

ROLL's Environmental Health Impacts

Examples from the Field



Considered one of Russia's most recognized and successful environmental initiatives, the Institute for Sustainable Communities' (ISC's) Replication of Lessons Learned (ROLL) program is a Russian-to-Russian partnership building stronger networks among governments, NGOs, and the private sector to use best practices for cleaning up the environment, improving public health, and sustainably managing Russia's natural resource base.

Health problems are a critical factor in Russia's ongoing economic, democratic, and social transition. Investments, exports, efficiency, and economic growth are all fueled by a vital, healthy population. Citizens across Russia contend daily with contaminated drinking water, ineffective solid and wastewater management, and air pollution.

Moreover, environmental health problems are among the most preventable and can be effectively addressed through community action processes that help citizens,

NGOs, and governments overcome barriers in working together to solve critical issues.

ISC's ROLL program staff has more than a decade of experience implementing and managing environmental health projects across Russia. Areas of expertise include health risk assessment, management and communications, grantmaking, environmental education, and environmental research. The ROLL program, supported by the U.S. Agency for International Development, also offers technical expertise in air, water, natural resource management, and energy efficiency.

Additionally, ISC has developed an extensive network of partners and environmental specialists across Russia.

ISC's ROLL program is helping Russians improve their environment and health by introducing cutting-edge health risk assessment methods that lead to efficient, practical solutions to serious environmental health problems.

The Challenge

- 61 million Russians are endangered by environmental hazards.
- 250,000 die prematurely due to poor environment.
- Air pollution kills 40,000 people a year.

ROLL's Impact

- \$1.4 million have thus far been invested through ISC in health risk management.
- 350 children in the Ural region have been treated for lead poisoning.
- 4,000 men and youth from industrial cities in Bashkortostan have been screened and treated for environmentally related health problems.
- 1,200 children living in Nizhnii Tagil, Baikalsk, Yaroslavl, Klin, and the Republic of Chuvashia have been treated for environmentally linked diseases.



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Russia's ROLL

Knowledge Key to Preventing and Reducing Prenatal Allergic Diseases

Three hospitals in the cities of Novosibirsk and Mirny, and eight outpatient clinics in Novosibirsk Oblast, have trained 400 pregnant women and nearly 150 parents in allergy reduction/prevention through the Family Rehabilitation Center in Novosibirsk (another ROLL grantee). An additional 2,000 people will be trained during the coming year.

ROLL-sponsored research by Professor Ludmila Kaznacheya shows that the chance of giving birth to a sick, allergic infant decreases 30-to-40 percent in women who are educated about the risks and ways to avoid them; and the rate of allergies acquired later by children born to these mothers is reduced by half. The benefits of Kaznacheya's ROLL-funded training led the chief allergists of the Republic of Sakha and Nizhnii Novgorod Oblast to recommend adopting the program into their standard operating procedures.

Saving Energy Results in Improved Treatment

The Saratov City Administration Public Health Committee saved more than the \$1,200 in heating fuel in its tuberculosis clinic through a ROLL project. Not only have the energy-efficiency techniques saved fuel, but tuberculosis treatment has become more effective. Because the clinic building is five degrees warmer, patients no longer cut short their treatment to go to warmer places.



Project Results in Additional Funding for Health Risk Assessment

ROLL introduced health risk assessment to transportation planning in Moscow. Specialists from Ecodesign Ltd. developed an emissions dispersion and risk assessment map showing the distribution of 23 chemicals over a 420 square kilometer area with a population of 420,000.

This illustration of the health risks associated with chemical pollutants from vehicle emissions was presented to officials from the Departments of Transportation, Epidemiological Monitoring, and Environmental Protection from both the municipal and federal levels. The recommendations from the project have been used to justify additional local funding to support health risk assessment for other areas of Moscow, primarily the subdivision associated with the Third Transport Ring being constructed near the center of the city.

Connecting Economic Development and Health Risk

ROLL supported a project in the Perm region to develop better ways to document potential prevention and treatment options for pollution-related illness in children, and new diagnostic methods specific to large, industrially polluted

cities. The project now receives additional financial support from the regional government's ecological fund. The grant also funded a regional program to focus on medical-ecological rehabilitation, addressing illnesses brought on by the adverse factors of industrial pollution. The experience was so successful that the City of Ekaterinburg also created and supports a similar program.

ROLL project data has become an integral part of establishing normative baselines from which to assess industrial impact on general health. A system of "grading and assessing" relative risk is being developed and sanctioned by the federal Sanepidnadzor Ministry as a way to determine concrete connections between economic development and health risk.

Addressing Male Reproductive Health

Family planning center visits by men in the Republic of Bashkiria doubled during a ROLL project to develop a comprehensive program on male reproductive health and infertility.

The project also resulted in a constitutional amendment to protect people's rights to reproductive health.

Bashkiria's Parliament is planning to introduce additional amendments to the Federal Legislature, and is currently developing a comprehensive program on male reproductive health—the first of its kind in the Russian Federation.



program

A secondary research focus—prolonged chemical contamination affecting human life expectancy—is proving to be extremely current and timely. A unique technique for detecting dioxins in humans has been devised and is being shared on an international level, most recently at the international Dioxin Congress in Barcelona.

Successful Collaboration in Health Risk Management

In 1998, three ROLL grantees in the City of Serpukhov came together to compile, summarize, and map soil, surface water, and air pollution in the city.

Two seminars to discuss the results of the project brought together more than 190 citizens, representatives from the city administration, environmental protection agencies, and the state Sanitary and Epidemic Control Service. As a result, the City Council adopted a plan to stabilize and improve Serpukhov's environment, and included it in the city's budget for the first time.

The proposal included an air quality plan and a strategy to address the problem of PCB-contaminated food being sold in city markets. Local growers, the city, and state officials were able to work together to come up with a practical, cost-effective solution to the contaminated vegetable problem. Vegetable growers switched to growing flowers in the contaminated soil, which they could sell for a higher profit than vegetables. The growers had a new, safe cash crop and the local contaminated vegetables have been largely replaced in the markets with vegetables from uncontaminated sources, reducing a major health risk in the city.

In addition, the new-found cooperation between the public, the city, and the state is continuing to pay off as plans are being developed to address air quality and other public health problems.

Recommendations for Cleaner Drinking Water

The guidelines and recommendations of ISC's ROLL project in Belgorod Oblast detailing drinking water quality problems were included in Belgorod City's three-year development plan and in the Program for Reforming Belgorod Oblast Housing and Communal Services.

Immobilizing Heavy Metals in the Soil

A ROLL project in Saratov investigating chemical behavior of heavy metals in the soil identified cadmium, because of its mobile compounds, as the most serious pollutant. This knowledge led city managers to create a program to immobilize heavy metals in the soils. The city was also able to identify and fine the polluters, and establish buffer zones around polluted areas.

Action to Protect Against Contaminated Groundwater

Two hundred and fourteen water wells in the Vurnary area of the Chuvash Republic were sampled and analyzed for 72 elements and uranium isotope ratios as part of a ROLL project implemented by the National Academy of Sciences. A set of 27 maps detailing groundwater hydrologic patterns was created and analysis indicated that a 760 square

kilometer area—supplying tens of thousands of people with drinking water—was polluted by heavy metals and sulfates. Because of these findings, a new five-year program for cooperative water quality management has been developed with the Vurnary Local Administration and the Local Committee for Natural Resources. Low-cost activities have already been implemented to improve water quality, including an initiative calling for replacing deep well water

supplies with surface sources. The Vurnary Local Administration has allocated funds for the upcoming year to continue with present remediating strategies and develop new approaches.

Mercury Pollution Reduced in the Chuvash Republic

NPK Mercury in the Chuvash Republic implemented a ROLL-funded project to remove mercury from the waste stream. After undertaking an extensive monitoring and remediation program for mercury contamination in schools and hospitals, 82 rooms in local hospitals were found to be contaminated (15 have already been cleaned up).

The Chuvash Republic Ministry of Health created a plan to recycle 750,000 mercury lamps and a special fund was created to finance mercury monitoring initiatives in all hospitals and schools. Most notably, the Chuvash Republic is the only place in the Russian Federation where not a single mercury-bearing lamp will go to a landfill.





continued from inside

High Health Risk Groups Among Children

A ROLL project in Moscow, Yaroslavl, and Irkutsk Oblasts has developed an innovative methodology for monitoring atmospheric pollutants that increase the risk of pathological problems in children. The system monitored the health of 100,000 children up to 12 years old. Because this methodology works as an accurate, low-cost, diagnostic method, it has already been expanded to twice the number of cities than originally planned for in the grant application.

Improving the Ecology and Health of the Evenk People

To protect the health of indigenous people, this ROLL project conducted environmental research in populated areas of Selemzhinsky Raion, where 2,500 native Evenk people live. For more than 100 years, the populated regions of Selemzhinsky Raion have been subjected to environmental degradation caused by gold-mining, turning woodland floodplains into bare areas poisoned by tons of mercury.

The Village of Ivanovskoye was first in the Amur Oblast and fifth in Russia for the frequency of diseases among its adult population; sixth in Russia for gas-trointestinal diseases; and third in Russia for the number of urinary diseases. It was found that many patients suffer from two or more diseases at the same time, and that the diseases were often caused by mercury poisoning.

The general environmental situation in this area was classified as ‘very stressful’ and in some cases as ‘catastrophic.’ A team of doctors visited the Evenk settlement and carried out medical preventive measures and public information activities, conducted interviews with patients, and drew up recommendations for the Amur Oblast Administration.

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ISC's mission is to help communities around the world address environmental, economic, and social challenges to build a better future shaped and shared by all.

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