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Strategies to use Biofuel Value Chain Potential in Sub-Saharan Africa to respond to Global Change - Enhancing low-productivity Farming in Tanzania and linking to SMEs

Leibniz Centre for Agricultural Landscape Research e.V.

Leibniz Universität Hannover – Environmental Economics and World Trade

The International Food Policy Research Institute

World Agroforestry Centre

Association for Strengthening Agricultural Research in Africa

Sokoine University of Agriculture (SUA)

Wuppertal Institute for Climate, Environment and Energy

Müncheberg, 20. August 2010

gtz – Im Auftrag des Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung

International Food Policy Research Institute

Global Change Research Theme, Environment Division

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Im Auftrag des Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung

IFPRI project contributions

1. **Provide Global Scenarios**
   - To provide overall picture of changes in food & energy markets and how they impact Tanzania
   - Characterize agricultural growth patterns under alternatives – and implications for food security
2. Document & clarify drivers of change underlying **storylines** that will be used by other teams (socio-economic and environmental factors)
3. Evaluate **ag & energy market impacts** under cases and **implications for trade**
4. Help build **global-national-village** level linkages

General description of baseline

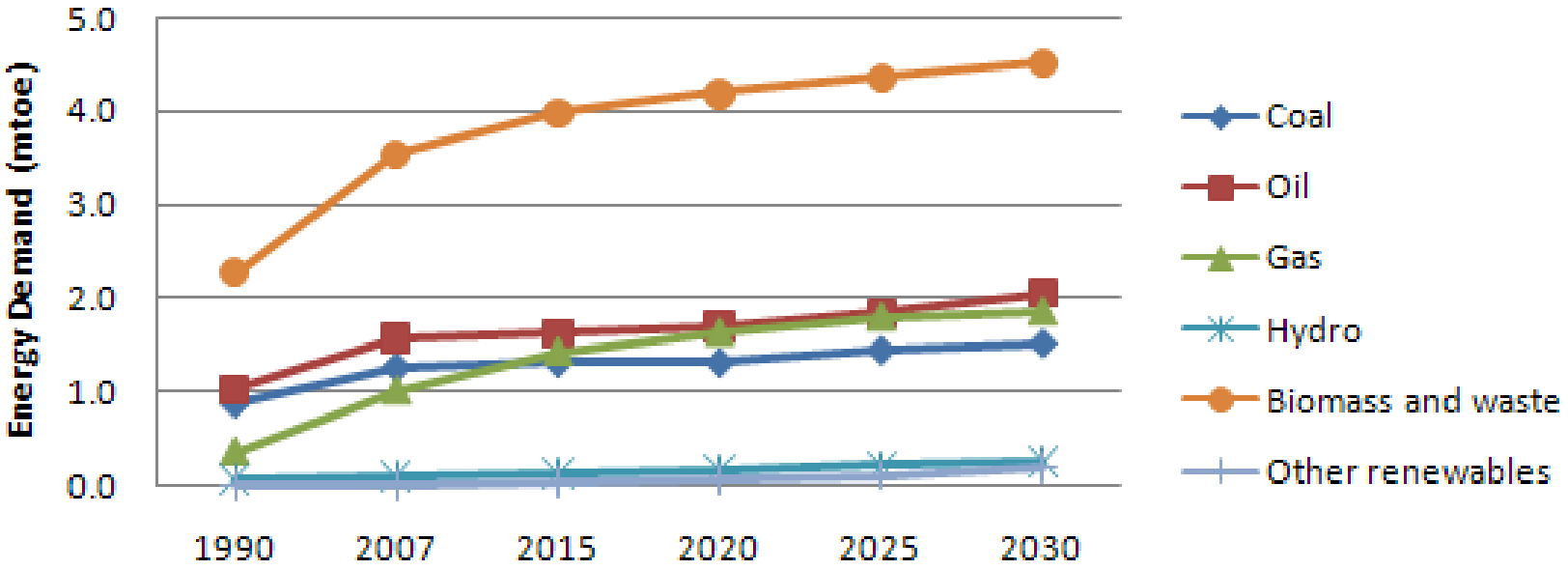
	Descriptive features
Population Growth	Annual avg growth: •1.8% over the 2000-2015 period •1.4% over the 2015-2030 period
Economic Growth	Annual avg growth: • 3.6% over the 2000-2015 period • < 4% over the 2015-2030 period
Energy Technologies	Most rural poor rely on crude biomass for hhold uses (with women/girls bearing collection burden) Urban-dwellers use charcoal/kerosene as alternatives (un-reliable electricity and poor coverage) Most transport use in diesel Limited renewable alternatives
Agricultural Technologies	Relatively low-levels of adoption of irrigation (share of cereal area under irrigation grows from 1.7% →2.4% by 2030) Low levels of fertilizer use, and mostly dominated by smallholder subsistence ag prodn systems

Alternative Futures for Tanzania

- Look at two alternatives to the reference/baseline:
  - "Security First" – which is a "Balkanization"-type of scenario that has much less trade (much higher levels of trade protection), slow diffusion of knowledge, less innovation, and slower economic growth. Most of the key socio-economic indicators point in the "negative" direction under this scenario
  - "Sustainability First" – which is where policies promoting environmental protection, more efficient energy usage and technologies, and more emphasis on yield and productivity growth to avoid agricultural area expansion

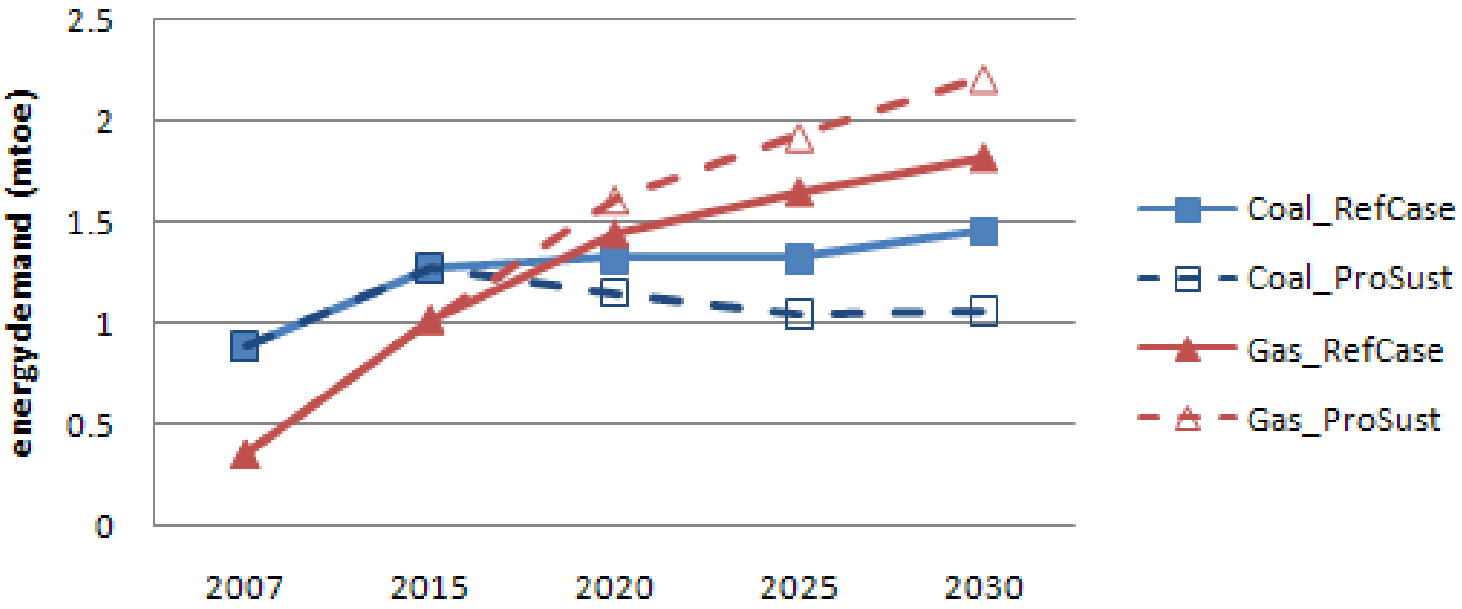
Primary Energy Demand to 2030 for Tanzania

[following IEA reference projections]



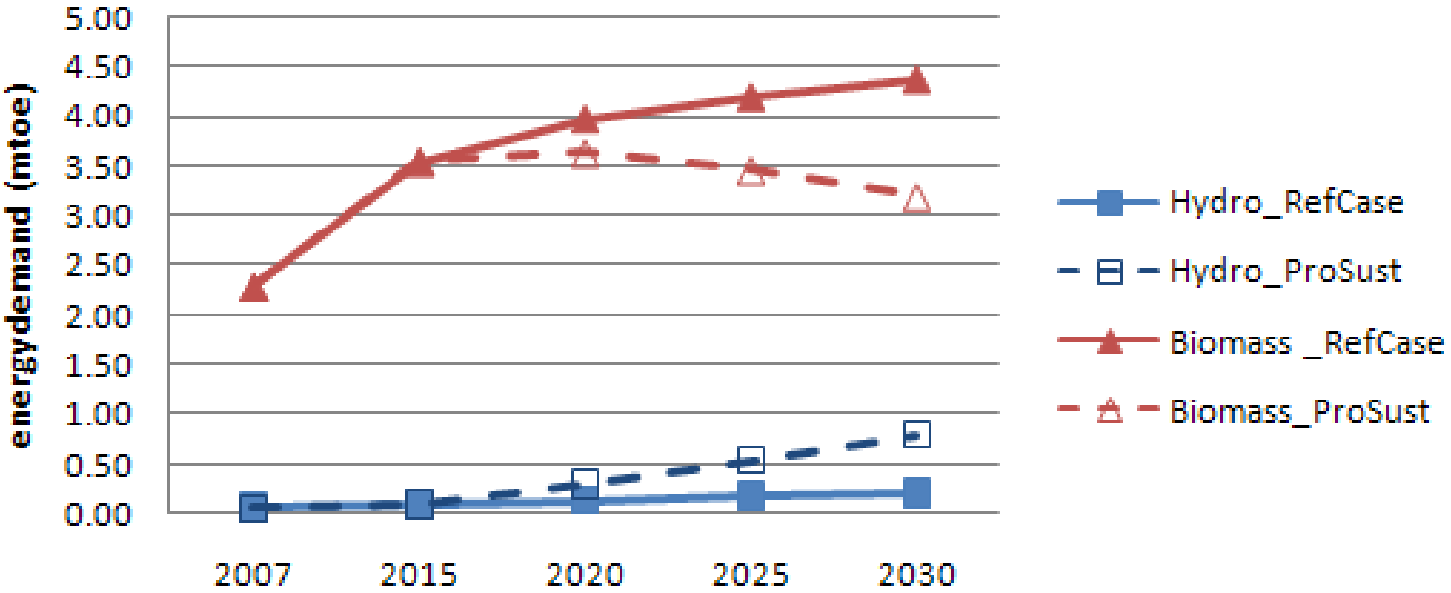
Primary Energy Demand to 2030 under alternative scenarios

Move to cleaner fossil-based fuel sources under a 'pro-sustainability' case



Primary Energy Demand to 2030 under alternative scenarios

Move away from biomass towards other renewable fuels under 'pro-sustainability' case



Next steps

- For **scenarios:**
  - Refining scenario definitions to incorporate biofuels and bioenergy (such as biomass use at the household level)
  - Account for effects of gradual diet change in the high-income countries that have an effect on market in SS Africa (such as changes in meat demand)
  - Look more closely at the dimensions of urbanization in Tanzania and the implications for diet and energy usage
- Update modeling of biofuels (better representation of feedstocks and trade in global model)
- Building a better national model of Tanzania to fit w/in global model – to better represent sub-national details and make better use of data

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Thank for your attention!

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