Irrigation

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Input data sources

Optical: MODIS (250 m), Proba-V (100 m) or Landsat (30 m), depending on desired spatial resolution

Radar: n.a.

Supporting data: CHIRPS rainfall data, Copernicus Global Land Cover dataset, weather data including, Land surface temperature data derived from thermal infrared imagery (MODIS or Landsat)

Spatial resolution and coverage

Spatial resolution: 250 m (also 100 m and 30 m products available for dedicated areas)

Coverage: Africa and Near-East (see extent displayed in Figure above)

Availability: Available on demand with service providers for regions with limited rainfall.

Accuracy / constraints

Thematic accuracy: The WaPOR methodology described above has shown particularly good performance of detecting irrigated areas in arid climatic conditions. In semi-arid regions however, where irrigation is only applied supplementary to overcome occasional periods of drought, distinction between rainfed and irrigated agriculture is less straightforward and requires a more dedicated methodology based on high-resolution input data and machine learning. At present, this is still an active field of research.

Spatial accuracy: depending on resolution of input data and desired product

Limitations

Current methodologies are mainly focused on regions with limited rainfall.

Frequency / timeliness

Frequency: updated yearly (available for 2009 - present)

Timeliness: each year released after final growing season

Delivery / output format

Data type: Numerical land cover classification (integers)

File format: GeoTIFF

Accessibility

Large-scale irrigation mapping (area based) in semi-arid and arid regions (WaPOR)

The mapping of agricultural practices at field level is being tested in project such as SEN4CAP

Available on demand with service providers for regions with limited rainfall.

CHALLENGES ADDRESSED - USE CASE(S)

Product Development:

- Market analysis
- Elaboration of crop profile: field crops, vegetables, horticulture, greenhouses

Information on crop rotation

Product Sales:

Client outreach

- Pre-contractual consulting (show-case risk exposure)
- Farm structure / management practice (linking to cadastre)
 Regular market penetration review

Underwriting:

- Seasonal portfolio monitoring
- Identification of farmer's production practice (technology, infrastructure, property, machinery, etc.)
 Identification of productive units
- Identification of productive un
 Crop calendar and practices
- Regular assessment of risk pricing and product rating

Claims Handling:

- · Quality control assessment of claims before pay-out
- Fraud detection