







## 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.





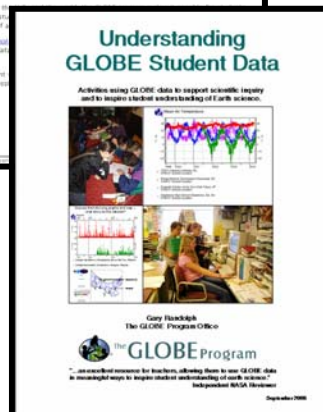
## Online Teaching Modules

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



## 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.







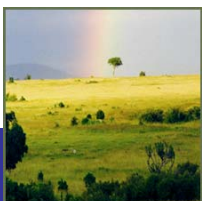
## GLOBE Learning Expeditions

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](http://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](http://www.globe.gov/annualconferences).





## GLOBE Country Coordinators in Africa (22 Countries)



**Benin**  
109 Schools

Ms. Alidjennatou Aliou Emmanuel  
B. P. 1195  
Porto-Novo  
BENIN  
Telephone: 229 20 21 27 12 or 20 21 53 65  
Fax: 229 20 21 27 12  
Email: globeben@intnet.bj



**Burkina Faso**  
0 Schools

Professor Jean Pierre Korsaga  
Coordinator National du Programme GLOBE  
Proviseur du Lycée Nelson Mandela  
01 BP 48 Ouagadougou 01  
BURKINA FASO  
Telephone: 226 70 73 34 74; 50 32 45 44



**Cameroon**  
35 Schools

Mrs. Margaret Besong  
GLOBE Program Country Coordinator  
Ministry of Education  
Lycée General Leclerc, Yaounde  
BP 1600 Yaounde  
CAMEROON  
Telephone: 237 231 72 34  
Fax: 237 23 12 02 or 237 23 07 79  
Email: margieb84@yahoo.com



**Cape Verde**  
5 Schools

Ms. Ana Cristina Ferro Marques  
Ministry of Education  
Caixa Postal C.P. No. 111  
Praia  
Republica de Cabo Verde  
Telephone: 238 262 2303, 238 996 7064  
Fax: 238 261 0242  
Email: anymarques@hotmail.com



**Chad**  
0 Schools

Mr. Nomaye Madana  
Coordonnateur du Programme de Formation  
Information pour l'Environnement (PFIE)  
au Ministère de l'Education Nationale  
B.P. 1127  
Njamena  
Republique du Tchad  
Telephone: 235 51 41 53  
Fax: 235 51 48 62



**Congo,  
Republic of the**  
1 School

Mr. Joachim MANDAVO  
Program and Project Assistant to the Minister  
Ministry of Primary and Secondary Education  
Brazzaville  
Republic of Congo  
Telephone: 242 551 42 14  
Email: mandavojoachim@yahoo.fr



**Ethiopia**  
2 Schools

Dr Mekuria Argaw  
Environmental Science Program  
Science Faculty  
Addis Ababa University  
P.O. Box 15610 (private)  
Addis Ababa  
ETHIOPIA  
Telephone: 00251 011 1239472  
Fax: 00251 011 1 1239469  
Email: m\_argaw@yahoo.com,  
mekuriaa@sc.aau.edu.et



**Gabon**  
2 Schools

Mrs. Memine Me Zue Seraphine  
Pedagogic Inspector  
Ministry of Education  
Libreville  
GABON  
Telephone: 241 843 785  
Email: adadaseraphine@yahoo.fr



**Gambia, The**  
22 Schools

Currently no Country Coordinator is  
identified for GLOBE in the Gambia;  
contact the GLOBE Program Office by  
phone at 1 800 858 9947 or by email at  
africa@globe.gov



**Ghana**  
42 Schools

Rev. Emmanuel Kingsley Dadebo  
GLOBE PROGRAMME  
Ghana Education Service Headquarters  
P.O. Box M-45  
Accra  
GHANA  
Telephone: 233 21 683674, 233 244 675257  
Fax: 233 21 664067, 233 21 679353  
Email: pastordadebo@yahoo.com,  
revdadebo@gmail.com



**Guinea**  
22 Schools

Mr. Lamine Barry  
Coordonnateur du Project Education a  
l'Environnement et au Developpement  
INRAP  
B.P. 823  
Conakry  
GUINEA  
West Africa  
Telephone: 224 60570558  
Email: laminbarry@yahoo.fr



**Kenya**  
31 Schools

Mr. Dinda M. Jakanyakwaka  
Inspectorate  
Ministry of Education  
P.O. Box 30426, Room 619  
Nairobi  
KENYA  
Telephone: 254 2 224 344 Ext. 22  
Fax: 254 2 214 287



### Madagascar

26  
Schools

Mr. Paul Randrianarisoa  
GLOBE Country Coordinator of Madagascar  
Ministère de l'Education nationale et de la Recherche  
Scientifique,  
Direction de l'Enseignement Secondaire  
Tsimbazaza, Antananarivo 101  
Madagascar  
Telephone: 261 33 11 063 21  
Email: randripaul@yahoo.fr



### Mali

9 Schools

Mr. Adama Moussa Traore  
Coordinateur National du Programme GLOBE  
Direction Nationale de l'Education de Base  
Fondamental  
BP 71 – Bamako  
MALI  
Telephone: 223-222-2756, 223-673-9327  
Fax: 223-222-2756  
Email: amt.dneb@afribone.net.ml



### Namibia

9 Schools

Mr. David Sampson  
SEO: Social Sciences National Institute  
for Educational Development  
Private Bag 2034  
Okahandja  
NAMIBIA  
Telephone: 264 62 509000, 264 81 256 1349  
Fax: 264 62 509073  
Email: dsampson@nied.edu.na



### Niger

40  
Schools

Mr. Ma'azou Garba  
Coordinateur  
Cellule Pour La Generalisation Et La  
Perennisation  
De L'Education Environnementale (CGPE)  
BP 557, Niamey  
NIGER  
Telephone: 227 738 808, 227 372 667  
Fax: 227 722 105  
Email: gmahazou@yahoo.fr



### Nigeria

85  
Schools

Mr. Korie Eberechukwu Ernest  
Department of Basic and Secondary Education  
Secondary and Enterprise Division  
Federal Ministry Of Education  
Federal Secretariat Phase III Room 605  
Abuja  
NIGERIA  
Telephone: 234 805 9635055, 234 803 5367798  
Email: eberechukwukorie@yahoo.com



### Rwanda

1 School

Dr. Celestin Ntivuguruzwa  
Ph.D. Senior Lecturer  
Head of Department of Mathematics and Physics  
Faculty of Science  
Kigali Institute of Education (KIE)  
B/P. 5039  
Kigali  
RWANDA  
Telephone: 250 841 3463  
Email: ntvuguruzwac@yahoo.fr



### Senegal

22  
Schools

Ms. Ngosse Fall Bousse  
Professeur de SVT  
Lycée Seydina Limamoulaye  
B.P. 18041 Pikine  
Dakar  
SENEGAL  
Telephone: 221 837 0509, 221 837 0995  
Email: ngossefall@yahoo.fr



### South Africa

90  
Schools

Ms. Sibongile Mokoena  
South African Environmental Observation  
Network (SAEON)  
Coordinator: Environmental Science and  
Outreach Education  
Private Bag X894  
Pretoria, 0001, South Africa  
Telephone: 012 392 9379  
Fax: 012 320 7803  
Email: sibongile@saeon.ac.za



### Tanzania

39  
Schools

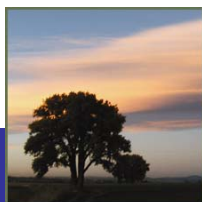
Ms. Mary Kivaria  
Ministry of Education  
PO Box 9121  
Dar Es Salaam  
TANZANIA  
Telephone: 255 22 211 0934  
Fax: 255 22 211 3271  
Email: kivariamg@yahoo.co.uk



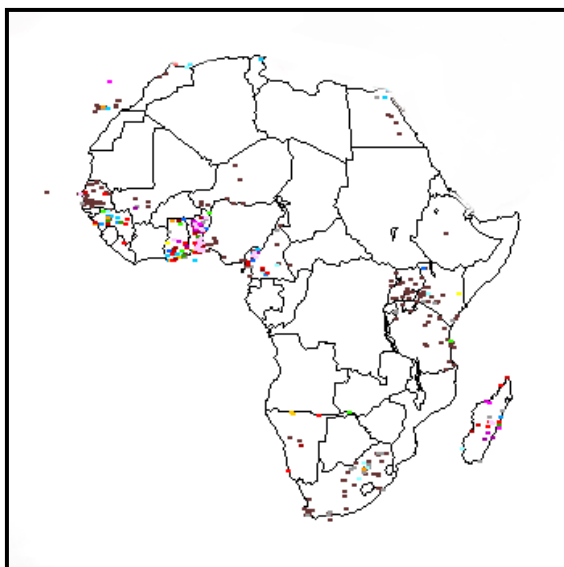
### Uganda

37 Schools

Mr. Patrick S. Sempala  
Coordinator Environment Education MoES  
P.O.Box 7063  
Floor 3 Development House Building  
Parliament Avenue  
Kampala  
UGANDA  
Telephone: 256 772 395 245  
Email: pssempala@yahoo.com







### Africa

Teachers: 1,058 Schools: 609  
Data Reported: 1,049,701

English Español Français Русский اللغة العربية Deutsch Nederlands

**The GLOBE Program** [Login](#)

[Home](#) [Projects](#) [For Students](#) [For Teachers](#) [For Scientists](#) [For Partners](#)

 **GLOBE PARTNER Newsletter**

**Africa Newsletters**

-  [GLOBE Newsletter 2008 \(Aug 2008\)](#)
-  [GLOBE Newsletter 2007 \(21 Nov 2007\)](#)
-  [GLOBE Newsletter 2006 Vol 2 \(16 Oct 2006\)](#)
-  [GLOBE Regional News in Africa 2006, Vol. 1](#)
-  [Africa Newsletter \(30 Sep 2005\)](#)
-  [Africa Regional Spring Newsletter \(31 Mar 2005\)](#)

SEARCH   [Site Map](#) [FAQs](#) [Partners](#)

[Sponsors and Cooperating Organizations](#)

 **The GLOBE Program Newsletter** August 2008

[Announcements](#) [Regional News](#) [Science](#) [Education](#)

[Greetings!](#)

[GLOBE International Advisory Committee](#)

[The Fourth GLOBE Learning Expedition and 12th Annual GLOBE Conference](#)

[2009 Annual Conference](#)

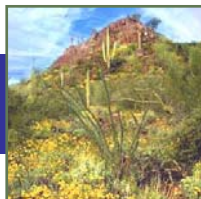
[The GLOBE Online Annual Partner Survey](#)

[GLOBE Impact](#)

[Earth Day 2008](#)



[Home](#) [News Feed](#)



## GLOBE Online Newsletters



## Highlights of GLOBE Activities in Africa

### GLOBE Africa Consortium (GAC):

- On 26 April 2007, 17 African countries met in Riversdale, South Africa, to establish a Memorandum of Understanding (MOU) formalizing the Africa Regional Consortium. The goals of the consortium are:
- To promote and strengthen regional and international functions and relations among students and teachers in GLOBE countries;
- To develop strategies that encourage scientific communities to collaborate and increase environmental education awareness for sustainable development;
- To promote and apply quality science that will improve on the quality of life for local Communities; and
- To encourage the GLOBE Program approach, “learning by doing,” into national curricula.

### Regional Events/Collaboration:

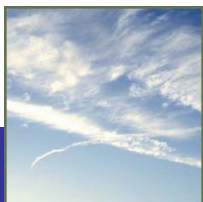
- The GLOBE Africa Meeting was held 23-27 April, 2007 in Riversdale, South Africa. Representatives from GLOBE partner countries Benin, Cameroon, Cape Verde, Ethiopia, Gabon, Ghana, Guinea, Madagascar, Mali, Mauritania, Namibia, Nigeria, Rwanda, Senegal, South Africa, Tanzania, and Uganda presented country status reports, and developed strategies to expand national and regional implementation.
- Twenty-six teachers participated in the Africa GLOBE Training Workshop in conjunction with the meeting. The workshop highlighted the Seasons and Biomes ESSP project, and focused on important questions about climate change and biome impact. Ten Master Trainers and two Assistant Master Trainers from nine countries facilitated the workshop.

### Regional Conferences with GLOBE Representation:

- Sahel Conference 2007: Improving Lives by Understanding Weather, Oaugadougou, Burkina Faso.
- Multilateral Initiative for Malaria. Yaoundé, Cameroon, November, 2005.
- African Monsoon Multidisciplinary Analysis (AMMA), Dakar, Senegal, November 2005
- World Meteorological Organization (WMO) Brazzaville, Congo, November 2004

### Recent Regional Workshops:


- Teacher Workshop, Yaounde, Cameroon, September, 2007
- Teacher Training Workshop, Niamey, Niger, August 2007
- Teacher Workshop, Osun State, Nigeria, April 2007
- International Master Training Workshop, Kampala, Uganda, 2006



GLOBE Africa has 16 Master Trainers, 202 Trainers, and 1057 teacher participants. 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 Africa



**Benin, Committed GLOBE Partner, Hosts First GLOBE International Atmosphere Symposium**

May 23, 2001

In April this year, the West African nation of Benin celebrated six years of strong growth in the GLOBE program as host of the First GLOBE International Atmosphere Symposium.

In April 1995, eight Beninese schools joined GLOBE. This year, Benin supports more than 75 schools that regularly report GLOBE data and conduct GLOBE activities.

Benin's Minister of Education, Mr. Damien Z. Alahassa, and



**Ghana's Lively Program Expands**

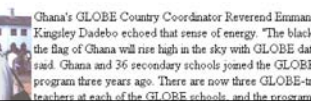
January 08, 2002

More than 90 teachers from across Ghana convened for the country's first GLOBE Teachers Conference, which included a launch of the recently added ozone and aerosol protocols. Trainers and trainees also tested the deep red clay and sandy soils, which contrasted mightily with the equally deep greens of the area's vegetation. Clothing of lovely patterned fabrics, added to the striking beauty of the surroundings. The colors were matched by strong feelings of energy and enthusiasm among the group.



**Nigerians Participate at Texas Workshop**

Strong connections are being made between the Ministry of Education in Nigeria, the University of North Texas and North Lake College, Texas. Twelve mathematics, physics, biology, and chemistry teachers from throughout Nigeria participated at a workshop held at the University of North Texas between January 12 and 31, 2005. A grant received by Rafiqi Durodoye from Allied Consulting and Educational Partnership of Texas allowed this unique opportunity to occur. This is the second workshop at which Nigerians came to the United States; the first workshop was held at the University of North Texas and North Lake College during November 15-30, 2002.



**South African School Recognized for Environmental Initiatives**

March 17, 2006

On 30 January 2006 the South African Indwe Secondary School received an Eco-Flag in recognition for their efforts towards environmental awareness.



**Ten Countries Participate in GLOBE International Training Workshop Regional Meeting**

January 10, 2006

An International Training Workshop took place in Niamey, Niger, during the week of 21 November 2005. The Niger Ministry of Education and the United Nations Development Programme (UNDP) graciously hosted the workshop at the Ecole des Mines, de l'Industrie et de la Géologie (EMIG). The training team came from Benin, Cameroon, Cape Verde, Congo (Brazzaville), Gabon, Mali, Mauritania, Niger, Senegal, and the United States. Nearly 70 participants attended, including primary and secondary school teachers, school inspectors, school administrators, and Ministries of Education officials. In addition, there were participants from Peace Corps, World Meteorological Organization (WMO), and two regional science centers, the Institute International de Recherche sur les Cultures des Zones Tropicales Semi-arides (ICRSAT) and the African Center of Meteorological Applications for Development (ACMAD).




**Ouverture au Cameroun du Centre régional GLOBE pour le Développement professionnel et création de l'Association camerounaise des enseignants scientifiques**

Paris 17, 2005

Globe Cameroun s'impose de plus en plus comme un pôle régional de perfectionnement pédagogique pour les enseignants africains des sciences, des mathématiques et de technologie de l'Afrique sub-saharienne. Sous la houlette de madame Margaret BESONG, coordinatrice nationale du GLOBE Programme au Cameroun, GLOBE a ouvert dans ce pays un Centre régional des Conférences pour le développement professionnel. Par ailleurs, à l'instar des Associations des enseignants scientifiques du Nigeria (STAN), du Ghana, et de l'Association africaine des enseignants scientifiques (NSTA), madame BESONG et l'équipe des Inspecteurs pédagogiques nationaux ont œuvré à la création de l'Association camerounaise des enseignants des sciences (CAMSTA).




De gauche à droite TAMBO Ivo, Secrétaire général du Ministère des enseignements secondaires, et ZOUA Abraham, Secrétaire général du Ministère de l'Éducation de base.



**Ten Countries Participate in GLOBE International Training Workshop Regional Meeting**

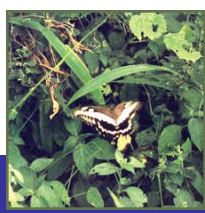
January 10, 2006

An International Training Workshop took place in Niamey, Niger, during the week of 21 November 2005. The Niger Ministry of Education and the United Nations Development Programme (UNDP) graciously hosted the workshop at the Ecole des Mines, de l'Industrie et de la Géologie (EMIG). The training team came from Benin, Cameroon, Cape Verde, Congo (Brazzaville), Gabon, Mali, Mauritania, Niger, Senegal, and the United States. Nearly 70 participants attended, including primary and secondary school teachers, school inspectors, school administrators, and Ministries of Education officials. In addition, there were participants from Peace Corps, World Meteorological Organization (WMO), and two regional science centers, the Institute International de Recherche sur les Cultures des Zones Tropicales Semi-arides (ICRSAT) and the African Center of Meteorological Applications for Development (ACMAD).



Madame Djibrilou Safia Moustapha, GLOBE Country Co-ordinator for Niger, organized an outstanding workshop for French-speaking Africa. Many thanks are extended to Madame Djibrilou, her staff and Monsieur Hamma Harouna, Ministre de l'Éducation de Base et de l'Alphabétisation.

The workshop provided the forum to bring together many teachers, administrators and



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 [communications@globe.gov](mailto:communications@globe.gov).





## For more information contact:

### The GLOBE African Consortium (GAC):

GLOBE Africa Chair and GLOBE International Advisory Committee Representative:  
Mr. Mark Brettenny (South Africa) <mark@caw.dorea.co.za>

GLOBE Africa Alternate Chair:  
Ms. Alidjennatou Aliou Emmanuel (Benin) <alidjennat\_ae@hotmail.com>

GLOBE Africa Secretary:  
Mrs. Rogeline Brettenny (South Africa) <roge@caw.dorea.co.za>

For more information regarding activities in the African Region contact: <africa@globe.gov>



For more information on GLOBE Alumni activities in the African Region contact the Alumni Regional Representative: <africa-alumni-regionalrep@globe.gov>



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

Featured in the Phi Delta Kappan International Studies Resource Guide – November 2004 • Volume 86 • Number 3  
www.pdkintl.org/kappan/k\_v86/k0411ka3.htm

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.

