Decentralized renewable energy to accelerate sustainable development:

what business model and what role for PPP's?

Rome, October 24th 2018

SDG #7

7. Ensure access to affordable, reliable, sustainable & modern energy for all

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

7.2 By 2030, increase substantially the share of renewable energy in the global energy mix

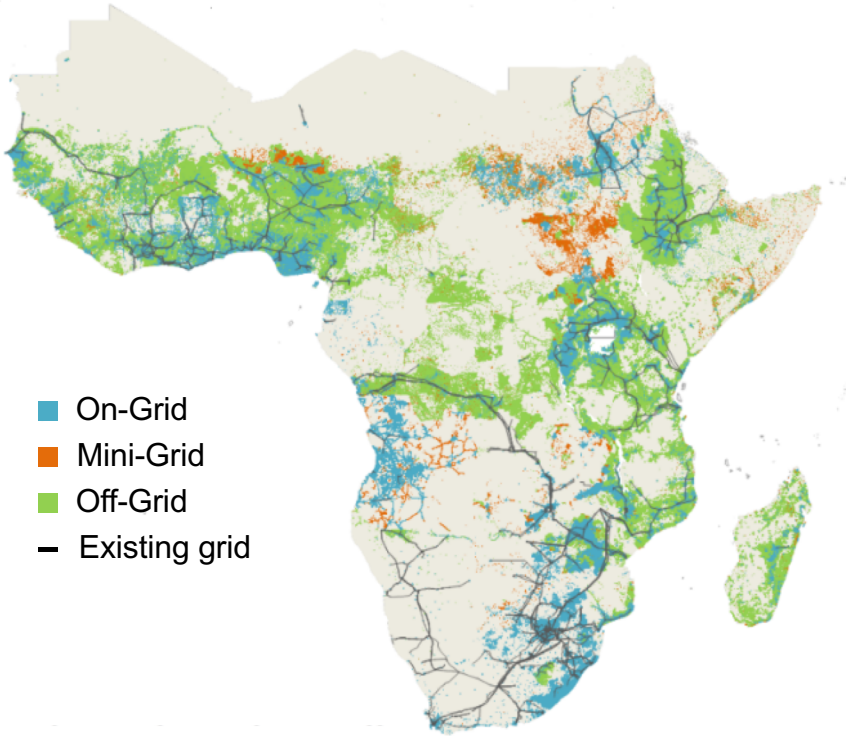
7.3 By 2030, double the global rate of improvement in energy efficiency

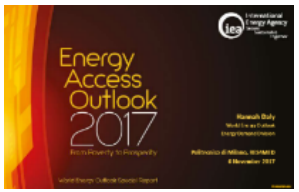
7 AFFORDABLE AND CLEAN ENERGY

Strategy to universal electricity access

IEA World Energy Outlook 2017

Least-cost solution for delivering universal electricity access in the Energy for All Case, 2030





- Grid extension for **150 million** additional people, with hydro accounting for the lion's share
- Decentralised solutions, mainly solar PV, for the remaining **450 million** people in rural areas
- An additional $26 billion per year is needed in electricity generation and grids

In 2030, 90% of those without access in Sub-Saharan Africa are in rural areas; electricity for all needs an acceleration in the ***deployment of decentralized systems***

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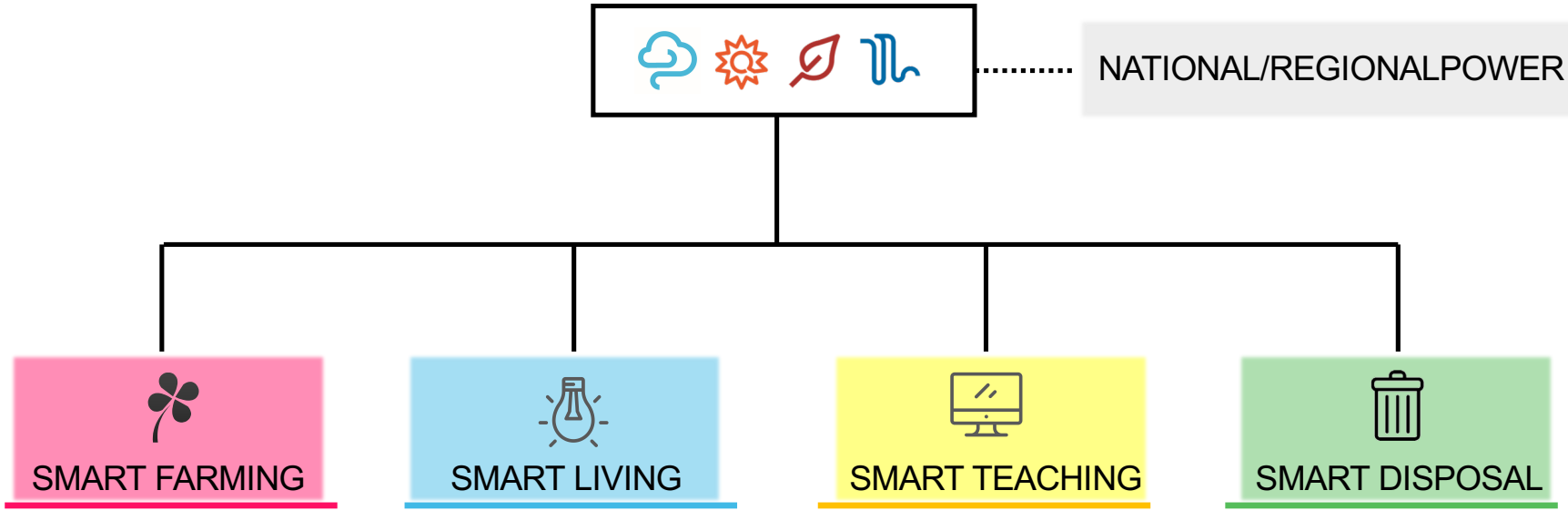
Smart Extensions



Pre-harvesting
Electric pumping
Water storage
Electric/smart watering
Post- harvesting
Precooling and cooling
Cleaning or disinfecting
Sorting
Packaging

Led lighting
Electric cooking
Mobile communication

Led lighting
Digital tools
Remote web access

Water treatment and storage
Anaerobic digestion

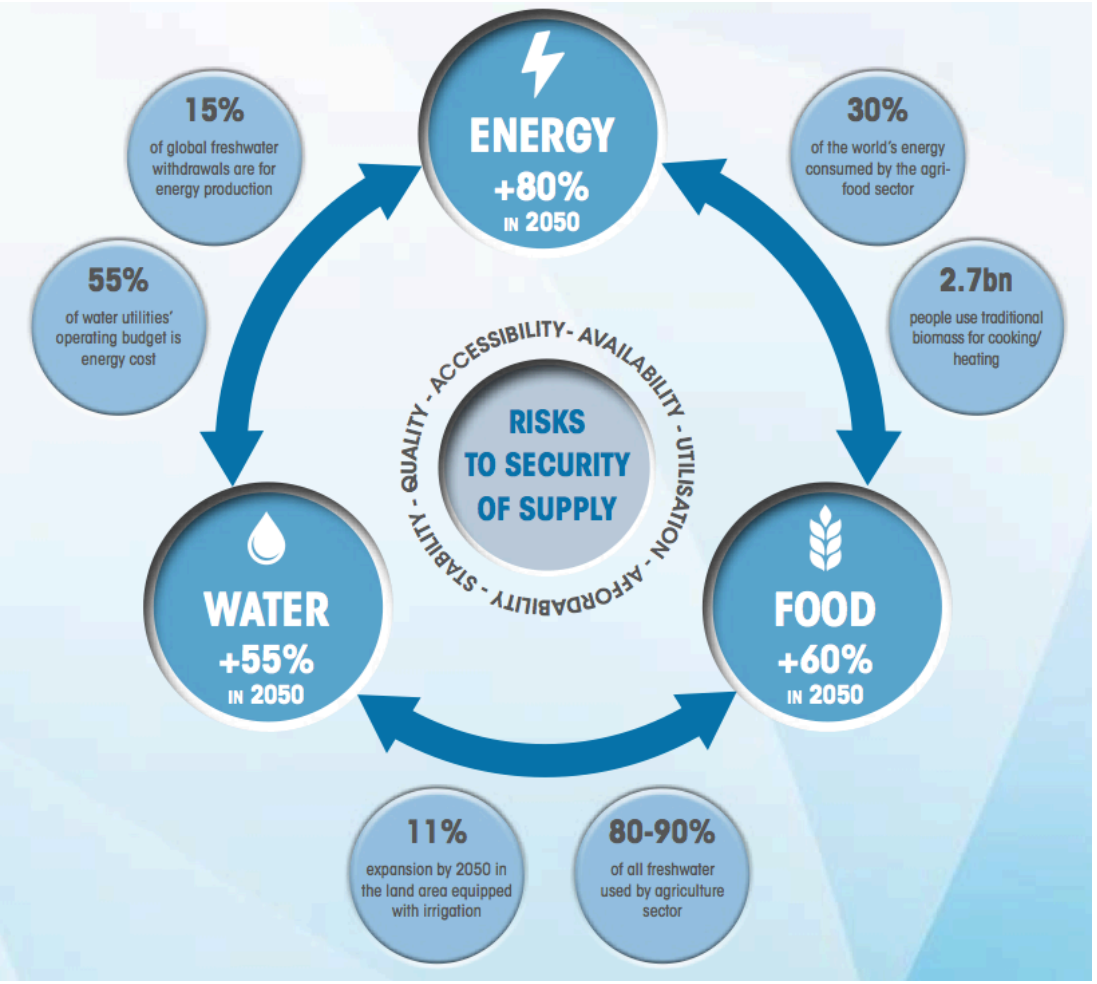
Nexus

“Energy is the golden thread that connects economic growth, social equity, and environmental sustainability. Children cannot study in the dark. Girls and women cannot learn or be productive when they spend hours a day collecting firewood. Businesses and economies cannot grow without power.”
(Ban Ki Moon)

“**Water, energy and food** are essential for human well-being, poverty reduction and sustainable development. Global projections indicate that demand for freshwater, energy and food will increase significantly over the next decades due to population growth, economic development, urbanization, growing demand for food and diversified diets, climate change, resource degradation and scarcity”
(Holger Hoff 2011).

Middle term scenarios

- Agriculture accounts for 70 percent of total global freshwater withdrawals, making it the largest user of water.
- At the same time, the food production and supply chain consumes about 30 percent of total energy consumed globally.
- Energy is required to produce, transport and distribute food as well as to extract, pump, lift, collect, transport and treat water.
- This situation is expected to be exacerbated in the near future as 60 percent more food will need to be produced in order to feed the world population in 2050.



Source: OECD-FAO 2012

What's next?

- A financially sustainable and affordable **business model**
- Integration of development services (water, food) and energy provision through decentralized energy solutions
- Enabling **Regulatory framework**