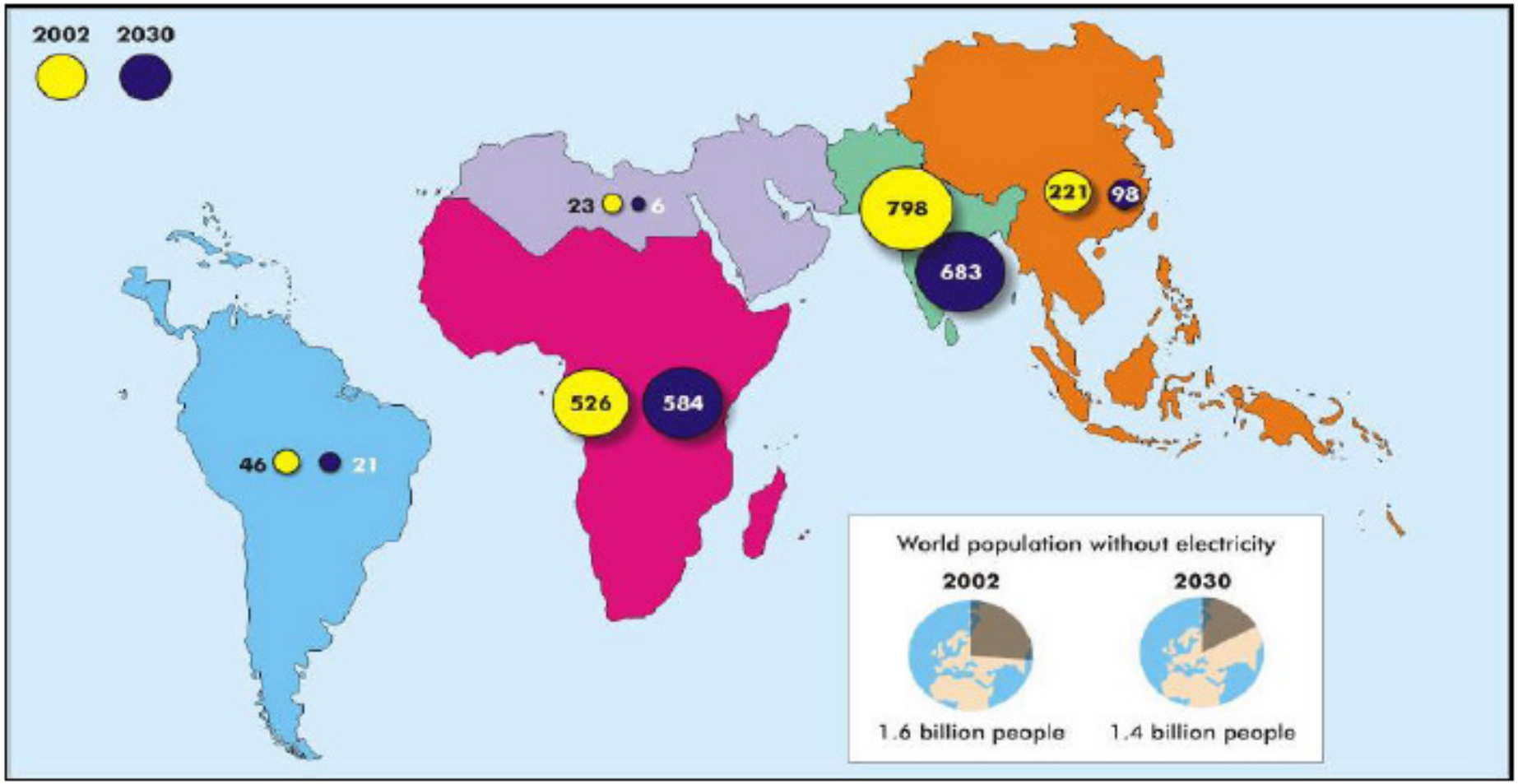
AFRICAN BIOFUEL & RENEWABLE ENERGY FUND

I. Energy Context

- **The priorities for Africa are primarily driven by the need to pro-mote economic development and to increase access to energy. In the field of climate change, Africa‘s priorities are:**
  - Technology adaptation and project replication
  - Higher share of carbon market (including CDM)

- **Overall, Africa has 13% of world‘s population and produces 7% of the world‘s commercial energy, but it consumes only 3% of the world‘s commercial energy. The IEA estimates that, by 2030, there could still be close to 600 million people in Africa without access to electricity, out of a total of 1.4 billion worldwide.**

I. Energy Context



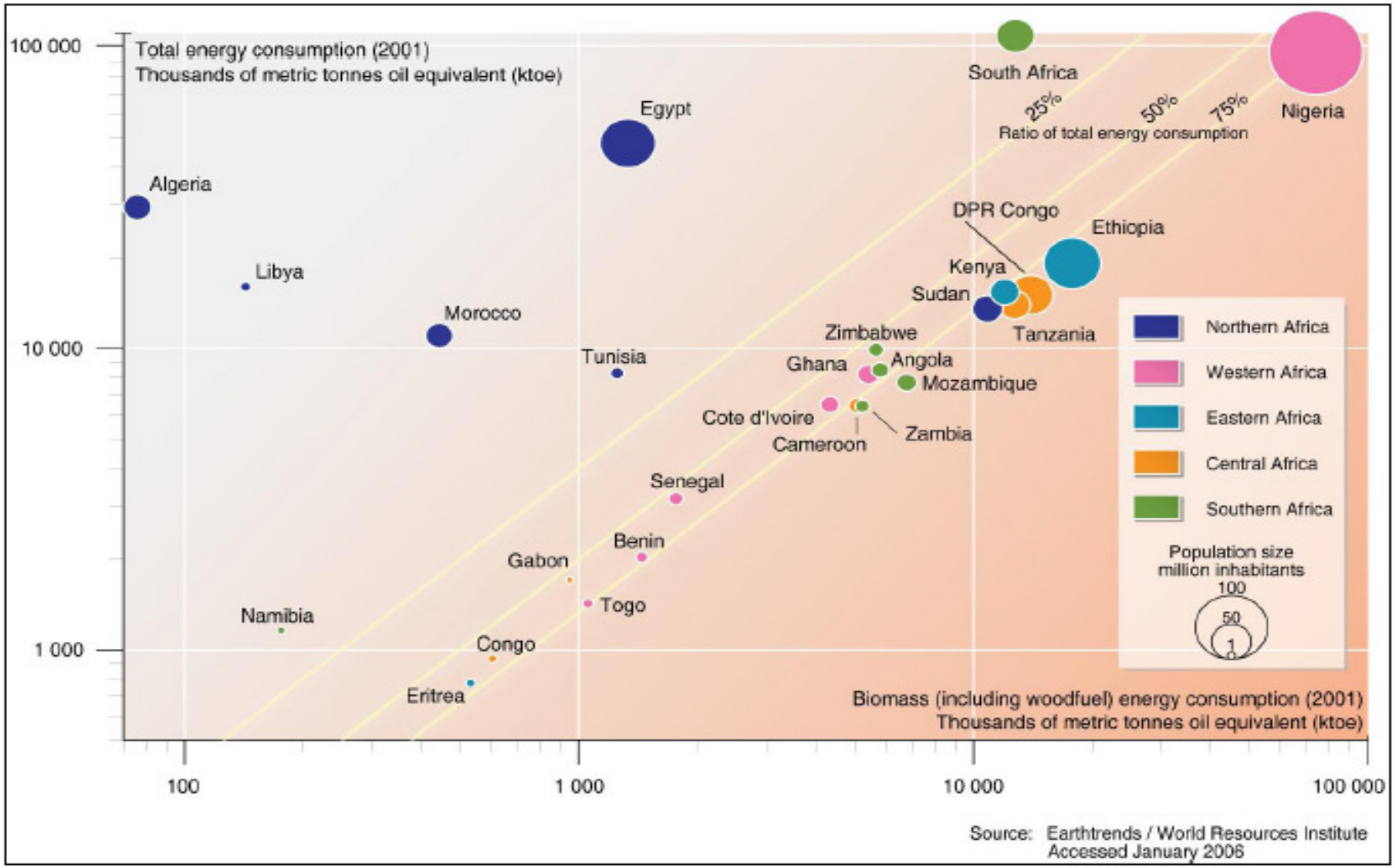
II. State of renewable energy in Africa

- Africa's vast size, abundant natural resources and ideal agro-climatic conditions makes it an ideal location for the implementation of solar, wind, hydro, bio-mass, biofuels and other types of renewable energy technologies ("RET").

- Consumption of modern forms of energy is very low in Africa, where the primary source of energy is traditional (i.e. non-commercial) biomass.

- Over 90% of the total energy consumption is biomass in Ethiopia, DPR Congo and Tanzania; Projections estimate that this will further increase, together with population increase and higher energy needs. In total energy consumption, populous countries, such as Nigeria, South Africa and Egypt have the highest levels of consumption of biomass.

II. State of renewable energy in Africa



II. State of renewable energy in Africa

- **Africa is endowed with substantial renewable energy resources, but just as in the specific case of the electricity sector, the Continent has been relatively slow at harnessing this potential. The indicators on the extent of the gap between potential and implementation are quite striking :**
  - More than 12% of the global hydropower potential is located in Sub-Saharan Africa but less than 10% of the 1.1 GW capacity is exploited;
  - More than 9,000 MW could be produced through geothermal power but few countries are even exploiting this source of energy.
  - Most African countries enjoy about 325 days of sunlight per year but so-lar power remains marginal in most countries.
  - With favourable agro-climatic conditions and available arable land (in-cluding semi-arid lands which are suitable for crops like Jatropha) Africa can become a global superpower in the supply of biofuels but most countries do not even have a specific national biofuels policy or consumption targets.

II. State of renewable energy in Africa

- Predictably, Africa also underperforms in terms of external financing flows into the clean energy sector and access to carbon revenues. In 2007, there was no recorded venture capital investment in Africa and asset finance flows reached only US$1.3 billion, most of which into biofuels and geothermal; this compares with global investment in clean energy of close to US$150 billion in the same year.

- In terms of the carbon market, Sub-Saharan Africa accounted for only 1.87 percent of all registered CDM projects as of September 2009 (only 34 out of 1,822 projects) and most of these projects (16 out of 34) were located in just one country, South Africa. Globally, China dominates the CDM market with close to 70 percent of volumes transacted in 2007.

V. Barriers and Solutions for RET in Africa

Barriers

- Financial barriers (high perceived risks);
- Lack of skilled human resources;
- institutional and regulatory hurdles;
- lack of awareness and information sharing;
- general awareness of new technologies.

V. Barriers and Solutions for RET in Africa

Solutions

- Provide entrepreneurial development services (including assistance with feasibility studies and business plan writing);
- Provide developers with a unique opportunity to receive both seed capital financing and to qualify for expansion financing or even through the external financing network;
- Disseminate information about country policy frameworks and investment opportunities; encourage regional policy harmonization; and conduct analytical and diagnostic national studies ;
- Organize technical seminars to ensure that entrepreneurs, financial firms and policymakers are informed of best practices in technical and financial areas. These seminars will be conducted in close collaboration with local and international centres of excellence and educational institutions.

IV. Financing approaches in use

- **In general, renewable energy finance is segmented by the size of projects and type of debtor:**
  - consumer and microfinance for off-grid projects;
  - corporate finance for small on-grid projects; and
  - project finance for large scale projects;

- **The finance can be in form of asset, venture capital, private equity, loans and grants, or multiple combinations of these.**

- **Financing of grid connected renewable energy projects is largely done using debt and grants, from both public and private funds. The specific models differ slightly across the different projects with funds tending to be a combination of national government, IFIs and private sector funds.**

VI. Carbon Financing for renewable energy

- The CDM is one of the Kyoto Protocol financing mechanisms which can be used to finance renewable energy. However Africa hardly benefits from CDM and is the region with the least number of CDM projects, 2.6% of the global total;

- Ones take into account the share of contribution from this finance, approximately 15 to 25%;

- A new approach seems to be emerging where carbon finance is being used to address social equity, rather than as a core component of capital project financing.

AFRICAN BIOFUEL & RENEWABLE ENERGY FUND AND THE FINANCING OF BIOENERGY

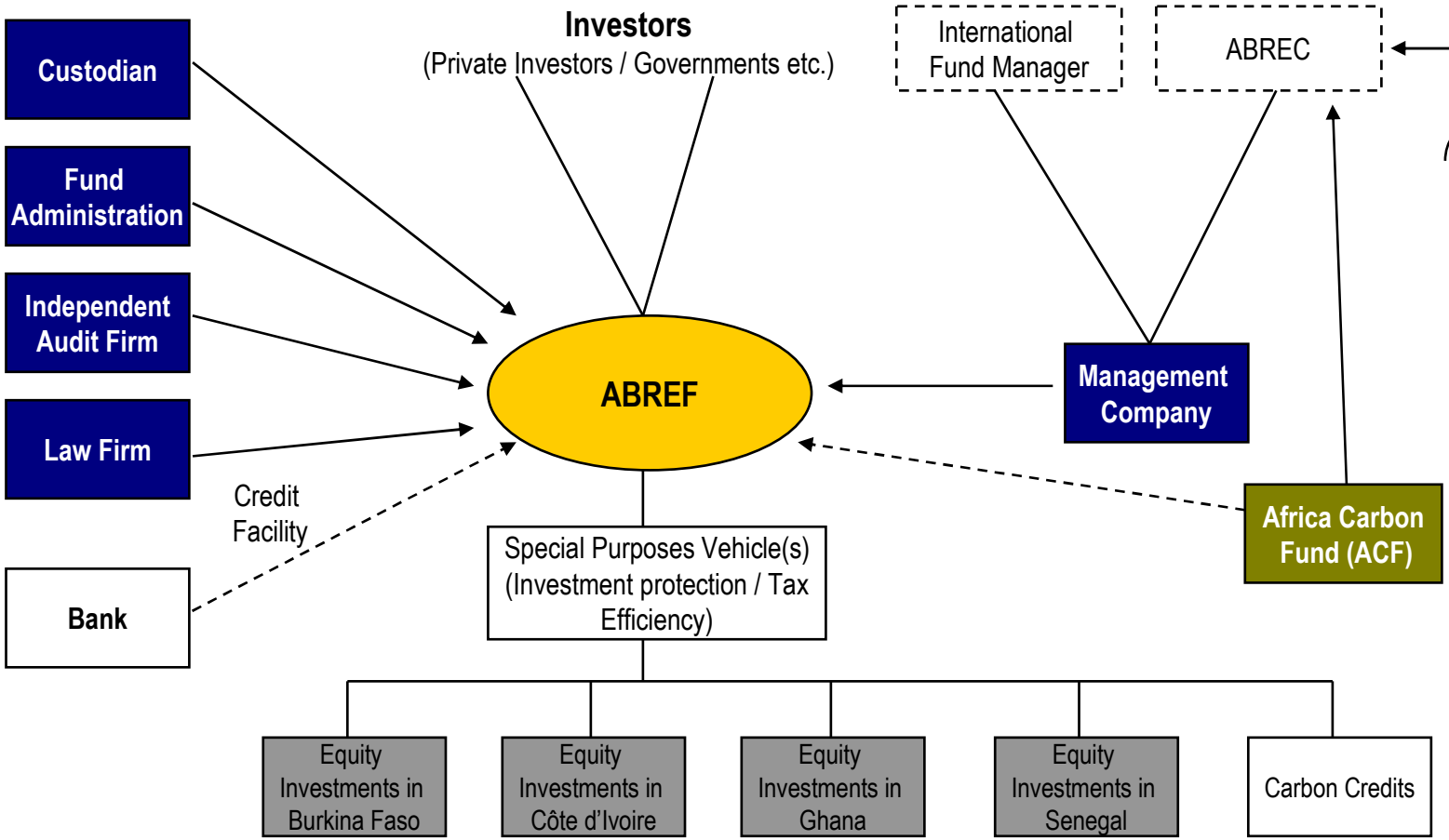
I. Objectives of the Fund

The Fund will :

- Contribute to the development of the biofuels and renewable energy industry in the African regions, with a particular focus on West African countries

- Provide investors with superior returns through investments in biofuels and renewable energy projects which generate Certified Emission Reductions (CERs).

II. Structure of the Fund



1. Develops a pipeline of potential projects to be considered for financing by ABREF;

2. Provides limited seed capital assistance for carefully selected projects;

3. Builds a network of external investors and funders for later-stage financing;

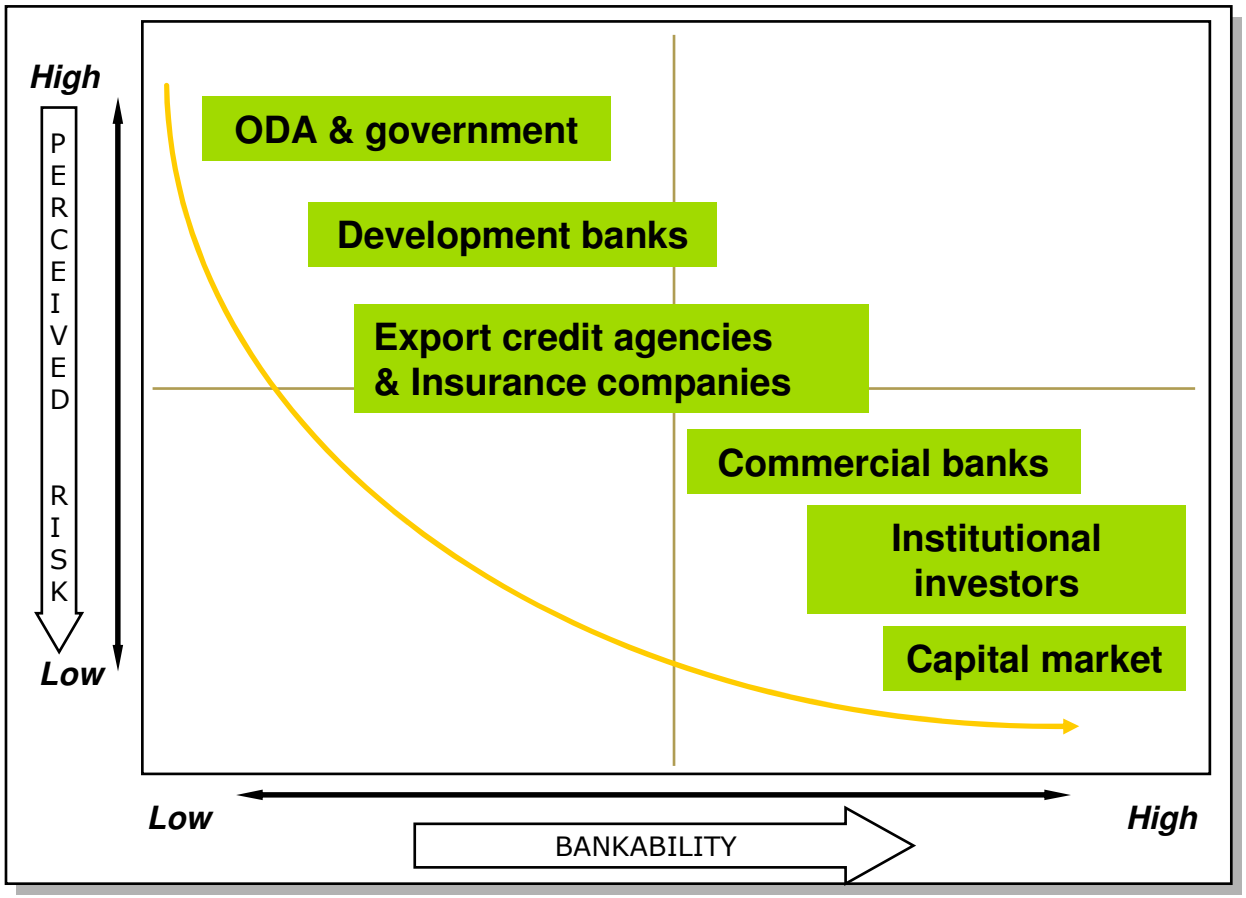
4. Promotes the development of sector-appropriate financing instruments at conventional financial institutions across Africa;

5. Assists entrepreneurs and financial institutions with CDM transactions;

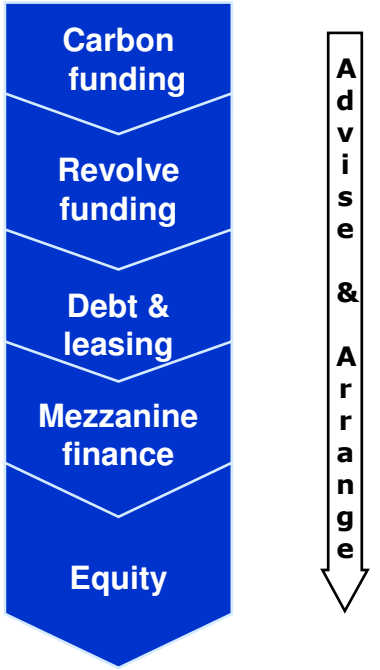
6. Contributes to sectoral policy analysis and harmonization across countries; and

7. Raises general awareness regarding biofuel and renewable energy among the public and private sector.

III. Strategic Financing Position



Use credit enhancements based on additional cash flows



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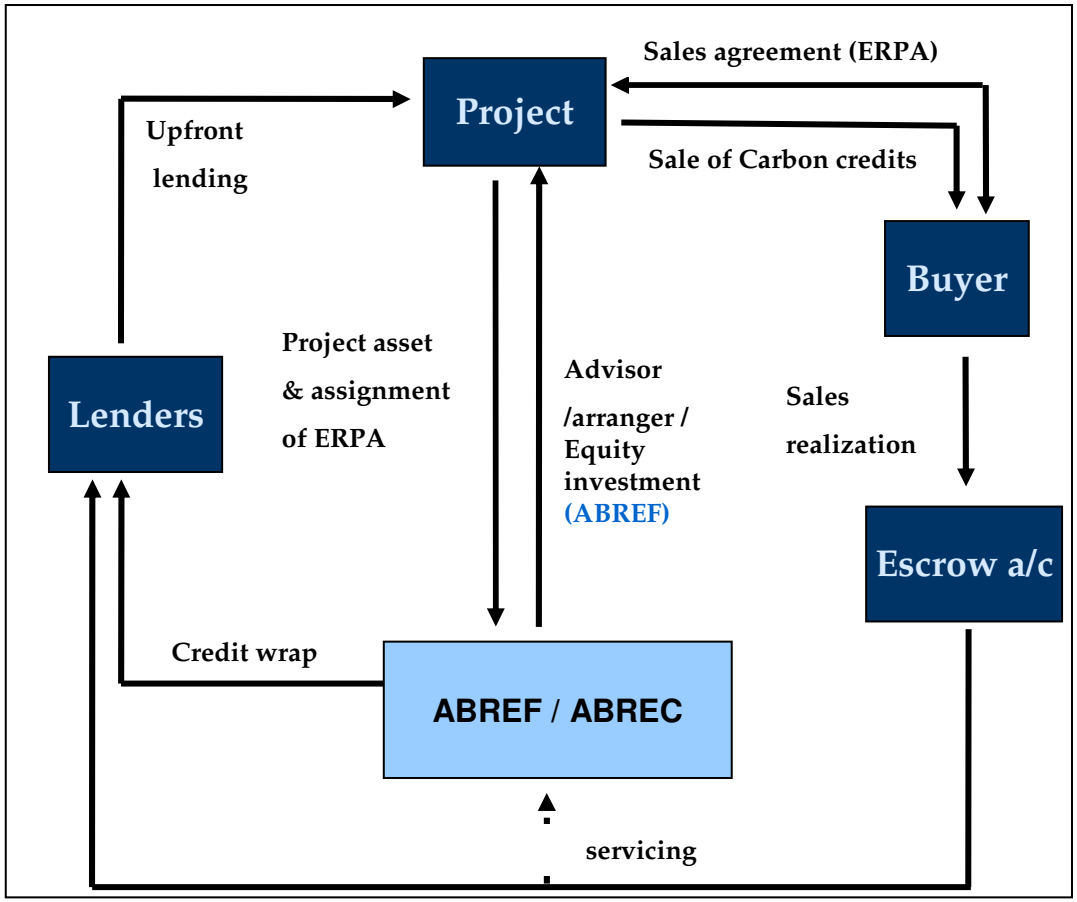

IV. Study cases

► Société Ivoirienne de Traitement des Déchets (SITRADE) - Abidjan

***Object** : Municipal Waste-To-Energy*

***Services from ABREF** : CDM development / CERs brokerage / fund raising*

***Project Scope** : SITRADE - the project owner - will collect and treat 200,000 tons of urban waste per year in a new facility located in Bingerville, North of Abidjan. After collection and sorting, waste will be treated through anaerobic digesters. The resulting biogas will be used to produce electricity while residual waste will be transformed into compost. The project is expected to avoid more than 71,000 tons of CO2 eq. per year.*

***CDM registration** : July 09, 2009*

***Investment** : Total cost : € 13.6 million*

- *Equity : € 4.1 million*
- *Debt : €9.5 million (from EBID)*
- *Carbon credits : 71,000 CERs/year*

  € 12 / tCO2 → € 852 000 / year

The project is the first CDM project ever registered in the West African Economic and Monetary Union (UEMOA).

IV. Study cases

► Global Biofuels Ltd - Nigeria

Object : Grid-Connected electricity generation from bagasse surplus

Services from ABREF : CDM development / CERs brokerage / fund raising

Project Scope : Global Biofuels Ltd (GBL) intends to establish a 90,000 liters per day ethanol refinery with 7,500 ha of cultivated sweet sorghum which provides the feestock for the refinery. The excess of bagasse will be used to add 15 MW of installed power and the resulting electricity surplus will be exported to the national grid. The renewable energy generated by the project activity will decrease the fossil fuel proportion of the national energy mix and thus will reduce the combined margin grid emission factor.

Investment : Total cost : US$ 107 million

- *Equity : US$ 22 million*
- *Debt : US$ 85 million (US$ 20 million from EBID through NEXIM)*
- *Carbon credits : 60,000 CERs/year*

  € 14 / tCO2 → € 840 000 / year

V. Recommendations

The following recommendations take into account the different stakeholders in renewable energy financing :

- **For governments and economic organizations :**
  - develop and support policies that encourage community involvement in renewable energy systems for productive purposes;
  - develop energy policies that support appropriate renewable energy initiative such as ABREF;
  - establish transparent market conditions that encourage investments in renewable energy.

- **For Donors :**
  - Support African initiative for renewable energy such as ABREF.

Contacts

Head of Project

Mr. Thierno Bocar TALL

Tel : (+228) 221 68 64
Fax : (+228) 221 86 84
(+228) 222 81 51

E-mail : *infos@faber-abref.org*

www.faber-abref.org

THANK YOU FOR YOUR KIND ATTENTION