

The background of the slide is a photograph of a rural landscape. In the foreground, there are rows of green plants in a field. In the middle ground, a person is visible, bent over and watering the plants with a hose. The background shows more fields and some trees under a clear sky. The overall tone is green and natural.

Monitoring agricultural water productivity: a contribution to SDG - Target 6.4

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Proposed Sustainable Development

Goal 6

Ensure availability and sustainable management of water and sanitation for all

Targets:

- 6.1 by 2030, achieve universal access to **drinking water** for all
- 6.2 by 2030, achieve access to **sanitation** and hygiene for all
- 6.3 by 2030, improve **water quality** by reducing pollution, halving the proportion of untreated wastewater, and increasing recycling and safe reuse
- **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**
- 6.5 by 2030 implement **integrated water resources management** at all levels
- 6.6 by 2020 **protect** and restore water-related **ecosystems**

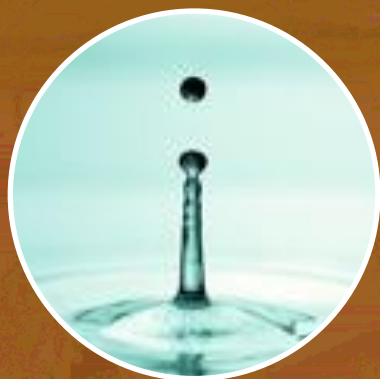
Related targets

2.1 by 2030 **end hunger** and ensure access by all people to safe, nutritious and sufficient food all year round

2.3 by 2030 **double the agricultural productivity** and the incomes of small-scale food producers through equal access to land, other productive resources and inputs [...]

7.1 by 2030 ensure **universal access to** affordable, reliable, and modern **energy** services

Elements of Target 6.4



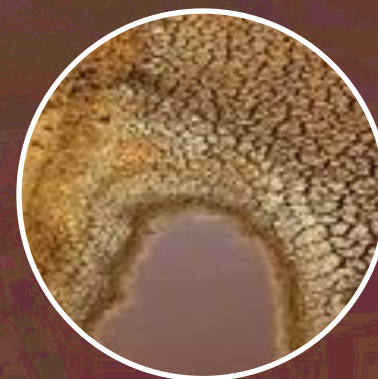
Economic

Increase water-use efficiency across all sectors



Environmental

Ensure sustainable withdrawals of freshwater



Social

Reduce number of people suffering from water scarcity

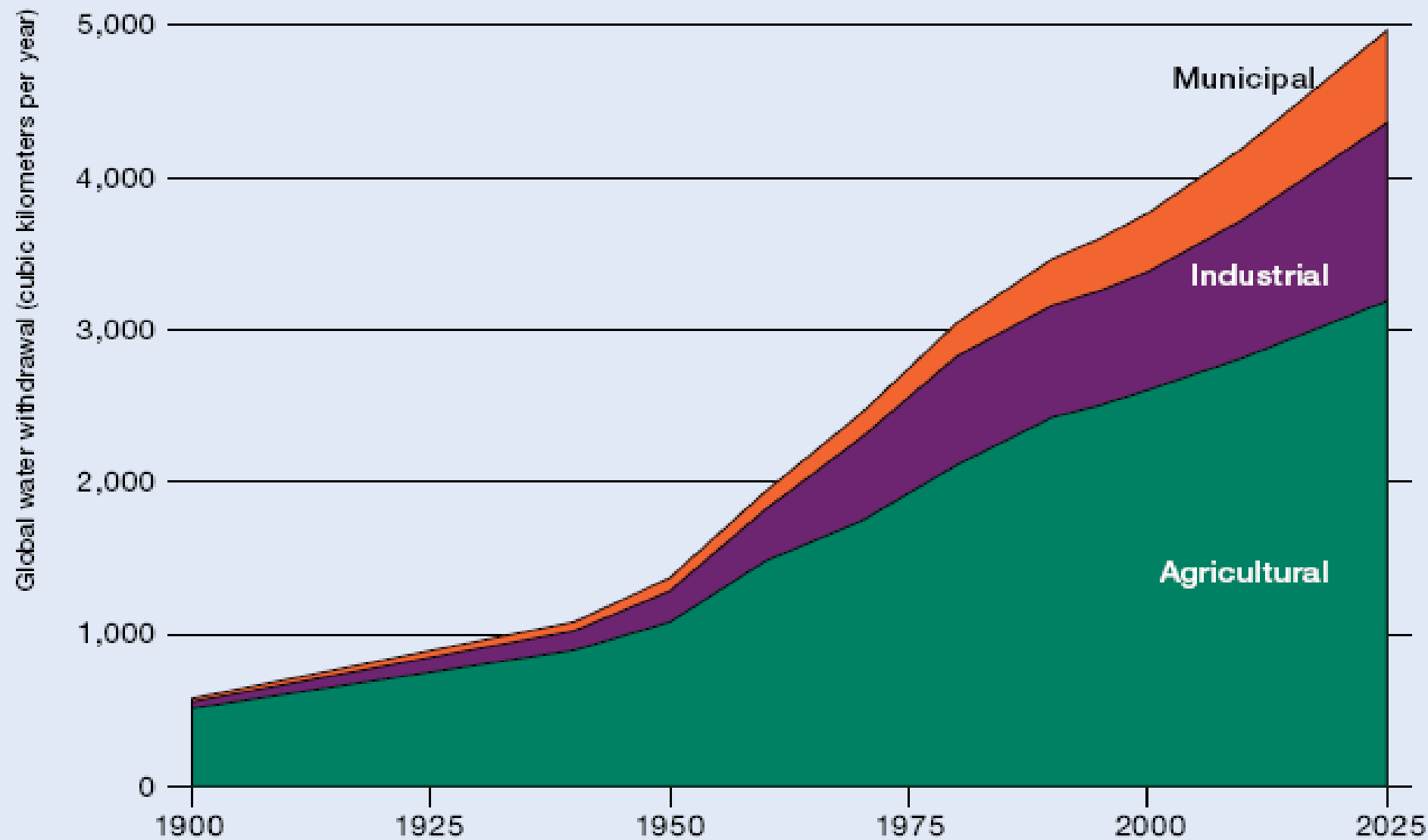
SDG - Target 6.4

Indicators proposed for 6.4

Developed by the UN-Water Task Team on Target 6-4 as part of the GEMI initiative
“Integrated monitoring of water and sanitation related SDG targets”

Multi-sector Water Efficiency (% change)	Level of Water Stress (change in water withdrawal as percentage of renewable water)	Number of people living in areas/basins affected by water scarcity (work in progress)
Industrial water productivity (USD/m ³) Energy water productivity (MWH/m ³)		

Why focus agricultural water productivity?



Source: Shiklomanov 2000.

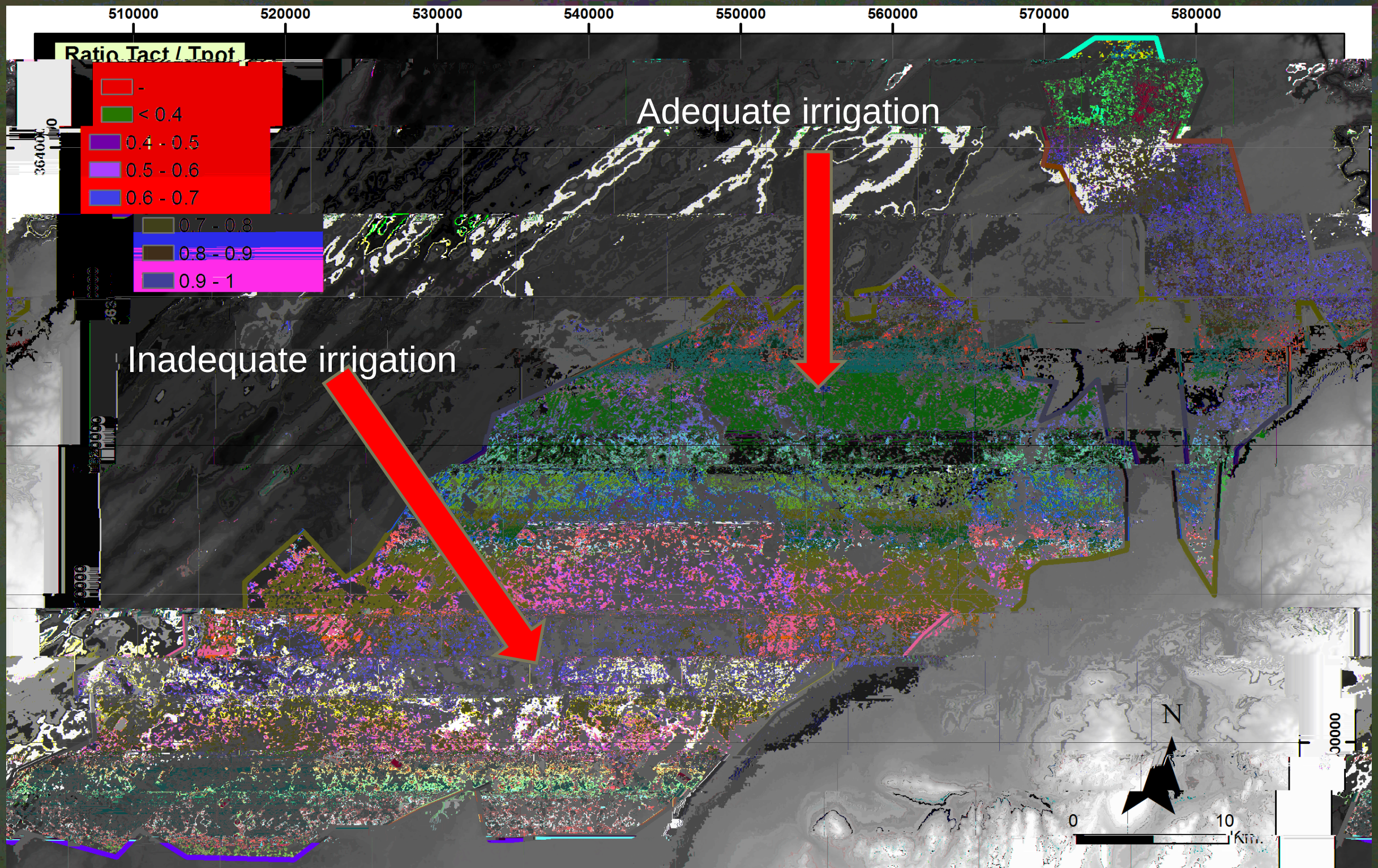
Why monitor agricultural water productivity?

- Agriculture is responsible for 70% of all water withdrawals
- Agriculture is responsible for 90% of all water consumed from these water withdrawals
- In 2050 we need 60% extra food globally
- In 2050 we need 100% extra food in developing countries
- 70% of the extra food needs to come from yield increases
- Irrigation will remain very important for food production

Measuring agricultural productivity

- In the past:
 - land productivity only (see target 2.3)
- As resources become scarce, need to have a more comprehensive approach:
 - Land: kg/ha; \$\$/ha
 - Water: kg/m³; \$\$/m³
 - Energy: kg/J; m³/J
 - Labour: kg/md; \$\$/md
 - etc..

The FAO/UNESCO-IHE/IWMI initiative



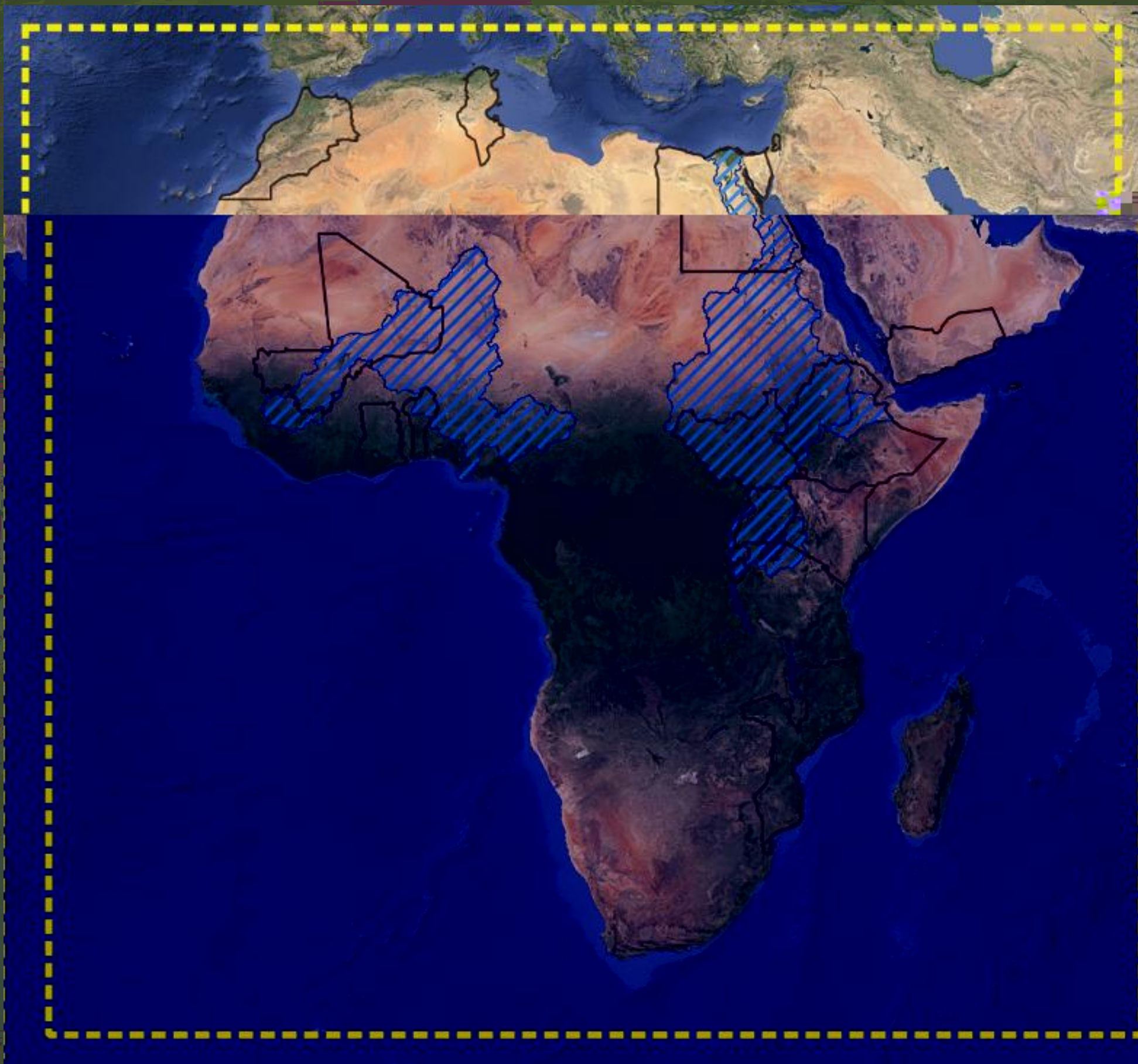
Project components

1. Database
2. Water and land productivity assessment
3. Water accounting
4. Capacity development

Project components

Database

- I. Continental level
- II. Country and river basin level
- III. Irrigation scheme / landscape level



Project components

Database

- Land use
 - I Irrigated vs rainfed
 - II Major crops
 - III Most crops
- Biomass
- Harvest Index
- Reference evapotranspiration
- Actual evapotranspiration
- Precipitation
- Carbon uptake (from biomass production)

Capacity development

	Assess differences in water productivity in the irrigation scheme
	Assess level of water services in irrigation scheme
	Increase service levels and water productivity through modernization of irrigation schemes
	Identify farmer communities or farmers with the best on-farm practices
	Prepare lists of good practices
	Benchmark land and water productivity in each agro-ecological zone
	Monitoring total food production in agro-ecological zones
	Planning of rainfed and irrigated cropped areas
	Planning and evaluation of total water withdrawals, consumptive use and return flows in cropped land
	Monitoring of lawful water use
	Monitor global / regional water productivity
	Contribute to early warning systems

Conclusions

- New approach, new technologies
- Contribute to key elements of SDG monitoring
- Offers links between major SDG targets
- Independent: comparable, replicable
- Multi-scale



thank you