

Monitoring productivity and other irrigation performance indicators at scheme level, the case of Xinavane

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WaterPIP
Water Productivity Improvement in Practice

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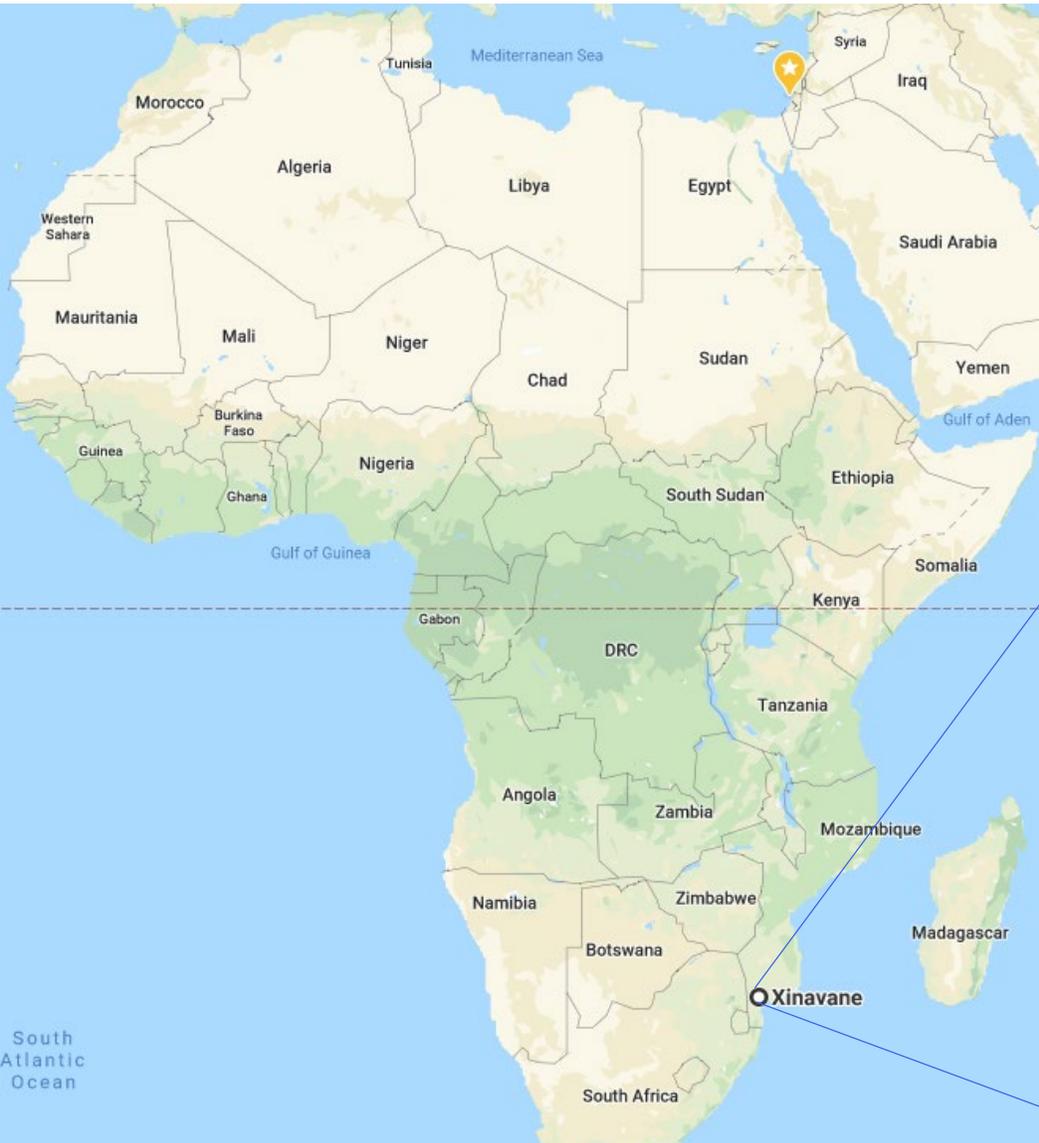


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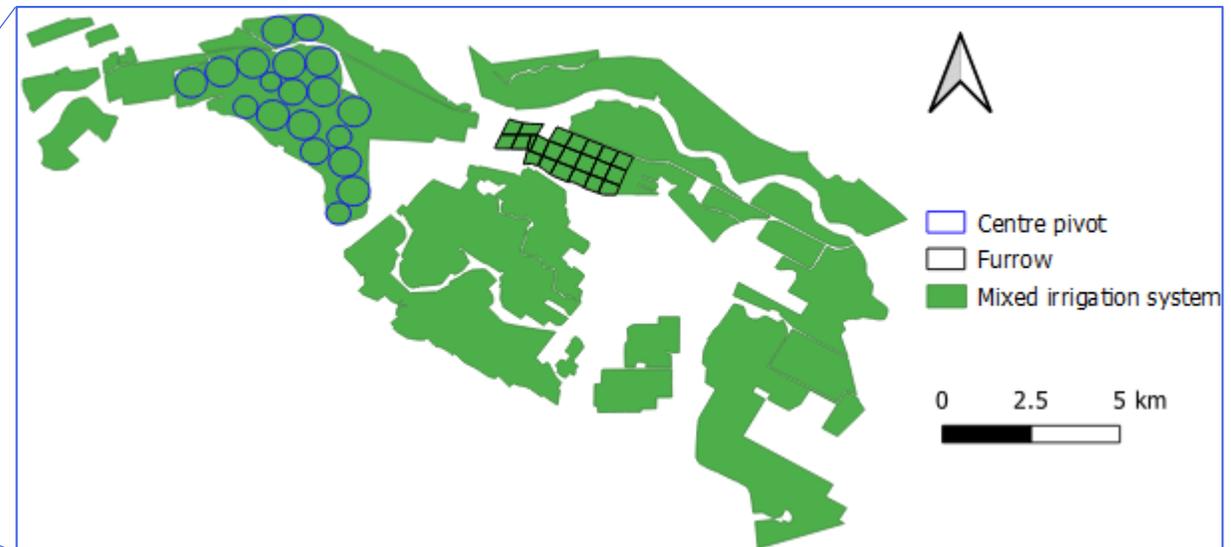


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Introduction

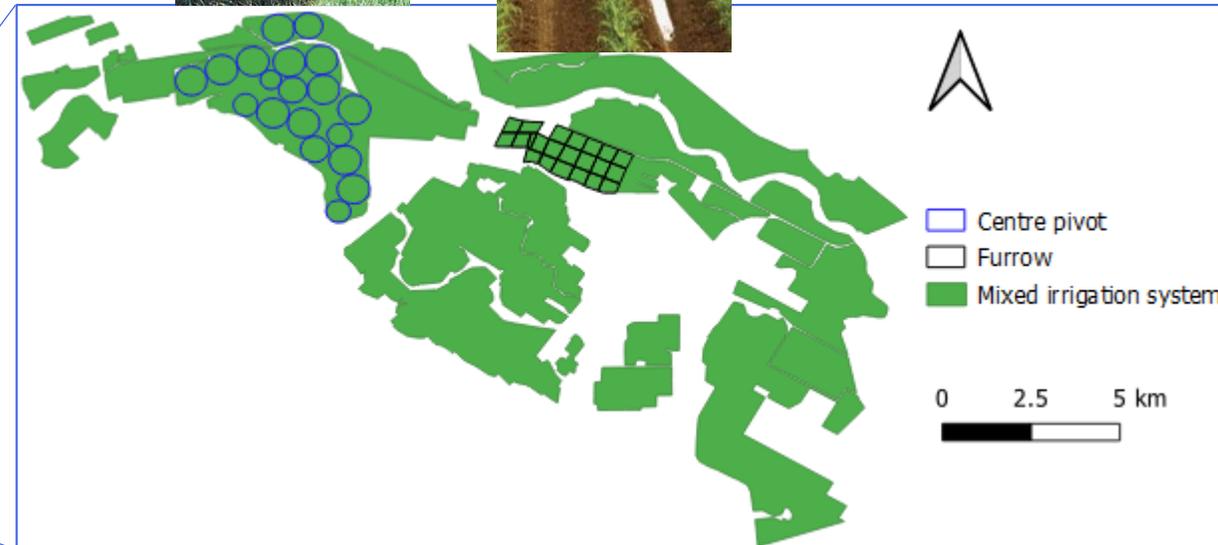
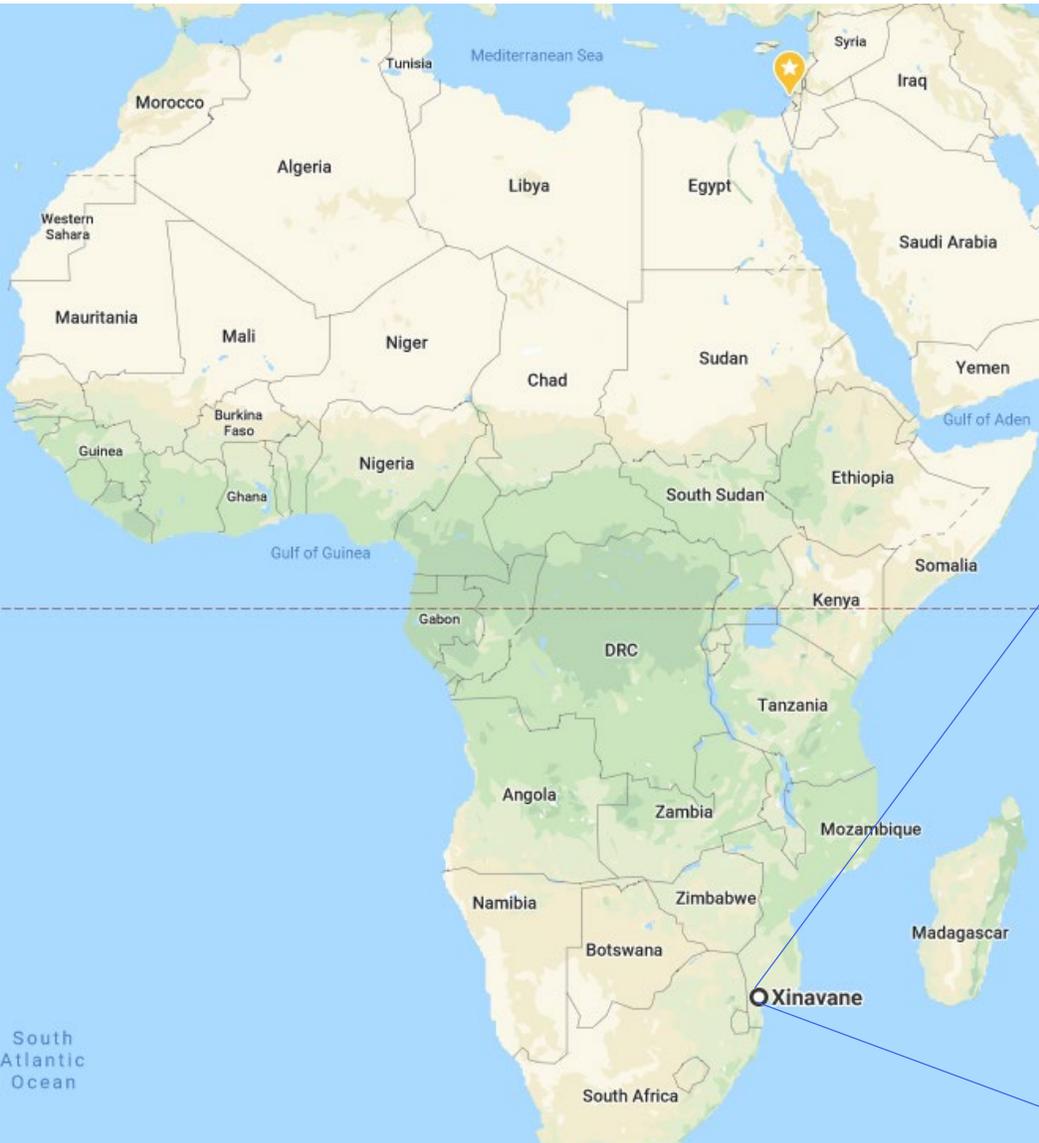


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- increase production on existing agricultural land:
can we identify the best performing spots to learn smart management practices?



Introduction

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- increase production on existing agricultural land: can we identify the best performing spots to learn smart management practices?



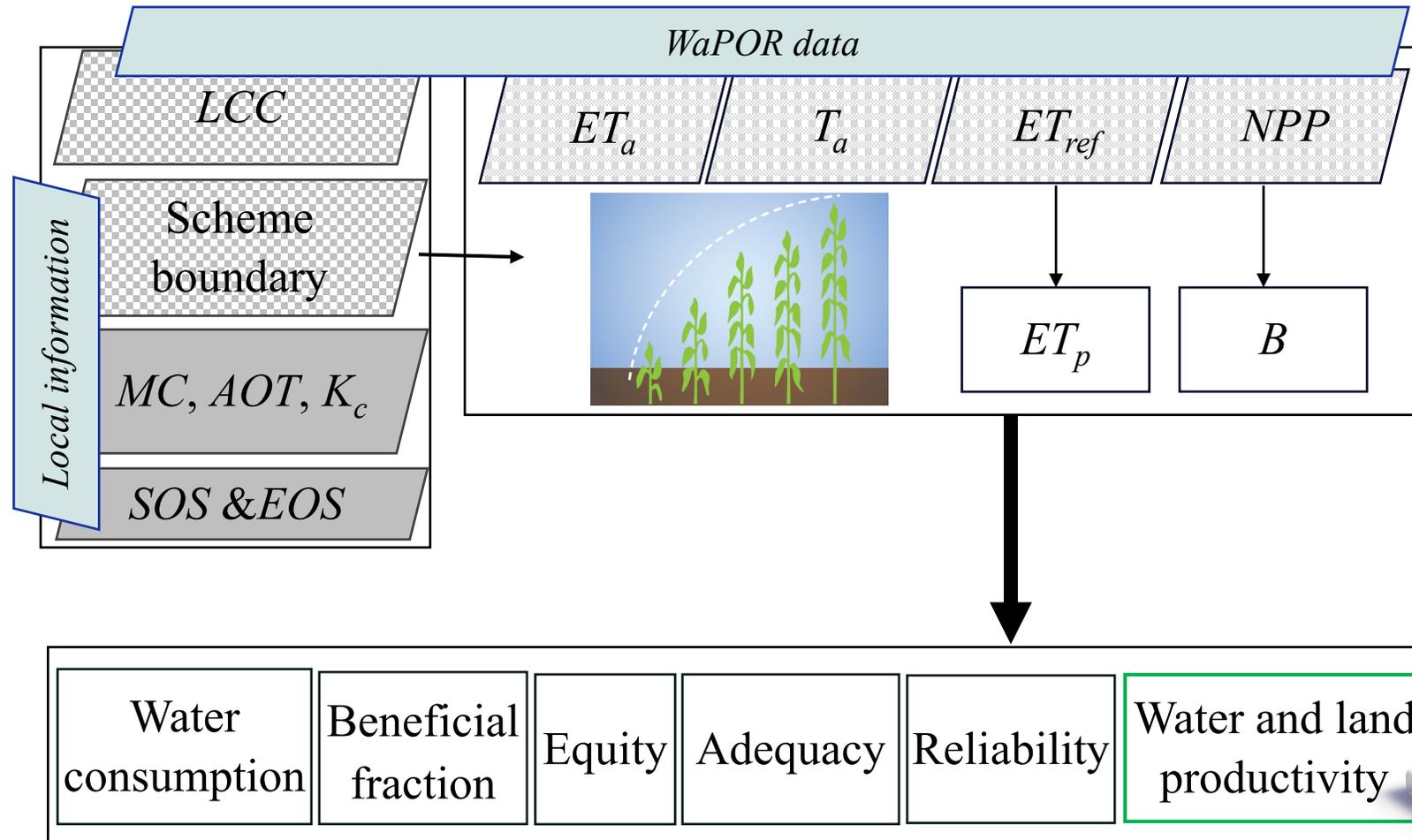
Objective

This study

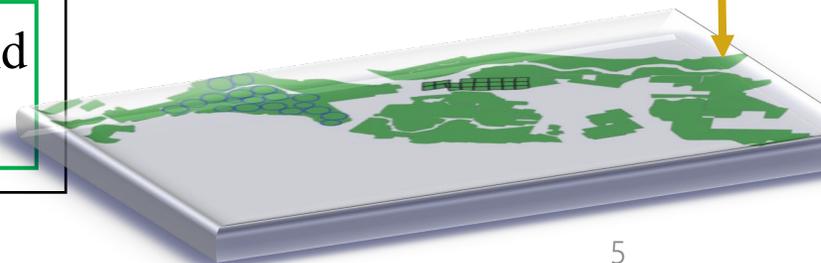
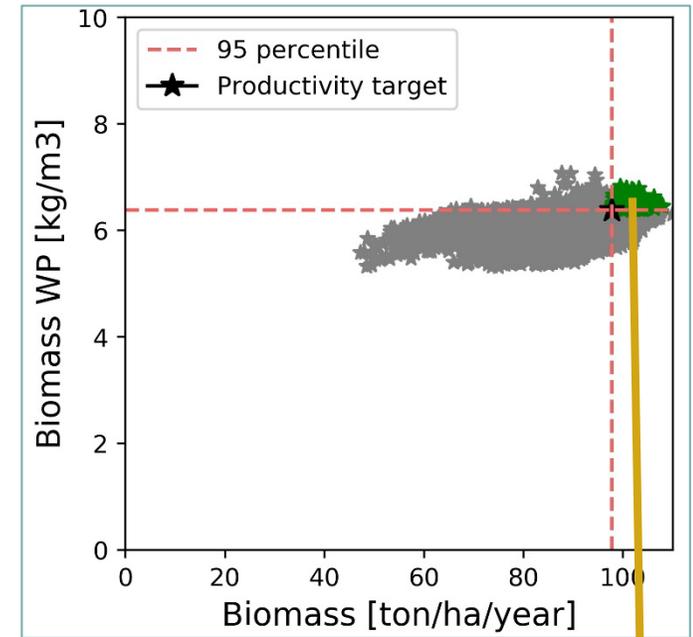
- ✓ provides insight into water and land productivity, and other irrigation performance indicators;
- ✓ identify the 'bright spots'.

At Xinavane sugarcane estate segmented by irrigation method.
Five seasons (2014/2015 to 2018/2019).

Methods and data

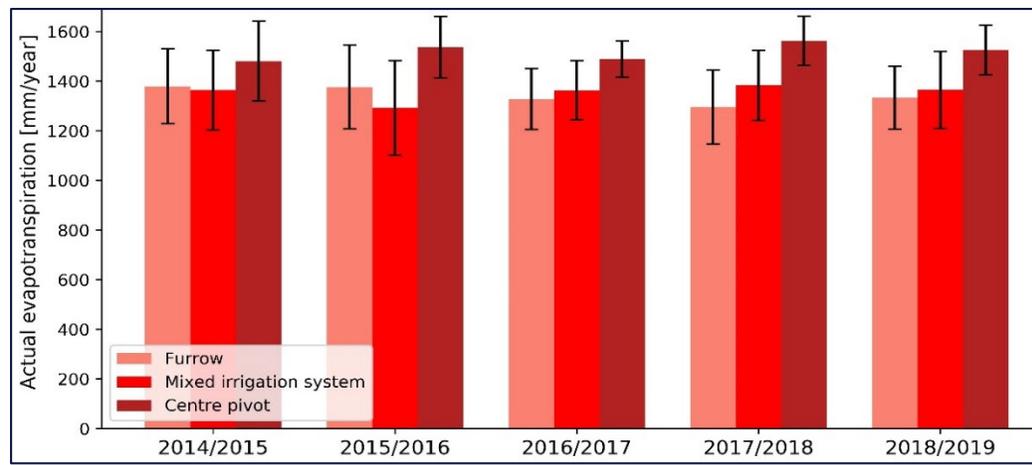
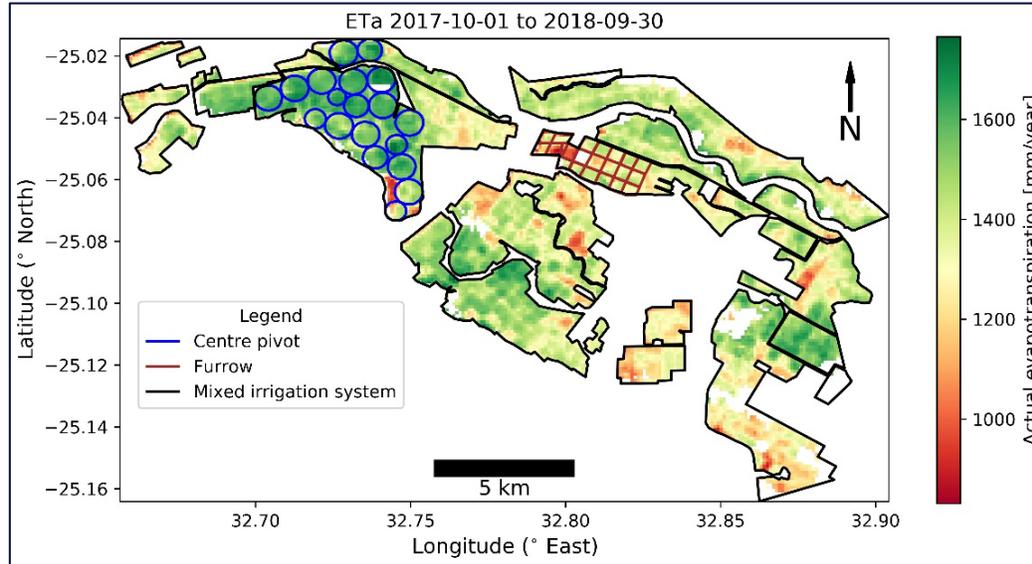


Productivity targets → Bright spots

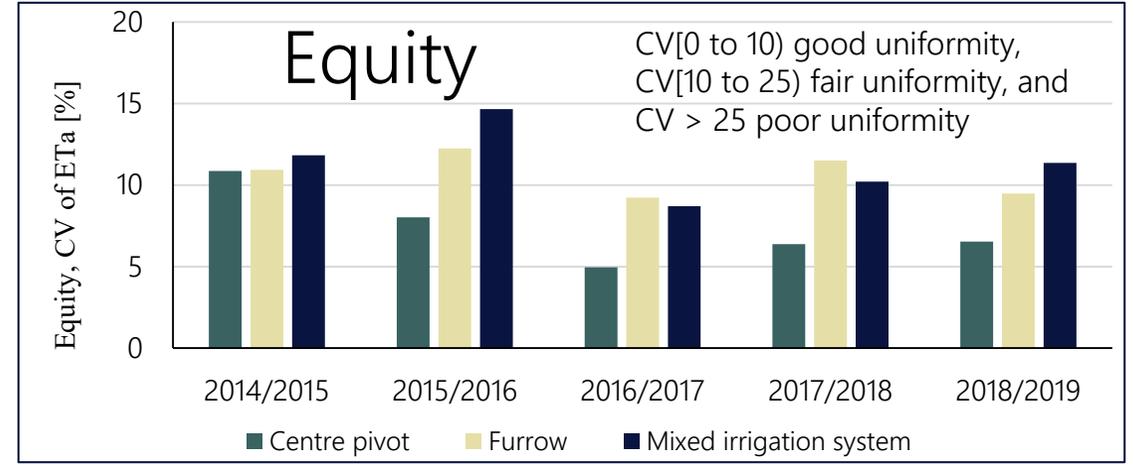
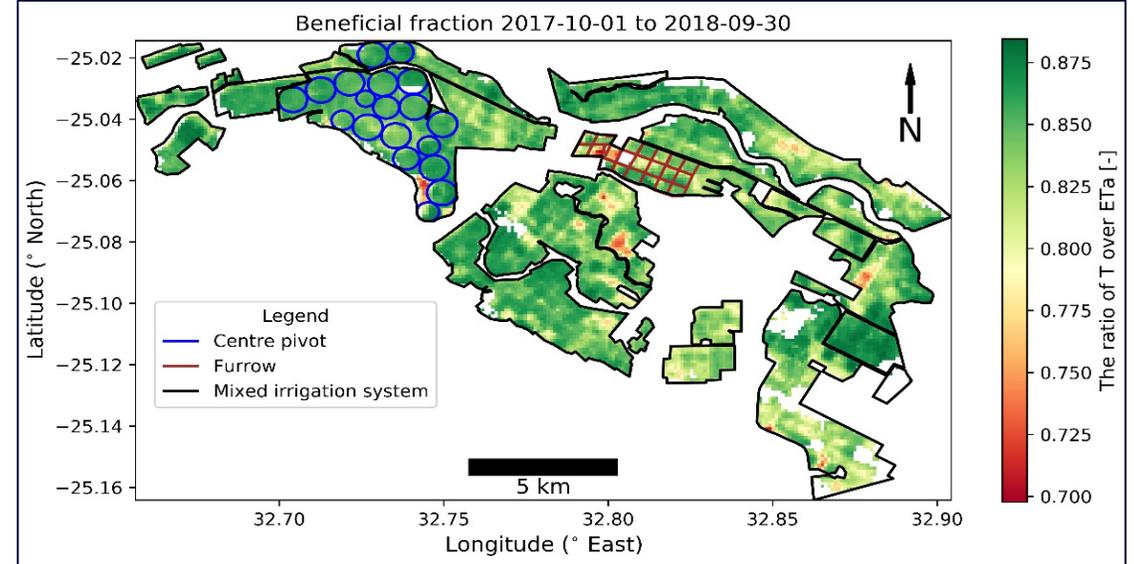


Irrigation performance indicators (a)

- Water consumption

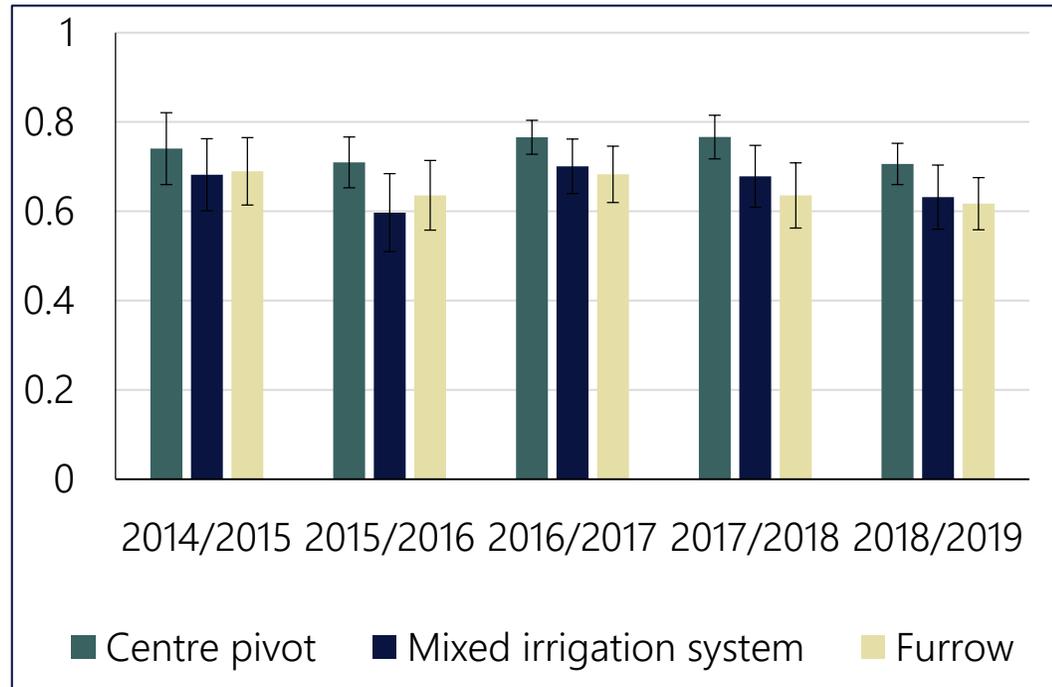


- Beneficial fraction

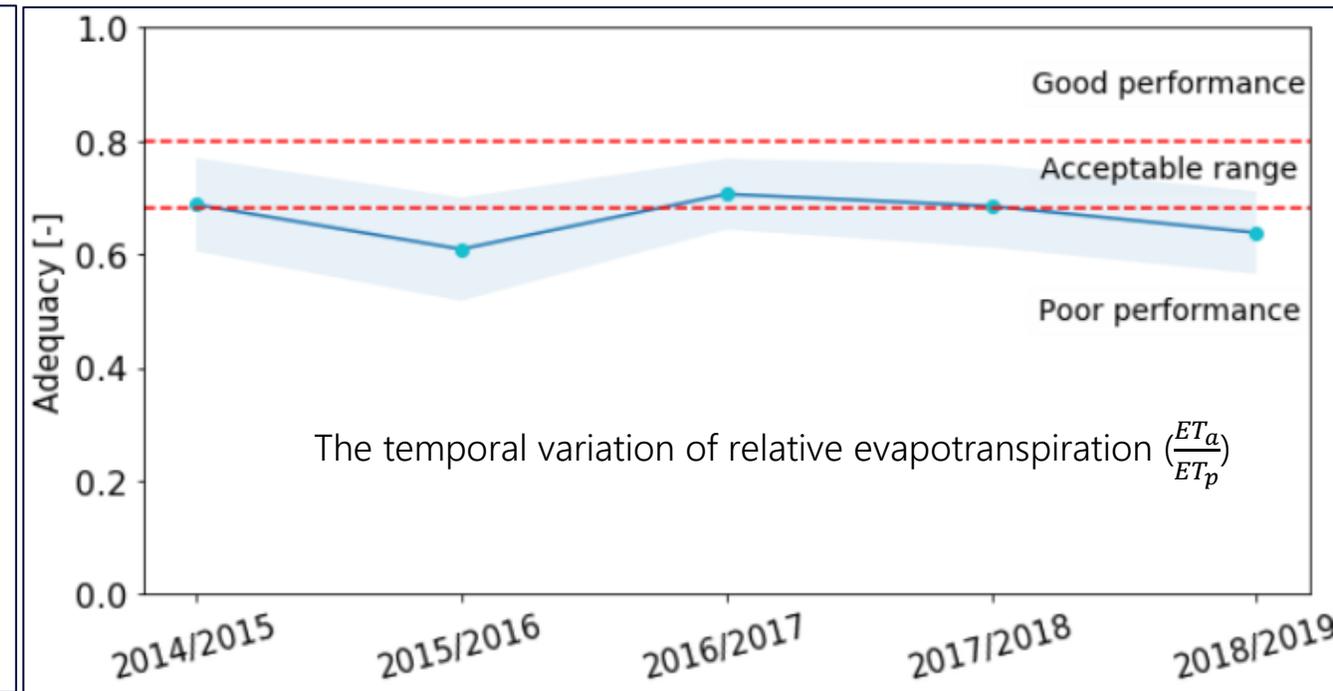


Irrigation performance indicators (b)

- Adequacy

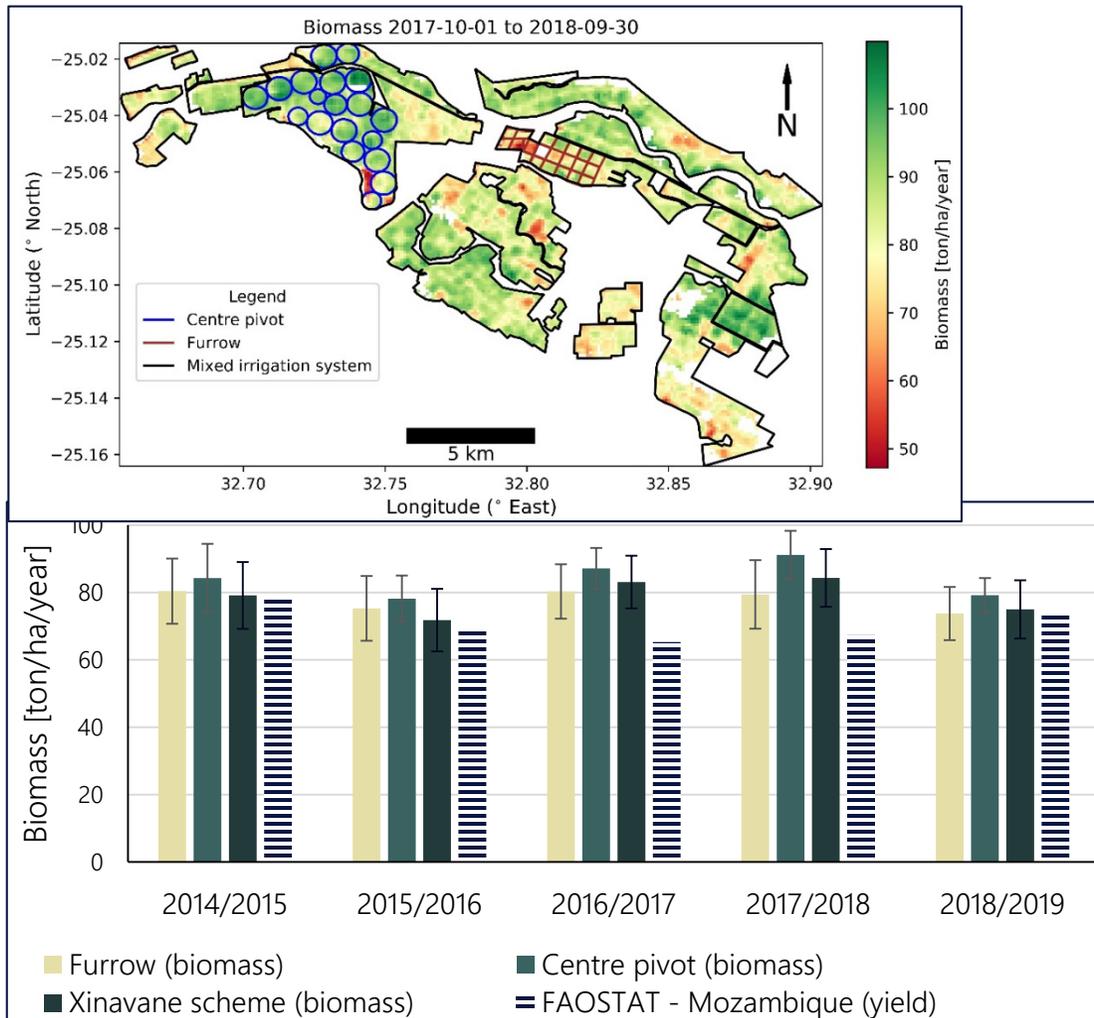


- Reliability

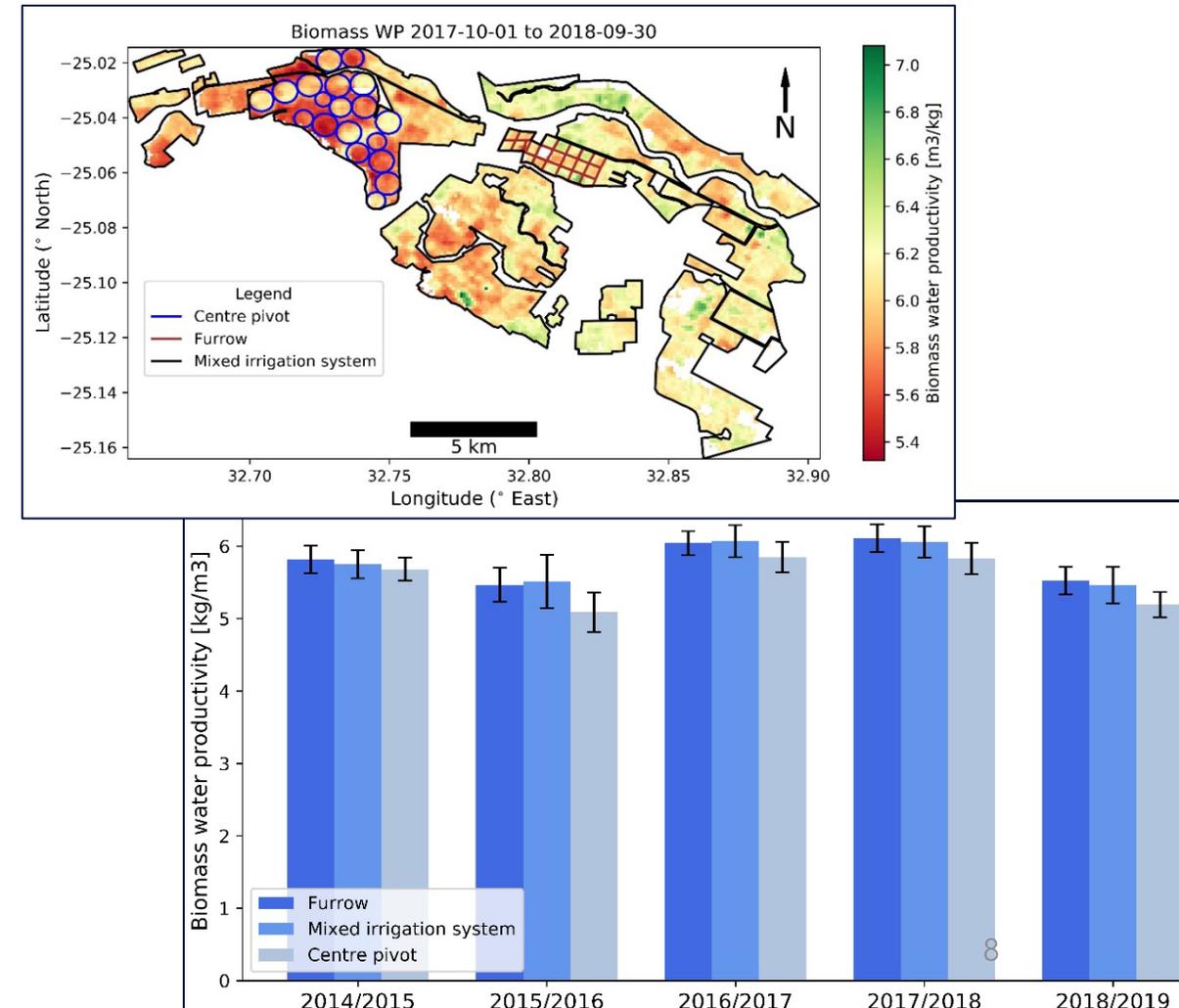


Irrigation performance indicators (c)

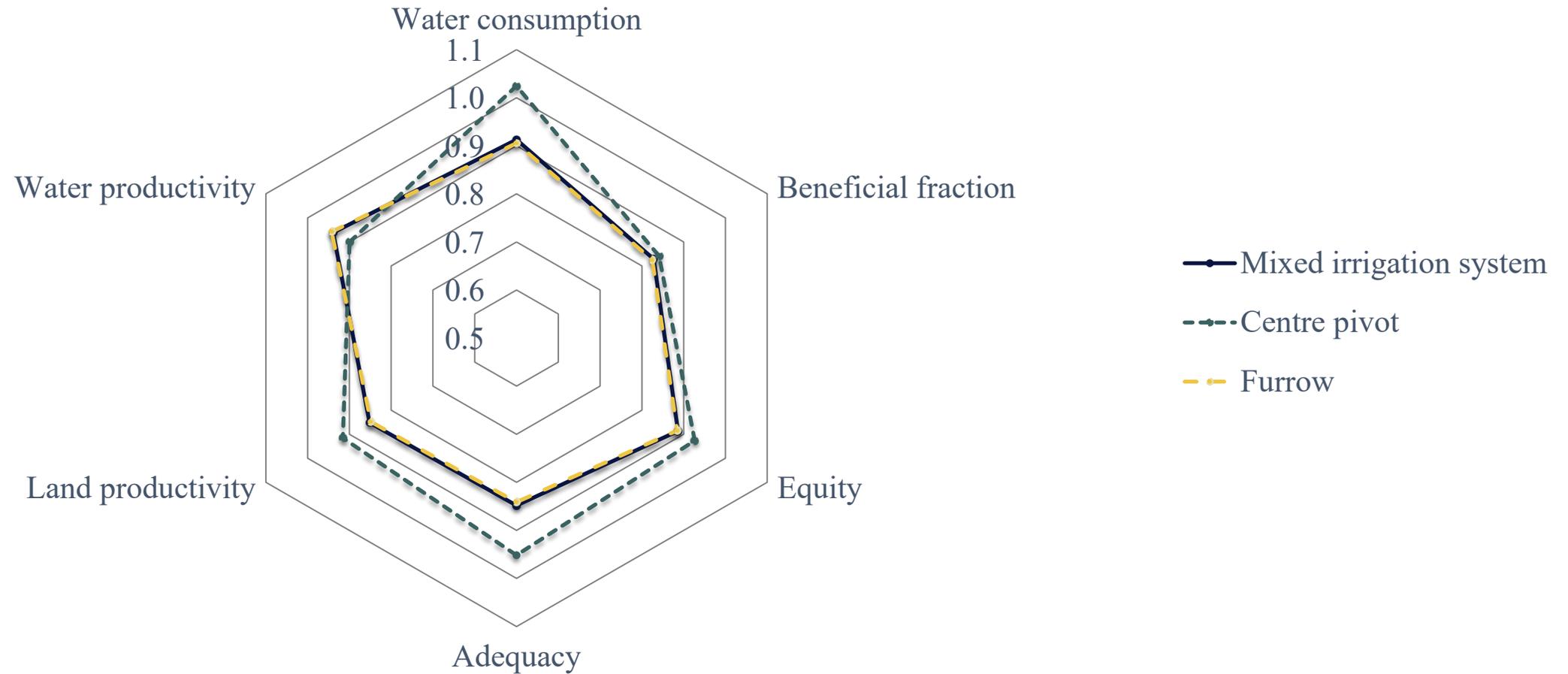
- Biomass



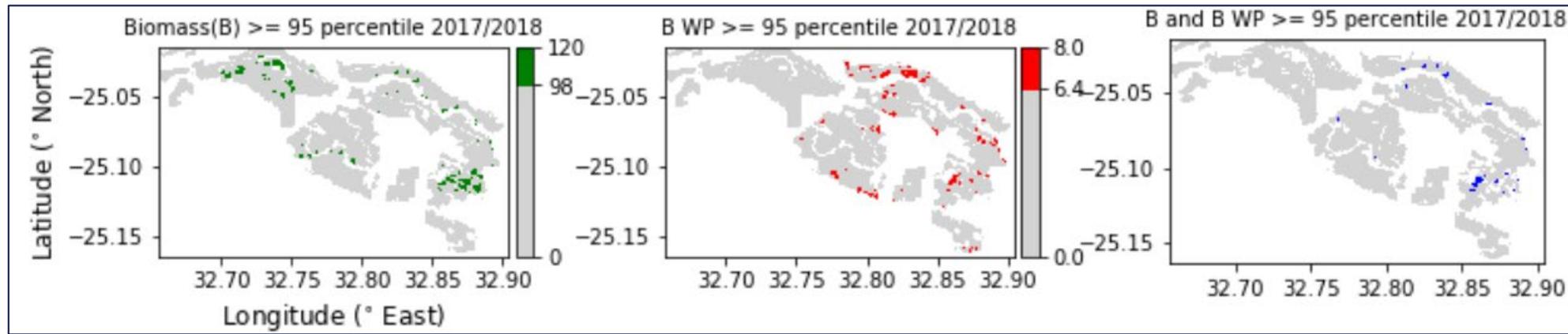
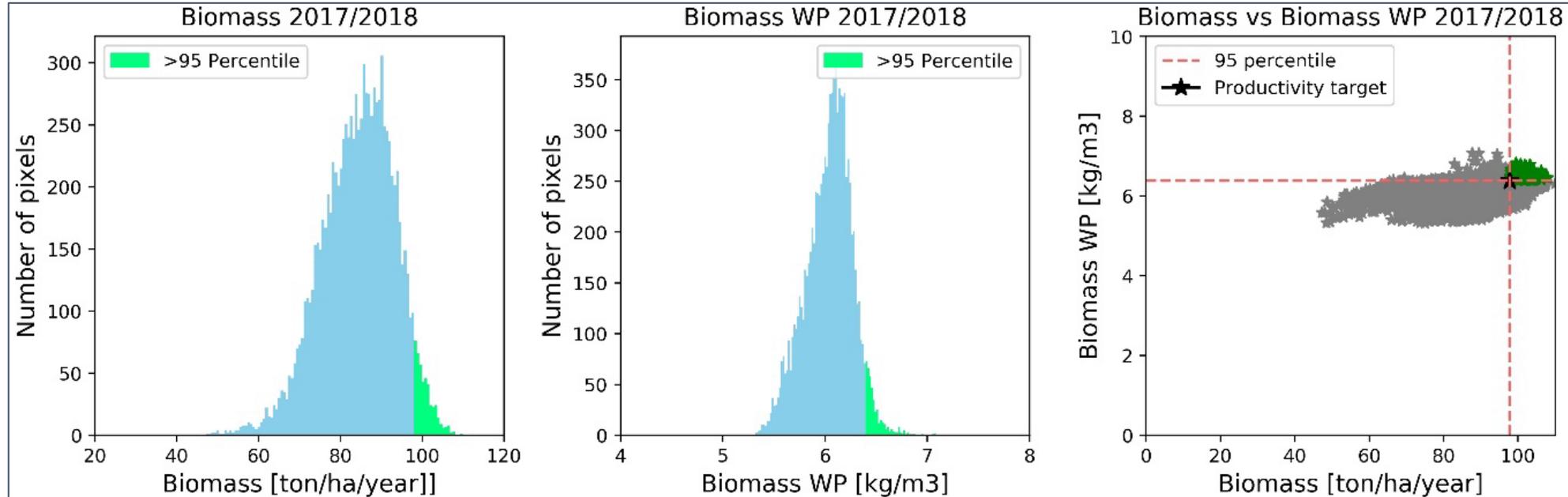
- Biomass WP



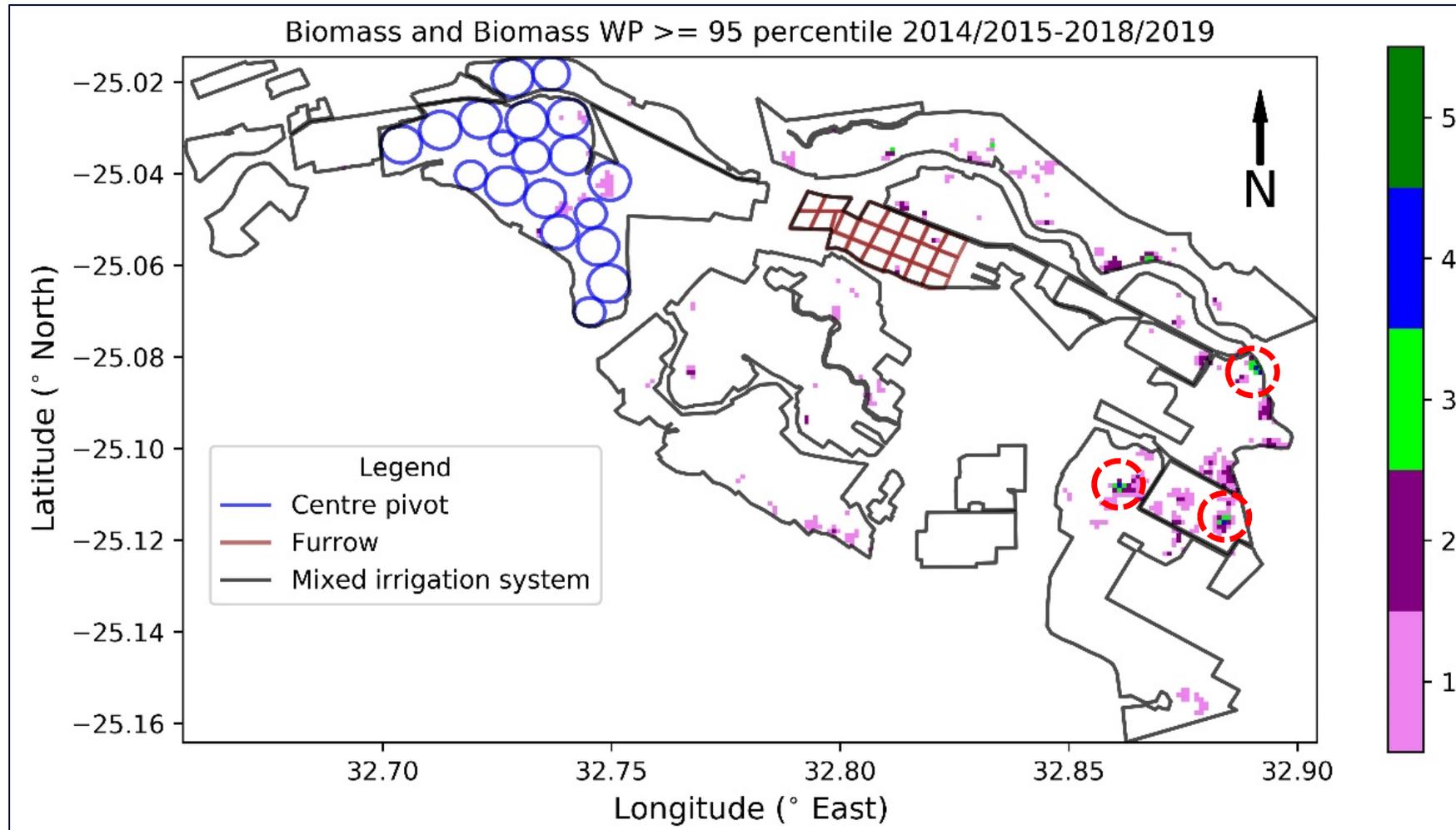
Summary of performance indicators



Bright spots



Bright spots



Conclusions

- The comprehensive analyses on the spatiotemporal variation of the indicators at Xinavane specify that **there is no one irrigation method that stands out the best in all indicators.**
- Centre pivots has higher adequacy, land productivity and equity, but at the cost of lower water productivity and excess seasonal water consumption compared to furrow irrigation.
- The relative evapotranspiration is somewhat acceptable under all irrigation methods, implying water deficit is not the main underlying problem for the difference between land productivity of furrow and centre pivots. Thus the difference in land productivity can be attributed to other farm inputs, such as water logging and salinity; which requires further investigation.
- The bright spots from which best management practices could be learned are identified at areas irrigated by mixed irrigation system.

WaterPIP

Water Productivity Improvement in Practice

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Precipitation comparison

