

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Lift Off: Primary and Secondary Education (1)

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GEO-ACADEMY: DEVELOPING TEACHER'S SPATIAL SKILLS FOR CLIMATE CHANGE AND
SUSTAINABLE DEVELOPMENT EDUCATION

Abstract

Climate change and sustainable development are particularly challenging topics for teachers to teach due to their complexity and connection with many different school subjects, alongside the need to combine scientific content alongside green, digital, and spatial competencies. Spatial competencies are particularly important in this regard, as around half of the essential climate variables can only be adequately measured from space. Research indicates, however, a deficiency in teachers' knowledge of key climate and sustainability content, as well as the skills required to access, analyse, and then effectively convey climate change data, through using, for example, Earth Observation (EO) imagery and GIS technologies. Ultimately, available training offerings are often misaligned with teachers' schedules or curricular needs, based on outdated pedagogical models or technologies.

Addressing these facts, GEO-Academy is an Erasmus+ Teacher Academy transforming climate change and sustainability education throughout Europe by establishing a network of educators and providing a suite of cross-curricula resources and training to enhance their green, digital, and spatial skills. The GEO-Academy consortium features expertise from climate science, space applications, and education working together to empower pre- and in-service teachers from primary to upper secondary education to incorporate innovative digital technologies (EO, GIS, remote sensing, and geo-spatial storytelling) within identified curricula requirements in climate education. The consortium offers teachers national and international training courses across Europe, while building an online platform, called GEOOBSERVE, hosting online courses, resources, and materials, and serve as a community of practice for teachers. Schools will be networked via GEO-Hubs, coordinated at national level, and connecting with other local stakeholders. Ultimately, GEO-Academy will foster a community of educators, training teachers to train other teachers, with all activities aimed at enhancing climate education across Europe.

We will focus on preliminary results and experience from our first year in operation, presenting our methodology and outcomes so far. By introducing our evidence-based pedagogical model developed to effectively train teachers alongside our GEO-Concepts as guiding topics through which training materials are structured, we will then demonstrate the GEOBSERVE platform, as a centre for resources and teachers to connect with. We will also present our first teacher training events, focusing on the development of teachers' spatial competencies through the GEO-Academy resources alongside teachers' experience from learning and implementing them. Through this, we show how developing teachers' spatial competencies offer unparalleled opportunities for demonstrating the effects of climate change on our planet, and the power of space technologies to understand it.