Environment & Energy in Kenya. The Quest for Sustainability

Dr. Ute Rietdorf

Environment & Energy in Kenya. The Quest for Sustainability

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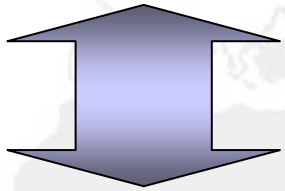
Background

'The high cost of energy is one of the biggest bottlenecks to economic activity in the country.' (KIPPRA, 2005)



"I have seen the destruction of more than 1,000 hectares of forest cover in Mau. The annual revenue loss from such destruction runs into tens of billions of shillings."

(Prime Minister Raila Odinga, launching the Kenya Energy Sector Environment Programme on 9th June 2008)

Background

Demand = suppressed by limited access

Less than 10% of Kenyans have access to electricity

Supply = expensive & unreliable

Currently, the cost of electricity in Kenya is about $ 8 cents per kWh compared with $ 2 cents and $ 2.7 cents in South Africa and Egypt respectively. In addition it is estimated that about 20 % of electric power is lost in transmission while about 11,000 outages occur in a month (15th June 2004)

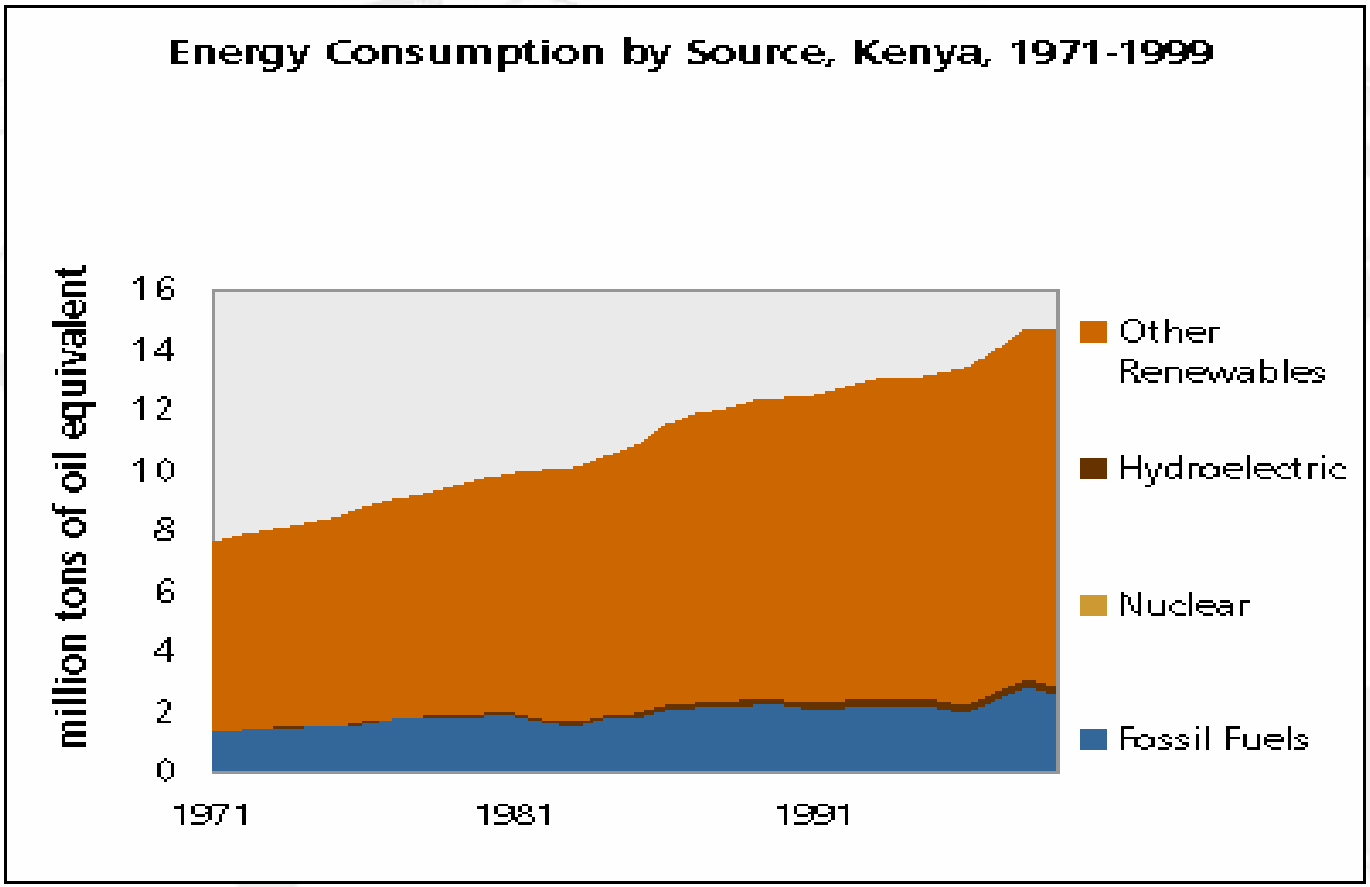
Kenya has the highest power tariffs in East and Central Africa. Energy costs in Kenya are nearly four times higher than the prevailing rates in South Africa and Egypt (27th June 2008; China View)

The Energy Sector in Kenya

3 main sources (for quantity of energy used):

- Electricity: 9 %
- Petroleum: 21%
- Wood fuel: 70 %

The Energy Sector in Kenya



Source: http://earthtrends.wri.org; 25.08.2008

The Energy Sector in Kenya

Wood:

90% of rural households' energy requirements; 85% in urban areas

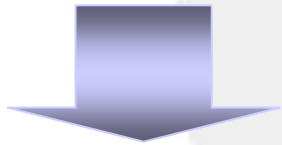
Charcoal used in 82% of urban and 34% of rural households (UNEP 2006)

Charcoal industry employs more than 200,000 people; contributes about 516 million U.S $ to the economy annually

The Energy Sector in Kenya

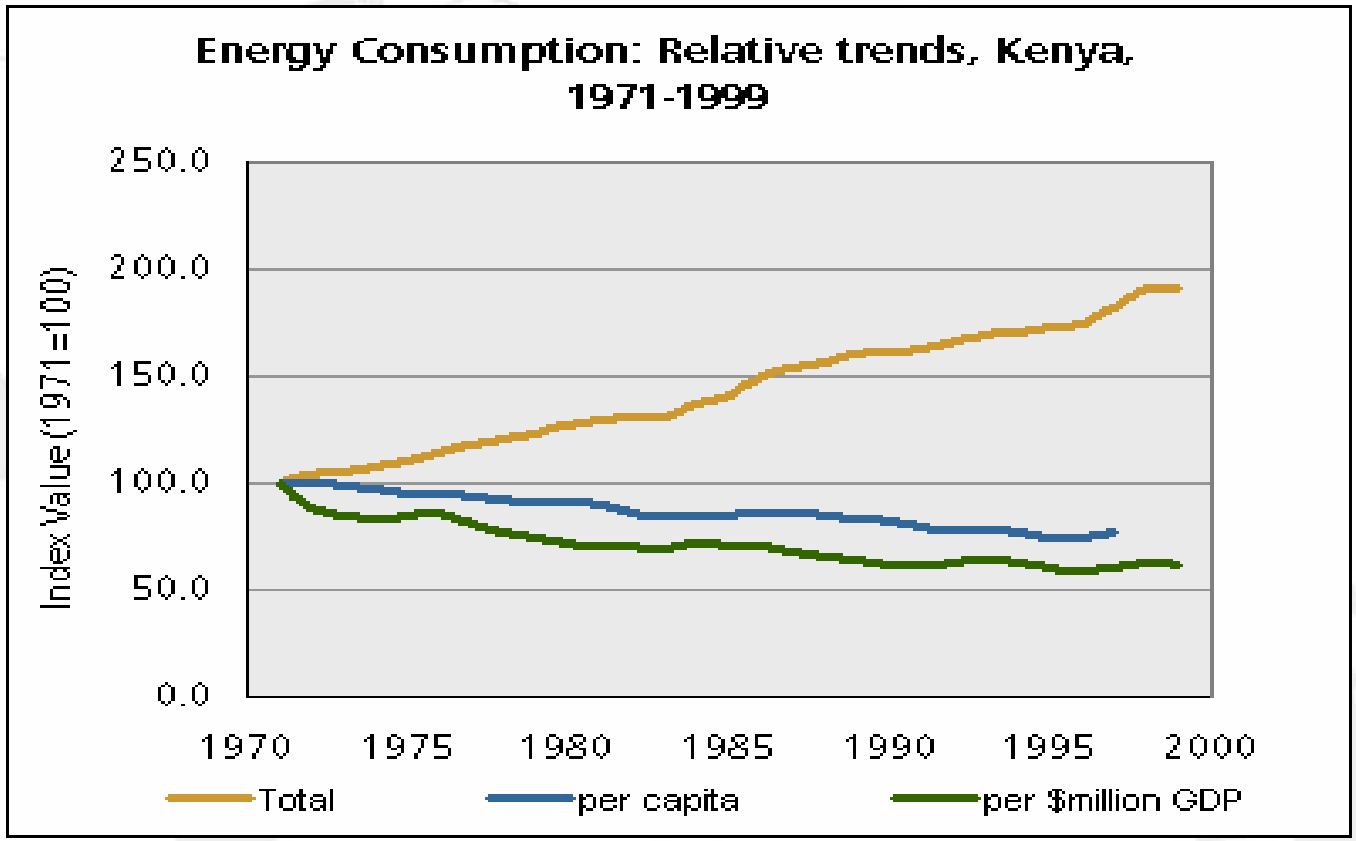
Electricity:

A few years ago, 80 percent of Kenya's power came from **hydro sources**. That share is now down to **45 %** with **geo-thermal** providing **15 %** and plants burning one or another kind of **petroleum-based fuel** making up the remaining **40 %**. Demand for electricity is increasing by about seven percent annually.



Geothermal Energy: used since 1981; **70-fold potential**

The Energy Sector in Kenya



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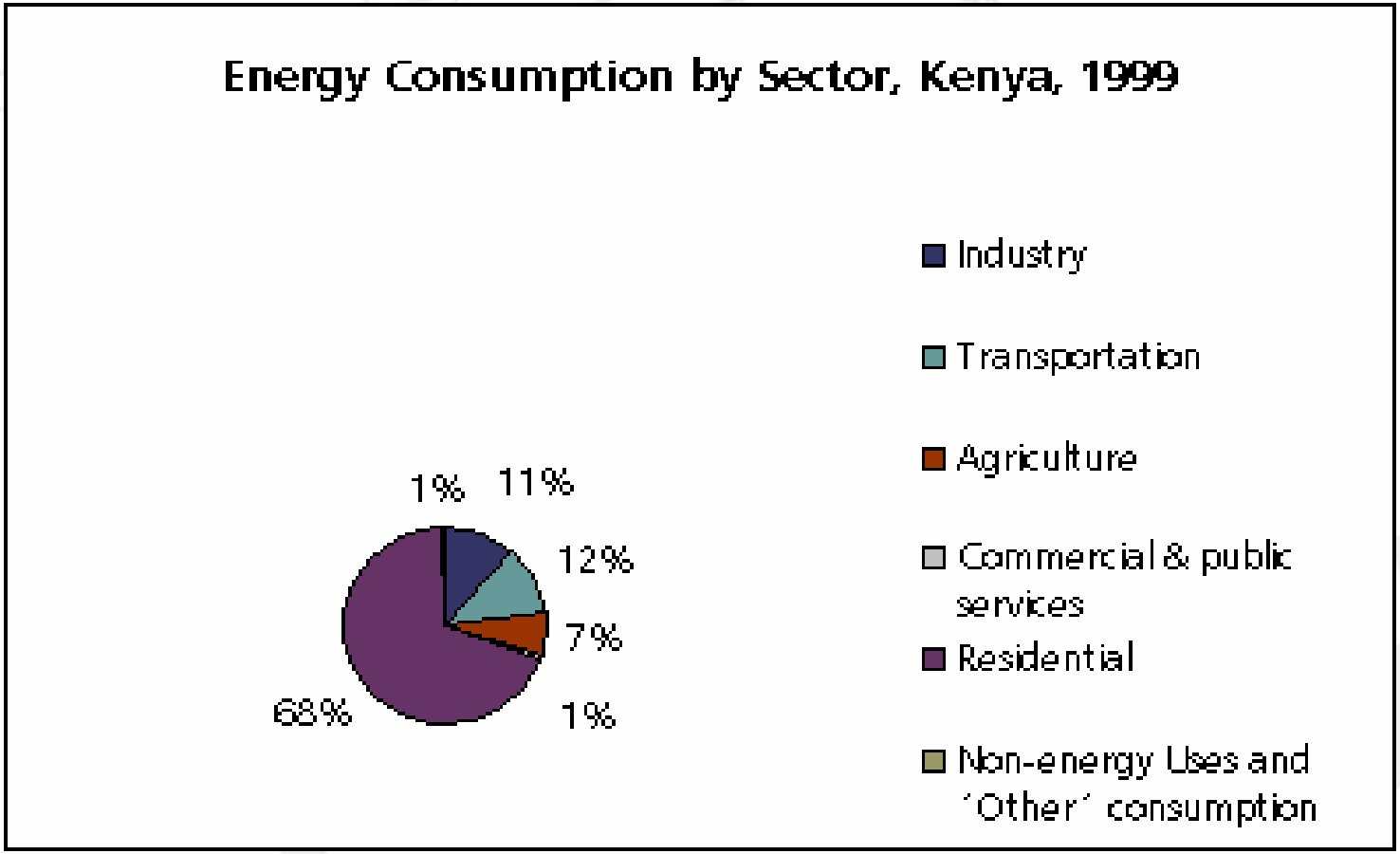
The Energy Sector in Kenya



Source: http://earthtrends.wri.org; 25.08.2008

The Energy Sector in Kenya – Sustainability Ahead ?

Big share of renewables → Is it renewed???

Potential for design and turn in energy policy ← Big share not used for value-adding economic activities

Sustainability

Sustainability: … development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland Report 1987)

Dimensions of sustainability:

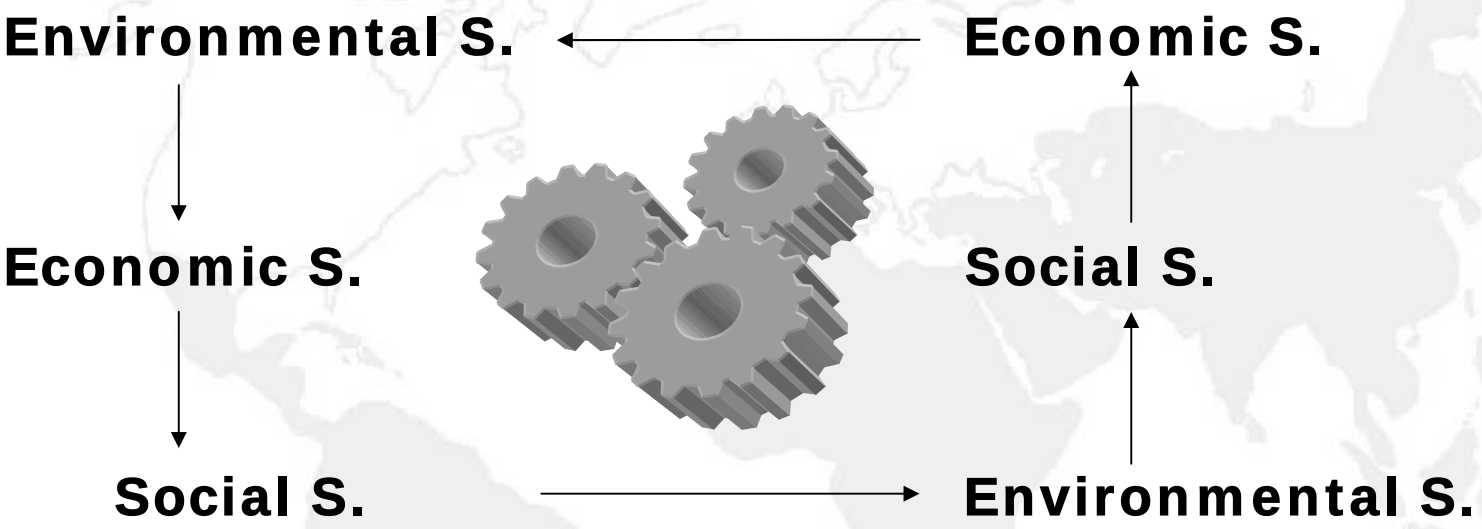
Environmental

Economic

Social

Institutional

Sustainability



Sustainability

”In rural homes, families spend at least a third of their income on kerosene for lighting and diesel for milling grain. Kenyan women also devote a huge amount of time collecting, processing and using wood and dung for cooking – time which could be spent on child care, education or income generation.” (http://www.praticalaction.org; 2.09.2008)

Energy and Environment: No Shortcut to Progress

14th July 2008, The East African

...Kenya is working to shift the pattern of energy consumption to electricity and petroleum in order to protect the environment and to provide energy forms necessary for economic growth...

24th July 2008, Daily Nation

...Kenya is looking for long-term investment...particularly the use of solar, wind and geothermal energy...is also keen to exploit coal and nuclear energy...

29th July 2008, Industry Week

...Kenya is opting to go full steam ahead with geothermal energy to boost its production...

Energy and Environment: No Shortcut to Progress

Kenya Energy Sector Environment Programme (9.06.08)

1. Energy Conservation
2. Tree Growing for Wood Fuel, Commercial Purposes and Environmental Conservation
3. Watershed Management
4. Training
5. Publicity and Awareness

Energy and Environment: No Shortcut to Progress

Sunny Solutions (2003): Introducing and creating a market for solar cookers in Nyakach

Energy and Environment: No Shortcut to Progress

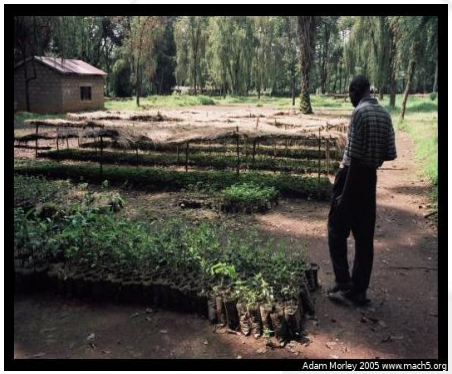
Micro-hydro Energy

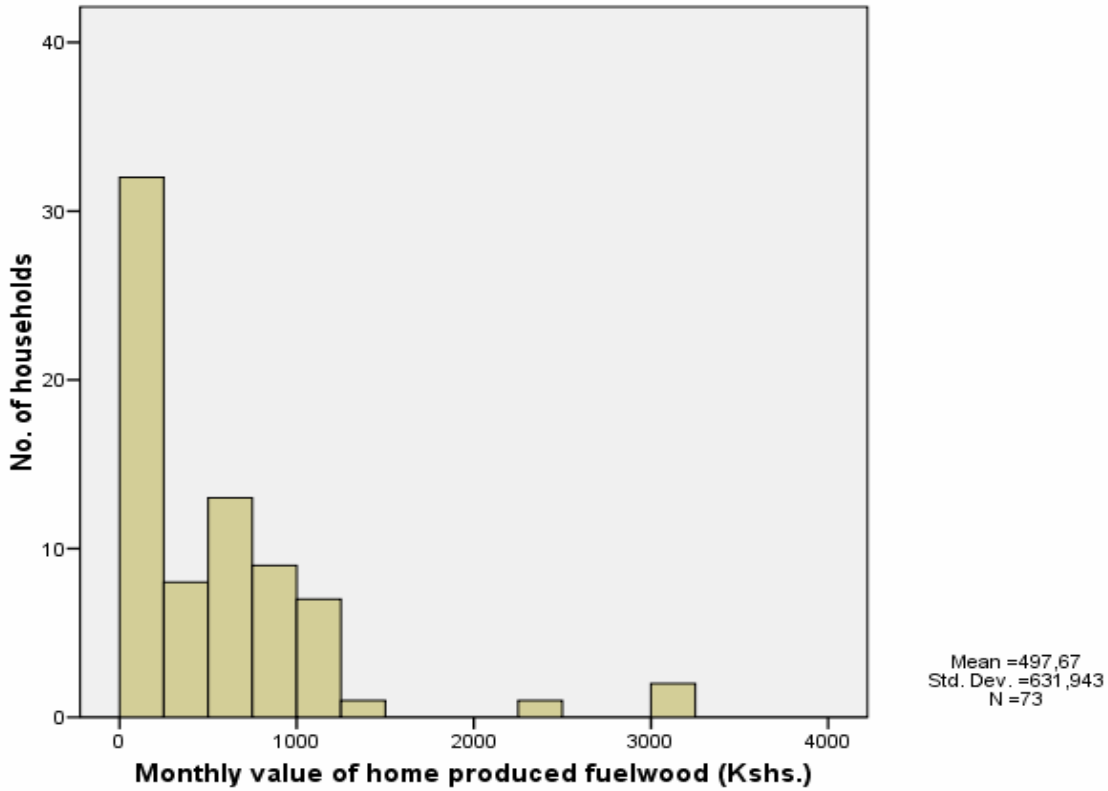
The **Tungu-Kabri Micro-hydro Power Project** is the first of its kind in Kenya. Funded by UNDP and developed by Practical Action East Africa and the Kenyan Ministry of Energy, the project benefits 200 households (**around 1,000 people**) in the **Mbuiru village** river **c**ommunity.

"I used to do a lot of work in the house and work on the land. Now, because of the electricity, I can have an income for the first time, by doing people's hair. My children can go to school – it has made such a difference to my family – I can take care of them now." (Ester, Mbuiru)

Energy and Environment: No Shortcut to Progress

Agro-forestry in Kakamega District

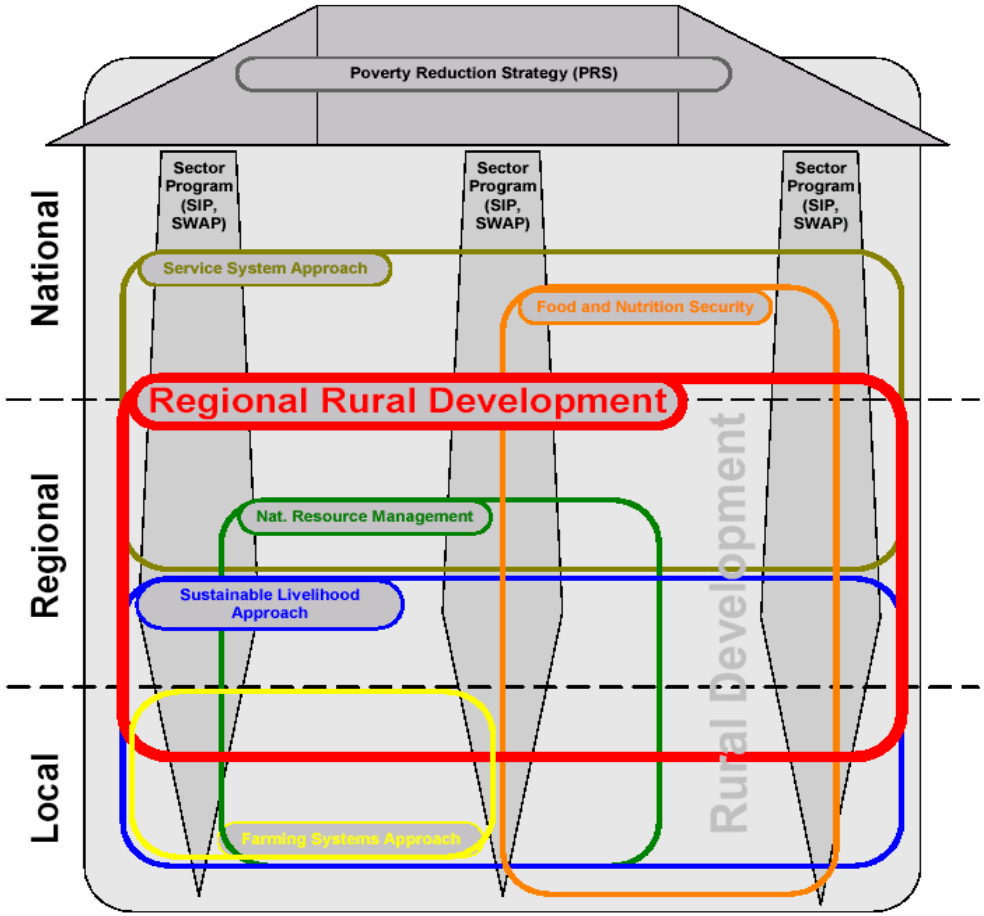




Energy and Environment: No Shortcut to Progress

"For Maasai tribesman Charles Kamani, Kenya's drive to boost its geothermal capacity spells environmental destruction which threatens his pastoralist way of life. … 'The pipes affect the migration of wild animals and where we can graze our cattle', he said, raising his voice above the drone of drilling on a nearby hillside. … 'Also the vegetation has changed', he said. Some of the plants the Maasai use for medicine no longer grow in the area. " (http://www.climateark.org; 03.09.2008)

Energy and Environment: No Shortcut to Progress



Energy and Environment: No Shortcut to Progress

Meta Level

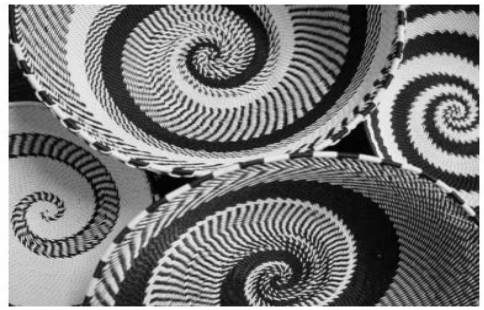
Macro Level

Policy making,

Planning &

Implementation

Meso Level



Micro Level

Conclusion

Decentralised local renewable energy options can

- ✓**Make efficient use of local energy and human resources;**
- ✓**Avoid the negative environmental and social impacts of large-scale projects;**
- ✓**Make use of and develop indigenous manufacturing and technical capability;**
- ✓**Be controlled by local communities and their organisations, enabling them to identify their own needs**

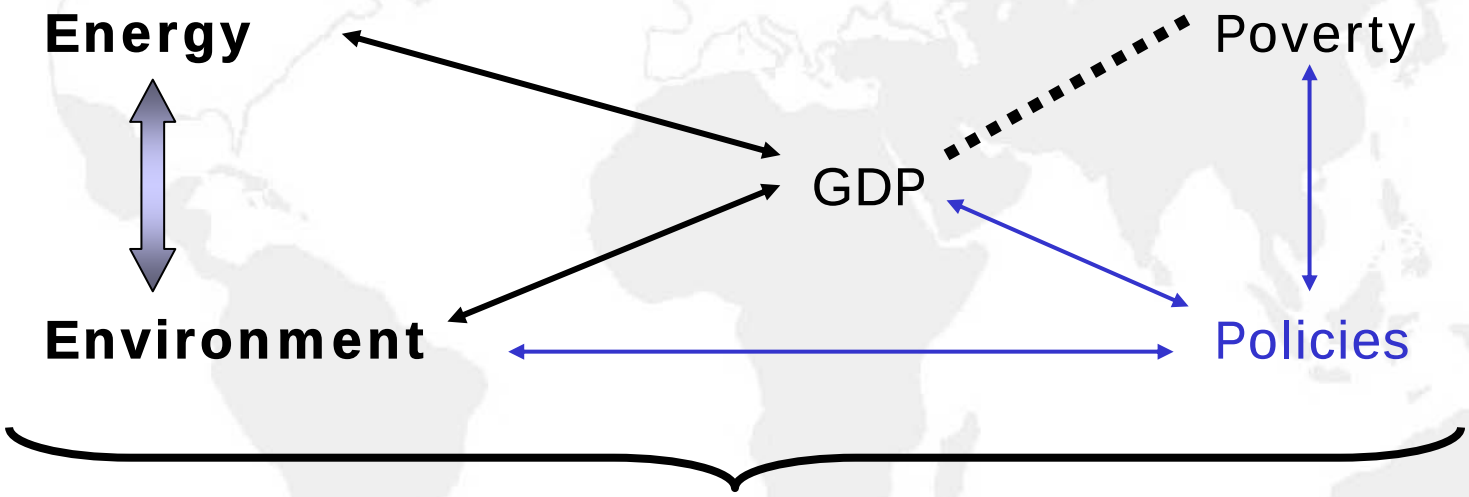
(Powering Poverty Reduction – ITDG, May 2004)

Conclusion

"**Energy** is our mutual, **regional problem**. And it is going to force more regional co-operation among East African countries. **We have to learn to solve our problems on our own.“**

(http://www.allAfrica.com; 14th August 2008)

THANKS FOR YOUR ATTENTION !



SUSTAINABILITY