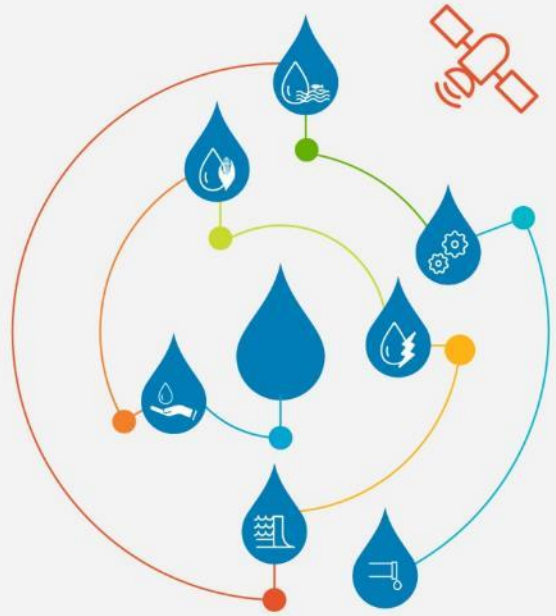
EARTH OBSERVATION INFORMATION SERVICES TO SUPPORT AGRICULTURAL PLANNING, MONITORING AND MANAGEMENT



Remco Dost

eLEAF

A dedicated programme for sustainable development: EO4SD

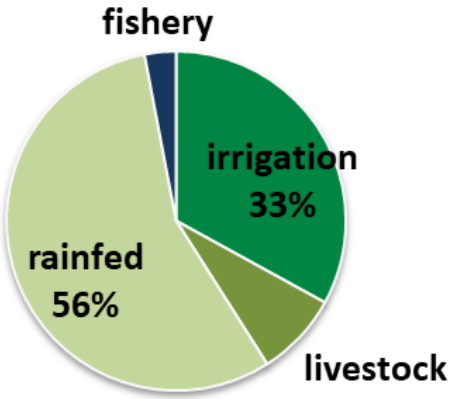
- EO4SD – Earth Observation for Sustainable Development:
  An ESA initiative for large-scale exploitation of satellite data in support of international development

- What EO-based information is most needed and how can it be used in Official Development Assistance (ODA) activities and working practice?

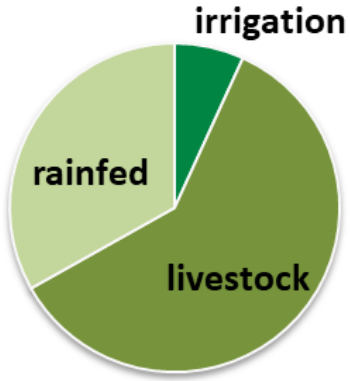
Setting the stage: world food production

Farmers need to produce 70% more food by 2050

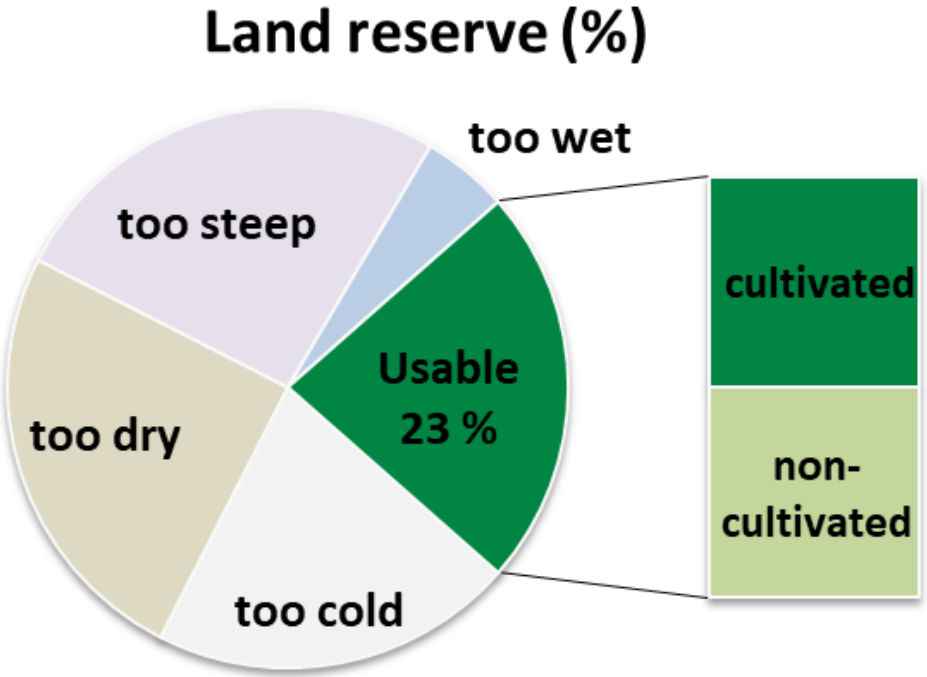
But can we and how?



Food production (%)



Area (million ha)



J. Deckers - kuleuven

Role of Earth Observation

Agricultural productivity ⟺ **Access to information**

- Monitor the baseline, status and trends of production of agricultural areas
- Assess the status of agricultural production on a wide range of spatial and temporal scales.
- Provides historical and actual global information on a regular basis

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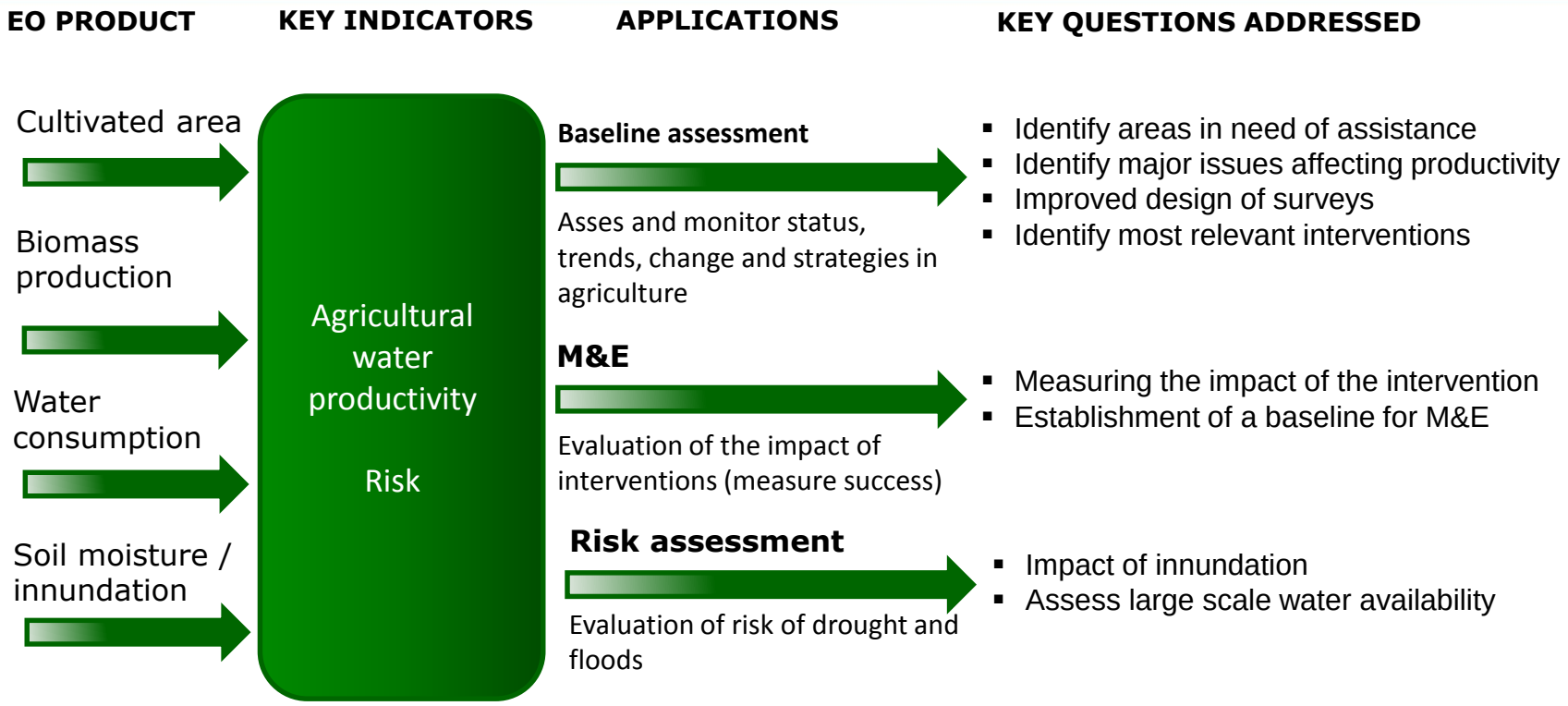
ADB

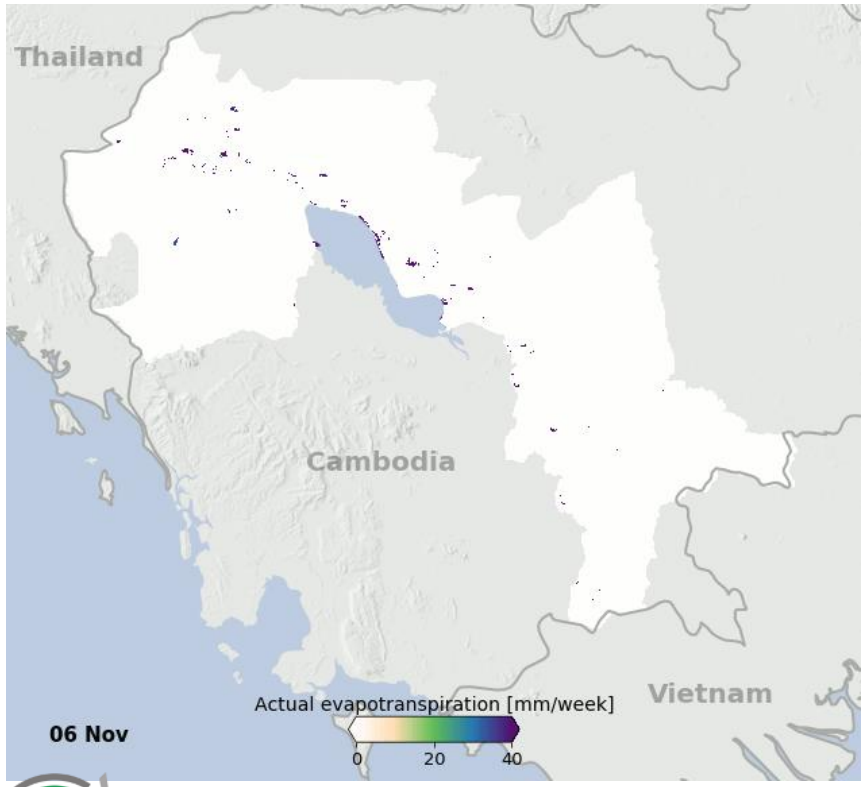
Multi-scale monitoring Service to assess food security and risk



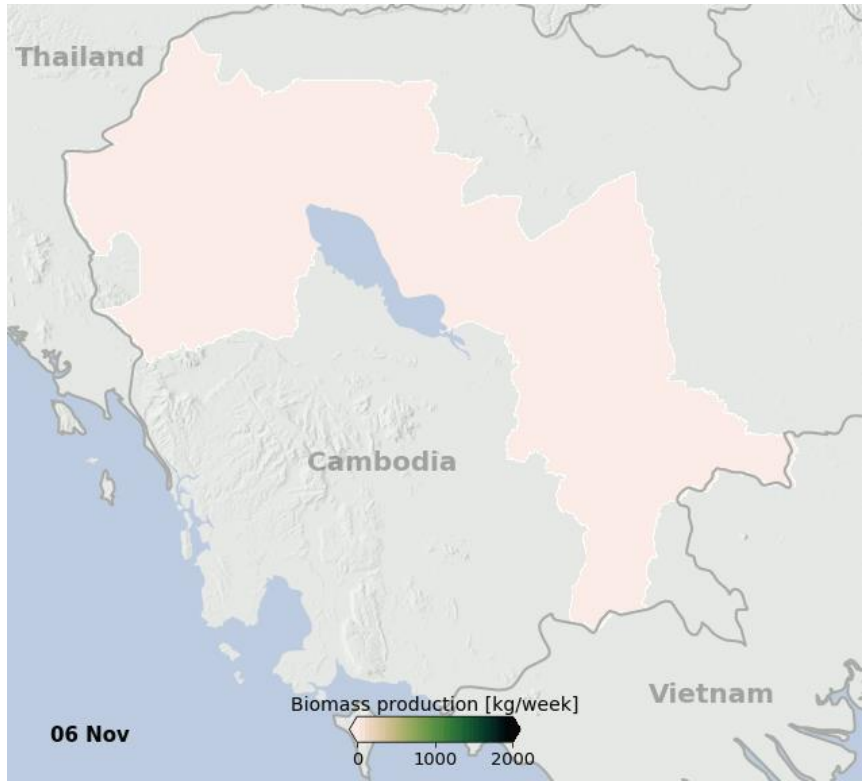
Related projects:	
Cambodia	Tonle Sap Poverty Reduction and Smallholder Development Project (TSSD)
	Strengthening Coordination for Management of Disasters Project (SCMD)
	Climate –resilient rice commercialization sector development program (RICE SDP)

Base line - Weekly production data Cambodia

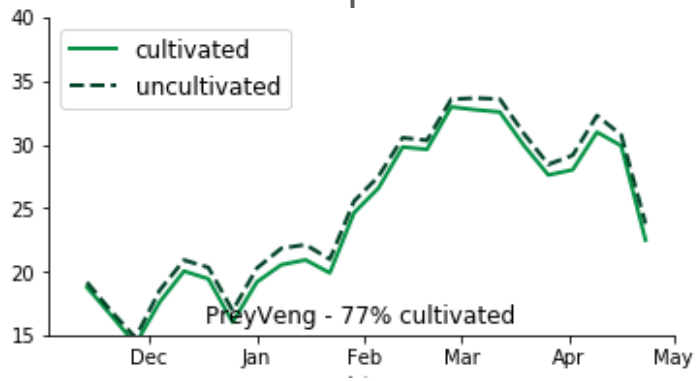
Water consumption
(mm/week)



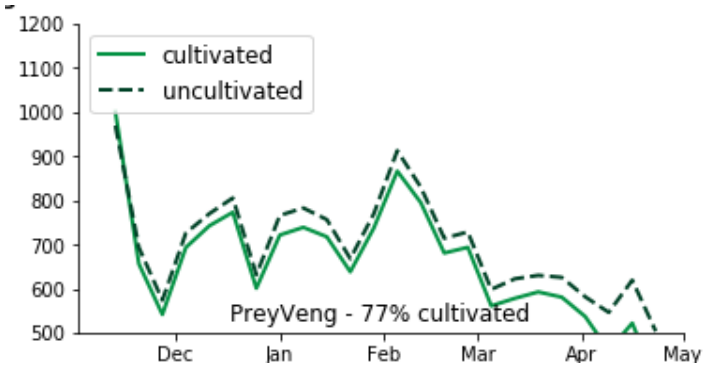
Biomass production
(kg/ha/week)



Water consumption



Biomass production



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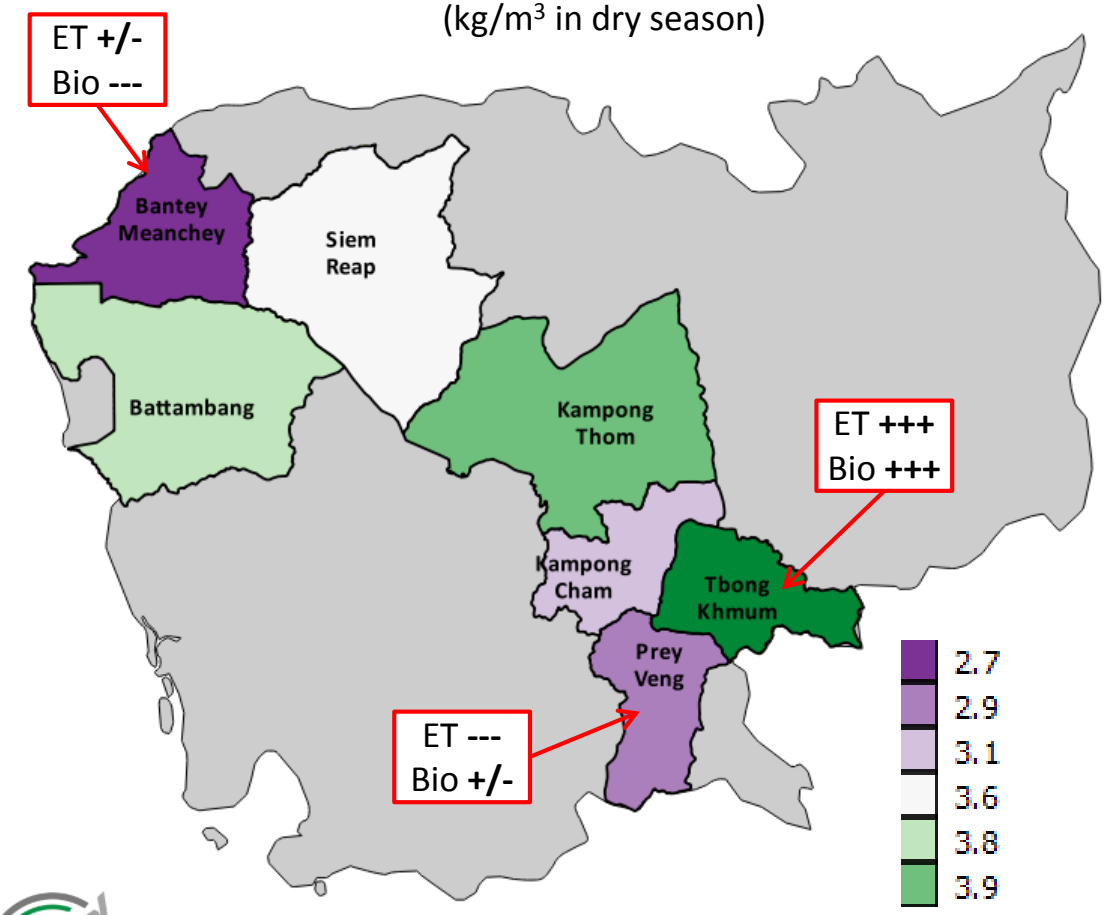
Animated from Nov'17-Apr'18

ADB

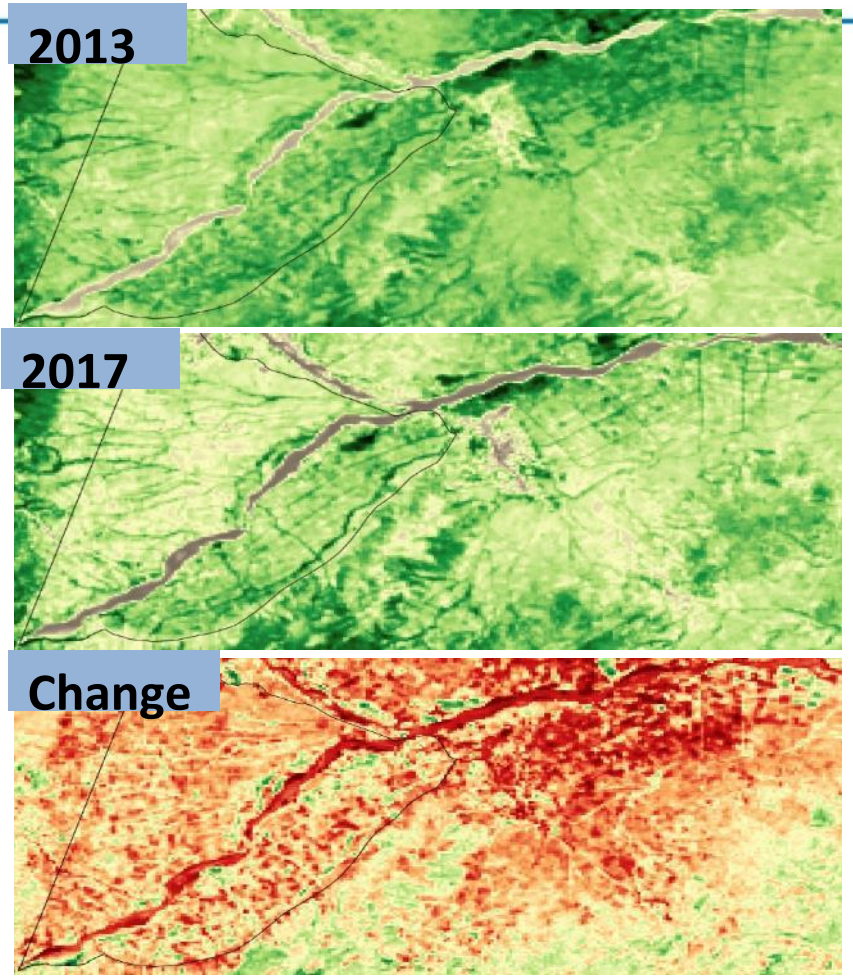
M&E - Water productivity analysis

Biomass water productivity

(kg/m³ in dry season)

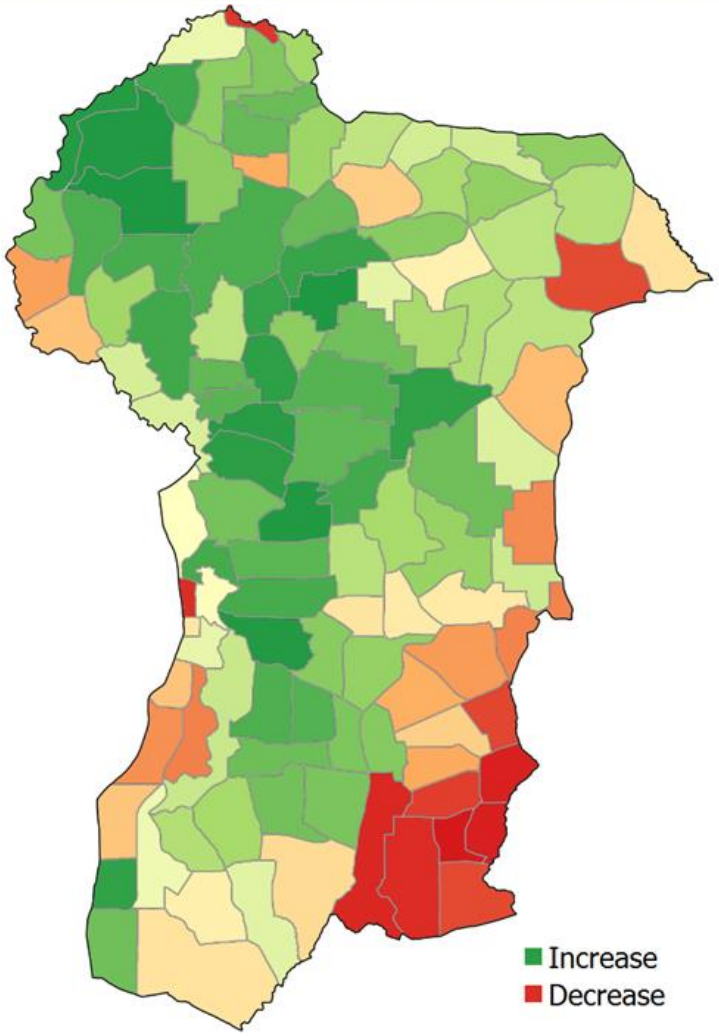


Provincial scale

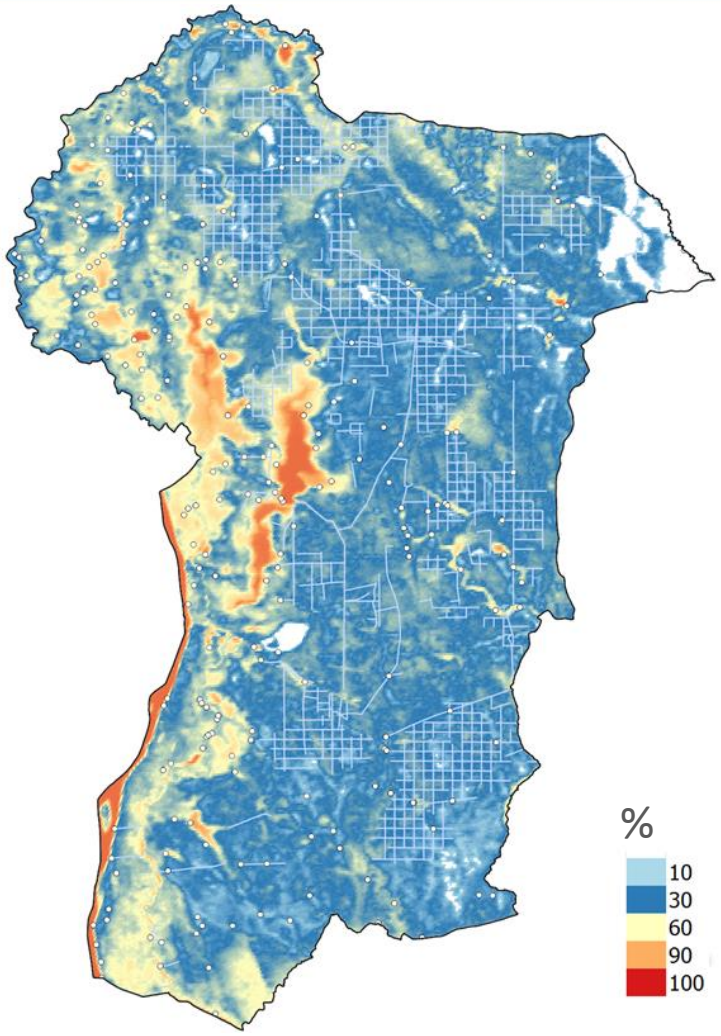


Project scale

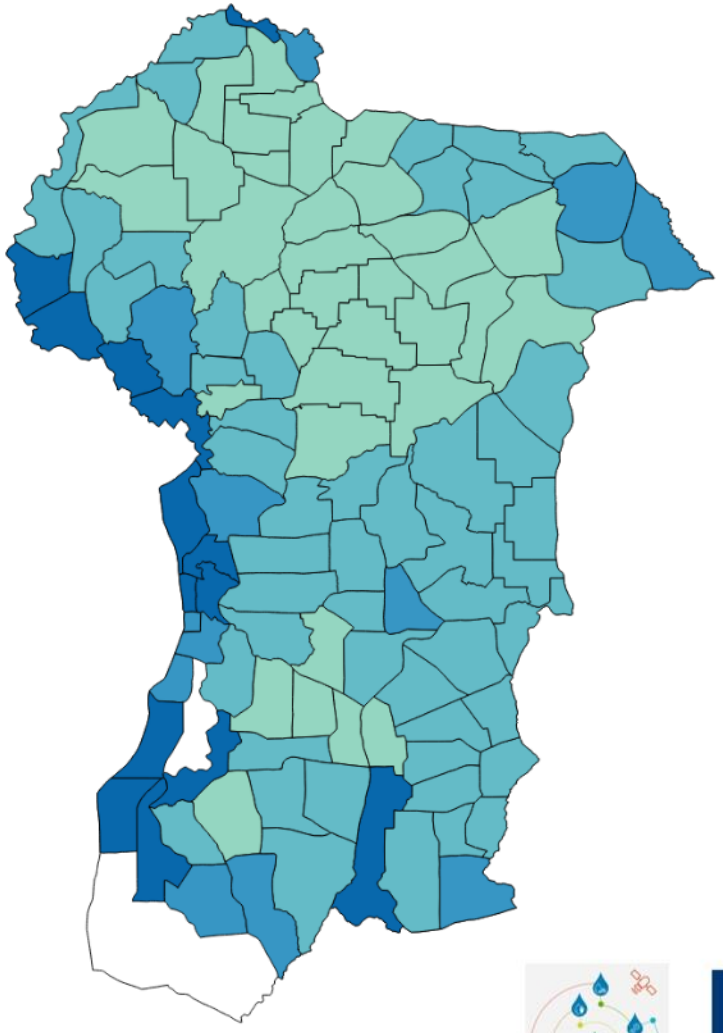
Risk assessment – Country scale



Crop productivity intensity change



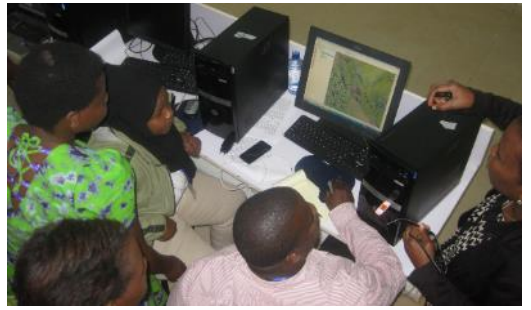
Inundation frequency

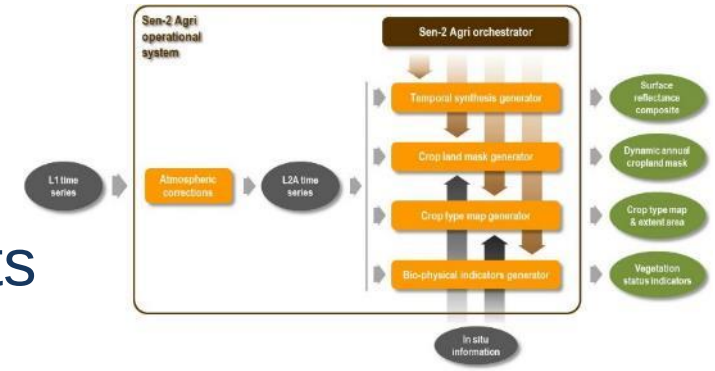


Water consumption / deficit by evapotranspiration

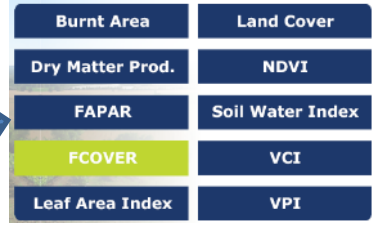
How to obtain information?

- Do it yourself
  - Specialized software
  - Online options *(e.g., Google Earth Engine)*
  - Existing tools *(e.g., Sen2Agri)*
  - Expertise needed
    - Capacity building





- Use free, existing products
  - Raw images
  - Processed products (e.g. surface reflectance)
  - Higher-level products
  - Do they suit needs?



- Get experts on board
  - No need for processing facilities
  - No need for image interpretation
  - Direct access to required information
  - Comes at a cost but possibly cheaper than setting it up

eo4sd.esa.int/agriculture