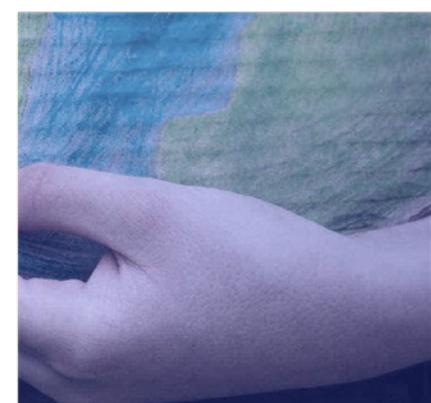




State of the art of Education for Sustainability through Food in the school environment

THE SKILLED REPORT



Co-funded by the Erasmus+ Programme of the European Union

2020-1-IT02-KA201-079705

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INDEX

- 1** INTRODUCTION
- 4** Skilled4Food - Aims and methods
- 6** Part 1 - Desk Analysis
 - 7 Best practices
 - 13 Conclusions
- 14** Part 2 - Field Research
 - 15 Student Questionnaires
 - 29 Student Questionnaires - Conclusions
 - 31 Teacher Questionnaires
 - 50 Teacher Questionnaires - Conclusions
- 52** Part 3 - Concluding remarks
- 54** REFERENCES



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INTRODUCTION

Recently, the discussion about the role of education in the field of food and nutrition has attracted a lot of attention.

The food system is a good example of global connections. Healthy and sustainable food consumption patterns have been recognized as a powerful lever to improve health, well-being, and longevity, and reduce disability and premature deaths, while remaining within the Earth's safe operating space. Recent studies have shown that **healthy and sustainable diets** can reduce wildlife loss by up to 46%, premature deaths by at least 20%, and food related GHG emissions by at least 30% (WWF, 2020).



Sustainable diets can accelerate the achievement of poverty reduction and social inclusion; increasing fairness and equality; ensuring education and health care for all; fostering biodiversity conservation, water security, and climate change adaptation and mitigation. Ultimately, they **pave the way to reach all the 17 Sustainable Development Goals (SDGs)** of the United Nations, adopted by all UN member states in 2015, in the Agenda 2030. Hence, sharing citizenship values, attitudes and behaviours supporting Sustainable Development in the food system is part of the solution and educating the younger to be global citizens through food a priority.

In Europe, since the beginning of the new millennium, the discussion about the role of education in the field of food and nutrition has attracted a lot of attention. In particular, with the rising number of overweight and obese children around the world¹, several actions have been taken.

1. Over 340 million children and adolescents aged 5-19 were overweight or obese in 2016. The prevalence of overweight and obesity among children and adolescents aged 5-19 has risen dramatically from just 4% in 1975 to just over 18% in 2016. The rise has occurred similarly among both boys and girls: in 2016 18% of girls and 19% of boys were overweight (WHO, 2019).

For example, the WHO included nutrition education in their European Core Curriculum (WHO, 2000). According to research conducted in relation to the compulsory nutrition education indicator in the Food Sustainability Index (BCFN, 2021), **nutrition education is compulsory in the national European curriculum for primary and/or secondary schools** in the following Countries: Austria, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Greece, Ireland, Latvia, Lithuania, Malta, Poland, Portugal, Slovakia, Sweden, United Kingdom.



For example, in Greece, health education programmes are conducted on an annual basis in Greek schools. They may include basic knowledge of nutrition according to Law 2817/2000 of the Ministry of Education. The Ministry of Education has created educational material for students in primary and secondary education regarding Nutrition, Eating Habits and Consumer Education. Programmes on nutrition and eating habits are implemented by trained teachers from the relevant departments of universities such as Harokopio University of Athens and Medical Schools.

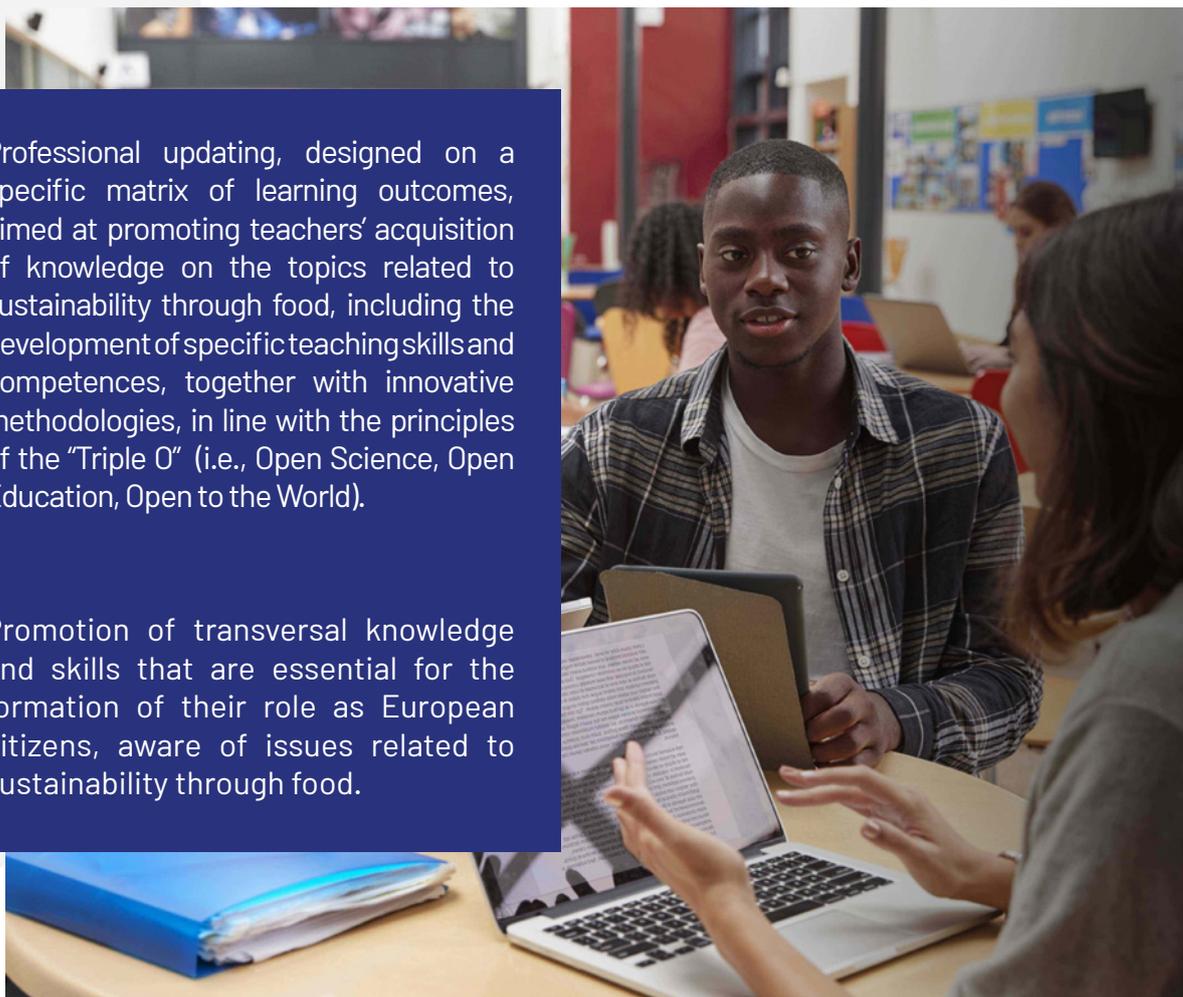


Most the healthy eating guidelines have been updated after 2015, but **only few refer specifically to environmental sustainability** (e.g., Germany and Sweden). However, although it is not mandatory, among the EU Countries the number of education modules dedicated to food sustainability, available at all levels in the schools, is growing. In Italy, for example, nutrition is not compulsory but since September 2020, healthy and sustainable diets have been included in the compulsory civic education. Teachers can choose among three different topics, and the second one - education for Sustainable Development - includes food education. However, much is still focused on the nutritional side only and modules on food system are relatively sparse.

In this context teachers seem to play a pivotal role. Grey literature (e.g., MIUR & FEI, 2018) showed that education for sustainability through food is still based on individual teachers' initiative and methods. Hence, didactic uniformity is lacking. Since sustainable food initiatives are gaining attraction and importance, the time is right to introduce them in the system, with a more systematic and comprehensive approach, based on skills and contents, that can be replicable and widespread. With is in mind, the SkilledED 4 Food project has been launched. In particular, teachers and learners will benefit from:

1 Professional updating, designed on a specific matrix of learning outcomes, aimed at promoting teachers' acquisition of knowledge on the topics related to sustainability through food, including the development of specific teaching skills and competences, together with innovative methodologies, in line with the principles of the "Triple O" (i.e., Open Science, Open Education, Open to the World).

2 Promotion of transversal knowledge and skills that are essential for the formation of their role as European citizens, aware of issues related to sustainability through food.



Skilled4Food – Aims and methods

The project Erasmus + KA2 “SKILLED: KEY SKILLS TO BUILD SUSTAINABILITY KNOWLEDGE THROUGH FOOD” integrates the priorities of the Erasmus + Program and the priorities of the education sector, foreseen by the European Union and the Italian National Agency (INDIRE). Thanks to the support to the teachers, from the partner schools, by making high scientific content materials available to them, as well as innovative teaching and learning tools and methodologies, it is intended to achieve their effective empowerment and the development of their transversal skills as sustainability educators.



The project intends to confront teachers and students with the role of sustainable diets, the complexity of food systems and their issues (i.e., the rise of hunger and the spread of obesity, the need for more sustainable agricultural production in the face of the increased challenge world population and the scarcity of natural resources, as well as the scourge of food waste from farm to table) to stimulate a sense of active citizenship.

In fact, from all of the above, the construction of a balanced relationship between environment, food, resources and needs of the human being, fundamental for the achievement of the Sustainable Development Goals, sanctioned by the United Nations in the Agenda 2030, may be achieved.

In order to increase the efficiency and effectiveness of education to sustainability through food, Skilled 4 Food intends to provide tools and methods capable of systematically training an increasing number of school staff. That aims at ensuring constant quality standards over time, capable of significantly affecting the students’ awareness of the advantages of a healthy and sustainable diet, for their health and that of our planet.

The first phase of the project is an activity of investigation and analysis of needs through two integrated modes of action:

- **Desk analysis** on partner Countries' national policies on education for sustainability through food in every order and grade of school, as well as on Best Practices in Europe related to sustainable education through food in school;
- **Field research**, carried out with two types of questionnaires, administrated by partner schools, aimed at identifying and evaluating the needs of the main stakeholders directly within the school system in relation to the knowledge of the project themes.

The output and outcomes will be helpful for the elaboration of the content of other project outputs, ensuring that target group needs are met. However, it must be said the **data collected** provide a contextualized understanding of the sample of schools analysed and **generalizability is not possible**. Hence, for brevity's sake, **the names of the Countries stand for "students/teachers from participating schools of their Countries"**.





Part 1 - Desk Analysis

REGIONAL AND NATIONAL POLICIES ON FOOD SUSTAINABILITY AND ON FOOD EDUCATION OF THE PARTICIPANT COUNTRIES

In recent years, at European level, several initiatives have been undertaken in terms of promoting healthy diets, sustainable food chains, innovative agriculture. These initiatives, both at public and private level, had an impact also in the educational system. In order to have a picture of the state of the art and to find the most successful approaches to education in these fields, the Project launched a collection of best practices and policies in the various partner Countries. In order to do so two different forms (one for practices and one for policies) were prepared, to make sure that information was collected in a consistent manner by the various partners.

With regard to the research of the practices, with the term “Best practice” we make reference to a variety of activities of both formal and non-formal education to convey food education in schools providing a more familiar and inclusive environment beyond the traditional methodology. We suggested to the partners to look for practices that had objectives involving: EU citizenship and Sustainable Development awareness; issues related to food consumption and food waste; issues related to healthy/sustainable diets; issues related to sustainable food production.



All partner schools took part to the collection of these materials (October - December 2020). All provided an example of national and regional policy, and 15 best practices have been collected. In general, data mining was hampered by the lack of easily accessible official information and the absence of repositories for best practices and examples of their applications. Although the response was not uniform in terms of the quantity of examples provided, common trends emerged across the partner Countries.

Desk Analysis - Best practices

Analyzing the best practices collected by the partners, there are some common features that need to be considered. In the first place, the activities provided are mainly focused on the development of healthy and sustainable diets, while the issues related to European values and sustainability awareness have not really been expanded in the practices. Only three practices out of the total amount include education towards a European citizenship: HORTA4SCHOOL; Quality of the school environment and education for sustainability; "RACCOLTA DIFFERENZIATA" Percorso di educazione alla sostenibilità sul tema dei rifiuti provided by the Italian partners.



This small number of practices is something that the partnership will consider in developing its teaching tools. There is ample space for improvement in innovation in this trans-disciplinary field. The targets of the practices are largely distributed from primary schools to secondary school, a positive sign which marks out the flexibility of these activities, which could be applied to different pupils and different levels of awareness about the topic. Another common key-point of the practices is the interaction between the classes and the local community.

Several practices aim to develop the knowledge of local products. Therefore, these specific practices revealed a particular attention towards the valorization of sustainable and quality food chains.



The best practice identified by the **Bulgarian school partner**, mainly focuses on food production, sustainable diets, and healthy food.

The practice's target is between 13-14. Although the activity was supposed to be developed in class, particularly in groups, due to the COVID-19 the pupils could only join the activity remotely, checking the material provided by their teacher and looking for new information on their own. This aspect compromised the full immersion into the activity, still the students had the chance to reflect on the material and discuss it with the rest of the class.



The **school partner from Spain** identified three practices, focused on food production, sustainable diets and healthy food.

The activities are related to different targets, from 6 to 19 years old. Two activities out of three emphasize the role of the local community in food education, involving not only students but also their families and local people during specific campaigns to educate on healthy food. The Program for the promotion of healthy eating in the school is supported by specific material applicable to class group activities supported by the teacher.

From a methodological point of view this practice still reflects the traditional approach of frontal, top-down teaching, even if it brings to the attention of the students' innovative notions. In general, the three practices show a good food education background, out and inside the school context, but they do not reveal an explicit attention for sustainability.

 The **Italian partners** of the project reported eight Best practices: three of them take into consideration the education to European citizenship, too.

The activities presented to promote healthy food values are addressed to students from 11 to 19 years old, which is a positive aspect considering the large applicability of the activities. Specifically, they promote the interaction between students and experts, through both interactional and traditional ways of learning. Students are involved in the process of food production (in the practices HORTA4SCHOOL, quality of the school environment and education for sustainability and Beesmart) food sell (in the practice Food shop) and recycling (like in the practices "Un esperimento sostenibile: il viaggio del rifiuto" and "RACCOLTA DIFFERENZIATA - Percorso di educazione alla sostenibilità sul tema dei rifiuti").

 The **Latvian partner** recounted one practice addressed to students between 13 and 14 years to promote the components and the benefits of a healthy eating pyramid.

The practice is rich in detail and contents; it actively involves the students' attention using the Padlet app. On the other hand, the development of the activity is still focused on a traditional frontal teaching methodology. Furthermore, the concept of sustainability is not really addressed within the lesson plan.

 The **school partner from Greece** has reported two best practices.

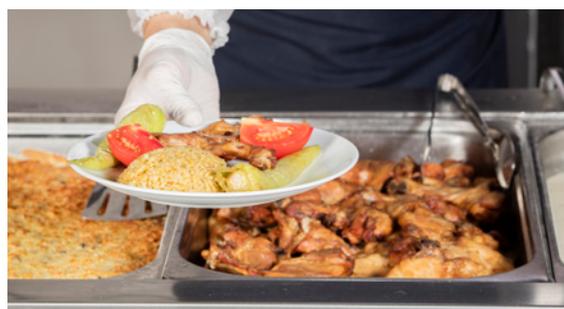
One of them is supposed to develop awareness on healthy diets (The everyday life of the athletes of the ancient Olympic Games) and the other one wants to promote EU citizenship and sustainable values (Geology, The Petrified Forest of Sigri Lesvos North-East Aegean). Although the development of the activities is original and informative, they do not really deal neither with healthy diets and food sustainability nor with EU values. The first one is more focused on the historical research of Ancient Olympic Games' athletes. On the other side, the second practice alludes to the interactive study of geological phenomena, but it does not address topics related to EU citizenship.

Overall, the analysis of the practices shows an interest at the level of the partner schools for questions related to Sustainable Development. At the same time, it seems not all the dimensions of sustainability through food are included, and the trans-disciplinary approach to these issues is not always part of the practice.

Desk Analysis - Best policies

Moving on the policies reported by the partners on their national legislation, nutrition in school canteens has a key role in promoting the importance of a healthy and sustainable diets. The collected policies mainly aim at providing students not only with healthy food at school but also informing them on the local food chain and food national traditions. These national policies involve the action of both schools and families to guarantee a complete awareness of a healthy diet.

A somehow weak point which can be addressed in the collected policies provided is that they seem to address healthy nutrition without a clear regard for the often-related environmental issues. An exception is represented by the Greek policy titled as Directorate of Sustainability Programme and Education Support, which vice versa is focused on environmental education in schools, but not on food sustainability.



On the contrary, Greece's National Action Plan on Food Reformulation is a valid and concrete research project that shows a scientific approach to the methodology, although it still needs to implement a concrete involvement of pupils, to stimulate their reflection on the theoretical studies.

Bulgaria as well reported a lack of policies on food sustainability at a school level: the involvement of specific tools to promote a healthy lifestyle is delegated to each school of the country. This aspect could lead to an unequal treatment of the topic within the schools and different possibilities given to the pupils.



A similar consideration can apply to the Spanish policy on NAOS strategy (Strategy for Nutrition, Physical Activity and Prevention of Obesity): every school community decides on its own to join the campaigns organized to promote a healthy diet and there is no obligation for schools. Furthermore, these strategies do not consider sustainability as one of the main aims.

Milan food policy is an Italian regional policy made to promote awareness on healthy and sustainable diets. It is given great importance to the role of canteens in reducing food waste and recycling. Thus, students can re-apply these values in their daily lifestyle. However, Milan food policy is not a specific policy for the educational sector, and it is mainly addressed to primary schools.

On a general overview in the adoption of school food policies and practices, in the Project's partner Countries tools to create better ways to educate pupils in matters related to food and nutrition are clearly evolving. In particular, more than 90% of school food policies that have been adopted in Europe until 2014 are focused on specific guidelines for nutrition and healthy diets in schools, which represent clear instruments that schools can adopt in order to provide correct meal plans for students (Genannt Bonsmann et al., 2014).

The spread of COVID-19 pandemic all over the world has claimed the urgency of intervention to reduce food waste and redesign the typical lifestyle in order to adapt it to sustainability. For instance, the Italian start-up Bella Dentro operates on food loss, intervening in support of farmers and promoting at the same time the consumption of fruit and vegetables, including those that for aesthetic reasons will not reach supermarkets. The fight against food waste goes through the active initiative of local communities.



For example, two cities in Europe have made impressive progress in the fight against FLW at urban level: Ghent and Riga. In 2017, Ghent launched the "Foodsavers" multi-stakeholder platform that allowed the city to involve supermarkets and producers in donating surplus food to local charities. Food donations were aimed at significantly reducing the environmental footprint of food surpluses, with a potential reduction of 250 CO2 tons per 100 tons of surplus food donated. Secondly, the project strived to have a deep socio-economic impact on the local population becoming an attempt to make quality food available and accessible to every social group.



Riga has invested in turning the Getlini landfill into an innovative and environmentally friendly waste management site. The conversion plan has allowed almost 150,000 tons of waste to be converted into biomass, reducing negative impacts on the environment and soil.

The importance of promoting child nutrition becomes the first aim of the major part of school food policies (97%) that have been adopted in European countries, followed by the purpose of promoting healthy habits (94%)(Genannt Bonsmann et al., 2014).

In 2019, the Policy Evaluation Network (PEN²) was launched to identify policies addressed to physical inactivity, unhealthy diets and sedentary behavior, while accounting for existing health inequalities. As part of the Joint Programming Initiative on a Healthy Diet for a Healthy Life (JPI HDHL), researchers from 28 institutions in 7 European countries and New Zealand combine their expertise to give an overview of the ‘best’ public policies most likely to sustainably support more favourable health behaviors.

These include food promotion, labeling, composition and retailing as well as both public and private sector policies and actions. A multi-disciplinary initiative worth mentioning is the EU Platform For Action On Diet, Physical Activity and Health, a forum for European-level organizations, from food business operators (manufacturers, retailers, caterers, fast food restaurants), to consumer organizations, public health NGOs and scientific and professional associations.



Platform members commit to concrete voluntary actions to promote a healthy lifestyle including the impact on children of regular physical activity. The EU Platform meets regularly and holds joint meetings with the high-level group on nutrition and physical activity. “School Fruit, Vegetables and Milk Scheme” provides fruit, vegetables and milk to school children as part of a wider program of education about European agriculture and the benefits of healthy eating. Member States are responsible for the design of the EU school scheme in their country and are responsible for its proper implementation in terms of management, monitoring and control.



The program has been implemented in all EU Member States, reaching over 20 million children across the EU during the school year 2017/2018.

As regards the identity of the policies adopted to promote food sustainability in schools, less than 30% of the policies are created to promote local agriculture and economy and school attendance (Genannt Bonsmann et al., 2014). Thus, supporting better governance is fundamental to empowering cities and local authorities in their quest for achieving Sustainable Development.

2. <https://www.jpi-pen.eu/>

A common weak point is the lack of activities focused on European citizenship values and environmental sustainability. The practices still need to reinforce peer-education, with the aim of creating new innovative ways of learning about sustainability through food. A more collaborative support between schools and national institutions could provide capillary education of food sustainability. In particular, more specific tools need to be adopted as concerns the production of school food policies. Indeed, the 65% of European school food policies are embedded in other policies such as food or education.



The Green Deal³ has been an important signal of reception from the Political institutional frame of EU **“to reduce the environmental and climate footprint of the EU food system and strengthen its resilience, ensure food security in the face of climate change and biodiversity loss and lead a global transition towards competitive sustainability from farm to fork and tapping into new opportunities”**, although the achievement of a sustainable awareness necessarily passes through schools and local communities.

3. https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

Desk Analysis - Conclusion

Both the practices and the policies collected underline the values of healthy diets, applying interactive ways of learning that allows the pupils to get into touch with local food production, healthy food consumption and recycling. At the same time, the answers collected do not show that all teachers use a methodology based on experiential and transformative learning in their classrooms, which can be a very useful and applicable method in education for sustainability through food.

In agreement with EU recommendations, all national guidelines collected highlight the importance of fighting overweight and obesity since early childhood. For this reason, all partner Countries agree on the importance of food education and recognize canteens as a strategic place to provide healthy food (for example, fighting junk food and sugary drinks). Particular attention is also given to quality food and organic products, whatever possible. However, canteens are not meant to be an educational space where health and sustainability issues could be dealt with through practical examples.

In general, focus is mostly on nutrition and sustainability, if mentioned, is paid much less attention. According to our data, it seems that a sustainable diet, based on a Planet's and the individual's health approach, is far from being routine. Moreover, food education seems to be a priority for primary schools only. Not surprisingly, canteens and similar facilities are rare in secondary schools.

From the data collected, clear guidelines to teach food education are generally missing and most of the burden is left to the initiative of teachers/schools. That may be supported by municipalities, communities and/or private sector representatives. The importance of the role of individual initiatives is reflected by the diversity of the examples and best practices collected throughout this study.



From them it emerges that the activities carried out are mainly focused on the development of healthy and sustainable diets, with little attention to the issues related to European values and sustainability awareness.

This analysis shows an interest in issues related to Sustainable Development but, at the same time, not all the facets of sustainability through food are included, and a trans-disciplinary approach to these issues is rarely adopted. **In this perspective, the SKILLED project can help in filling this gap, by providing professional updates and supporting materials whit the aim of fostering the development of educational skills and competences.**

Last but not least, a common weak point, in our opinion, is the lack of activities focused on European citizenship values and on environmental and societal sustainability. There is a need for a more holistic and systematic approach to see healthy food not as an aim but rather as an educational tool to promote a general understanding and awareness of what Sustainable Development is about.

Part 2 - Field research

In this project, school teachers were asked to administrate two types of questionnaires (February - April 2021): one to their students and one to their colleagues. The aim was to ascertain the level of awareness and understanding on issues connected with Sustainable Development (SD) and food sustainability, as well as to verify whether schools are an appropriate environment to move forward in raising awareness on Sustainable Development through food sustainability.

The questionnaires comprised 27 questions for students (plus 3 on demographics) and 21 questions (plus 6 on demographics). The questionnaires were structured with multiple choice answers. This methodology was preferred to open-ended questions and interviews to make sure that comparable data were gathered from the various schools, considering the differences existing between them in terms of organization and subjects taught. By way of example the Italian school is a secondary school focused on sciences and agriculture, whereas the Bulgarian school is a professional and vocational institute for interior design and woodworking.

Despite the enthusiasm of partners, data collection was hampered by COVID situation and schools performed differently in data collection, although everyone achieved the minimum quote requested.

The following section presents the results of a quantitative analysis. It is important to underline that the analysis aims at identifying the elements which seem crucial in order for the Project to further develop appropriate teaching tools capable of addressing different needs and perspectives in schools where education to sustainability through food and education to Sustainable Development is present.

The report does not intend to generalize the results gathered.

Student Questionnaires

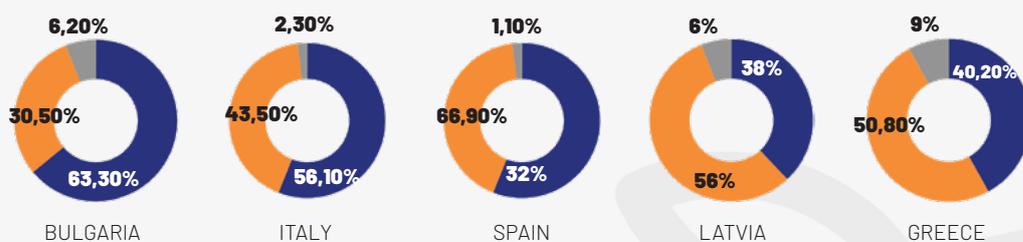
The numbers of the students completing the questionnaires country by country are as follows:



The gender balance of the results of the questionnaires is overall respected. In some countries there are more male students (Italy, Bulgaria) whereas in the case of Spain and Latvia the balance is reversed.

D1: Gender

Male
Female
Not specified



As to their age, most students were aged between 15 and 17 years, with some differences between participating schools⁴. In Italy, for example, the majority of students were mainly between the age of 17 and 18 years, whereas in Bulgaria the majority of students were between the age of 15 and 16 years.

4. IES Los Viveros is a school for Vocational Education and Training (VET) that prepares students for careers in specific fields. For this reason, students may vary in age, starting from 16, including adults.

The structure of the questionnaire is divided into five main areas:

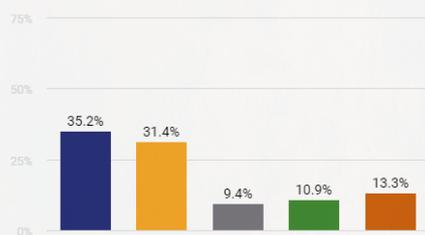
1. Understanding the level of knowledge regarding the environment and Sustainable Development (SD) (*questions 1-10*);
2. Exploring the level of awareness and understanding of issues related to responsibility (*questions 11 e 17*);
3. Understanding personal lifestyles and how students relate their daily habits to sustainability issues (*questions 14-16*);
4. Exploring whether students discuss sustainability issues (*questions 18-20*);
5. The final part of the questionnaire explores the role of school in teaching sustainability (*questions 21-27*).

Question 1

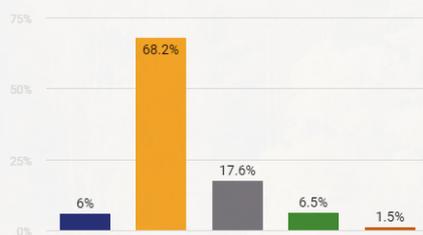
"Sustainable development is development that meets the needs of the present without compromising the ability of future generation to meet their own needs."

Have you ever heard of sustainability or sustainable development in these terms?

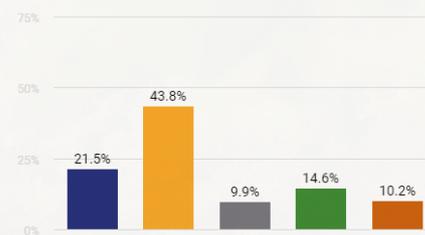
- This definition is totally new to me, but I like it!
- I agree with this definition.
- This definition is too limited.
- I've never thought of sustainable development in these terms.
- I've never thought of defining sustainable development.



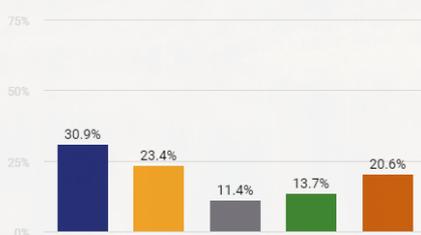
BULGARIA



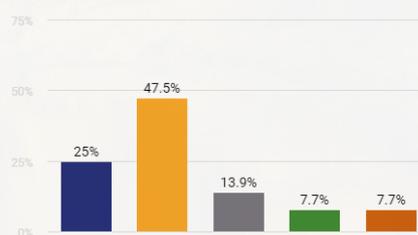
ITALY



SPAIN



LATVIA



GREECE

As stated above, in general terms, it is quite evident that there are some relevant differences among the schools that took part in the survey. This is already clear in the results of **Question 1** on the definition of Sustainable Development (SD) where we have negative results (items: new definition + never thought) in approx. 76% of students in Bulgaria to approx 14% in Italy.

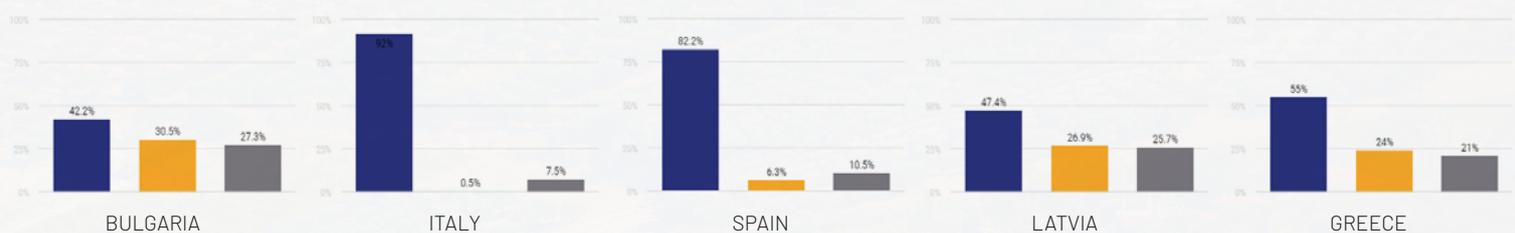
This result is mirrored by the results in **Question 3** on UN Agenda 2030, which are correct for the large majority of the students in Italy and only for the 42% of them in Bulgaria and 47% in Latvia.

Question 4, which is also devoted to the general knowledge on UN Agenda 2030, shows a stronger awareness for the number of Goals is correctly identified on a percentage of students which goes from approx. 62% to 95%.

Question 3

What is Agenda 2030?

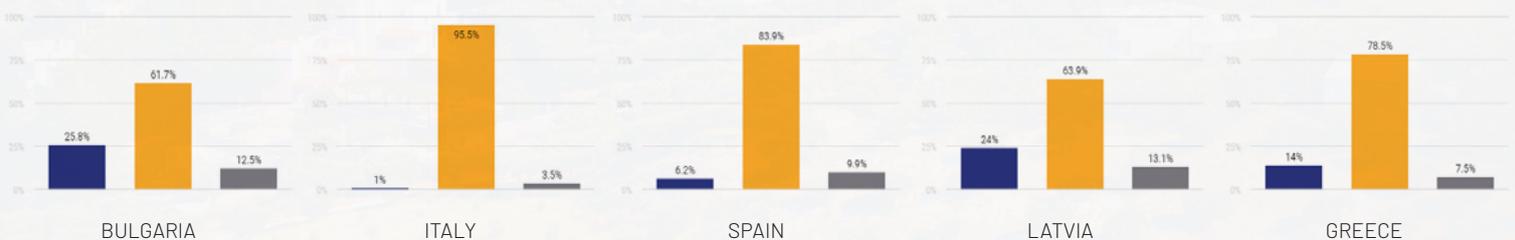
- An action programme for people, the planet and prosperity signed in 2015 by governments of 193 UN member Countries.
- An action programme to beat famine in the world.
- An action programme that defines the UN most important events until 2030.



Question 4

How many sustainable development goals are there?

- 8
- 17
- 23



In certain cases (especially with the Italian school) it is evident that students have already been exposed to learning experiences concerning sustainability through food and have therefore gained a knowledge and awareness on the issue which are the object of the Project. At the same time, students seem to be willing to learn more about SD and demonstrate a general awareness of the relevance of the topic for their lives, although they seem to have derived such awareness not from school programs.

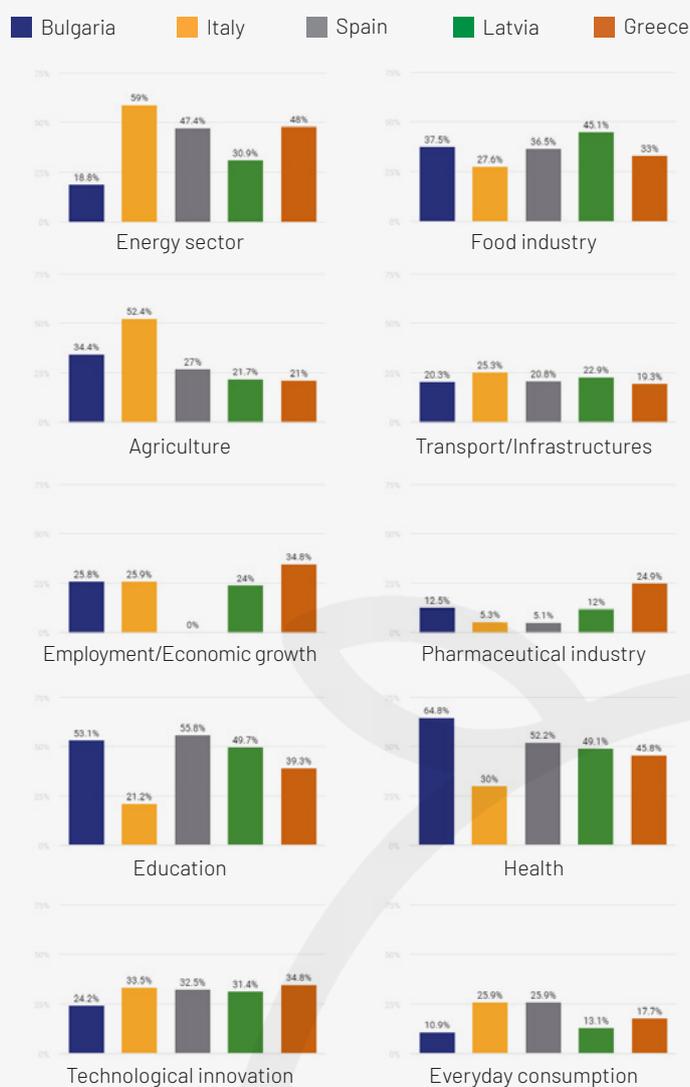
That suggests education could have a stronger impact on the students' perceptions about SD as well as food sustainability.

Another general remark is that the social dimension of SD is seldom appreciated by students and their understanding of the topic is focused on environmental issues (for example as a consequence of the Friday for Future movement). Interestingly Health seems a relevant topic for all.

With reference to **Question 2**, we can see that fields such a Food Industry, Agriculture and Innovation receive quite a lot of attention by all Countries (LT and GR not so much for agriculture approximately 20%), Innovation and transport receive the same amount of attention whereas there are relevant differences when considering Education (SP 55% - IT 21%). Health is extremely important, getting overall the highest scores (64% BG- 30% Italy). In addition to this, according to the results, the pharmaceutical industry has the lowest level of interest; apparently students think that this industrial field is not perceived as relevant in terms of Sustainable Development, notwithstanding the high profile gained by this industry during the present pandemic. At the same time, it seems that, overall, students are quite aware of the fact that many industrial fields are connected with sustainable development issues.

Question 2

According to you, what are the most important fields for sustainable development?



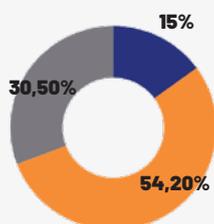
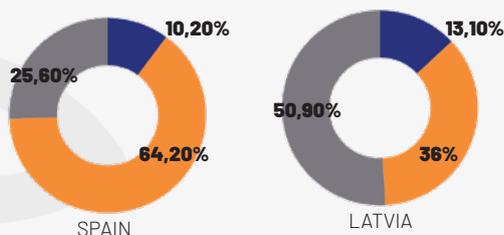
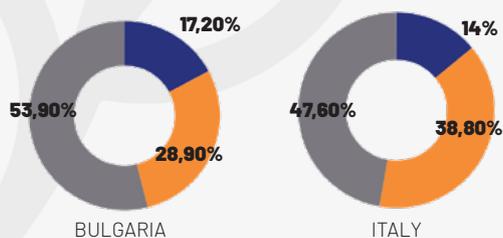
The level of awareness and understanding of the concept of sustainable development is also at the core of **Question 5**. When we look at the results, in this case we realize that the situation is not fully satisfactory. Students still believe that social issues are not necessarily connected to SD and that States can choose among the Agenda 2030 Goals which one should be implemented. Moreover, in certain Countries (like Spain and Greece) environment is perceived as the most relevant issue.

In our opinion, this lack of a comprehensive approach to SD is one of the main findings of this survey, and identifies a clear need in the educational filed.

Question 7

Is there enough food to feed anyone in the world?

- No, there isn't because there are too many of us.
- There is enough food for all, but not everyone can afford it.
- Food is enough for everyone but there isn't an efficient distribution network.



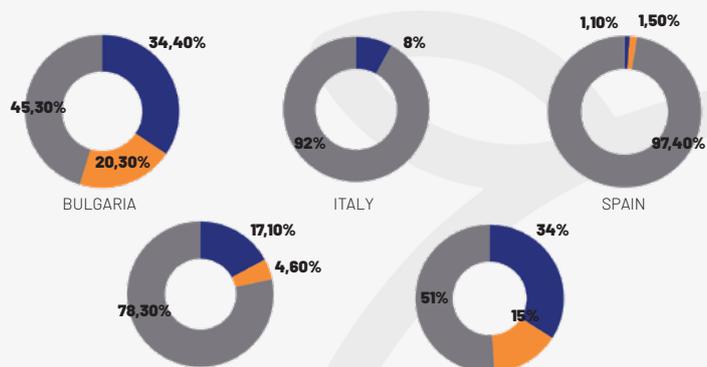
Viceversa, it could be said that the level of awareness concerning issues related to food sustainability is somehow more encouraging. **Questions 7 and 8** highlight a large level of understanding of the issues related to food and sustainability. In Question 8, for example, the correct answer goes from approx. 92% in Italy to 45% in Bulgaria.

It is possible that a level of awareness can be connected to the activities already done at school level for example in Italy and Spain, but also to the general public awareness on these fields.

Question 8

How much food is wasted in the world every year?

- Only 10% of food is wasted every year.
- Very little, people have clearly reduced food wasting.
- One third of all the produced food.



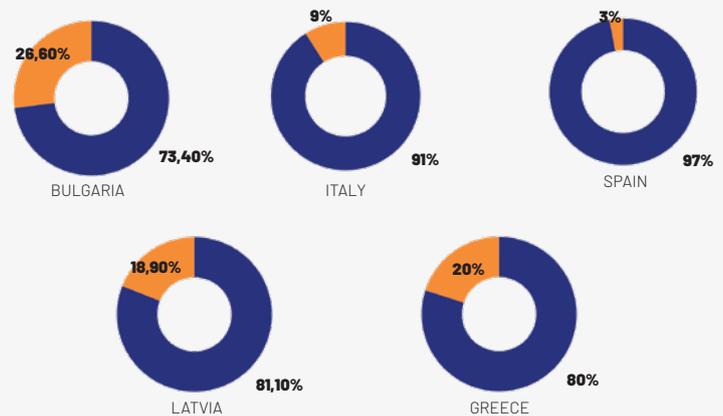
Question 9

The relevance of the environment as the main concern when dealing with sustainability quite evident in the results of **Questions 6, 9 and 10** which again are related to the environmental dimension of SD with which students are overall more familiar.

Although with some differences among schools, students are aware of the impact on climate change of the use of plastics and meat consumption, whereas they do not believe that the use of local agricultural products can have a relevant impact.

Are there a lot of fish in the sea?

- No, overfishing, pollution and climate change are reducing fish stocks.
- Yes, everyday fish markets are stocked and there aren't many problems.

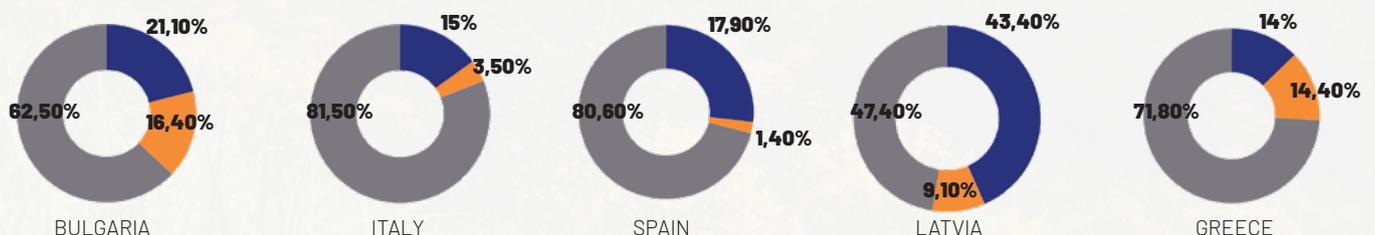


The relevance of SD as an issue which is strongly "felt" by young persons, possibly also due to the Friday for Future movement, is also supported by the results of Question 10. With the exception of BG and GR, the large majority of students consider SD as a problem for the community as such.

Question 10

Where does most of wastewater go after being use for humans' activities?

- It's treated and recycled.
- It's stocked in a safe place.
- It's discharged into rivers and sea without providing for the removal of contaminants.



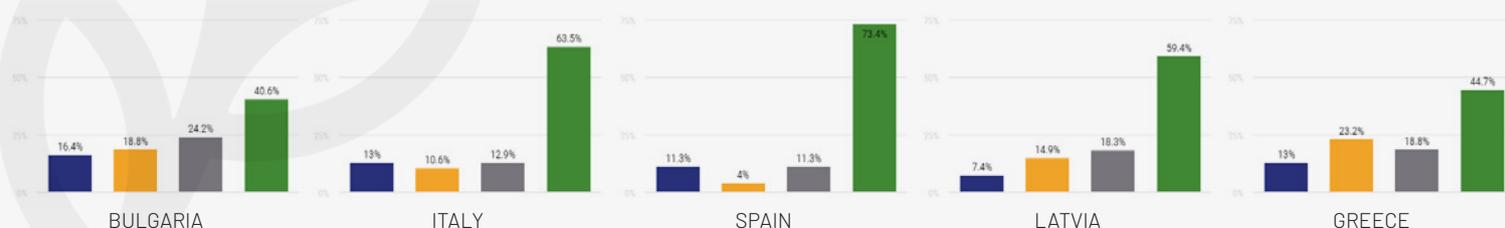
Although students have demonstrated an interesting level of awareness concerning the environmental relevance of issues connected to Sustainable Development and to sustainability and food, the results of **Question 11** show certain differences among the involved schools. The concept that SD is a societal responsibility is strongly shared in Spain, Italy and Latvia.

In Greece and Bulgaria, vice versa, the results are more nuanced with less than 50% of the students sharing this concept. Once again it seems that education to Sustainable Development, where it has already taken place, has lasting effects on the levels of knowledge and awareness of the students.

Question 11

According to you, which one of the following entities should mainly be involved and responsible for Sustainable Development?

Rich countries Developing countries International Organizations All citizens

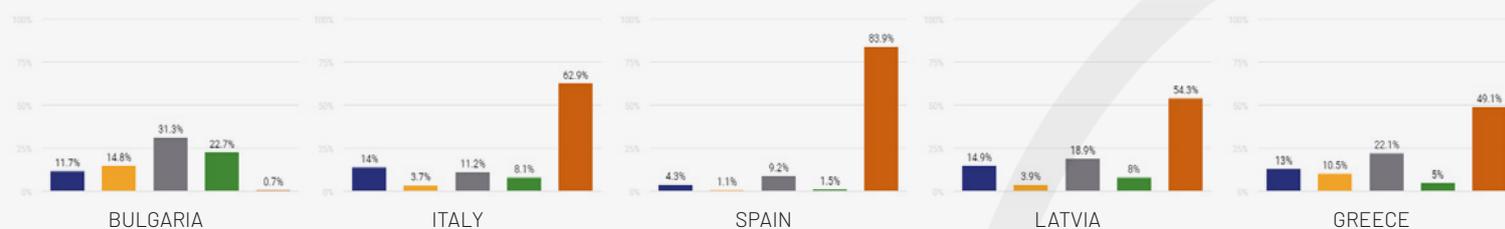


Question 12 shows the relevance of the environment as the main concern.

Question 12

In your opinion, promoting sustainable food is mainly important because:

It helps protecting the environment. It helps developing new and innovative enterprises. It guarantees greater possibilities for everyone's access to food. All the previous answers. It guarantees greater changes for health.



Questions 13, 14, 15 and 16 concern personal lifestyles and their impact on Sustainable Development issues. Students are aware that their behaviors have an impact on the environment and on society at large, although, by way of example, according to the results in question 13, they consider the reduction of water consumption for daily hygiene mainly from an economic perspective.

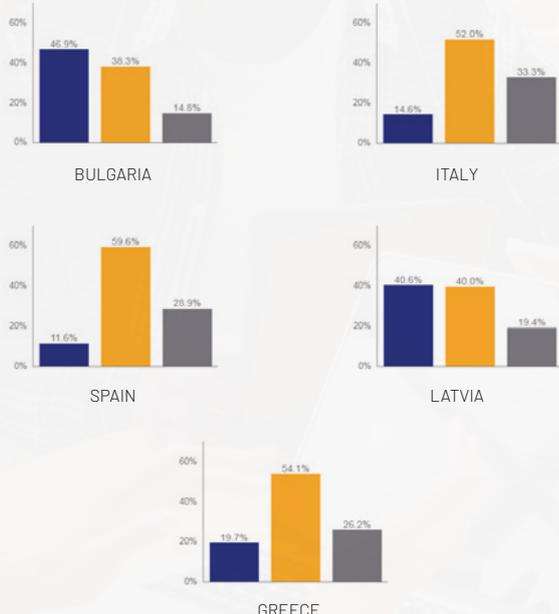
Even when declaring their consuming habits, they do not consider “brands” as a relevant element. They consider “quality” has the main element in their choices, although they do not seem, in general terms, that the concept of quality includes “producing methods”.

Thus, it is difficult to understand if “green methods” are somehow connected for them to the concept of quality or not. It is also quite interesting to note that although the majority of them believe their lifestyles to be quite sustainable, there is still a good portion of them considering that they could do more. In fact, the majority of them chose level N° 3 suggesting a good level of self-awareness and social responsibility.

Question 13

When you have a shower, brush your teeth or use energetic sources at home, which aspects do you mainly consider?

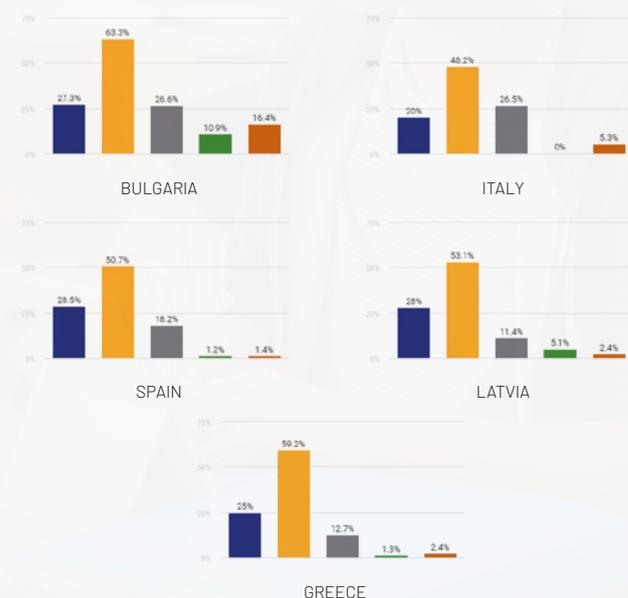
- Personal comfort: I use the source without any specific limitations.
- Economic savings: I try using the source keeping in mind the costs brought by its consumptions.
- Environmental impact: I use the source being aware of its impact on the environment.



Question 14

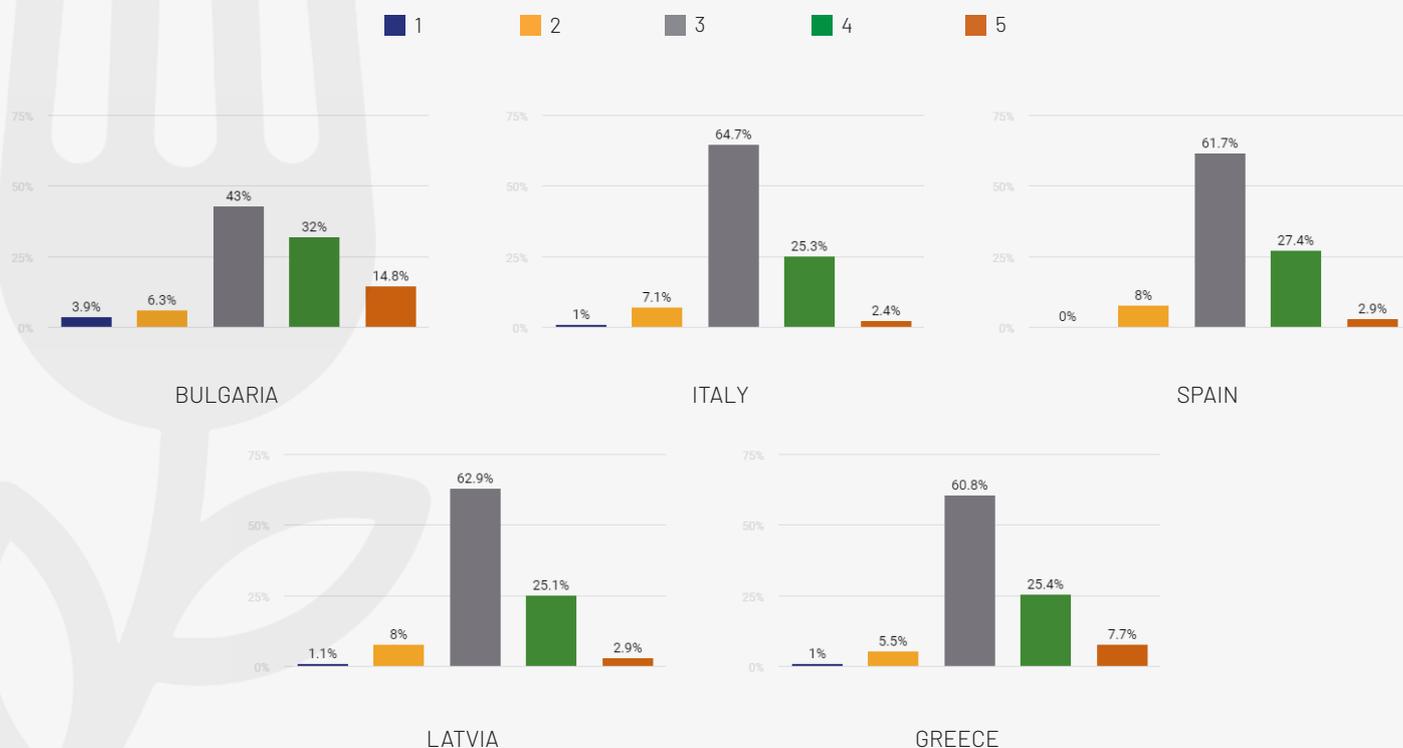
When you buy food, which aspects do you mainly consider?

- The price of the product: I try to buy the cheapest.
- The quality of the product: I try to buy the best quality, even if not cheap.
- Production methods: if it was made respecting the environment and the workers's rights.
- The packaging, the aesthetic, the advertisement: I buy the prettiest.
- The brand of the product.



Question 15

On a scale of 1 to 5, where 1 is the minimum and 5 the maximum, how sustainable do you think your lifestyle is?



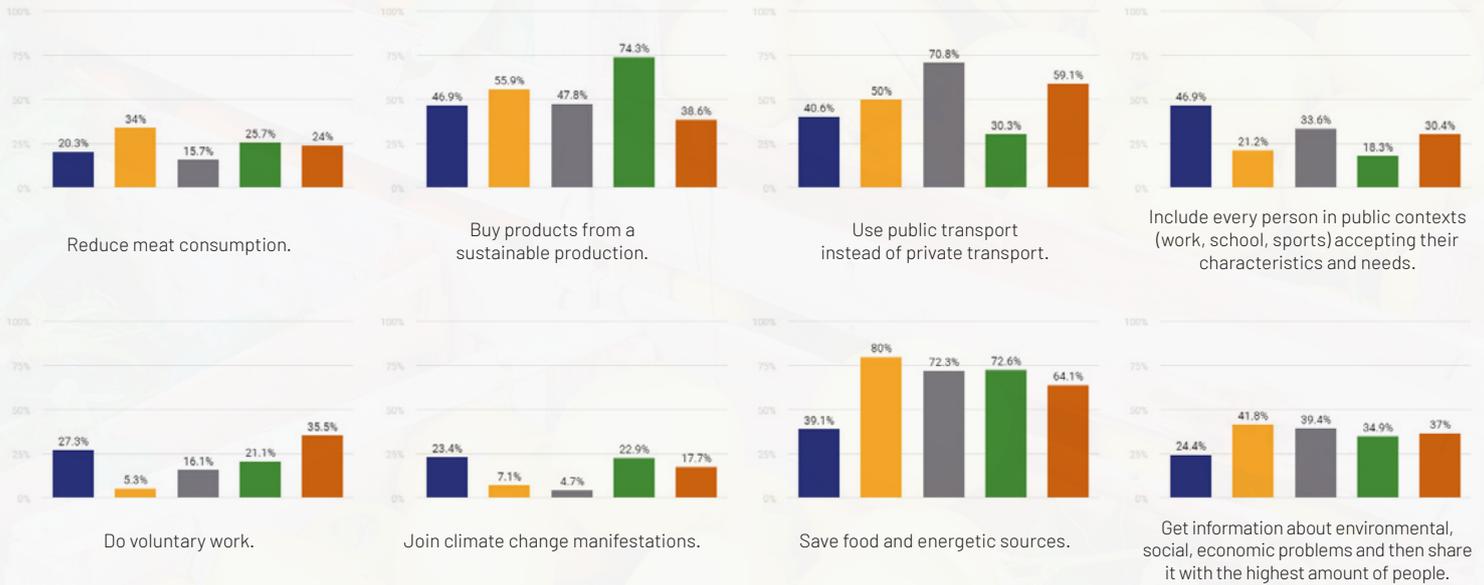
Still there are some elements of concern. According to the results in question 16 students maintain that a sustainable lifestyle is mainly related to environmental protection and social inclusion is considered as part of the picture only in certain Countries (notably, Bulgaria and Greece). This could possibly be related to the fact that in situations where students received education on sustainability (such as in the Italian school) the main focus was on environmental issues without due consideration for the global dimensions of SD.



Question 16

Which behaviours do you think reflect the most sustainable lifestyle?

■ Bulgaria ■ Italy ■ Spain ■ Latvia ■ Greece



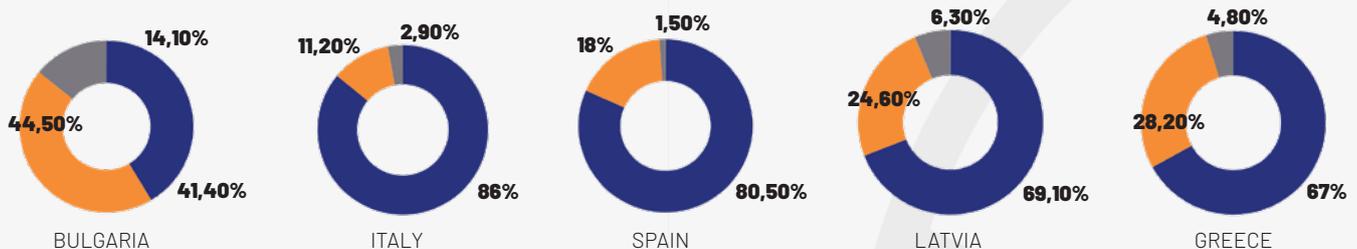
Finally, the results in **Question 17** show personal behaviors are considered by the majority of students as a powerful driver towards change. This social responsibility approach has been probably reinforced by movements such as Friday for Future and represents a particularly important aspect which creates a positive premise to the goal of the Project in terms of development of educational tools on sustainability through food. The final part of the questionnaire explores on the one hand whether students discuss sustainability issues at school level and, on the other hand, whether they would consider such discussion as important and/or necessary for their personal development.

Question 17

Could a more sustainable lifestyle have an impact on the next generations, if adopted by everyone?

- Absolutely yes, especially for the developing countries.
- Hardly, my behaviour does not affect the future of people and the planet.
- Reasonably, even though a more sustainable lifestyle could not bring big benefits for the next generations.

In this case there are some relevant features which are worth mentioning and considering with the aim of better defining the teaching tools and methods that the Projects aims at realizing.

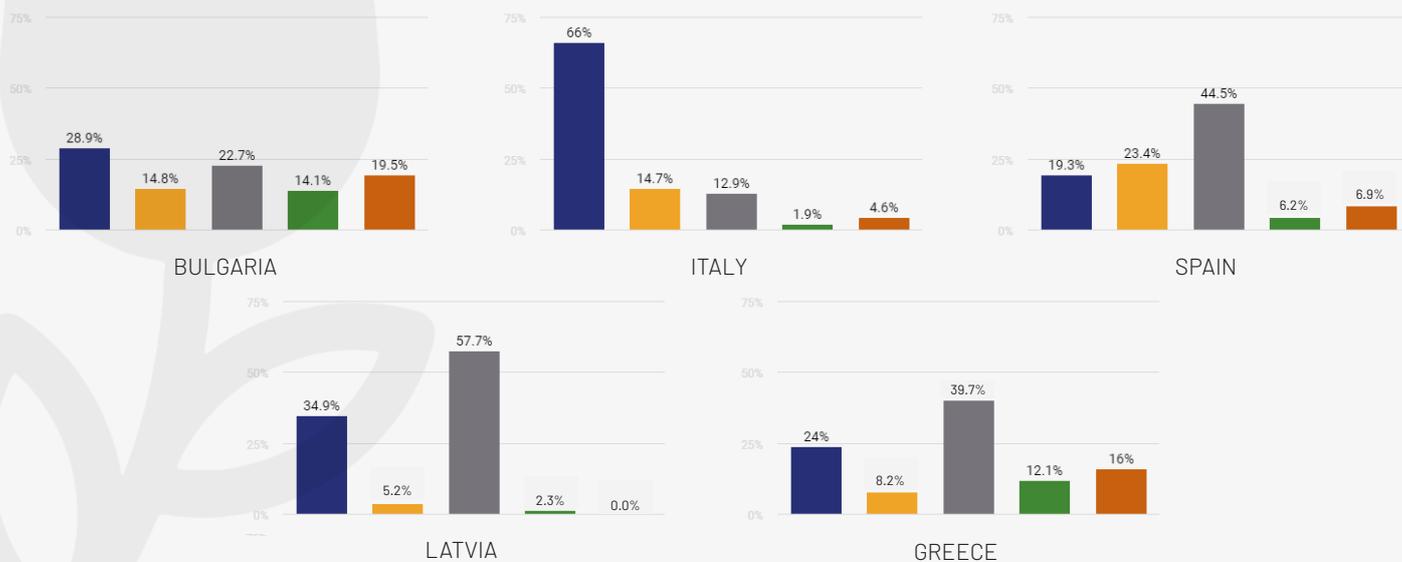


First of all, these topics seem to not be part of usually school activities. Students often know about sustainability through different channels, such as media and social networks (with the notable exception of Italy), as reported in **Question 19**.

Question 19

In which one of these context have you mainly heard of sustainability?

- At school.
- On newspaper, TV programs or radio.
- On websites and social networks.
- Through friends, in other informal situations.
- Through family.

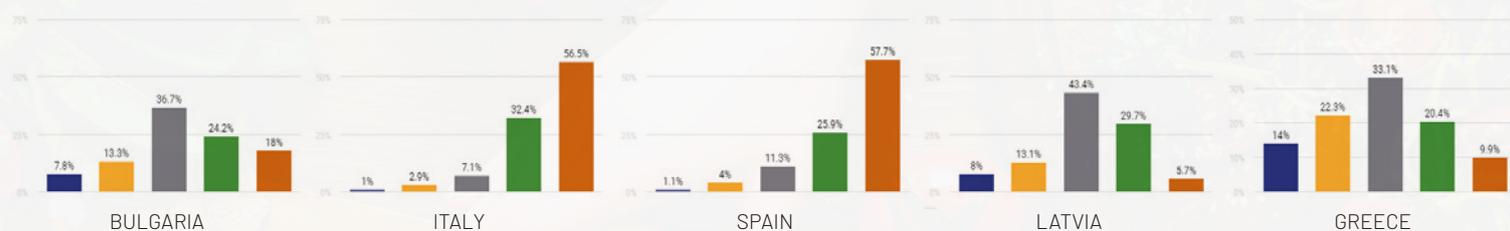


At the same time, according to the results in **Question 20**, students are willing to discuss Sustainable Development issues at school. In all Countries students chose their answers from level 3 onwards with significant percentages in level 5. Moreover, students seem interested in discussing these themes within their curricular activity as showed in the results of **Questions 21 and 24**.

Question 20

On a scale of 1 to 5, where 1 is the minimum and 5 the maximum, how important is it to discuss sustainability themes at school?

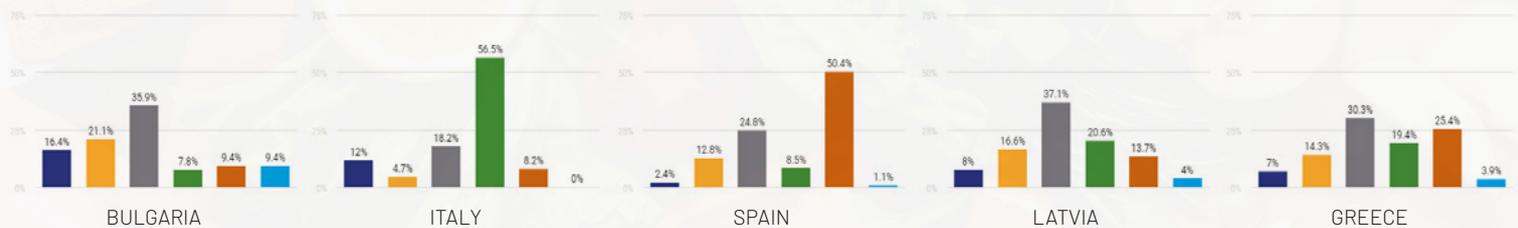
- 1
- 2
- 3
- 4
- 5



Question 21

According to you, which one of these actions is better to promote sustainability in schools?

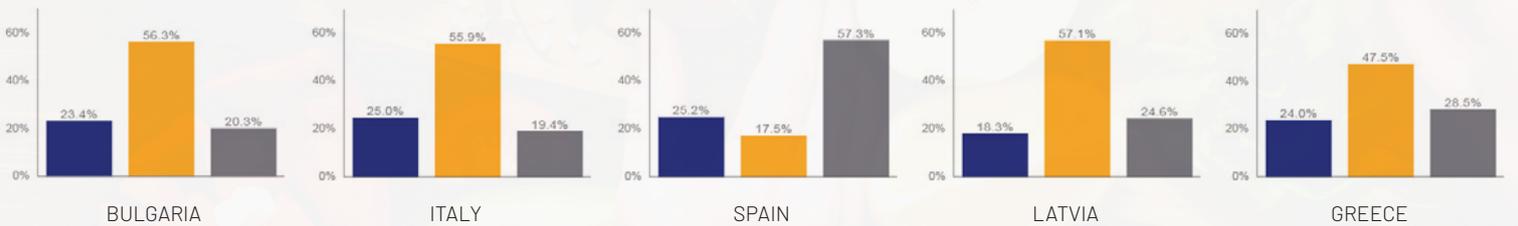
- Promote short food chain (local food production) in canteens.
- Maximize the inclusion of students with disabilities in the education system and remove physical and attitudinal barriers.
- Introduce healthier food and use less plastic.
- Dedicated lessons to sustainable themes.
- Dedicated lessons to sustainability themes.



Question 24

What are the methods you consider the most correct for sustainability education in schools?

- As an extracurricular activity coordinated by experts.
- As a curricular activity to be examined in class through the teacher's support.
- As an occasional activity to be included in peer education activities or in other occasions of discussion among students.



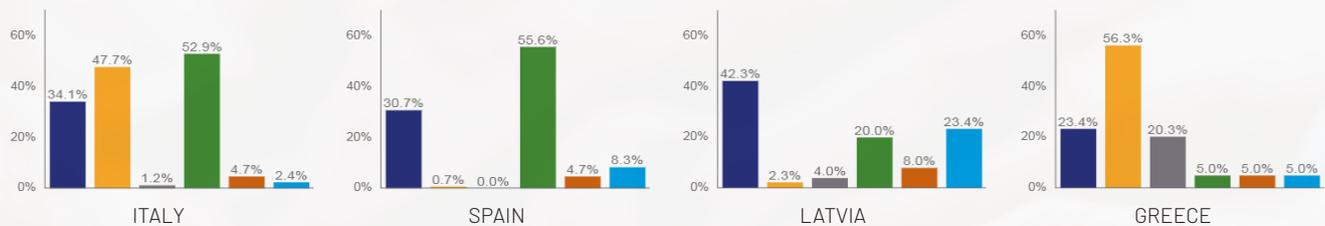
Finally, students seem to be aware of the fact the learning about Sustainable Development and sustainability through food is not only relevant in terms of responsible citizenship (**Question 25**) and as a means towards a needed change for the planet, but they also envisage the possibility of working in these fields.



Question 26

Who is the teacher that you expect should deliver lessons about sustainability?

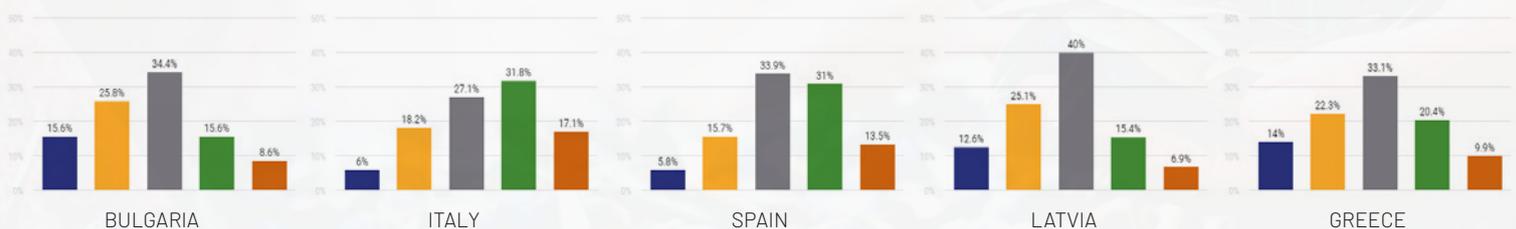
■ Science teacher
 ■ Literature teacher
 ■ Math teacher
 ■ Civil education teacher
 ■ Geography teacher
 ■ Social science teacher



Question 27

On a scale of 1 to 5, where 1 is the minimum and 5 the maximum, how much would you like to get a job in the sustainability field?

■ 1
 ■ 2
 ■ 3
 ■ 4
 ■ 5



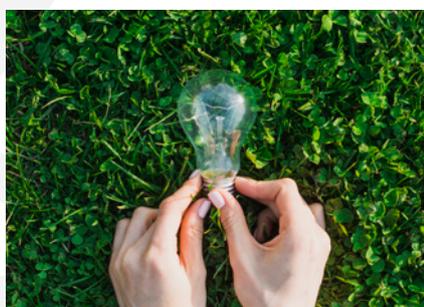
Questions 22 and 23 aim at identifying existing good practices at school level in the field of sustainability education through food. The gathered data are in line with the results of our best practices collection (see Part I of this report), showing a growing attention towards environmental protection. At the same time, they indicate that canteens are not considered “educational spaces” when food chain questions are taken into account.

Question 22 concerning the habits of the various canteen systems received different answers also because not all the schools provide for those facilities. Overall, it seems that practices such as recycling are quite common. Vice versa, the use of local and bio/organic food seems not so well spread. Once again, these results show the possible space for developing and sharing good practices in the field of food consumption at school.



Also the results in question 23 suggest a large variety of activities that take place in certain schools more than others.

As stated at the beginning, certain results are more likely to suggest that there has been a different approach adopted in the partners schools concerning education to Sustainable Development and sustainability through food. For example, the overall score of the Bulgarian and Latvian students are the lowest ones concerning the knowledge on these issues.



For example question 18, which is “How often have you heard or discussed sustainability during the last year?”, results have shown most of the students from Bulgaria (43,80%), Spain (33,90%), Latvia (48,60%) and Greece (39%) have chosen the answer rarely, except the Italian students (8,20%). This issue might be an important reason for the students from these Countries that they do not know, or they do not have sufficient knowledge on sustainability and Sustainable Development.

The results in this question may have an impact in the students’ perception of reality. Thus it is not surprising that in question 17 which is “Could a more sustainable lifestyle have an impact on the next generations, if adopted by everyone?” the results have shown that the participant students from Countries such as Latvia (69,10%), Italy (86%), Spain (80,50%), and Greece (71%) have answered that “Absolutely, yes especially for the Developing Countries”, whereas students who did not received at specific education on these themes at school Bulgaria (41,40%) have chosen this answer.

At the same time, the results in question 20 which is “On a scale of 1 to 5, where 1 represents the minimum and 5 the maximum, how important is it to discuss sustainability themes at school?” have shown the students consider seriously important to discuss sustainability themes at school.

Student Questionnaires - Conclusions

869 questionnaires have been collected in school partners, with a good gender balance.

The first area of the questionnaire investigated the level of knowledge regarding the environment and SD. In general, collected data show some differences among schools that took part in the survey. Students answers from Italy and Spain show more knowledge about the topics, followed by students from Greece and Latvia. On average, instead, Bulgarian students seem to be less familiar with the topic⁵. In general, SD seems much more linked to environmental issues rather than social dimensions.



With some differences in terms of percentages among Countries, students think sectors that have a major impact on SD are education and health, followed by the energy sector and food industry. Interestingly, daily consumption, pharmaceutical industry, transport, and agriculture are not considered important for SD. Regarding the impact on climate change, students agree on the negative impact of plastics, but they do not have a clear position on the role of meat consumption and the use of sprays. Both have been the subject of information campaigns and some messages may have passed but they couldn't be as strong/recent as plastics ban.

However, regarding meat consumption, most of the students is omnivorous but, in every Country, there is a percentage (around 20/30% depending on the Countries) who considers her/himself as flexitarian or vegetarian. That is an interesting sign of changing. Finally, they rank lower internet, traditional foods, fruit and vegetable, and light packaging.

These results are slightly in contrast with **the area that investigated issues related to responsibility**. Italian, Latvian and Spanish students strongly believe individual actions matter on SD (a little bit less Greeks and far more less Bulgarians), and they have the desire to contribute to the Agenda 2030, even though daily actions ranked lower in the previous area and, when they take a shower, they mainly consider personal comfort and economic saving and not so much the environmental impact. That suggests students are interested in SD and they yearn for doing something, but they do not have a clear idea about what to do and they may underestimate the power of real daily actions. Hence, school and education can play an important role, offering specific knowledge and stimulating their sense of agency, because many things that can be adopted into a normal routine can make a big difference.

5. It must be noted that Bulgaria, Greek and Latvia have a smaller sample

Regarding their lifestyles, students have quite a positive image of themselves. They leave room for improvement, but nobody consider her/himself not sustainable. However, when it comes to put theory into practice, students favor choices that have an immediate personal advantage, such as health or price, or actions with a clear benefit, such as saving food and energy, buying from sustainable sources and using public transport (also because many of them do not have a car).



Conversely, more challenging actions, such as reducing meat, volunteering, or striking, are much less desired. It is not surprising that many of them are not particularly interested in finding a job in the sustainability field. Again, school and education can help students to reflect on sustainable lifestyles and gently push them into action, for example, providing correct information, promoting voluntary work and internship in sustainable workplaces, or supporting student movements, such as Fridays for Future.



In fact, **talking about sustainability** at school seems to be important for the sample. With exception of Italy, students rarely discuss about sustainability issues and school provides, after the internet, the place for a dialogue and for information. Hence, school is considered an important information channel but considering the role on the internet, it should provide students with skills and competences to correctly search on the web.

Then, the specific **role of school** has been analyzed and some differences among schools emerged. Students from Italy and Spain seem to have done more external activities linked to environmental protection (e.g., visiting a farm, talking to experts), they would like to have dedicated lessons and they expect their civic education teacher delivering lesson about sustainability (instead of their science teacher). Finally, all the students (except those from Spain) think the most correct method for sustainability education in schools are curricular activities to be developed in class through the teacher's support and not as an occasional activity. Again, that suggests some level of interest in approaching environmental issues.



Teacher Questionnaires

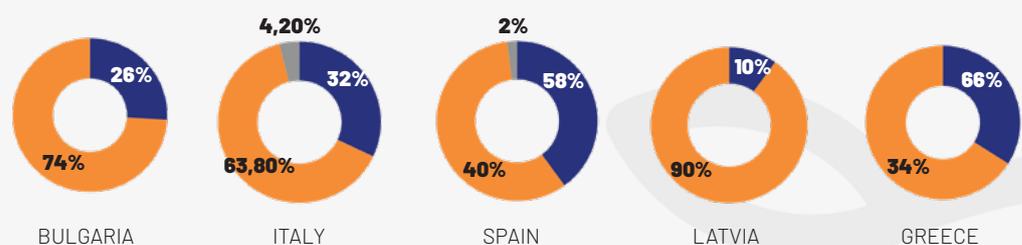
The numbers of the teachers Country by Country are as follows:



First of all, it is important to present some preliminary remarks. The teachers participating in the questionnaires are mostly women, and in certain school the presence of female teachers reach 90% of the participating persons.

D1: Gender

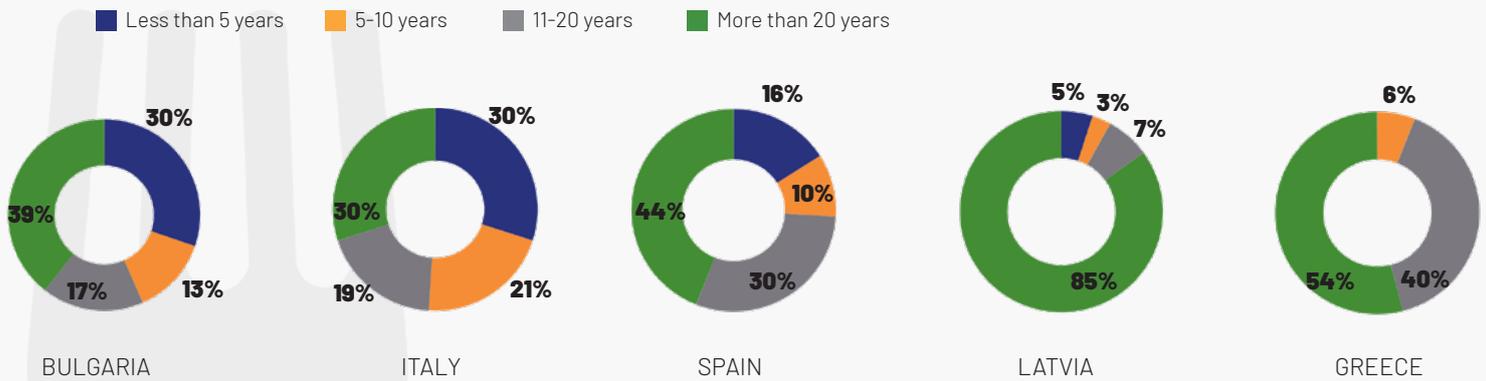
- Male
- Female
- Not specified



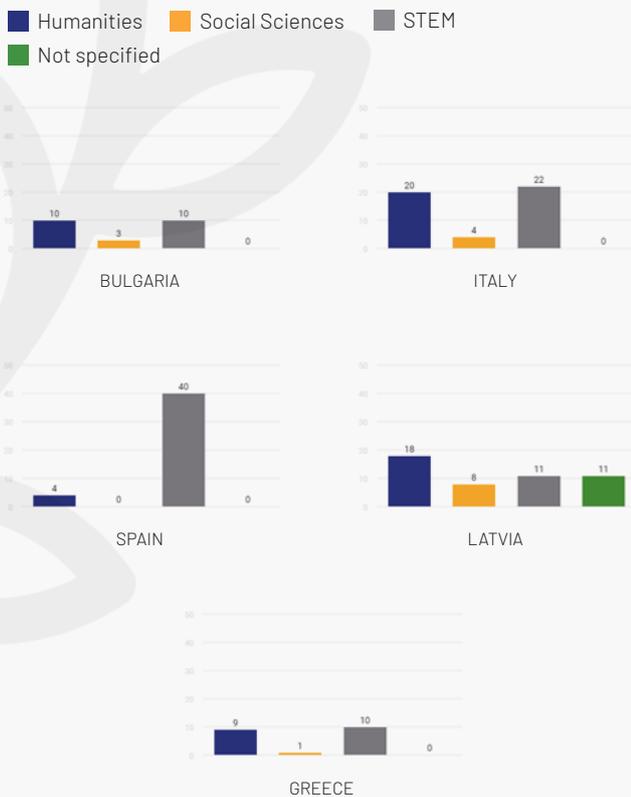
Most of the teachers are middle aged (average age 48,6 years old), with a long experience in the school field (more than 10 years of teaching experience). Overall, there is a good balance among STEM sciences and humanities.



D5: How long have you been teaching?



D4: Subject taught



The structure of teachers' questionnaire is very similar to the students' one and is divided into the following parts:

1. Investigating the level of knowledge regarding the environment and SD (*questions 1-5*);
2. Exploring how Sustainable Development and the SDGs are taught (*questions 6-7*);
3. Exploring whether teachers discuss sustainability issues (*questions 8-10*);
4. The final part of the questionnaire explores the role of school in teaching sustainability, especially through food (*questions 11-21*).

As far as the first part is concerned, teachers demonstrate a significant level of knowledge about Sustainable Development and Agenda 2030; a relevant number among them also declares that the definition of SD seems too limited, thus showing their awareness of the complexity of the issues related to Sustainable Development.

The percentage of those declaring, in **Question 1**, that they do not know the definition is quite low (from approx. 17% in Bulgaria to 2% in Italy). A significant number also declares that the definition seems too limited, which also shows a significant level of awareness of the complexity of the issues related to Sustainable Development.

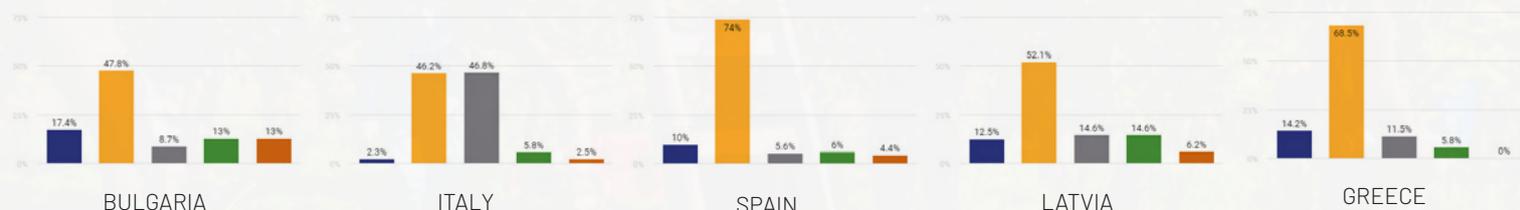
The same level of competence is clearly showed in the results of **Questions 3 and 4**. In question 3 the correct answers go from 94% in Italy to 57% in Greece, and in question 4 from 98% in Italy to 78% in Bulgaria. As observed in the students' questionnaires the involved schools have a different level of involvement in teaching and organizing activities on Sustainable Development, which explains the variety of results.

Question 1

"Sustainable development is development that meets the needs of the present without compromising the ability of future generation to meet their own needs."

Have you ever heard of sustainability or sustainable development in these terms?

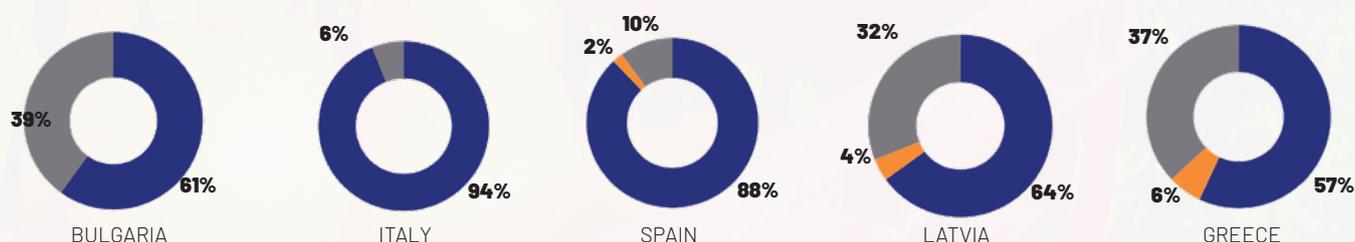
- This definition is totally new to me, but I like it!
- I agree with this definition.
- This definition is too limited.
- I've never thought of sustainable development in these terms.
- I've never thought of defining sustainable development.



Question 3

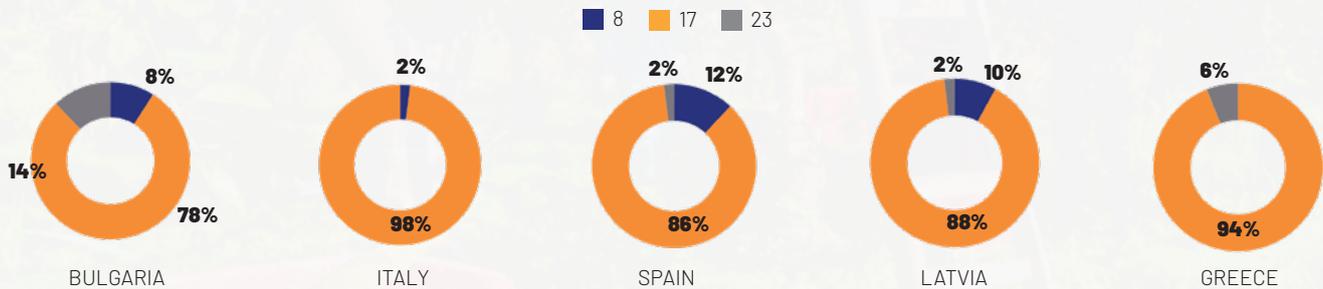
What is Agenda 2030?

- An action programme for people, the planet and prosperity signed in 2015 by governments of 193 UN member Countries.
- An action programme to beat famine in the world.
- An action programme that defines the UN most important events until 2030.



Question 4

How many sustainable development goals are there?



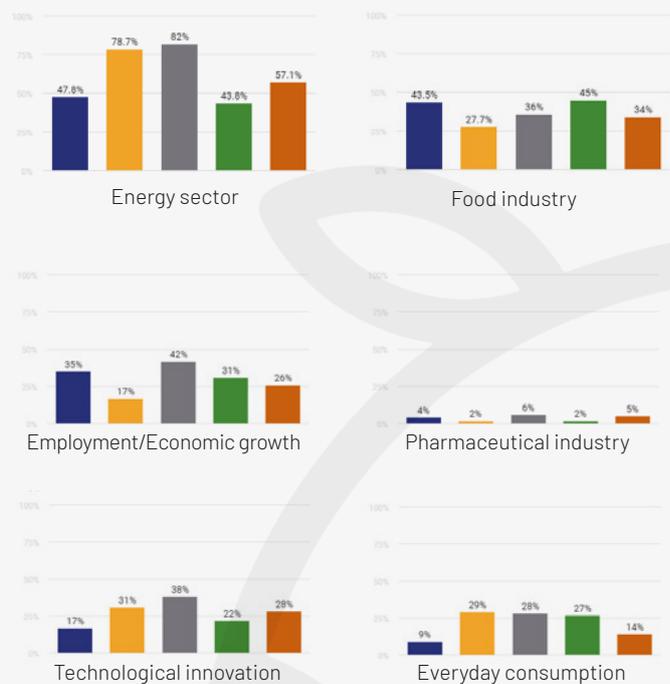
When looking at the fields of interest for Sustainable Development in question 2, it is interesting to note that there are shared levels of perception with reference to energy, food industry and technological innovation.

Vice versa, agriculture is not considered a relevant field in Countries such as Spain (0%) and Bulgaria (17%). An interesting feature, in our opinion, is the attention devoted to the field of education which goes from 65% in Bulgaria and 60% in Latvia, to 36% in Italy. These data need then to be read with reference to the willingness of the teachers to be trained in issues related to teaching sustainability through food. Finally, it is also interesting to note that the field of health is considered relevant in Bulgaria and Latvia (approx. 47%), with a notable difference, for example, with Italy (12%).

Question 2

According to you, what are the most important fields for sustainable development?

Legend: Bulgaria (blue), Italy (orange), Spain (grey), Latvia (green), Greece (brown)



These initial results indicate a solid base of knowledge in the teacher component of the partner schools. However, it seems that there is room for an intervention with appropriate training and tools to make sure that what teachers know about Sustainable Development is also transferred to their students.

A dichotomy between what teachers know and what teachers do at school about Sustainable Development is present in the results of question 14. In this case only an average of 30% of the teachers in the various Countries declared that knowing about the themes of Sustainable Development will improve their professional competences.



Also, when looking at the results in **Question 5**, comparing with those of the students, we confirm that teachers have a better understanding of the complexity of the concept of Sustainable Development and, in particular, they seem to consider quite relevant its social dimension. At the same time, also in their case, there is a strong perception of the relevance of the environmental dimension of SD, without significant differences among Countries. The large majority of the teachers, by way of example, in question 5 considers environmental protection as the core theme of sustainable development.

The results obtained in **Question 6** are also quite relevant in defining how teachers approach Sustainable Development as a theme with an impact at school level⁶. Question **6a** shows that teachers perceive in general SD as not fully embedded in education. Practically in all Countries teachers chose level 3 as their preferred answer.

Level 1 received very little attention as well. Thus, teachers think that SD is already part of the curriculum, but, at the same time, they think that something more could be done. In terms of the Project this is a very positive results, demonstrating the need of further development for SD education tools and methodologies.



Interestingly teachers seem not fully convinced that SD education should deal with all the 3 dimensions of sustainability (**6c**), although positive responses (level 3 and 4) in **6b** seem somehow in contradiction with the above statement. It could be inferred that teachers have yet to develop a firm approach on how to address Sustainable Development in education.

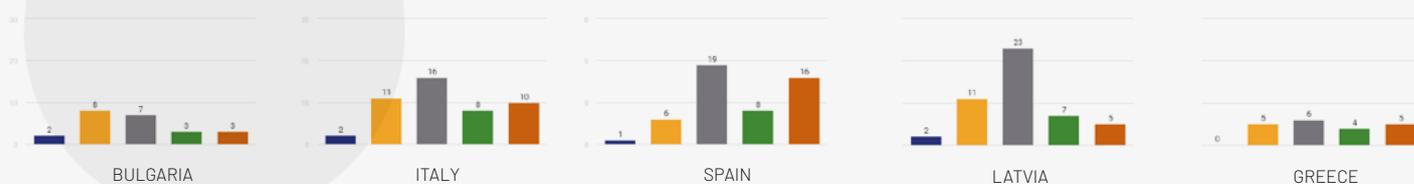
6. Please note that for questions 6 and 7 the numbers in the tables indicate the teachers answers and not their percentage

Question 6

According to your opinion, rate the following statements about sustainable development, on a scale from 1 to 5, where 1 is “nothing” and 5 “a lot”.

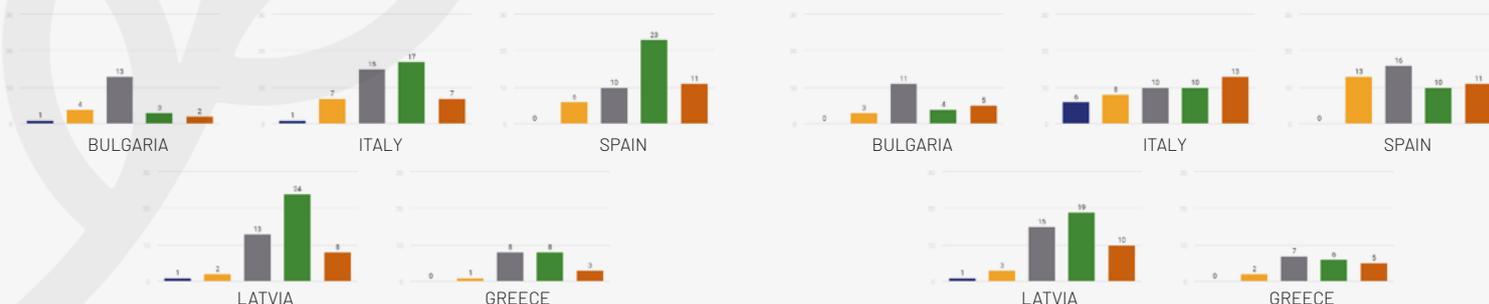
■ 1 ■ 2 ■ 3 ■ 4 ■ 5

6A- The implementation of of the Sustainable Development Goal at school is still in its infancy.



6B- The implementation of of the Sustainable Development Goal at school mainly focuses on environmental sustainability.

6C- The implementation of of the Sustainable Development Goal at school includes environmental, economic and social sustainability.



Results of **Question 7** also deal with how the teachers view Sustainable Development education. In this case there also some interesting features to consider. As to whether science teachers are better equipped answer attest themselves on medium –low levels (2 and 3) with very few choosing the maximum level 5 in all Countries. That should indicate teachers are quite aware of the multidisciplinary dimension of SD education, although very few of them choose level 1 (indicating they do not believe science teachers are better equipped, also in line with sample. In fact, there is a good balance among STEM sciences and humanities).

Although teachers seem to not fully believe that SD education is complicated (the majority chose levels 2 and 3), they believe that specific skills are necessary, including the participative-transformative approach. All in all, question 7 seems to indicate a lack of firm beliefs in the area of how SD education should occur, considering that the majority of participants in the various Countries has chosen medium levels for their answers.

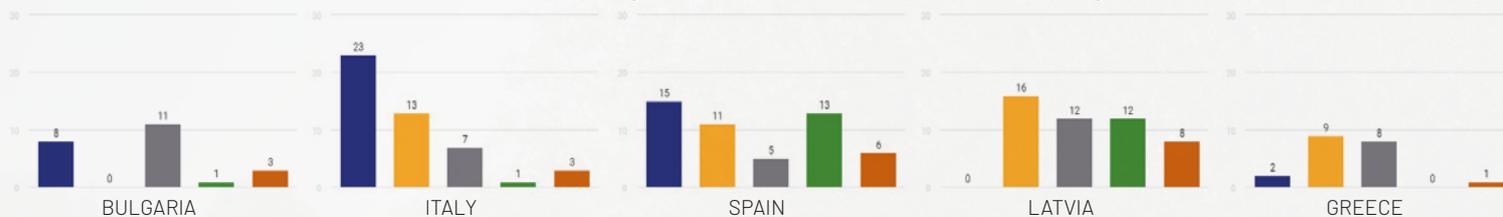
These results are also possibly influenced by the fact that, as stated at the beginning of the report, there are relevant differences in the experience of the partner schools in projects linked to Sustainable Development and sustainability through food education. This is probably a very useful insight in the situation of many European school and will give the opportunity to the partnership of the Project to test the tools in a variety of contexts. Although there are different level of experiences in SD education, there are less relevant differences in the level of personal knowledge in the field which will contribute to the quality of the tools to be developed.

Question 7

Based on your teaching experience, rate the following statements, on a scale of 1 to 5, where 1 is "Nothing" and 5 is "A lot".

1 2 3 4 5

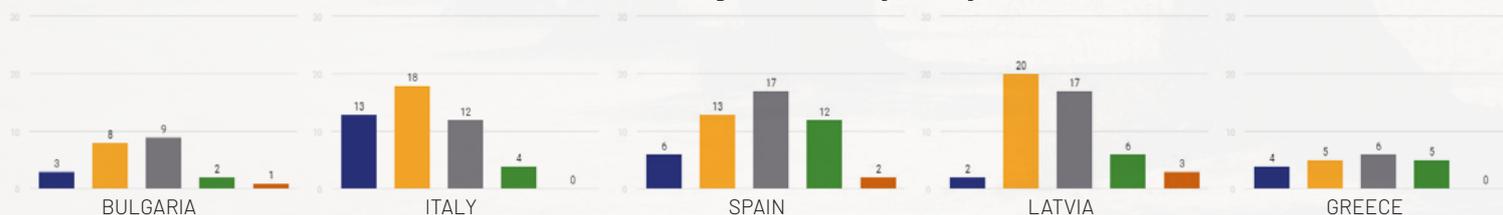
7A - Not all the subjects are suitable to tache sustainability.



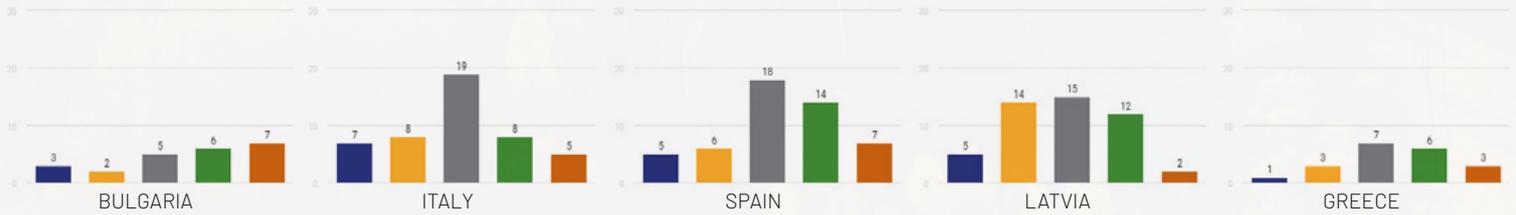
7B - Science teachers are better prepared to teach sustainability.



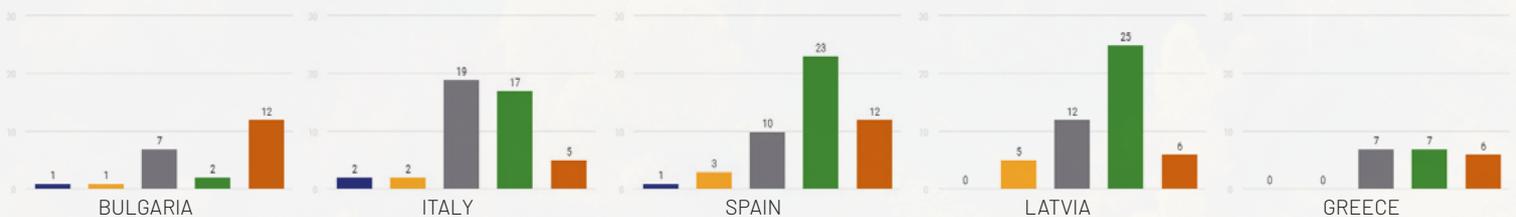
7C - Teaching sustainability is easy.



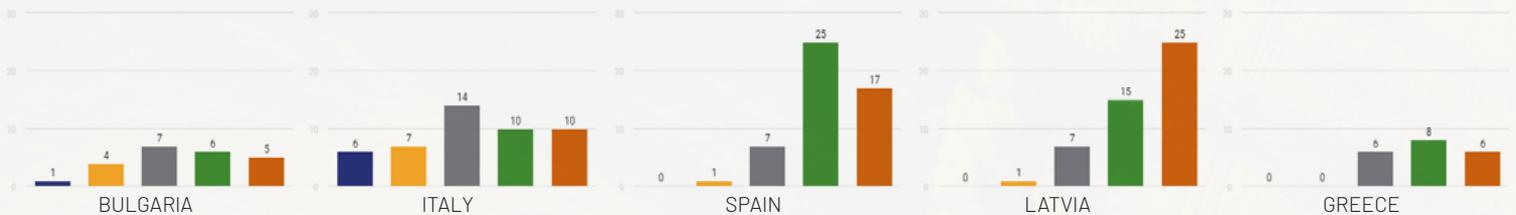
7D - In order to teach sustainability specific skills are required.



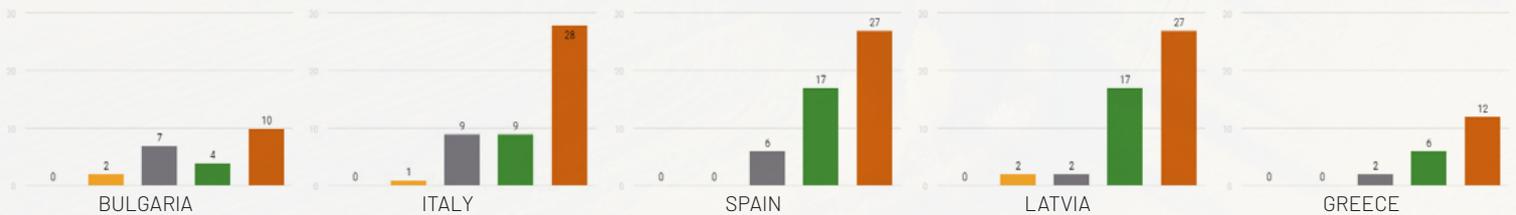
7E - In order to teach sustainability specific approaches are needed, such as (but not limited to) participative and transformative approach.



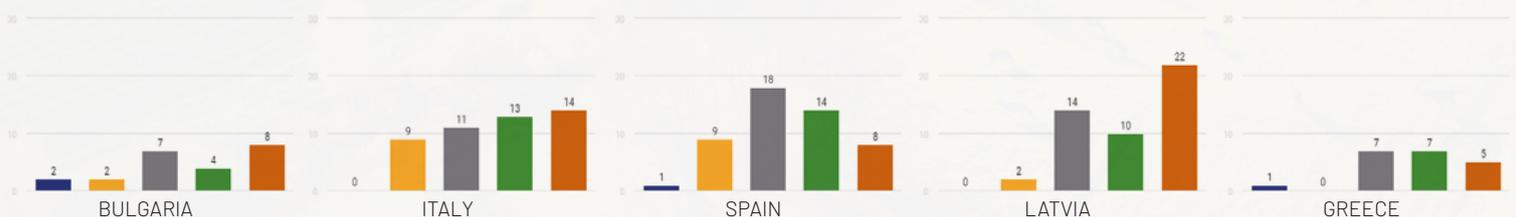
7F - In order to teach sustainability an environmentalist attitude is required.



7G - In order to teach sustainability a multidisciplinary approach is needed.



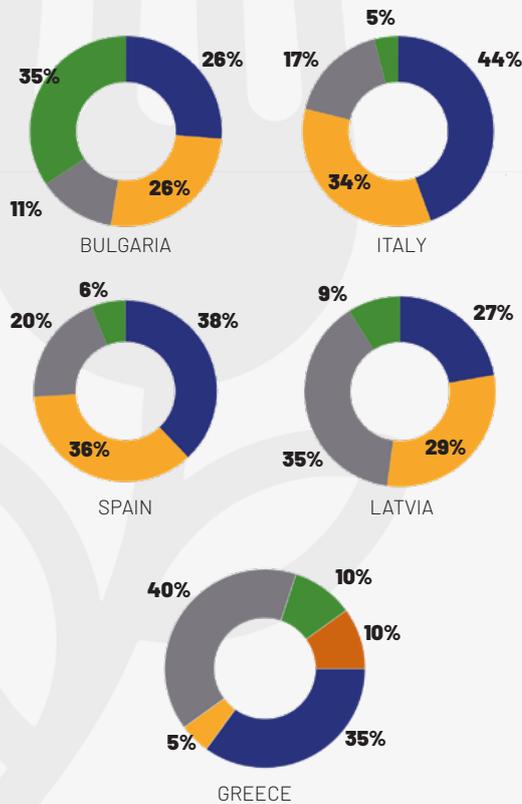
7H - In order to teach sustainability field experience is fundamental.



Question 8

How often have you heard of sustainability last year?

Very often (dark blue), Often (orange), Pretty often (grey), Rarely (green), Never (red)

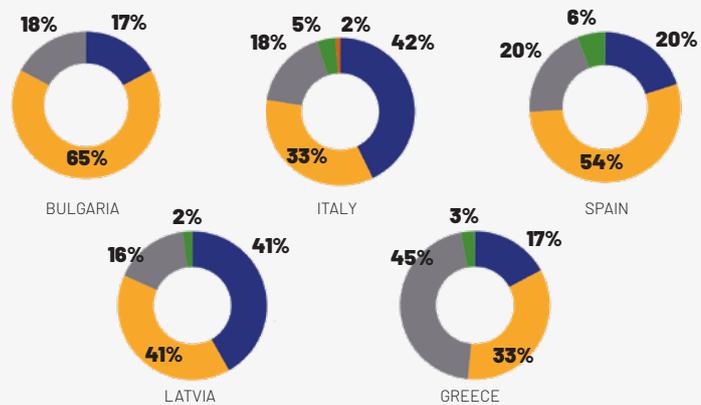


The fact that teachers know about Sustainable Development more than students is also demonstrated by **Question 8**. In this case, with the exception of Greece (7%), the answer “never” was not used. The results in **Question 9** show some similarities with the students’ data considering that teachers also (with the exception of Italy) discuss Sustainable Development outside the school system, as it was for students.

Question 9

In which of these context have you most heard of sustainability?

At school (dark blue), On newspaper, TV, radio (orange), On websites, social networks (grey), Through friends, in other informal situations (green), Through family (red)

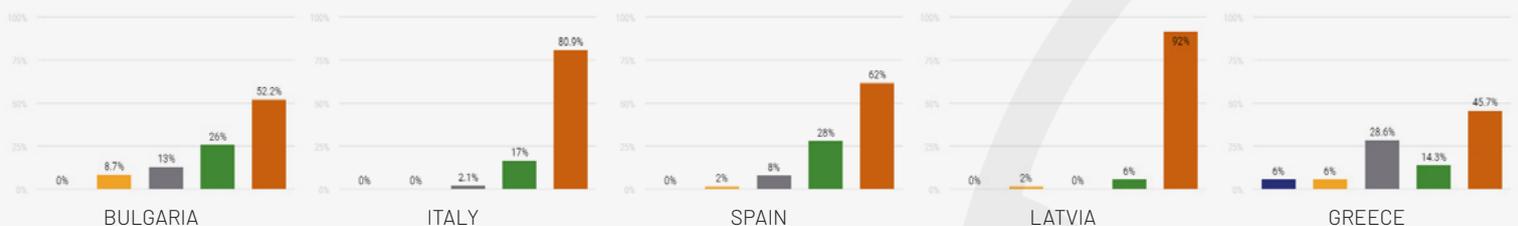


Taking into account the above comments, in **Question 10** teachers maintain that it would be important to deal with sustainability at school, considering that answers in level 4 and 5 reach 98% in Italy and Latvia up to 61% in Greece. In terms of the project, it is important to capitalize such results because they show a significant space of improvement providing appropriate tools, ready and easy to use, in order to make sure that this interest brings an impact on the competences of the students.

Question 10

On a scale of 1 to 5, where 1 is the minimum and 5 the maximum, how important is it to deal with sustainability in school?

1 (dark blue), 2 (orange), 3 (grey), 4 (green), 5 (red)



In the development of the Project's tools the results in **Question 11** are extremely relevant.

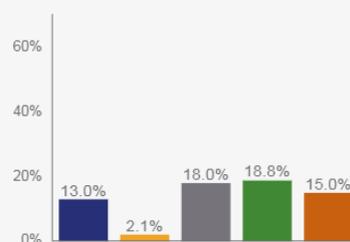
The proposed answers that received overall the majority of the attention of the teachers are "dedicated lessons to sustainability themes" and "dedicated lessons on local food production". Also the answer "launching urban school agriculture" received relevant attention in all Countries. On the contrary answers "introduce healthier food" and "implement short food chain" did not receive significant attention (with percentages around max 15%, with the notable exception of Bulgarian teachers the 68% of which chose introduce a healthier diet at school). Teachers see their role as connected with didactic activities and they apparently do not feel involved in the overall organization of the school (canteens etc.).

Finally, it is worth noting the activities connected with social inclusion are largely ignored by teachers. This element shows the lack of perception of Sustainable Development teaching as connected only to limited dimensions of the concept. As we have already commented upon, the trans disciplinary dimension of the concept of Sustainable Development is not fully understood and sustainability themes seem to be largely intended as related to environment, energy, agriculture and similar subjects. Once again in the design of the project's teaching tools it is important to make sure that such a multidisciplinary approach is fully embedded.

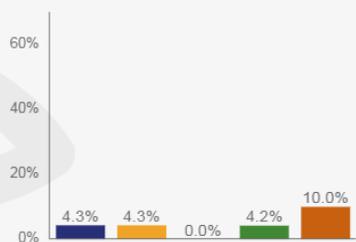
Question 11

In your opinion, which action would be better to promote sustainability in school?

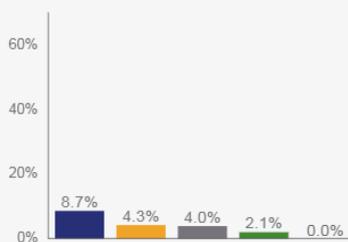
■ Bulgaria ■ Italy ■ Spain ■ Latvia ■ Greece



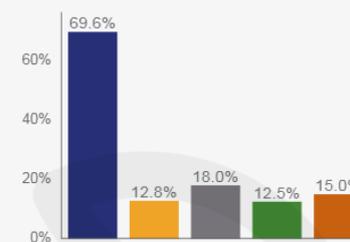
Implement a short food chain (local food production) in canteens.



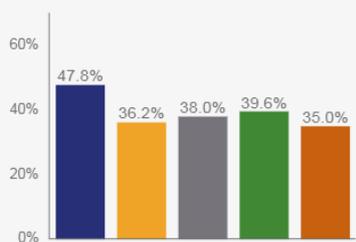
Maximize inclusion of students with disabilities in the education system, remove physical and attitudinal barriers.



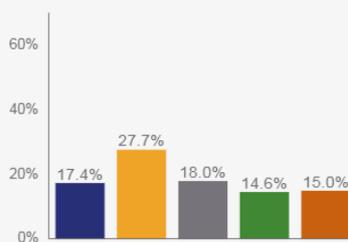
Maximize inclusion of students belonging to vulnerable groups (migrants, refugees,...)



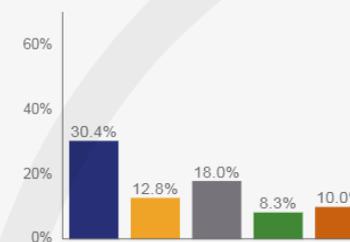
Introduce healthier food (vending machines, canteens, ...) and less plastic.



Dedicate lesson to sustainability themes.



Dedicate lesson to local agriculture and sustainable food production.



Launching "urban-school agriculture" initiatives.

Questions 12 and 13 are devoted to the analysis of existing best practices at school level with reference to the organization of canteens and out of school activities related to food chain and agriculture. In this case the results gathered in the survey match those obtained with the collection of best practices.

According to question 12, only schools in Latvia and Greece have the use of the canteen and could properly answer the question.

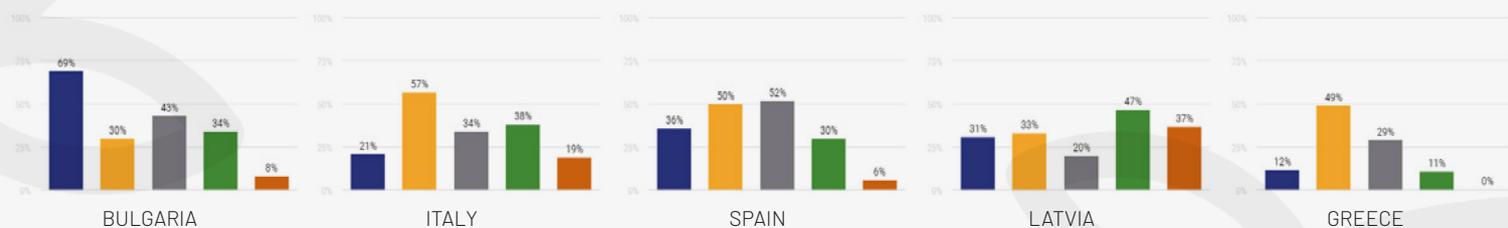
When it comes to activities there also strong differences among the involved schools, only in Italy and Latvia there seems to be a direct involvement of the teachers and the school in the organization of said activities. This is probably due to the diverse categories of schools participating in the project. Some of them do not have a specific focus of food and agriculture and did not consider such activities as “useful” in order to discuss Sustainable Development. The Project’s tools will need to address the challenge of sharing the model of teaching sustainability through food in secondary schools which have no direct curricular links in the field of nutrition and agriculture.



Question 14

You would like to deal with sustainability with your students because:

- You'd like to deepen you knowledge on these themes.
- Knowing these themes better will make you more aware.
- It's part of your “school program” or “school teaching requirements”
- You's like to contribute to the pursuit of the 17 SDGs.
- Knowing these themes better will make you better qualified as a teacher.

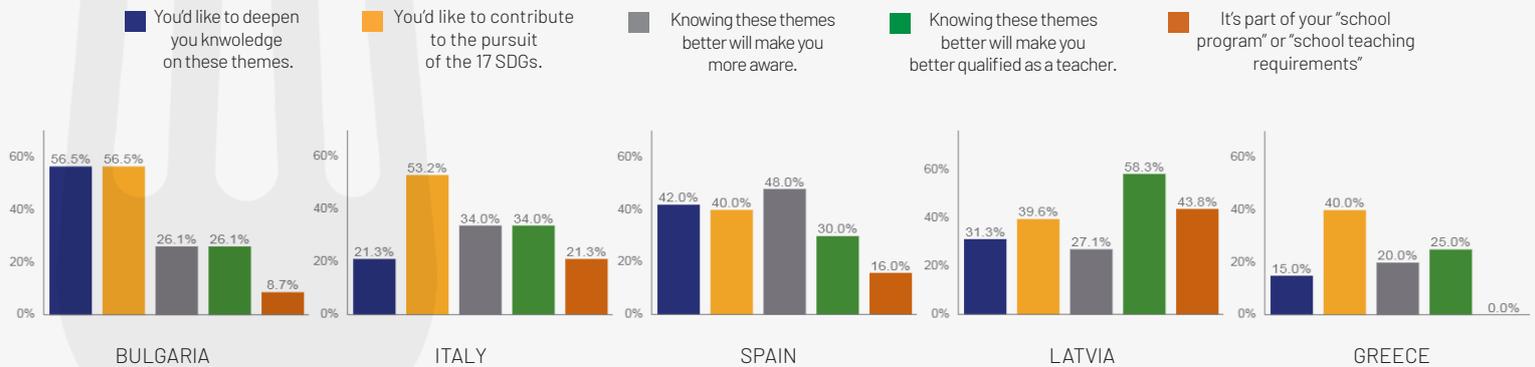


Having said that it is also important to note that teachers have a certain level of commitment to the concept of including Sustainable Development education in their activities.

Comparing the results of **Question 15**, together with **Question 14** (see above), it seems that the participating teachers are more interested in including food sustainability education rather than SD education per se. Although only an average of 30% choose item 2 of the answer (with the exception of Latvia 58%), many teachers believe that teaching sustainability through food will produce a positive impact in terms of progress in the achievement of Agenda 2030 Goals. These teaching activities are nevertheless not considered as a compulsory part of the curriculum .

Question 15

You would like to deal with food sustainability with your students because (you can select 2 answers):

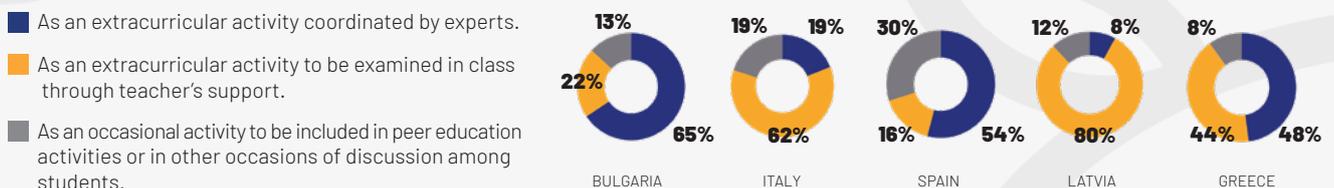


With reference to how teachers imagine the inclusion of the themes of sustainable development within their activities, **Question 16**, there is a strong polarization between those believing that it would be important to consider these activities as part of the curriculum (79% Latvia, 62% Italy) and those who maintain that it would be better to have them as extra-curricular ones (65% Bulgaria, 54% Spain) with Greece having basically the same percentages for both options.



Question 16

Which is the method you consider more suitable for sustainable education in schools?



This polarization represents a challenge for the development of the Project. It will require careful consideration in the definition of appropriate teaching tools capable of satisfying the needs of those teachers who are still reluctant in including education to sustainability through food as part of their usual lesson planning.



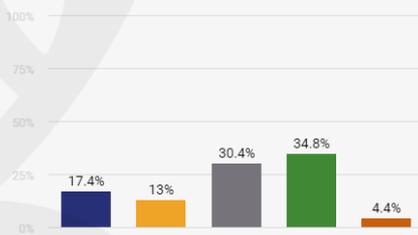
As to the needed competences for sustainable development education, **Question 17**, teachers show quite a variety of perspectives. In general terms the competence “learning to do” is not considered particularly relevant (with the exception of Latvia 79%) whereas “learning to know” and “learning to live together” received similar attention in the various countries.

This element requires careful consideration in the development of the Project’s tools in order to make sure that the suggested approach of including several categories of competences is duly embedded.

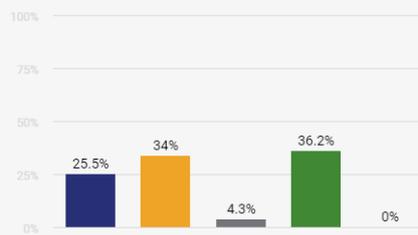
Question 17

Which competence do you consider the most important for sustainable development education in schools?

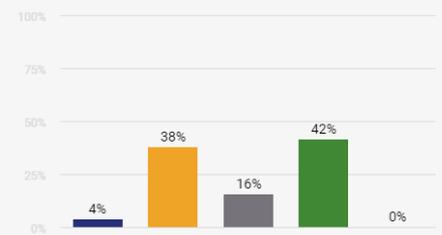
■ Learning to know
 ■ Learning to live together
 ■ Learning to do
 ■ Learning to be
 ■ None of these



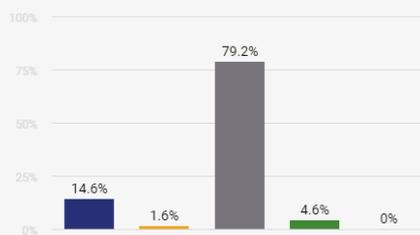
BULGARIA



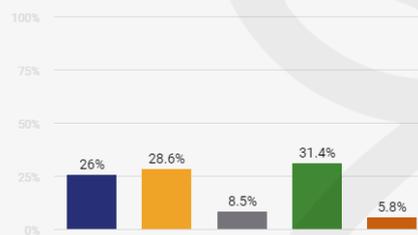
ITALY



SPAIN



LATVIA



GREECE

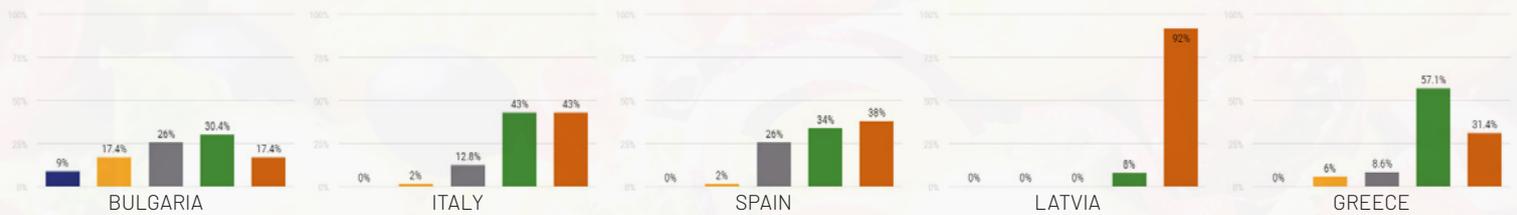
Finally in the part of the questionnaire devoted to education to sustainability through food, **Questions 18, 19, 21**, there are some interesting features worth mentioning. In general there seem to be a strong interest on the use of food for teaching sustainability.

Positive answers (levels 4 and 5) received the large consensus (from 100% in Latvia to 47% in Bulgaria). On the other hand there is a strong polarization with reference to the use of food themes. In Italy for example 60% of the teachers declared to have done so already, whereas in Latvia 92% chose the negative answer. Moreover this polarization is present also in question 19-1 where teachers in Italy declared to have used already prepared materials (69%) whereas in Greece and Spain 60% and 88% affirmed the contrary.

Question 18

On a scale of 1 to 5, where 1 is the minimum and 5 the maximum, how important is it to use food teaching sustainability in school?

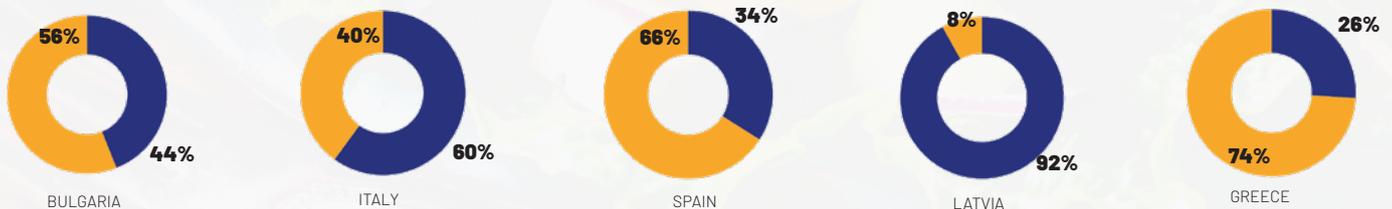
■ 1 ■ 2 ■ 3 ■ 4 ■ 5



Question 19

Have you ever used food to introduce sustainability to your students?

■ Yes, I have. ■ No, I haven't



A careful reflection is due in the analysis of **Question 20** (please note that Spain did not include all items in the questionnaire)⁷.

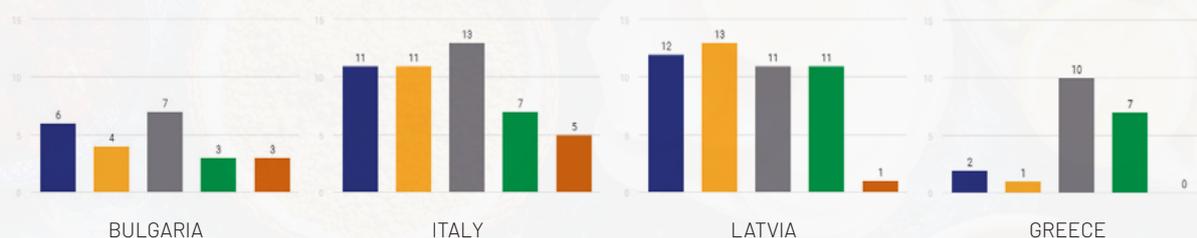
Teachers are quite aware of the fact that teaching sustainability through food requires a multidisciplinary approach and not all of them are convinced that science teachers are better equipped in order to do so or that field activities are required. As to the methodology, there seems to be not a strong consent on the possibility to use transformative-participatory approach. This element needs probably to be further analyzed. It might be possible that teachers believe that, due to the complexity of the themes related to sustainability, a more traditional, knowledge transfer approach is needed. The benefits of a more transformative methodology will probably better explored in the testing phases of the educational tools that will be developed by the project, taking place in the academic year 2022/2023.

Question 20

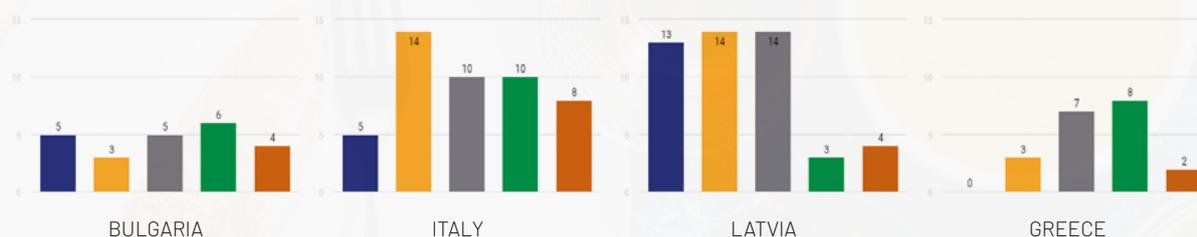
On the base of your teaching experience, rate the following statements, on a scale of 1 to 5, where 1 is "Nothing" and 5 is "A lot".

■ 1 ■ 2 ■ 3 ■ 4 ■ 5

20A - Not all the subjects are suitable to tache sustainability through food.

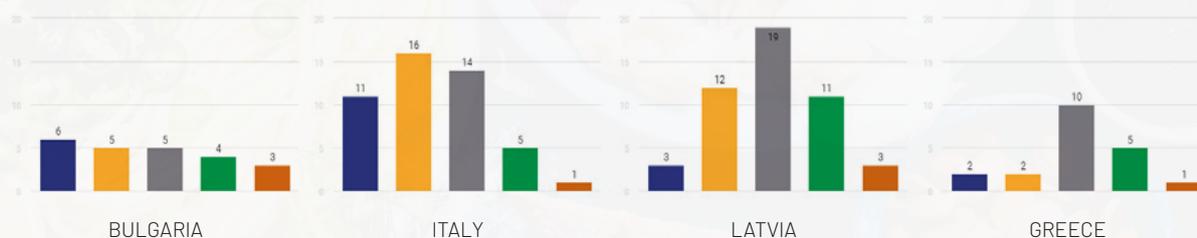


20B - Science teachers are better prepared to teach sustainability through food.



7. Please note that for questions 20 the numbers in the tables indicate the teachers answers and not their percentage

20C - Teaching sustainability through food is easy.



20D - In order to teach sustainability through food specific skills are required.

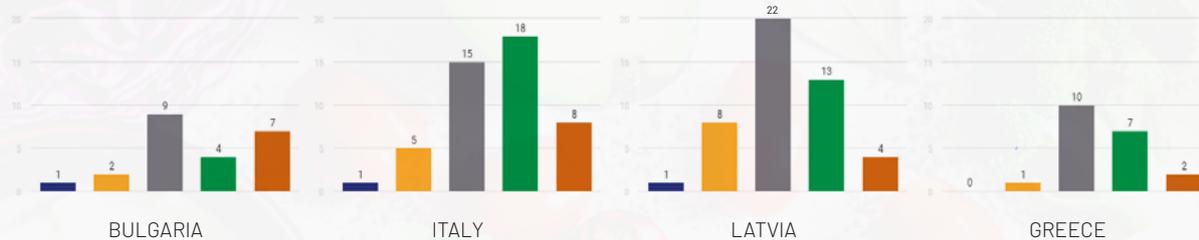


Looking at question 20 from the perspective of the various disciplines taught, it is interesting to note that there are different approaches to the same questions from the same category of teachers in the various Countries.

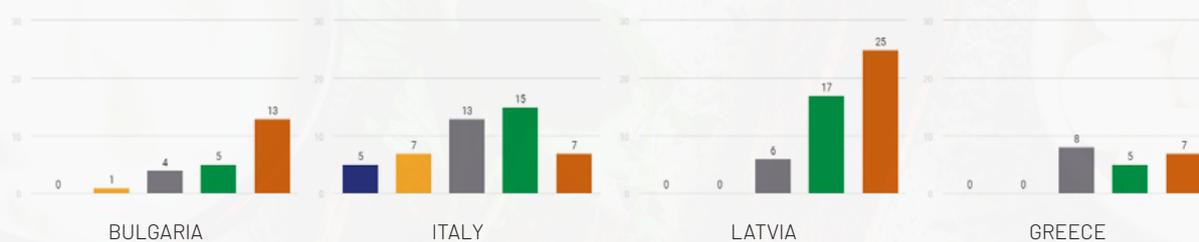
For example, social sciences teachers in Italy, Latvia and Greece consider important to have specific skills (levels 4.5 and 5), whereas in Bulgaria the level chosen is 3. When looking at the statement “not all subjects are suitable to teach sustainability” there are quite low levels for all categories of teachers in Bulgaria, level 3 answers in Italy and Latvia (but in different categories) and, on the contrary, high-level answers in Greece.

Once again, this variety of results, which underlines different sensitivities among teachers, needs to be taken into consideration and represents a challenge for the development of the Project’s tools and trainings.

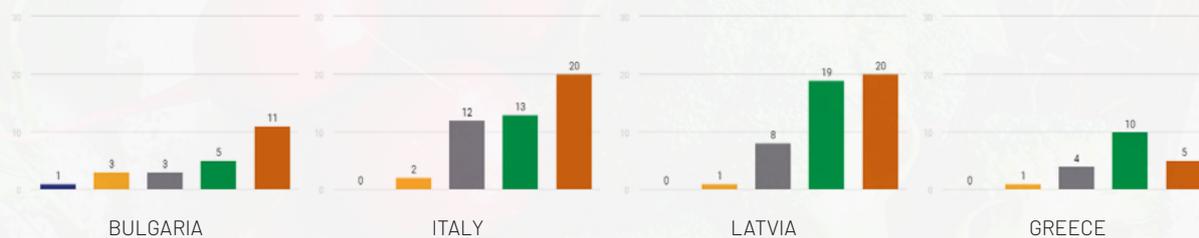
20E - In order to teach sustainability through food specific approaches are needed, such as (but not limited to) participative and transformative approach.



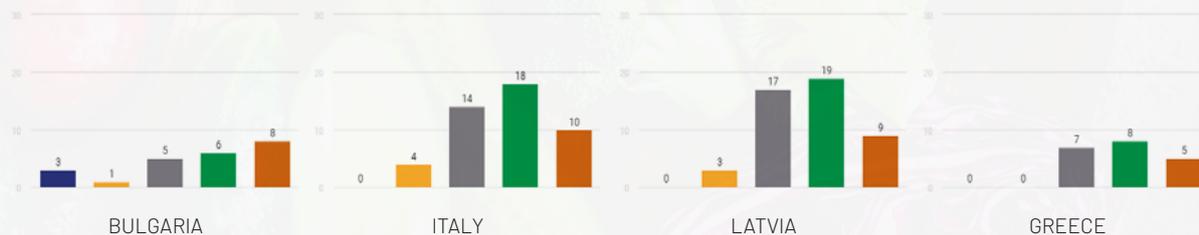
20F - In order to teach sustainability through food an environmentalist attitude is required.



20G - In order to teach sustainability through food a multidisciplinary approach is needed.



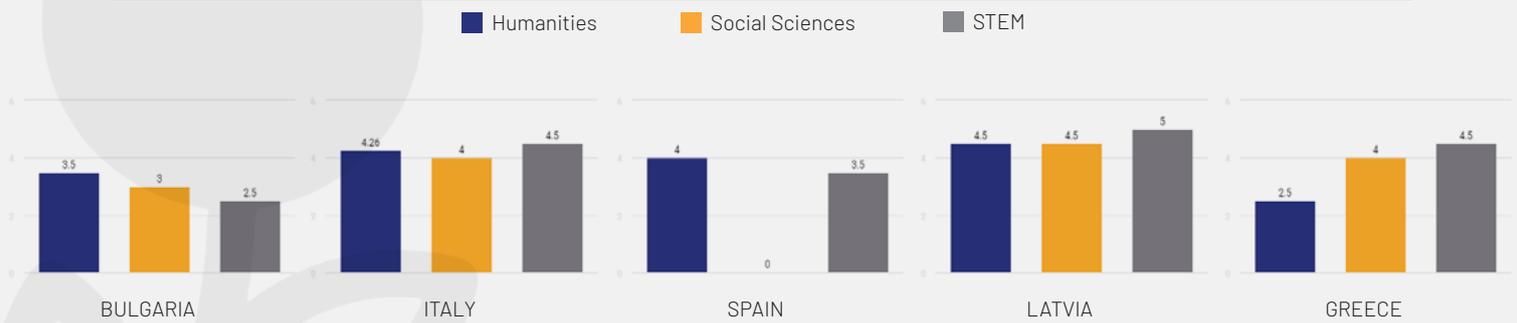
20H - In order to teach sustainability through food field experience is fundamental.



It is interesting to note (see **Table on question 18** below), that the above mentioned differences are not so crucial while dealing with the relevance of teaching sustainability through food: in 3 Countries/schools there seem to be not a specific difference between the approach adopted by teachers of humanities and the STEM ones. Social sciences teachers, where present, also seem quite interested in developing the topic.

Subject taught and Question 18

On a scale of 1 to 5, where 1 is the minimum and 5 the maximum, how important is it to use food teaching sustainability in school?

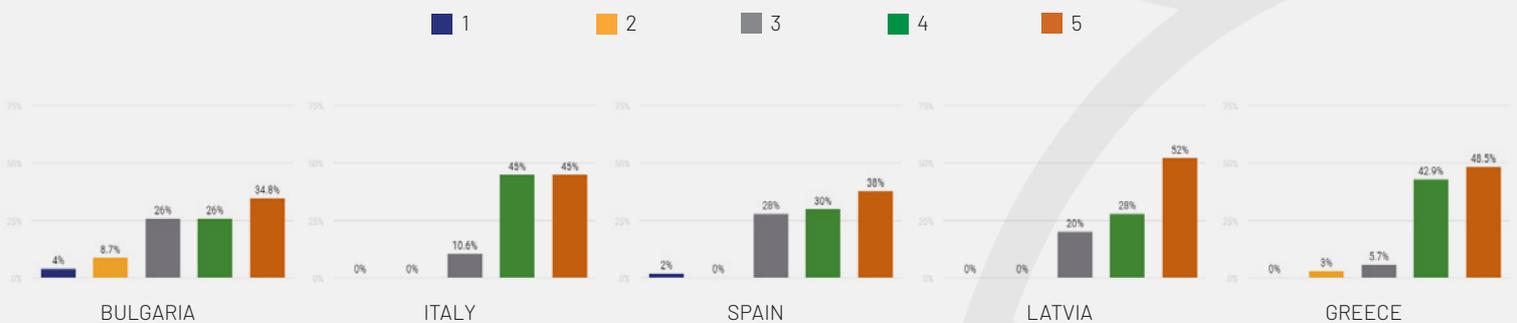


The interest manifested in teaching sustainability through food outlined above probably explains the outcomes of **Question 21**, where the large majority of teachers in all countries chose the levels 4 and 5 of the proposed question on the willingness to acquire a specific set of skills. This positive outcome is particularly relevant for the success of the Project, which has clearly identified an interesting space still available.



Question 21

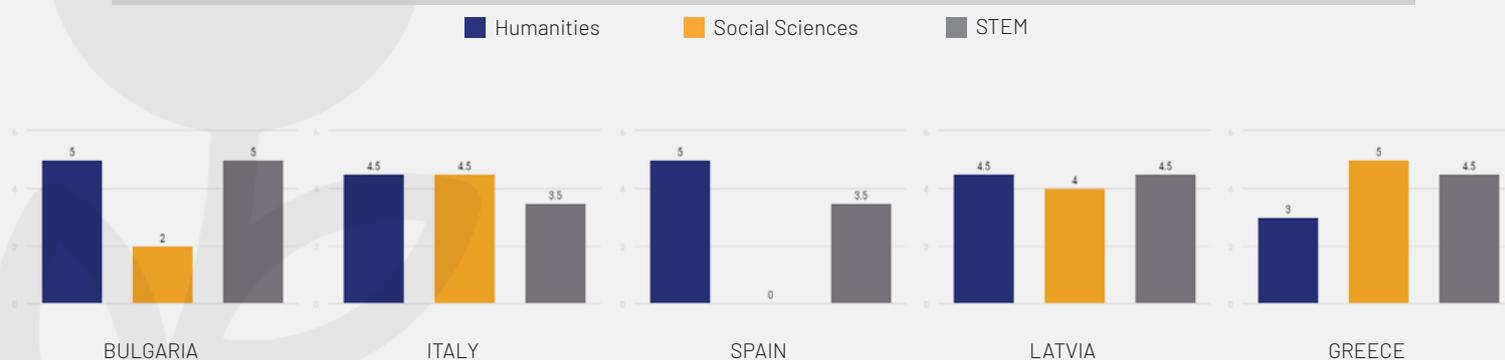
On a scale of 1 to 5, where 1 is the minimum and 5 the maximum, how useful do you think it is acquiring a specific set of skills for teaching sustainability through food?



In certain cases (Italy and Spain) STEM teachers are less open to the idea of acquiring new/specific skills. In Bulgaria it seems that humanities teachers are more reluctant as well as social sciences teachers in Greece. This variety of responses need to be probably better explored in order to make sure that the tools developed by the Project will be capable of attracting the attention of teachers of various disciplines thus granted the multi and trans disciplinary approach which is considered necessary in order to promote sustainable development education.

Subject taught and Question 21

On a scale of 1 to 5, where 1 is the minimum and 5 the maximum, how useful do you think it is acquiring a specific set of skills for teaching sustainability through food?



At the same time, while developing the Project's teaching tools it will be important to take into account that those tools are going to be used by very different categories of teachers: young ones and experienced ones, those who have a significant level of competence concerning Sustainable Development and those who do not; those who have been practicing education to sustainability through food already and those who are totally new comers in the field. It is possibly worth exploring the possibility of developing different steps in the Project's tools and training in order to make sure that everybody receives a meaningful competence advancement.



Teacher Questionnaires - Conclusions

188 questionnaires have been collected in partner schools.

Most of the teachers in the sample are middle aged women (average age 48,6 years old), with a long experience in the school field (more than 10 years of teaching experience). Overall, there is a good balance among STEM sciences and humanities.

The first area of the questionnaire investigated the level of knowledge regarding the environment and SD. Not surprisingly, teachers replied better than students, but collected data show some relevant differences among schools that took part in the survey. In general, Italian and Spanish teachers are more familiar with these topics, followed by Latvians and Greeks. Bulgarians seem to be less familiar with these topics.

They highlighted the role of education for Sustainable Development, followed by the energy sector and they seem to be more aware of the impact of small actions, since for the majority they have an average impact. Interestingly, none of them is vegetarian and only 10-20% reduced meat consumption. That suggests that the diet of student is more varied.



The **second area** of the questionnaire investigated how SD and SDGs are taught. According to teachers, both are taught at school, even though not so often. Environmental issues are very important, but they are not the only topics related to SD and SDGs. In fact, they can be implemented within several disciplines, and not only by science teachers (who, however, are still recognized as qualified people to do so; but it must be taken into account that in the sample there were many science teachers, and this data could be biased). Finally, no one thinks that teaching SD is easy and that suggest teachers would appreciate receiving more support and/or to develop specific skills and competences.

As expected, **teachers are more familiar with the topics** than students and, on average, they often hear about SD (or quite often), with the exception of Bulgaria. Teachers prefer traditional information channels (such as newspaper and tv) but school remains an important channel for everyone.

The last area of the questionnaire investigated about teaching (food) sustainability at school. First of all, teachers consider the introduction of healthy food and dedicated lessons the most suitable options to promote sustainability at school. Instead, Greece, Bulgaria and Spain think activities carried out by experts are the best solution to teach sustainability (perhaps because they have less experience on these issues, compared to their Latvian and Italian colleagues). On the other hand, Italian and Latvian teachers state that a curricular activity managed by teachers is better. Despite the method, all the teachers recognize the importance of teaching sustainability, and no one states it is an activity to do occasionally.

Teachers want to deal with sustainability for personal reasons (such as, being a better person or contribute to the Agenda 2030). No one chose it because part of their school program. Only Latvian and Bulgarian teachers (and some Greeks) want to deal with sustainability because they believe they could have some benefit for their job.



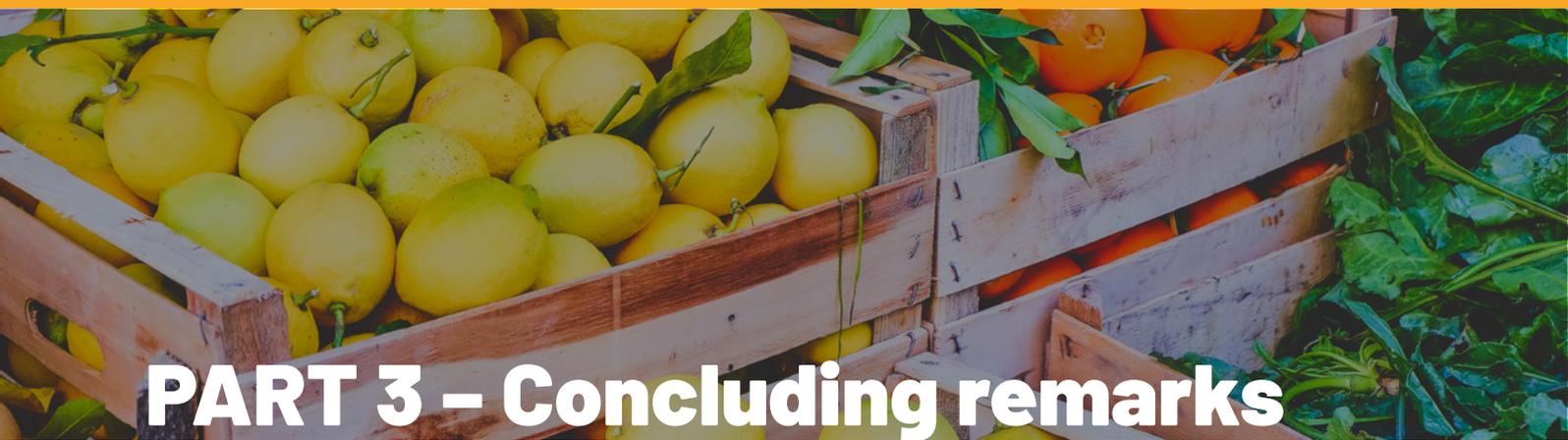
Teaching sustainability through food does not seem to produce extra value. For all the teachers, regardless the subject taught, it's an interesting topic (especially for Latvians and Italians) but it's not fundamental. It must be said that Latvians and Italians participating in this survey are the only ones who have already used the themes of food to discuss sustainability in class and the latter had a variety of ready-made material available.

As far as **competences** are concerned, there are some interesting differences among teachers. The questionnaire adopted the traditional partition of competences (to do, to know, to be and living together). "How to do" is very important for almost everyone, especially for our Latvian school. Another competence for almost everyone (except for Spain) is "knowing". For everyone (except for Latvia) the human dimension of skills is important, which is translated into "learning to be" (Italy, Greece, Spain and Bulgaria) and "learning to live together" (Italy, Spain and Greece).



Finally, all the teachers state that acquiring specific skills to teach sustainability through food would be useful. Italy, Greece, Latvia and Bulgaria expressed their opinion on teaching sustainability through food (data from Spain are missing). Except for Greeks, everyone thinks teaching sustainability through food is not easy, and that all the subjects are suitable (hence science teachers are not the only one equipped for doing so) and that a multidisciplinary approach is important (but not essential). Instead, field experiences do not seem to be particularly important although it must be said that only few schools organize them (above all, Italy and Latvia).

Last but not least, almost everyone thinks that teaching sustainability through food does not require specific attitudes but specific skills, and that it may be useful to use specific approaches.



PART 3 – Concluding remarks

As stated at the beginning of this report, the aim of the data collection is guiding the Skilled4Food partners in the development of appropriate and adequate teaching tools to reach the Goal of quality education and education to sustainable development through food. However, due to the differences existing in the schools participating on the survey it is not possible to generalize the results and consider them as a clear picture of the existing situation in partners' Countries. Having said that, certain common features have been identified and will lead the development of the project's tools.

Data collected from desk analysis and field research suggest that both teachers and students will benefit from being more knowledgeable and aware about food sustainability and Sustainable Development. In particular, it seems that the existing link between sustainable diets as instruments for individual health and for our Planet's wellbeing is not fully exploited. However, everyone agrees on the importance of teaching sustainability and quite a few teachers believe that the most correct method for sustainability education in schools are curricular activities, to be developed in class through the teacher's support as part of lesson planning and not as an occasional activity.



Although students think their lifestyles are quite sustainable, they seem to lack practical information and need to become more aware of the complexity linked to sustainable development topics. They should be exposed to specific knowledge (e.g., they should know what kind of actions can have a real impact on the environment) and teachers should stimulate their sense of agency. Such acquired knowledge and awareness would be useful for immediate action but also for long-term planning in their future careers. With their answers, teachers also correctly point out the need to include the human dimension of learning, while dealing with sustainability in class, focussing also on "learning to be" and "learning to live together".

“ In this context, Skilled4Food assumes that food is a very versatile topic, and it can be used not only for education in terms of health and nutrition, but also to deepen the understanding of the cultural and social dimension of sustainable development. ”



Having said that, it is important to note that teachers state that it would be useful for them to acquire specific skills to teach sustainability through food, which is not perceived as an easy subject. Moreover, data suggest that readymade materials to teach this subject, such as lesson plans or glossary for technical terms (to share a common language), could help them in this task. Thus, the Project's next step will endeavour to answer to these needs.



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