

LARGE-SCALE EXPLOITATION OF SATELLITE DATA IN SUPPORT OF INTERNATIONAL DEVELOPMENT

→ IRRIGATION SYSTEM OPERATIONS

Regular and consistent monitoring of water distribution over large areas has become possible with satellite technology. Satellite derived evapotranspiration and precipitation data are used to calculate water use. Together with weather forecasts it allows timely identification of upcoming water stress and/or exceedance of the allocated water.

Irrigation performance can be enhanced by (1) optimising water distribution (rehabilitation of the physical irrigation infrastructure); and (2) by improving the irrigation water management (sufficient and timely application). This service focusses on the latter – improving water management- and is valuable to water managers at different levels, from irrigation agencies to irrigation scheme managers to the farmer. Regular updates on water use in-season allow irrigation schedules and water distribution to be adjusted and provides valuable insights on how water management can be improved.

The irrigation operations service can send timely notifications when predicted soil moisture drops below a set threshold in the coming 5 days and irrigation is essential to sustain optimal crop growth (irrigation planning). Another service application is the comparison of actual water use to the water allocated, allowing farmers to better distribute their water resources over time and managers to distribute the water fairly (water auditing). Knowing how much and when to irrigate within the limits of crop requirements for optimum growth can save substantial amounts of water and other irrigation related inputs such as fuel and fertilizer while at the same time improve production.

Irrigation planner service



DESCRIPTION

This service provides regular updates on the actual water use to help irrigation agencies improve irrigation system operations and thus reduce water consumption and increase production

USE

- In-season information to water managers at all levels – from farmer to irrigation agency – to improve irrigation system operations, i.e.
- › Planning of irrigation volume and timing
 - › Compare actual water use against water allocation
 - › Improve distribution of water over an irrigation scheme by identifying water stressed areas during the season

INPUT OF PRODUCTS

- › Actual evapotranspiration
- › Potential evapotranspiration
- › Transpiration deficit
- › Precipitation
- › Irrigation planner
- › Water auditing

SPATIAL RESOLUTION AND COVERAGE

From local (field-level) up to regional scale (irrigation scheme level)

BENEFITS

Improved water management from farm to scheme level using up-to-date area-specific information on crop water use

DELIVERY FORMAT

Depending on user needs, e.g.:

- › Vector and raster formats
- › Through a web portal
- › Statistics in tables and/or (interactive) graphs
- › Regular notifications through SMS or email

FREQUENCY

In-season (weekly) up to once a season (retrospective)

Water auditing service

