

# APSAN-Vale project: Water Productivity Assessment

## Irrigation season 2021

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### Introduction

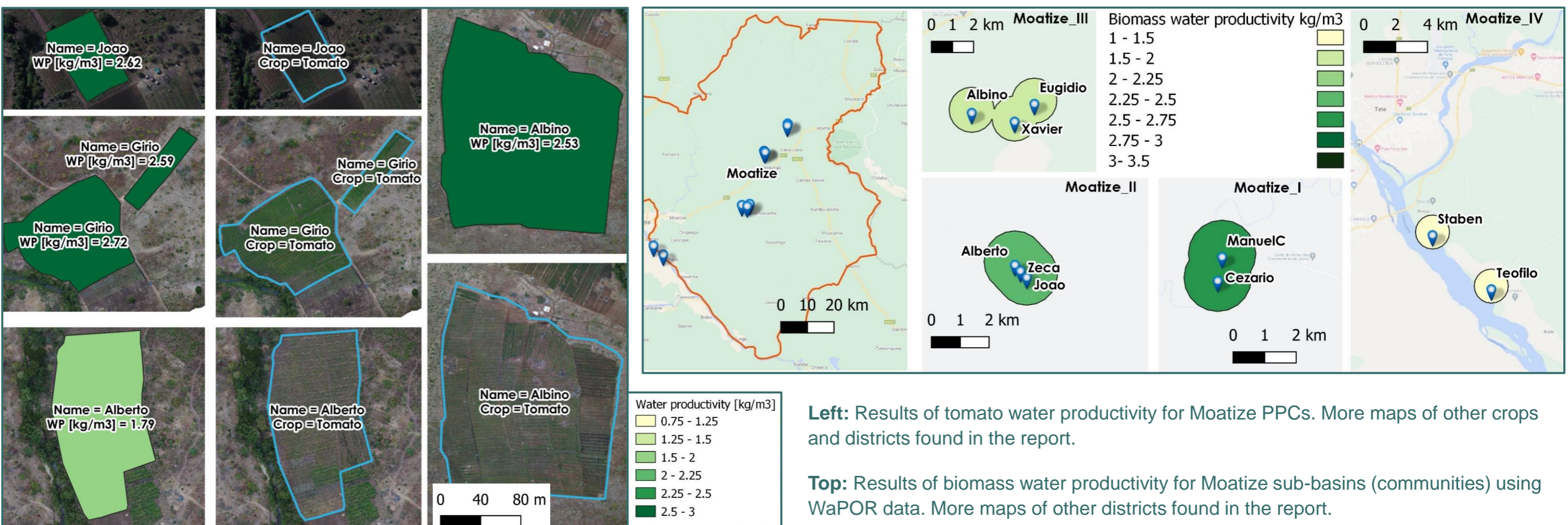
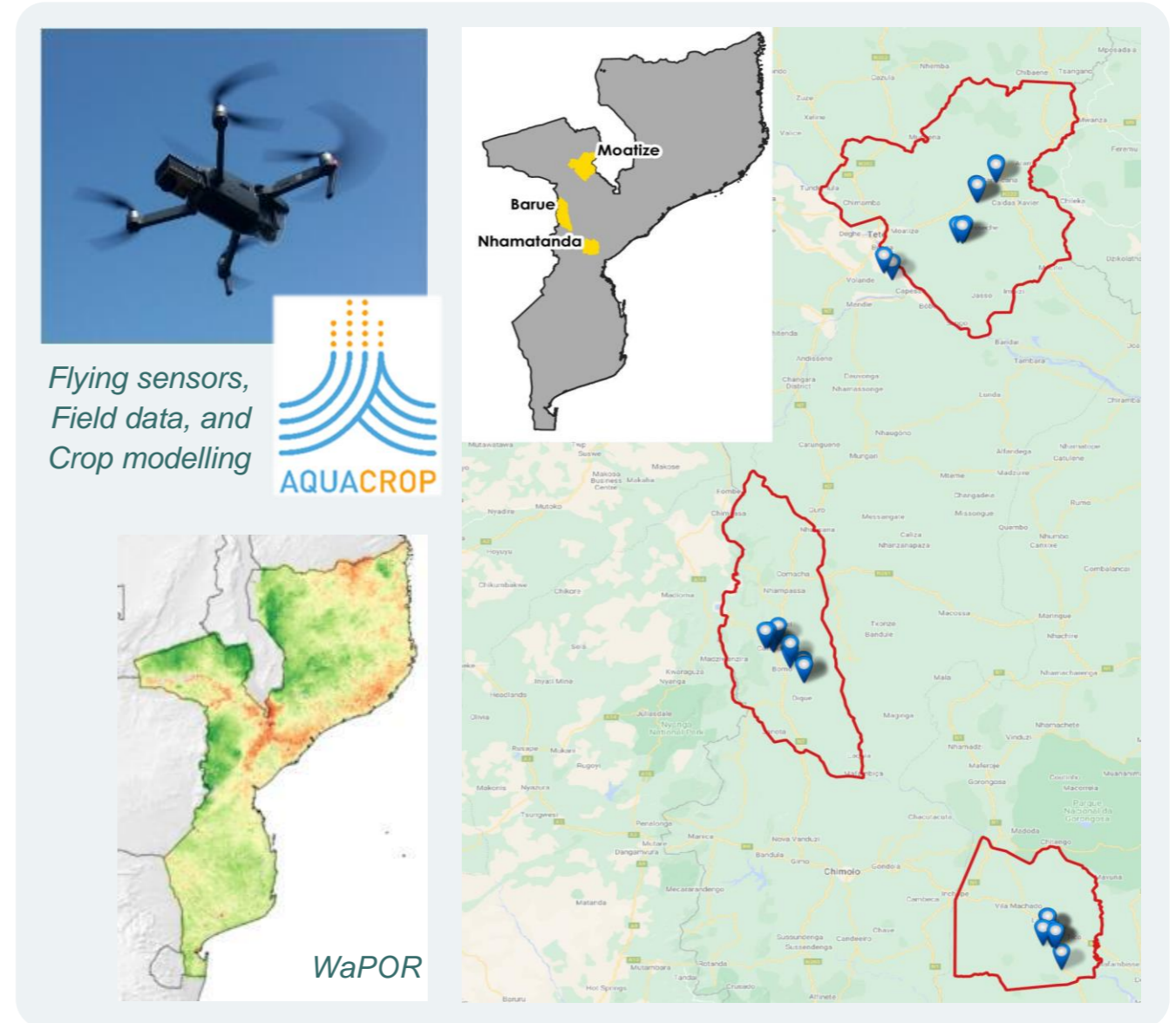
The APSAN-Vale project has the objective to: 'Pilot innovations to **increase the Water Productivity** and Food security for Climate Resilient smallholder agriculture in the Zambezi valley of Mozambique'. Water Productivity (WP) is used as an indicator to quantify the **impact of the innovations** on smallholder agriculture. These innovations can be technical packages (interventions and trainings), and adoption of lessons-learned through farmer-to-farmer communication. Project activities take place in three districts namely: **Báruè, Moatize, and Nhamatanda**.

### Methodology

Crop-specific water productivity is monitored at field scale with **flying sensors** (drones), **satellite imagery** (Sentinel 2), **field notes**, and **crop modelling** (AquaCrop). In the districts nine to ten PPCs (small commercial farmers) are selected and monitored throughout the irrigation season (2021). The crop types cultivated at these locations are **tomato, cabbage, potato, onion, beans, and maize**. At sub-basin and basin scale biomass water productivity is monitored with FAO's open-access data portal **WaPOR** (<https://wapor.apps.fao.org>) for communities surrounding the APSAN PPCs and the basins the PPCs are in using hydrological information of streamlines.

### Results

Results are provided on the crop development during the growing season for vegetation status and canopy cover. These are found on the **online data portal** (<https://www.futurewater.nl/apsanvaleportal/>). The assessment of water productivity is presented with maps of water productivity and change compared to the baseline assessment for these districts. After normalization for climatic conditions, **the increase in overall crop specific water productivity was found to be +74% in Báruè, +21% in Moatize, and +50% in Nhamatanda, resulting in an average +48% increase in comparison with the baseline values**. The biomass water productivity as analysed with the WaPOR dataset indicate an increase in water productivity at the sub-basin (community) level of +24%, +24%, and +17% in Báruè, Moatize, and Nhamatanda, with an overall increase of +22% for all districts. The basin level water productivity results indicated +46%, +27%, and +25% increase for Báruè, Moatize, and Nhamatanda respectively, with overall increase of +33%. Example maps are shown below with detailed results, tables, and other figures provided in the **Water Productivity Assessment report** accessed through the QR code at the bottom.



**Left:** Results of tomato water productivity for Moatize PPCs. More maps of other crops and districts found in the report.

**Top:** Results of biomass water productivity for Moatize sub-basins (communities) using WaPOR data. More maps of other districts found in the report.



175

flights taken



28

PPCs monitored



+52%

increase in tomato WP



+36%

increase in cabbage WP



+48%

increase in WP at field level



+22%

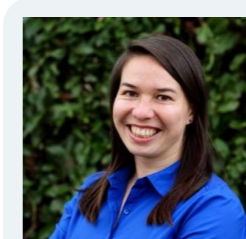
increase in WP at sub-basin level



+33%

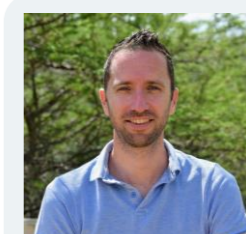
increase in WP at basin level

View or download the full report



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