

Italy

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Organization and Number of Staff:

ASSOCIAZIONE GLOBE ITALIA: 2 Country Coordinators and 6 staff members

Funding by:

European, National, Regional and Private foundations calls for proposals, Municipalities and schools' own budget.

Cooperating Organizations/Individuals:

GLOBE ITALIA Association set up with the aim of supporting the GLOBE ITALY School Network with training courses, activities, events and materials. The implementation of GLOBE in the school network is shared by:

- LABTER-CREA located in Mantova, focused on functions as coordination, information and communication, web management, event promotion and management
- IISS BASSA FRIULANA located in Cervignano del Friuli, focused on testing the use of GLOBE protocols in primary and middle schools, promoting the use of GLOBE protocols in high schools' projects, event promotion and management

GLOBE Italia's relationship with ASVIS continued, through Labter-Crea Mantova. ASviS (Italian Alliance for Sustainable Development) aims to increase the knowledge and the importance of 2030 Agenda for Sustainable Development. Through ASviS the initiatives of GLOBE Italia school network can have greater visibility on a national basis.

GLOBE Schools:

Comprehensive Schools, including Primary and Junior High Schools – 32, Senior High Schools – 69.

GLOBE Areas You and Schools Focus on:

Hydrosphere, Atmosphere, Soil, Land Cover, Earth as a System, Phenology, Bundles. Number of

Schools Reporting Data over Past Year:

6 Junior High Schools + 9 Senior High Schools

Program Implementation, International Cooperation in GLOBE Network, and Activities over Past Year (categorized by GLOBE Strategic Plan 2018-2023 Goals):

1. Education

Teacher Training Course “**#connect school science and society: the GLOBE Program**” a 24-hours course (two editions: online and face-to-face). Implementation of the GLOBE Program with these topics: Landcover and Trees, Phenology, Clouds, Soils, using GLOBE Protocols and Apps of GLOBE OBSERVER. The registration of the teachers to the Course took place on the SOFIA Platform (managed by the Italian Ministry of Education) and this gave it a national dimension, with 80 teachers enrolled in 11 Italian regions.

Teacher Training Course focused on MICROPLASTICS (2nd edition) 93 teachers from 15 Italian regions, registered on SOFIA platform. The course included two Teacher Training webinars, two Student Training Webinars, the Microplastics Monitoring Campaign (March-May 2022), all managed by Deakin University Australia, in strong collaboration with GLOBE Italia and LabTer-CREA.

Four proposals from GLOBE Italy and Labter-CREA were **included by Italian Ministry of Education among the official training proposals** for Italian schools for 2021/2022 school year.

- n. 3 National Student webinars focused on the GLOBE Observer Apps - 126 classes participants
- n. 2 National Student webinars "Microplastics Hunters"
- the community event "Rivers in Spring, the Virtual World Water Day in Mantova", 22 March 2022 mainly based on GLOBE activities.
- the community event "Earth Day in Friuli Venezia Giulia- WITS", 22 April, 2022, based on GLOBE activities

The publication of the 4 proposals gave relevance to our initiatives, helping to increase the users of the GLOBE Program.

“GAIA: Geodata Analysis and Acquisition” Science Hackathon, October 2022. The use of GLOBE data for Innovative Teaching Methodology – Participants: Students from Secondary schools - 3 days in full immersion. Challenge: WHAT ARE THE SCENARIOS WE EXPECT TO SEE IN THE NEXT 20 YEARS? Use of various scientific open data-base, public, to visualize trends and propose solutions in relationship with local authorities.

2. Science

INTERNATIONAL MICROPLASTICS MONITORING MARCH-MAY 2022 CAMPAIGN

39 Teachers from 35 schools took part in the Campaign, of which 6 from Croatia, 1 from Ireland, 1 from Slovakia, 27 from Italy. Schools produced a high number of Data Sheet concerning the

situation of their water bodies, as well as, precious Image Galleries, posters, video, summary reports, etc. All these materials were uploaded to the Deakin University cloudstore.

MINCIO Project 32th edition, 21 April 2022. Participants: 3 schools in Mantova area. The data produced by schools with GLOBE Protocols have been supplemented by those provided by a highly specialized Environmental Chemical Analysis Laboratory, concerning two chemical parameters crucial for life in water such as Total Phosphates and Nitrates, and in particular Glyphosate and AMPA, its metabolite, both suspected carcinogens.

“MICROPLASTICS MONITORING OF THE WATER OF RIVER MINCIO, SOME ITS TRIBUTARIES AND THE RIVER PO”

First systematic scientific research on the presence of microplastics in the Mincio river, in two of its tributaries and in the Po River. The monitoring has produced the first x-ray of the state of the water in relation to these dangerous pollutants, which will serve as a basic knowledge for following the evolution of the state of the water over time. 5 schools, 22 classes, 22 teachers and technical assistants and 295 students participated in the project. 28 study sites were monitored and 107 Data Sheets were produced, validated by the Australian researchers, creators of the protocol. The research results were presented in a public conference at Bibiena Theater in Mantova 24 May, 2022 in the presence of representatives of the local administrations. More than 300 people took part in the conference, which had an excellent participation of partners and press coverage (community). Sponsored by the Mantova section of Italia Nostra.

“RIVER ARNO” Project

The GLOBE School IS Ferraris-Brunelleschi of Empoli (FI) carried out the project investigating the quality of River Arno waters concerning the chemical and bacterial parameters, as well as the microplastics in four sampling sites. Students discussed the chemical/bacterial results together with technicians of the local Environmental Protection Agency and with the Australian scientists to discuss the results of the microplastics monitoring. 80 students and 3 teachers took part in the research. The research results were presented in a public conference at Palazzo delle Esposizioni in Empoli, 29 Aprile 2022 in the presence of representatives of the local administrations and of the Tuscan EPA. More than 300 people took part in the conference, which had an excellent press coverage (community).

RIO SCHOOL Project

RIO School Project was conducted by Higher School IS Strozzi in a reduced form compared to previous edition. Students monitored the traditional chemical parameters foreseen by the GLOBE and GREEN projects with the addition of the monitoring of microplastics.

Collaboration in Project “OCEAN MATTERS: Saving our Oceans”

In the project, managed by TERI, the Indian Institute for Energy and Resources, DEAKIN University and GLOBE Italia play the role of trainers concerning the Microplastics Monitoring Protocol. The organizers planned the webinars n.1 and 2 for teachers of 3 cities of the West Coast of India: Mumbai, Goa and Mangalore. The collaboration with TERI is very rewarding.

3. Community

“Rivers in Spring, the Virtual International World Water Day in Mantova”, 22 March 2022.

The 22nd edition of the event was held in a virtual version, so in addition to local schools it had an international character due to the participation of 15 schools from 6 European countries, a school from Taiwan, Tony Murphy (who sent a video), as well as a scientist and Peter Falcon from JPL of NASA and Bara Semerakova representing GLOBE E-E RCO. The event was structured in 5 thematic sections (underground hydrology, microplastics 1 and 2, climate change, WitS – FVG section). The press coverage of the event was excellent.

WitS #Where is the Science? a project supported by Friuli Venezia Giulia region (grant for scientific dissemination activities), promotes the sharing of knowledge and good practice between different components of civil society and aims to be an agent for a new model of development in order to face the constant challenges imposed by environmental emergencies, with the objective to transfer knowledge and develop skills regarding STEM, environmental education and sustainability.

Many events were managed during the one-year project, starting with the Earth Day in FVg field exhibits (850 participants) followed by other events like Conferences and Shows.

GLOBE Italy took part in all the monthly GLOBE E-E meetings.

Together with LabTer-CREA and DEAKIN University GLOBE Italy presented the video "GLOBE-L scale microplastics monitoring campaign, challenges & results" at the **Virtual Annual GLOBE Meeting** during the Community Session (26 July, 2022).

4. Technology

There are still critical issues for entering data on the site but there we have good reasons to hope in improvement of the entering of data by schools thanks to the use of Apps, after training for students on GLOBE observer.

5. Communications

GLOBE Italia is using its website, Youtube, Facebook, Telegram, Twitter to disseminate the action of the network and to connect schools and citizens.

A fortnightly newsletter is sent to schools-teachers and people registered in GLOBE Italy and when necessary, even more times in a week. **Many newspaper articles and local TV have covered this year actions.** The links to press review and social media can be found on www.GLOBEItalia.it.

Plans and Ideas for Next Year:

Microplastics Campaign 2023 - GLOBE schools in Italy will be invited to use the microplastic protocol mentioned before, along with the traditional GLOBE Hydrology measurements.

Microplastics Monitoring Protocol submission to GLOBE Science Group, NASA and NOAA for consideration.

The "**Generation School walking with GLOBE**": a one-year national project by the GLOBE ITALIA Association ranked into the 8 selected on national basis for the "Ecology transition and environmental sustainability" area by Italian Ministry of Education. The project includes teacher training activities on the issues, protocols and Apps of the GLOBE Program and on the Microplastics Monitoring Protocol for the development of monitoring actions on local ecosystems, combined with events and cultural actions to raise awareness of the community on environmental issues, among which the climate change will have a special place. 30 schools, which will be chosen by the Ministry of Education, from the following six regions will be involved: Friuli Venezia Giulia, Lombardy, Tuscany, Campania, Sicily, Sardinia.

SLE-GO Science Learning Expedition Gorizia-Nova Gorica, 20-21-22 April 2023 (Grant for scientific dissemination activities by Friuli Venezia Giulia Region). The Science Learning Expedition offers a group of students, researchers, and citizens, cross-border I-SLO, an expedition model: an immersive exploration experience using Science glasses. The activity is proposed in the natural area surrounding Gorizia-Nova Gorica, and in an urban environment in Italian and Slovenian territory. The project's mission is to inspire people to know and take care of their environment and to facilitate contaminations, useful for learning and suggesting new partnership possibilities. Exploration activities will use Protocols also available digitally as Apps, developed by GLOBE.

Output from PULCHRA Project (Horizon 2020): six Italian schools were directly involved in the project in 2020-2022 and used GLOBE protocols. On the focus “Green Space as a Laboratory for Scientific Green Experiences for the Community” the students are developing a data collection system with field sensors and online transmission.

“Read the horizon, write the future”: Local school network – ISIS Bassa Friulana in cooperation with Associazione GLOBE Italia and the local University propose at the FVG Regional Educational Office a new project to develop STEM enhancing focus on climate change, innovative pedagogical approaches and use of technologies in teaching with GLOBE. October 2022-October 2023

We plan to realize, in presence if pandemic will allow it or virtually if not, **the following activities:**

- 33rd edition of Mincio Project
- 23rd edition of WWD
- 5th edition of RIO School Project
- 3rd edition of Microplastics Monitoring of Mincio, some of its tributaries and the Po River
- 22st edition of At school on the river
- 12th edition of Earth Day