



## The One Health for Environmental Literacy in a Changing World

### Değişen Dünyada Tek Sağlık Okur Yazarlığı

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### Summary

This project aimed to enhance environmental health literacy (EHL) and green skills among adults through the integration of the One Health approach, which emphasizes the interconnections between human, animal, and ecosystem health. A mixed set of activities was implemented across Italy, Portugal, and Turkey, including five project meetings, partnership workshops, and training programs. A Trainers' Training Program in Portugal brought together 24 experts, while adult training sessions reached 130 participants from diverse backgrounds. Educational outputs included trainer and participant guides, as well as a survey implementation and evaluation report. Promotional activities were conducted in all partner countries to disseminate project results. The project also organized three tree planting and plant ownership activities, strengthening environmental responsibility and sustainability awareness. A multisectoral workshop in Italy with 16 participants fostered cross-sectoral dialogue and collaboration. Additionally, the official EnvirONE-HEALTH website and e-learning platform were launched to provide resources, training materials, and communication tools. The One Health Environment Open Platform, integrated within the website, further supported engagement through resources, a chat function, and an EHL survey. Overall, the project significantly contributed to improving EHL, promoting green skills, and fostering interdisciplinary cooperation for sustainable health outcomes.

**Keywords:** Environmental issues, Health, Environmental health, Environmental health literacy

### Özet

Bu proje, insan, hayvan ve ekosistem sağlığı arasındaki karşılıklı ilişkileri vurgulayan Tek Sağlık yaklaşımı çerçevesinde yetişkinlerde çevre sağlığı okuryazarlığını (ÇSO) ve yeşil becerileri geliştirmeyi amaçlamıştır. İtalya, Portekiz ve Türkiye'de yürütülen faaliyetler arasında beş proje toplantısı, ortaklık atölyeleri ve eğitim programları yer almıştır. Portekiz'de düzenlenen Eğiticilerin Eğitimi Programı'na 24 uzman katılmış, yetişkin eğitim faaliyetleri ile 130 kişiye ulaşılmıştır. Eğitici ve katılımcı rehberleri ile anket uygulama ve değerlendirme raporu eğitim çıktıları arasında yer almıştır. Ortak ülkelerde gerçekleştirilen tanıtım etkinlikleri proje sonuçlarının yaygınlaştırılmasına katkı sağlamıştır. Üç ağaç dikme ve bitki sahiplenme etkinliği düzenlenerek sürdürülebilirlik bilinci ve çevresel sorumluluk pekiştirilmiştir. İtalya'da 16 kişinin katılımıyla gerçekleştirilen çok sektörlü çalıştay, sektörler arası iş birliği ve diyalogu güçlendirmiştir. Ayrıca proje kapsamında resmi EnvirONE-HEALTH web sitesi ve çevrimiçi öğrenme platformu oluşturulmuştur. Bu platform, kaynaklar, eğitim materyalleri ve anket aracıyla kullanıcı etkileşimini artırarak çevre sağlığı okuryazarlığını desteklemiş, yeşil becerileri teşvik etmiş ve sürdürülebilir sağlık çıktıları için disiplinler arası iş birliğini güçlendirmiştir.

**Anahtar Kelimeler:** Çevre sorunları, Sağlık, Çevre sağlığı, Çevre sağlığı okuryazarlığı

## Introduction

In the 21st century, global health and sustainability are increasingly challenged by climate change, biodiversity loss, pollution, antimicrobial resistance, and the emergence of zoonotic diseases. These phenomena highlight the interdependence of human, animal, and ecosystem health, thereby reinforcing the importance of the One Health approach, which is a comprehensive and integrated framework that aims to sustainably balance and optimize the health of humans, animals, and ecosystems by acknowledging their close connections and mutual dependencies (Friedman, 2022). This approach recognizes that human health is intrinsically linked to the health of the wider environment, including domestic and wild animals, plants, and ecosystems. Cross-sectoral and interdisciplinary collaboration is essential for addressing pressing global health challenges, including the emergence of infectious diseases, antimicrobial resistance, and food safety, while simultaneously safeguarding ecosystem integrity. By holistically linking human, animal, and environmental health, the One Health paradigm encompasses the full spectrum of disease management—from prevention and detection to preparedness, response, and control—thereby contributing to global health security (Destoumieux-Garzón et al. 2018).

Parallel to “One Health” concept development, environmental literacy (EL) has gained prominence since the 1970s. The concept of environmental literacy is defined as an individual's environmental awareness, knowledge, skills, attitudes, values, personal investment, responsibility, and active participation (Roth, 1992). The “One Health approach” is a comprehensive and integrated framework that aims to sustainably balance and optimize the health of humans, animals, and ecosystems by acknowledging their close connections and mutual dependencies (Friedman, 2022). This approach recognizes that human health is intrinsically linked to the health of the wider environment, including domestic and wild animals, plants, and ecosystems. Although sectors such as health, food, water, energy, and the environment each have distinct priorities, cross-sectoral and interdisciplinary collaboration is essential for addressing pressing global health challenges, including the emergence of infectious diseases, antimicrobial resistance, and food safety, while simultaneously safeguarding ecosystem integrity. By holistically linking human, animal, and environmental health, the One Health paradigm encompasses the full spectrum of disease management—from prevention and detection to preparedness, response, and control—thereby contributing to global health security (Lerner, H., & Berg, C. (2015)).

More recently, the notion of environmental health literacy (EHL) has emerged at the intersection of environmental science, public health, and health communication, emphasizing the capacity of communities to understand environmental risks and adopt health-protective behaviors (Finn, 2017). . Despite these parallel trajectories, the integration of One Health and environmental literacy remains underexplored, with most One Health initiatives still prioritizing infectious disease control and food safety, while the environmental literacy dimension is insufficiently addressed (Rüegg et al, 2017). Evidence suggests that enhancing environmental literacy can foster ecological resilience, support sustainable health systems, and empower populations to engage in risk reduction strategies, yet the operational linkages with One Health frameworks are rarely articulated. International agendas such as the 2030 Sustainable Development Goals and the Shanghai Declaration on Health Promotion explicitly highlight the importance of literacy, intersectoral collaboration, and integrated governance for tackling complex global health threats (WHO,2017). In line with this necessity, the project aims to develop and implement a high-quality adult education program delivered by qualified trainers to enhance environmental literacy, strengthen green skills, and increase awareness of climate change, while integrating the One Health approach to ensure multidisciplinary collaboration and improve the applicability and sustainability of the educational outcomes.

## Methods

The main objectives of the project are to increase people's environmental literacy, improve the knowledge, awareness, attitudes, skills and behaviors of societies about the environment, develop green skills, ensure that environmental awareness is formed in new generations starting from adults by developing an environmental health education program, develop instructional methods for the program, convey effective and participatory training techniques.

***The following work package has been executed through the projet:***

1. Five project meetings and partnership workshops were held.
2. One Health Environment Open Platform: Content determination and environmental literacy assessment app was developed.

Open Platform is on the website and includes key resources, chat and an environmental health literacy survey instrument.

3. There are four results of this project.
  - a. Participant guide
  - b. Trainer guide
  - c. Trainers Training Guide
  - d. Survey Implementation and Evaluation Report: This report presents the implementation process and results of the survey. The primary aim of the survey was to assess participants' awareness, attitudes and knowledge related to One Health and environmental issues.
4. There are training activities of the project.
  - a. Trainers' training was conducted in Ponte de Lima, Portugal, with learners and trainers
  - b. from partner institutions.
  - c. Five adult training activities were conducted by each partner of the project.
5. The project includes ten promotion events: five of these were environmental literacy guide promotions, and the other five were platform promotion activities.
6. A multisectoral workshop was conducted in Naples, Italy, with the participation of 16 attendees
7. Green skills development activities: Three tree planting and plant ownership activities were conducted.
8. Publishing a website and creating digital platforms: These were created for promotion and e-learning. The EnvirOneHealth website at <https://www.environehealth.org> has been established, and an e-learning platform has been configured within the website.

## Results

A total of five project meetings and partnership workshops were conducted throughout the implementation period. These meetings served as a platform for collaborative planning, where all project activities were systematically organized step by step in coordination with the partner institutions. In addition to planning, regular evaluations were carried out to monitor the progress of the project, assess the extent to which the objectives had been achieved, and ensure the alignment of activities with the overall project goals.

A needs analysis survey was performed, including the environmental health literacy scale and demographic characteristics of the participants in the partnering countries. Environmental Health Literacy (EHL) scores varied across domains and countries. Italy demonstrated the highest scores in the General Environmental Health and Air scales, Portugal outperformed in the Food scale, while Turkey scored highest in the Water scale.

Trainers' Training Program was successfully conducted in Ponte de Lima, Portugal, under the coordination of PREVIFORM. The program brought together a total of 24 participants, comprising multidisciplinary experts and trainers from Gazi University, DAGTEM, Harran University, and COSVITEC. This international training activity not only facilitated knowledge exchange across institutions and countries but also contributed to strengthening the capacity of educators using the developed trainers' training guide in integrating the One Health approach into adult environmental literacy programs.

The trainer guide and participant guide were developed and used as an adult education material. A total of 130 participants were reached through the adult training programs, representing a diverse group in terms of age, gender, and educational background, which allowed for the assessment of the program's effectiveness across different demographic segments.

The project comprised a total of ten promotional events, divided equally between environmental literacy guide promotion activities and platform promotion activities. Among these, six were organized by Turkish partners, while Portuguese and Italian partners each conducted two events. These activities played a key role in disseminating project outputs, raising awareness among diverse stakeholder groups, and ensuring the visibility and accessibility of both the guide and the platform across the three participating countries.

As part of the project's green skills development activities, three separate tree planting and plant ownership events were organized. These activities not only promoted active environmental engagement among participants but also provided them with practical experience in ecological stewardship. By directly involving individuals in the planting and care of trees and plants, the events aimed to strengthen awareness of sustainability practices, foster a sense of responsibility toward the environment, and contribute to the long-term development of green skills within the community.

In line with the project objectives, a multisectoral workshop was held in Naples, Italy, creating a platform where individuals from diverse sectors could collaborate and exchange perspectives to foster the concept of optimal health within the shared environment of humans, animals, and plants. A total of 16 participants from different backgrounds attended the workshop, contributing actively to discussions and joint activities. The

outcomes of the workshop, together with participants' feedback, were systematically documented and compiled into a workshop evaluation report, which serves as a valuable resource for guiding future multisectoral collaborations and promoting the One Health approach.

As part of the project's dissemination and capacity-building activities, a dedicated website and digital platforms were developed to ensure both promotion and sustainability of the project outputs. The official EnvirONE-HEALTH website was launched, providing open access to project-related information, resources, and updates. In addition, an integrated e-learning platform was configured within the website to support interactive training, knowledge sharing, and wider accessibility of the Environmental Health Literacy materials. These digital tools play a central role in enhancing outreach, fostering continuous learning, and ensuring long-term impact beyond the project's implementation period.

Within the project framework, the One Health Environment Open Platform was launched as part of the official website. The platform was designed to serve as an interactive hub, providing users with access to key resources on environmental health, a communication channel through an integrated chat function, and the Environmental Health Literacy survey instrument. By combining resource sharing, dialogue, and research tools in a single digital environment, the platform enhances user engagement, promotes interdisciplinary collaboration, and supports the dissemination and practical application of the One Health approach.

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