



SUSTAINABLE
ENERGY FOR ALL

BIOENERGY FOR SUSTAINABLE DEVELOPMENT

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Global Lead

Sustainable Bioenergy High-Impact Opportunity

Sustainable Energy For All

Session 2: Assessing bioenergy potential in Southern Africa

- **Gerard Ostheimer (Novozymes / SE4ALL):** Moderator and introductory presentation
- **Medhat El-Helepi (UNECA):** Policy Framework and Guidelines for the Sustainable Development of Bioenergy in Africa
- **Thembakazi Mali (SANEDI):** Overview of biomass resources, policies and technologies in South Africa
- **Rajabu Ngoma Mtunze (Ministry of Agriculture Food Security and Cooperatives, Tanzania):** Bioenergy policies and strategies in Tanzania

Overview

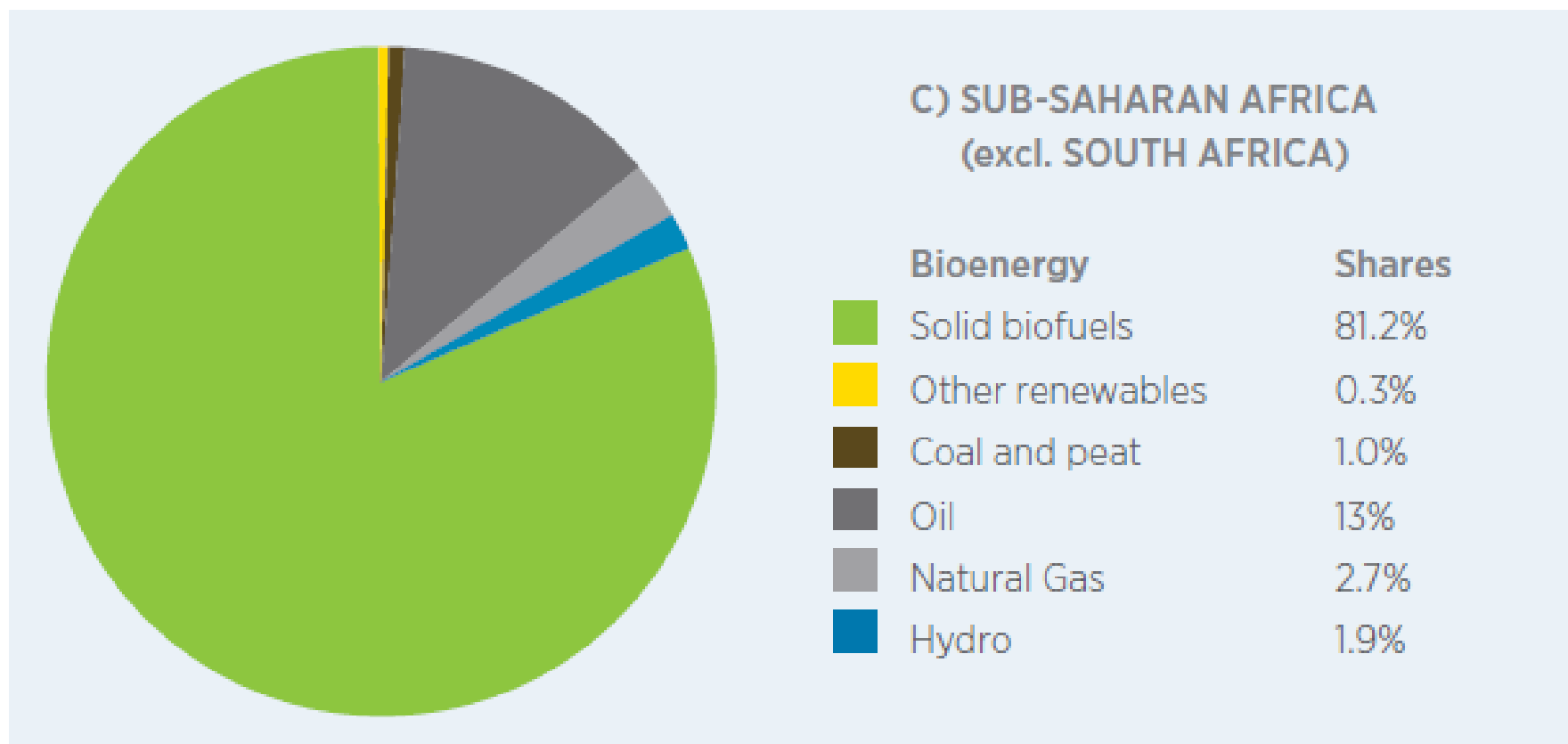
- Energy poverty is widespread and prevents economic development
- The international development community is beginning to act
- Integrated Energy-Agricultural systems are a powerful draw for developing countries

Energy Poverty: Statistics

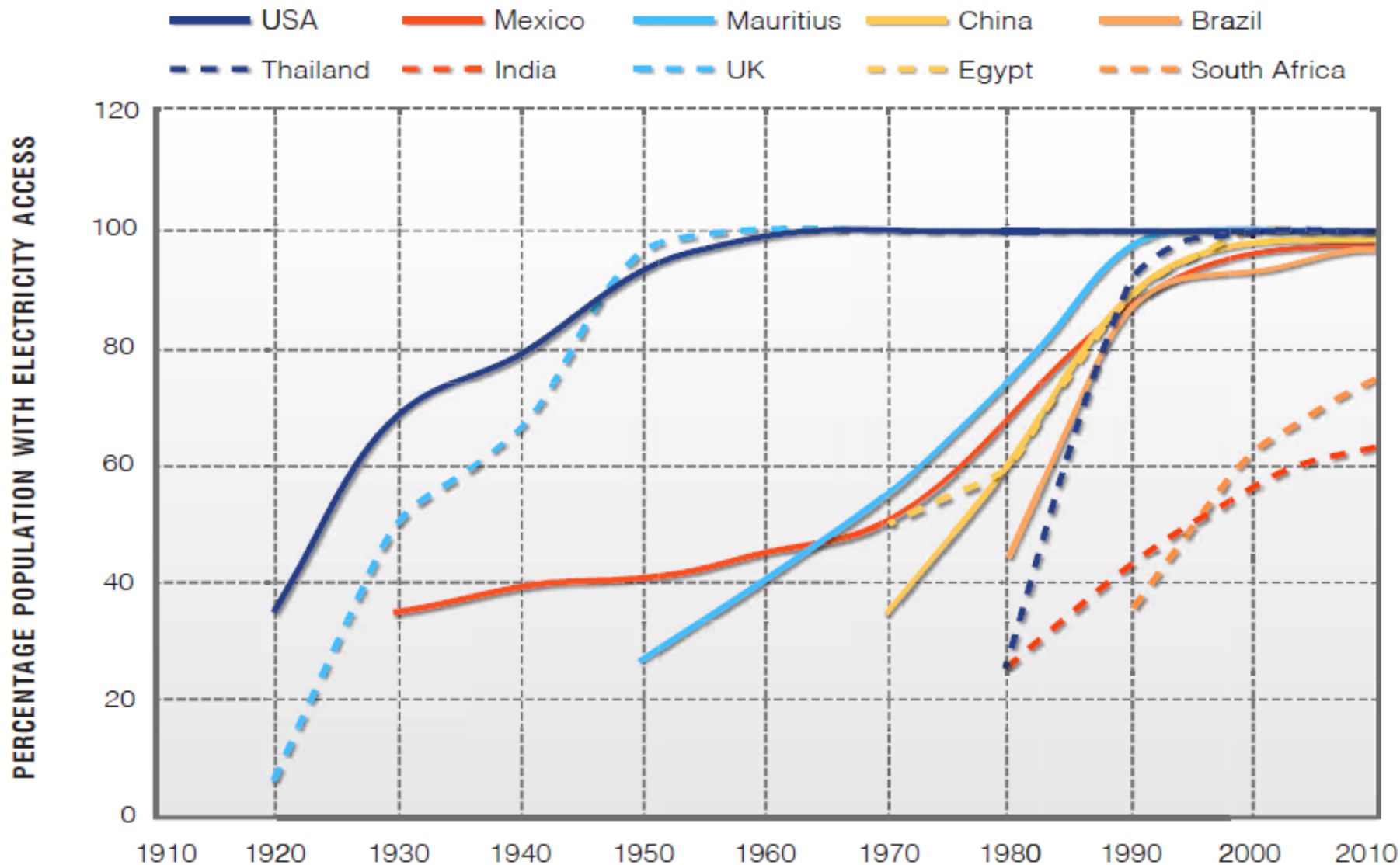
- 1.2 Billion people lack access to modern energy services
 - *0.5 Billion in sub-Saharan Africa*
- 2.7 Billion people lack sufficient energy to cook with anything but charcoal or biomass



Energy Poverty: Sub-Saharan Africa



Energy Poverty: History



International Efforts to end Energy Poverty

Energy is the golden thread that connects economic growth, increased social equity and an environment that allows the world to thrive.

-- UN Secretary-General Ban Ki-moon

Ending poverty and ensuring sustainability are the defining challenges of our time. Energy is central to both.

-- Jim Yong Kim - World Bank Group President



**SUSTAINABLE
ENERGY FOR ALL**

Ban-Ki Moon
Secretary
General
United Nations



Jim Yong Kim
President
World Bank

**Achieving the
three objectives
of Sustainable
Energy for All...**

**... makes many
development
goals possible**



**Ensuring universal
Energy Access**

- Improved health
Improved agricultural productivity
- Empowerment of women
- Business and employment creation
- Economic development
- Achievement of the Millennium Development Goals



**Doubling the share of
Renewable Energy**

- Affordable energy even where grid does not reach
- New opportunities for small entrepreneurs
- Decreased variability in energy costs
- Energy security and reduced import bills
- Reduced environmental impacts



**Doubling the rate of
improvement in
Energy Efficiency**

- Lighting / appliances that require less power
- Fossil fuel resources used more effectively
- Reduced energy costs for consumers
- Redistribution of electricity that now is wasted or lost
- More reliable electricity systems



SUSTAINABLE ENERGY FOR ALL

The SE4A initiative is uniquely positioned...

Unparalleled convening power

Ability to mobilise the boldest commitments

Shared commitment by partners ensuring coordination

Capacity to leverage large-scale investments

Large and rapidly expanding knowledge network

...to achieve the three objectives by 2030

ENERGY ACCESS



ENERGY
EFFICIENCY



RENEWABLE
ENERGY



SUSTAINABLE ENERGY FOR ALL



Legend



SE4All GFT Locations



Proposed Regional and Thematic Hub Locations

SE4ALL High Impact Opportunities



UNIVERSAL ADOPTION
OF CLEAN COOKING
SOLUTIONS



ENERGY AND WOMEN'S
HEALTH



INNOVATIVE FINANCE

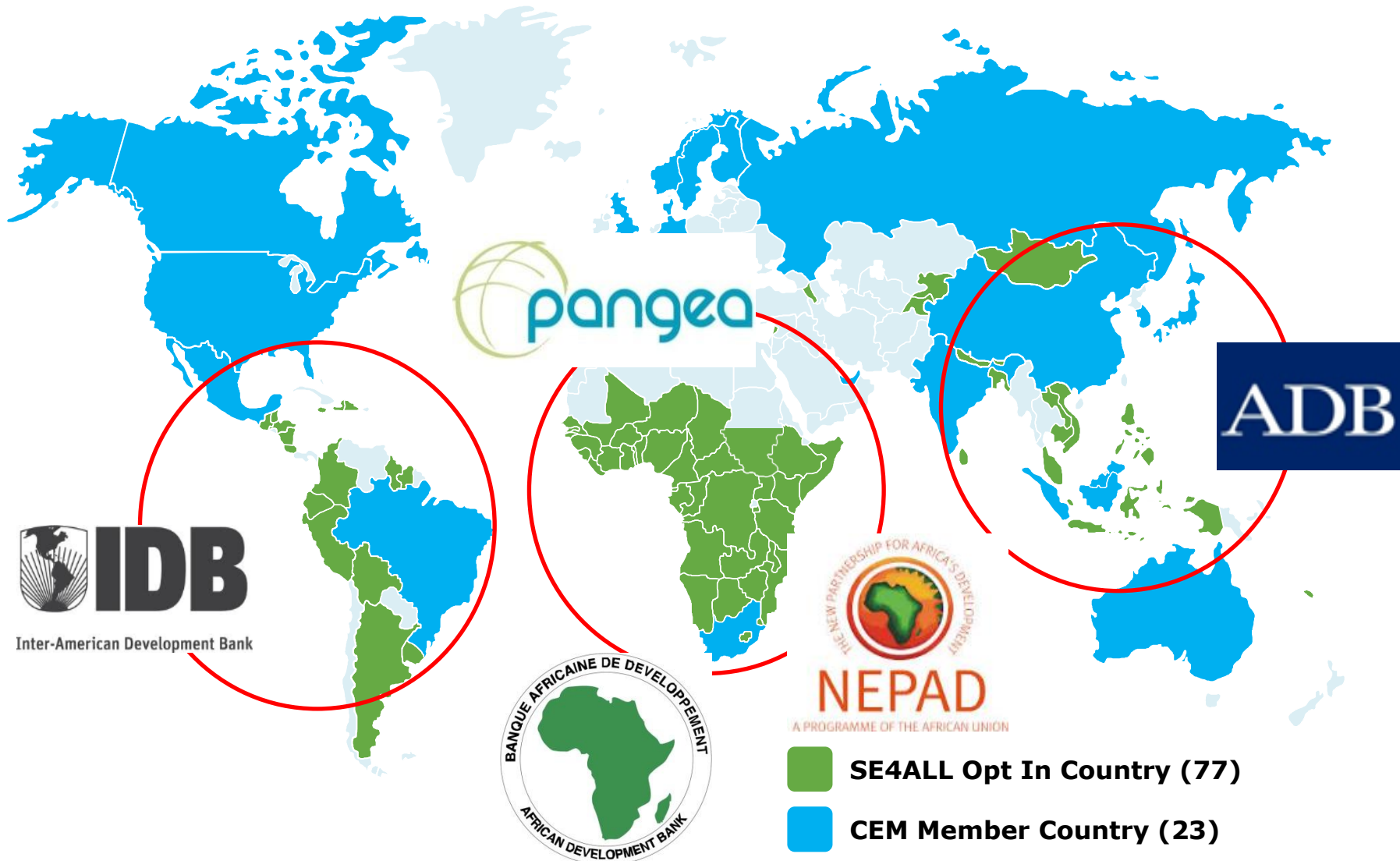


PHASE-OUT OF GAS
FLARING FROM OIL
PRODUCTION

Sustainable Bioenergy HIO

- Clean Cooking Solutions
- Increased Agricultural Productivity
- Energy from Municipal Solid Waste
- Sustainable Aviation Biofuels
- Cellulosic Ethanol

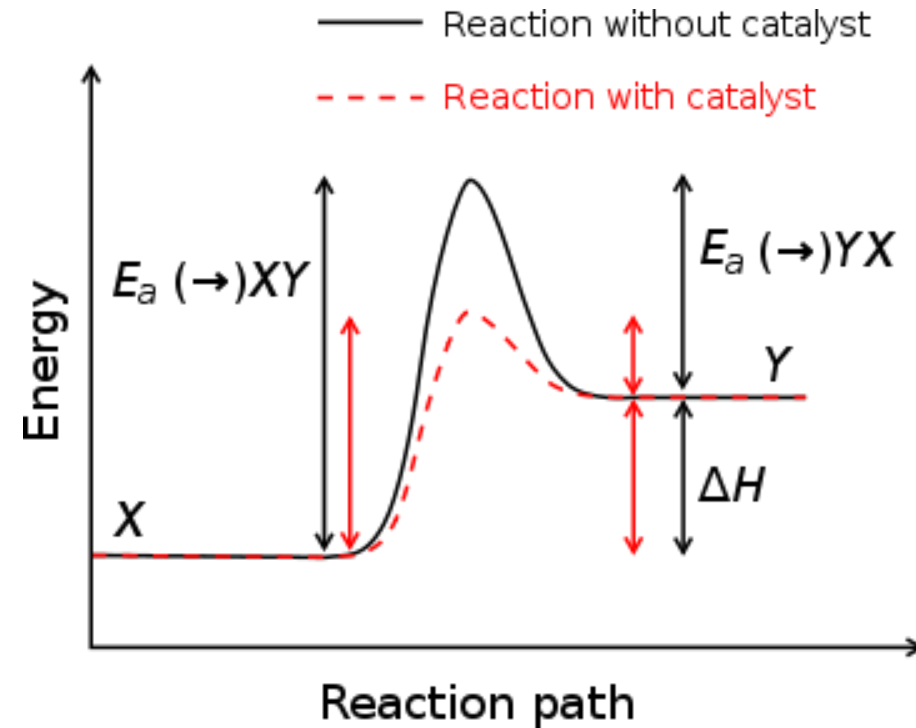
Sustainable Bioenergy High-Impact Regional Initiatives will align with the SE4ALL regional hubs



Reducing transaction costs

Barriers to deployment
in developing countries

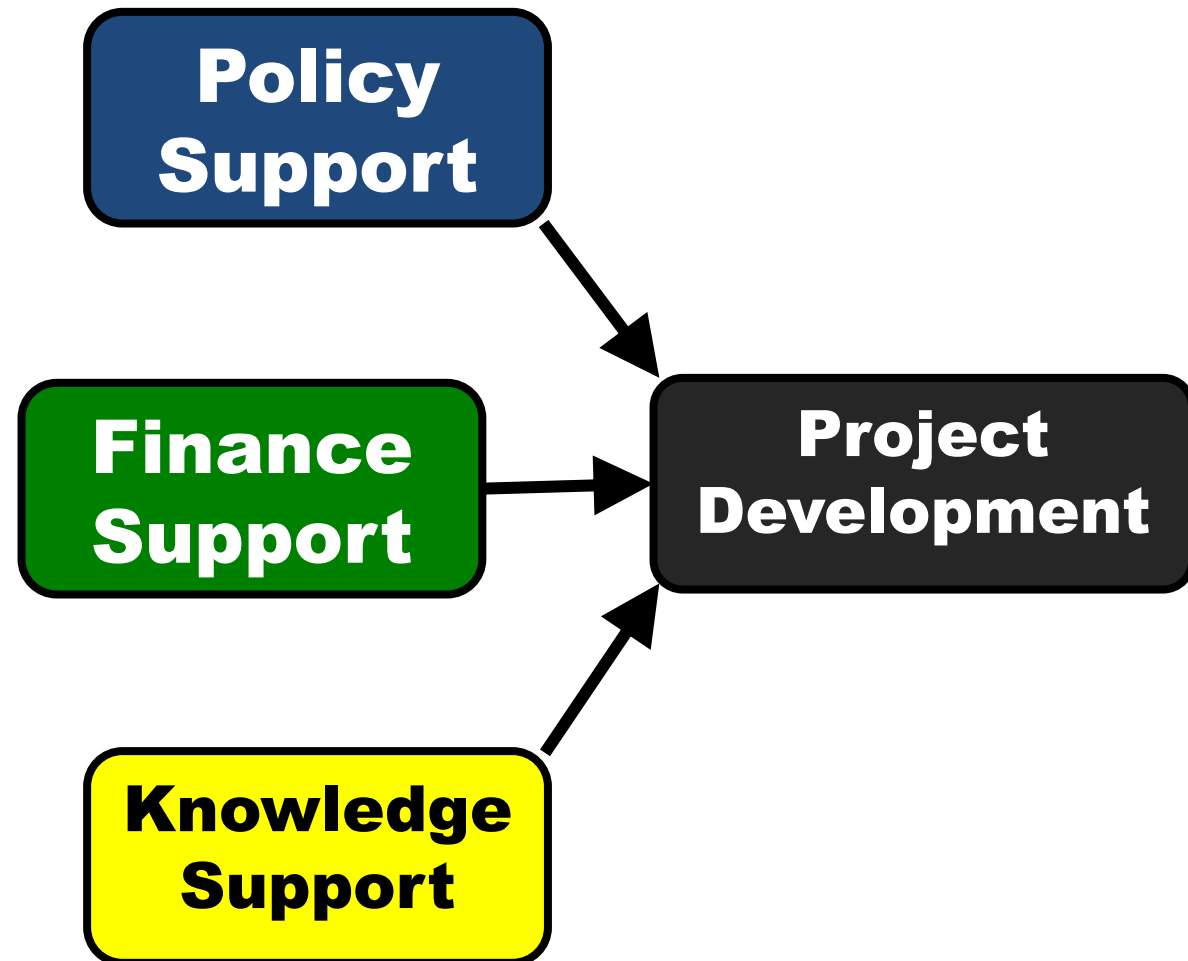
- National, local policy
- Culture
- Finance
- Technology capacity



The Sustainable Bioenergy HIO will facilitate deployment by reducing transaction costs

We seek to reduce the transaction costs to Sustainable Bioenergy development & deployment

- UN FAO
- IUCN
- UN Foundation
- Accenture Development Partnerships
- Bloomberg New Energy Finance
- Carbon War Room
- Roundtable Sustainable Biomaterials
- IDB
- Addax Bioenergy
- Boeing
- KLM/SKYNRG
- Novozymes
- PANGEA
- Shell



Platform for Bioenergy Deployment



World Business Council for
Sustainable Development

Sustainable Bioenergy Projects and High Impact Initiatives

- Bioenergy and Food Security (UN FAO)
 - Promoting Best Practices (UN FAO) & Policy Tool Development (UN FAO)
- Bioports for Sustainable Aviation (KLM & SKYNRG)
 - Australia & Brazil & Canada & Netherlands
- Policy Tools Promoting Sustainable Bioenergy (International Energy Agency & UN FAO)
 - How2Guide for Bioenergy (IEA)
- Smallholder Sustainability Certification (RSB & Boeing)
 - Latin America (Solidaridad, Inter-American Institute for Cooperation in Agriculture)
 - Africa (PANGEA)
 - Southeast Asia
- Sustainable Aviation Biofuels (UN ICAO, Carbon War Room & Boeing)
 - Halophyte Plants for Sustainable Aviation Biofuel (Masdar Institute, Etihad & Boeing)
 - Municipal Solid Waste for Aviation Biofuels (British Airways and Solena)

Sustainable Bioenergy Projects and High Impact Initiatives (continued)

- Sustainable Bioenergy in Africa (PANGEA & NEPAD)
 - Ethanol for Clean Cooking in Nigeria (SMEFunds)
 - Ethanol for Clean Cooking in Cote d'Ivoire (COTRAME, SAPHIR HM, Green Social & Project Gaia)
 - Sustainable Woodfuels and Charcoal (The Charcoal Project, International Center for Research in Agro-Forestry)
 - Sustainable Ethanol for Cooking and Transport in Sierra Leone (Addax Bioenergy)
 - Sustainable Aviation Biofuels in South Africa (Boeing and South African Airways)
 - Sustainable Supply Chains for Clean Cooking Solutions (Accenture Development Partnerships)
- Sustainable Bioenergy in Latin America (IDB & Novozymes)
 - Climatescope (IDB and Bloomberg New Energy Finance)
 - Workshops promoting sustainable bioenergy (IDB and Novozymes)
 - Financing of Next Generation Biorefineries (IDB and Novozymes)
- Sustainable Biofuels for Maritime and Heavy Trucking (Carbon War Room)

Africa has diverse renewable carbon resources



Integrated Energy – Agricultural Systems

Preventable post-harvest losses steal 30 – 70% of food from rural smallholders.

Production



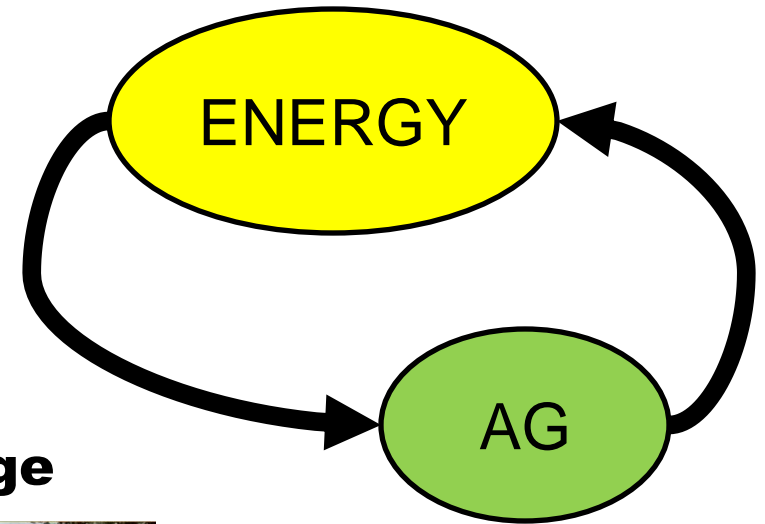
Processing



Storage



Distribution



Energy access improves the yield of each step in the food supply value chain.

SE4ALL Sustainable Bioenergy HIO

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