

### 3. Images of science facing the water crisis and climate change. Survey results

#### The kind of satisfaction you get from asking people questions

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«What kind of satisfaction do you get from asking people questions?», James Stewart was asked in the movie *Magic Town*, where he played a well-known pollster. If we were asked the same question, we would answer that the goal of our polls is to arrive at a greater and better understanding of the context in which we operate and in which we test education and science communication approaches. Therefore, the goal of the questions we posed to the students of the secondary schools involved in the *Perception and Awareness of Science – Ethics and Polemics* Project was to test their knowledge on the topics of the water crisis and of climate change, and gauge their awareness of and interest and confidence in the values of science. In 2008 we carried out our tenth survey on science: each questionnaire features a few key questions that are used over and over again, in order to be able to monitor the main aspects of the scientific and social debate, as well as some new themes, inspired by analysis and experimentation activities. The results of the surveys are then used to reconsider processes and methods of science-society communication and interaction.

However, our intent is not just to review the young people's knowledge but also to motivate them in becoming aware of and taking into consideration a few *ethical and polemical* aspects of science, to increase their interest in science itself and to promote their participation, as citizens, in the scientific debate, making sure they grasp the importance of the role of science in its close relations with society.

Indeed, the questionnaire is an addition and an important complement to the communication and participation processes proposed to students, and also helps us test forms of thought laboratory. Since one of the project's goals is to contribute to changing the relations between science and society, improving them, the questionnaire is one of the instruments that helps us do so.

The articles in this chapter analyse the replies given by students in the course of the events organised between 2006 and 2008 on a few key topics of the study of the water crisis and climate change: knowledge, information sources, confidence in the scientific system and the possibility of undertaking a professional career in science, which the four essays of this chapter respectively refer to.

The two events, the one on the water crisis and the one on the greenhouse effect, carried out a year apart from each other, both involved classrooms of secondary high schools in Rome (classical and scientific high schools and technical and professional schools) and lower secondary schools in Milan. For this reason, and due to the fact that the two surveys concerned topical and controversial subjects of environmental research, it was possible to use the data from both, reaching almost 800 cases. Nevertheless, as far as each commented analysis is concerned, the two subgroups surveyed were considered separately and provided results that were very similar to each another, apart from minor variations based on the different sampling choices.

The girls and boys who took part in the two abovementioned experiences came from different kinds of schools and guaranteed representation of at least 4 major school types (classical and scientific high schools, technical institutes and lower secondary school), with rather varied presence percentages among the various types. Hence it was possible to consider the different points of view of people coming from rather varied school and family backgrounds.

In fact, also as regards the parents' profession (a very important datum because it can act as a proxy<sup>1</sup> of the social context in which the young people interviewed are growing up), the declarations of the young people showed that the main professions were covered although there was a prevalence – which we were anticipating, given that the respondents were for the most part high school students – of freelance professionals and families in which both parents work.

In the four following essays, the results of the surveys on water crisis and climate change are compared with those obtained in the first surveys carried out within the *Perception and Awareness of Science – Ethics and Polemics* Project on GMO, “Electrosmog” and Space exploration (Valente, 2006)<sup>2</sup>, since they are based on questionnaires with a partially identical structure and on a similar project methodology. This enabled us to monitor the aforementioned data, confirming the hypotheses expressed and verified in previous surveys and noting the new elements in each, in order to better understand what the youngsters imagine in relation to the major environmental issues and the perception of science and of its values.

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<sup>1</sup> A proxy is a variable that is used in place of other variables that cannot be directly surveyed.

<sup>2</sup> The surveys on GMO, “Electrosmog” and Space exploration, connected with the *Ethics and Polemics* Project, were only carried out on secondary high schools (and universities), therefore the youngest students were already 14-16 years old, while in present surveys on Climate change and the Water crisis the youngest students are those of the lower secondary schools (12-13 years old).

