

ENERGY PROFILE AND RENEWABLE ENERGY PROGRAMMES IN TANZANIA

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Biography of Prof. Iddi S.N. Mkilaha

- Qualifications:
 - B.Sc. (Mechanical Engineering)(University of Dar es Salaam);
 - M.Eng. (Energy Engineering) (Toyohashi University of Technology, Japan);
 - Dr. Eng. (Energy and Environment) (Toyohashi University of Technology, Japan)
 - Certificate of Japanese (Nagoya University, Japan)



- Research Interests:

- Energy Conversion and efficiency;
- Environmental Management and Pollution Control;
- Combustion and Combustion Systems
- Renewable Energy systems optimization
- Control of Trace Metals from Combustion
- Internal Combustion Engines performance and emissions;
- Solar energy systems optimization and utilization;
- Waste Management and Recycling Techniques
- Nuclear Energy Applications for sustainable development



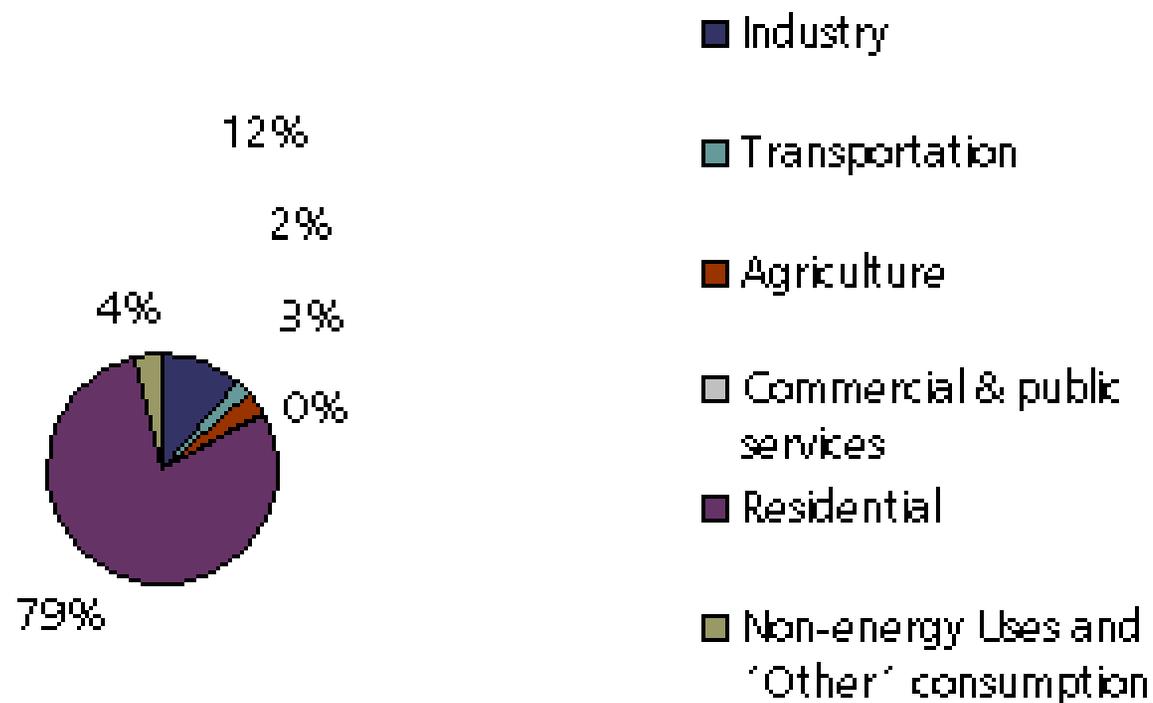
- Employment and Professional Engagements:

- Lecturing and research in the area of Energy and environment since 1984, rose to Associate Professor;
- Director General of Tanzania Atomic Energy Commission
- Member of Governing Boards of several institutions in Tanzania
- Member of Small Power Producers Expert Group of the Ministry of Energy and Minerals
- Member of Renewable Energy Group at the University of Dar es Salaam

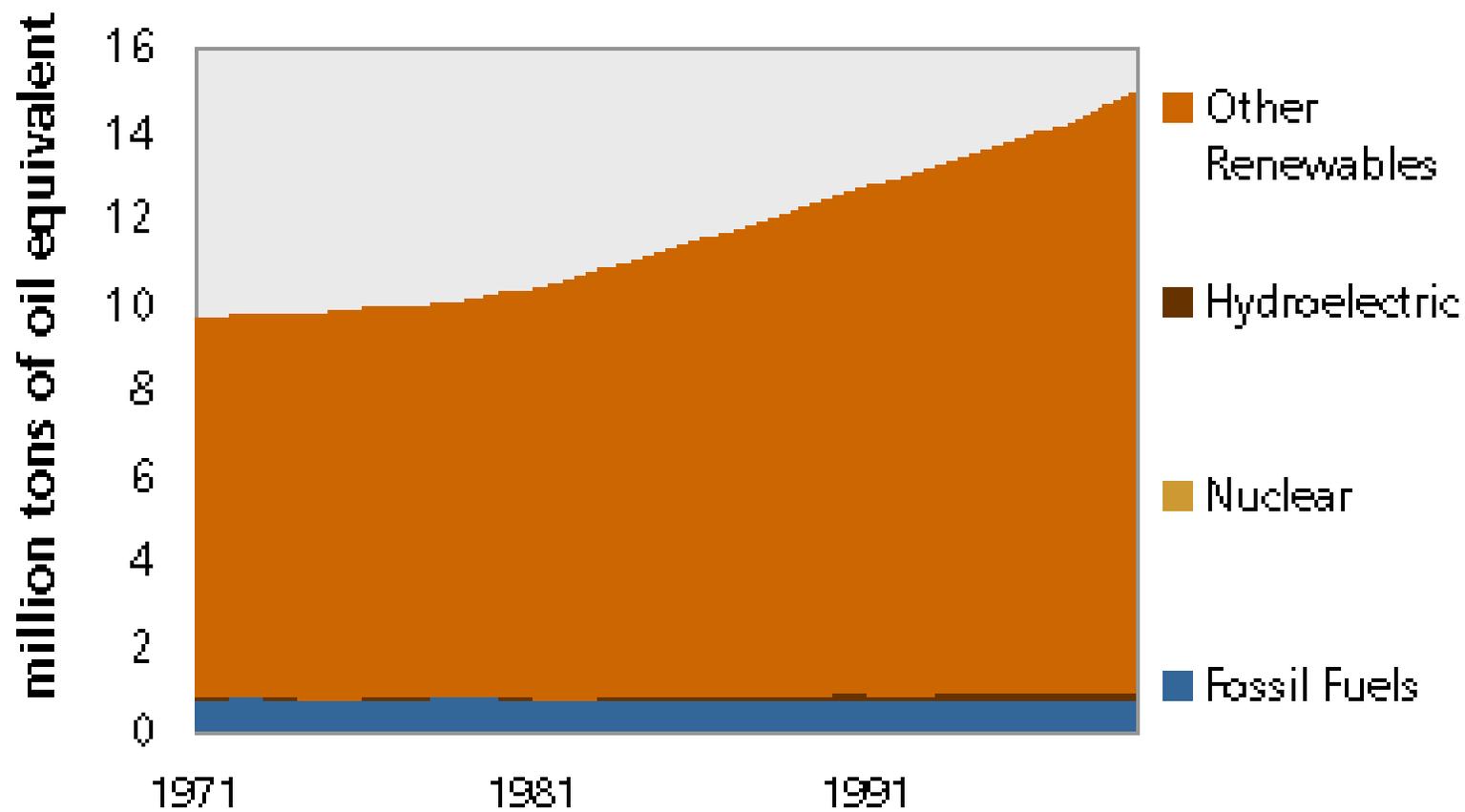
Tanzania Energy Profile

- Basically dependent on Biomass energy for most part of the country;
- Biomass forms the major part of the energy needs
- Household accounts for major part of the energy consumption followed by transport
- Major part of the rural population have no access to electricity
- Only 10% has access to grid power and its mainly the urban;
- Energy demand is on the increase year after year
- The following three sheets show this trend.

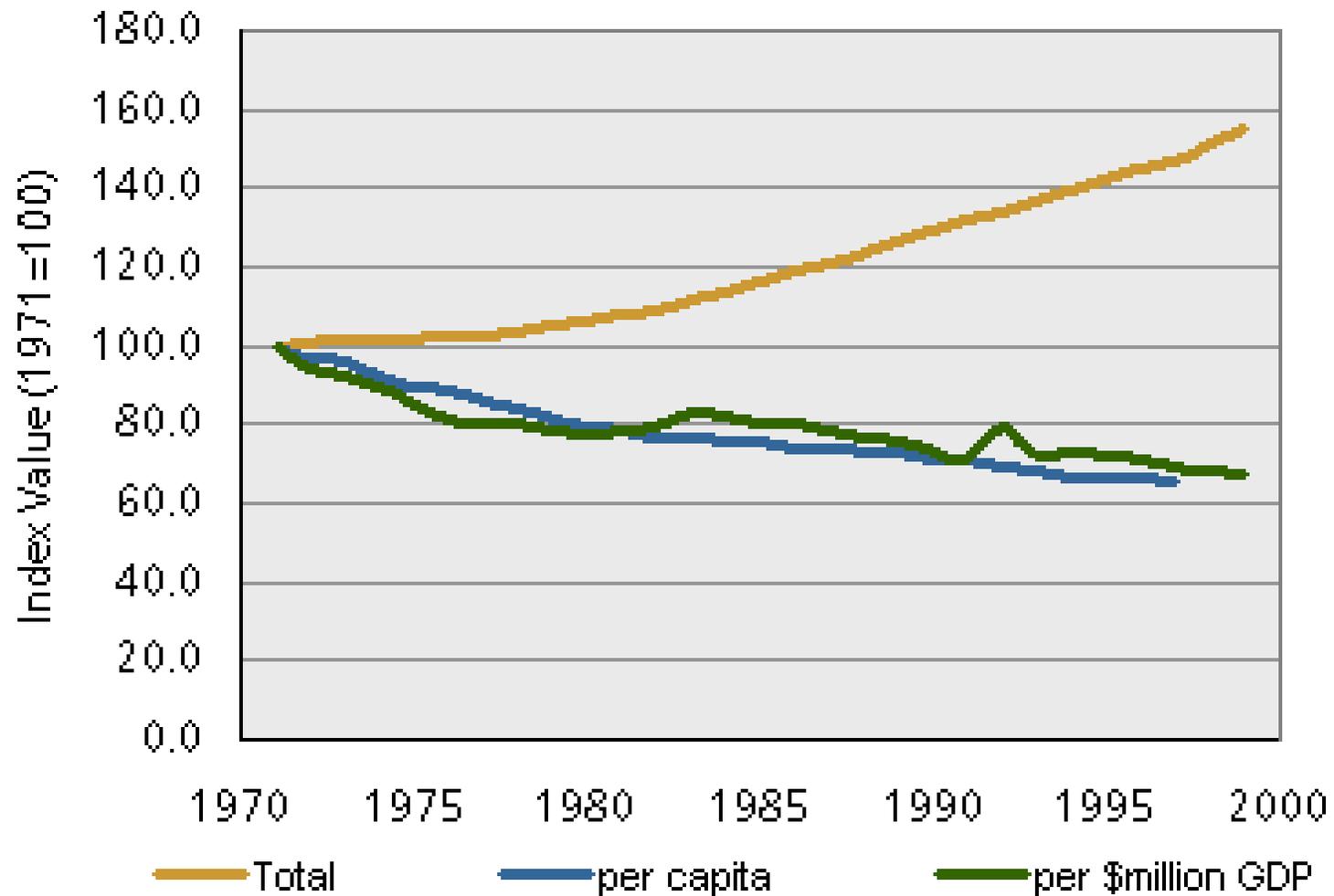
Energy Consumption by Sector, Tanzania, 1999



Energy Consumption by Source, Tanzania, 1971-1999



Energy Consumption: Relative trends, Tanzania, 1971-1999



Energy Resources available

No.	Energy Resources	Application	Remarks
1.	Hydropower- electricity	Widely used	Climate dependent
2.	Diesel – Electricity	Applied	Environmental pollution problems
3.	Natural Gas- Electricity	Applied	Limited resources and environmental problems
4.	Geothermal Energy	Not applied	At feasibility stage
5.	Wind energy	Minimum application	Site sensitive
6.	Solar Energy	Minimum application	Initial capital investment high

Renewable Energy Related

Projects

No.	Project	Key players	Remarks
1.	Biogas development	NGOs, Institutions	Isolated projects
2.	Lighting the Rural	Rural Energy Agency, Private individuals	Commercialization approach to energy provision
3.	Efficient Stoves	NGOs, University of Dar es Salaam	Continuing research
4.	Public-Private partnership for provision of sustainable energy	Government, University of Dar es Salaam	Renewable energy development
5.	Solar energy applications for the rural	University of Dar es Salaam	Continuing research on solar thermal and pv

6.	Students RE exchange programme	-GTZ, USA universities, Uganda, Mozambique,	Continuing research
7.	M.Sc. (RE) program established and running	Makerere, Dar es Salaam, Malawi, Mozambique, Addis Ababa, Mekele and NTNU universities	Continuing project
8.	Gasification projects	Sida, University of Dar es Salaam	Continuing researches
9.	Jatropha Biodiesel project	University of Dar es Salaam, Japan, Government of Tanzania	Just started
10.	Efficient biomass utilization	University of Dar es Salaam, NGOs	Continuing research
11.	Co-utiization of biomass and Coal	University of Dar es Salaam	Continuing research

Possibilities of cooperation

- Joint research and development programmes
- Joint programmes aimed at capacity building
- Development and accustomization of energy planning and optimization tools
- Exchange programmes for researchers and students
- Joint professional meetings and workshops to strategize on renewable energy development and applications.



Thank you for your attention