IWMI International Water Management Institute

CGIAR RESEARCH PROGRAM ON Water, Land and Ecosystems

FROM **RESEARCH** TO **RESILIENCE** WEBINAR SERIES

Solar-led Trajectories for Food System Transformation

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IN PARTNERSHIP WITH:

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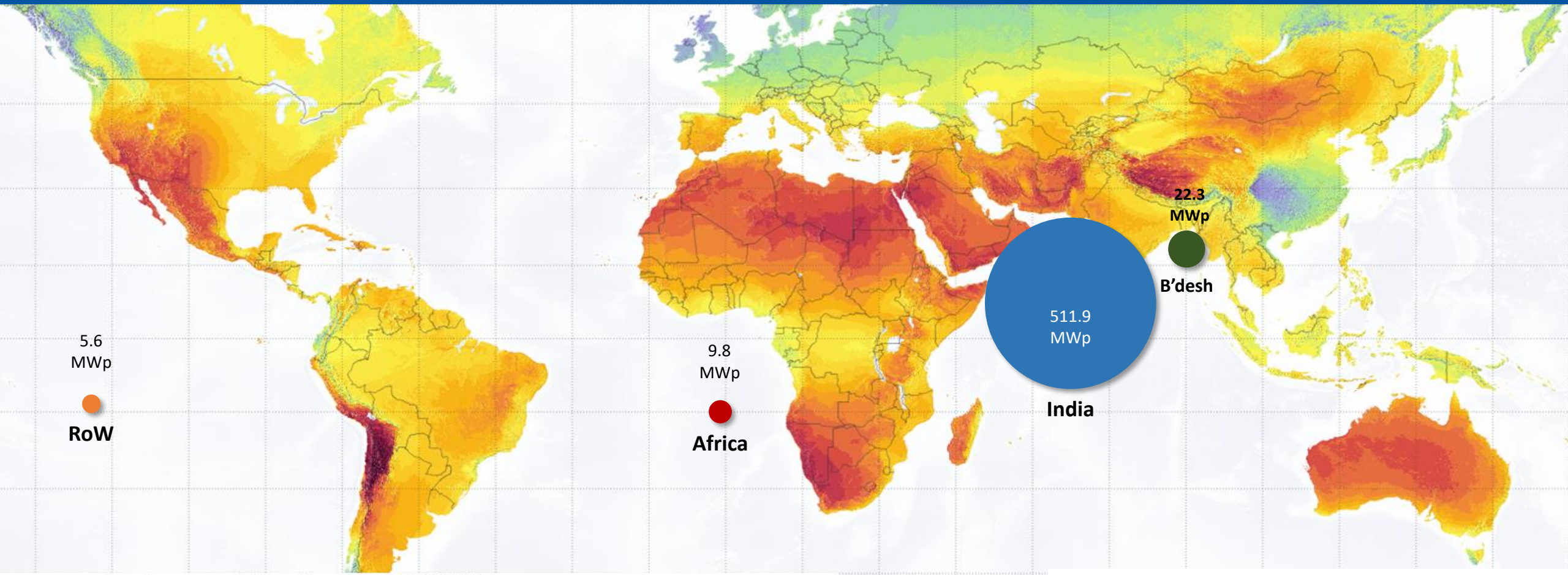
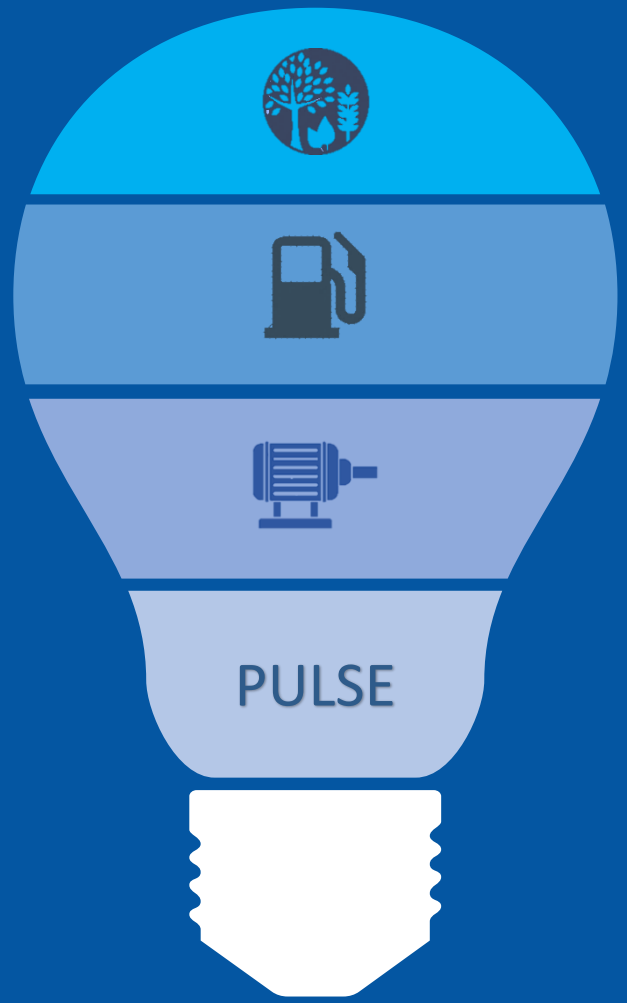
Solar-powered Irrigation: Global Status

Solar pumps offer annually 1,400 – 2,200 peak-hours of reliable and affordable energy for irrigation; bulk of the early investments are in South Asia, but tremendous potential worldwide.



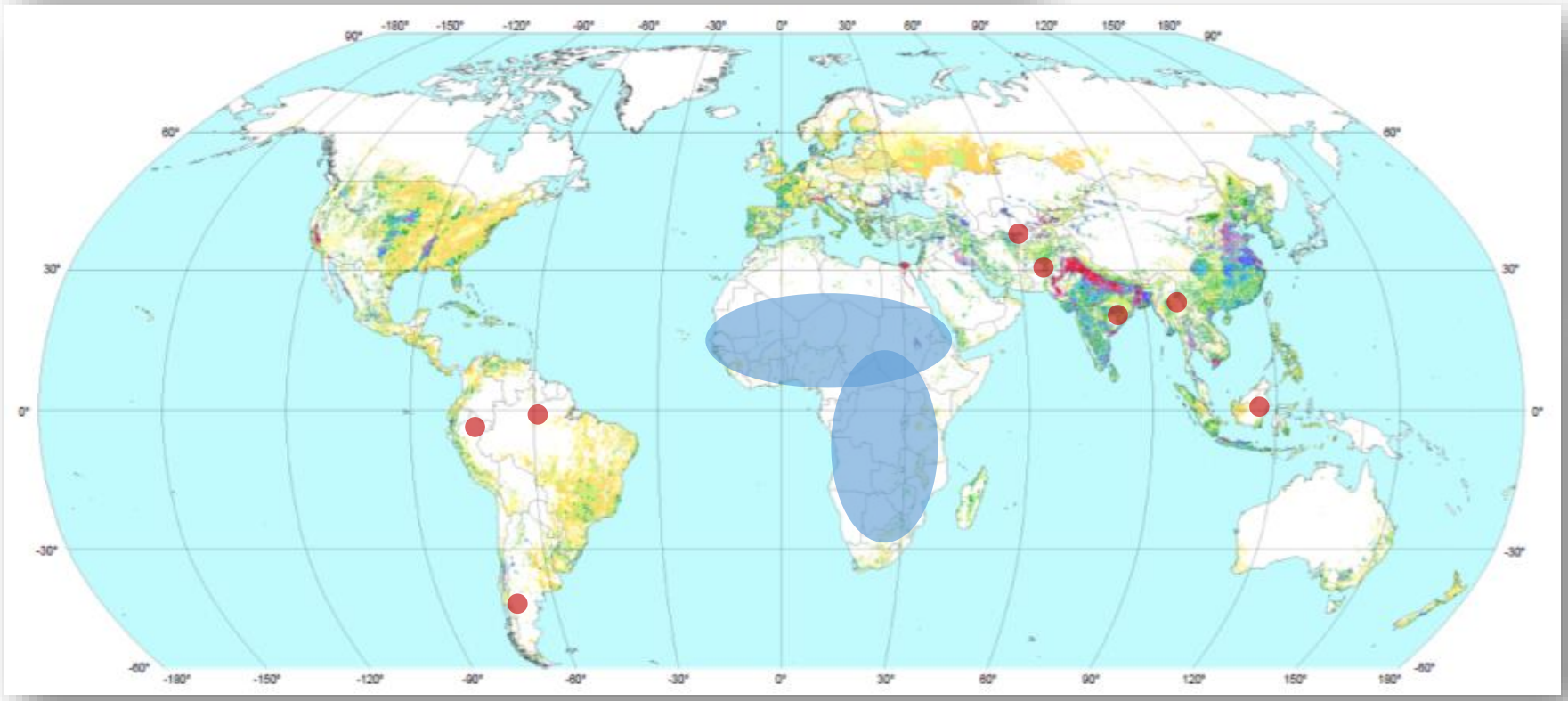
Source: IRENA Off-grid RE Statistics 2020
https://www.irena.org/publications/2020/Dec/Off-grid-renewable-energy-statistics-2020

Four Key Transformation Trajectories



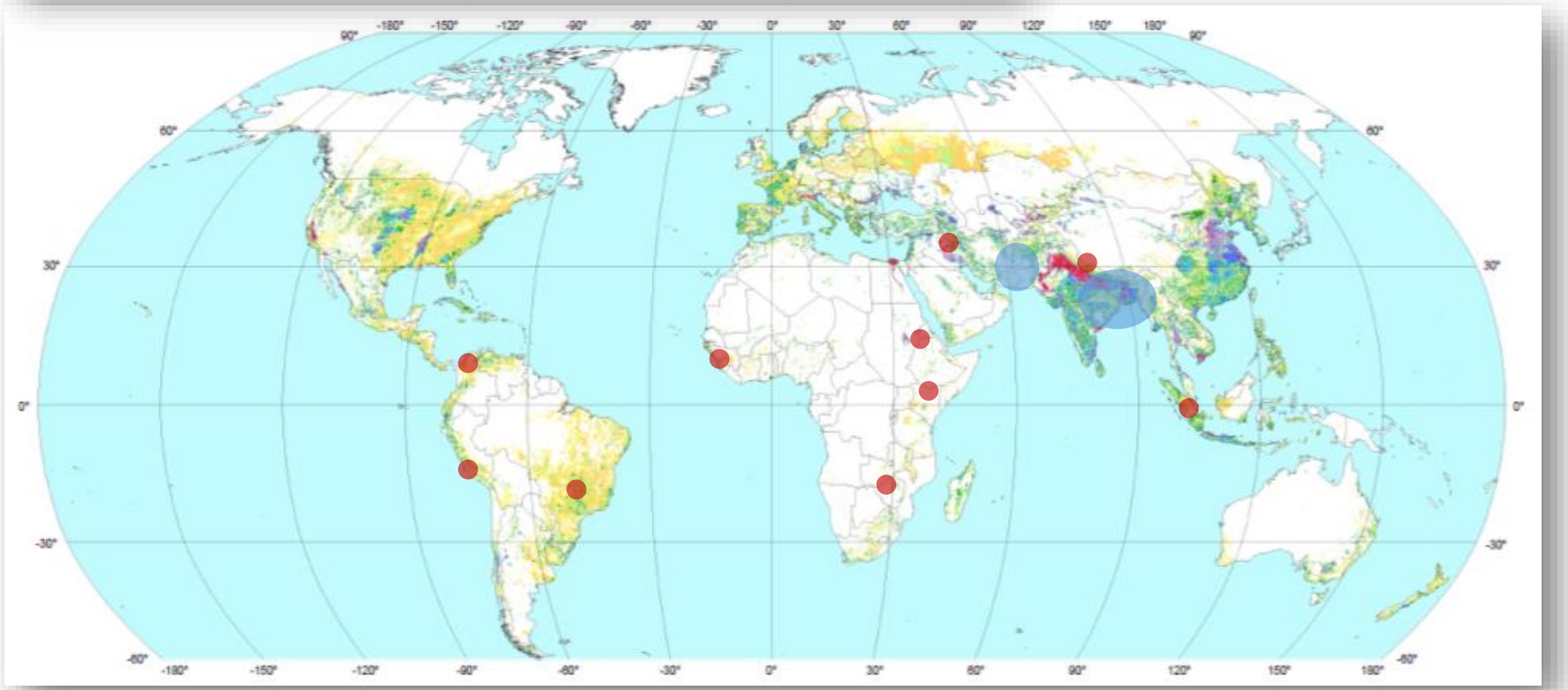
1. Sustainable Irrigation Expansion

- Improved ‘water control’
- Higher land and labour productivity
- Higher gross and net returns
- Improved food and nutritional security
- Improved climate resilience



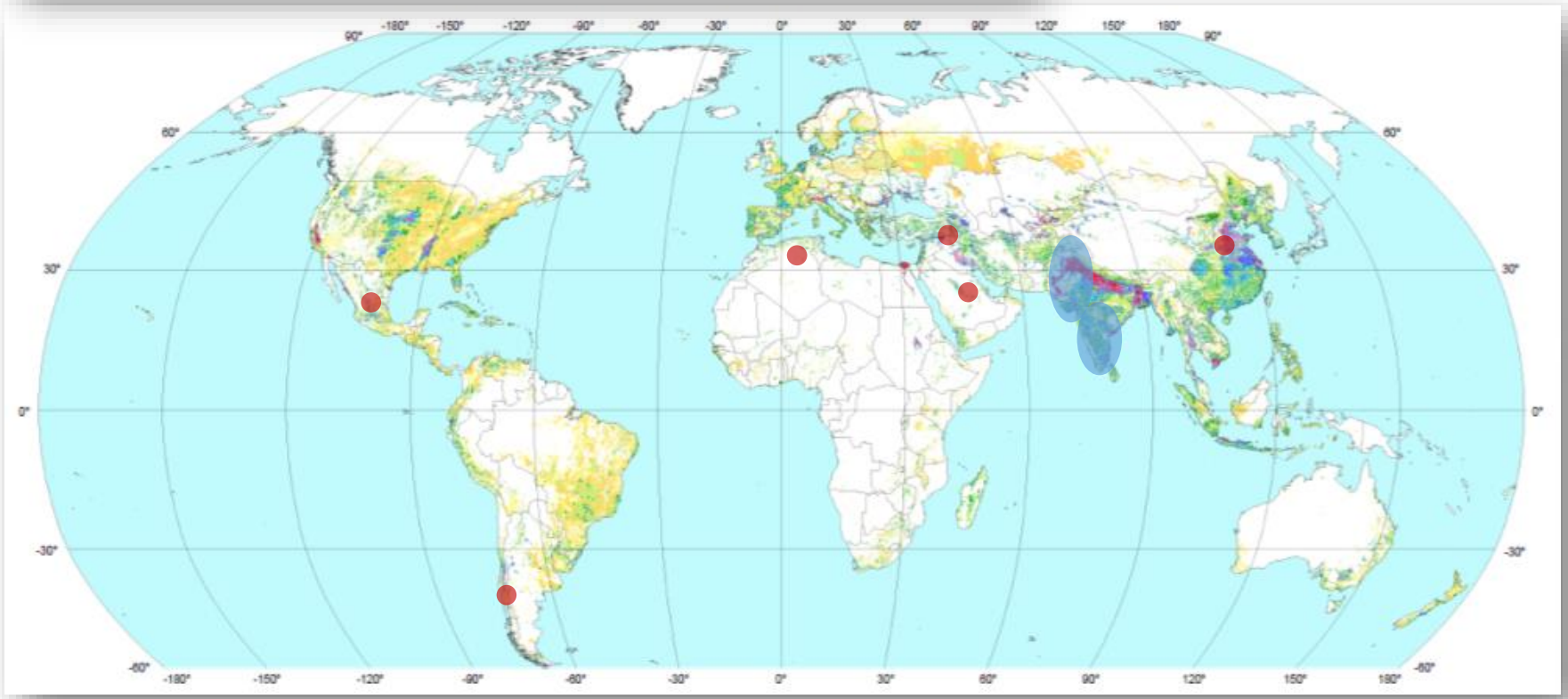
2. Affordable and Clean Irrigation Access

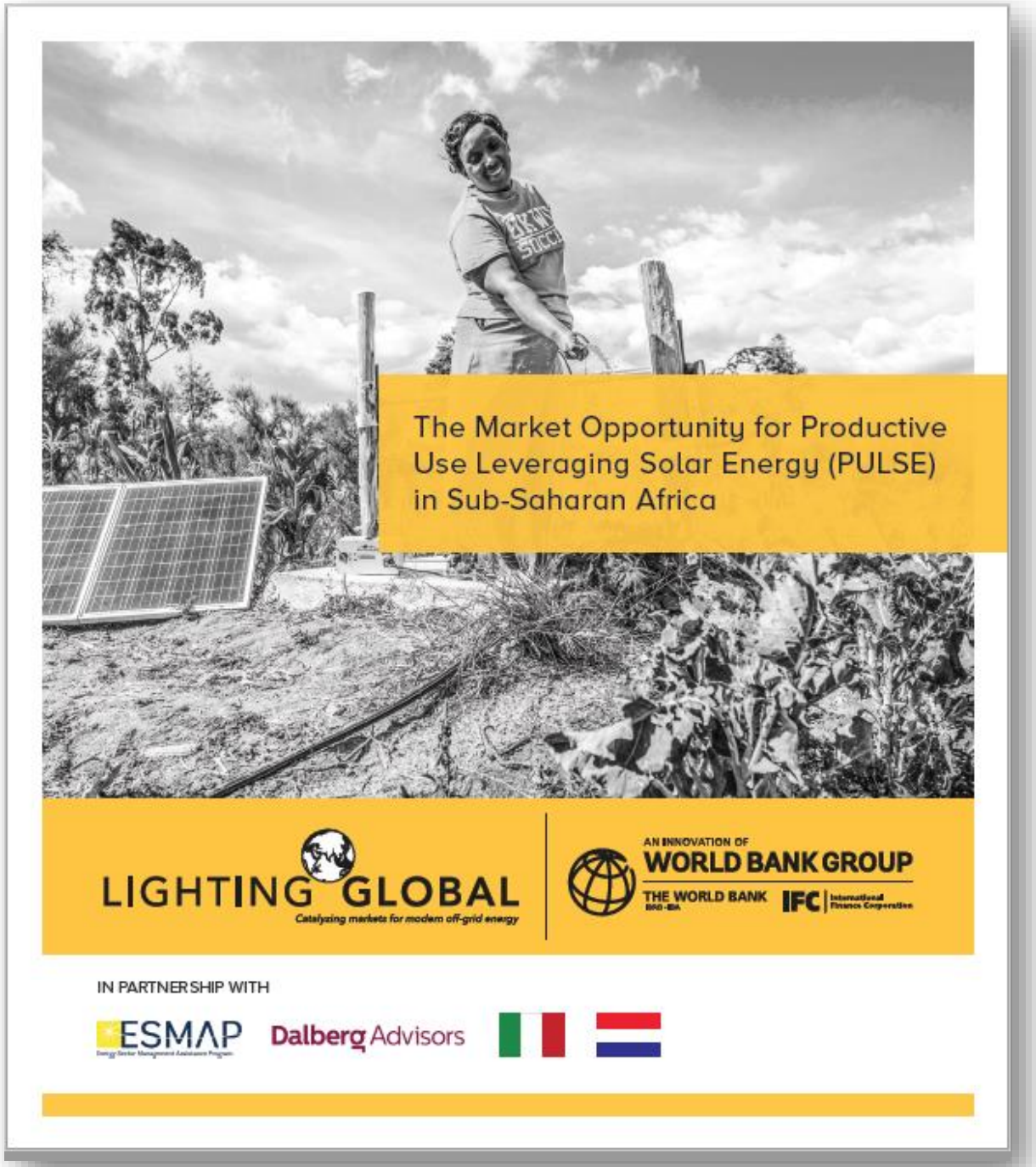
- Reduced pollution, carbon footprint
- Significant reduction in pumping costs
- Higher productivity and incomes
- Improved climate resilience



3. Solar Power as Remunerative Crop (SPaRC)

- Reduced carbon footprint of irrigation
- Reduction in perverse ‘farm power subsidies’
- Incentivising efficient energy and water use
- Additional, counter-climatic income source
- Instrument for ‘Groundwater Governance’

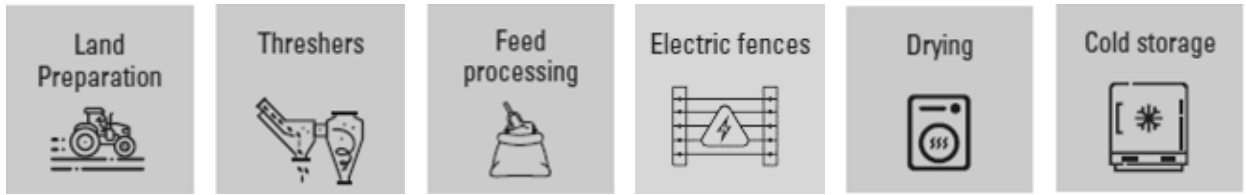




4. (Additional) PULSE Applications

- All SIPs have in-built energy surplus
- SIPs can service multiple energy needs
- Opportunity greater in off-grid contexts

Additional PULSE applications enhance asset utilization and improve economic viability



https://www.lightingglobal.org/resource/pulse-market-opportunity/

Key Messages

WLE and IWMI's work in Asia and Africa suggests that:

- Solar pumps more than 'clean energy'
- SIPs will transform global food systems by:
  - Enabling shift to irrigated agriculture
  - Making irrigation affordable and equitable
  - Enhancing climate resilience
  - Fixing perverse incentives
  - …while reducing carbon footprint
- Focus needed on: smart business models; financing and technology transfer

Thank You…

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