Young Reporters for the environment: when education and engagement lead to a more sustainable future

Umüt Dilsiz , Viki Kalderon and Lana Khouildi

This article is the result of the collaboration of Umüt Dilsiz (SÜGEP Academy), Viki Kalderon (Cakabey Schools) and Lana Khouildi who helped in the redaction of this contribution highlighting the work of Turkish students engaged through Environmental Education in Sustainable Food Systems.

With time passing by, the climate crisis has had the time to show the extent of the existential threat it represents. Interlinked to biodiversity, climate change needs to be urgently addressed because of the impacts on food systems and security, livelihoods but also the damages environmental catastrophes can create.

Climate change will be the fairest catastrophe mankind has known. No one is immune to it and having wealth will mitigate certain effects but will not allow you much more. However, for those already vulnerable, it will stretch the resilience gap between the richest and poorest. Rising temperatures are fueling environmental degradation but also natural disasters which then impacts food and water security but also peace, stability and security. This environmental degradation can take multiple forms: dry weathers, reduced precipitation, soil erosion and land degradation, typhoons, heatwaves, rising sea levels… [1]

Everyone is concerned and responsible for the situation as billions of tons of CO_2 are released yearly in the atmosphere because of anthropogenic pressure. We are already 1°C above pre industrial levels and close to 'unacceptable risks'[2]. Since 2015 and the Paris Agreement, Member States have vowed to keep the warming temperatures below 2°C and limit the increase to 1,5°C. If nothing is done, by 2100 we could be experiencing temperatures rising above 3°C.

What does it mean for the Mediterranean region?

The Mediterranean region relies heavily on tourism, travel and has already strained ecosystems with vulnerable economies and societies.

Climate change and its effects will add pressure on different matters. Warming 20% faster than the global average, the Mediterranean region will experience numerous days with temperatures above 37°C, droughts[3], water stress and wildfires[4] which in turn will impact the tourism industry, the communities living on the coast - ⅓ of the region's population - but also agriculture, food security and social peace. This difficult situation will discourage tourism especially during peak seasons which accounts for almost 15% of the region's GDP.[5]

With around 510M people the MED region will see its water demand double or triple by 2050[6]. In many basins, there is a planned decline of 10% in water supplies by 2030 and up to 25% by 2050 stressing the situation of already heightened

[1] The climate crisis - a race we can win, UN.

[2] World Meteorological Organization

[3] Italy, Portugal, Spain, and parts of Greece will experience a 10% reduction of rainfalls during dry warm seasons in 2030 and 20% in 2050. Drought conditions could attain six months.

[4] With heat and dryness, the current areas on the Iberian Peninsula experiencing wildfires will double

[5] McKinsey Global Institute, A Mediterranean basin without a Mediterranean climate ? (2020)

[6] Population et développement, Mediterranean 2017 Quality Status Report, UNEP.

water stress countries like Morocco, Libya, Greece and Spain.[7]

For agriculture and food security, almost 50% of the region's agricultural production value comes from grapes (14%), wheat, tomatoes and olives (9% each) - for the latter, the region produces 90% of the total global supply. However, these crops will not last with the effects of climate change and their sensitivity to fluctuations allowing new and resilient crops to be planted if adaptation strategies are developed. If not, losing agricultural productivity in some countries - especially in the South and East of the region - could have a negative impact on food security, the overall national economic situation and create social turbulence and riots[8] because of deepened socio-spatial inequalities.

Climate change is a risk multiplier that worsens existing challenges, which is difficult for a region that has a variety of structural issues. Considering the actual state of the region, impacting the tourism sector and food production will create a negative domino effect putting the countries under a lot of pressure and fostering mass displacement. That is why there is an urgent need to invest in adaptation and to drive a fundamental shift so the next generations can create and invest in adaptation and mitigation strategies. To do so, education should be considered a priority and an important level to influence direct change on youth and long-term change on the adults they're going to be in the future.

Fortunately, different initiatives exist and promote an education to sustainable development which gives the right tools to young people to better comprehend the actual state of climate change, its effect on the world and how it is possible to counter its effects.

What is YRE and how does it help engage youth through environmental education?

One of these initiatives is Young Reporters for the Environment (YRE), where the objective is to bring up children with an educated stand on environmental issues by giving them the tools and a platform to express their ideas.

Coordinated by the Foundation for Environmental Education, YRE is an award-winning program run by National Operators in over 40 countries for youth between the ages of 11 and 25. They can either come from youth groups, schools or sign up on their own as individuals to enjoy the workshops, events and national competitions organized. YRE is implanted in different countries[9] of the Mediterranean region and helps empower children by uniting different profiles and developing new skills and sensitivity to environmental subjects.

Young Reporters for the Environment is a sort of apotheosis of the two driving forces of today's societies that youth can grasp and make their own: the environmental crisis and news media. Media coverage isn't optimal and lacks straightforward treatment of the facts to the point that movies are now being produced to point fingers at the absurdity and inertia of some while the world is burning. [[10]

In the late 1980s when the first scientific envoys were sent in the Polar regions to analyze the depletion of the ozone layer Philippe Saugier, a young Frenchman had an idea. He founded the Ozone Project and followed with two other youth scientists up north to understand the ozone issue

[7] Climate change in the Mediterranean, UNEP, 2020.

[8] Gana, Alia. « Aux origines rurales et agricoles de la Révolution tunisienne », Maghreb - Machrek, vol. 215, no. 1, 2013, pp. 57-80.

[9] Morocco, Portugal, Malta, Italia, Cyprus, Israel, Greece and Türkiye

[10] OCHIENG, Joshua. Media coverage of Environmental Conservation Issues - The frequency and Significance with which Environmental Issues are reported in the Media ; PhD - 2015.

and disseminate the information they collected in a world that was experiencing the first steps of the Internet. The communications industry has experienced a profound change and is now punctuated by fast information and the opportunity to access and share, to a wide audience, different formats about a variety of subjects. YRE smartly uses these platforms to give to young people a place where they can express their ideas but also develop a myriad of skills such as investigative journalism skills, redaction skills or even active listening and openness to feedback.

The Ozone Project was then absorbed by the Foundation for Environmental Education in Europe. It was the final step towards the creation of Young Reporters for the Environment and its dissemination in the world. The objective was to encourage youth to engage in environment-focused citizen journalism to investigate and report environmental issues.

With a specific methodology divided in four steps:

- Investigate a local environmental issue
- Research solutions to the issue
- Report on the issue and its possible solutions
- Disseminate with the local audience [11]

They start by identifying an environmental issue close to their homes and then conduct extensive research with a variety of sources helping them realize the complexity of situations. Moreover, the idea is to encourage them to find solutions and to justify their ideas with solid scientific evidence and reasoning. After that they need to report their findings in a journalistic piece and organize how and to whom they wish to share the information through a positive approach to inspire change. The last step is dedicated to disseminating the work with the local community through a variety of media such as social media, exhibitions or even local events.

The international head office is based in Copenhagen and manages the international coordination of the program that now regroups 450,000 young journalists in 44 countries. Annually 19,000 photos, articles and videos are submitted to the national competitions. Thanks to this extensive work to engage with youth, YRE was awarded in 2019 the Special Commendation award for the Global Youth and New Media prize which honors actions that excels in providing young people by engaging them with news media and giving them hope for a greener future.

Considering the challenges the Mediterranean region is facing because of the climate crisis but also other structural issues, having such dynamics implemented in schools can have a positive impact on the short and long term. By raising awareness on matters related to environmental issues, youth are also educated to the intertwined links between food systems and the environment and how both can better help themselves to strengthen national resilience.

Special Focus: Türkiye and the Mediterranean, when National Operators engage youth in sustainable development through agriculture-related projects

The YRE programme is implemented in different Mediterranean countries, such as Morocco through to the YRE Mohammed VI Foundation for Environmental Protection - Hassan II International Environmental Training center (34,000 students), in Portugal through Jovens Reporteres para o Ambiante (2,500 students), Malta through Nature Trust (2,000 students), Italy through FEE Italia - YRE (663 students), Greece through the Hellenic Society for the Protection of Nature (390 students) and Türkiye through ÇGS (850 students).

[11] Young Reporters for the Environment, Our History - https://www.yre.global/our-histor¥

The state of agriculture and food systems in Türkiye

Türkiye's area of 783,562 km2 allows the country to have a myriad of terroirs and the ability to diversify its agricultural production easily, especially with fruits and vegetables. There are 38M hectares of agricultural lands with more than 70% of it dedicated to vegetable production, with low mechanization and therefore productivity.

The country produces no less than 80 different varieties of Fruits and Vegetables (F&V) and is self-sufficient in wheat, barley, rye, potatoes and sugar beets. With these conditions, Türkiye is now a world leader in the production of cherries, apricots, figs and hazelnuts. Indeed, agriculture represents 5,8% (2018) of the state's GDP and employs 18,4% of the active population. Its social role is major and even if its share in the national GDP has decreased from 35% in 1970 to its actual rate Türkiye shows a surplus in agricultural products - specifically in the F&V sector. The exports of agricultural products are estimated at 15 bn euros - which represents more than 10,5% of the country's overall exports. However, the meat and dairy sector are unprofitable and suffering from an important crisis.

To give a better idea of the results, here is a presentation of two projects that were developed in Türkiye by students and National Operators. These projects show that having an environmental education and awareness brought some youth towards agriculture and food systems. By understanding the pressures put on ecosystems, youth understand how food systems can be strained or even reinforced with adaptive solutions. Here are two examples from Türkiye where the program is implemented by Türçev (Turkish Environmental Education Foundation).

SÜGEP Academy - Do nothing farming project and Recall the Carbon project

The *Do Nothing Farming* project came to life to answer the question '*what solutions to increase our resistance as humanity against a possible food crisis*'. Indeed, in a world where machineries and fertilizers are the norm, what would happen if everything stopped just like the first covid national quarantines? To answer this question a project team composed of 17 Youth Leaders, two project leaders[12] and two 12-year-old project ambassadors[13] wanted to find a meaningful solution. Their idea is to turn towards ethnobotanical research and teach new generations about wild herb culture. By doing this, a source of food supply is strengthened and the traditional knowledge and know-how about

The Do nothing farming project field visit – Photo Credits : Sugep Academy

The information is delivered through workshops where youth can taste different herbs, their

[12] M. Umut Dilsiz (Head of SUGEP Academy, iZMIR / Türkiye) and Mrs Jeanne Canan Yörük çiçek (SÜGEP Academy, iZMIR / Türkiye)

[13] Defne Mey Dilsiz and Julie Julide çiçek

harvesting methods and different recipes in which they can be used. Field trips and creative group activities are also organized to make sure the foundation is set for a holistic, value based participatory and action-oriented education system; considered essential by YRE to generate a positive change. Research samples were collected from Europe and shows how easily this action can be established but also disseminated. For example, Spain has 419 plant species traditionally used for human consumption and Italy has 78 wild taxa and relies on the local small-scale activities they create.

Quality education and environmental awareness foster creativity and creative thinking, it also builds up more conscious citizens for tomorrow. It is urgent for countries to develop adaptive solutions and mitigation strategies to counter the effects of climate change on food systems. By relying on an educated and conscious new generation safeguarding ancestral know-how to better adapt to tomorrow's challenges, Mediterranean countries could create their own solutions.

The project team consisting of students Ozan Nazım Küçükyavuz, Doğa Aslan, Aden Giresun, Cem Olcay, Seran Kılıçoğlu, İlkim Bilge İdem, Bahar Çelen, Nazlı Tekin, Defne Mey Dilsiz, Julie Jülide Çiçek and Defne Peri Kebat will be in Bordeaux (France) in November 2022 to hold a series of events including training, fieldwork and workshops.

The project was implemented in 2021 but still gives us an enriching insight on the impacts of Environmental Education on the thinking of youth and its links to sustainable food systems and reasonable consumption practices. To mention a more recent project by the SÜGEP Academy, the project Recall the Carbon thought by students Doğa Işık, Ada Işık, Can Aksüt, Özge Karaoğlan and İlkim Bilge İdem is a great example.

In the framework of fighting climate change, it is essential to reduce our carbon footprint and emissions but also recall the carbon by blocking it in soils - second largest carbon sink worldwide. To make sure students had the right techniques, they were trained by expert Tolga Esetlili from Ege University Faculty of Agriculture and Tolga İlçin, an expert in Organic Waste Management and Industrial Compost at the ION Farm in Urla Barbaros Village.

A project field visit – Photo Credits : Sugep Academy

Thanks to their training, they returned composted organic wastes to the soils and managed to capture carbon in plants. They learned how to help the cycle between new plant species to retain more carbon while creating a healthier environment in and for the soils.

The project's target audience is youth - 25 years old and younger - and the objective is to disseminate this easy and understandable methodology to apply it in other contexts and teach younger generations but also their parents.

Cakabey School – The Biochar project

Two students from Cakabey Schools, Nisan Bader Emre and Ecem Uzunoglu, discovered through their participation in their school's project club soil conditioners and especially biochar. Indeed, after a lot of research on sustainable development they found this soil conditioner through one of their

literature reviews and wanted to deepen their understanding of it to make sure it was adapted to their project.

After researching other soil conditioners to compare the different characteristics and taking the advice from a professor of the Agriculture Faculty at Izmir Ege University they finally decided to work on biochar.

Ecem Uzunoglu and Nizan Bader Emre on field visits - Photo credits : Cakabey Schools

What is biochar? It's a charcoal-like substance that is made in a controlled process called pyrolysis that can mitigate climate change as it uses agricultural and forestry waste but also improves soil quality and produces energy. Nowadays in Türkiye, because of drastic changes in land use and the degradation of soil quality the C reserves in the managed ecosystems are depleted.[14] Soils and vegetation have low organic matter reserves and cannot sequester as much C as they could if they were restored. Changing agricultural practices can impact the content of Soil Organic Carbon (SOC). With better production systems, cultivated soils can greatly restore CO_2 thanks to proper soil quality and land management. [15]

To understand how it really works, both students went on some field studies under the consultancy of Assoc. Prof. Dr. Hüsnü Kayikçioglu from Ege University, Faculty of Soil Department. They wanted to achieve vegetative production without increasing the greenhouse gas (GHG) emissions from the soils while maintaining their health by increasing the organic matter in it. They used biochar obtained from sewage sludge as a soil conditioner and analyzed its effects on two local plants: wheat and vetch. One week later, the organic matter was mixed in the soils and a photoacoustic gas measuring device was used to monitor the evolution of the situation.

Having such exhaustive and structured experience can have a long-lasting effect on the psychology of youth. By being in charge, educated and sensitized to sustainable development through environmental education they develop their skills but also their thinking and curiosity. The surveys we sent to different students clearly showed that, even if they are still young and might not have all the answers, a lot of students are really interested in social and sustainable development, youth activism and more generally the environmental sector. This shows that the subjects they worked on interested them and that they feel concerned now.

They know they can develop a solid argument to express their ideas, even on complex matters such as climate change, while engaging in activism to make sure they're heard. While the Mediterranean region is not known for the place it gives to its youth in terms of decision-making, educating them from an early stage will give them the tools and self-esteem they need to put their foot down and assert themselves.

[14] Bilgehan Aydın, Gönül & Erdogan, Emrah & Yorulmaz, Alper & Kapur, Selim & Lal, Rattan. (2016). Soil Organic Carbon Management in Türkiye.

[15] Tom Edwards, What is soil organic carbon? Department of Primary Industries and Regional Development's Agriculture and Food division (Australia)

Photo credits : Cakabey Schools

These two examples do not demonstrate the entirety of YRE's National and International operators work, a variety of examples exist where youth spontaneously link their environmental awareness and their journalistic skills to engage with local food systems. They manage to create projects, engage local communities and rely on local or national scientists - which in the end promotes collaborative intelligence - to put forward innovative solutions and let youth create their own place and an informed opinion in today's societies.

To learn more about the different projects led by the SUGEP Academy or the Cakabey Schools, click here:

- SUGEP Academy: https://sugep.exposure.co/
- Cakabey Schools: https://yrecompetition.exposure.co/turkeyslovenia-1

Lana Khouildi is a graduate in International Program Management from IRIS SUP and International Relations and Contemporary History from Sorbonne Université. Her last Master's thesis about Lebanon and the management of fisheries and aquaculture resources confirmed her appetite for food studies and more generally sustainable food security in challenging regions. She is now working at the CIHEAM (International Centre for Advanced Mediterranean Agronomic Studies) and pursues her specialization on the region and its food-related issues.