

Biofuels Investments in Tanzania: Policy Options for Sustainable Business Models

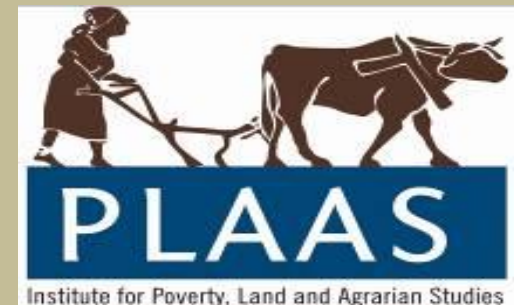


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Presentation contents

- Introduction
- Biofuels: Global overview
- Biofuels development in Southern Africa
- Overview of biofuels development in Brazil, South Africa and Tanzania
- Inclusive business models
- Policy options

1. Introduction

- Biofuels: globally advocated as an environmentally friendly alternative source for energy
- US and Brazil: global producers of biodiesel and ethanol
- Southern African Nations: the “Middle East” of biofuels
 - Chief Executive of the UK biofuels suppliers
- Initial projects started without guidelines, policy, legal and regulatory framework
- Acquisitions of large tracts: threat to food security & tenure of land
- Foreign vs home developed policies

Rationale for the study

- While biofuels industry is in its early stage in Tanzania there is no national policy or strategy that define national interests.
- To be able to benefit from this industry without jeopardizing local ownership of resources and participation, understanding suitable business models is necessary.
- Policy analysis of the countries producing biofuels may provide insights of what might work, or not in the Tanzanian context.

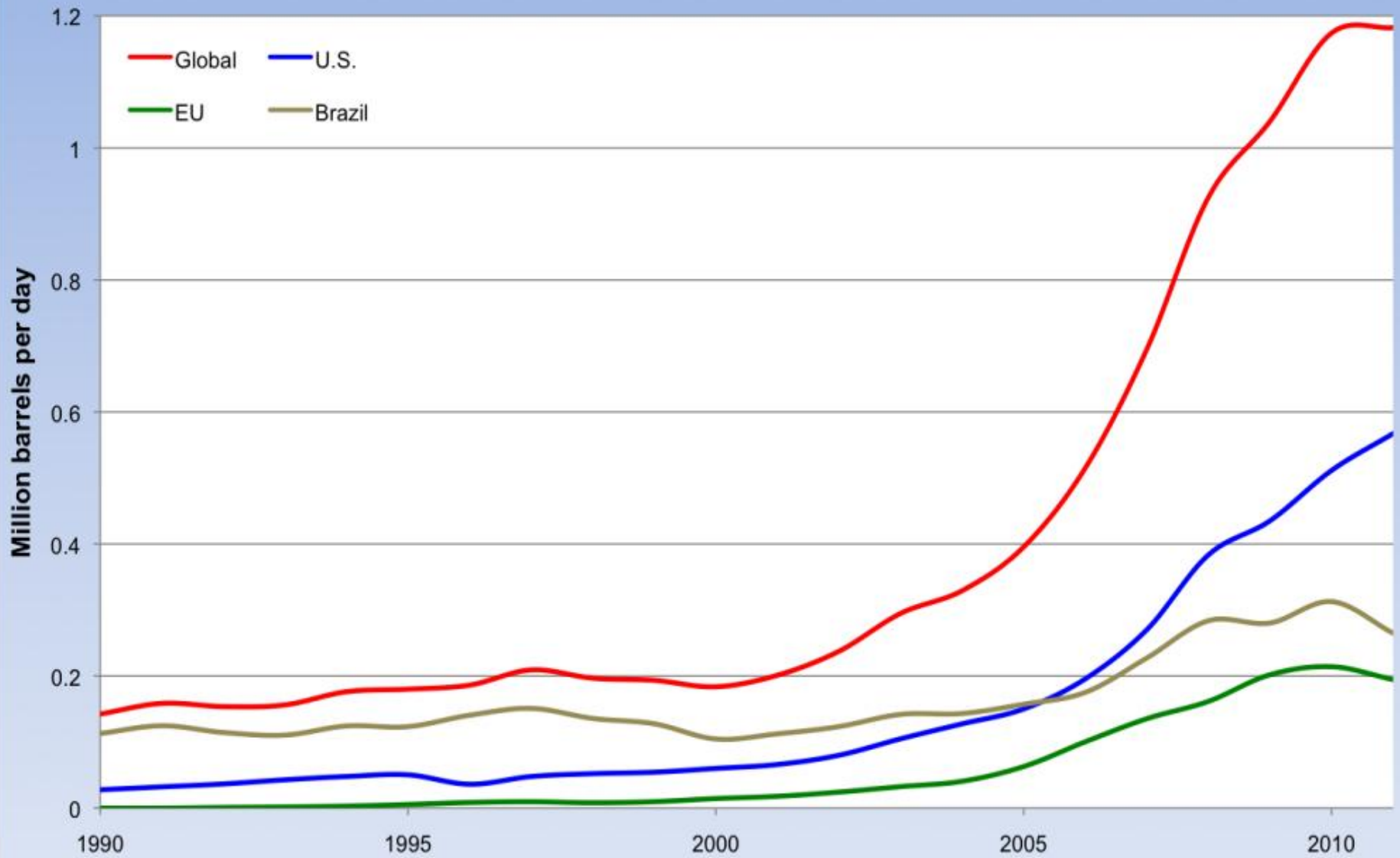
Objectives and Methodology

- Assess biofuels policies/strategies in Brazil and South Africa, and draw analogies to the Tanzanian biofuels industry
- Examine best policy options for biofuels development in Tanzania, suggest inclusive business models and provide policy recommendations.

In order to achieve these objectives:

- The study employed desk research for the review of the available literature both online and from various actors as well as organizations.
- Also personal contact was made with a number of individuals in Tanzania and South Africa.

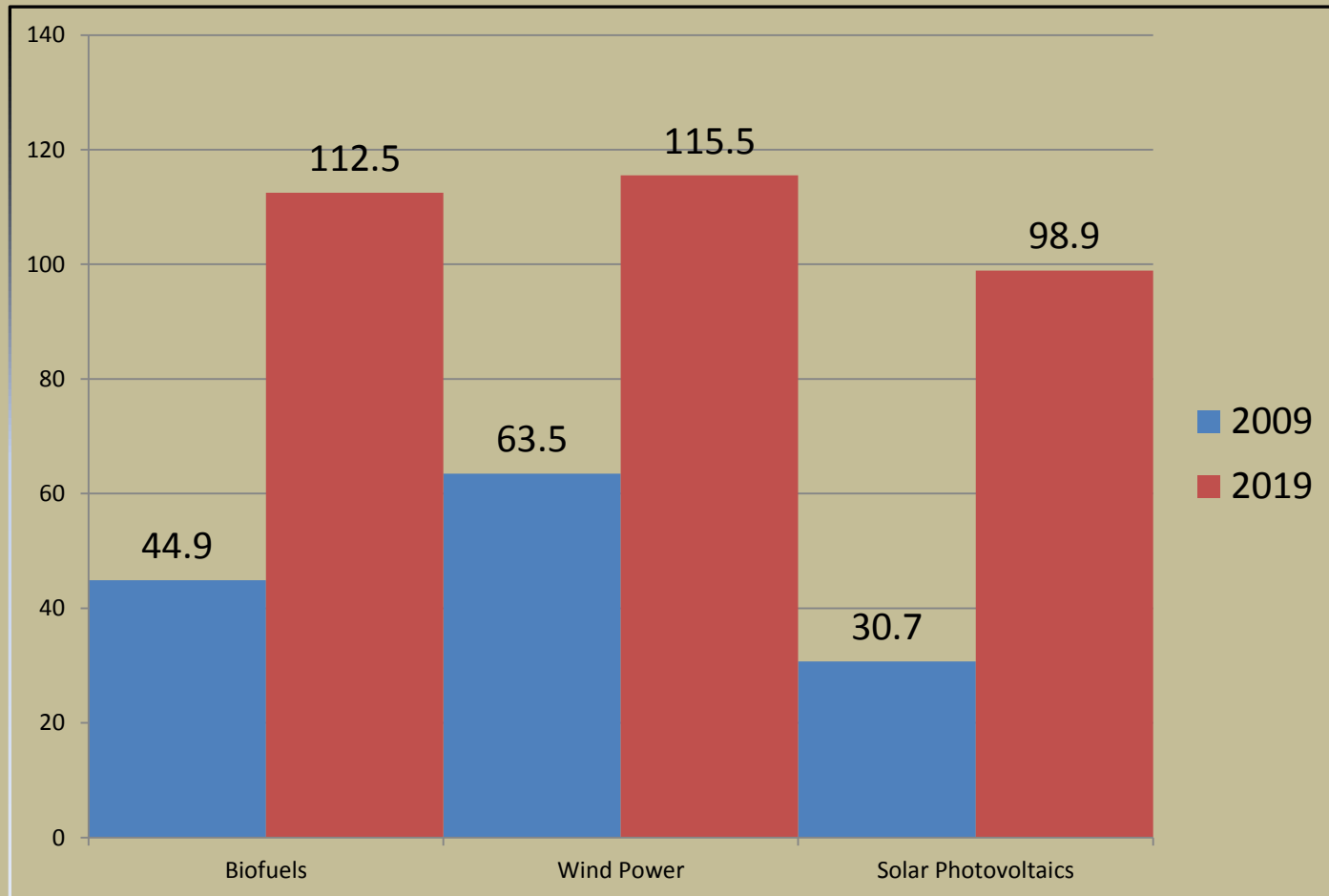
Biofuel Production 1990-2011



Data source: 2012 BP Statistical Review of World Energy

Current and future trends

Global Clean-Energy Projected Growth 2009-2019
(USD Billions)



Source: Pernick et. al. 2010 Clean Energy Trends

3. Biofuels dev't in Southern Africa

- Most States in Southern Africa are at the initial stages of developing commercial biofuels projects
 - except, South Africa, Zimbabwe and Malawi
- Few have either biofuels strategy or guidelines
- Almost none of them have biofuels policy
- With persistent food insecurity many countries are yet to put staple food crops into biofuels production
- Driving factors for biofuels include:
energy security, climate change mitigation and rural development

4. Biofuels dev't in Brazil, S.Africa and Tanzania

A. Brazil

- *“The Productivity and efficiency of Brazilian sugarcane ethanol are virtually unmatched by any other country.”...*
- *“Even in Brazil, where climate and labor market conditions favor ethanol production, ethanol is cost-competitive with gasoline only during periods when oil prices are high” (Xavier, 2007)*
- Huge local and international markets facilitated by its agriculture, energy and foreign policies
- Signed MOU with Tanzania on biofuels development and provision of the expertise.

“I want Tanzania to produce biofuels the way Brazil does...”

President Lula in his visit in Tanzania in July 2010 said

Brazil's "Social Fuel Seal"

- The Social Fuel Seal is part of Brazil's new national bio-diesel program
- Designed specifically to address previous ethanol industry:
 - ❖ considers regional inequalities and geographical specific-ecological potential for biodiesel feedstock production
- Uses tax break to encourage to conform with Social Fuel Seal
- Major biodiesel producers have joined the program

Costs of joining social fuel seal include:

- ✓ Formal contracts with feedstock producers
- ✓ Allow presence of rural union representative during all negotiations
- ✓ Clearly described technical and extension services
- ✓ Allow yearly evaluation of the project by external agencies of the ministry of Agriculture

B. Biofuels dev't in S. Africa

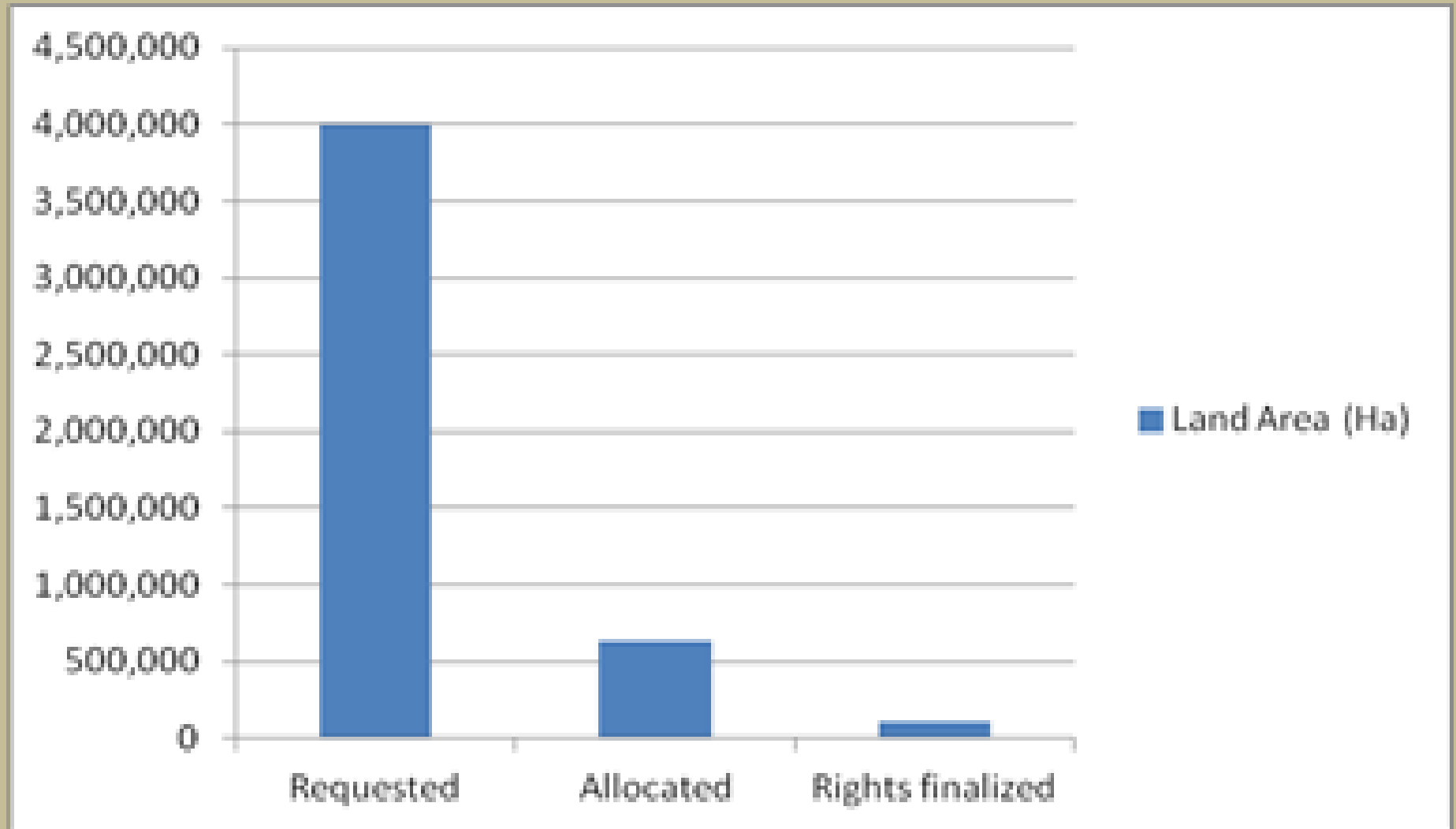
South Africa produces 70% of the ethanol produced in Africa

- Biofuels started during the international economic sanctions
- S. African Biofuels Industrial Strategy (BIS), 2007
- Proposed crops for biofuels production are:
 - Bioethanol: sugarcane, sugar beet
 - Biodiesel: sunflower, canola and soya beans
- Biofuels to address rural poverty and
- 2% of biofuels in the national liquid supply
- Blending ratio of 2% and 8% for biodiesel & bioethanol respectively
- Supply 4% of total electricity by 2013
- Government is yet to release biofuels policy documents

C. Biofuels development in Tanzania

- ❖ Liquid biofuels is at infancy stage
- ❖ Neither strategy nor policy is in place
- ❖ Biofuels guidelines released in January 2011 require:
 - One stop center for coordination, approval and monitoring
 - Specific biofuels crop in a specified location
 - Investors get land from TIC and may use for max. of 25 years
 - Max. chunk of land is 20,000 ha per investor
 - Processing of biofuels feedstock up to a final biofuels product shall be done within Tanzania
 - Blending ratios shall be produced by the Energy Regulator from time to time
 - These guidelines may be updated whenever necessary to do so

Land area requested and allocated for biofuel investments

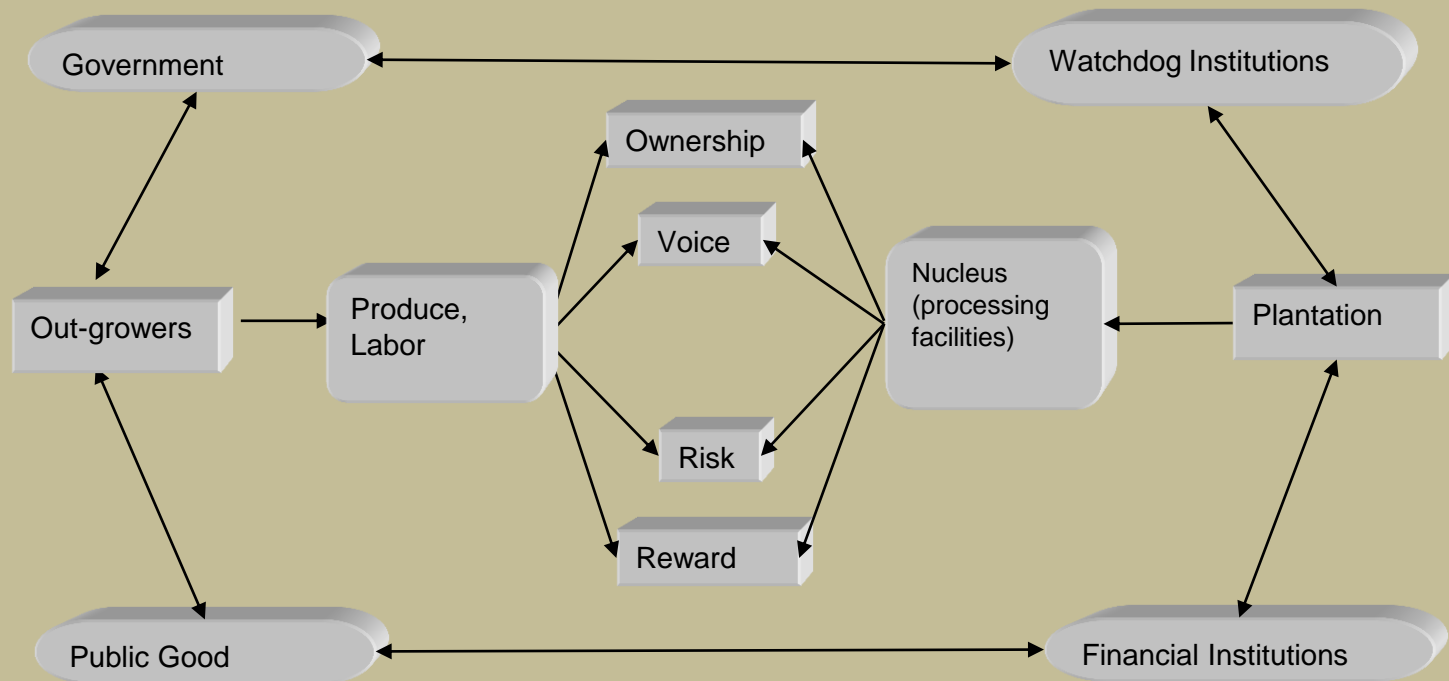


Source: Sulle & Nelson 2012

Lessons from the policy approaches in 3 countries

- All three countries aim to produce ethanol and biodiesel
- Policy issues seem to be taking long time in both South Africa and Tanzania
- Brazil's policies are favored with its local context which greatly differ from many other countries and hence difficult to replicate its policies across the world
- Furthermore, Brazil has policies supporting biofuels in at least three ministries; agriculture, energy and foreign
- Brazilian '**Social Fuel Seal**' provides insights on how the government can attract business companies to follow its policies

(Plantation + Out-growers)



Hybrid Business Module

Targeting national biofuels policies to common problems

• **Issues of concern**

- Governance
 - Low capacity, poor management
- Protecting farmers rights
- Low Understanding of legal rights
- Crop choices/Business models
- Food security
- Environment

• **Target for policy**

- Capacity building
 - Policy in place
- Legal mechanism
- Education/training initiatives
- Research best feedstock/crops
- Flexible feedstock
- SEIA for every project

Policy Recommendations

- Comprehensive policy, efficient and effective legal and institutional framework
- Research and Development (R&D), Science and technology
- Investment in infrastructure -irrigation systems, roads, railways and financial services
- Well integrated micro and macroeconomic policies to impact individuals and firms in the country
- Labor intensive business models will spur rural development
- Public-private partnership (PPT) is promising
- Categorically identify strategic biofuels feedstock
- Government interventions through subsidies and tax breaks

Thank you for your attention

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Cleared forest at Bioshape jatropha plantation 'trial plot' Kilwa district (IFM report, 2009)