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Certificate “One Health & Water”

A case study for the advancement of interdisciplinarity in professional training

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Introduction to One Health Education

Introduction to the One Health concept and its paradox

Scientific and political **consensus** on the critical importance of collaborative and interdisciplinary approaches to respond to emerging and recurrent diseases: prevention, surveillance, control and mitigation, on a global scale.

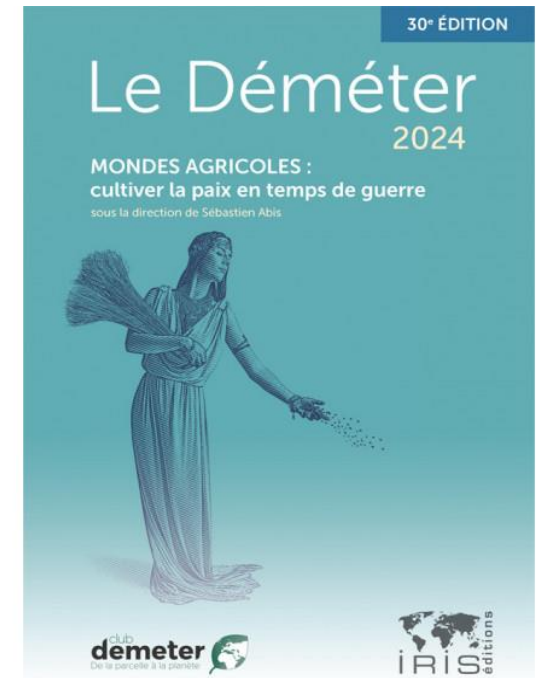
Yet, despite growing scientific interest in the concept and growing interdisciplinary mobilization, the systematization of training in the One Health approach comes up **against** national regulatory constraints (Angot and Lefébure, 2024).

From Concept to Curriculum: Evolution of One Health Education since the early 2000s in Anglophone countries like the United States, Canada, and the United Kingdom.

Gradual evolution of educational offerings : master's programs, short certification courses for professionals, minors in Global One Health, integration of environmental and public health concepts

Predominance of veterinary-focused perspectives in both academic literature and educational curricula.

Recent efforts to develop more transdisciplinary and integrative educational approaches, particularly in non-traditional academic settings (online), equipping students with practical skills such as community advocacy, crisis management, and social acceptability assessment to address complex health and environmental challenges effectively.



One Health Education

Two Complementary and Contrasting Approaches on Training Choices

1. Fostering dialogue and mutual understanding among different professionals involved in One Health: a common framework of competencies tailored to each profession to enhance interdisciplinary collaboration. This approach often involves the development of online educational resources and case studies accessible to diverse professional communities.
2. Professionals from different disciplines should undergo training together, preferably in the same location: exchange of viewpoints, integration of mutual constraints, and creation of a shared community of knowledge and values that transcend disciplinary boundaries. The emphasis is on creating a more integrated approach to address the complexities of One Health challenges.

The Paradigm Shift in professional skills is often hindered by knowledge silos

- Regulatory constraints and epistemic challenges faced by universities in implementing One Health education programs
- Need for interdisciplinary collaboration and coordination on a global scale
- Importance of overcoming professional divides and promoting integration in education programs

Collaborative Efforts in One Health Education in France

A new collaborative initiative between VetAgroSup / ENSVFVI, EHESP, and Institut Agro on One Health (agreement signed on July 6, 2022)

- Effort among 3 Public Higher Education and Research Institution to cover the health continuum of plants, animals, humans, and the environment through Research, Education, and International initiatives
- Side objectives : promoting interdisciplinary approaches, better supporting public policies, and evolving training programs
- A cross-school Degree in “**One Health in Practice**” (100 hours, 3 weeks).
- The certificate “One health and water” is a component of the Degree.



One Health and Water Certificate Overview

Objectives, structure, and length (30 hours)

- Coordination by three distinct schools in France
- The program addresses the challenges identified at the global level through its interdisciplinary approach
- Rethinking content, skills, teaching methods, and practical aspects related to water challenges
- Considering the standing point of different professional groups, crossing perspectives
- Core activity: Mural One Health (Fresque One Health), with a case study about water management, interactive workshops, and role play.

One Health and Water Certificate Overview

Target (20 professionals / session)

- Environment (ecologists, biodiversity managers in national parks/reserves/protected areas, etc.)
- Human health (doctors, nurses, pharmacists, public health and mental health professionals, etc.)
- Animal health (veterinarians, pharmacists, veterinary public health inspectors, etc.)
- Administrations (central government agents, local government officials, etc.)
- Agriculture (agricultural engineers, farmers, agricultural chambers, GDS [Groupement de Défense Sanitaire], professional organizations, etc.)
- Agencies (water agencies, OFB [Office Français de la Biodiversité], ARS [Agences Régionales de Santé], ANSES [Agence Nationale de Sécurité Sanitaire], Santé Publique France [French Public Health Agency], etc.)
- Elected officials (local, intermunicipal, metropolitan, departmental, regional)

Components of the Certificate

Breakdown of the program components

Introduction to One Health concepts and challenges

Workshops on water-related issues:

- **Water and chemical contaminants**
- **Water, biodiversity, and microorganisms**
- **Water and territory**
- **Water, landscapes, and health**

Public Health, pollution, risks: Hydrogeology, Hydrology, Pollutant Transport

Group discussions on solutions and innovations:

- **Detection:** Degradation of water quality (chemical pollutants, pesticides, pharmaceutical residues, microorganisms): new tools, bio-indication, or bio-monitoring
- **Treatments:** Roles of microorganisms
- **Preservation** of water resources

Field Trip to Miribel Jonage Park (Grand Parc Miribel Jonage near Lyon) -

Practical Learning

- Urban park covering almost 2,200 hectares on the outskirts of Lyon
- Choice of a site for its relevance to water supply, biodiversity preservation, and economic activities
- Exploration of water supply and health aspects
- Preservation of biodiversity
- Economic activities: tourism, industry, agriculture



Driving Change Through Education

- Education is key in addressing global challenges, echoing the aims of the One Health and Water certificate program.
- Like the ecological transition, higher education is evolving towards more interdisciplinary approaches, in spite of traditional divisions.
- Integrating One Health principles into education can drive transformative change, reshaping alliances and partnerships, mirroring shifts in environmental education.
- Rethinking the role and strategy of European Life Science Universities ?

