Climate finance for energy access in Sub-Saharan Africa

Johannes (Jan) Van den Akker

ICREP Lustrum Conference, 26-28 March 2013

University Twente

ASCENDIS

Overview

- Access to modern energy, SSA
- Electricity and renewables
- Energy efficiency
- Climate change, SSA
- Achieving energy for all
- Climate finance

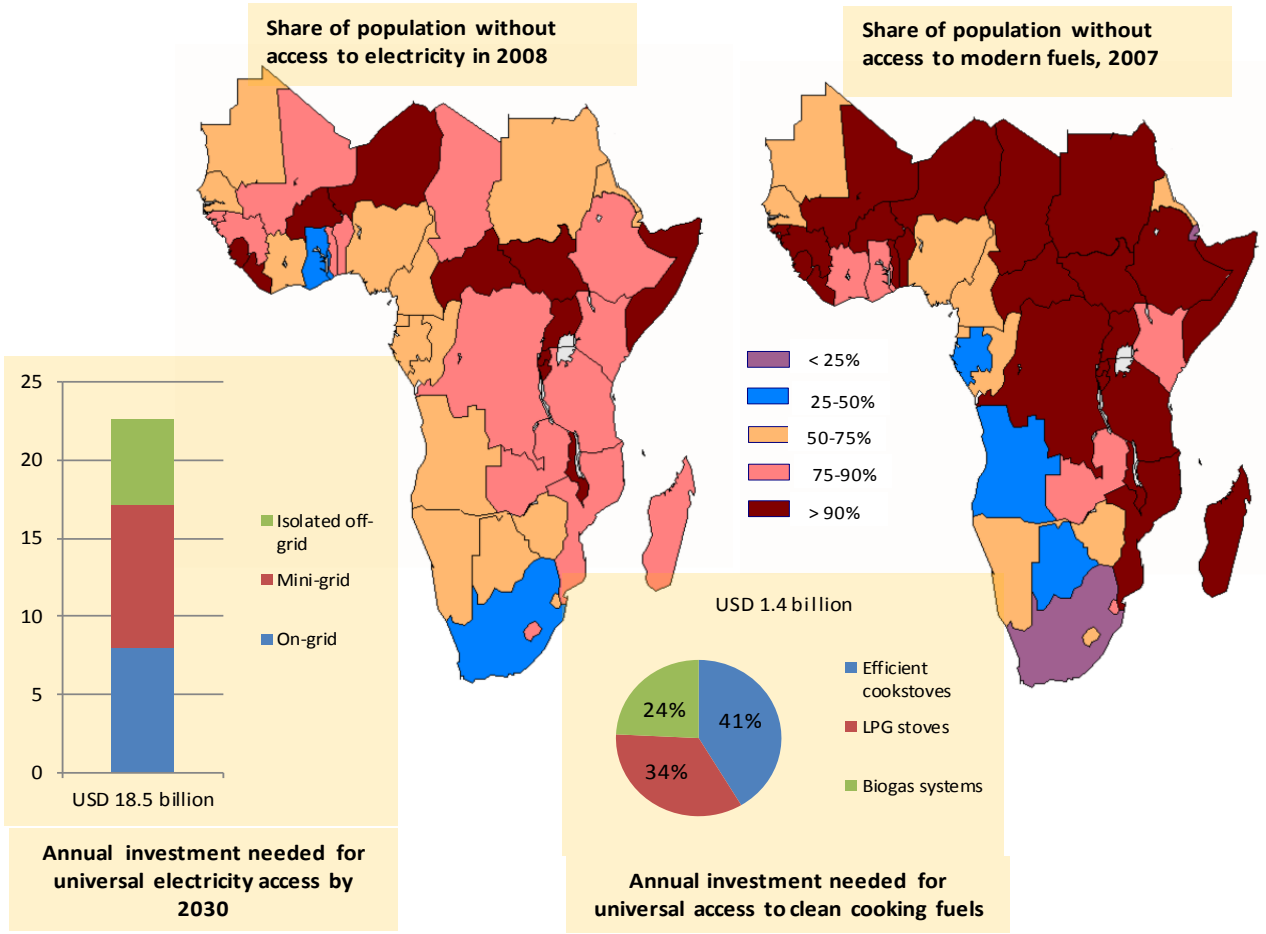
Modern energy access, SSA

No access, SSA:

- Electricity, 585 million
- Cooking fuels, 650 million

2030, energy4all:

- Annual investment of $ 24 billion/yr, of which about $ 22.5 billion/yr for electricity

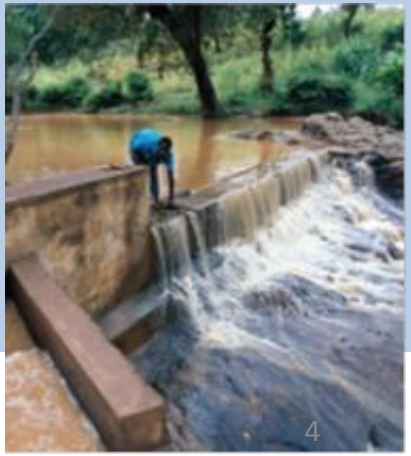


ASCENDIS

Modern energy access, SSA

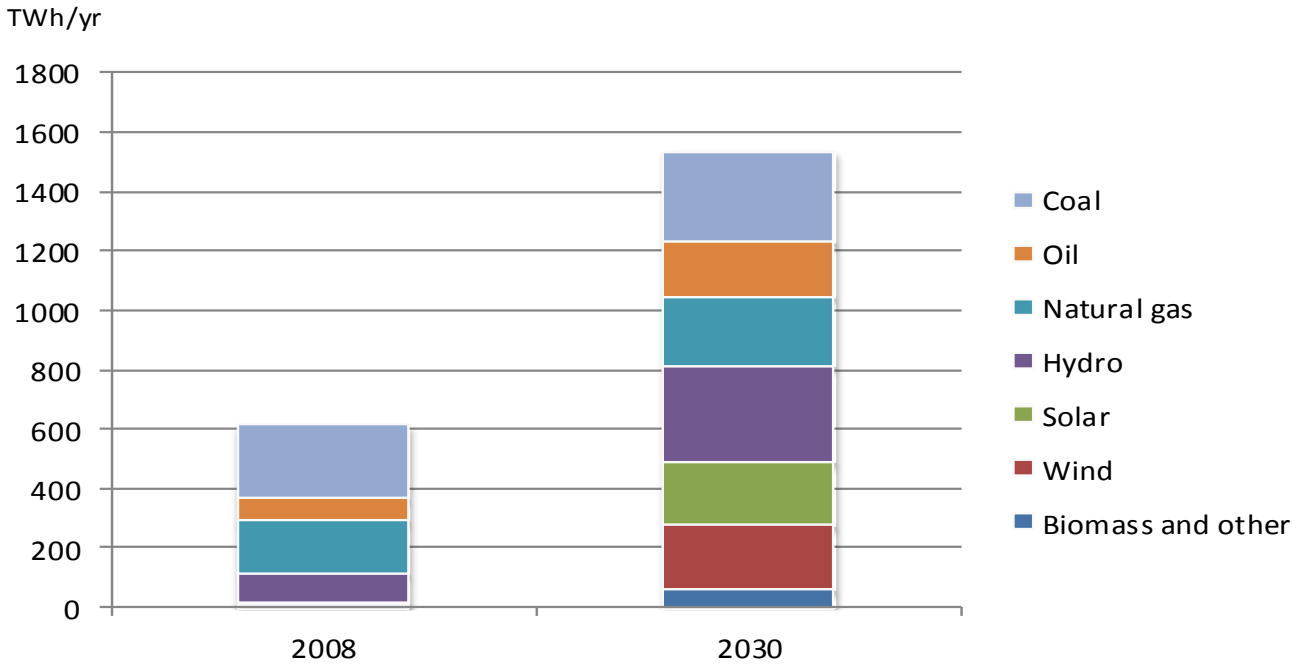
- Electricity access
  - Grid electricity
    - Fossil fuels
    - Renewable sources (hydro, wind, biomass, solar, geothermal)
  - Decentralised options
    - Fossil fuels (diesel gensets)
    - Renewable sources (hydro, biomass, solar)

- Modern fuels and facilities
  - Efficient equipment
    - Mechanical machinery for producyive uses
    - Efficient cookstoves
  - Modern fuels
    - Sust. biomass production
    - Fossil fuels (LPG, kerosene, gasoline, diesel)
    - Biofuels



ASCENDIS

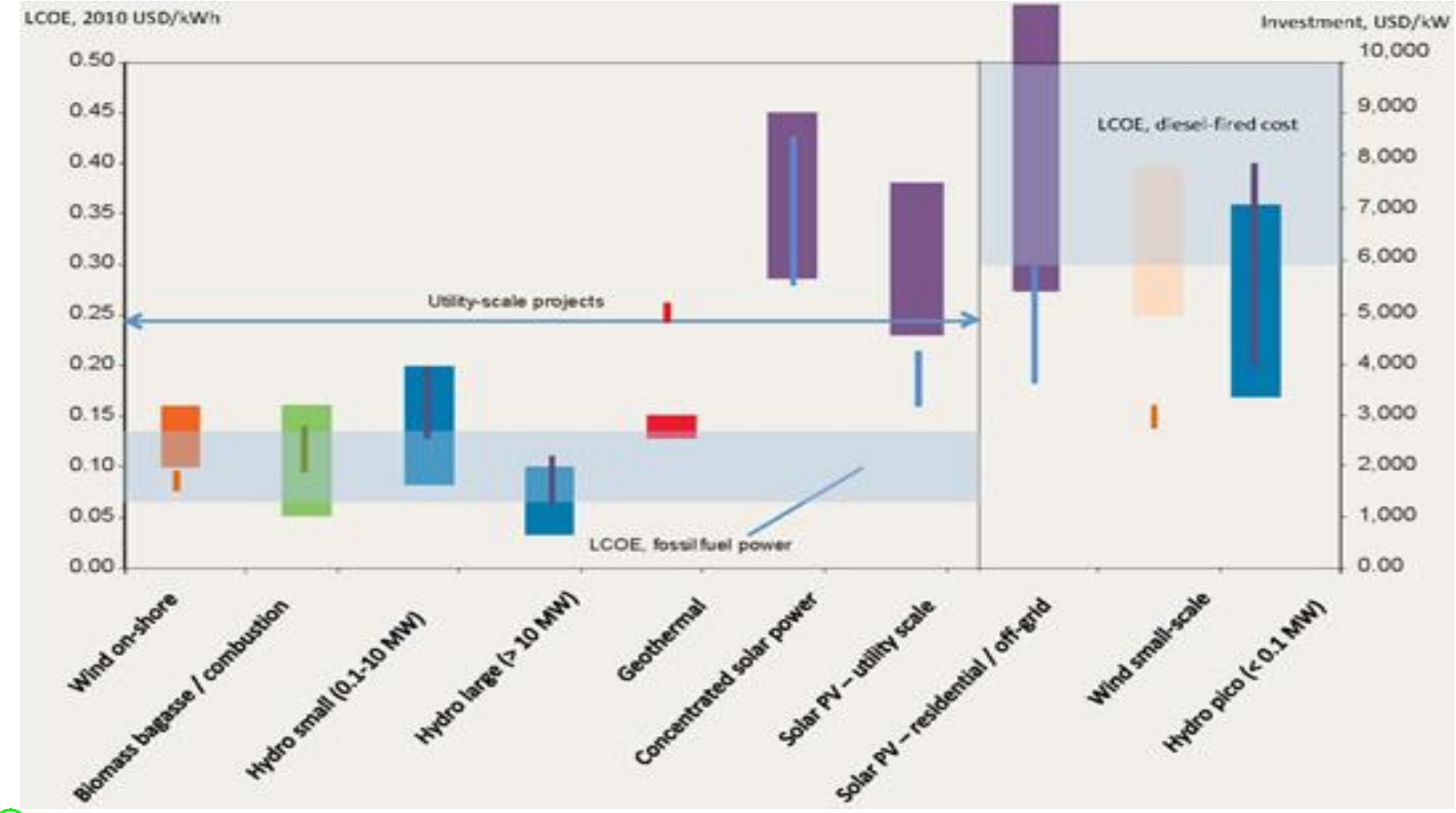
Electricity and renewables



- Opportunities:
  - Large renewable energy potential (hydro, solar, bio, wind)
  - About 2/3 of capacity still needs to be built; leapfrogging opportunity
  - Grid-based solutions and regional power pools; decentralised options

ASCENDIS

Electricity and renewables

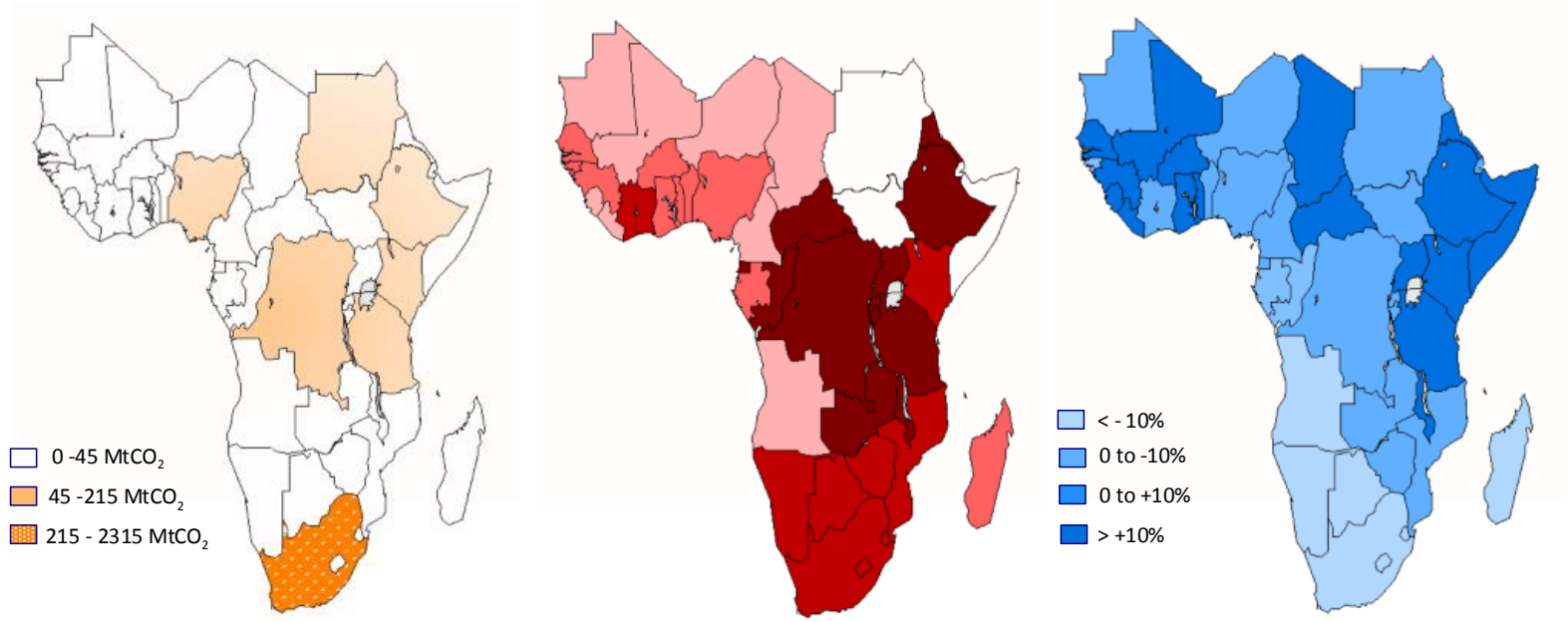


ASCENDIS

Energy efficiency (EE)

- Rationale:
  - Often cheaper to save a kWh than to generate a kWh; defers investment in future energy production; helps take the pressure of the grid, in case of supply shortages
- Residential
  - Efficient lighting, EE standards and labelling of appliances, solar water heaters, EE building design, retrofitting and new construction
- Productive sectors
  - EE equipment and machinery; systems optimization; EE processes
- Transportation
  - Energy and pollution regulations vehicles; promote public transport
- Efficiency in energy production and transport/transmission
  - EE power plants; reduction T&D losses; DSM programmes

Climate change, SSA



SSA only has a small contribution to global CO_2 emissions; only 3-4% (left)

BUT: Impacts could be large, on health (middle), water availability (right), food security, needing additional investment in climate resince and adaptive capacity

ASCENDIS

Achieving energy4all

- Policy support
  - Energy access and
    - RE, EE, rural energy policies with clear targets
    - Link with other development sectors
  - Appropriate institutional setup
  - Consider the whole energy mix
    - Electricity and fuels
    - Grid extension and decentralised options
    - Fossil fuels , biofuels renewable resources
- Performance of energy sector and utilities
  - Power system needs to be functioning well
  - Public funding for investment in energy access
    - Subsidise access, not consumption; Appropriate tariffs
  - Regional cooperation (power pools)

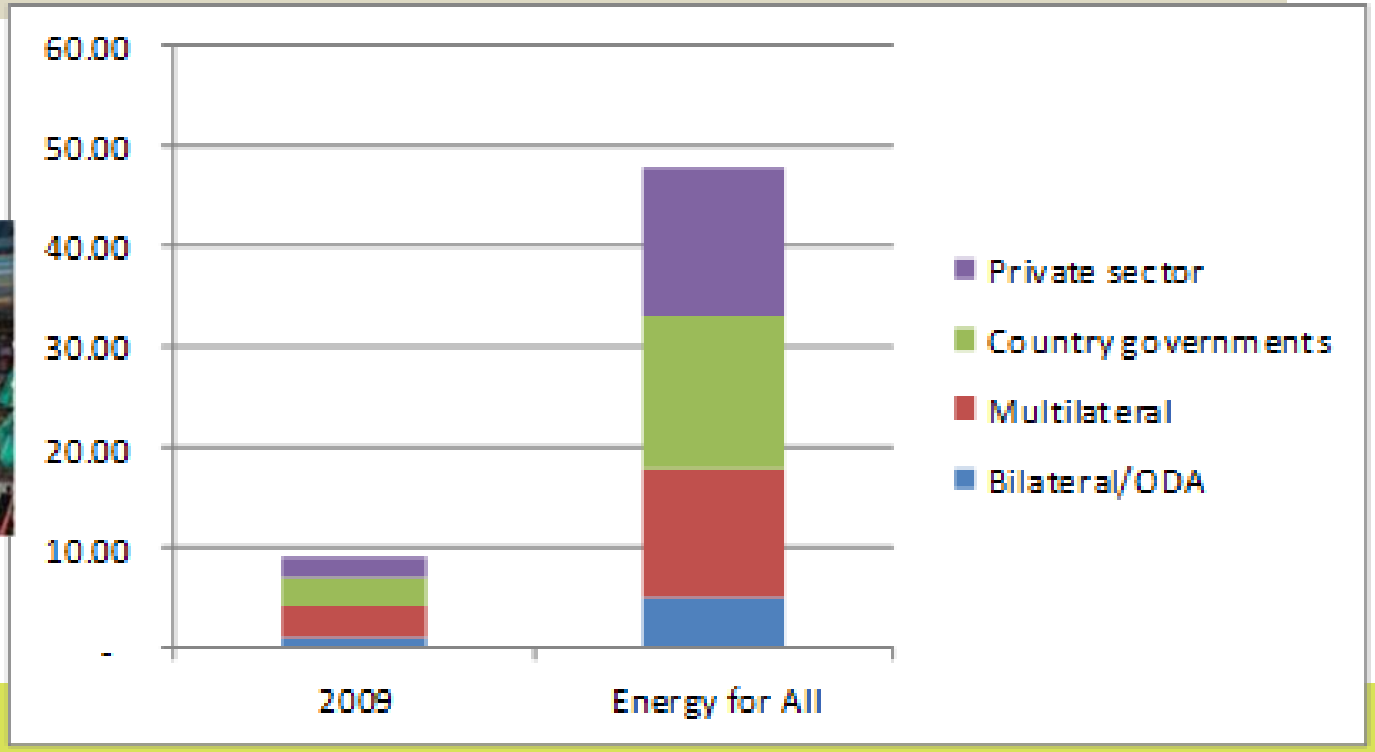
ASCENDIS

Achieving energy4all

- Capacity development
  - Supply chain of technology and services
    - Import of mass-produced systems
    - Local assembly and/or production; local maintenance and service
  - Capacity strengthening
    - Policy and decision-makers (public and private sectors)
    - Technology and service providers (importers, distributors, service, installers, maintenance)
    - End users and beneficiaries (appliances, O&M&M decentralised systems); link with productive uses and land use
    - Bundle capacity building rather than project-by-project

ASCENDIS

Achieving energy4all



- Financing
  - Soft' assistance (ODA and climate funds)
  - Investment (public and private; foreign and local; grants and loans)
  - Innovative finance for energy access

Achieving energy4all

- International community
  - Make energy access a priority
    - With its own funding and institutional arrangements, linked with, but not subservient to other development and environmental issues (poverty reduction, productive uses, deforestation and land use, climate change, education and training, gender, etc.)
  - Move away from project-by-project to enabling larger scale programmes
    - Appropriate policy and institutional frameworks and adequate capacity
    - Donor money as seed finance for investment (funds; provide grant/loans/risk guarantee to energy access investors; micro-finance for off-grid)
  - Re-direct ODA and climate finance for expanding energy access
    - Even if all in Africa would have energy access with fossil fuels, global emissions would only slightly increase; allow energy access with fossil fuels

Global climate finance

$ 97 billion (2009/10):
- **Private: $ 55 billion**
- **Public: $ 21 billion**
- **Public/private: $ 19 billion**
- **Carbon markets: $ 2 billion**

$ 97 billion (2009/10):
- **Mitigation: $ 93 billion**
- **Adaptation: $ 4 billion**

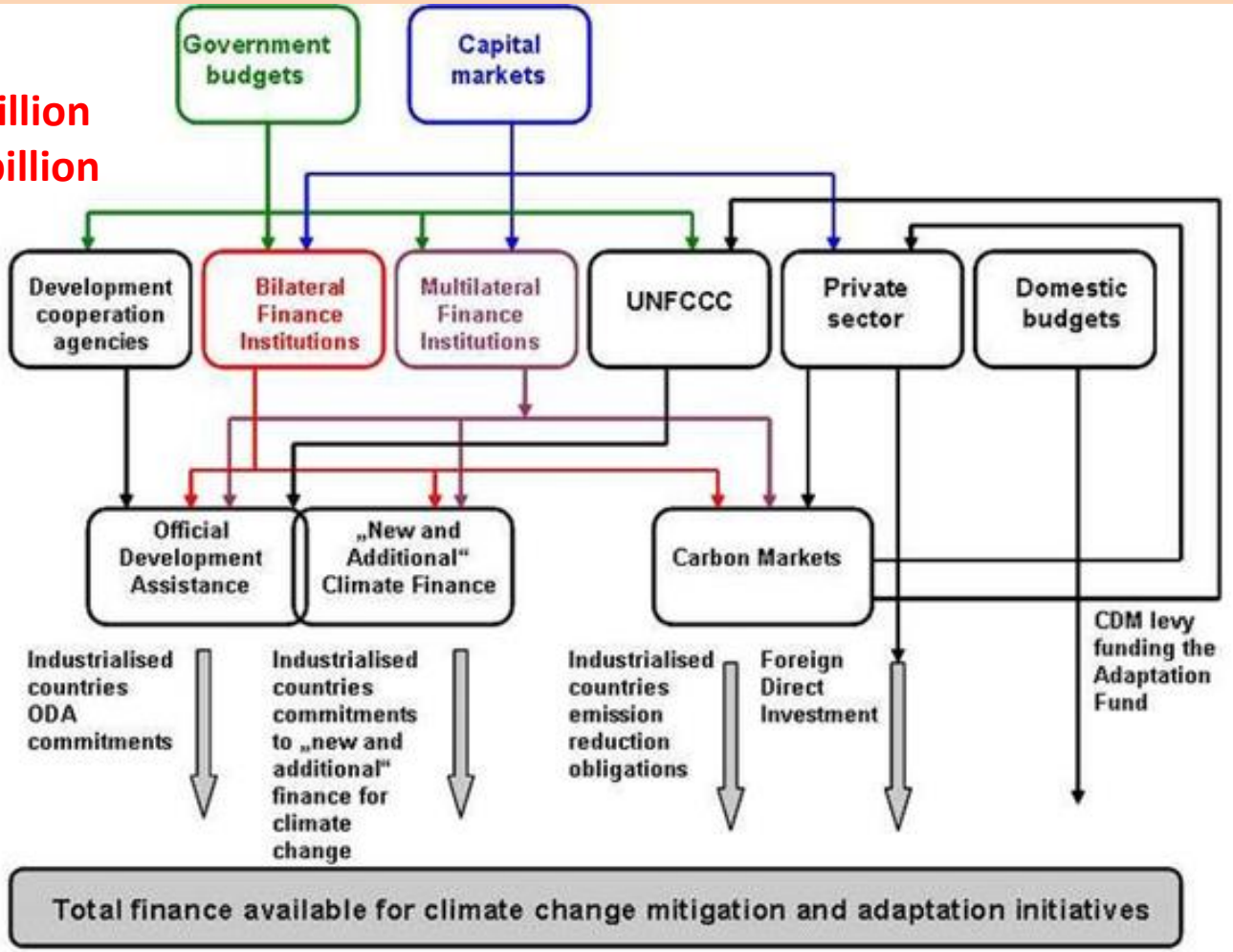


Figure 2. Financial flows for climate change mitigation and adaptation in developing countries. Note: The UNFCCC mechanism include the various funds under the Global Environment Fund as well as the Adaptation Fund.

ASCENDIS

Climate finance

- Re-direct ODA and climate finance for energy access
  - Expand relevant bilateral and multilateral grant funding
- Reduce bias in carbon markets (reform CDM)
  - New modalities in CDM::
    - Programmatic approach;
    - Standaridised baselines and methodologies
    - 'Surpressed demand' methodologies
  - Expand CDM
    - Reducing emissions from deforestation and forest degradation (REDD);
- New mechanisms (post-Kyoto)
  - Sectoral targets, transnational sectoral agreements, policy-based instruments

Thank you !

Authors:

- Johannes (Jan) Van den Akker
  - Independent consultant, ASCENDIS (Netherlands)
- Teodoro Sánchez
  - Advisor, PRACTICAL ACTION (UK)

Inquiries:

- jhavdakker@hotmail.com