



Food and Agriculture  
Organization of the  
United Nations

**BUILDING FORWARD BETTER**  
INITIATIVE



**THEMATIC AREA**

# WATER PRODUCTIVITY

## 1. Description of the module

The module will initially provide an overview of crop water productivity approach currently employed to address food security and to evaluate the effects of the environment and of different management practices on crop production. The module will present practical case studies and will guide participants through the four steps of its approach to provide insights and present a standard methodology, to be later tailored to different contexts, for assessing and improving crop water productivity. Moreover, the module will present the evolution of the standard approach and will introduce the most recent tools developed through field applications.

### *The tool*

The AquaCrop crop growth model ([www.fao.org/aquacrop](http://www.fao.org/aquacrop)) is internationally recognized as one of the most suitable crop models for simulating crop yield response to water, particularly under conditions in which water is a key limiting factor in crop production. Developed and launched in 2009 by the Food and Agriculture Organization of the United Nations (FAO) to support the enhancement of agricultural production by assessing the yields of major herbaceous crops as a function of water supply.

The tool is applied under different farming conditions to:

1. Evaluate attainable yields under local conditions;
2. Compare potential yield to actual production in order to diagnose yield gaps of selected crops.





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## 2. Module structure

1. Evolution of the crop water productivity approach
  - Sustainable Agricultural Water Management (AWM) and enhanced crop water productivity
  - Crop water productivity: A new methodological approach & tools tailored to local conditions
2. On-farm irrigation and drainage systems
3. Crop –environment interaction
4. Crop management
5. Soil and water conservation practices
6. Economic and environmental dimensions of AWM

## 3. Learning objectives

Trainees become familiar and consolidate their knowledge of crop water productivity concept, also through the evaluation of field applications, in order to:

- Optimize the use of water for increased crop production;
- Maximize the performance and sustainability of irrigation schemes;
- Design new irrigation schemes according to sustainable criteria;
- Apply farming practices to enhance crop water productivity at any irrigation condition.

The step-by-step presentation of the AquaCrop tool, moreover, will allow participants to thoroughly apprehend how to tailor this approach to local contexts to boost crop production through the implementation of enhanced and integrated farming management practices.



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