

Reply

# Reply to Fildani, A.; Hessler, A.M. Comment on “Gerbaudo et al. Are We Ready for a Sustainable Development? A Survey among Young Geoscientists in Italy. *Sustainability* 2022, 14, 7621”

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We very much appreciate and thank Andrea Fildani and Angela Hessler for their comment [1] on our article [2]. Their 2021 paper [3] inspired us to conceive of a survey among the Italian geocommunity about the connections between education in sustainability (EfS) and Earth Sciences (ES) education. The first step of our research was made among the participants at BeGeo21, a congress held in Napoli in October 2021, mainly gathering MSc and PhD students of ES in Italy. As we underlined in the article, the importance of the survey stands in the fact that many of the participants will be part of Italian geosciences departments for the next 20 to 30 years [2]. As Fildani and Hessler well understood in their comment, our purpose was to raise awareness in the Italian geological community about the lack of strategy with respect to educating the newest ES generations towards sustainable development [1]. In order to better analyze this aspect, our intention is to expand the analysis first to the entire Italian geoscientific community (step 2), and then to the European one (step 3). We have already started working towards step 2 by submitting a new questionnaire to the participants at the congress of Società Geologica Italiana (SGI), which was just held in Turin in September 2022, whose title “Geosciences for a sustainable future” seems to harmonize with our purposes. After the analysis and the reporting of the data we will have collected, an excellent occasion with which to move to step 3 will be the next EGU general assembly (Wien, April 2023); this step will prove whether our survey has the potential to be exported and applied in other countries [1].

We are also very delighted that the comment underlines the ethical dimension of our work, which is very important to us, as we believe that geoethics will be one of the most interesting fields of research for future geoscientists. By reflecting on the values that underpin the appropriate practices and behaviors of geoscientists [4], geoethics has turned out to be the discipline that connects ES with sustainability issues. More specifically, the call for the building of a new pedagogical proposal based on geoethics with formative and political purposes [5] finds us in full agreement and we are willing to commit ourselves personally.

In their comment, Fildani and Hessler also point out that the consideration of the concept of “deep time” should be involved in any initiative about sustainability, which only Earth scientists could master, in order to be able to read the current ecological crisis across time-dependent scenarios [1]. We agree with this point of view, firstly, because we recognize that quick engineering and technological solutions to environmental issues often reflect a shortsighted approach that lacks a systemic vision [3], and secondly, because we believe that the concept of “deep time” has robust educational power that should be exploited either in ES departments and in other school and extracurricular settings. If “our blindness to the presence of the past in fact imperils our future” [6], the primary aim of the ES community, in Italy and all over the world, should be to bring to the table of the public debate its extremely important and unique contributions through an educational program, starting from primary school up to university, in which the understanding of Earth’s past is clearly connected with a sustainable future for humankind.

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