

## Irrigation Performance: Ethiopia

### The challenge

The Irrigation Management Information System of Ethiopia (IMISSET) is a national web-based platform that monitors irrigated agriculture at various scales (<https://imiset.gov.et>). The tool, which is managed by the Ministry of Agriculture (MoA) with support from the Food and Agriculture Organization of the United Nations (FAO), provided up-to-date information on irrigated areas, water use and production to support decision-making. However, it lacked a component for assessing irrigation performance indicators, and systemic data on scheme performance was unavailable. This limited IMISSET's ability to identify and address low-performing or non-functional irrigation systems.

### The solution

The new tool adds functionalities to IMISSET, using Water Productivity through Open access of Remotely sensed derived data (WaPOR) to calculate crop water requirements, agricultural water use (Table 1) and irrigation performance assessment indicators, such as beneficial fraction, adequacy, relative water supply, crop water productivity and yield.

Month	Agricultural Water Use From WaPOR For All Irrigation Schemes (in m <sup>3</sup> )		
	SW	GW	Total
January	52,560.32	-	52,560.32
February	300,368.69	-	300,368.69
March	1,648,588.22	-	1,648,588.22
April	1,210,032.12	-	1,210,032.12
May	1,380,937.49	-	1,380,937.49
June	396,430.20	-	396,430.20
July	-	-	-

SW - surface water    GW - groundwater

Table 1: Agricultural water use from WaPOR for IMISSET irrigation schemes.

### Key technical features

Using WaPOR Level 2 datasets at 100 m spatial resolution – including transpirations (Tr), actual evapotranspiration and interception (AETI), precipitation (P) and net primary production (NPP) – the tool is integrated into the IMISSET platform. Users do not directly interact with the tool but use its outputs through the IMISSET reporting system. The tool is available in English.

### Current use and main users

Main users include MoA, the Ministry of Irrigation and Lowlands, the Ministry of Water Resources and Energy, and policy analysts and decision-makers at different levels of government administration.

### Key stakeholders and beneficiaries

Key stakeholders and beneficiaries include the main users mentioned above, along with irrigation scheme managers, the Ethiopian Institute of Agricultural Research and the Agricultural Transformation Institute.

### The co-creation process and sustainability

The co-creation process involved meetings between MoA, the International Water Management Institute (IWMI) and FAO to discuss needs and existing capacities, develop the tool's specifications, jointly assess key performance indicators and monitor the progress of tool development. As part of ongoing capacity building, key stakeholders and staff from various universities received hands-on training on tool operation. To ensure the tool's long-term sustainability, MoA staff participated in a training workshop on tool operation and maintenance. IWMI also offered support during the integration of the WaPOR tool into IMISSET.

## Key outcomes and impacts

This WaPOR tool strengthens IMISET, enhancing irrigation performance monitoring, boosting water productivity, and supporting evidence-based planning and decision-making. It equips water managers with timely, reliable data on irrigated and rainfed crop water consumption. In doing so, it promotes resilient water management practices critical to sustaining agricultural productivity amid growing resource pressures.

## Scaling potential

Though the tool can be used outside of IMISET, it was mainly developed to allow WaPOR datasets to be effectively used within IMISET.

## The WaPOR portal

The publicly accessible Water Productivity through Open access of Remotely sensed derived data (WaPOR) portal of the Food and Agriculture Organization of the United Nations (FAO) supports agricultural water productivity monitoring at continental, national and basin scales. With new information produced every 10 days, the portal helps users make informed policy and investment decisions.

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