Food and Agriculture Organization of the United Nations

BUILDING FORWARD BETTER INITIATIVE

THEMATIC AREA

RENEWABLE ENERGY RESOURCES FOR IRRIGATION

1. Description of the module

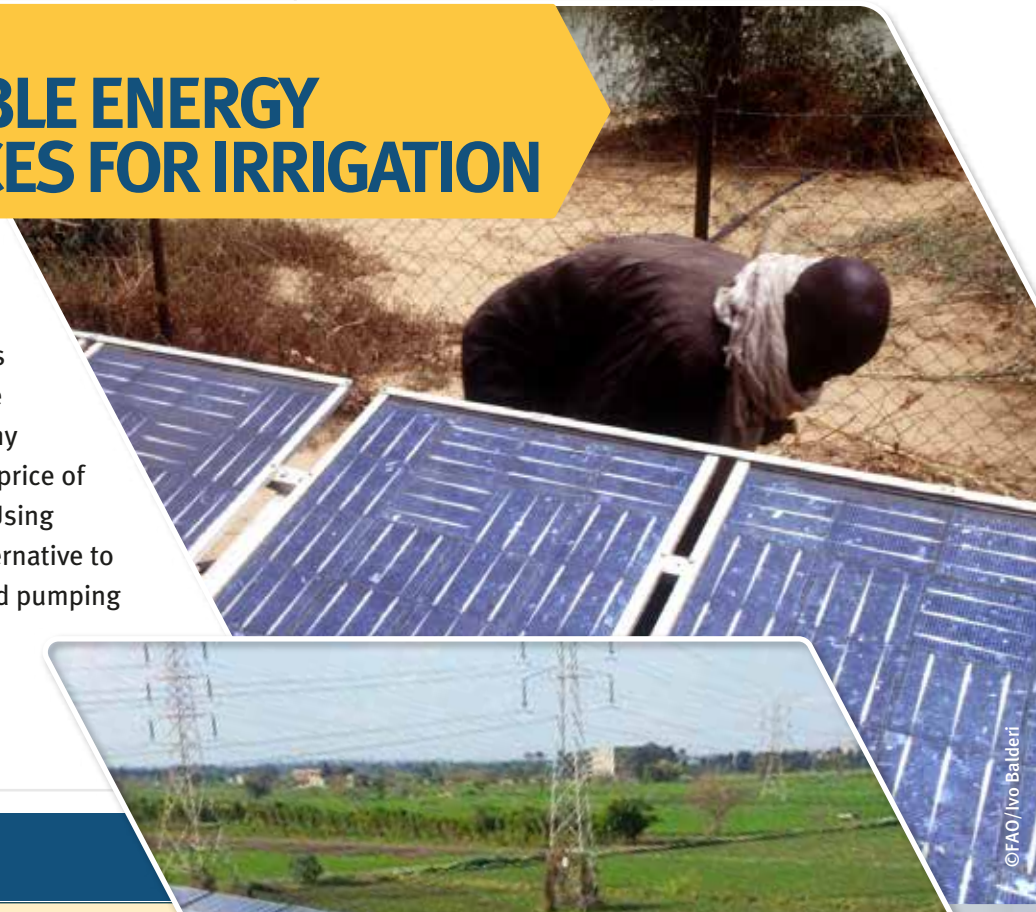
As the global population continues to increase, food production will have to grow to meet the increase in demand. Agriculture is both impacted by climate change and a source of greenhouse gas (GHG) emissions and can contribute to fight climate change by being a source of renewable energy and by using less fossil fuels throughout the agri-food chain. The identification, planning and implementation of appropriate energy, water, food security and climate-smart strategies can stimulate agricultural growth and rural development without increasing energy production. The module will introduce the concept of water, energy and food security nexus, and will discuss technical options (and their operation) of the use of renewable energy sources for irrigation.

Energy-smart agriculture

Modernizing food and agriculture systems by increasing the use of fossil fuels as was done in the past may no longer be an affordable option. The role of energy must be reconsidered, and new energy options must be adopted for improving food systems. Renewable energies, such as solar and wind, can be used in agri-food systems and can be a sustainable alternative to fossil fuels to generate power needed.

THEMATIC AREA

RENEWABLE ENERGY RESOURCES FOR IRRIGATION



Solar irrigation

Irrigation is among the measures implemented to increase yields and thus reducing dependence on more and more unpredictable rainfalls. Nevertheless, any increase in irrigated areas comes at the price of increases in the energy consumptions. Using solar energy for irrigation is a viable alternative to conventional electricity and diesel-based pumping systems. This session will present technological aspects of solar irrigation and introduce examples of successful applications of its use.

2. Module structure

1. The Water-Energy nexus
2. Essentials of solar pumping for agriculture
3. The application of solar energy for irrigation – Aspects of operation and maintenance
4. Hands on training: case studies

3. Learning objectives

The participants will acquire knowledge on the water-food-energy nexus and familiarize with the key concepts related to energy-smart agriculture. They will improve their knowledge in the field of solar irrigation by being presented with both theoretical bases and real cases to its application in agriculture.

SUPPORTED BY:

ITALIAN AGENCY FOR DEVELOPMENT COOPERATION