Evapotranspiration

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Overview

Evapotranspiration is the largest transiting quantity in the daily hydrological cycle along with rain.

It is a resource managed by several stakeholders

- Governments
- Basin water organizations
- Irrigation systems
- Agribusinesses
- Environmental services managers

ET modeling

The residual energy available to evaporate water
from leaves (transpiration) or
from soil (evaporation)

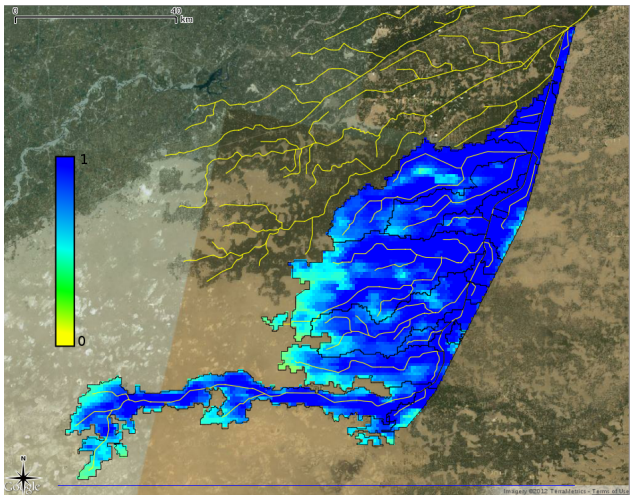
There are several types of evapotranspiration modeling methods

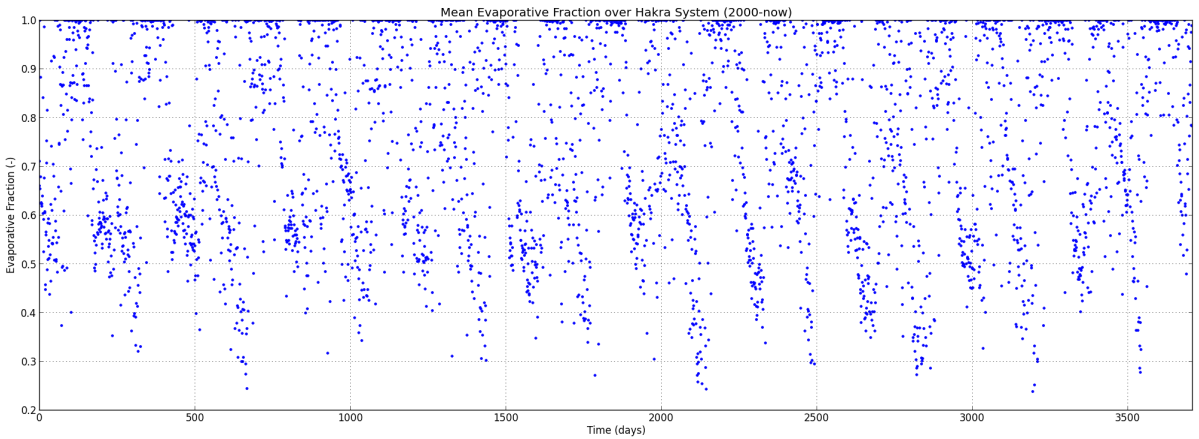
- Reference ET: Hargreaves, Penman-Monteith
- Potential ET: Priestley-Taylor, astronomical
- Actual ET: Thermodynamic/energy balance (mostly)

Equity of water use in irrigation systems

Irrigation water monitoring & management

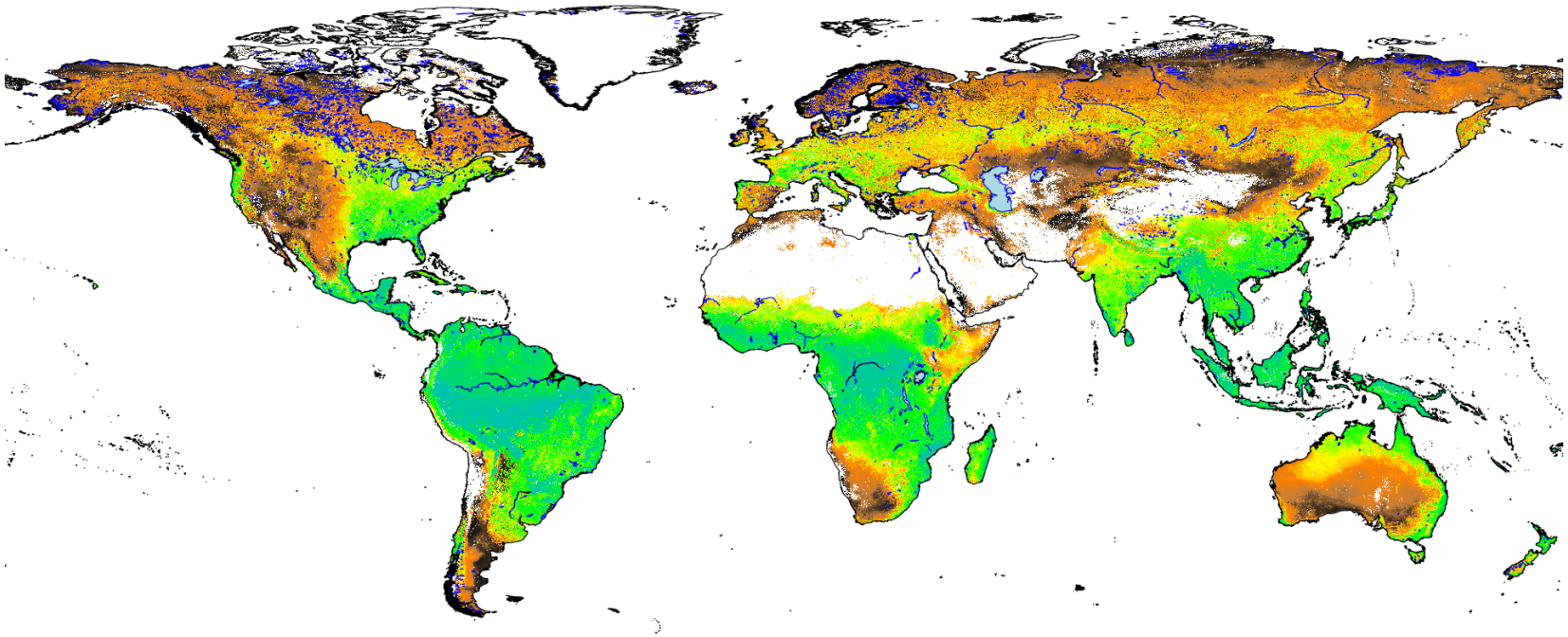
- Map: Uniform colour is equity of water distribution
- Graph: irrigation system equity in time (daily, 12 years)





MOD16 MODIS product

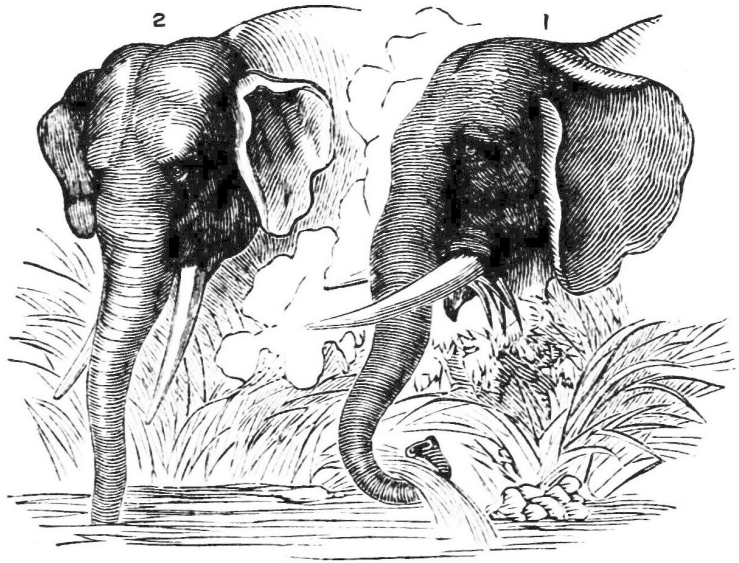
Global monthly (MOD16A2) and yearly (MOD16A3) dataset



8km parameterization, validated on Fluxnet data.
Not validated daily.

Asia and Africa

1. Worlds of climatological variability each
2. Asian regions (CAC, SA, EA) for IWMI
3. Africa is one continent-island (processing)
4. On-ground monitoring is low to non-existent



Conclusions

1. EvapoTranspiration is the residual of the energy balance
2. ET is needed through all water management decision-levels
3. Low-tech environments
4. Low monitoring commitments

Thank You