

Promoting Universal Energy Access: Achievements & Challenges

Shonali Pachauri

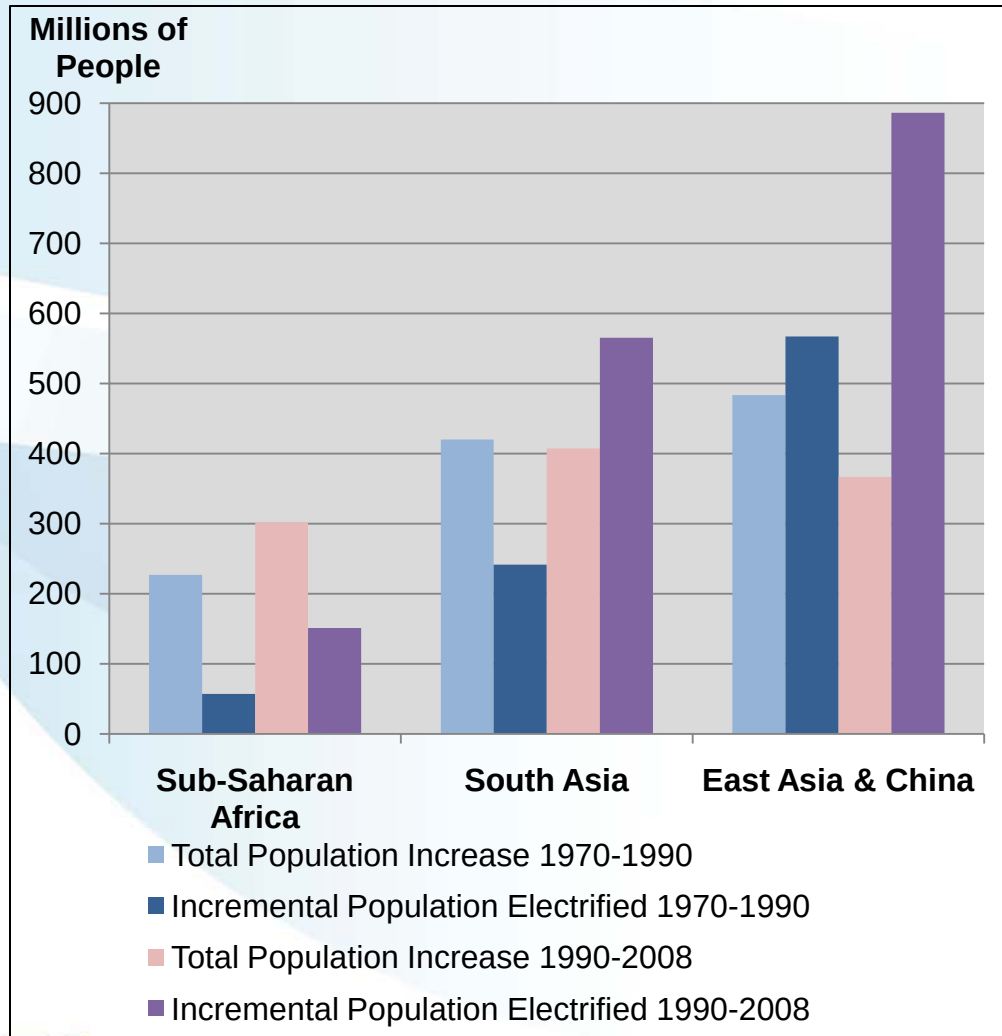
2nd IEF-OFID Symposium on
Energy Poverty, Vienna

November 15, 2011

Current Status of Global Access to Modern Energy

- Currently over 3 billion people lack access to modern energy or devices for cooking and heating
- About 1.3 billion have access to no electricity and another 1 billion have only sporadic or irregular access
- Data regarding the lack of access to mechanical power for improving productivity and living standards is lacking
- Modern energy services underpins the achievement of all the MDGs, yet access to energy is not included as one of the MDGs

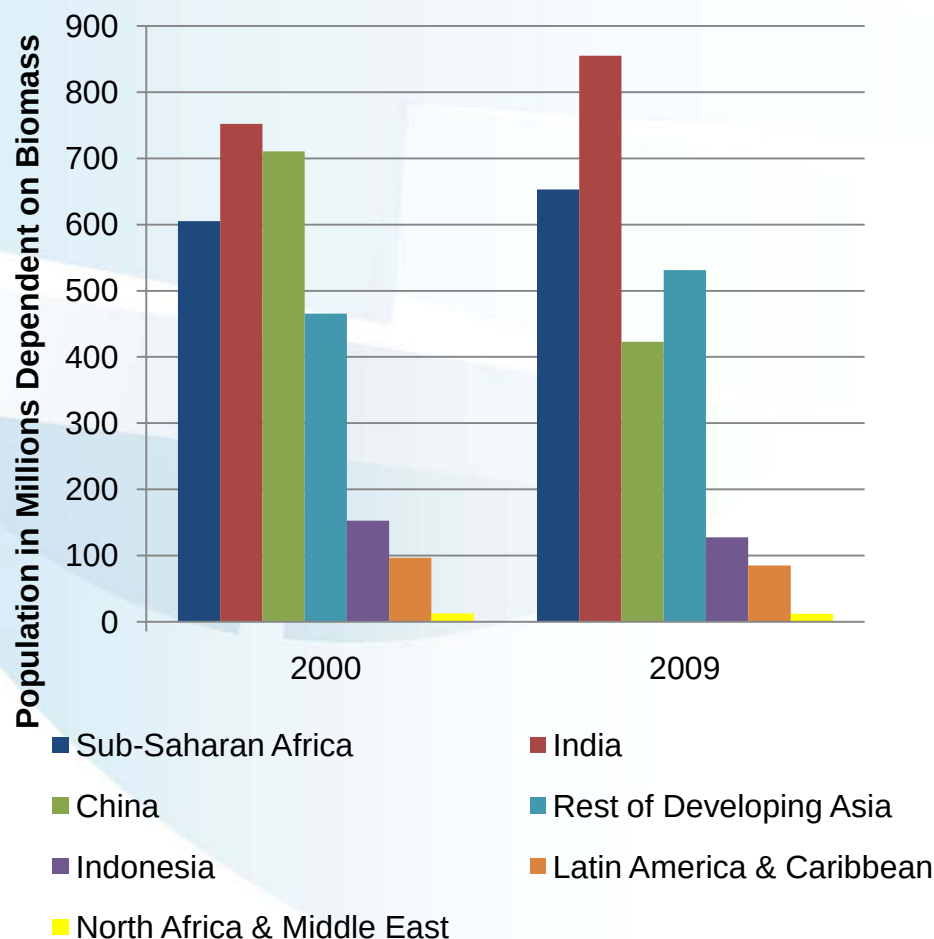
Status of Electricity Access for Regions with Least Access



- The pace of electrification across time and regions has been very uneven
- China electrified its entire population over a few decades. Thailand and South Africa, connected over 0.4 million new customers annually over a period of 5 years
- In SSA the growth in population, particularly in rural areas, still outpaces the rate of new connections

Source: GEA forthcoming

Status of Access to Modern Energy for Cooking & Heating



- The number of people dependent on biomass alone has declined from 2.8 billion in 2000 to 2.7 billion in 2009, largely due to reduced dependence in China
- However, in addition to these numbers, 30% of people in China continue to depend on coal and over 10% in SSA depend on charcoal, so over 3 billion people still depend on solid fuels today
- In rural areas, dependence on solid fuels remains almost unchanged over the last decade in many developing countries

Major Issues Associated with a Lack of Electricity

- Over 85% of those lacking electricity today live in rural Sub-Saharan Africa and Asia. This lack of power impairs these populations ability to enjoy

Private Benefits:

- Household Lighting
- Communications & Entertainment
- Thermal Comfort
- Other Appliances

Enhanced Income Generation Options:

- Mechanical Power
- Microenterprises

Community Services:

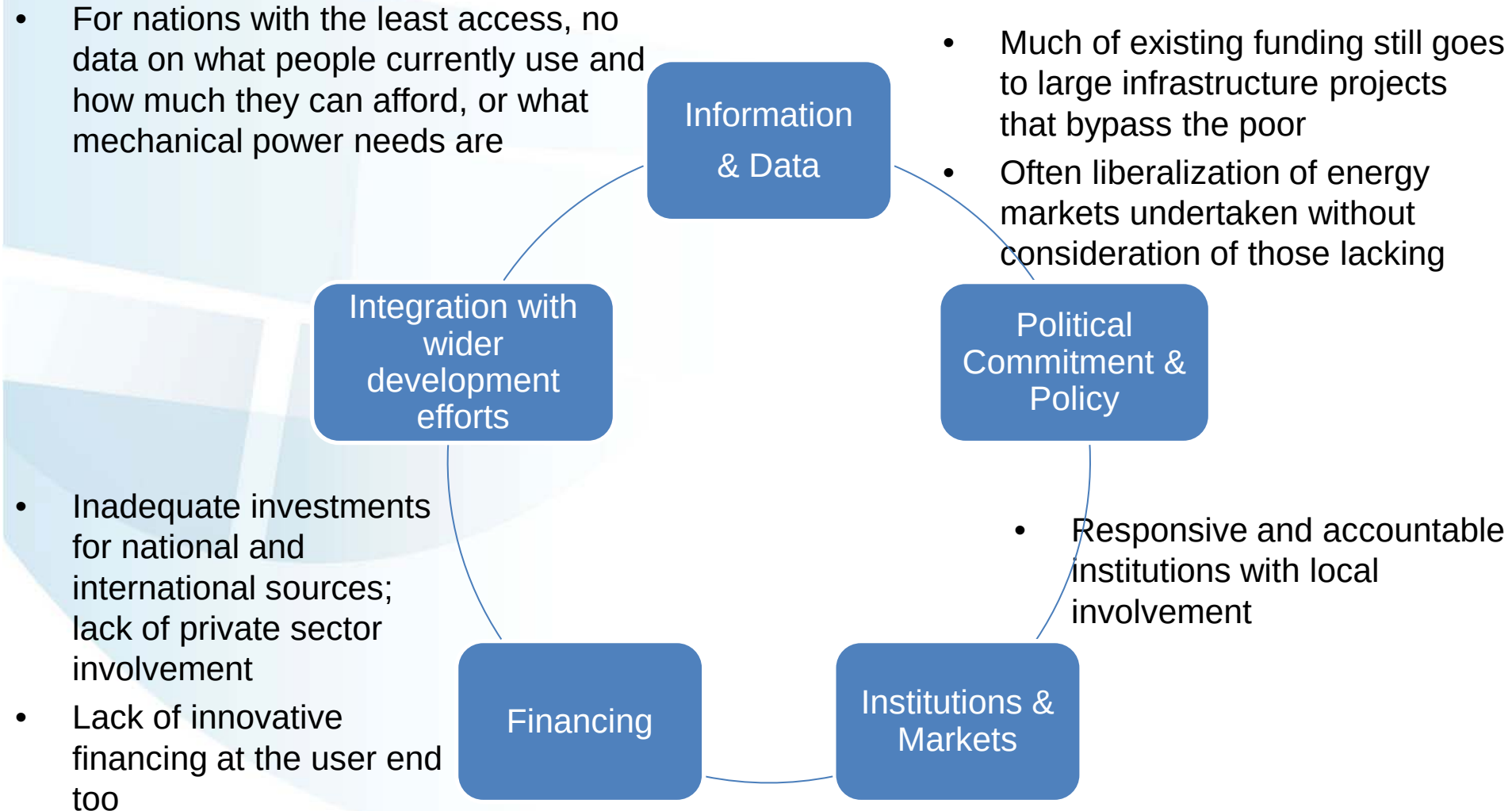
- Public Lighting
- Health (refrigeration for vaccines)
- Education

Negative Consequences of Solid Fuels Dependence

- Social costs –
 - 2 million premature deaths a year from household air pollution
 - Between 1 to 5 billion women-hours lost annually in collection
- Impacts on livelihood
 - Limited productive hours in the day
 - Limited work and business possibilities
- Environmental impacts
 - Local forest, land and soil degradation and net CO₂ emissions when biomass is unsustainably harvested
 - Emissions of non-CO₂ GHG and aerosols. Growing evidence of strong climate impacts of black carbon (soot) for arctic and glacial ice melting

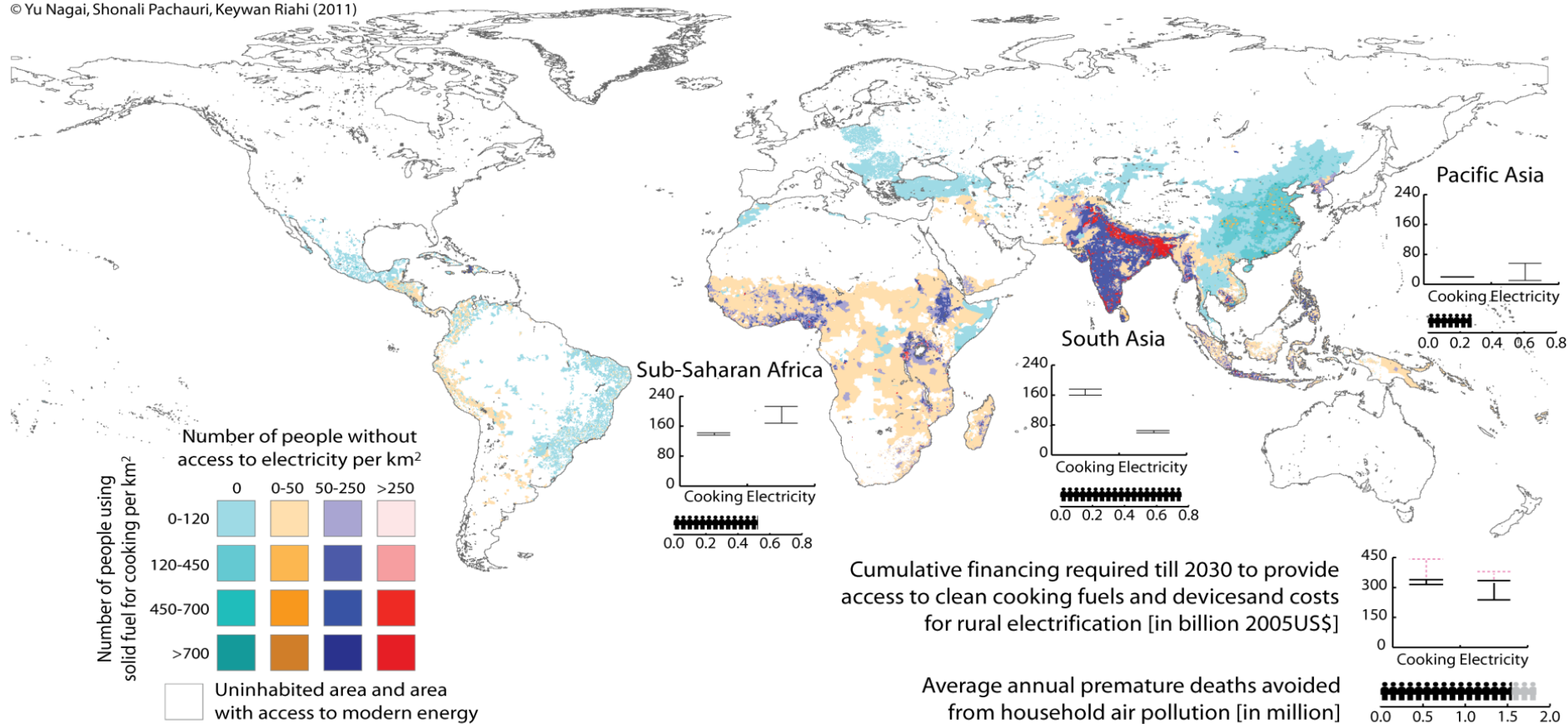


Barriers to Enhancing Access



Density of Population Lacking Modern Energy Access & Investments and Impacts of Achieving a 2030 Target

© Yu Nagai, Shonali Pachauri, Keywan Riahi (2011)



What it will take to Achieve Universal Access by 2030

- Total investments of \$ 40 - 55 billion per year till 2030
~ 3-5% of global annual energy sector investments
- Detailed local assessments of existing demands, affordability and options for expanding access
- Focused policies including price support and microfinance to make cheap credit available to the poor for purchase of efficient equipment
- Appropriate and dedicated institutions with local involvement
- Accelerated expansion of rural electricity grid infrastructure and decentralized electricity supply options where suitable