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Special session “Development of water accounting and its policy uses in Africa”

# How WA+ can strengthen the water accounts that monitor water efficiency, water stress and the state of water-related ecosystems, key SDG indicators

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# Outline

- SEEA-Water *and* WA+ - looking for synergies
- Key water SDG indicators
- WA+ illustration: Mara river basin, Kenya and Tanzania
- Conclusion

## SEEA-Water *and* WA+

complementary

	SEEA-Water	↔	WA+
Experts	accountants		hydrologists
Spatial scale	administrative units		hydrological units
Temporal scale	financial year		seasonal
Object	blue water		green and blue water
Emphasise	industry, cities	↔	agriculture, ecosystems
Prerequisite	databases		detailed land use map

## Key water SDG indicators



Ensure availability and sustainable management of water and sanitation for all

Target 6.4: By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.

Indicator 6.4.1: Change in water use efficiency over time

Indicator 6.4.2: Change in the level of water stress over time: freshwater withdrawal as a proportion of available freshwater resources

## Key water SDG indicators



Ensure availability and sustainable management of water and sanitation for all

Link to  
SDG15

Target 6.6: By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes.

Indicator 6.6.1: Change in the extent of water-related ecosystems over time

# Mara River Basin

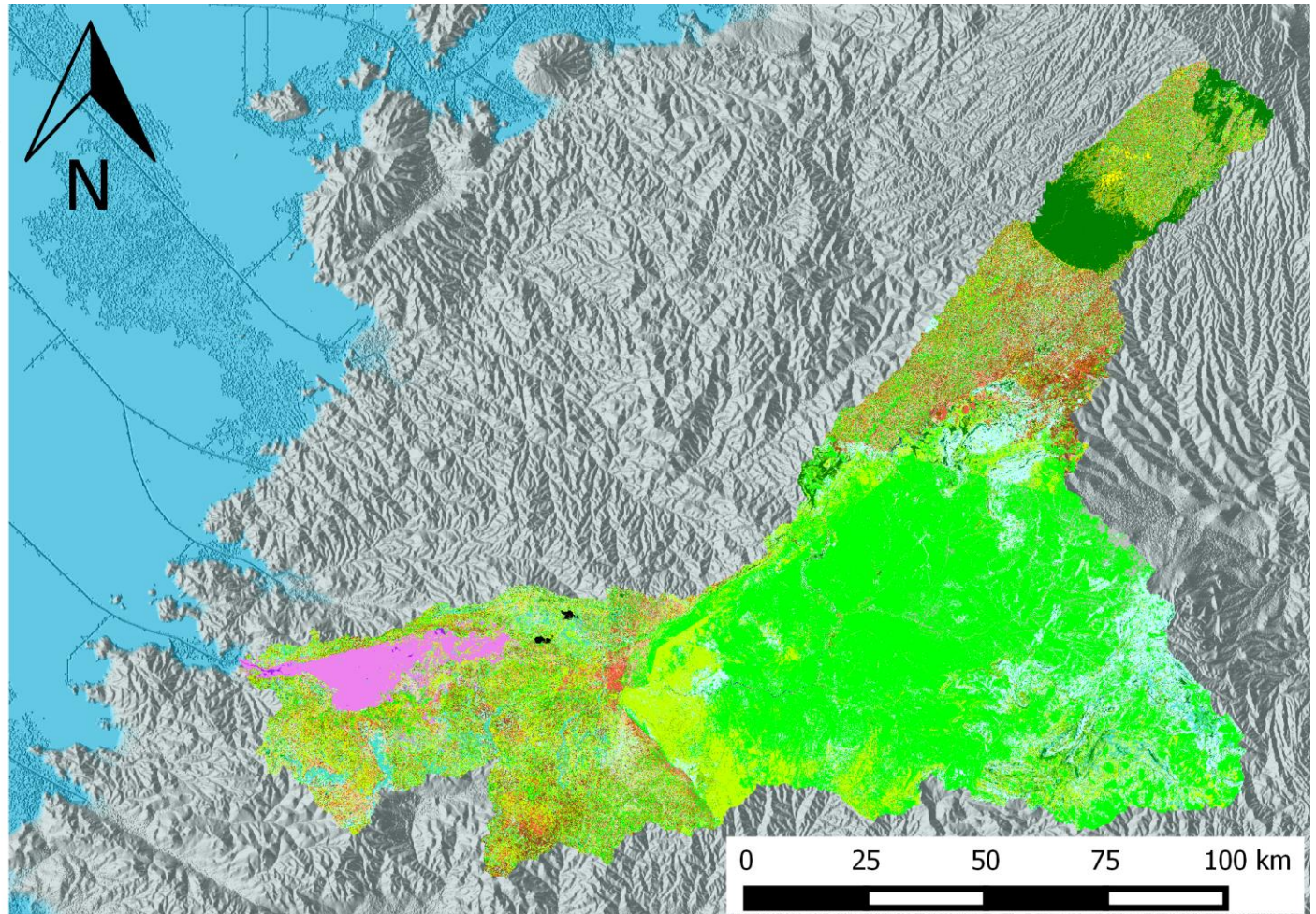
# Mara River Basin

## Land use (2014) in the Mara Basin

### Legend

#### Landuse

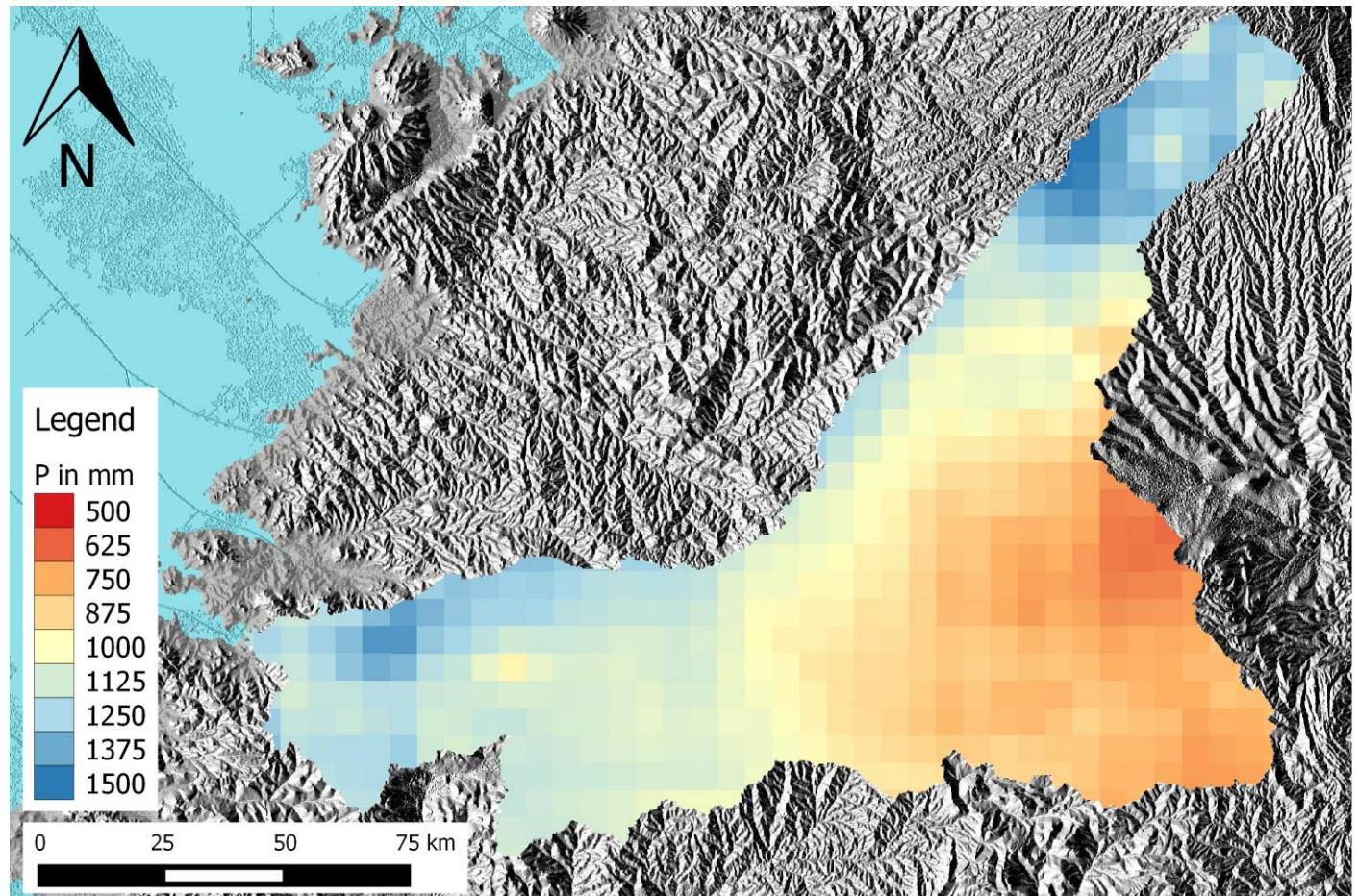
- Evergreen Broadleaf Forest
- Deciduous Broadleaf Forest
- Mixed Forest
- Plantation Forest
- Grass
- Savanna
- Shrub Open/Sparse
- Shrub Closed/Dense
- Wetland Vegetation
- Wetland Permanent Water
- Water Pond
- River
- Urban
- Bare Soil
- Mining Area
- Agriculture Pasture
- Beans
- Finger Millet
- Irish Potato
- Maize
- Maize-Beans
- Maize-Sweet Potato
- Irish Potato-Maize
- Sorghum
- Wheat
- Wheat-Irish Potato
- Wheat-Maize
- Farmer Rose
- Napier Grass
- Sudan Grass
- Tea Plantation
- Other Crop





# Mara River Basin

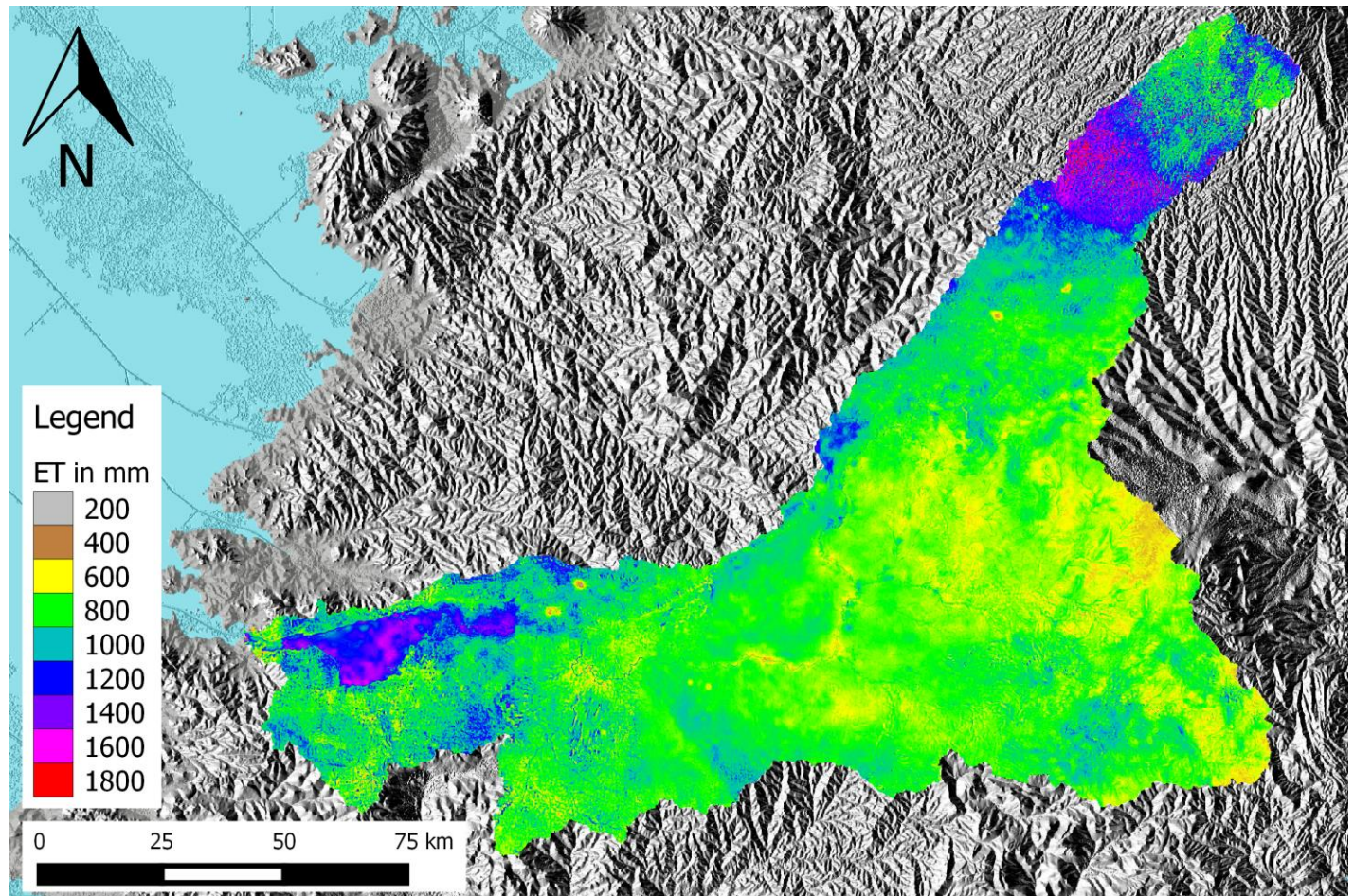
Rainfall (2014) in the Mara Basin (mm/yr)





# Mara River Basin

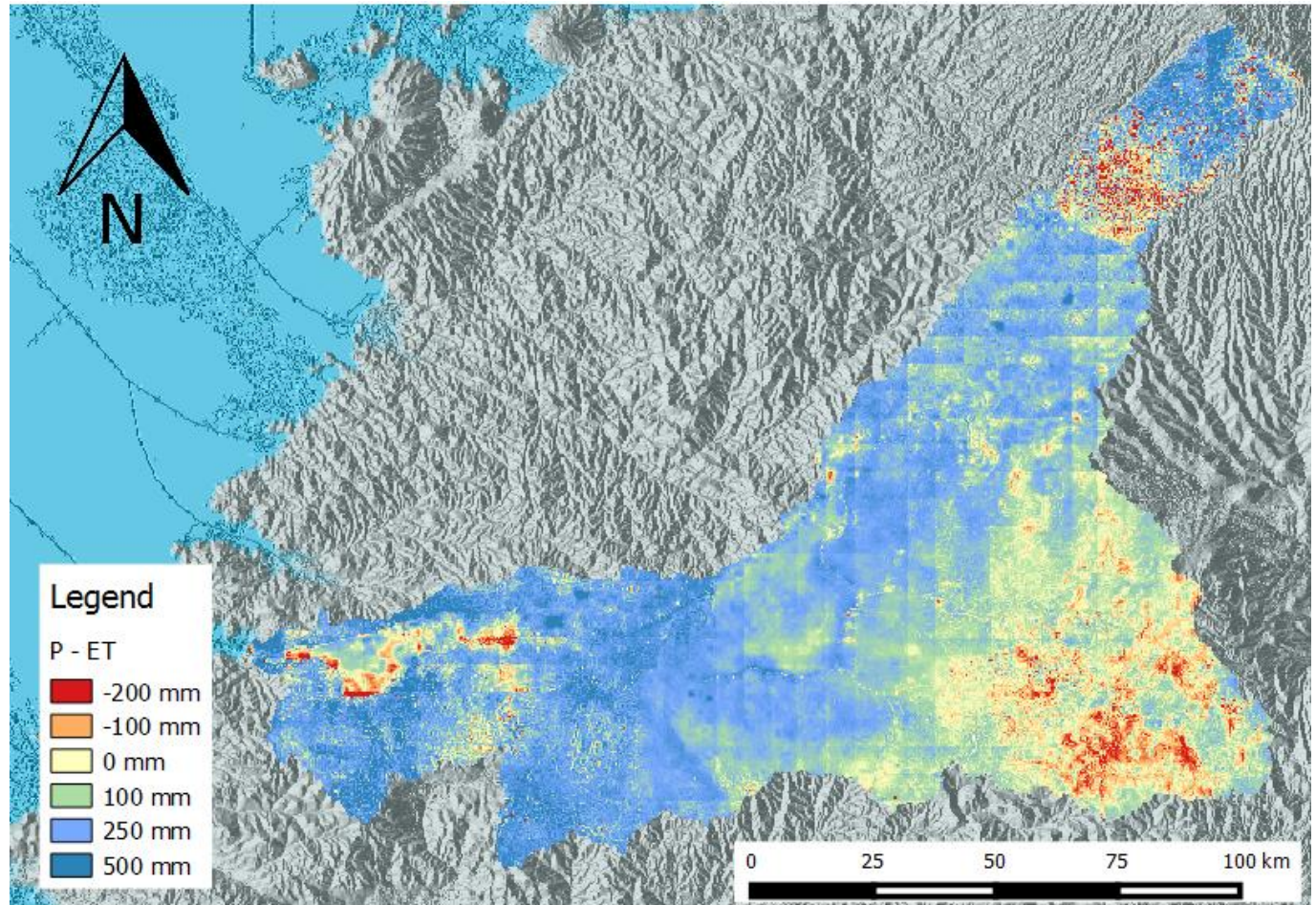
ETa (2014) in the Mara Basin (mm/yr)





# Mara River Basin

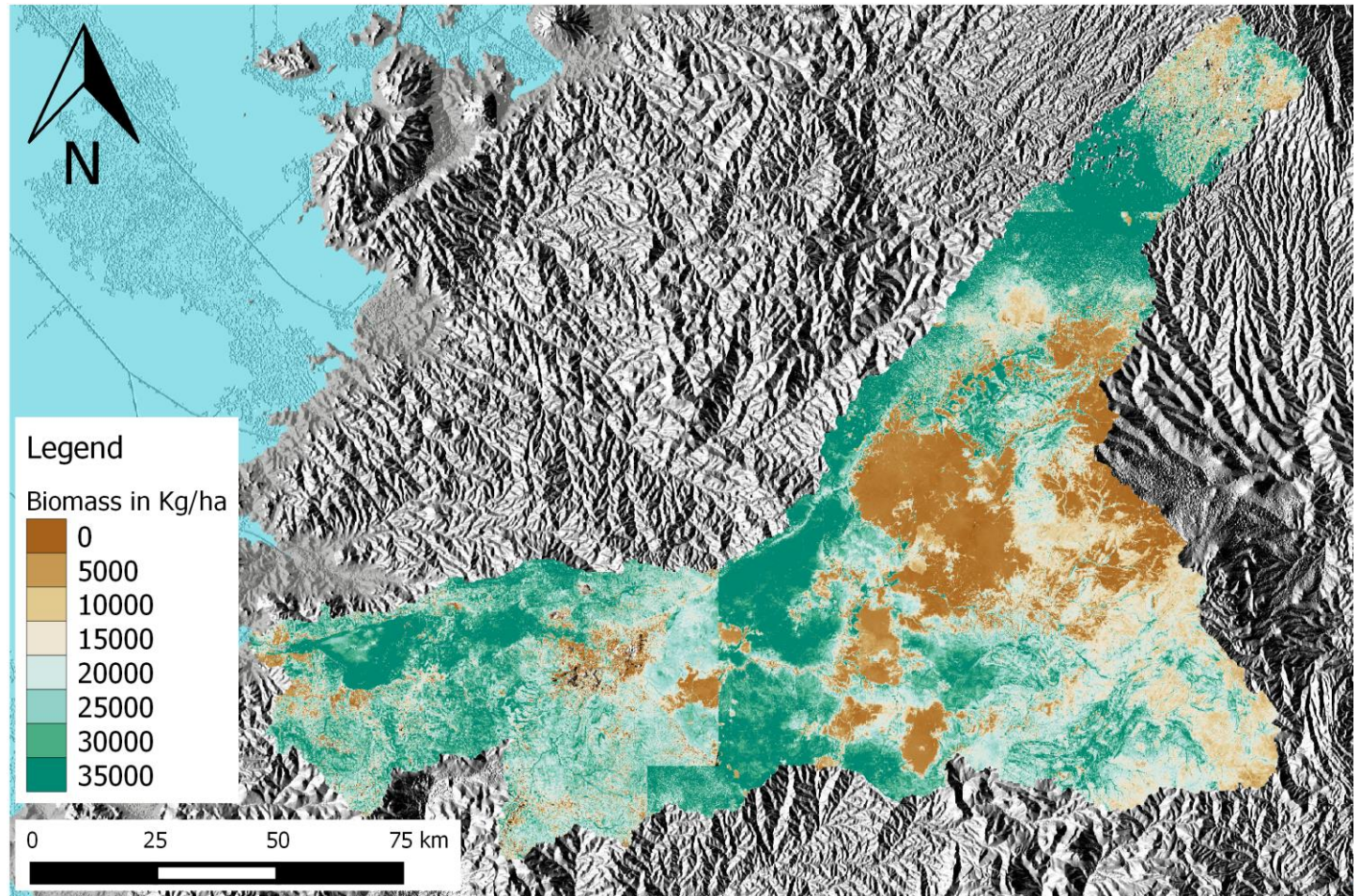
Water Yield ( $P - ETa$ ) (2014) in the Mara Basin (mm/yr)





# Mara River Basin

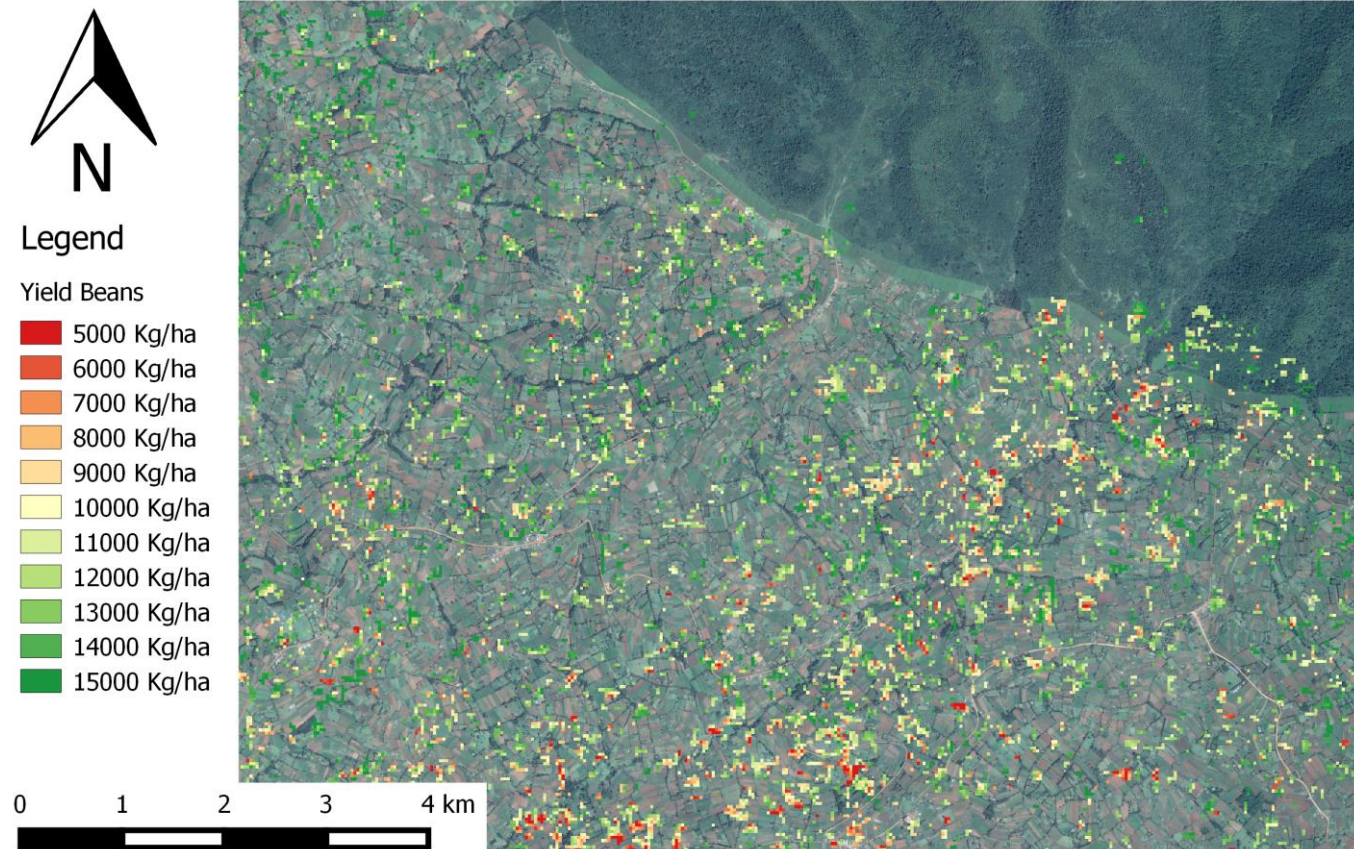
Biomass production (2014) in the Mara basin (kg/ha/yr)





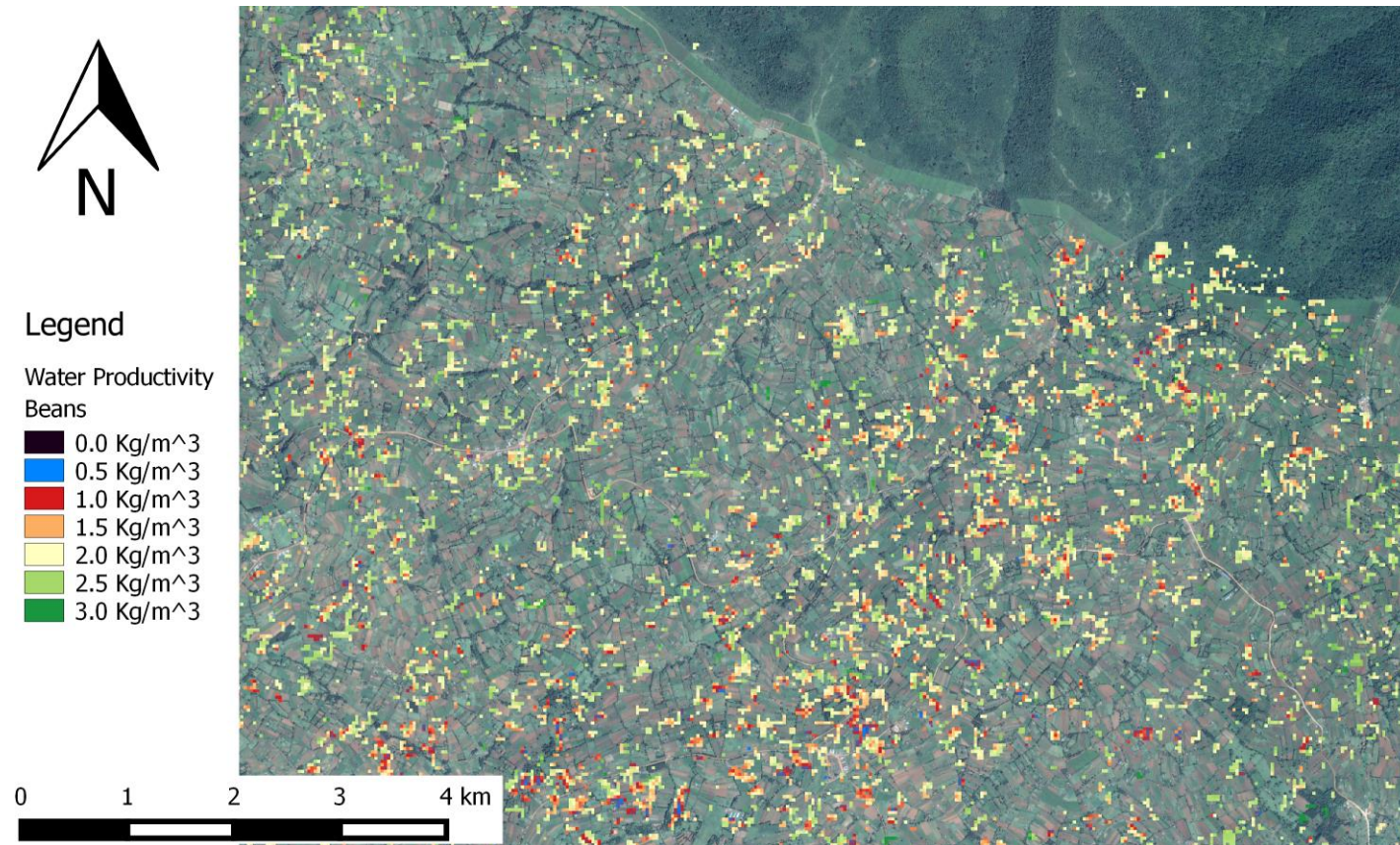
# Mara River Basin

Crop yield: beans (uncalibrated) (kg/ha)



# Mara River Basin

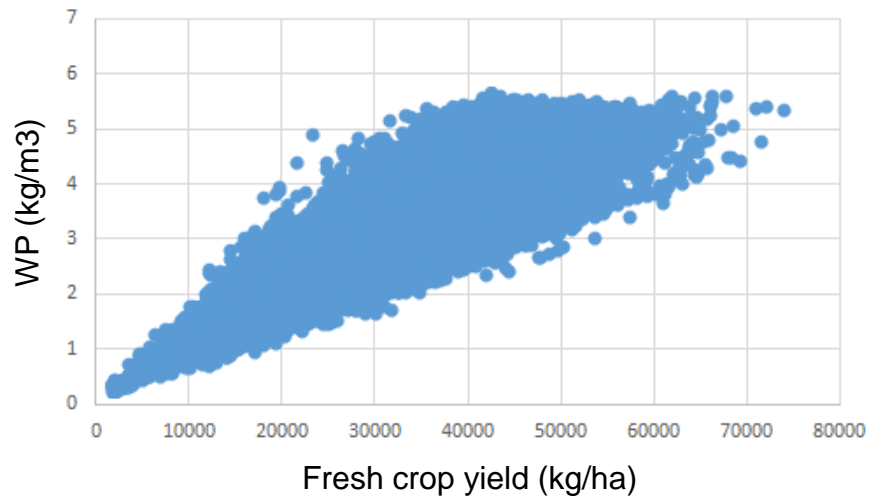
Crop water productivity: beans ( $\text{kg}/\text{m}^3$ )



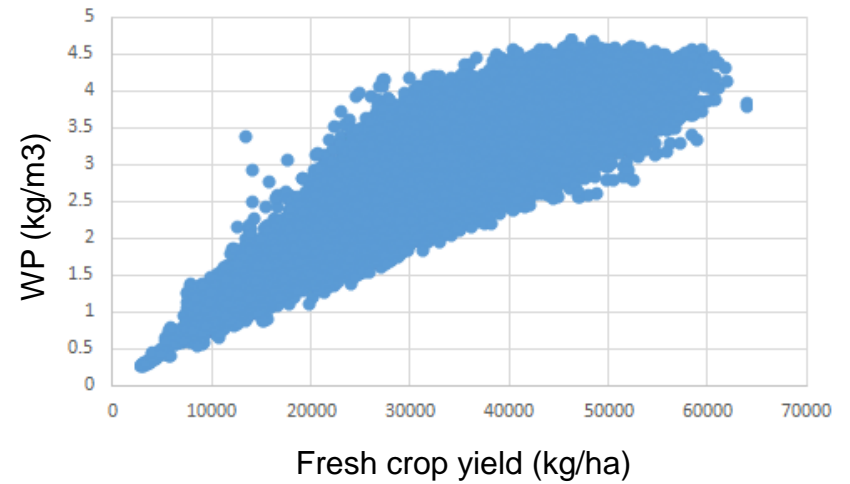


# Mara River Basin

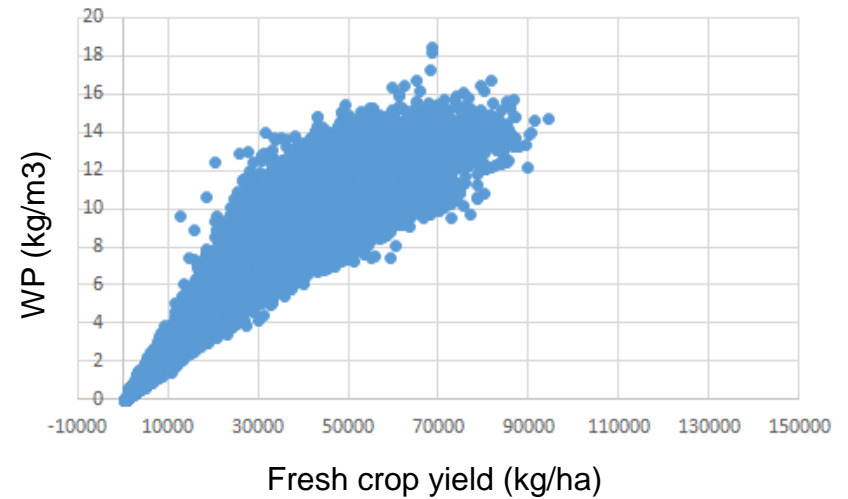
Pasture



Tea Plantation



Irish Potato



## Conclusion

WA+ approach can strengthen SEEA-Water on monitoring SDG 6.4 and 6.5:

- (a) WA+ includes rainfall water use by crops and ecosystems (green water);
- (b) WA+ generates information on net water consumption of agriculture and ecosystems, thus includes information on re-use of water within a basin;
- (c) WA+ generates information on biomass production, including carbon;
- (d) combine (b) and (c) with economic information than the added value per unit of water consumed in agriculture and ecosystems can be imputed;
- (e) when combined with hydrological models, WA+ could generate information on the state of groundwater resources;
- (f) WA+ generates information that is spatially explicit, so it can be aggregated at hydrological but also at administrative spatial scales.



## Water Accounting+

independent estimates of water flows, fluxes, stocks,  
consumption and services



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For more information visit: [www.wateraccounting.org](http://www.wateraccounting.org)



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