



ENVRIplus project

**Supporting teachers for training a new
generation of students on Environmental
Sciences**

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ENVRIplus What

- **ENVRIplus** is a Horizon 2020 project funded by the European Commission bringing together Environmental and Earth System Research Infrastructures, projects and networks together with technical specialist partners to create a more coherent, interdisciplinary and interoperable cluster of Environmental Research Infrastructures across Europe
- The project aims to provide the necessary data, data elaboration and facilities **to face major scientific questions related to the natural and anthropogenic environmental changes.**

ENVRIplus Objective

- One of the aims of ENVRIplus is to **disseminate knowledge on environmental topics, and on Research Infrastructures** supporting the scientists, focusing attention on European secondary schools
- The ENVRIplus scientific community aims to **increase awareness on the great challenges that our planet is facing**
- Other main purpose is to **favor teachers and students training** on selected scientific themes: **Biodiversity and Ecosystem Services, Greenhouse effect and Earth Warming, Ocean acidifications and Environmental sustainability**

ENVRIplus Thematics

Research Infrastructures in ENVRIplus cover the following Earth components:

Atmosphere

Oceans and Seas

Biosphere

Solid Earth

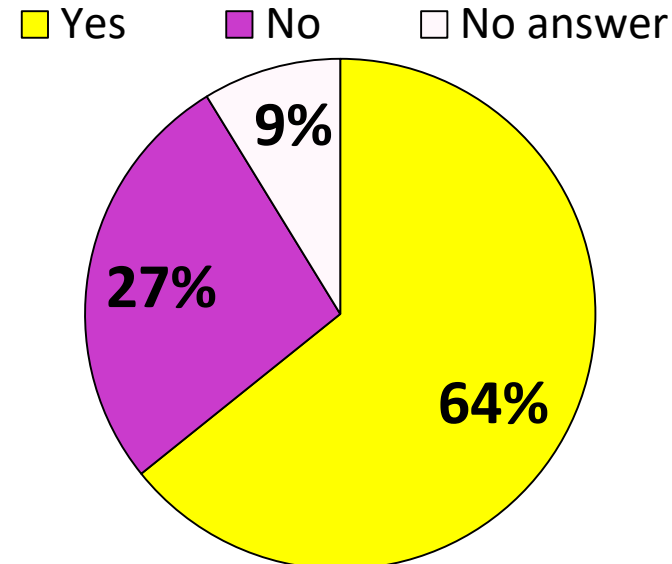


In 2017 we prepared a **questionnaire to improve and better fit the content of the e-learning Platform**, investigating the teachers needs.

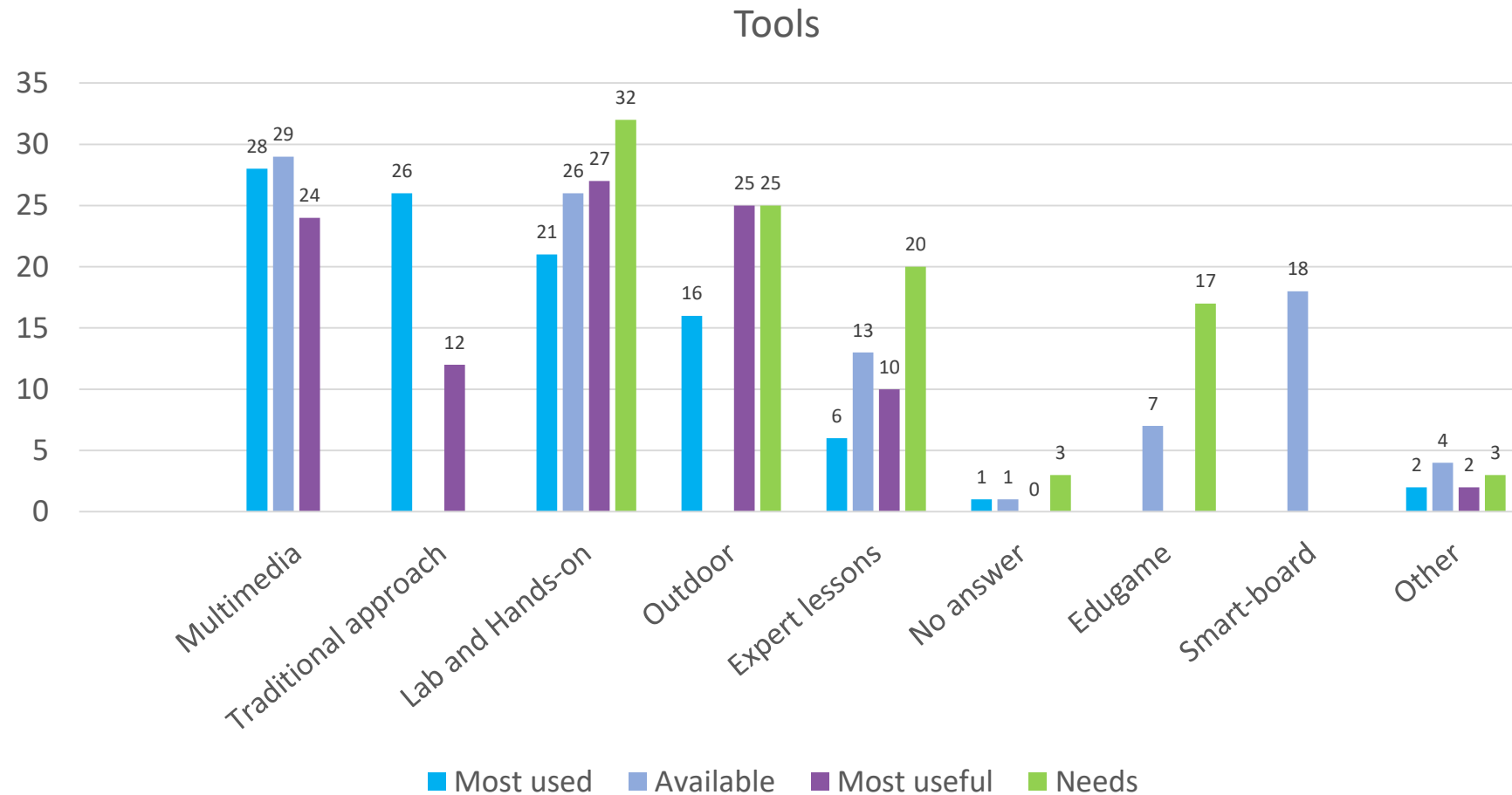
The questionnaire was administered to **137 teachers** from **29 countries** during EGU 2017 and 2018 and at the Open Science event of Teacher Training Meeting organized by INGV in 2017

ENVRIplus Questionnaire

Do you use digital resources to find new educational tools?



ENVRIplus Questionnaire results



ENVRIplus Platforms for education

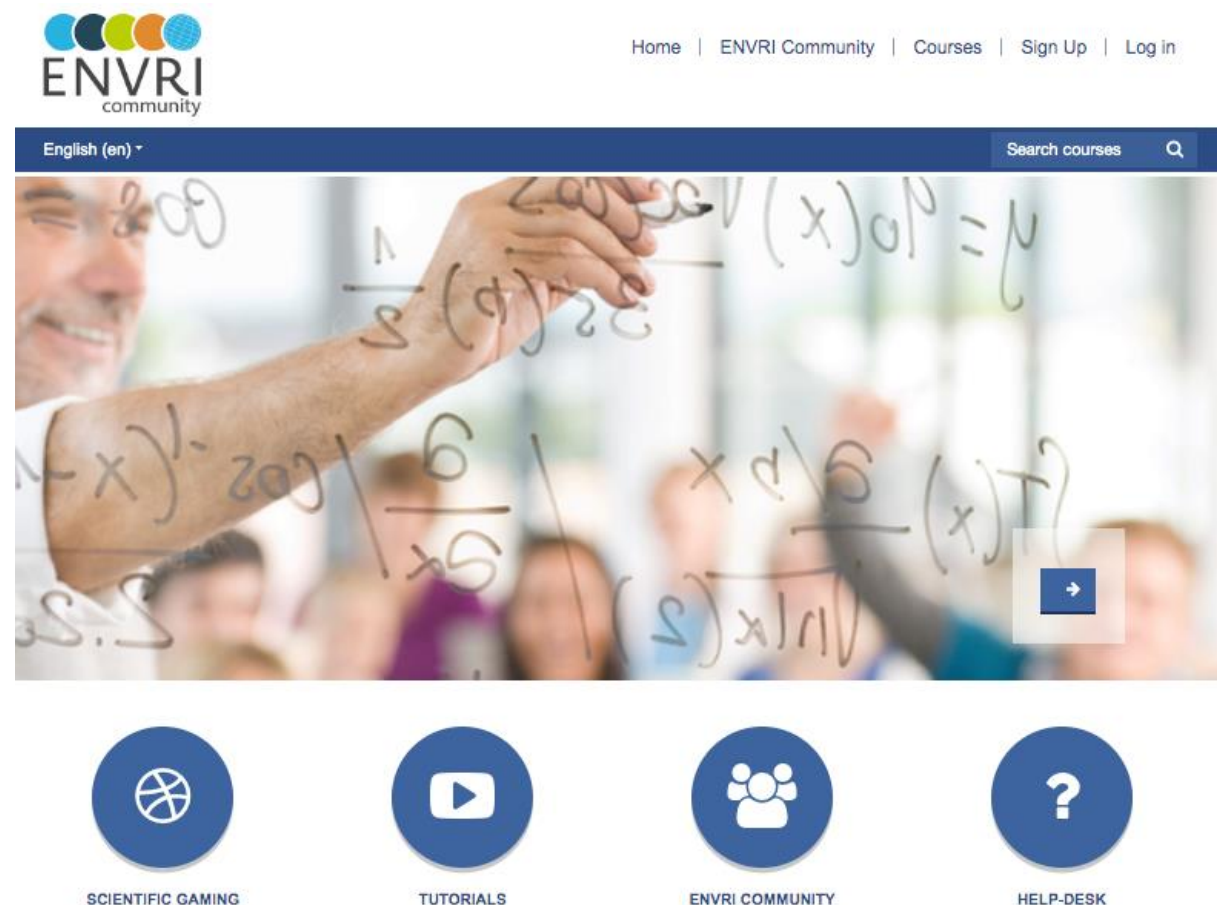
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We elaborated two main tools:

- **e-learning Platform;** a multimedia educational support to secondary school teachers and students.
- **educational games** for pc, tablet smartphones to verify and improve students learning in an amusing way.

ENVRIplus e-learning platform

- The e-Learning Platform is included in e-Training ENVRIplus website (<https://training.envri.eu/>) that is devoted to providing professional courses for the project partners. The e-Training Platform, also, incorporated a **Scientific Gaming section** (<http://scientificgame.envri.eu/>). The e-Learning Platform section is addressed to students and teachers and its aim is to offer a point of reference to the school community (elementary, middle and high) on the recent environmental themes, providing: courses, links to the other European and worldwide platforms, and illustrated boards to aid teachers to develop innovative lessons.



ENVRIplus e-learning platform

e-Learning (1)

- ▶ AQUATIC DOMAIN (3)
- ▶ SOLID EARTH (18)
- ▶ ATMOSPHERIC DOMAIN (1)
- ▶ ECOSYSTEM/BIOSPHERE
- ▶ MULTI-DOMAIN (3)

Tags

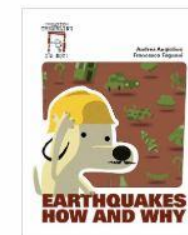
Atmosphere Documents Earth science
Earthquake English language
 Environment External resources **game**
High School level Italian language Lab Low School level
 Magnetic field Magnetosphere
 Marine ecosystem Medium School level
Medium School level
 Ocean **Presentations** Quiz
 sim1TD Solar interior structure Tectonic plate
 Tsunami video **Videos** **Volcanoes**
 Vulcanology Web site



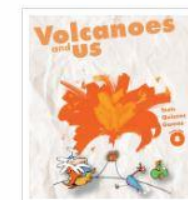
Gli oceani



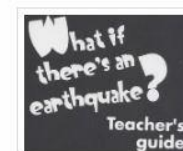
Octopus game and the marine ecosystem



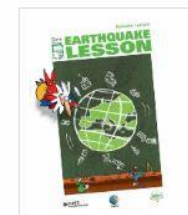
Earthquakes How and Why



Volcanoes and us



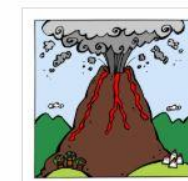
What if there is an earthquake?



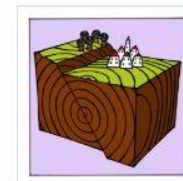
Earthquake lesson



Mantle Convection and Plate Tectonics



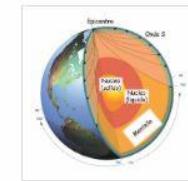
Volcanoes



Earthquake



Miscellaneous videos



Geosfera e Terremoti



Il Sistema Terra





<https://training.envri.eu/course/>

ENVRIplus Courses characteristics

Courses characteristics:

- Tools for teachers who want to find resources on a specific environmental topic
- Different teaching / learning method
- learning resources to fill the gap in the topic not yet covered

Available courses

 <p>Il Pianeta Blu: Dall'evoluzione degli oceani alla circolazione oceanica</p> <p>Questo corso si rivolge a studenti ed insegnanti delle scuole Secondarie di Secondo livello.</p>	 <p>Environment</p> <p>This game is for middle school students. Image of Consuelo Zatta. Made by INGV</p>	 <p>Volcanoes</p> <p>This game is for middle school students. Image of Consuelo Zatta. Made by INGV</p>	 <p>Earthquake</p> <p>This game is for the middle school students. Image of Consuelo Zatta. Made by INGV</p>
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ENVRIplus e-learning courses

Domain	Number of Courses	Number of Topics	Language	School level	Tools	Owner
Aquatic	3	17	2 IT/ 1EN	1 Low/Medium/ 2 High	presentations/quiz/labs	INGV
Solid earth	18	26	10 IT/8EN	4 Low/7 Medium/8 High	presentations/videos/games/ documents	INGV
Atmospheric	1	1	1 IT	1 Low/Medium	presentations	INGV
Ecosystem/ biosphere	0					
Multi	3	15	2 EN/ 1 IT	1 Low/ 1 Medium/1 High	web sites/ documents/games	INGV
Total	25	59	14 Italian 11 English	6 Low 8 Medium 11 High	presentations quiz labs videos games web site links documents	INGV

ENVRIplus scientific gaming

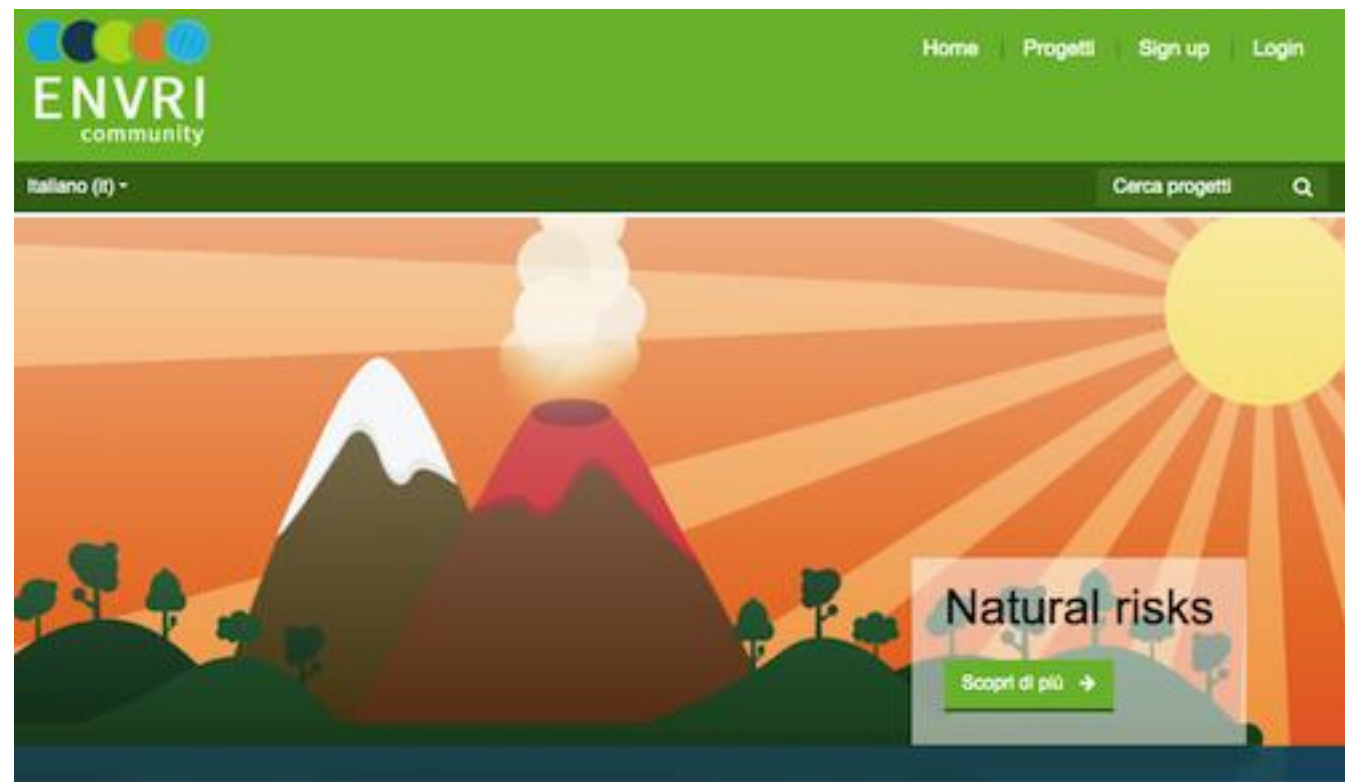
ENVRIgame

Teams of 4 - 8 students and with the support of a teacher (mentor)

- **Phase 1** Students realize a scientific project and publish the results of their research.
- **Phase 2** online competition (on-line games in the same topic of research project)

Goal: to obtain the major score in a scientific competition made by two different phases:

<http://scientificgame.envri.eu/>



PLAY



HOW TO PLAY



GAME GUIDE



VIDEO

Thank you for your attention!

ENVRIplus e-learning URL:

<https://training.envri.eu/course/>

For more info please

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