Food and Agriculture Organization of the United Nations

BUILDING FORWARD BETTER INITIATIVE

THEMATIC AREA

WATER USE EFFICIENCY AND PERFORMANCE ASSESSMENT

1. Description of the module

1. Irrigation water performance: Methodologies and approaches

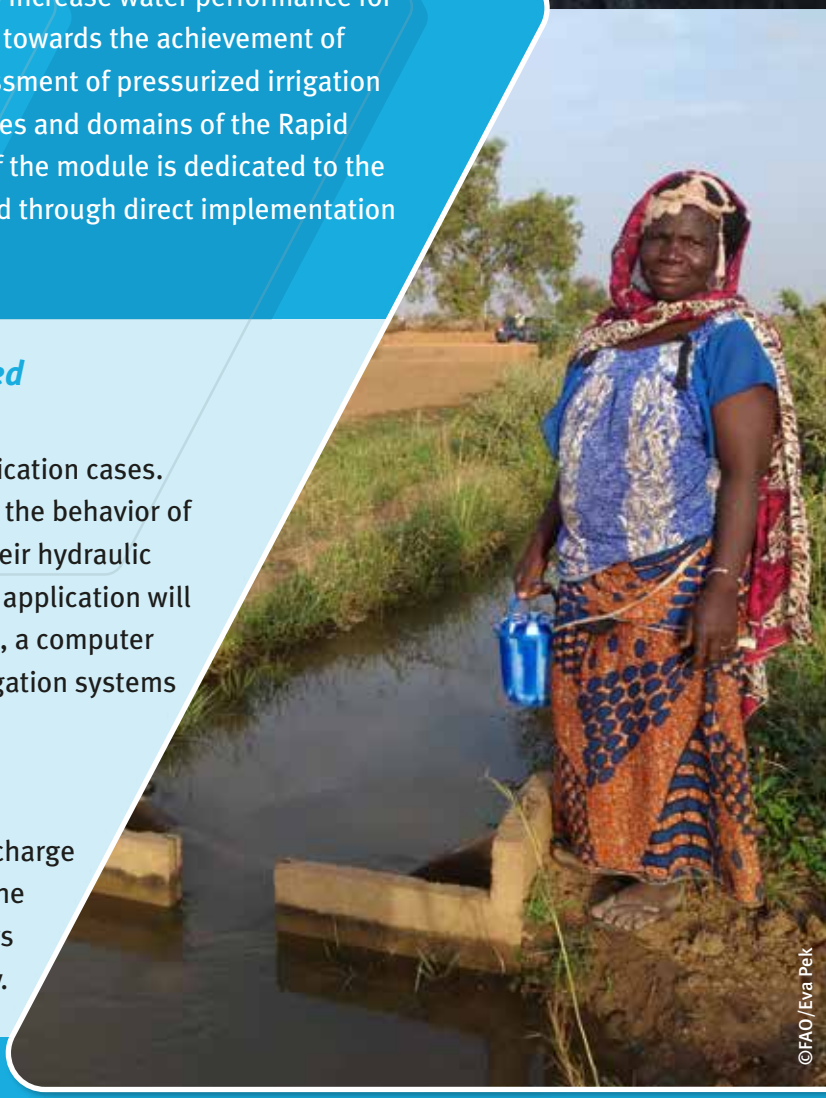
This part of the module presents the main elements of water use efficiency (starting from its definition and objectives) and discusses strategies to increase water performance for the improvement of water and food security and moving towards the achievement of SDG6. Starting from the principles of performance assessment of pressurized irrigation systems, the module narrows down to illustrate objectives and domains of the Rapid Appraisal Procedure (RAP) and its components. A part of the module is dedicated to the presentation of on-field applications and lessons learned through direct implementation of the approach.

2. Mapping System and Services for Pressurized irrigation systems (MASSPRESS)

The MASSPRESS model is presented together with application cases. MASSPRESS is a step-wise approach for the mapping of the behavior of pressurized irrigation systems and the assessment of their hydraulic performance at network and hydrant level. MASSPRESS application will be further illustrated though the presentation of COPAM, a computer tool for the diagnosis of performance of pressurized irrigation systems through the integration of relevant indicators.

3. Discharge Measurement Techniques

The module presents traditional and non-traditional discharge measurement, a multi-objective activity that considers the relation between water supply and demand and monitors optimal water allocation to enhance water use efficiency.



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4. Flexible water resource allocation

In order to achieve the enhancement of production while reducing the water consumed, sufficient knowledge of irrigation schemes' discharge data is required together with a clear understanding of the potentiality to increase efficiency of those schemes and access to mechanisms to do so. Accessible databases on historical water use, thus, represent useful decision-support tools that can facilitate the elaboration of tailored flow models for optimal water service. Resource allocation at scheme level should thus promote flexible water services according to the most efficient and sustainable standards in terms of: (1) Adequate water rates; (2) Frequency; (3) Duration; and (4) Control.

2. Module structure

1. Agricultural water performance: methodologies, approaches and tools
   - Principles of performance assessment of pressurized irrigation systems (MASSPRESS)
   - Rapid Appraisal Procedure (RAP) and related domains
   - Mapping of the behavior of pressurized irrigation systems through performance indicators
   - Modelling of hydraulic performance (COPAM)
2. Discharge Measurement Techniques and technologies to improve water-use efficiency
3. Flexible water resource allocation


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3. Learning objectives

Participants will acquire knowledge on the approaches to assess the performance of irrigation systems and increase water use efficiency at system and farm levels. They will apprehend how to apply and use MASSPRESS and become familiar with the related tool, COPAM, for the diagnosis and the design of pressurized irrigation networks.

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