



# **Social constraints to investing in biofuels in Mozambique**

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## Aims & Methodology

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1. Understand drivers & processes of investment in biofuels
2. Review social costs and benefits associated with biofuels investments;
3. Provide an understanding of social constraints to investment to qualify expectations from modelling exercises; .

### Methods:

Review of legal and operational processes and experiences of land acquisition.

Review of impacts from assessments of displacement resettlement

Review of costs associated with resettlement from project experiences

## Investment in agriculture

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### In past decade:

- Farmland investment including biofuels has so been attracted to well-connected parts of the country.
- Biofuel projects (19 in 2008) have on average requested and received large areas of land, but also experienced higher rates of failure.

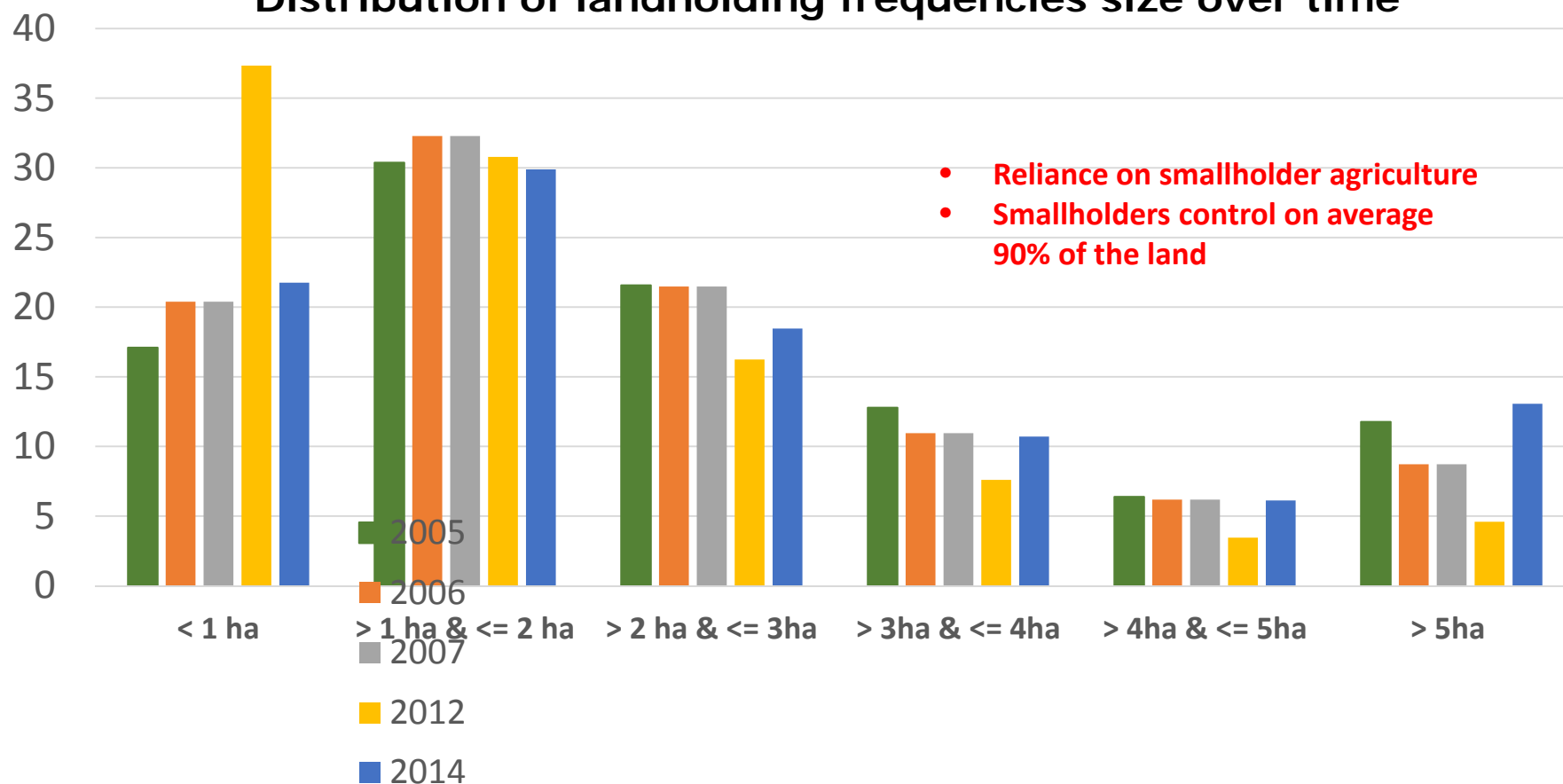
### Recent trends:

- Slow-down in approval of large-scale investments.
- Smaller farms are becoming approved (sometimes several contiguous)
- Unclear if regulations for community consultation are gaining traction.
- Questions remain on extent of land availability

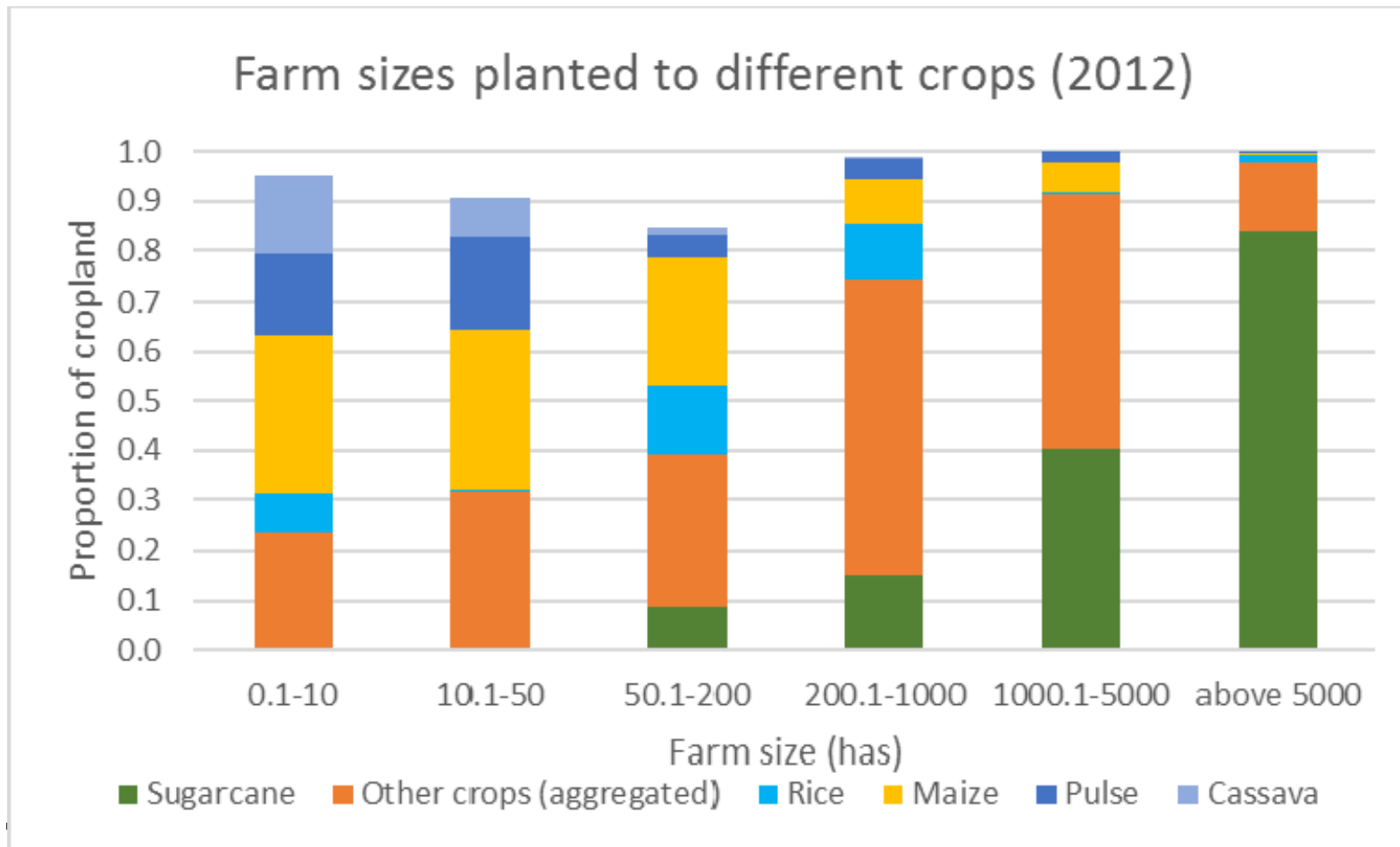
**What type of agriculture do we have in  
Mozambique?**

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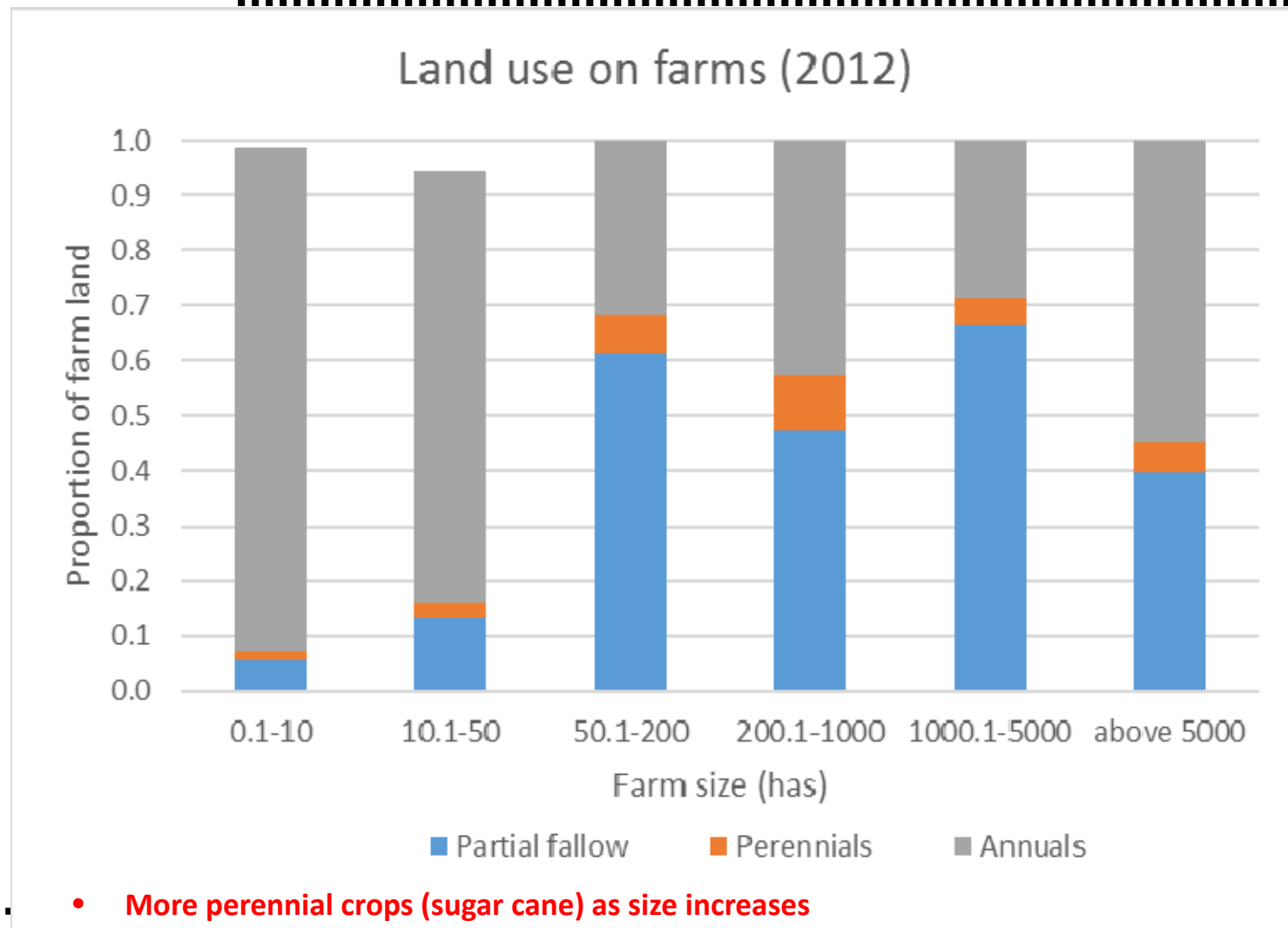
**Distribution of landholding frequencies size over time**



**Sugarcane is the main crop of large farms...**



## Land use of different-sized farms



# **Geography Matters:**

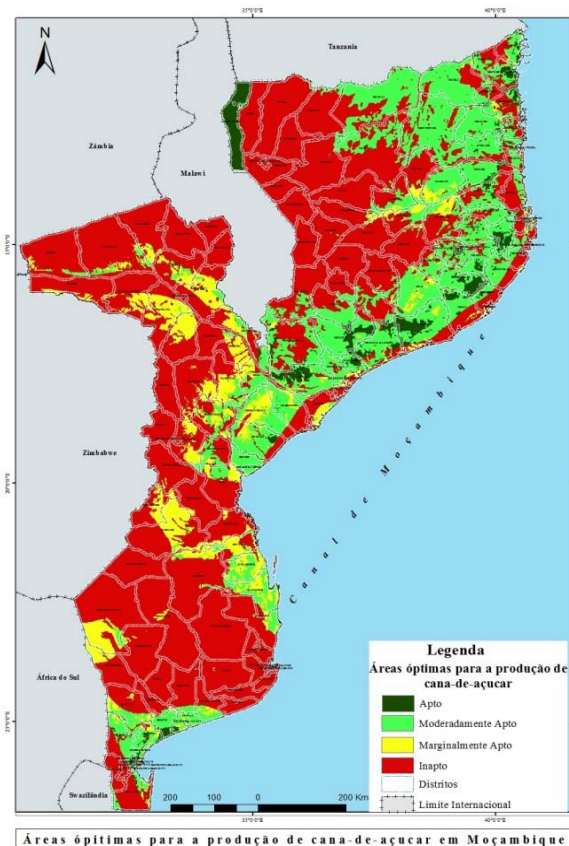
## **Biophysical suitability and distribution of large farms**

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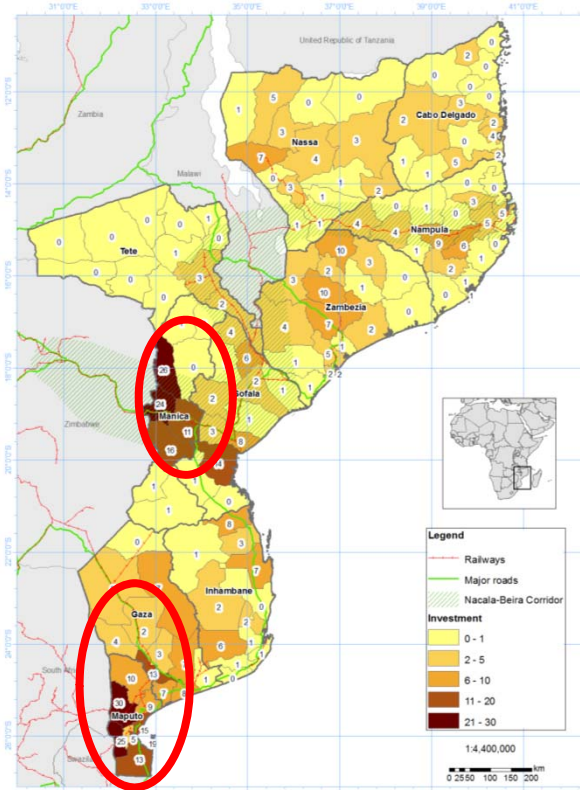


# Sugar potential vs. Existing large farms

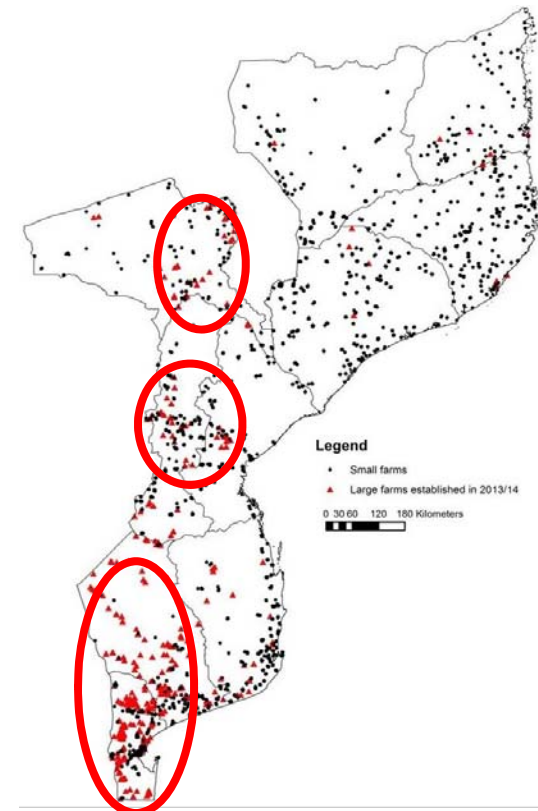
## Sugar suitability



## Distribution of large farms (di Matteo & Schoneveld 2016)



## Distribution of large farms (IAI data- Xia and Deininger 2016)



- Concentration in the south and central regions
- In well infrastructured areas

## What are the experiences and trends

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### Land tenure:

- Customary and conventional land tenure coexist
  - Traditional tenure – dominante, based on local norms, beliefs and practices
  - Formal tenure - entails authorization from government in form
- Concern:
  - Most land is held under traditional system (XX %) not captured in formal statistics.
  - Official statistics may give the impression that there is a lot of unoccupied land.

- The pool of existing DUATs is shrinking
- For future investments, land requirements will need to come from creating new DUATs.
- Investment with new DUATs tend to:
  - Have higher probability of – and closer association of company with – displacement;
  - Require consultation, and for communities to provide consent (PROSAVA; KATEME)
  - Require investors to provide compensation for farmland and in some cases, common resources (good practice).  
(di Matteo and Schoneveld 2016)

## Recent observations of investment practices

Land acquisition activities undertaken, by land access category.

Type of land access	N	Proportion involving displacement	Consultations	Consent	Compensation farmland	Compensation CPR	Replacement land
New DUAT	30	83.3%	90.0%	79.2%	68.0%	12.5%	3.3%
Old DUAT	13	7.7%	53.8%	33.3%	7.7%	7.7%	0.0%
Rent	9	44.4%	66.6%	44.4%	33.3%	0.0%	0.0%
Custody	4	0.0%	0.0%	25.0%	0.0%	25.0%	0.0%
Total	56	51.8%	72.7%	41.3%	47.9%	11.1%	1.8%

Note: Three investors were unable or unwilling to provide information.

Source: di Matteo and Schoneveld (2016)

**New acquisitions (new DUAT) tend to cause more displacement of people**

## What are Risks and Benefits?

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**Experience from Mozambique and elsewhere suggest investments without strong community consultation risk causing social harm and conflict.**

- Examples (mining sector) point to propensity for poorly executed resettlement to lead to adverse social outcomes, including deterioration of livelihoods.
- Poor access to good quality land;
- Poor access to water (especially if relocated from riverine areas e.g. irrigation schemes);
- Dislocation from local economies, when resettlement areas are further from towns.

**This can quickly translate into costs that companies have to bear: opportunity cost, legal cost, reputational costs;**

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- Mixed experience of job creation, multipliers for surrounding communities:

### **Jobs from investments in general**

- Jobs mainly casual (c.70%)
- Jobs tend to go to men, in some cases due to local gender norms: around 1/3rd of all workers are female;
- Employment higher in mixed investments than in plantations alone.
- Despite precariousness of work, jobs still appear to be in demand for existing sugar investments (half of all permanent ag work in Mozambique is in the sugar industry).

### **Multipliers**

- Limited evidence of positive inputs
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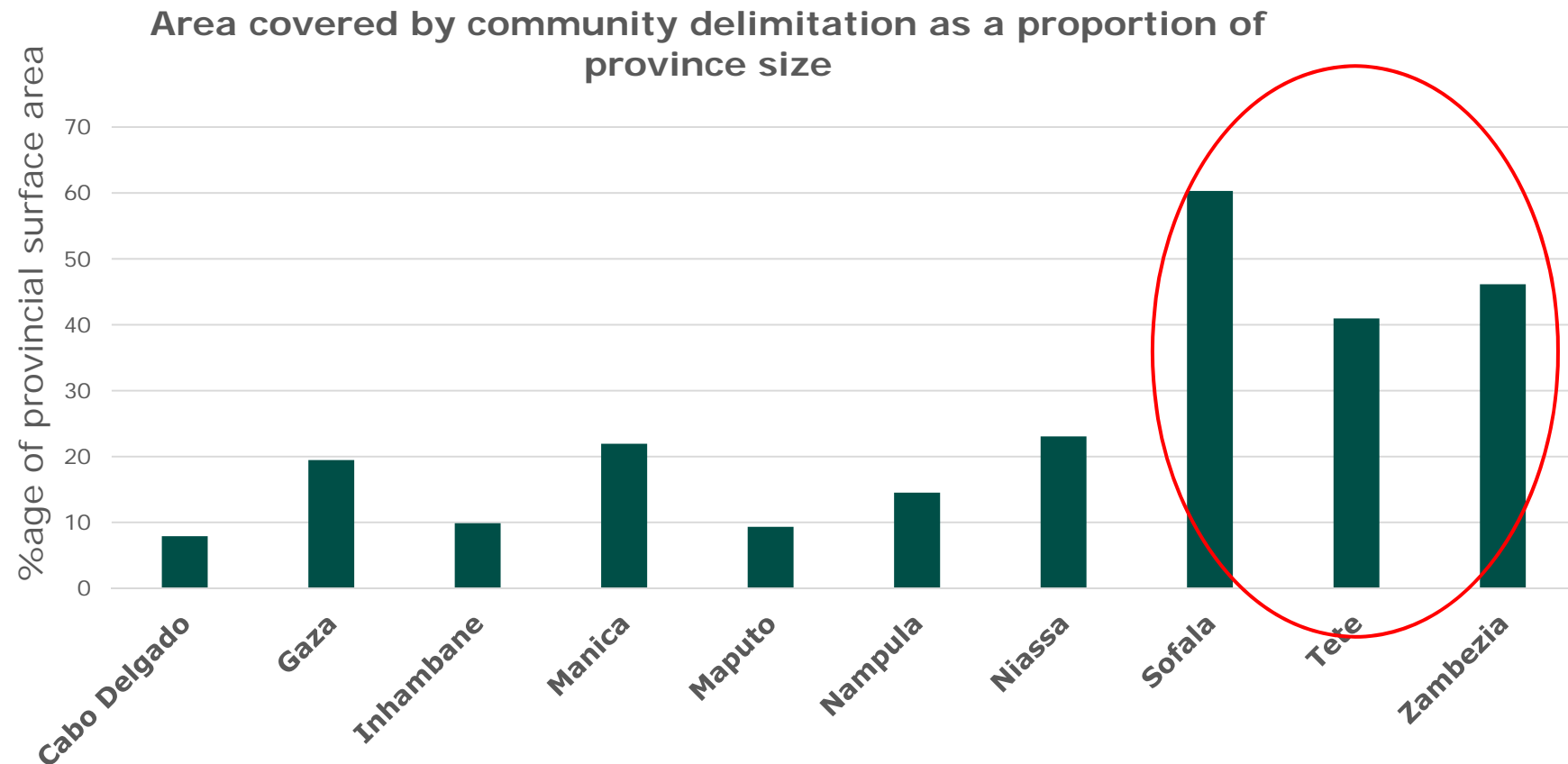


# Can sugarcane production scaled up

## A look at land, water, and infrastructure

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## Available land (1)?



Source: CTC/ ITC reported in Cabral and Norfolk(2016)

## Available land (2)?

Land availability for sugarcane (all needs considered):  
low productivity agriculture (status quo) and the high productivity agriculture

Land availability	unit	2010	2020	2030
The business-as-usual scenario (BAU)	Million ha	8.89	8.37	7.72
Agricultural Intensification scenario	Million ha	10.45	13.61	16.41

Source: van der Hilst and Faaij (2012)

- Yes there is land available
- Need to consider intensification



## Land and water available?

### Total area with irrigation infrastructure that is irrigated in Mozambique

Soils apt for irrigation : 29,2 million ha

Area with potential for irrigation : 3,0 million ha

without storage  
infrastructure

Considering 80% of water  
resources in Mozambique

Consumption estimated  
until 2040 considering only  
one crop, sugarcane.

Area with infrastructure: 181 mil ha

Inventory of  
existing  
irrigation  
systems

irrigated area  
90 000 ha

22 hidrographic  
basins  
representing 27,4  
million ha

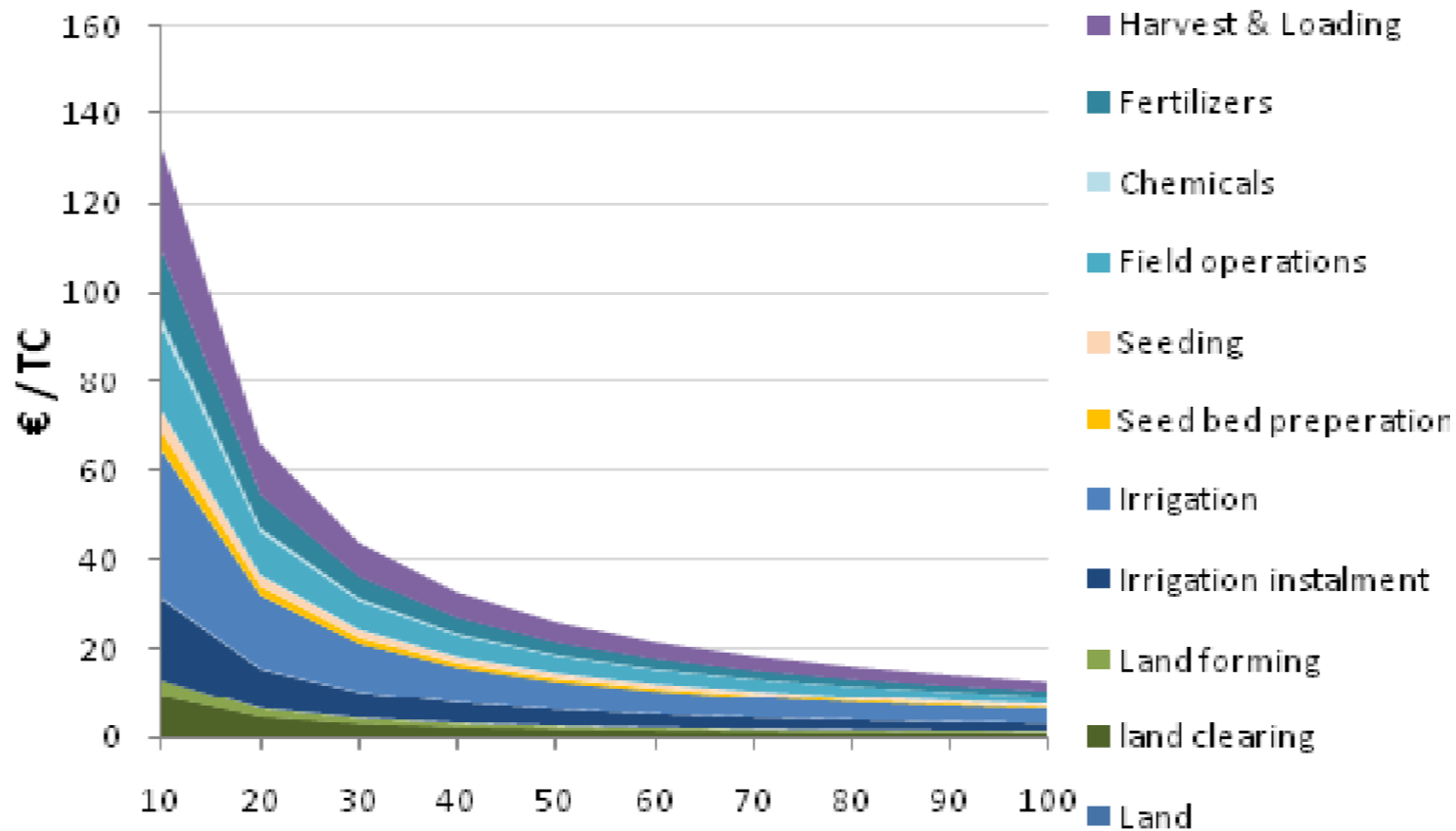
- Yes there is land and water available

Source: Adapted from Ministry of Agriculture and Food Security (2015)

- Ongoing massive investment in Railways and Roads and Ports and roads driven by mining industry
- For roads need about 26% of the GDP (about \$1.7 billion a year) for 10 years road infrastructure.

## Technology and costs known

Cost breakdown of sugarcane cultivation in Mozambique for several yield levels.



Source: van der Hilst et al., (2012).

## Main findings (1)

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- There is significant potential for feedstock production
  - Areas that are suitable for sugarcane production have relatively high concentration of investment
  - For future investments, new land will come from establishing new DUATs.
  - Community participation and qualitative engagement is important in exploring investment opportunities and the negotiation process.
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## Main findings (2)

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Current models of public and private provision of goods to raise sugarcane yields among outgrowers are underway: **its too early to tell if these have been successful.**



### Investors

1. More upfront attention by investors is needed to risks when selecting sites – survey data suggest this is not a current priority

### Government

1. Provide more DUATs to communities
  2. Drive the consultation process
  3. Increase the capacity to monitor the land provided for feedstock production.
  4. Monitor companies to avoid delays in delivering on their social responsibility commitments
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**Thank You**





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- NEED TO ADD A GRAPH SHOWING AREAS OF PRODUCTION OF SUGARCANE WITH:
  - 1. FOOD SECURITY
  - 2. EMPLOYMENT
  - 3. INFRASTRUCTURE INDEX
  - 4. NEED TO SAY SOMETHING ABOUT CURRENT PRODUCTION (THE TABLE I DELETED MUST BE REVISITED)
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