



Bio-fuel and food security: The South Asian Context



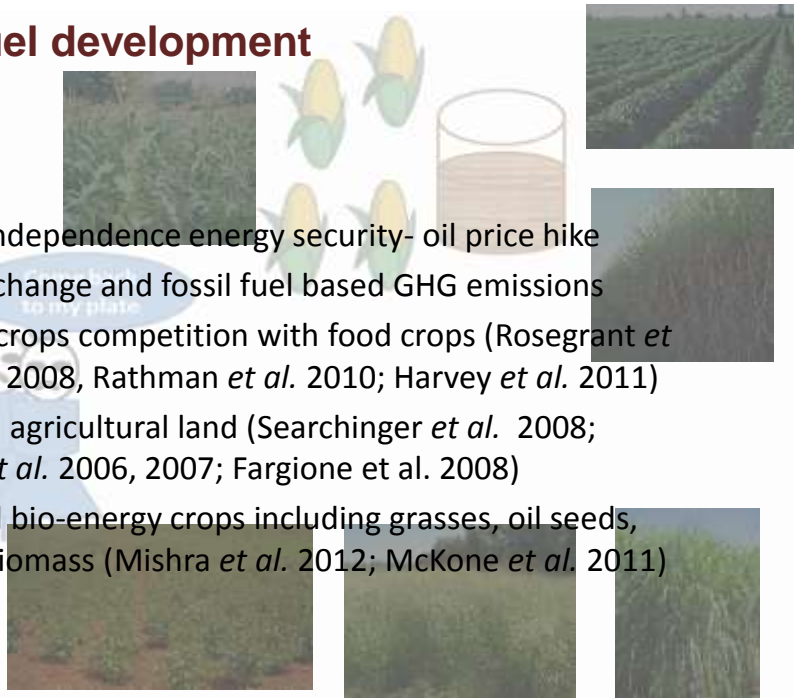
Shruti Khadka Mishra



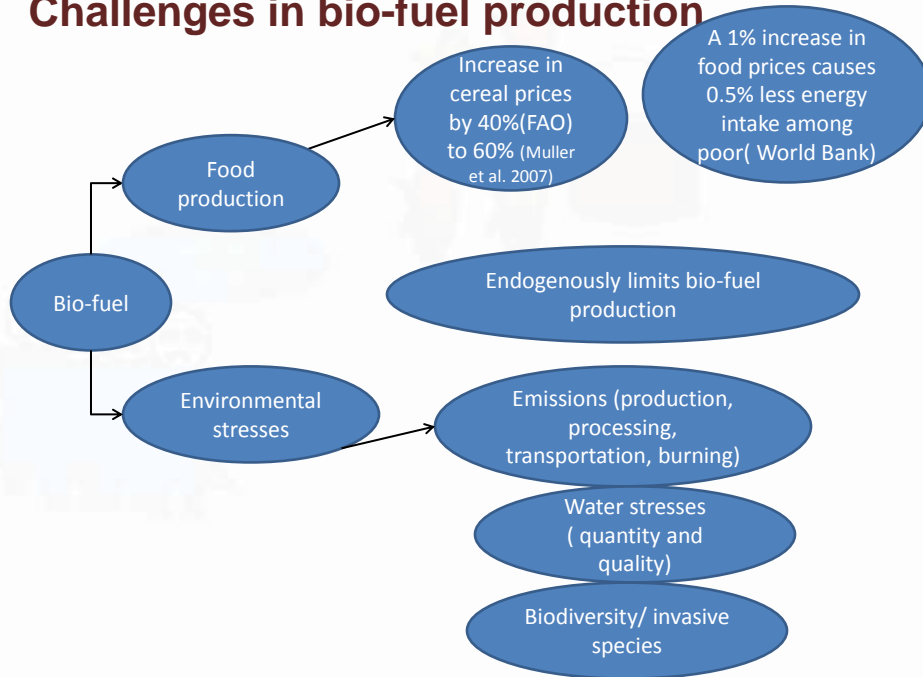
Regional Consultation on Trade, Climate Change and Food Security in South Asia
 South Asia Watch on Trade, Economics and Environment and OXFAM Novib
 20-21 December 2012, Hotel Himalaya, Lalitpur, Nepal

Bio-fuel development

- Energy independence energy security- oil price hike
- Climate change and fossil fuel based GHG emissions
- Bio-fuel crops competition with food crops (Rosegrant *et al.* IFPRI, 2008, Rathman *et al.* 2010; Harvey *et al.* 2011)
- Marginal agricultural land (Searchinger *et al.* 2008; Tilman *et al.* 2006, 2007; Fargione *et al.* 2008)
- Potential bio-energy crops including grasses, oil seeds, woody biomass (Mishra *et al.* 2012; McKone *et al.* 2011)



Challenges in bio-fuel production



Bio-fuel development: South Asia specific issues

- Geographic heterogeneity and ecological diversity
- Economic and social equity concerns
- Demographic concern (Ethnic, indigenous people, dalit, women)

Way forward

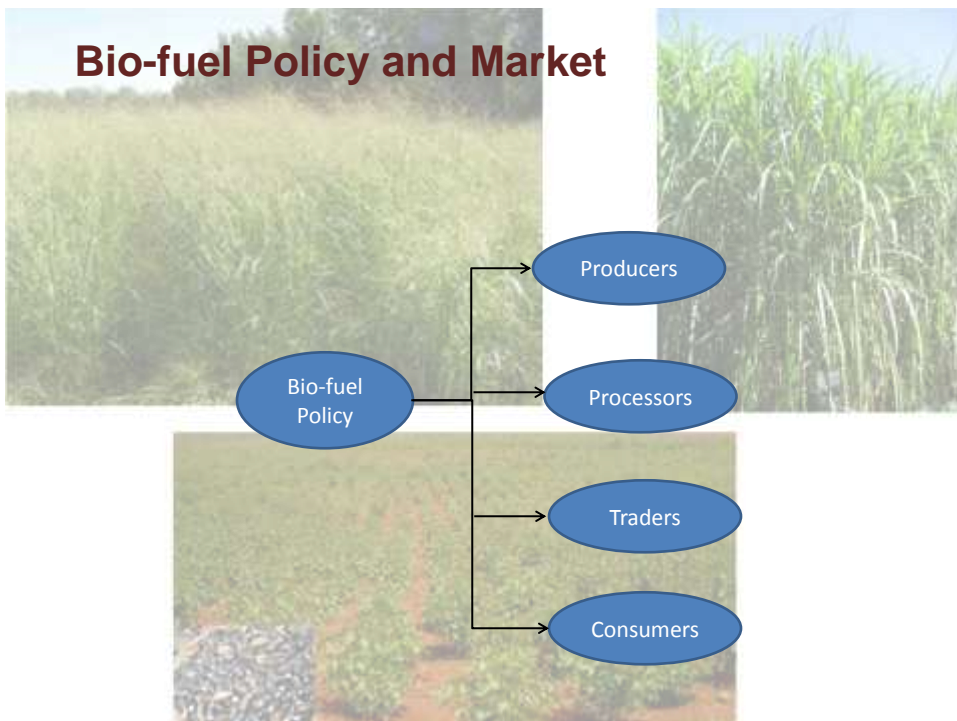


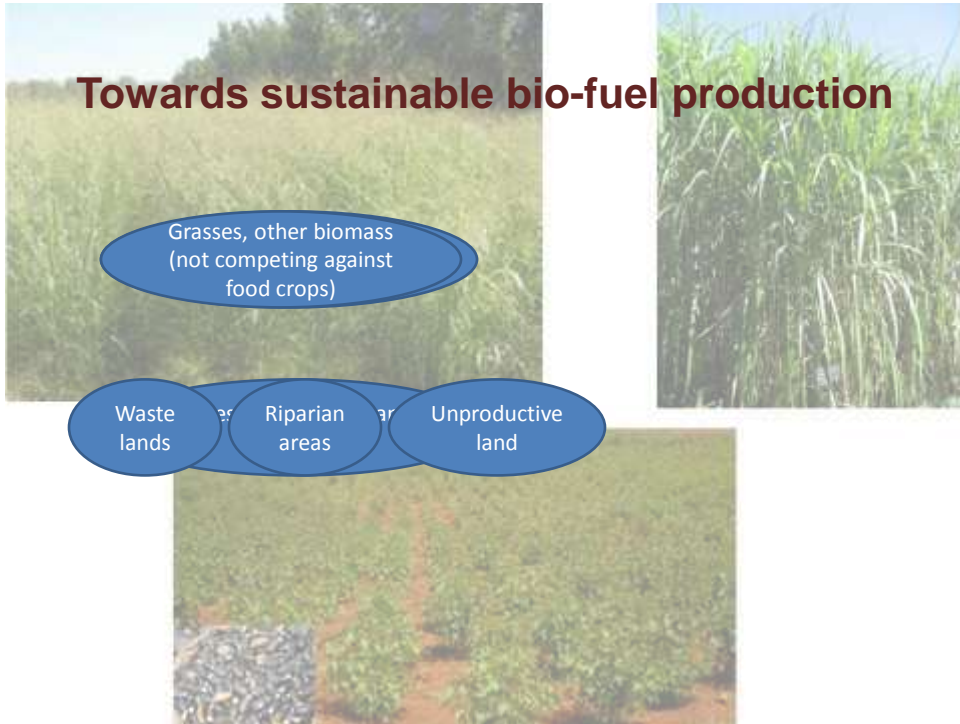
National and regional policies for bio-fuel development in South Asia

- Incentives for production of bio-fuel crops
- Bio-refineries (large investment – government)
- Financial and fiscal incentives
- Research development and demonstration (unknown impact of cellulosic bio-fuels (Kim et al., 2009; Williams et al., 2009).
- Distribution and marketing regulations
- Quality control
- International cooperation and Trade policies

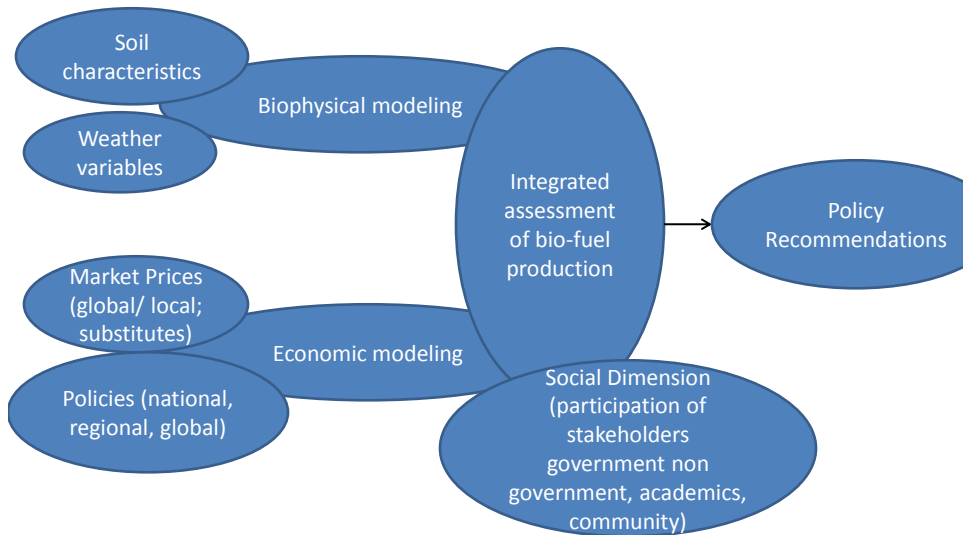


Bio-fuel Policy and Market





Regional scale study on sustainable bio-fuel production using interdisciplinary approach



Adapted from United States Geological Survey, Professional Paper Series 1796

Towards sustainable bio-fuel production

- Impacts of regional scale adoption of cellulosic bio-energy crops is still not known.
- Miscanthus being a native South Asian crop, it has potential to become the bio-energy crop for the region.
- Growers should be provided incentives for ecosystem services attributed to bio-energy crops production.
- Integrated assessment of regional scale adoption of bio-energy crops can provide science based policy recommendations for economically and environmentally sustainable bio-fuel production for this region.



Thank You!

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