Renewables for African Agriculture:
Integrating Modelling Excellence and Robust Business Models

THE RE4AFAGRI DASHBOARDS

www.re4afagri.africa

LEAP-RE

Long-Term Joint EU-AU Research and Innovation Partnership on Renewable Energy

RE4AFAGRI

Renewable Energy for African Agriculture

The LEAP-RE project has received funding from the European Union's Horizon 2020 Research and Innovation Program under Grant Agreement 963530.

The RE4AFAGRI visualisation dasbhoards

www.re4afagri.africa

- A **powerful decision support tool with interactive dasbhoards**

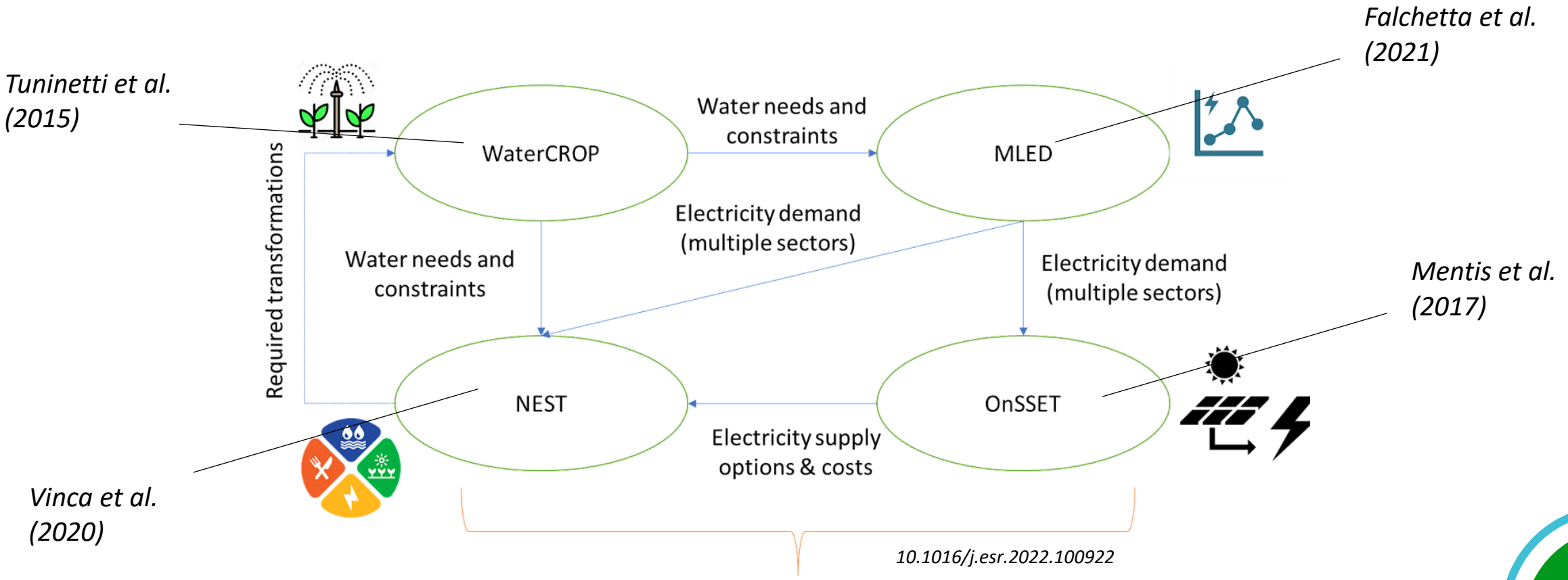
→ Support **private infrastructure developers** in site selection for maximising financial sustainability and development impact

→ Support **policymaking** through sub-national gaps and needs assessment for tailored measures and investments

- Enriched with **direct access to download the raw output data**

THE RE4AFAGRI modelling platform

The RE4AFAGRI platform is a multi-model framework to analyse deficits, requirements, and optimal solutions for integrated land-water-agriculture-energy-development nexus interlinkages in developing countries. Four models representing land-water-crop-food-energy requirements and dynamics *(WaterCROP, M-LED, OnSSET and MESSAGE-NEST)* are calibrated and soft-linked through the RE4AFAGRI platform.



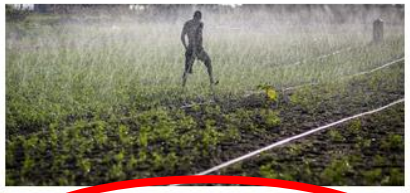
Infrastructure and investment requirements estimated and impact analysis

The RE4AFAGRI visualisation dasbhoards

The RE4AFAGRI visualisation dasbhoards

LEAP-RE

Dashboards - Zambia



Cropland and water requirements

Assess the current agricultural area, by crop and irrigation regime, and visualize water requirement estimates to close the irrigation gap

Multi-sectoral electricity demand

Browse local estimates of electricity demand from different sectors, including agricultural and other sources of demand.

Yield and yield growth potential

Navigate the current crop yields and estimates of productivity growth potential thanks to the input of irrigation

Crop processing

Navigate the crop throughput potential and corresponding energy requirement estimates for processing and storing crop yields in rural communities

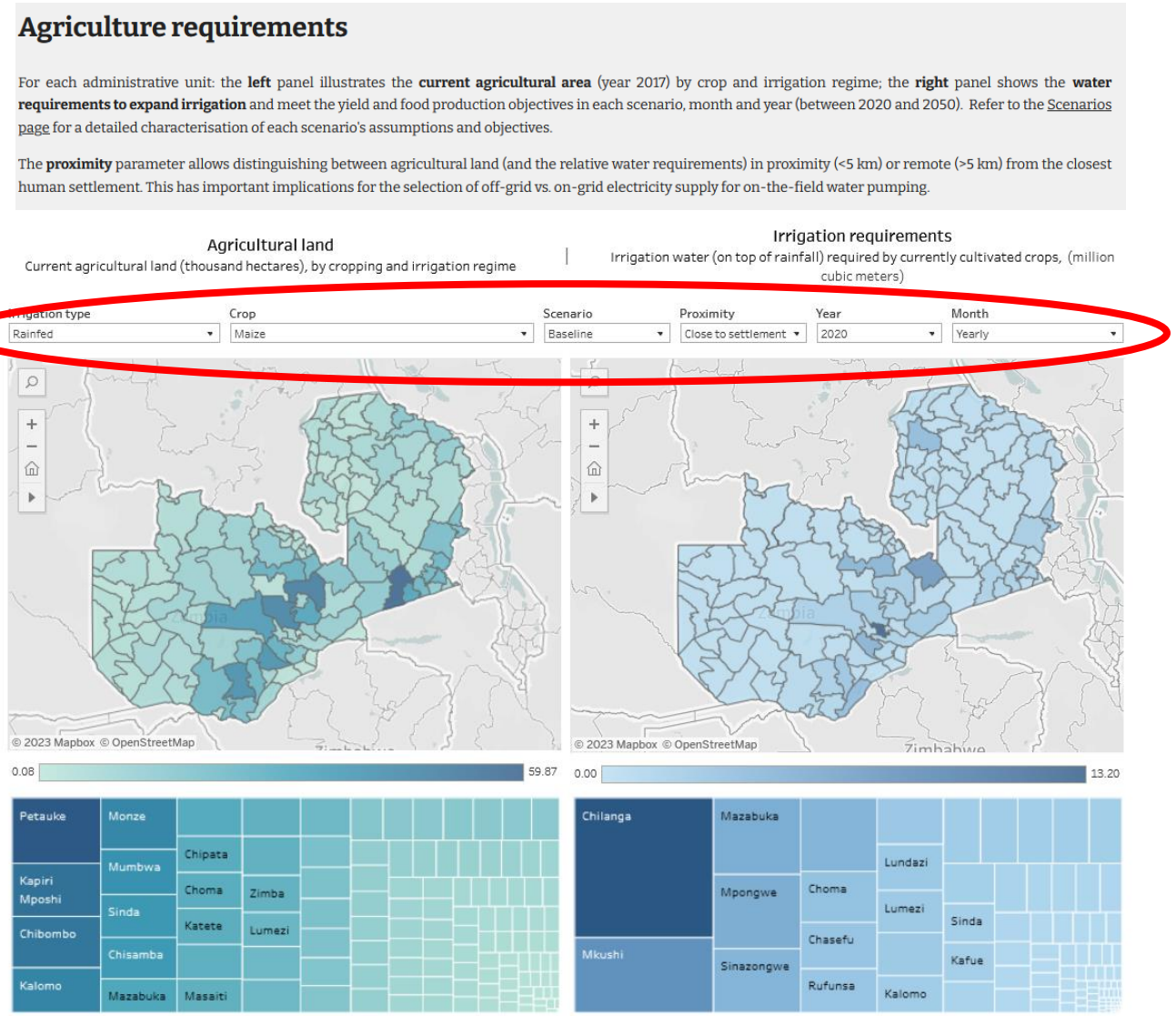
Electricity access planning

Assess the cost-optimal technologies and related investment requirements for electrifing communities

Multi-sectoral insights

Draw policy-relevant insights on how electricity access, food security, water management and climate change objectives interact

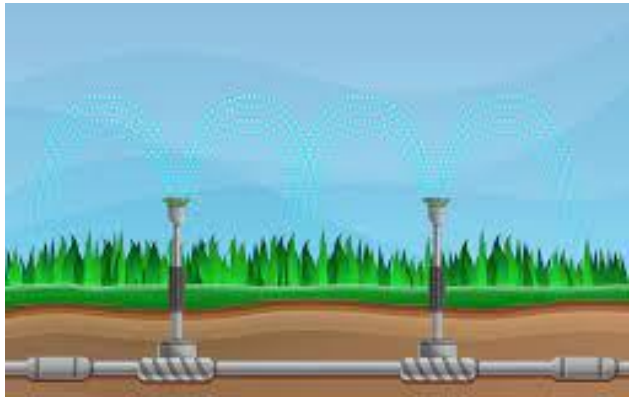
The RE4AFAGRI visualisation dasbhoards



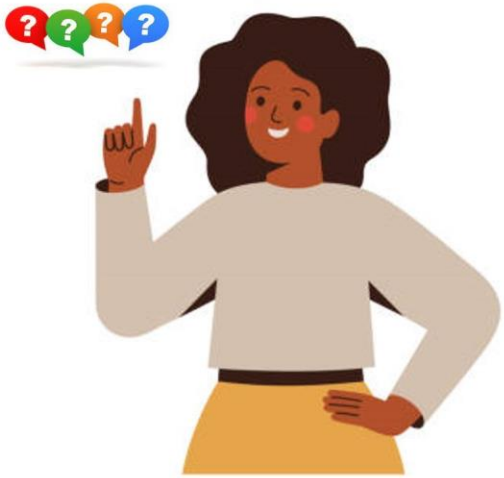
Selectors

- Scenarios
- Months
- Projection year
- Options (dashboard-specific)
  - Crops
  - Technologies
  - Sectors
  - …

Use case example: agriculture and irrigation

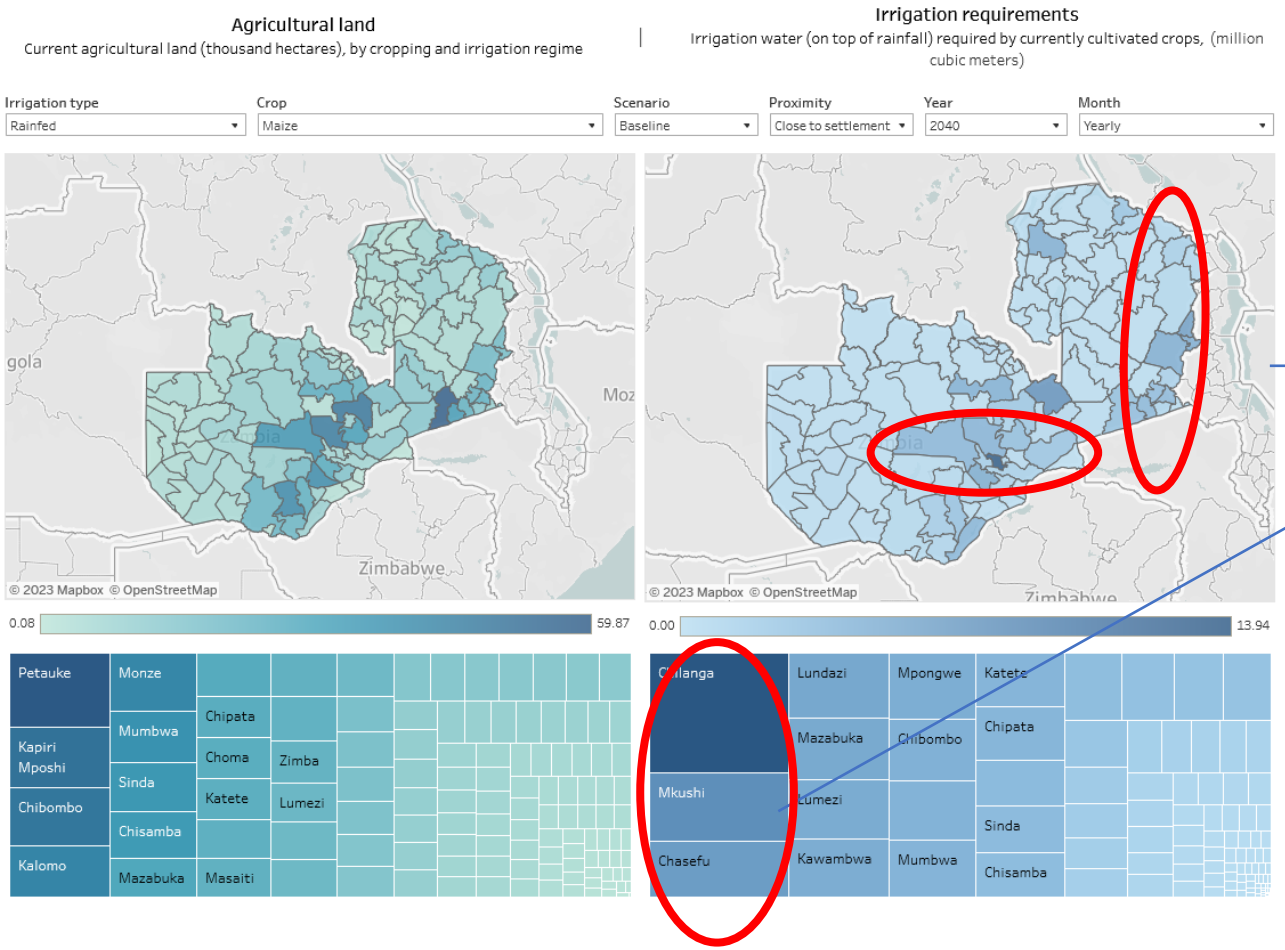


Anne wishes to identify which regions have the **strongest need and potential for expanding maize irrigation**



Anne, president of smallholder farmers association of Zambia

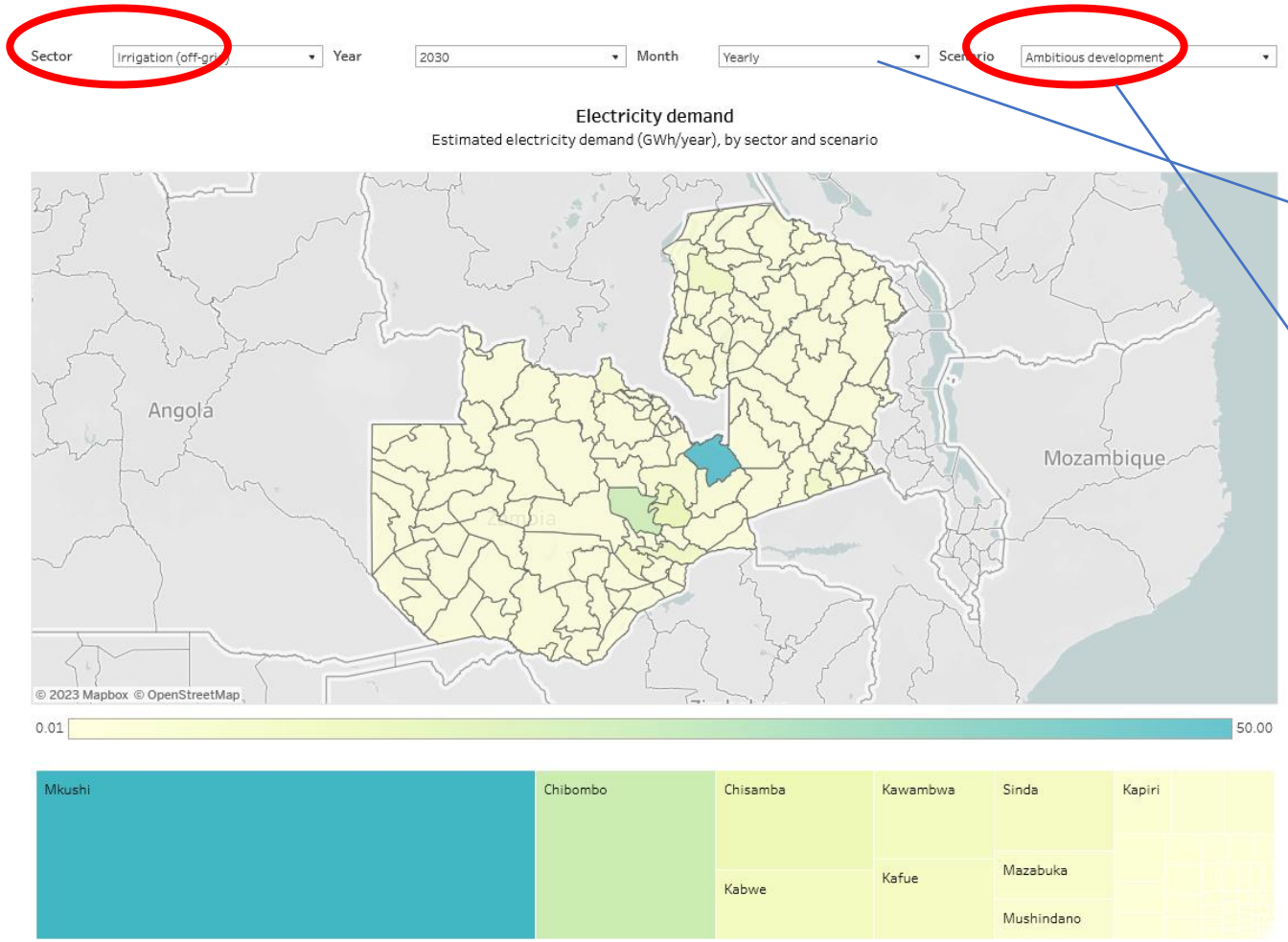
Use case example: agriculture and irrigation



Regions with the estimated largest irrigation water gap for rainfed maize fields **CLOSE TO SETTLEMENT**

Cropland that is close to settlement might be more suitable to be connected to centralised water infrastructure and electricity generation options

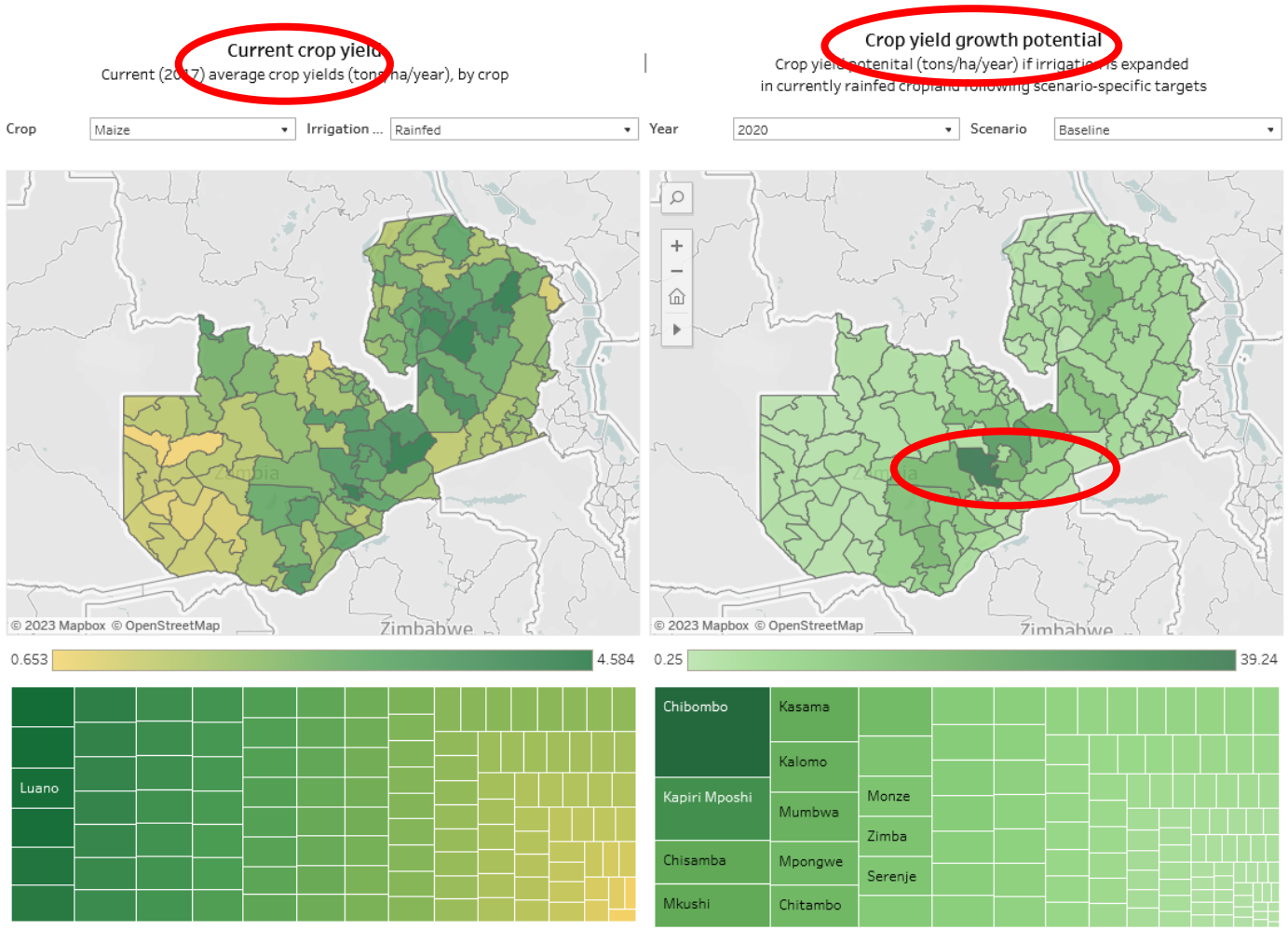
Use case example: agriculture and irrigation



Check **seasonality of demand**

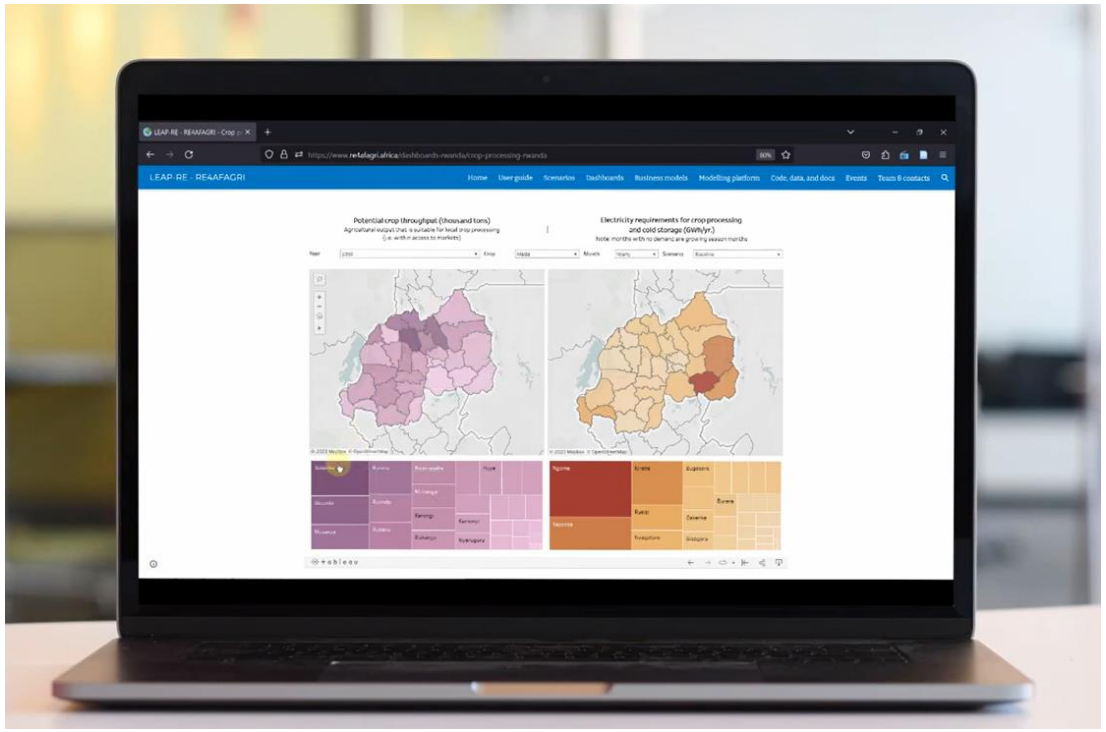
Compare the three scenarios to observe the difference of switching from base production to increased production to meet food and nutrition security goals

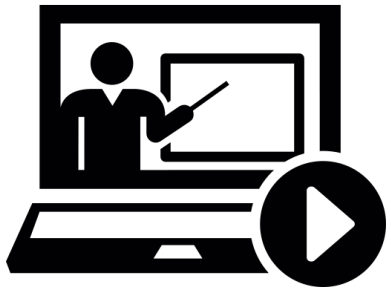
Use case example: agriculture and irrigation



Regions where rainfed maize is expected to have **the strongest yield growth response** if irrigation is performed in currently rainfed cropland

M-LED: extended training videos





Check out the **extended training video**:

- RE4AFAGRI modeling platforms and dashboards training

Thank you

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