



The global use of biomass for energy

Can diverging agendas be merged?



Klas Sander,
Sr. Environment Economist
The World Bank



ESMAP Bioenergy Training
Washington, DC
June 18, 2014

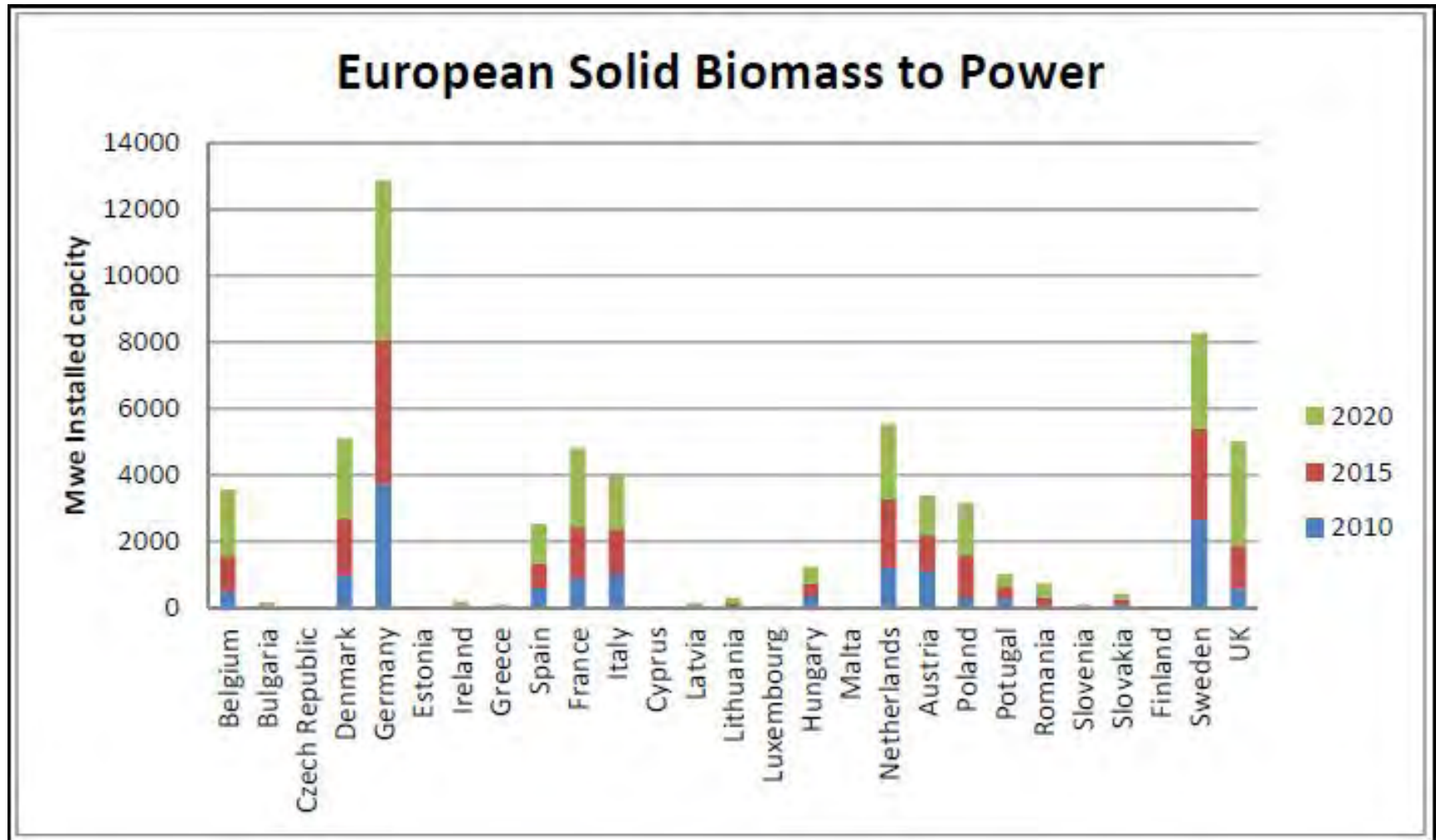
Wood Energy in Developed Economies

Many industrialized countries have already developed ambitious energy transition plans integrating wood energy:

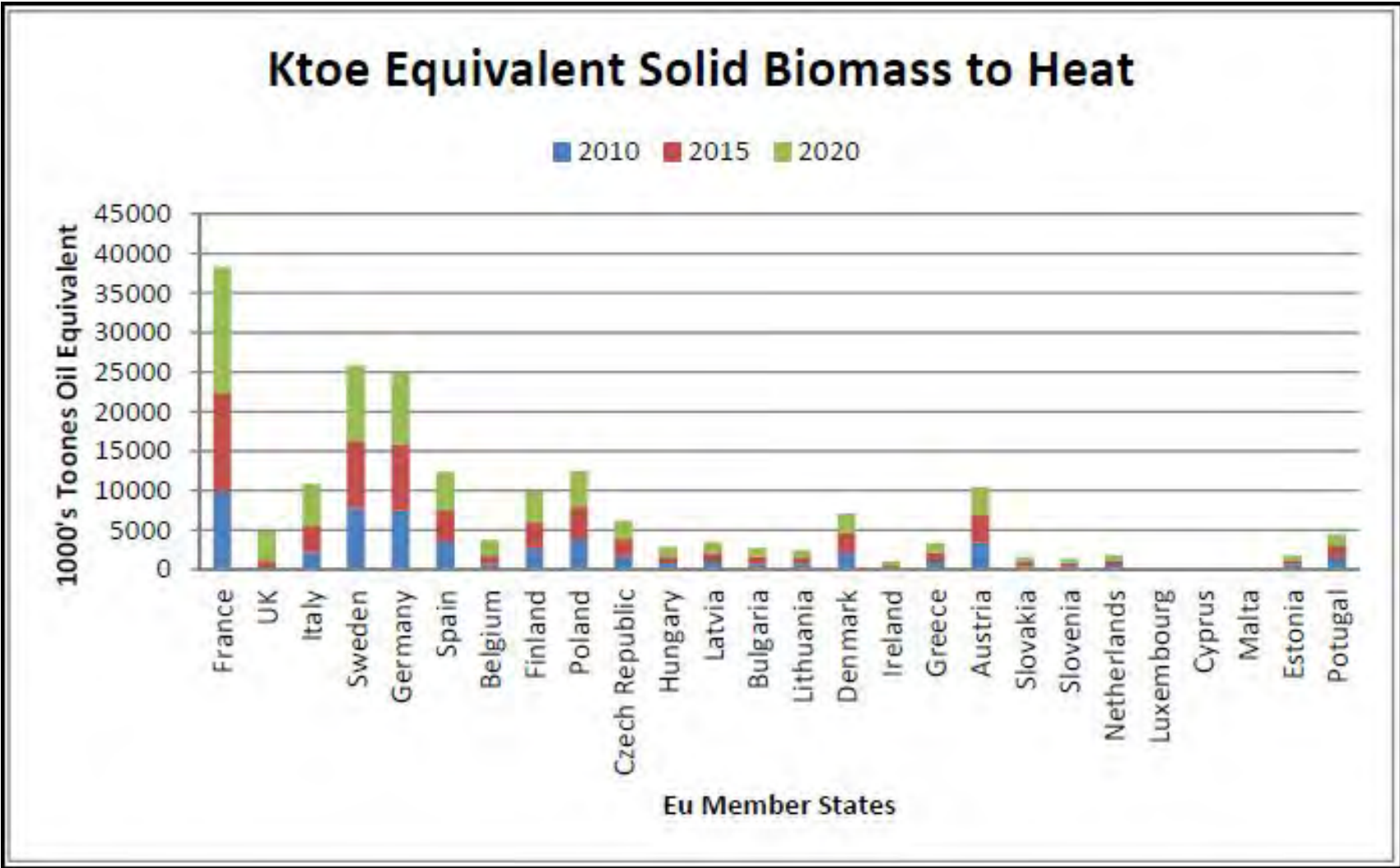
- RWE: power plants in UK and Netherlands to substitute coal
- Berlin: LED Strategy includes switching from brown coal to biomass (wood)
- Denmark: 33% renewables (2030), fossil free (2050)
- USA: Use of wood energy for heating has grown by 30% between 2000 – 2010.
- Europe: Increasing household demand for wood for heating



Wood to Power Projections for the EU

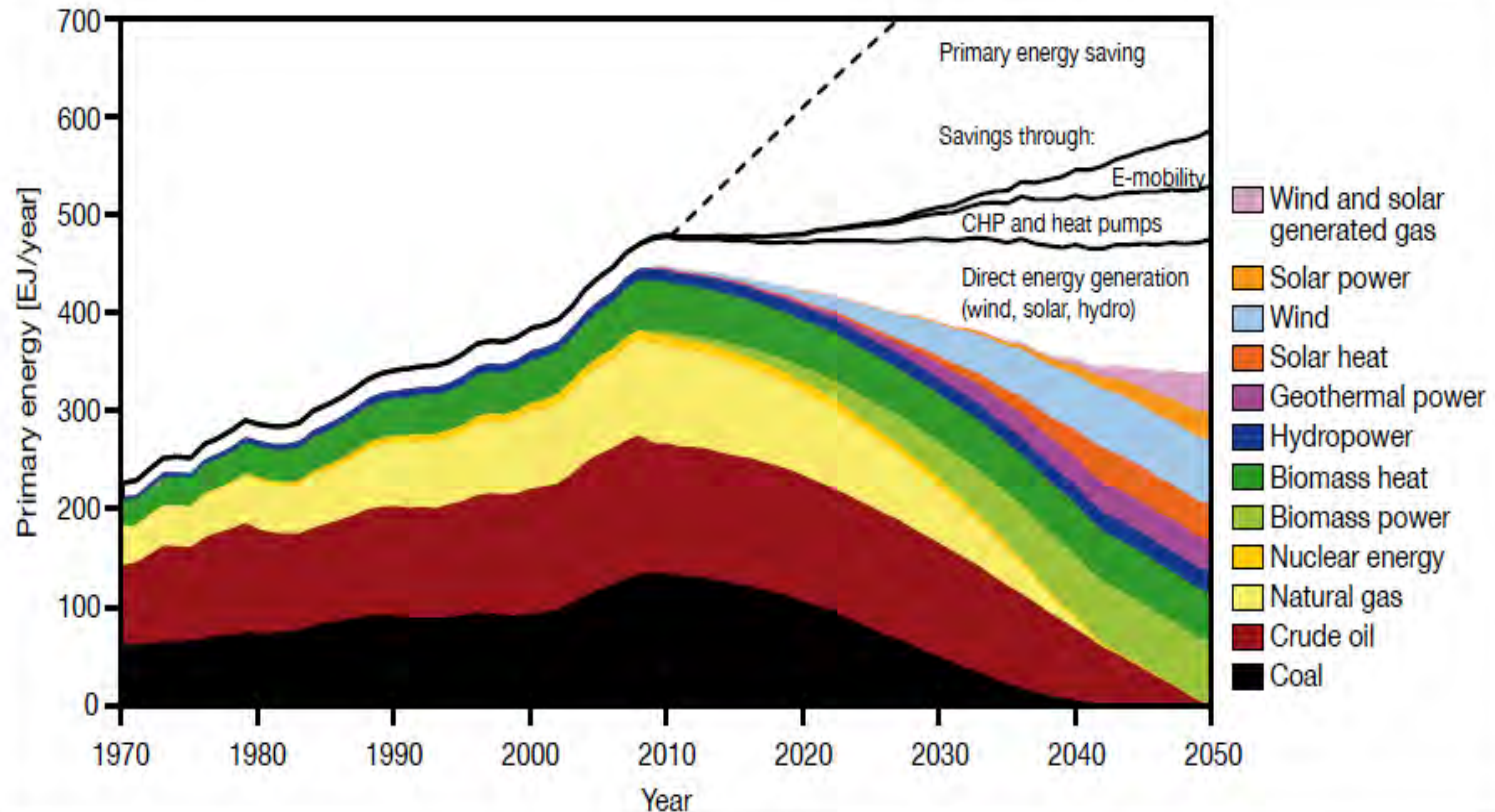


Wood to Heat Projections for the EU



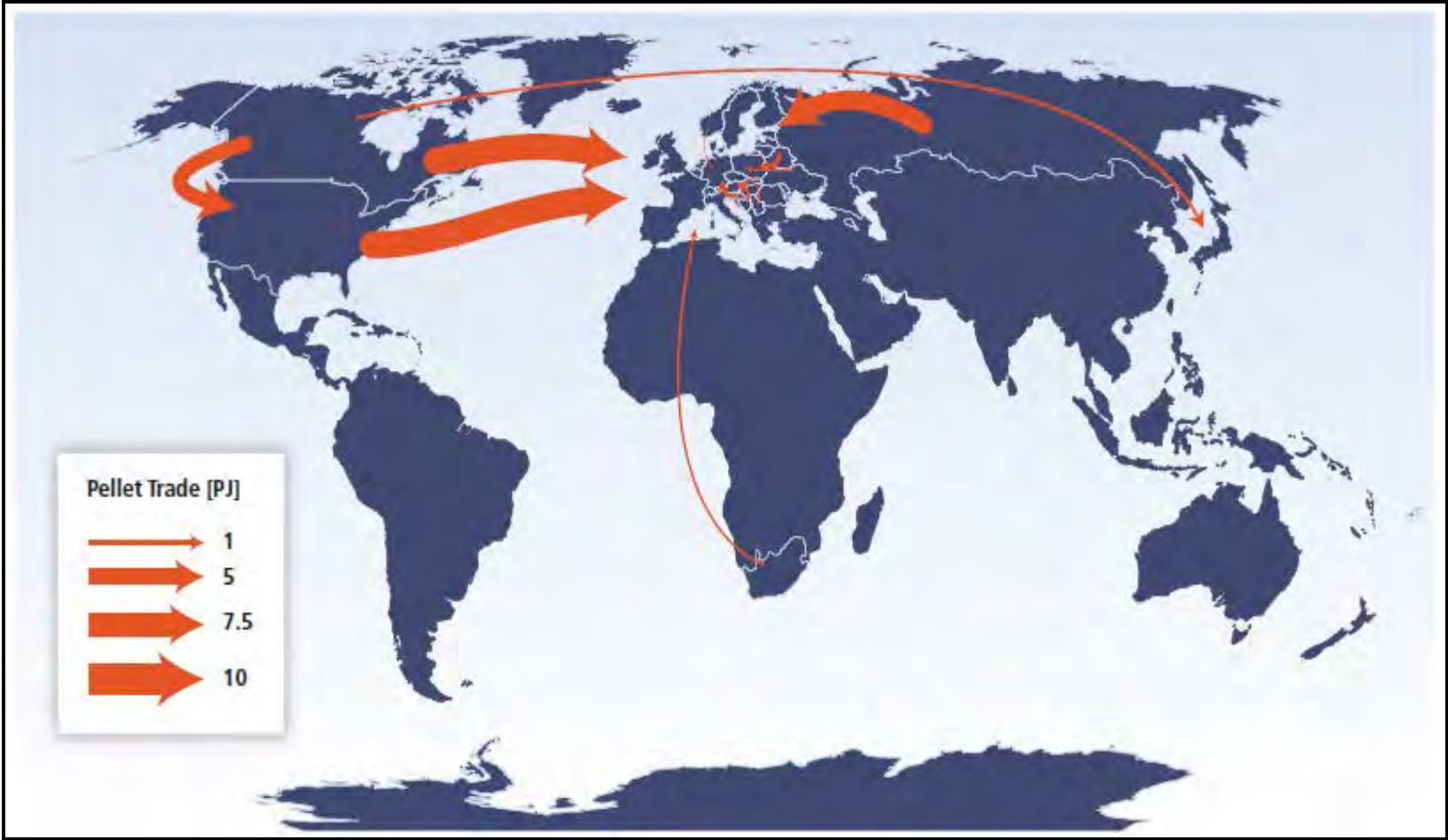
Biomass Energy and Energy Transition

Vision for a Global Renewable Energy Supply by 2050



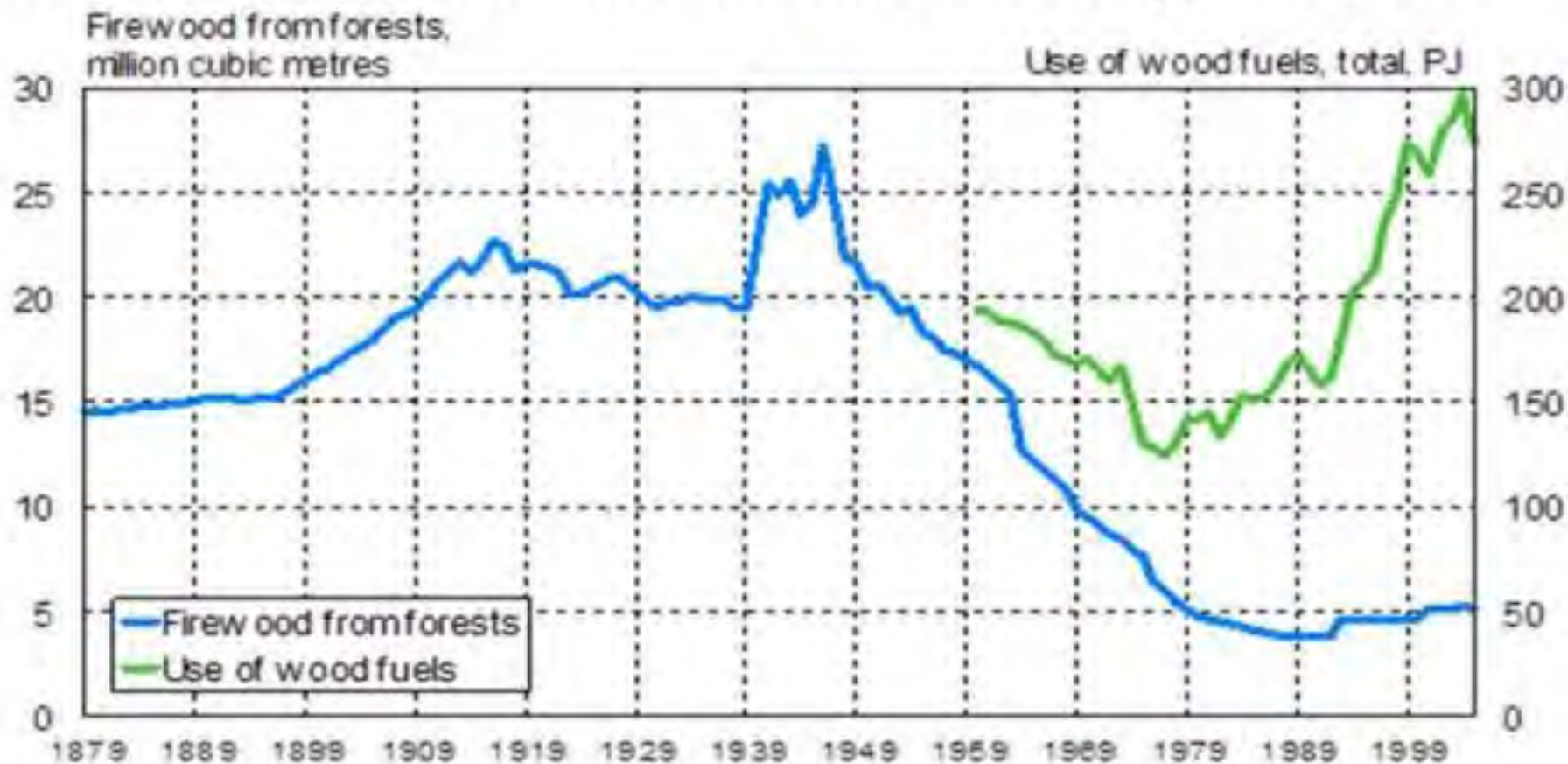
Source: German Advisory Council on Global Change (WBGU); Factsheet No. 02/2011

Global Woodfuel Markets



Wood Biomass Energy – Current Situation

Use of firewood and other wood-based energy in Finland



Source: Statistics Finland, 2007

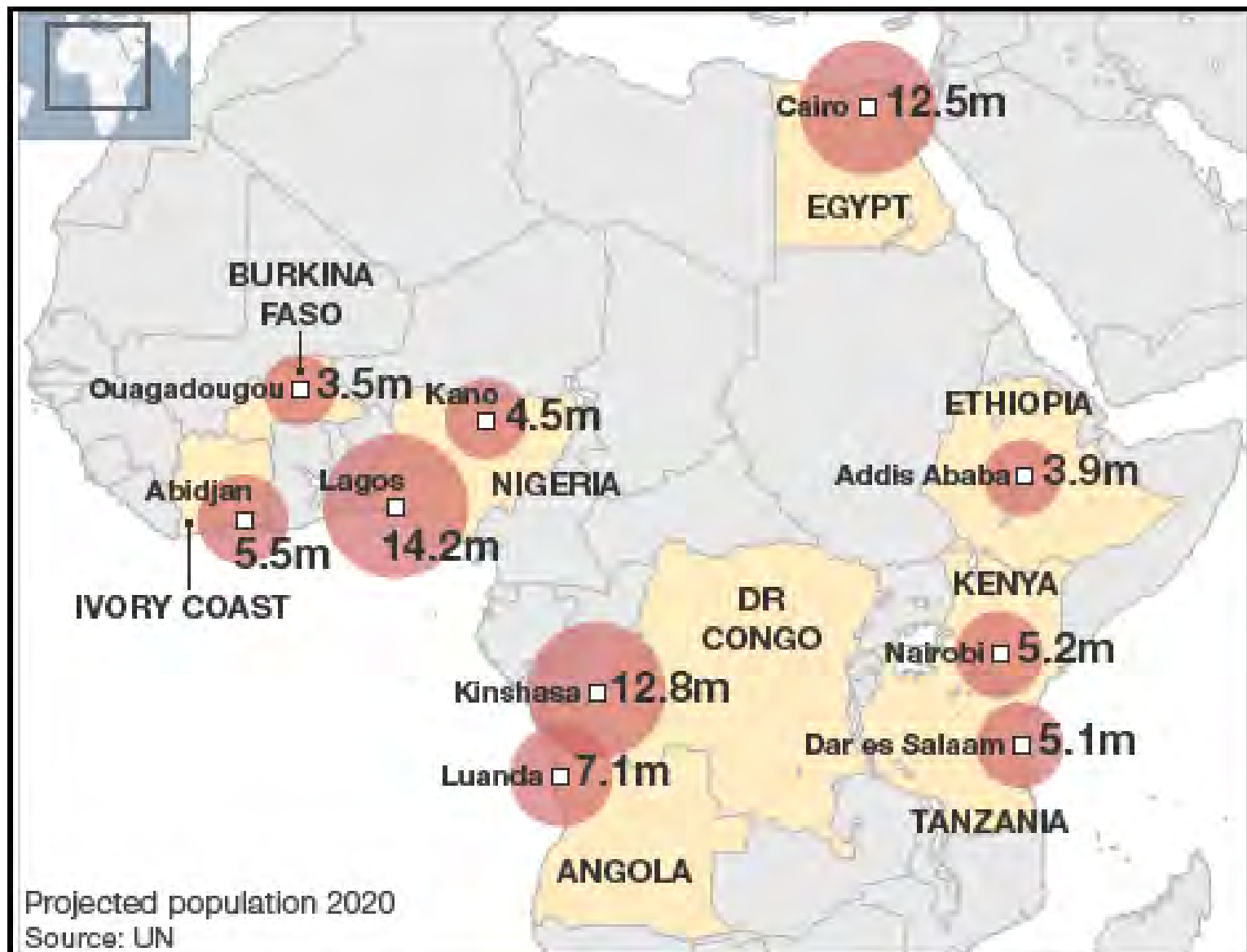
Wood Energy in Africa – Economics

Wood energy as principle energy source:

- ➔ Wood energy accounts for 70-90% of total energy use
- ➔ Rural (fuelwood) vs. urban (charcoal)
- ➔ Charcoal is a vibrant sector of the economy:
 - Annual value of USD 8 billion (2030: USD12 billion)
 - Employment & livelihoods: 7 million people (2030: 12 million)
 - 2030: one billion consumers
 - Annually several hundreds of millions of dollars in forgone revenue collection (Kenya: USD 65 million, Tanzania: USD 100 million)

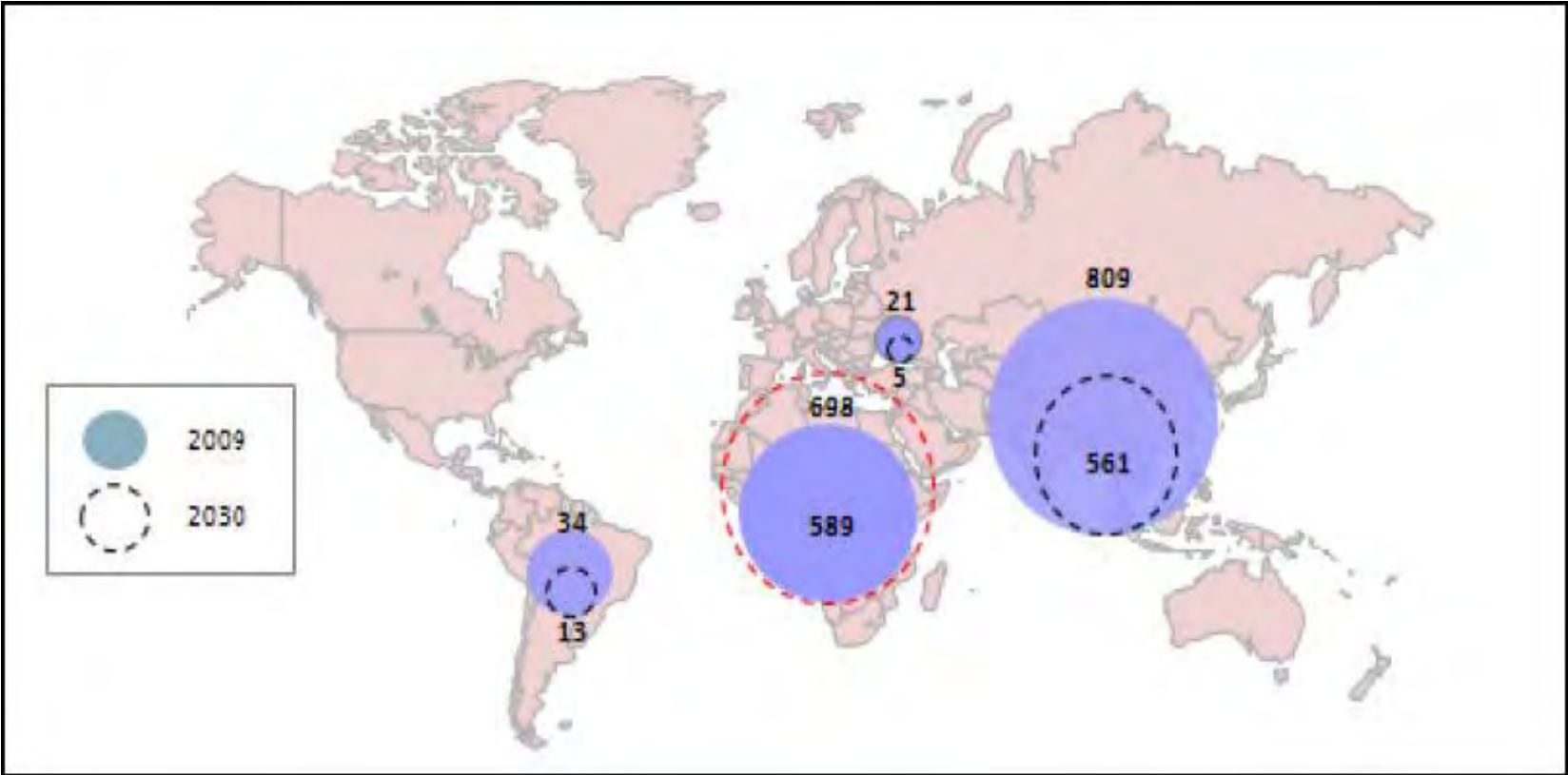


Wood Energy Drivers in Africa – Urbanization



Framing Facts – Energy Use

Population without access to electricity [in millions]



Urbanization & Population Growth

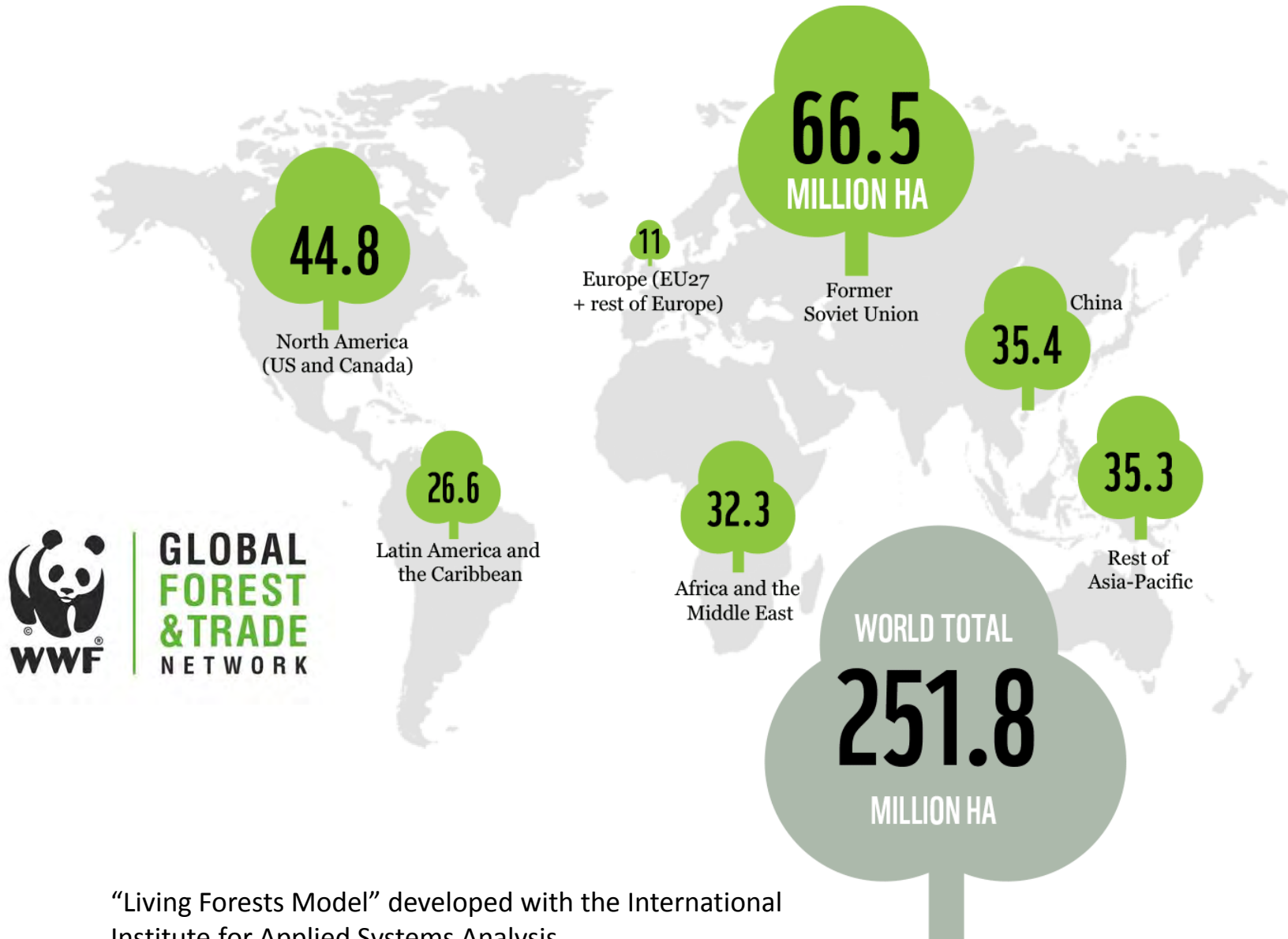
City	'50	'90	'00	'10	'25	Solid Fuel	PG 05-10	DT 05-10	PG 10-25	DT 10-25
Kinshasa		3,520	5,414	8,415	14,535	68.7%	4.46%	15.9	3.71%	19.0
Maputo		776	1,019	1,132	1,823	65.0%	1.10%	63.5	3.23%	21.8
Kampala		755	1,097	1,594	3,540	73.5%	3.83%	18.4	5.47%	13.0
Dar es Salaam		1,316	2,116	3,415	7,276	79.5%	4.94%	14.4	5.17%	13.7

PG = Population Growth; DT = Doubling Time

More forests – less forest?



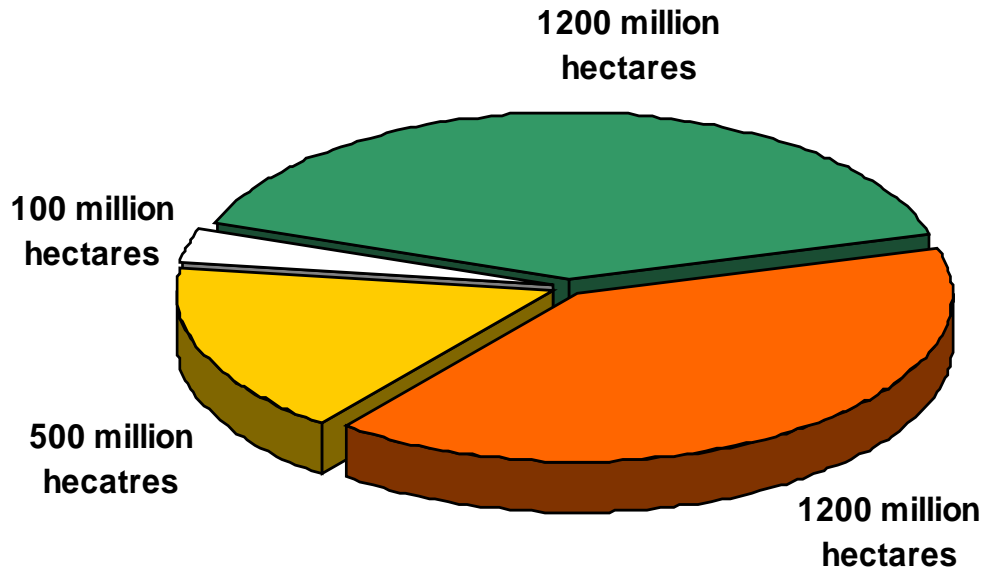
Projected growth in plantations



“Living Forests Model” developed with the International Institute for Applied Systems Analysis

Meeting Future Forest Product Demand

A Possible Global Forest Situation 2050



- Protected areas (IUCN categories I - IV)
- Multiple use forests under Community Based Forest Management
- State forests and private woodlands managed primarily for timber production
- Plantation forest management primarily for fiber and timber production

Source: Global Vision for Forests 2050 Project

Guiding Questions

1. Can these agendas be merged – and how?
2. What is the role for the private sector?
3. How can it be done to achieve economic development (poverty & prosperity)
4. What are the obstacles and challenges?

