

# Agriculture 4.0: Equipping young NEETs with basic & advanced digital and green skills

## Module 2

**Digital Green Skills, Green Skills, and training as a starting  
point for prospective green jobs**



**Developed by**



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**Disclaimer:**

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## 1. Introduction

Following the analysis of the findings from the literature review and field research activities there is a strong need to train and upgrade rural young people to become attractive, employable and to take up central positions in the circular and regenerative economy.

Adapted training material will be further described and developed for practical implementation within our project. The training material will provide young / women NEETs with a package of digital learning resources designed based on the concept of micro-learning: short and coherent learning nuggets delivered in multimedia formats aiming to promote blended learning methodologies. The digital learning nuggets will include a variety of resources such as interactive games, podcasts, e-learning videos, interactive case studies, infographic resources, etc.

## 2. Content

### Main objectives

- Introducing the Green Skills for the Digital Age
- What exactly is meant by the term "green skill," and how may training help to pave the way for the creation of green jobs in the near future?

### Learning contents

The module consists of 5 submodules:

2.1 Engineering and technical skills: Hard skills encompassing competences involved with the design, construction, and assessment of technology

2.2 Science skills: Competences stemming from bodies of knowledge broad in scope and essential to innovation activities

2.3 Operation management skills: Know-how related to change in the organizational structure required to support green activities

2.4 Monitoring skills: Technical and legal aspects of business activities that are fundamentally different way from the remit of engineering or science

2.5 Green knowledge and skills using some practical examples

### Learning outcomes

- Knowledge of tools for preventing the development of unhealthy soil by monitoring soil moisture and humidity, nutrient levels, temperature, and acidity
- Mobile applications to disseminate information about different crops and livestock
- Platform service managing farmers' data
- Examples of Bio-pesticides and herbicides that are used in alignment with European legislation

- Introduction to the “Fog computing model”
- Importance of WUE (Water Use Efficiency)

### **Green Skills**

Greening our economies is expected to have long-term benefits in the form of less damage to the environment, as well as big opportunities and challenges. Concerns are growing that the spread of environmentally friendly technologies and organizational practices could cause problems in the labor market, such as faster obsolescence of workers' skills and a rapid increase in the demand of existing and new skills, which, if they aren't available, could lead to skill gaps. As a result of these worries, the phrase "green skills" has become common in policy circles. This is especially true since government programs like Europe's 2020 strategy and the Green Jobs Act in the US have put a lot of money into supporting "green jobs" to help the economy grow in a sustainable way (OECD/Cedefop, 2014). First, we compute a skill measure. Greenness is the proportion of green specific tasks to the overall number of specified tasks completed by a profession. This enables us to classify green employment according to how much time is allocated to a certain category of duties that are more or less closely related to environmental sustainability. Interestingly, green jobs are most prevalent among high-skilled professional profiles, such as managers and engineers, and low-skilled manufacturing and production jobs, such as construction workers and maintenance and repair employees. The Green General Skill index specifies four kinds of job tasks that are particularly significant for green employment, and these groups are as follows:

#### **Engineering and technical skills: Hard skills encompassing competences involved with the design, construction, and assessment of technology**

Hard skills are those that often only engineers and technicians are able to master. These include competencies involved in the design, construction, and evaluation of technological systems. This knowledge is essential for research and development (R&D) initiatives pertaining to eco-buildings, the design of renewable energy systems, and energy-saving research and development.

### **Science skills: Competences stemming from bodies of knowledge broad in scope and essential to innovation activities**

Skills that are derived from extensive banks of information that are fundamental to the processes involved in invention, such as those found in physics and biology. These competencies are in particularly high demand across all stages of value chains and in the utility sector, which is responsible for the provision of fundamental conveniences like water, sewage services, and electrical services.

### **Operation management skills: Know-how related to the change in the organizational structure required to support green activities**

Changes in the organizational structure required to support green operations and an integrated vision of the company through life-cycle management, lean production and collaboration with external actors, including customers, necessitates knowledge of the organizational change. For instance, these abilities are essential for sales engineers, climate change analysts, specialists in sustainability, chief sustainability officers, and transportation planners.

### **Monitoring skills: Technical and legal aspects of business activities that are fundamentally different way from the remit of engineering or science**

The scope of engineering and science does not fully encompass the technical and legal facets of business activities, which are fundamentally distinct in their own right. They are the competencies required to evaluate whether or not certain technical requirements and legal standards have been met. Inspectors of environmental compliance, nuclear monitoring technicians, directors of emergency management, and legal assistants are some examples of these professionals.

### **Green knowledge and skills using some practical examples**

Promoting industrial skills development in poor and emerging nations, the United Nations Industrial Development Organization (UNIDO) can play a crucial role in accelerating the global shift towards a green economy. Public Private Development Partnerships (PPDP) form the basis for UNIDO's Learning and Knowledge Development Facility (LKDF), in which both the public and

private sectors contribute in a third party's initiative. When it comes to local industrial training institutions, the LKDF has implemented a wide range of PPDPs across countries and industries.

The H2O Maghreb project is one such initiative; it is led by the United Nations Industrial Development Organization and has the backing of the governments of Morocco and the United States as well as organizations like FESTO Didactic SE, EON Reality, the Moroccan National Office of Drinking Water and Electricity and the United States Agency for International Development (USAID). Establishing a high-level training hub to provide market-oriented training in wastewater treatment and water management, and creating curricula for existing water professionals that combine different professions and specializations related to water and wastewater for municipal and industrial applications, are all steps taken by the project to improve water management practices in Morocco.



## Methodology – activities

<https://www.youtube.com/watch?v=iloAQmroRK0>

<https://www.youtube.com/watch?v=xFqecEtdGZ0>

[https://www.youtube.com/watch?v=-k02MiB\\_wxg](https://www.youtube.com/watch?v=-k02MiB_wxg)

<https://www.youtube.com/watch?v=o5-k0ql0od4>

<https://www.youtube.com/watch?v=8Jn3bgSOe3c>

<https://www.youtube.com/watch?v=sAMvPb-7DX0>

## Resources:

<https://events.euractiv.com/event/info/digital-farming-driving-productivity-and-a-more-sustainable-way-of-farming>

<https://ec.europa.eu/eip/agriculture/en/event/digital-farming-%EF%BB%BFdriving-productivity-and-more>

<https://www.mckinsey.com/industries/agriculture/our-insights/agricultures-connected-future-how-technology-can-yield-new-growth>

<https://www.dtn.com/how-digital-farming-increases-productivity/>

<https://www.fao.org/sustainable-development-goals/indicators/641/en/>

<https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2007WR006200>