

The GLOBE Program in Europe and Eurasia

An international hands-on, school-based education and environmental science program uniting students, teachers, and scientists in study and research about the dynamics of Earth's environment.

Over 49,000 teachers in more than 22,000 schools in over 100 countries have been trained to implement GLOBE.



GLOBE Program Summary

GLOBE (Global Learning and Observations to Benefit the Environment) is a worldwide hands-on, primary and secondary school-based science and education program. Announced in 1994, GLOBE began operations on Earth Day 1995. Today, the international GLOBE network has grown to include representatives from 110 participating countries and over 100 U.S. Partners coordinating GLOBE activities that are integrated into their local and regional communities. Due to their efforts, there are more than 49,000 GLOBE-trained teachers representing over 22,000 schools around the world. GLOBE students have contributed more than 18 million measurements to the GLOBE database for use in their inquiry-based science projects. The goals of the GLOBE Program are to:

- Improve student achievement across the curriculum with a focus on student research in environmental and Earth system science;
- Enhance awareness and support activities of individuals throughout the world to benefit the environment;
- . Contribute to scientific understanding of Earth as a system; and
- Inspire the next generation of global scientists.

Scientists and educators have developed environmental science educational materials as a resource for GLOBE teachers, including 54 scientific protocols, 60 Learning Activities, and many additional supplemental resources and activities.

GLOBE students measure and report physical, chemical and biological properties of Atmosphere and Climate, Hydrology, Soil, Land Cover/Biology and Phenology. The resulting global data sets are made freely available via the Internet at <www.globe.gov> to users including the worldwide environmental science community. GLOBE students also access these data for classroom studies, research, student-scientist partnerships, and worldwide school-to-school collaborations.

The current step in the evolution of the GLOBE Program, referred to as the "Next Generation GLOBE" (NGG), is aimed at increasing the number of student inquiry-based research projects focused on international large-scale science initiatives.

The National Aeronautics and Space Administration (NASA) and the National Science Foundation (NSF) have identified 4 new Earth System Science Projects (ESSPs) to add to the suite of educational activities and resources GLOBE has offered to students and teachers since 1995:

- Watershed Dynamics
- From Local to Extreme Environments (FLEXE)
- Seasons and Biomes
- Carbon Cycle

The GLOBE Program provides opportunities for students, teachers, scientists, and community members to work together through the GLOBE Schools Network, the international GLOBE Alumni organization, and the GLOBE Parent Council in support of student learning and research.

GLOBE supports education by providing hands-on experience in authentic science. GLOBE students are doing science, not just learning about the work of others. Students begin with measurements of individual environmental parameters and build how to better understand, sustain and improve Earth's environment at local, regional, and global scales.



NGG highlights GLOBE's essential elements of being both education and Earth system science, a bridge between these two international communities, a worldwide collaborative community of practice, and a program that employs inquiry based educational activities that involve students in "authentic" hands-on science, the analysis of data and the use of scientifically-tested protocols.



Educational Materials

GLOBE provides a variety of K-12 educational materials, from hands-on inquiry activities for classroom use to online interactive learning experiences and investigations using student-collected data.



GLOBE Teacher's Guide

The GLOBE Teacher's Guide provides the scientific and educational foundation for the first generation of GLOBE investigations: Atmosphere, Hydrology, Land Cover, Phenology, and Soil. It includes information necessary for accurate data collection such as measurement procedures, student lab and field guides, instrument specifications, and scientific background information. The Teacher's Guide also includes a variety of Learning Activities that complement data collection and extend student understanding of the Earth as a system through a hands-on and inquiry-based approach.

Elementary GLOBE

GLOBE has developed a suite of storybooks and learning activities specifically designed for grades K-4 that form the Elementary GLOBE Unit. This unit engages the youngest GLOBE students in an age-appropriate fashion. These standards-based and classroom-tested resources include five modules that each address parts of the Earth system while also building literacy skills.







Online Teaching Modules

The GLOBE Program has developed Interactive online resources to promote understanding of GLOBE **Program** content and scientific protocols. combine graphics and Resources interactivity to promote understanding through a hands-on approach that has been established as a successful model learning. for online The Cloud **Protocols** module (shown here) promotes scientific understanding of formation. cloud content identification of cloud types, Interactive features to help online learners accurately collect data related to the GLOBE protocols.



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Data Use Activities

Educational materials have been designed to encourage student analysis and interpretation of data. The data use activities foster student investigation of environmental data

using the GLOBE Web site and its online graphing tools.

GLOBE educational technologists are exploring additional learning models to encourage student interpretation of data in an online and inquiry-based format.





GLOBE Learning Expeditions

GLOBE Learning Expeditions (GLEs) are organized every few years in order to provide students from around the world the opportunity to present their research projects to their peers, to GLOBE scientists, and the greater GLOBE community. These conferences also provide students with opportunities to establish friendships and to develop collaborative partnerships that will enhance their future GLOBE experiences. GLEs provide teachers with opportunities to share innovative ideas and challenges, to attend protocol and related professional development sessions, and to build connections for research efforts between schools. GLEs have occurred in 1998 (Helsinki, Finland), 2000 (Arkansas, U.S.A.), 2003 (Šibenik, Croatia), and 2008 (Cape Town, South Africa). For more information visit: www.globe.gov/gle2008.



GLOBE Annual Conferences

GLOBE Annual Conferences bring together GLOBE Country Coordinators, U.S. Partnership Coordinators, Science and Education Principal Investigators, and Partnering Organizations from around the world to address key science and education issues. These events offer a unique opportunity for participants to learn about the latest scientific research, interact with the GLOBE community, and develop collaborative student research partnerships with scientists and schools from around

the world. The next GLOBE Annual Conference will occur in August 2009 in Calgary, Canada. For more information visit:

www.globe.gov/annualconferences.





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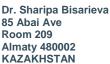
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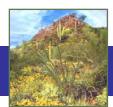
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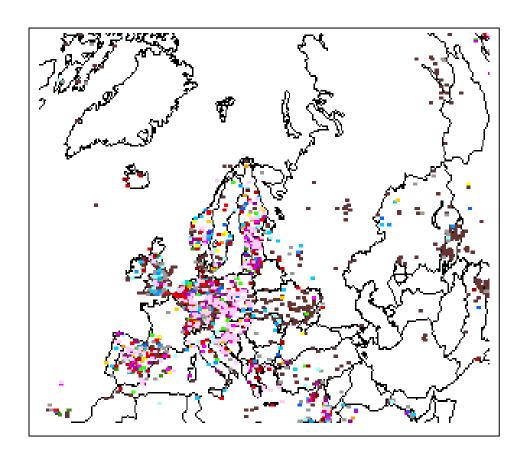


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Europe and Eurasia



Teachers: 5,096 Schools: 3,234 Data Reported: 9,176,855







GLOBE Online Newsletters





Highlights of GLOBE Activities in Europe and Eurasia

GLOBE Europe Regional Consortium:

GLOBE Europe, while meeting both formally and informally since 1996, drafted a constitution on 10 October 2004. The Consortium has met formally at regional meeting in 2006 (Paris, France), 2007 (Budapest, Hungary) and 2008 (Warsaw, Poland) as well as at the 2005, 2006, 2007 and 2008 Annual Conferences. Objectives of the European Consortium include:

- Increasing the number of participating GLOBE teachers and schools (locally, nationally, and regionally);
- Increasing the activities of GLOBE teachers and schools including, but not limited to, GLOBE Games and GLEs;
- Developing joint GLOBE projects and collaborations between schools (both within the countries and regionally) and between countries within the region (but not excluding non-European countries);
- Increasing the involvement of European scientists with GLOBE activities and creating a European Scientific Board;
- Supporting the infrastructure of Country Coordinators across Europe, through regional Training workshops, fundraising for projects, and other exciting activities.

Regional Events/Collaboration:

- European representatives have participated in all 3 GLOBE Learning Expeditions (GLEs) (Finland, 1998; Arkansas, 2000; and Croatia, 2003);
- Student conferences and training events focusing on Arctic POPs (Persistent Organic Pollutants) have occurred in Alaska (U.S.A.) in 2001, Iceland in 2002, Sweden in 2003, Norway in 2004 and Poland in 2008;
- GLOBE Games have been held annually in Czech Republic since 1997. Estonia, Latvia, Norway, Poland, and other countries have also held GLOBE Games;
- The GLOBE Alumni Network originated in Europe.

Trainings of Regional Significance:

Train-the-Trainer (TTT) workshops:

- The first and second International TTTs were held in Prague, 1995. TTTs have also occurred in Estonia, Germany (including Department of Defense Education Activity schools), Lithuania, Poland, Russia (GLOBE and UNESCO cooperative workshop), the United Kingdom, and Croatia.
- A European Regional TTT Workshop was held in Dubrovnik, Croatia, from 2 –7
 November 2007. The event engaged a broad international reach, with 12 Trainers and 43 participants coming from 24 countries.

Regional Master Trainers:



The GLOBE Europe and Eurasia Region have 12 Master Trainers and 7 Assistant Master Trainers. To access the list of Trainers, please visit the following URL: http://globe.gov/fsl/workshop/MasterList.pl>



Highlights of GLOBE Stars and News and Events in Europe and Eurasia





The GLOBE Program office wants to hear stories of projects and people who shine. These are our 'Stars', the bright lights that spark our imagination and inspire us with news of GLOBE at work in the world. Tell us about the stars in your universe. Send your stories about students, teachers, schools, projects or awards that you would like to bring to the attention of the worldwide GLOBE community to <<u>Europe@globe.gov</u>>.





For more information contact:

The Board of European GLOBE Country Coordinators

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GLOBE Europe www.globeeurope.org

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For more information on GLOBE Alumni activities in the European and Eurasian Region contact the Regional Representative: <<u>europe-alumni-regionalrep@globe.gov</u>>.





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www.pdkintl.org/kappan/k_v86/k0411ka3.htm

GLOBE was the winner of the 2004 Goldman Sachs Foundation Prize for Excellence in International Education in the Media and Technology Category.

The Goldman Sachs Foundation and the Asia Society stated that GLOBE was selected "for the unique reach of its work around the world and its ability to bring international education to life through the process of scientific inquiry. GLOBE serves as inspiration and a model of excellence to schools and programs seeking to bring the world into our classrooms."

GLOBE is an interagency program funded by the U.S. National Aeronautics and Space Administration (NASA) and the U.S. National Science Foundation (NSF), supported by the U.S. Department of State, and implemented through a cooperative agreement between NASA and the University Corporation for Atmospheric Research (UCAR) in Boulder, Colorado.







