



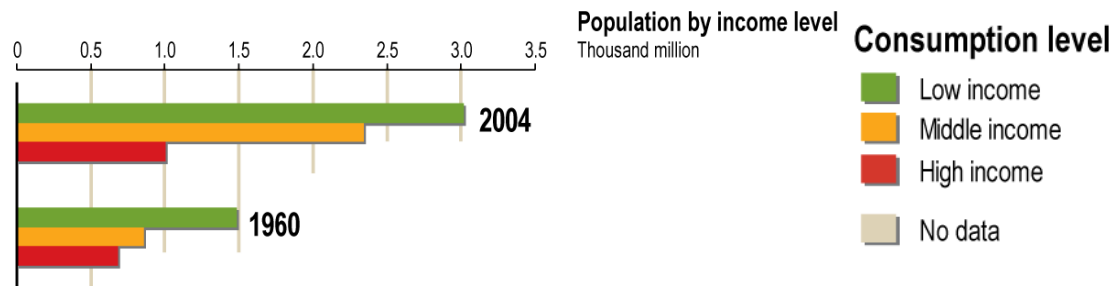
Role of renewable energy in ECOWAS region and implementation of the White Paper: a theoretical and operational approach

Dr Smail Khennas

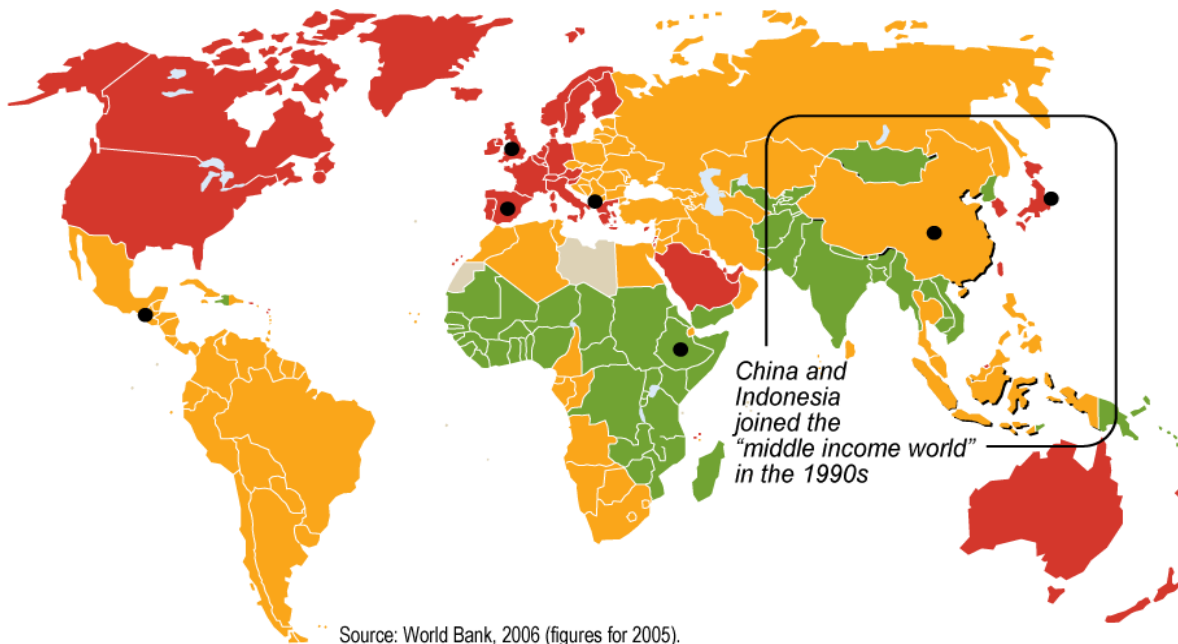
**Regional forum on the
Ecowas solar energy initiative (esei)**

Dakar, 18th October 2010

Regional Context



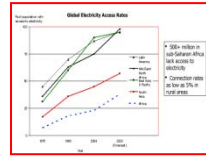
% of world poor in Africa will rise from 33% in 2005 to 50% by 2012.



HDI are increasing except in SSA which stagnated around 1990 and slightly declined after.

Source: World Bank, 2006 (figures for 2005).

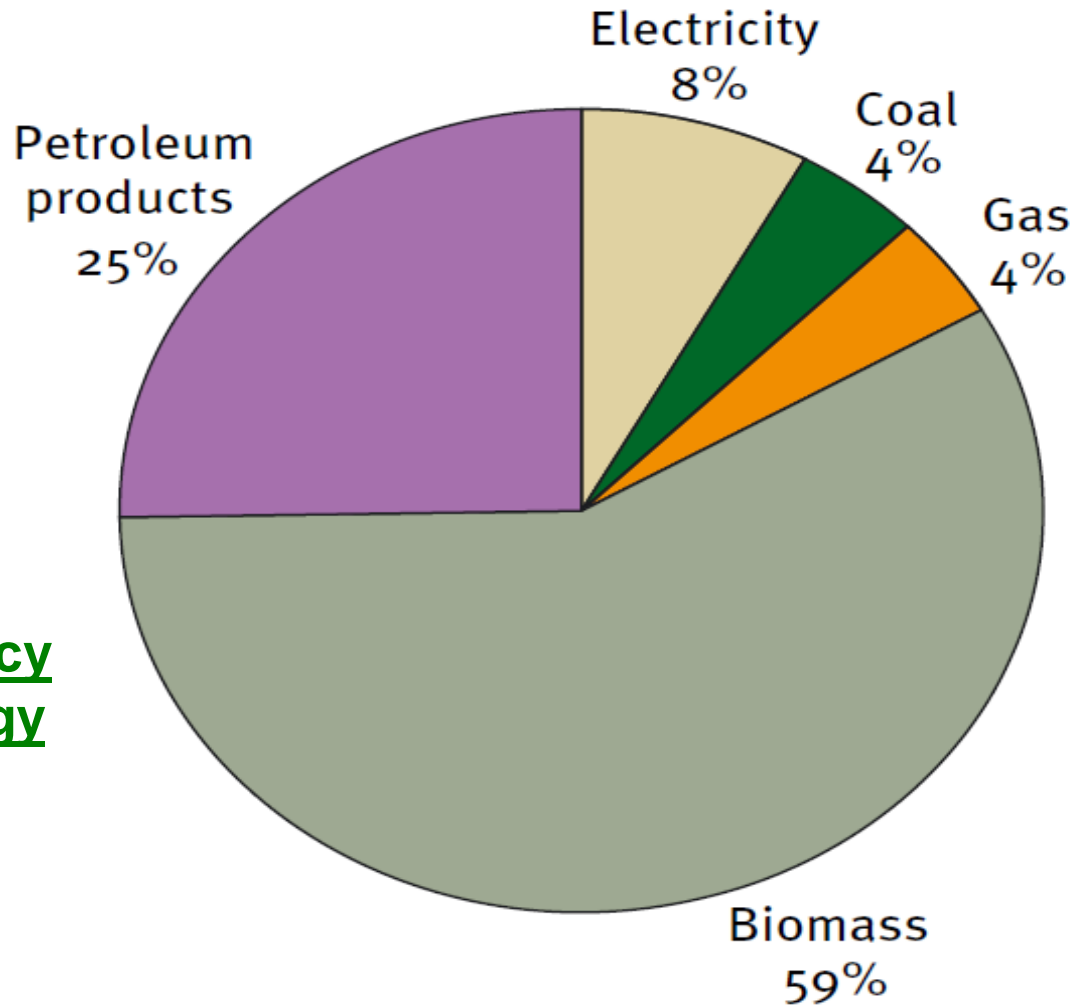
Energy Trends and Challenges in the ECOWAS region



- ✚ Low access to modern energy services.
- ✚ Heavy reliance on **non-sustainable** biomass for basic energy services.
- ✚ Significant increase in the long-term of fossil fuel prices → **energy resources in Africa increasingly seen as an export commodity.**
- ✚ Renewable energy potential largely untapped (25,700 MW hydro, only 16 % exploited) ; **solar: 5 to 6 kWh/m²/day wind (penetration negligible)**
- ✚ Climate Change related effects:
 - Repeated droughts will cause serious water shortages for hydro generation. Hence a need to diversify **RE supply options** to increase security of supply
 - Ability of rural communities affected to cater for their own energy needs.

WHY INCREASING THE SHARE OF RE IS CRUCIAL FOR ECONOMIC GROWTH AND SOCIAL DEVELOPMENT

Consumption by source in Ecowas countries (IEA, 2005)



Life expectancy and energy transtion

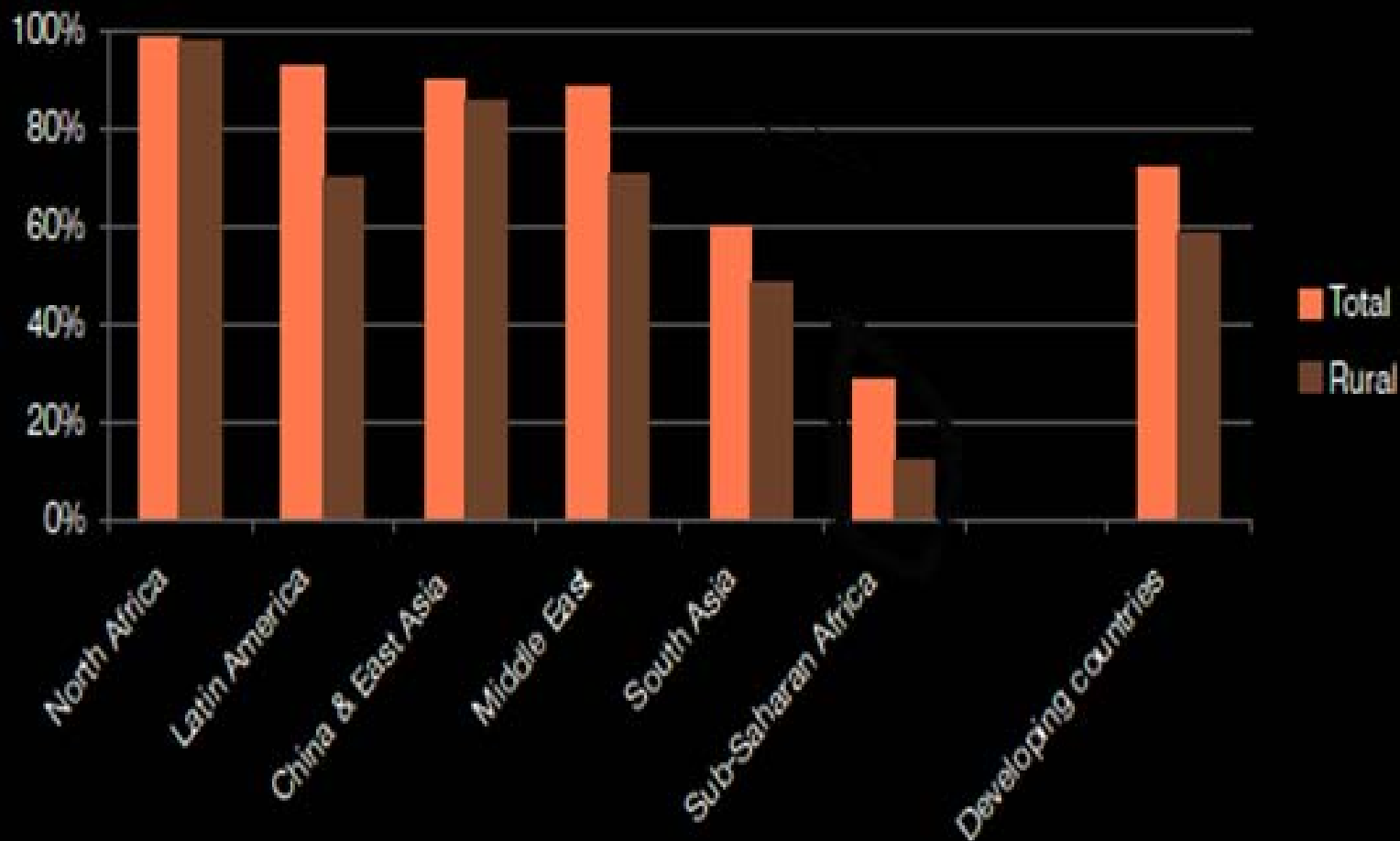
Access to Renewable energy: traditional and modern fuels (UNDP, 2009)

	No. of people relying on solid fuels (in millions)			No. of people with access to modern fuels (in millions)
	Traditional biomass	Coal	Total	
Developing countries	2,564	436	2,999	2,294
LDCs	703	12	715	74
Sub-Saharan Africa	615	6	621	132

Electricity access in 2008 Regional aggregates, Africa (WEO, 2009)

	Without electricity (M)	Electrification rate (%)	Urban Electrification rate (%)	Rural electrification rate (%)
North Africa	2	98.9	99.6	98.2
Sub-Saharan Africa	587	28.5	57.5	11.9
Africa	589	40	66.8	22.7
World	1456	78.2	93.4	68.2

FACTS: Electrification rate North Africa and Sub-Saharan Africa (IEA, electricity database 2009)



Ecowas Regional policy and selected indicators related to MDGs by 2015 (focus on rural areas)

- 60 % of rural population live in localities with modern energy services
- At least 36% of rural households electrified
- Share of traditional biomass in the energy will decrease at least by 20 % from current level of 80%
- 100 % of the population will have access to modern fuel service or improved stove and sustained biomass supply
- At least 20 % of new investment in electricity generation driven by **local and renewable** resources including hydropower

Regional approach Solar regional programme: lessons learned : 1990-2009

Why a regional approach:

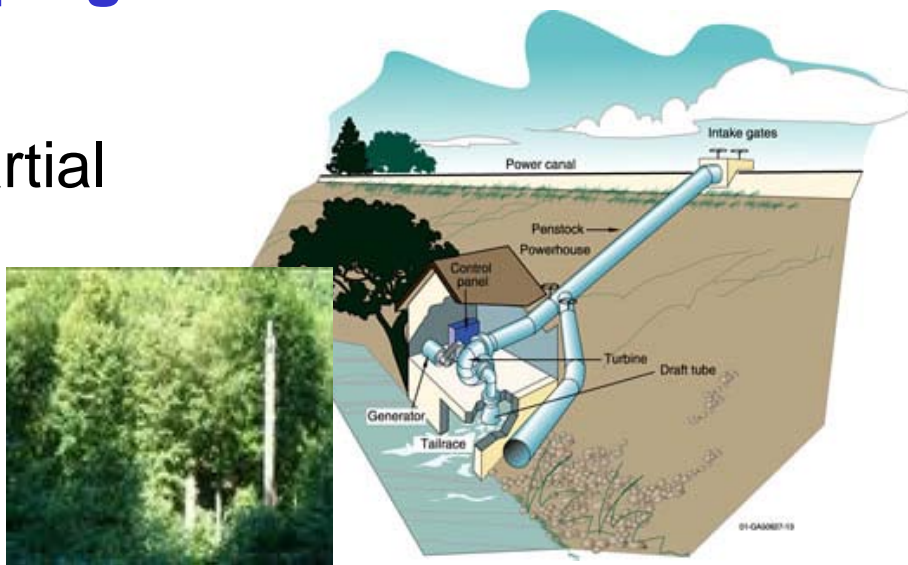
- strategic dimension,
 - dissemination of lessons learned to a large number of countries
 - Economies of scale,
 - Capacity development (institutions, professionals etc...)
- ECREE is a good example, UEMOA, CILSS, ECOWAS

Scaling up of off-grid renewable energy solutions in poor developing countries

In almost all cases: public investments to provide a partial subsidy, enforce standards and quality control.

Private sector provides the technology often under warranty, maintenance services.

MFIs, NGOs or banks : financial intermediation to enable poor consumers to purchase RE energy



Regional approach Solar regional programme: lessons learned : 1990-2009

Focus: Renewable energy for water mobilisation (in the Sahel less than 7% of the water mobilised: agriculture, pastoralism, human consumption)

Large scale programme : 112 M Euros

3.5 M have have access to clean water

World wide strong correlation between PV cumulative production and PV modules (20 % reduction for every doubling of cumulative sales)



Quantitative results :Access to more than 3.5 million people

Phases	Water pumping	Irrigation	Community systems
PRS1 90- to 98	610	16	649
PRS 2 2000-09	300 <i>(210 sustai)</i>		280 <i>(Sustainabilty)</i>
Total	910		649

SUMMARY

Renewable energy for economic growth and improved livelihood:

- **Increased coefficient of capital from RE in agriculture, education, motive power, health, water and key sectors**
- **Production of RE services and manufacturing:**

Solar kWh and RE calorie: Who will be benefitting?

- **Investment strategies: eg PPP.**

Thank you for your attention...!!!