IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Lift Off - Secondary Space Education (2)

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BECOMING CLIMATE DETECTIVES USING SATELLITES DATA – A TAILORED SUCCESS STORY IN ITALY

Abstract

The Italian Space Agency (ASI) co-finances and coordinates the European Space Agency's ESERO educational programme in Italy, in collaboration with ESA. During the school year 2021-2022 ASI promoted a tailored national format for the ESA-ESERO European-wide Climate Detectives school project. Climate Detectives promotes and enables young people's development of STEM skills and competences through the application of the scientific method, practical investigations and data collection from real space missions. In order to reinforce awareness about the Italian space programme, and encourage young students to contribute to the Italian space sector in their future careers, particular emphasis was put on the actions and research programs that ASI puts in place for the study of climate and climate change, representing the biggest global threat and challenge of the 21st century.

Thanks to the support of an ASI team of experts to the Italian implementation of Climate Detectives, enabled in Italian schools by ESERO Italy under the guidance of MUSE, the data obtained from the COSMO-SkyMed and PRISMA Italian space missions, usually provided only to scientists and Institutions, were made available, usable and understandable for Italian schools students. Such satellite data and images represent, in fact, fundamental inputs for the understanding of the phenomena linked to climate change, and are key to make the best choices towards the mitigation of its effects.

The Climate Detectives project features three phases: Phase1 - Students are asked to identify a climate problem and plan their investigation of the problem, identify which satellite or ground Earth Observation (EO) data they need and what laboratory activities they will perform. EO and climate scientists support the student teams.

Phase2 - Students collect, analyse and compare data to draw a conclusion about the investigated problem. During Phase 2, teams receive further expert support by "asking a scientist,", and receive background information and tips.

Phase3 - Based on the results of their investigations, students are asked to decide which actions they want to take to help monitor or mitigate the problem.

Not only does Climate Detectives, with its successful implementation in Italy, represent a meaningful and reach opportunity to inspire and attract the next generation to STEM disciplines, and so ensure the availability of an experienced and talented future workforce. It also represents a powerful way – based on experience-based learning – to nurture a generation of citizens which understand, and are ready to act responsibly upon, today's pressing climate issues.