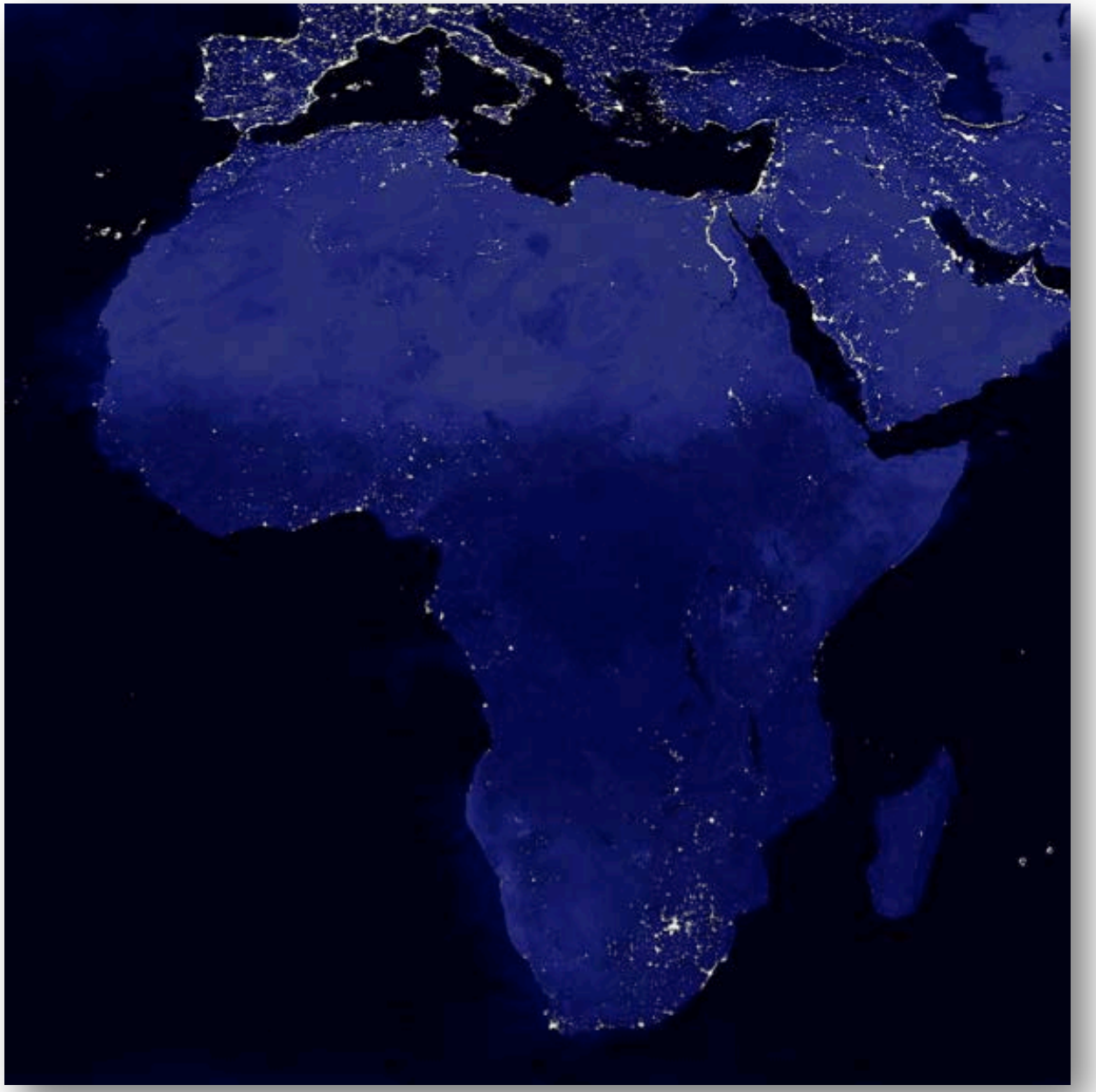

Water and Energy: Some Key Pointers

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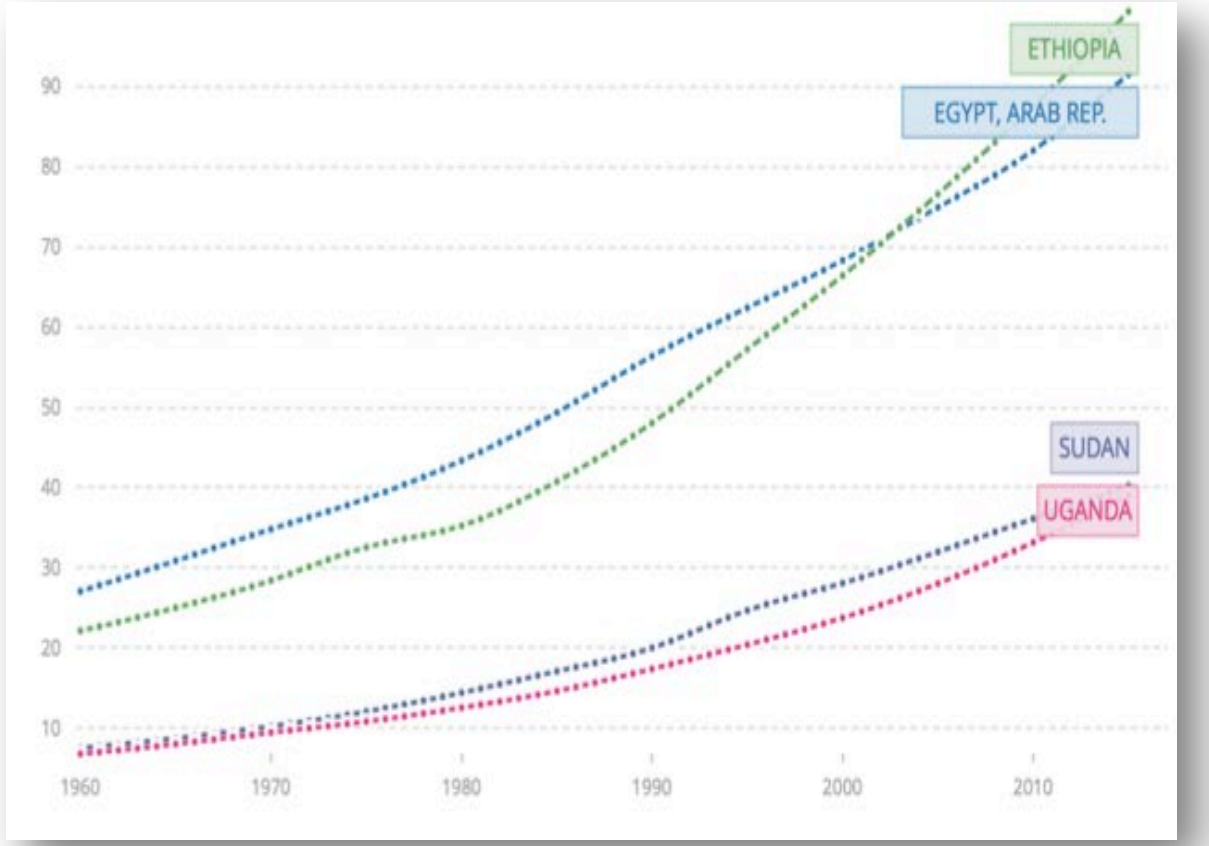
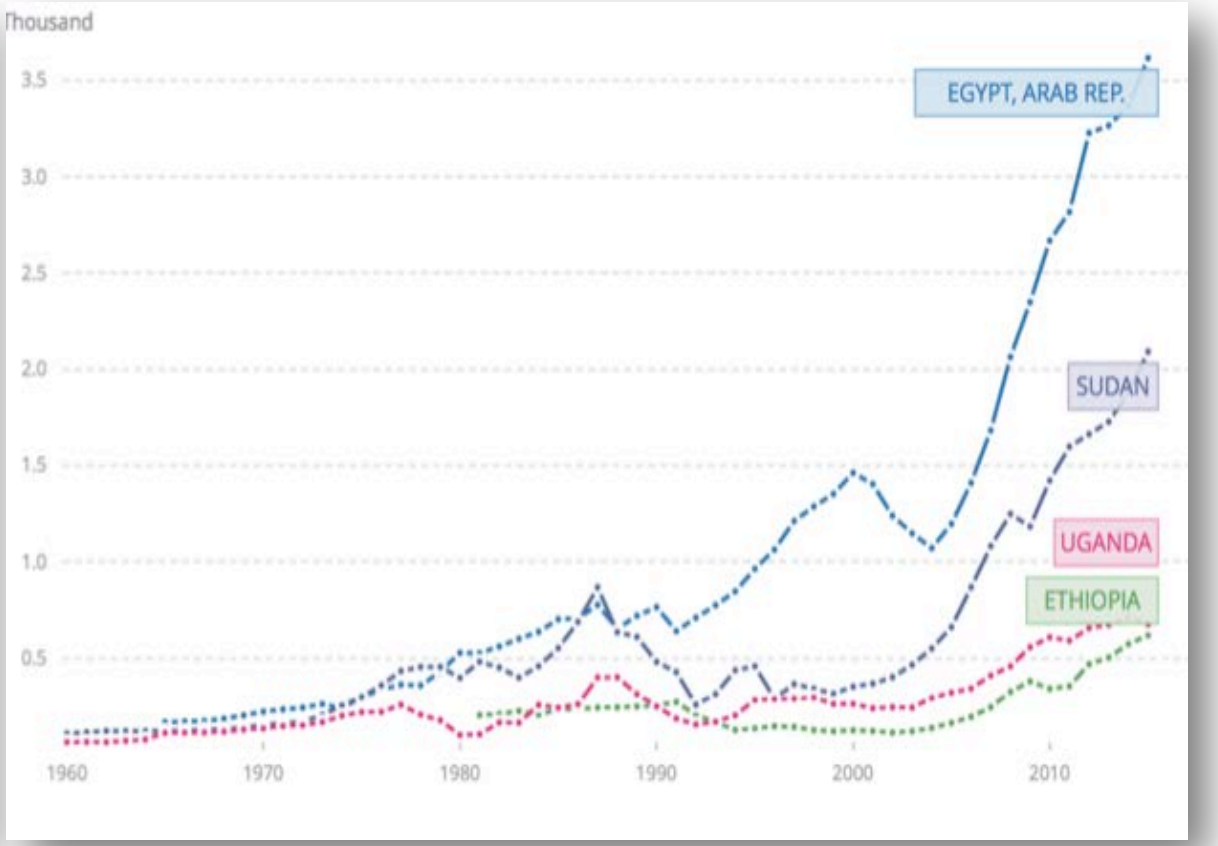
EANBO, Addis Ababa

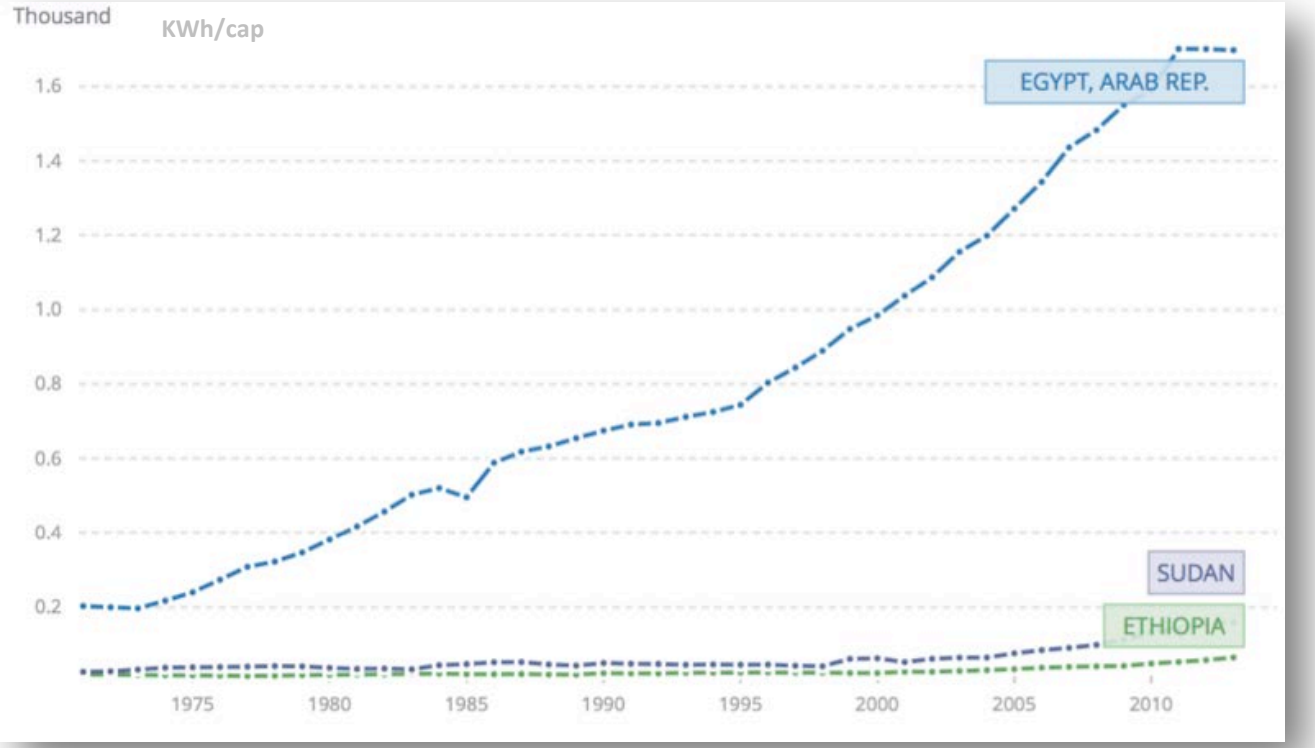
5th September 2018

Introduction: *Rapid transformations*





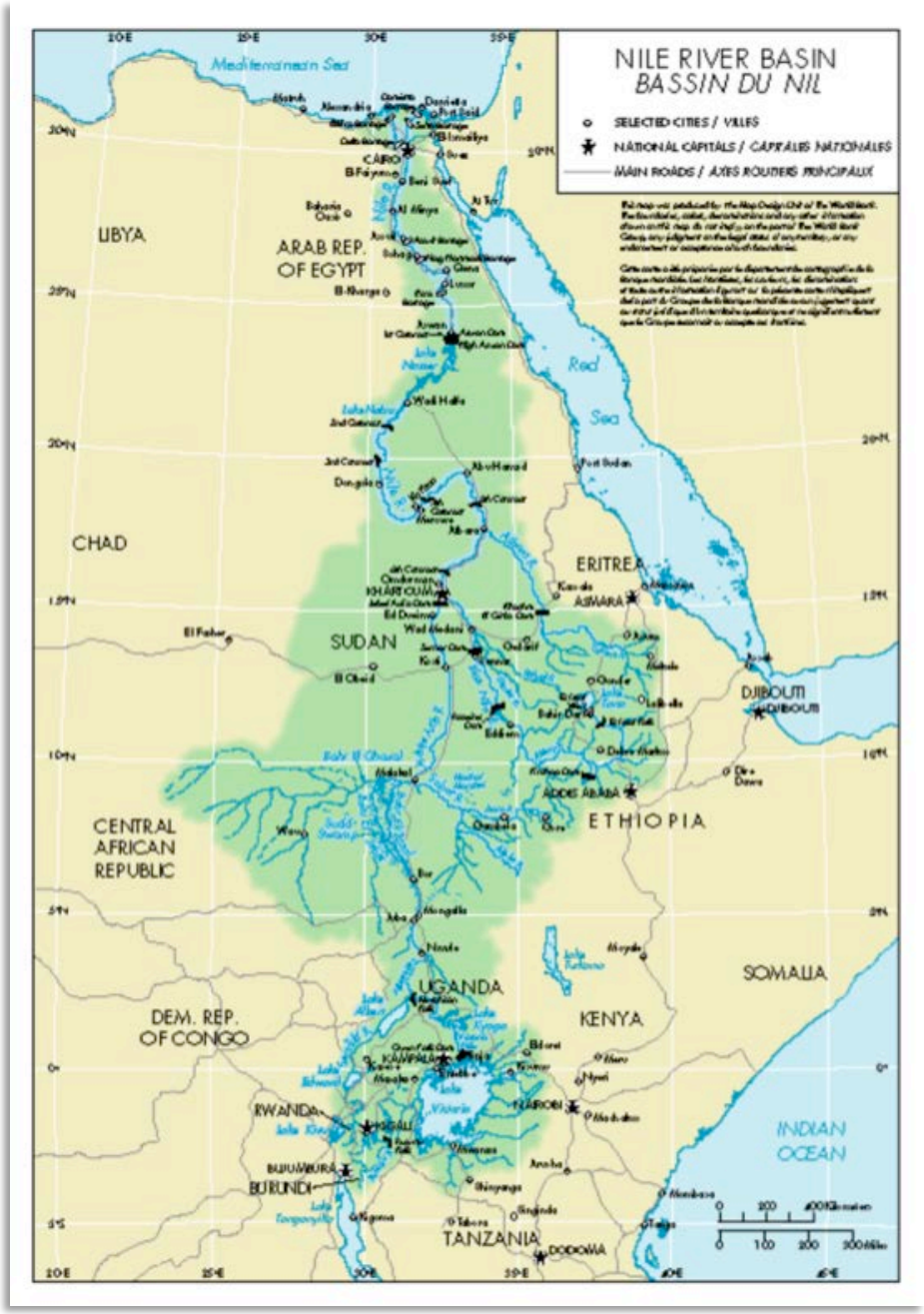
Challenges: *Energy disparities*



Cheaper energy and rural electrification could transform small-scale agriculture, making more use of dry season cropping through groundwater development

Pressures and stresses result from biomass energy consumption contributing to soil loss

Consequences?

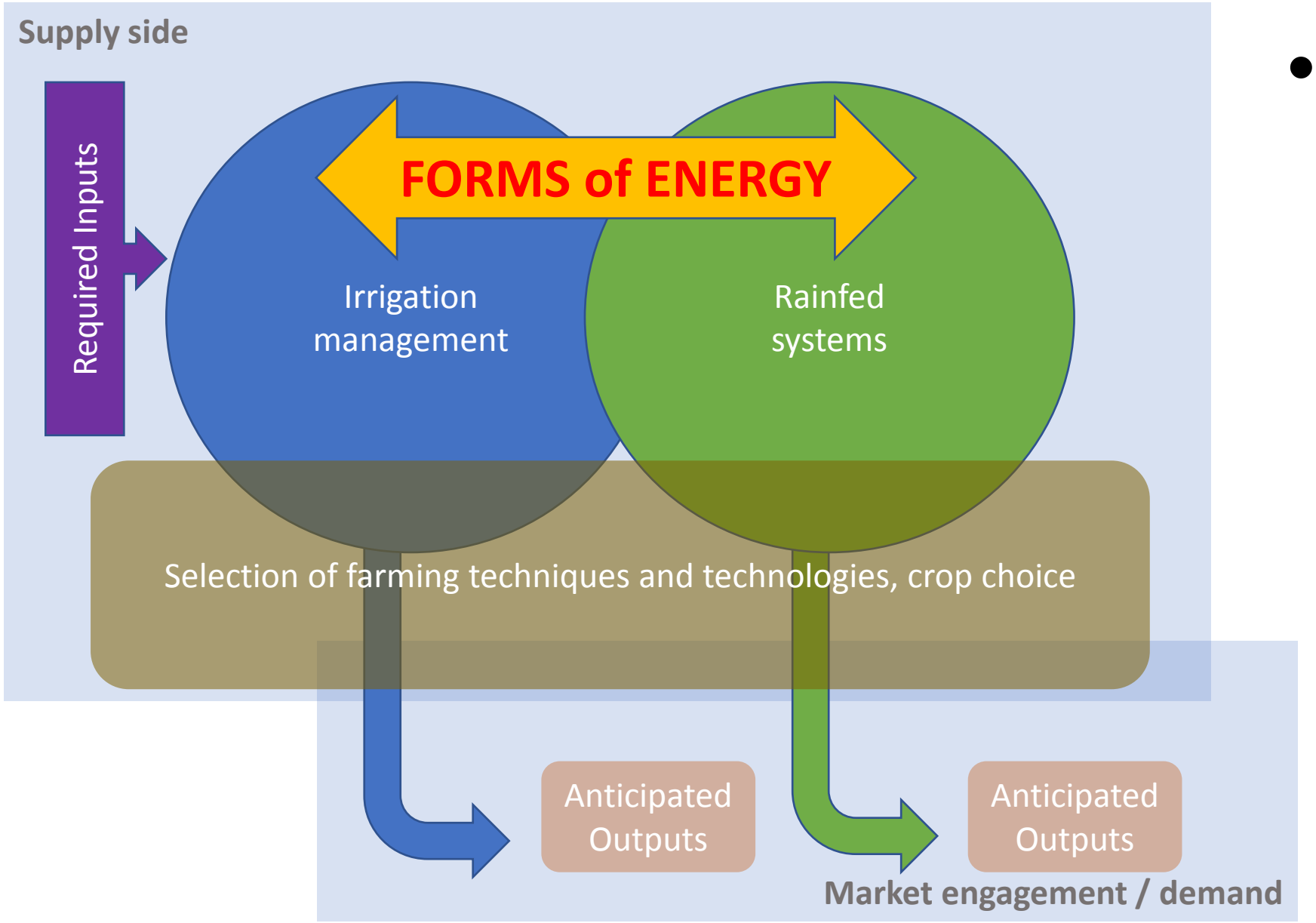


Implications: Energy-water securities

- Water insecurity costs global economy about $500 billion annually; drag on the world economy of c.1% GDP (conservative estimate)
- Challenge of ‘difficult hydrologies’:
  - management through blending natural and built infrastructure
- Employment dependency:
  - WWDR three out of four jobs water-dependent
  - > 1.4 billion jobs, or 42% of the world’s total active workforce, heavily water-dependent

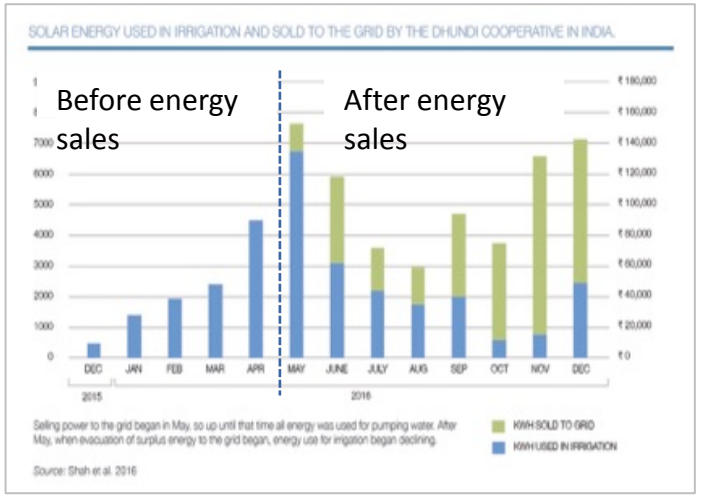
Future: *Energy options*

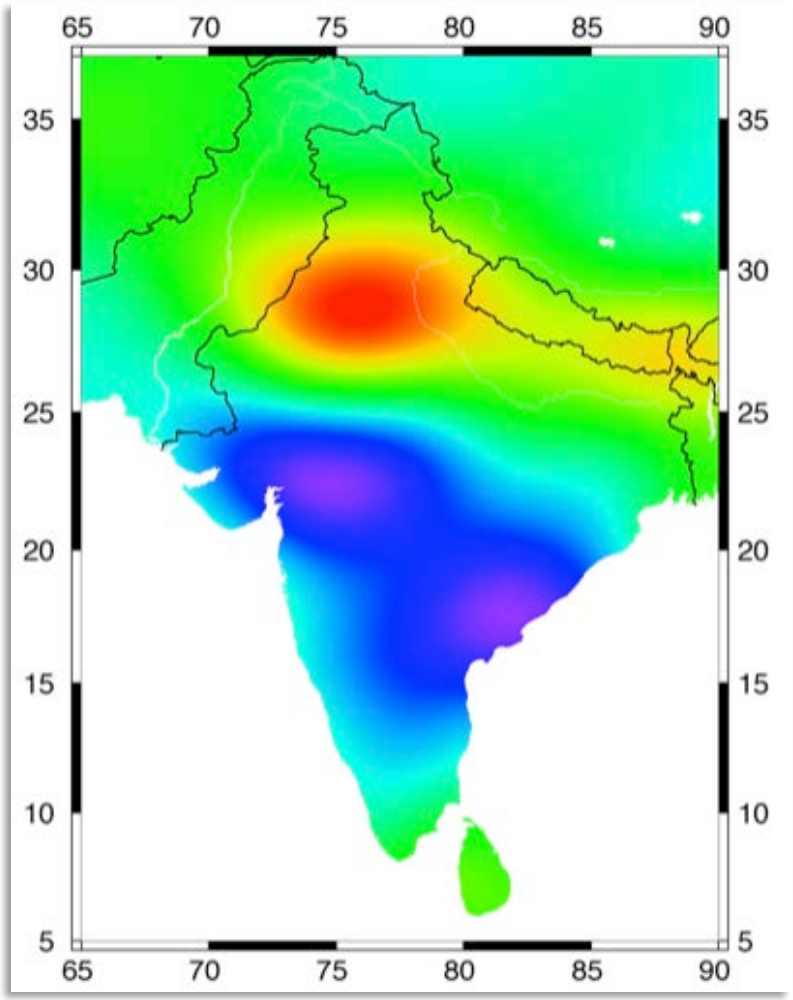
- Solar irrigation for dry season cropping
  - Horticulture for local markets
  - Including urban demand
  - Regulating abstraction



- Energy (ies) across the 'water-smart agriculture' mix

Risks: Managing abstraction

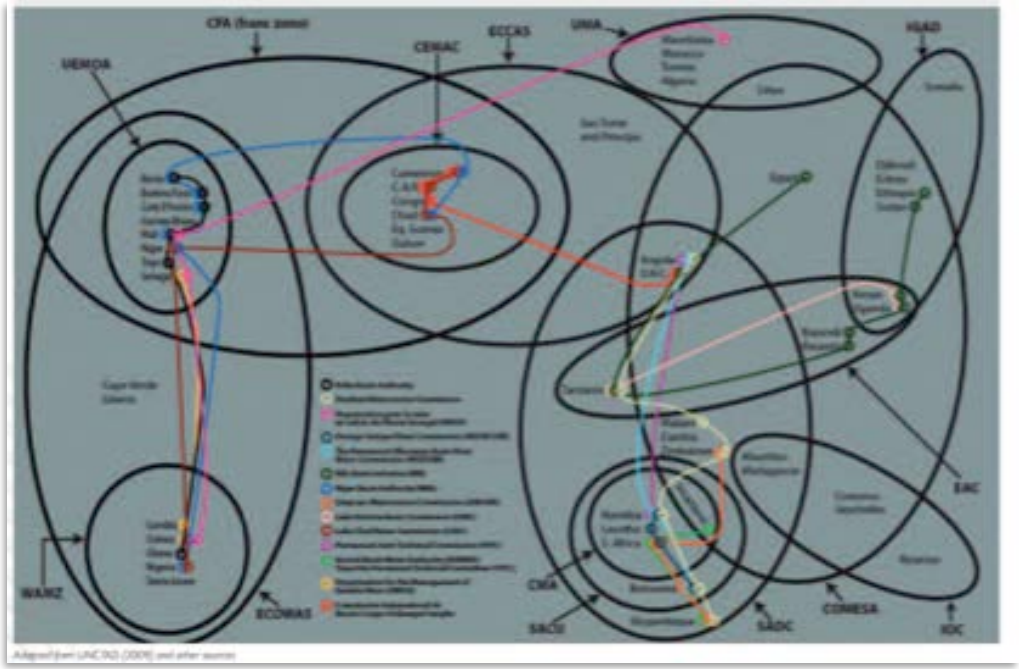




Securities*: Energy options*

Interrelatedness

- More than 280 transboundary basins
  - Include 45% world's surface
  - 40% global population
  - Provide 60% annual renewable water
- Complex political economies
- Collective action problem



Conclusions

- Climate-energy-water mix
  - High-level uncertainties
- No/low regrets solutions
  - Affordable energy solutions
  - Energy blends
  - Carbon-energy relationships (soils)
  - **<u>Codifying benefits across the water-ag-energy spectrum</u>**
  - Systematizing links and relationships
  - Establishing trade-offs
  - Offering policy options (and connections)