

# Russia

## Global Learning to Benefit the Environment (**GLOBE**): Linking Students, Teachers and the Environment

**GreenCOM Final Report**

**GreenCOM**  
**human**  
*nature project*



PN HCD-417

**Russia**

**Global Learning to Benefit the Environment  
(GLOBE):  
Linking Students, Teachers and the Environment**

**GreenCOM Final Report**

November  
1998

**GreenCOM  
Environmental Education and Communication Project  
U S Agency for International Development  
Contract No PCE-Q-00-93-00069-00  
Delivery Order/Task Order No 20**

# GreenCOM Summary Report Russia GLOBE Delivery Order

PCE-Q-00-93-00069-00 (Task order #20)

Submitted: November 2, 1998

1 Type of activity Community-level environmental assessment and participatory methodology

Geographical area Perm Region, Russia

Dates of activity March 25, 1997 - September 19, 1998

Team composition Russian Regional Coordinator -- Victor Misenzhnikov  
Home Office Backstop -- Mary Sebold

2 Objective of the activity The overall objective of GreenCOM technical assistance in Russia was to assist in the expansion of the GLOBE program in the Perm region by establishing GLOBE in six schools in the Perm region. GreenCOM provided technical (computer and Internet) and administrative assistance through its local Russian Regional Coordinator and Washington staff.

See the overall Scope of Work, included here as Attachment 1

3 Activities performed

1 **Establish GLOBE in six schools in the Perm region (Victor's school to act as a resource center)**

1) Needs assessment and delivery of workplan to USAID/Moscow

Martha Monroe, a GLOBE trainer, traveled in April 1997 to attend the Almaty workshop and perform a needs assessment prior to developing and delivering a workplan to USAID/Moscow. She met with the Russian National Coordinator and USAID/Moscow staff and worked with Victor to assess computer needs and visit the target schools. She debriefed USAID/Moscow before she left.

## 1 2 Obtain computer and equipment for GLOBE activities

Nine AED/NET computers, equipped with Cyrillic and modems, and six sets of scientific equipment were shipped via MATRIX International shipping company. Scientific equipment from Forestry Suppliers sent in same shipment. GreenCOM purchased an office computer for Victor from a Russian vendor in August, 1997. Nine used computers (complete with monitors, Cyrillic alphabet, mice and keyboards) were sent to Perm in July, 1997 for the schools to utilize. Basic GLOBE scientific equipment for 6 schools was also sent in the same shipment.

## 1 3 Internet hookups

The computer at the regional center is hooked up to the Internet, but the schools were not hooked up originally. Some lacked phone lines, others the funds to pay for additional lines. The Coordinator identified an Internet provider late in the project who would service the schools, and GreenCOM supplied funds in 1998 to the Coordinator for this purpose.

## 1 4 Commitment of funds to support additional GLOBE training and equipment

A commitment of 65 million rubles was made by the Perm Committee for Environmental Protection to support the expansion GLOBE in Perm on April 8, 1997. Additional funds have been pursued, and when GreenCOM Administrative Director Peter Spain visited Perm in June 1998 he and Mr. Misenzhnikov met with Vassily Kazancef, the head of the Perm Region environmental committee. He deals with all environmental issues, not just EE, so is a man of broad powers. He had promised the project 65 million rubles for environmental education but so far has delivered only 12 million. Though GreenCOM emphasized to him the good work underway and the need for more, not surprisingly no new promises were forthcoming – 1998 is a year of extraordinary financial stress for Russians and their government. So the funds hoped for from the Russian side were extremely limited.

## 2 Train Teachers in GLOBE Program and monitor project

2 1 Five teachers and Mr. Misenzhnikov attended the April 1997 Peace Corps/GLOBE workshop in Almaty.

2 2 Trip to Moscow and Perm by Washington staff member to monitor the project.

Mr. Spain visited in June 1998, and wrote a full report. He found five schools, selected on a competitive basis, are actively working as GLOBE schools. Three of them are located outside the city of Perm and the other two are in the city. Twelve more schools have been identified to join the GLOBE network in the near future, in autumn of 1998. These schools are already introducing the GLOBE program component into their curricula. Site visits were conducted to the three rural schools and one Perm school which are in the GLOBE network already.

What was immediately evident and would be evident at all school stops was that the students were interested and excited and proud of their work on the GLOBE program. They showed visitors their datasets stored on the computer, and then guests went outside to be shown how they made their measurements. The Tchaikovskaya school had its temperature and rainfall gauges outside, there was a ten-meter square of land on which they measured soil moisture and ground cover and observed the clouds, and another wooded plot where they measured ground cover and tree growth. Then it was off in the school's bus to the nearby river Suzva, where the children demonstrated measurements of the electro-conductivity of the water. At each site and for each measurement, a different student made the presentation about GLOBE activities.

#### 4 Potential needs of, or opportunities for, future assistance

GLOBE has done well in developing interest in these schools. Although the number of schools is small, the work is paying off. GLOBE should hold talks with the Soros people in Washington to coordinate their efforts. Internet access remains a problem, due to poor local infrastructure and scarce local funds, with connection possibilities only located near the end of the project period.

Local leaders like Mr. Misenzhnikov need to be supported. They are the crucial factor in these efforts. Small financial assistance from the outside can go a long way in maintaining the good work of these local coordinators, especially during Russia's current financial turmoil. Mr. Misenzhnikov's final report is attached.

Financial Summary as of October 31, 1998  
(All figures were rounded to the nearest hundred )

Labor

204 person days were used for a total of \$15,000

Equipment

Computers and scientific equipment, including freight, totaled \$9,500 GLOBE scientific equipment totaled \$2,500 The remaining \$700 was spent to outfit nine computers transferred from another Academy for Educational Development project with modems and the Cyrillic alphabet

**TOTAL LABOR AND EQUIPMENT**

**\$24,500 00**

## Attachment 1 - Scope of Work

Work performed under this Delivery Order will be performed over an 18-month period. The GreenCOM Contractor will oversee the establishment of a minimum of six schools as active participants in the GLOBE Program. Funds provided under this Delivery Order will cover participant travel and accommodations for five teachers and the Regional Coordinator to a GLOBE Teacher Training Workshop in Kazakhstan in late March, followed by support for establishing necessary equipment and on-site guidance in GLOBE schools. Each of the six participating GLOBE schools will be outfitted with computer hardware and software and basic measuring equipment necessary for participation in the program. An emphasis is placed on the development of public-private partnerships in the identification of resources to ensure ongoing support following the completion of this activity.

### Needs Assessment

At no cost to this Delivery Order, a GreenCOM Core staff member familiar with the GLOBE program will travel to Moscow and the target region for a period of two weeks in late February or early March 1997 to

- Meet with the Russian National Coordinator and USAID/Moscow staff, assess computer needs, availability, capacity, costs and shipping constraints,

- identify sources for procurement of computers, measuring equipment needed for program,

- visit target region and identify coordinating institutions,

- develop/confirm school site selection and, if possible, visit selected schools, identify/recruit ½ time Regional Russian Coordinator,

- develop workplan and identify possible collaborators/additional resources, debrief and leave draft workplan with USAID/Moscow,

- if necessary, arrange travel and payments for 5 Russian teachers and the Regional Coordinator to attend the GLOBE teacher training workshop in Kazakhstan

### Establishing GLOBE Partner Schools

The Russian Regional Coordinator will work on a half-time basis for a period of 18 months equivalent and will work closely with the Russian National Coordinator and GreenCOM Washington staff in the development and implementation of the program. His/her responsibilities

will include school site selection, oversight of computer procurement and installation, the coordination of Russian teacher participation in a Peace Corps Kazakhstan sponsored GLOBE Teacher Training Workshop and facilitate computer and general support on an ongoing basis for selected schools. A minimum of six schools will be selected to participate in the program, each to receive computer hardware and software necessary to participate in the program, as well as basic measuring equipment to collect data according to the program protocols. Additional schools may participate based on interest and availability of resources.

Funding is provided in this Delivery Order for the Regional Coordinator for up to 60 days of local transport costs to visit schools, as well as airfare and per diem (reimbursement for actual expenses not to exceed \$100/day) for two trips of 3 days each to Moscow to assist with computer procurement and transport as necessary and meet/brief the Russian National Coordinator and USAID staff on the activity. Funding is included for shipping of equipment from Moscow to the target region. Funding for airfare and accommodations is also included for five teachers and the Regional Coordinator from the target region to travel to Kazakhstan for a 5 day GLOBE Teacher training sponsored by Peace Corps Kazakhstan and the GLOBE Program in late March. An agreement with GLOBE program staff stipulates that participants, with funding from this Delivery Order, pay only for travel and accommodations and food. As necessary, the Regional Coordinator will be responsible for disbursement of travel and accommodations funds for participating teachers.

The Contractor will identify a vendor for computer procurement based locally in the target region or, if necessary, from Moscow. Funding is included for additional vendor fees to provide ongoing technical hardware /software assistance on site over the life of this Delivery Order. The Vendor will install equipment on site and be available for periodic consultation at schools.

Additionally, up to \$4,000 is included for on-line costs during the activity for school participation in the program. The Contractor will make every effort to ensure the development of partnerships to sustain program costs following completion of this activity.

GreenCOM Contractor Core staff member will travel (at no salary Cost to the Delivery Order) a second time for a period of two weeks once the schools are actively participating in the program for management oversight, review and to provide support for the activity. Travel and per diem for this trip is provided for in this Delivery Order. GreenCOM Washington backstop support for financial, technical and administrative assistance is provided at no cost to this Delivery Order.

### Reports

The Contractor will submit an administrative report NTE 25 pages in English (exclusive of attachments) upon completion of the activity that describes activities and results of the work performed. The report will also include a brief financial section detailing Costs of equipment and program implementation. The Contractor will submit ten copies to USAID/Moscow and five copies to USAID/W.

## Equipment

Purchase of six computer systems, each system to include a computer, monitor, software, Internet link-up equipment and software necessary to support participation in the program. Additionally, those materials and office supplies required to produce the reports required above. A plug figure of \$15,000 is used for computer procurement (6 units) locally or in Moscow and \$3,000 for measuring equipment for student/teacher use in 6 schools. Additional schools may be included in the program on an ad-hoc basis pending availability of resources from collaborating institutions and private sector support.

## **SUMMARY ACCOUNT**

**submitted by**

**Regional Coordinator of the GLOBE Program  
in the district of Perm, Russia  
Victor Misenzhnikov**

### **INTRODUCTION**

GLOBE--a long-term international educational ecology program, intended to unite students ages 6 to 18, teachers, and scientists in global research and observation of the environment with the goal of improving the condition of the world's ecology

This program was founded in the USA on the initiative of the Vice-president Albert Gore on the occasion of the 25th Earth Day celebration--April 22, 1994. The program provides for teaching schoolchildren to carry out environmental measures based on particular standardized norms worked out by scientists of NASA and American universities.

Participation in the program aids children in beginning to better understand environmental problems, in gaining essential practical skills for evaluating ecological conditions using simple but reliable scientific methods. The program makes it possible for children of different countries to communicate, facilitates the exchange of information about the environmental peculiarities of various parts of the world, furthers the understanding that there are no boundaries to the world's ecological problems, and that humanity as a whole must pay for the irresponsible attitude of human beings toward the environment.

Currently more than 4500 schools in 56 countries are taking part in the program, and 125 governments have expressed interest in the program.

In Russia the program is based on an inter-governmental agreement, signed by Prime Minister V. S. Chernomyrdin and Vice-president A. Gore, and strengthened by Resolution No. 1380 of the Russian government, taken on December 14, 1994.

Today approximately 60 Russian schools have joined the program. Primarily, the schools are located in Moscow, St. Petersburg, and the central districts of European Russia. Thanks to an initiative by USAID and the Russian Ministry of General and Continuing Education, which established the GLOBE GreenCOM/Russia Project, 18 schools of the Perm district are among this number.

## **GOAL OF THE PROJECT**

### *Extension of the ecological education program GLOBE in the western Urals (in the District of Perm)*

In order to achieve this goal, the following tasks were established

- to select five (5) schools for participation in the project, based on a study of the level of ecological education in Perm District schools,
- to train the teachers in these schools at an international GLOBE training seminar in Almaty, Kazakhstan
- to select GLOBE training grounds (15x15 km) in the areas where the schools are located
- to determine tracts of land within the training grounds for carrying out research on the atmosphere and climate, hydrological and hydrochemical indicators of the water, soil, and biometric measurements,
- to determine the geographical coordinates of the center of the training ground (location of the school)--width, length, and height above sea level,
- to compose questionnaires for registration of the schools in the program and to send them to the national coordinator,
- to create groups of students aged 8-15 and to educate them in how to carry out the environmental measures in accordance with program requirements,
- to obtain computers and measuring equipment, acquired in the USA, to allocate them among the schools, to load software, and to make sure all equipment works well together,
- to obtain from the GLOBE national coordinator ID codes for the schools that are registered in the program,
- to set up regular measurements and observations of the condition of the environment in the schools' recreation grounds, and to register the measurement results and convey the data to the coordinating center,
- to provide methodological support, education and consultations for the teachers and students in technical measuring procedures and in using the computers

### **Implementation of the GLOBE GreenCOM/Russia Project in Perm District**

The process of preparing Perm District schools for participation in the GLOBE program was begun at the beginning of 1995, after the first Russian international seminar took place in the town of Pushchino

The program's methodological materials received at the Ministry of Environmental Protection were thoroughly analyzed and carefully processed. The scientific-methodology committee of the

Ecological Education Center made the decisions about preparing the district schools for participation in the program and about conducting the teacher training. Applications for certification of the center as a training center for teachers of the Western Urals, and possibly for other adjoining areas as well, were sent to the Russian coordinating committee and to the Ministry of General and Professional Education. For certification of the center one of the workers had to take the course and receive the international GLOBE certificate. The next seminar took place in the Czech Republic and it was not possible for any one from the center to attend it. However, the center's director completed the certification at the first training seminar conducted in Russia (St. Petersburg, September, 1996), and the preparation began for monitoring the ecological condition of the areas near the schools. At the beginning of 1997, the national coordinator of GLOBE in Russia, K. L. Butyagina (of the Ministry of General and Professional education) asked for confirmation that the center was ready and willing to begin preparing the Perm teachers for implementation of the GLOBE program.

In answer a letter was sent once again reaffirming the seriousness of intention of the workers at the ecological education center and their readiness to begin implementation of the GLOBE program.

Contacts were established with the Academy for Educational Development (AED) in the US and with the GreenCOM project. It was proposed that we send five teachers and the program's regional coordinator to the international training seminar in Almaty (Kazakhstan). The Americans took responsibility for the expenses involved in this decision.

It was necessary to select the first to begin working in the GLOBE program and to invite the teachers from these schools to participate in the seminar. With this end in view, information about the program was published in the mass media (local papers, radio, television) and in the regional volume of collected educational materials. More than 20 schools expressed the desire to participate in this work. Most of them are among the base schools of the district network of ecological education, which numbers more than 70 educational institutions. The five schools which had achieved the greatest success in developing ecological education were selected.

- 1 Municipal High School NO 1 in the city of Perm
- 2 School No 34 in the city of Perm
- 3 School No 2 in the city of Gubakhi
- 4 Tschaiokovsky School of Nytvensk District
- 5 Plekhanova School of the Kungur District

The teachers from these schools were invited to the GLOBE training seminar in Almaty. The seminar took place from March 3 through April 4, 1997. There we met for the first time with Martha Monroe of the GreenCOM project, who acquainted us with the content of the GLOBE GreenCOM/Russia project, after which we agreed on a plan of implementation and formulated a consultation agreement.

In addition, a very interesting and helpful discussion took place regarding the future development of work related to the project with national coordinator of GLOBE in Russia, Karina Butyagina and Deputy Director of the GLOBE Program, Margaret Finarelli

All teachers from the Perm district completed the training successfully and received certificates as GLOBE trainers with permission to train not only students but teachers as well

Several days after the completion of the seminar, Ms Monroe paid a visit to Perm. She was introduced to the plan for environmental education in the Perm region, visited four schools, and held discussions in the director's conference room of the teachers' university, in the district education department, and with the district committee on environmental preservation

At the regional Center for Ecological Education, the terms for completing individual stages of the program were agreed upon, as well as the nature and types of measuring equipment that GreenCOM would acquire for the five Perm schools and the Center for Ecological Education

During the course of April and May, 1997, study areas were created at the schools for conducting observations and measurements, plots were chosen for atmospheric/climatic research, hydrological/hydrochemical indicators of the water and soil, and biometric measurements. At the same time questionnaires were completed with data about each school and with the geographic coordinates of the center of the training ground and of the plot of land for topsoil study. These questionnaires were sent to the national coordinator.

At each school the teacher-trainer put together a group of students and, with the help of the regional coordinator, carried out their training in the environmental measuring techniques which did not require complex equipment

- current air temperature
- types of clouds
- thickness of the cloud cover
- temperature of water in the reservoir
- pH of the water

In addition, we undertook efforts to attract new schools to participate in the program. Information about an upcoming district-wide teacher-training seminar for work in the GLOBE program was sent to all areas of the district. By the beginning of the academic year we received requests to participate in the seminar from teachers from 35 schools.

At the same time significant work was being done in preparation for the seminar. It was necessary to adapt American teaching materials to local conditions and to work out some methodologies from scratch. By the beginning of September a teachers' workbook was prepared and circulated. It was necessary to resolve the issues of finding classroom space for the seminar, renting a computer classroom with connection to the Internet and locating a hotel for lodging the teachers. But the main requirement was the receipt of measuring and computer equipment from the USA.

The equipment began arriving in the middle of August. Two shipments were sent through Moscow and were received in good condition in Perm. However, a small package sent via the international delivery agency DHL was received in Yekaterinburg, since DHL has no representative in Perm. It was subject to customs declaration and duty charges, and to do that processing in Perm turned out to be impossible. In order to resolve this problem, the director of the center had to go to Yekaterinburg.

Expenses for preparing and conducting the seminar amounted to 14,500,000 rubles (\$2544 US). This money was paid out by the environmental conservation organs of the Perm district.

The first GLOBE training seminar in the Urals took place from September 23-27 at the headquarters of the Teachers' University's Center for Ecology Education. Teachers from 25 educational institutions in the city and district of Perm--31 people in all--took part in the seminar. The training was conducted at the headquarters of the Teachers' University and of the State University's meteorology department, the practicum in the study of topsoil and in biometric measurements was held on the field training ground of Perm School No. 34, which had already been working in the program for 5 months. The classes in telecommunications were held in the computer lab of Perm State Technical University. Each teacher was given the opportunity to use the Internet and World Wide Web independently and to create an E-mail message.

All teachers completed the test norms successfully and received international certificates as teachers of GLOBE.

Thus a training complex had been created in Perm, on the basis of which it became possible to prepare groups of teachers for the GLOBE program not only in the Perm region but for other areas as well.

The equipment received from the USA was delivered to the schools and tested on site. The regional coordinator held instructional classes in the techniques for measuring minimum and maximum temperature, for determining rain (liquid) and solid atmospheric precipitation, soil moisture, the electro conductivity of the water and the pH of the water. Beginning in October the GLOBE schools began measurements in virtually all the areas charted by GLOBE.

One of the tasks involved in bringing schools and institutions of continuing education in Perm and Perm district into the long-term international ecological science program GLOBE is the preparation of teaching aids, including methods for conducting observations and measurements according to the official norms of the program and also including recommendations for attracting schoolchildren to the program. Taking into consideration that younger schoolchildren also wanted to participate in the program, staff members at the Center for Ecology Education, along with GLOBE teacher A. V. Zvorygina, developed a system of teaching games that would acquaint the students with the practical work of GLOBE and develop interest in ecology research. The system of instructional games creating the close interaction of schoolchildren of various age groups, includes the following types of games:

- 1 The oral magazine "Hello, GLOBE!",
- 2 Thematic role-play game "Paying a visit to the Measuring Instruments",
- 3 The game--journey around the stations of GLOBE,
- 4 The game "The Talking Cloud",
- 5 The game "What Resembles What",
- 6 The game "The Fifth Extra (Ticket?)",
- 7 The game "Put Together a Three-digit Number",
- 8 The game "Traffic Light",
- 9 The game "GLOBE Shooting Gallery "

The proposed system of instructional games can be successfully integrated in GLOBE schools for the purpose of increasing the students' interest in practical ecological activities

Beginning in October, 1997, efforts intensified toward increasing the number of schools working in the program. The regional coordinator held discussions with the heads of area education departments and with the principals of the schools whose teachers had been certified in the GLOBE program. Conditions were set down which the schools had to fulfill in order to register in the program

- a) creating a group of students to work in the program,
- b) deciding on location of training areas
- c) determining the geographical coordinates of the school

By November, 12 schools were found to be prepared for the first level of participation in GLOBE

- 1 Shadeiskaya School of the Kungur area
- 2 Komsomol School of the Kungur area
- 3 Ecological Center in the city of Lysva
- 4 Sinton High School in the town of Tschaikovsy
- 5 School No 18 in the city of Kizel
- 6 School No 132 in the city of Perm
- 7 School No 98 in the city of Perm
- 8 School No 137 in the city of Perm
- 9 School No 61 in the city of Perm
- 10 School No 38, in the city of Perm
- 11 School No 100, in the city of Perm
- 12 School No 1 in the city of Perm

The questionnaires completed by these schools were sent through national coordinator Marina Dobrolyubova to program administrative headquarters, and the students began conducting the measurements that did not require the use of complex equipment

Thus, the primary goal of the project was attained. In the Perm district 18 schools have been enabled to function in the GLOBE International Ecological Educational Program. This number is considerably larger than was anticipated in the contract. Five schools and the Center for Ecological

Education received sets of computer and measuring equipment, acquired with money paid out by USAID. The Center for Ecology Education at the Teachers' University now has the experience and the technical support needed to carry on and to expand the network of GLOBE schools. This experience can be extended into other regions.

In the process of carrying out the project, not everything went smoothly--various problems and difficulties arose, which complicated the resolution of a number of questions.

The major problem was that no official agreement or contract had been concluded with either of the official organizations (Teachers' University and Center for Ecology Education). The money which needed to be spent in Perm was deposited into the personal bank account of the regional coordinator. In accordance with Russian laws, foreign money deposited into such an account, is considered as personal income and is subject to income taxes. Listing money earmarked for such purposes as transportation, business-trip expenses, acquisition, repair, and maintenance of computer equipment as personal expenses is not allowed. This was clarified only after a year of work. Therefore problems arose with the tax service. For precisely this reason we were unable to resolve thoroughly the question of connecting the schools to the Internet. We do have an agreement with a company which agreed to very beneficial conditions for connecting 8 schools to the Internet and to provide 10 hours each month to each school. However, in order to receive the money for this service, which was anticipated in the project budget, we have to present a receipt that the money has already been spent, and that is impossible for us to do in the current situation.

We are approaching the end of the term of the project, but the work of the Perm schools in the GLOBE program, in our opinion, is still in its initial stage and will undoubtedly continue to develop and improve.