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Debt Swapping as a Tool for Economic and Social Stabilization in Russia's Closed Nuclear Cities

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Prepared for the U.S. Department of Energy
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Summary

The magnitude of Russian foreign debt, both official bilateral and commercial, compounded by collapse of the Russian economic system, is an obstacle in preventing the Russian Federation from effectively increasing the domestic priority of drawing down its nuclear weapons complex and providing a healthy, competitive environment to its nuclear cities. Debt-for-nature swaps, introduced in the early 1980s, provide debtor nations with a means of converting a portion of foreign debt into local currency, often at steep discounts, to use for purposes such as environmental protection that serve both a domestic and international need. This paper presents the debt-for-nature concept as a model for providing an infusion of funds to further U.S. and international nonproliferation objectives to help stabilize Russian closed city economic conditions through direct work on proliferation problems and remediation of the environment. A specific proposal is presented to demonstrate the utility and efficacy of the dept swap concept through initial collaboration with the city administration of Ozersk. The purpose of the proposal is to facilitate making Ozersk a safe, healthy competitive city, providing useful employment for its scientists and population and converting its superior infrastructure into productive activities.

Introduction: Debt Conversion, Proliferation Prevention, and Environmental Clean-up

In the early 1980s a new financial instrument was introduced into international capital markets designed to convert foreign debt of developing nations into useful purposes. Debt conversion was premised on the assumption that the developed world had a vested interest in helping developing nations overcome the burden of crushing foreign debt while supporting initiatives that serve domestic as well as international needs. Environmental issues within the Amazon Basin received particular attention. Debt-for-nature exchanges, as they came to be known when applied to the environment, allowed debtor nations to trade a portion of their outstanding international debt, often at steep discounts, for commitments to channel some domestic resources to environmental programs (Thapa, 1998; Gugler, 1997).

Debt-for-nature exchanges were initially seen as a way to encourage nations to shift domestic priorities toward areas such as the environment that might otherwise be ignored or neglected, and to encourage development within sectors by channeling resources to local NGOs. A second generation of debt swaps focusing on Eastern Europe, typified by the so-called Polish-Paris Club Initiative, assumed more ambitious goals. In this arrangement, debt-for-nature and debt-for-development exchanges were assigned a significant portion of a total debt forgiveness package. Creditor nations expected tangible return on investment in the form of reductions in the amount of pollution exported from Poland to other nations, for example. Debt swaps allow banks to realize a return on investment when otherwise there would be none: 1) by selling debt in secondary markets at a discount; or 2) through provisions in U.S. tax code that allow banks to write-off charitable contributions to not-for-profit organizations.

Today, the world confronts an analogous situation in relation to problems facing the Russian Federation and its outstanding international debt. Western nations must decide what they will do about

some of the far-reaching problems facing Russia and, by implication, the world. Debt conversion offers one potential avenue for obtaining both the domestic and international capital required to address them. Given the economic turmoil in Russia, the debt exchange model, such as debt-for-nature, should be considered for purposes which include both debt-for-nature and other potential debt swap priorities. No one expects the Russians to be able to pay their debt. The debt swap mechanism provides the prospect of getting something of real value where nothing is expected.

Economic stabilization of a downsized nuclear weapons complex is one such area of international concern. Drawing down from the Cold War is an immensely complex undertaking for both the United States and the Russian Federation. In both countries, not only does it require the irreversible dismantlement of thousands of nuclear warheads and the cessation of production of new nuclear materials, it also requires the remediation of extreme environmental problems, as well as the stable conversion of a technical specialist workforce to gainful employment in non-weapons pursuits. Both countries must undertake the draw-down in transparent, reciprocal steps. Success in this endeavor is of great importance to the world as a whole. Yet with the collapse of the Russian economic system, the Russian Federation is unable, and perhaps a little unwilling, to finance the necessary draw-down and remediation programs.

Russian external debt currently exceeds $US161 bn and thus is quite debilitating to social and economic restructuring and stabilization (Hardt, 1999). Nuclear proliferation prevention does not currently seem to be at the top of Russian internal investment priorities. Cold War environmental legacy issues are even less of a priority. Yet their remediation offers the potential for substantial reemployment of weapons scientists and engineers, help in making nuclear communities attractive for external commercial development, and help in addressing a public health crisis of staggering proportions.

The costs to effect re-employment of former weapons scientists and engineers and to clean up the Cold War environmental legacy are both daunting. It is estimated that a weapons complex re-employment program could cost several billion dollars. The current cost estimate to clean up the U.S. Cold War environmental legacy is in excess of $US200 bn (DOE, 1996). Financial creativity involving both public and private sectors is going to be necessary if there is any hope of achieving substantive solutions for these issues.

In this paper, processes and examples of debt conversion are described in the belief that debt swapping is an important tool to consider for increasing the internal Russian priority for such endeavors. The aim is to creatively underwrite and manage activities in a way that substantially leverages and increases the funds available to solve both U.S. and world security problems while at the same time improving economic, security, social, and health conditions in Russia. The debt swap mechanism provides a focus for attracting and leveraging tax funds, local contributions in-kind, international financial institution support, foundation funds, etc. It also provides incentive for more effective use of Nuclear Cities Initiative funds for downscaling the nuclear weapons threat.

Profile of Russian External Debt

Russia faces the same conditions that led to the debt crisis among Latin American nations in the 1970s and 1980s: it can no longer afford to service its foreign debt obligations. To avoid further financial crisis, external debts need to be rescheduled, restructured, and serviced. The Russian government possesses only half of the amount necessary to service its 1999 external debt of $US17.5 bn from its own budget. Rescheduling is needed to avoid immediate default and reduce the heavy debt service burden. At a meeting of the G-7, plus Russia (G-8) in June, 1999, a policy designed to expedite rescheduling of the Russian sovereign debt was adopted. With formal IMF-Russian agreement expected by fall, 1999,

Russia's obligations for payment of principal and interest are expected to be rescheduled to 2001. Delaying servicing the massive Russian debt ($US161.6 billion representing 80.6 percent of their Gross Domestic Product) is essential as currently fully servicing the debt is impossible. Longer term, renegotiation or forgiveness of as much as half of foreign debt is essential for Russia to escape from its "debt trap" (Hardt, 1999).

Table One presents the most recent available data on growth trends and a breakdown, by official bilateral and commercial creditors, of external Russian debt.

Table One: Russian External Debt

IIF DATABASE: RUSSIAN FEDERATION **EXTERNAL DEBT ($ million)**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997e**	**1998f**	**1999f**
Convertible Currency External Debt	79,794	88,552	102,200	115,975	134,674	164,731	190,506	213,173
% GDP	98.2	48.2	36.9	32.5	30.6	35.6	43.1	49.2
% Exports goods, services & income	247.0	194.2	167.8	156.4	169.8	202.3	250.9	265.3
Medium/Long term debt	66,772	75,797	84,630	94,444	101,527	122,106	160,509	180,257
Short term debt	7,654	7,634	9,527	0.10807	20,102	39,047	29,997	32,915
Interest arrears	5,368	5,121	8,043	10,724	13,045	3,580		
By Creditor:								
Official bilateral creditors (PARIS CLUB)	46,498	49,806	54,426	57,097	59,777	59,123	61,824	63,569
Commercial banks (LONDON CLUB)	21,441	23,713	27,817	31,337	35,097	43,118	43,201	47,893

E = estimate, f = IIF forecast

The Legacy of Nuclear Contamination in the Former Soviet Union

Russia's nuclear waste management and radioactive waste problems continue to haunt the international community. In fact, Russia (especially at Mayak, Tomsk, and Krasnoyarsk) is the most heavily, radioactively contaminated region in the world as a result of the Cold War legacy (Bradley, 1998). This contamination has left a devastating effect on the health and environment of the country, an effect that will take decades to solve (Feshbach, 1992). There are three areas of greatest concern:

(1) Uranium Recovery Operations: Uranium recovery operations in the former USSR resulted in the generation of large amounts of mining and milling wastes. While research has occurred to more clearly understand the fate, transport and impacts of these wastes, economic concerns and political issues have hampered actual waste management and environmental restoration.

(2) Nuclear Fuel Reprocessing: Direct contamination of the environment from nuclear fuel reprocessing sites is another serious threat confronting Russia. Virtually all of the weapons complexes of the Former Soviet States are located in Russia. Three of these sites, Mayak (Chelyabinsk-65), Tomsk-7, and Krasnoyarsk-26 account for 95 percent of the world's known releases of radioactivity to the environment. In fact, the greatest near-term human health and environmental impacts are likely to

come from the greater than 200 million curies which have been discharged into surface waters at Mayak and Tomsk (Bradley, 1998).

(3) Nuclear Naval Operations: In the aftermath of Chernobyl, increasing attention has been given to discharges of liquid and solid wastes to oceans and seas from nuclear navel operations in Russia's Northern and Pacific fleets. These threats are relatively well studied and actions to address them are being taken.

Finding the solutions to Russia's radioactive contamination requires a long-term commitment and strategy to ensure protection of public health and the environment. Dedicated funding is needed to provide science-based solutions to ensure that the threats to water systems, human health, and cross-border contamination are minimized (Bradley, 1998).

Many of these environmental problems have had to be faced in the United States. The U.S. certainly has as a priority the remediation of environmental pollution resulting from nuclear buildup during the Cold War. It is of real significance to the thesis of this paper that in fact environmental remediation in places like Hanford has been the foundation of economic stabilization of the community of Richland, Washington. The environmental clean-up activities at Hanford not only have provided new jobs and skills for nuclear workers, they have also made the city and the region much more acceptable for commercial development.

Russian Workforce Conversion

Not only is there a need to economically stabilize and diversify the closed nuclear cities in order to minimize the threat of nuclear materials diversion and the emigration of weapons expertise, but socio-economic conditions of these cities are also likely to be a factor in the speed with which the Russian Federation chooses to draw down its nuclear weapons complex. All ten of the closed Russian nuclear cities face formidable barriers to change, emanating from socio-economic conditions that inhibit efforts to transition away from a command and control economy rooted in defense production. These are often "one-product" communities, even today. This results in an inertia that is compounded by debilitating environmental conditions. Until a vision and the possibility of change leading toward integration into the global market economy is introduced as a realistic and tangible goal, with examples of success and assistance in retooling social and economic infrastructure, Russian leaders are likely to be reluctant to invest scarce resources in workforce conversion. A matching fund approach in the debt-for-nature model, such as the matching fund approach that proved so successful in the Polish debt swap program, could provide local contributions of tax funds and human inputs (Hardt, 1987, 1989).

Successful Applications of Debt Swapping

Debt-for-nature swaps were conceived by Dr. Thomas E. Lovejoy in 1984, then vice-president of the World-Wide Fund for Nature (Lovejoy, 1984). In these exchanges, a certain amount of foreign debt is cancelled or forgiven in return for local currency which is applied to an environmental project. Dept swaps have been applied to a variety of fields, including debt-for-health, debt-for-charity, debt-for-child development, and debt-for-sustainable development (Thapa, 1998).

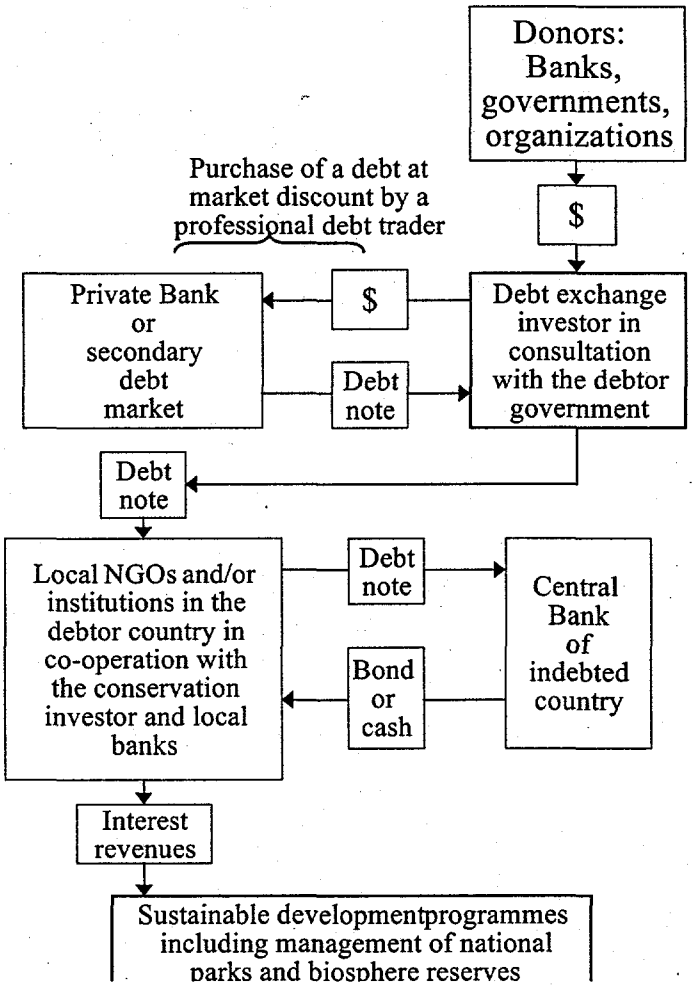
An early debt-for-nature swap in Ecuador became a model for many to follow. In 1987 the World Wildlife Fund purchased $1 million in Ecuadorian debt and assigned the debt to an Ecuadorian environmental NGO. The Ecuadorian government issued bonds which paid interest in local currency into an environmental fund. Proceeds of the fund were distributed to the local NGO which used the money to finance protection of nature reserves. The Ecuadorian swap was successful because it emphasized the

involvement of local NGOs in managing and administering the environmental program, de-emphasized the role played by the Ecuadorian government, and used "environmental" bonds to avoid the inflationary effects of swaps on the local economy.

What makes debt swaps possible is the existence of a secondary market in foreign debt. An international NGO, often with funds donated from a foundation or other source, purchases debt paper from commercial banks that are willing to sell foreign debt at a discount in order to clear their books of unrecoverable loans or to retrieve some portion of return on investment. Banks will often look for creative ways to offset bad loans, including such returns on investment as equity in a local company (formally known as a debt-for-equity trade), matching funds from the United Nations or some foundation, tax write-off, or even something as intangible as generating good will.

A debt swap typically involves the debtor country, the central bank of the debtor country, and an international nongovernmental organization (INGO) who usually buys the debt in the secondary market and serves as sponsor of the swap process. However, it is often essential for the INGO to have close contact with a private domestic NGO in the debtor country who is responsible for the administration and operation of the project (Thapa, 1998; Kaiser & Lambert, 1996).

Figure I. A commonly used, simplified hypothetical debt-for-nature operation. (Dogse and von Droste, 1990).



Based on this formula, a second generation of debt-for-nature swaps have evolved that rely much more on government to play a lead and sponsoring role. They also involve much larger amounts of debt, thus offering greater leverage in effecting environmental change. Because government is a central player, greater emphasis is given to enforcement of contractual arrangements (Sher, 1993). The three primary types of swaps, differentiated primarily by their enforcement mechanisms, are illustrated below:

Government Debt Purchases: The Netherlands-Costa Rican Exchange. In 1989 the government of Netherlands entered into agreement with the government of Costa Rica to buy private debt ($33 million on the secondary market at a steep discount of $5 million). The Central Bank of Costa Rica then issued bonds paying interest at a rate of 10 percent into a fund to finance environmental restoration. Governments of both countries control the fund by joint membership on a governing committee, and both governments must agree to allocations for grants. Either government can force suspension of a project's funding.

Government Grants to NGOs: The U.S. AID-Philippines Agreement. In 1991 the U.S. Agency for International Development awarded a grant to the World Wildlife Fund to purchase commercial Philippine debt with the proceeds going to a Philippine Foundation, which in turn would award grants to local NGOs to support reforestation efforts. Recipients of grants are held accountable by provisions that require them to sign an agreement with the host government that the terms of the grant contract will be fulfilled. Guidelines require careful planning.

The Debt Forgiveness Model: Polish-Paris Club Debt-for Nature Exchange. In March 1991, Paris Club members agreed to forgive fifty percent of Poland's $35 billion external debt. Unlike previous debt-for-nature swaps, the debt swap agreement between the Polish government and its creditors focused on environmental cleanup programs instead of environmental preservation. The Paris Club authorized members to forgive an additional ten percent of Polish debt through debt-for-nature swaps. The U.S. government went beyond these provisions by agreeing to reduce bilateral debt by seventy percent. The Polish-Paris Club agreement called for a far more intrusive system of enforcement than previous exchanges. For example, it gave creditor nations a voting majority on the Executive Board overseeing the development fund and a central role in the selection of environmental remediation projects.

Of the lessons learned from this second generation of government-to-government transactions, it is clear that success depends on strong local NGO and debtor government involvement in creating and monitoring transactions. To make debt-swaps acceptable to the taxpayers and governments of creditor nations, government oversight and enforceable contractual arrangements are a necessary component. The Polish-Paris Club model probably goes too far in removing the beneficiary government from involvement in virtually all project selection and funding decisions (Sher, 1993).

Models of Debt Conversion for the Russian Cities

Based on the examples of government-to-government debt swap transactions described above, two approaches to debt conversion may be useful as models for approaching the structure and key attributes of a debt swap arrangement involving U.S. and Russian governments. The debt-for-nature model works to a point in considering the contours of a debt-swap arrangement. But given the profound breadth of topics—proliferation prevention and environment restoration—of necessity the national security interests of U.S. and Russian governments will be the decisive factor in approaching the structure and goals of any debt swap arrangement. Both models--one focusing on official bilateral and the other

commercial debt—must occur within parameters defined by the following three sets of structural relationships and roles:

- U.S. and Russian Government-to-Government Relations
  - Ratify and affirm goals of debt conversion as a tool of nuclear city stabilization
  - Negotiate terms of debt conversion agreement
  - Guarantee terms of agreement are met through oversight and monitoring of contractual arrangements

- U.S. and Russian Laboratory-to-Laboratory Relations and NGO Partnerships
  - Craft technical parameters of debt conversion program around draw-down of nuclear weapons complex
  - Participate in government-to-government policy discussions
  - Responsible for administration, implementation, and oversight of provisions of debt conversion agreement

- International and Russian Financial and Lending Institutions
  - Participate in discussions involving potentially interested exchange partners
  - Assist in creating a legal framework for conversion of debt
  - Assist in creating mechanisms to protect local currency proceeds from loss of value through inflation

Within these role and relational parameters, debt conversion targeting the two types of bilateral and commercial debt may entail some combination of the following two approaches:

Russian Debt Forgiveness Model. This model is based on the example of the Polish-Paris Club Initiative and involves forgiveness of some portion of Russia's official bi-lateral debt, currently estimated at some $US63 bn as shown in Table One. The U.S. government would serve as the lead government sponsor and organizer, but the agreement would include all seventeen creditor nations of the Paris Club. Like the Polish-Paris Club Initiative, debt conversion for purposes of proliferation prevention and the downsizing of Russian nuclear complex would comprise some portion of a total debt forgiveness package, such as the ten percent devoted to environmental remediation in the Polish-Paris Club agreement.

Hybrid Public/Private Model Involving Grants to NGOs. This model, based on the U.S. AID-Philippines example above, combines joint public and private involvement in bringing down Russia's outstanding commercial foreign debt, currently estimated at $US47 bn under control of the London Club (Table One). The NGO in this instance would consist of a nominal partnership between the Pacific Northwest National Laboratory and a not-for-profit NGO. PNNL would serve as the primary technical lead in partnering with Russian laboratories, while involvement of a not-for-profit NGO would allow for charitable contributions from banks, as well as foundations who see this as opportunity to leverage foundation money in the service of a vital national interest. As in the U.S. AID-Philippine's example, the U.S. government would be in a position to award grants to the NGO, which in turn would purchase commercial debt on the secondary market. The proceeds would be converted into local currency to support Russian-based projects and activities, or in some instance used directly for hard currency purchases of equipment and expertise, in part to avoid the inflationary effects of swaps on the local economy and to preserve the purchasing power of debt swap proceeds.

A Specific PNNL Proposal

The Pacific Northwest National Laboratory proposes to undertake, in a manner consistent with U.S. Government and Energy Department nuclear cities initiatives, a new program based on debt swapping in order to demonstrate the utility and efficacy of this concept for nonproliferation and national security goals. The Russian city of Ozersk is a special situation that presents a unique opportunity to begin this engagement.

Ozersk: A Special Situation

The Mayak Production Association, located next to the city of Ozersk, is the site of Russia's first plutonium production reactor which began operating in 1948 (Bradley, 1997). Ozersk and the Mayak complex are almost mirror images of Richland and the Hanford complex, though environmental restoration efforts at Hanford are much more advanced. Like Hanford and Richland, Mayak and Ozersk are primed for a program of economic diversification because of their superior infrastructure as a priority city within the Soviet system. As a nuclear city, Ozersk continues to enjoy a special relationship in relationship to the Russian government, including tax advantages.

Mayak has been renamed several times throughout its history, from Chelyabinsk-40 and Chelyabinsk-65 in the early 1990s, to finally Ozersk in 1994, the original name of the town nearest to Mayak where most workers live. The Mayak nuclear materials production site contains five shutdown graphite plutonium production reactors, two operating isotope production reactors, reprocessing, and waste management facilities. A site to store fissile material for warhead dismantlement will contain about 40 percent of weapons-grade plutonium in Russia when completed. The Mayak facility is highly polluted (Novitsky et al., 1999; Smith-Briggs et al., 1999; Drozhko et al., 1999). All discharges of radioactivity have been to surface water bodies which are all hydrographically connected, with outlets to the Techa River system and possible transport to the Ob River and Kara Sea.

In a recent visit to Richland and PNNL by the mayor of Ozersk and a city delegation, it was confirmed that the environmental conditions in and around Ozersk from the Mayak Production Association (MPA) are terrible. Community investment in activities for purposes of economic diversification have been negatively impacted. There is a large proportion of the population that must be monitored for health effects.

The city administration of Ozersk is providing PNNL, a leading environmental science laboratory in the U.S., with a prioritized list of environmental problems negatively impacting public health and economic stabilization. PNNL requests Energy Department concurrence to actively explore the potential of debt swapping mechanisms and partnership to address some of these problems. We know that the city administration of Ozersk is extremely interested in this concept and Mayor Sergei Chernyshov has approached Minatom Minister Adamonv for permission to engage with us in this effort. Success in such an endeavor could significantly promote U.S. transparency and nonproliferation objectives at this important Russian nuclear complex; could serve as a model for broader involvement by other nuclear facilities in debt-conversion financing; would further develop and establish an experienced NGO presence in nuclear city endeavors; and would offer the possibility of substantial financial resources to address security, economic, social, and health issues in Ozersk in lieu of capital derived from the sale of MPA "product."

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