

# The Cotton by-products Project: Unlocking the hidden value in Mozambique

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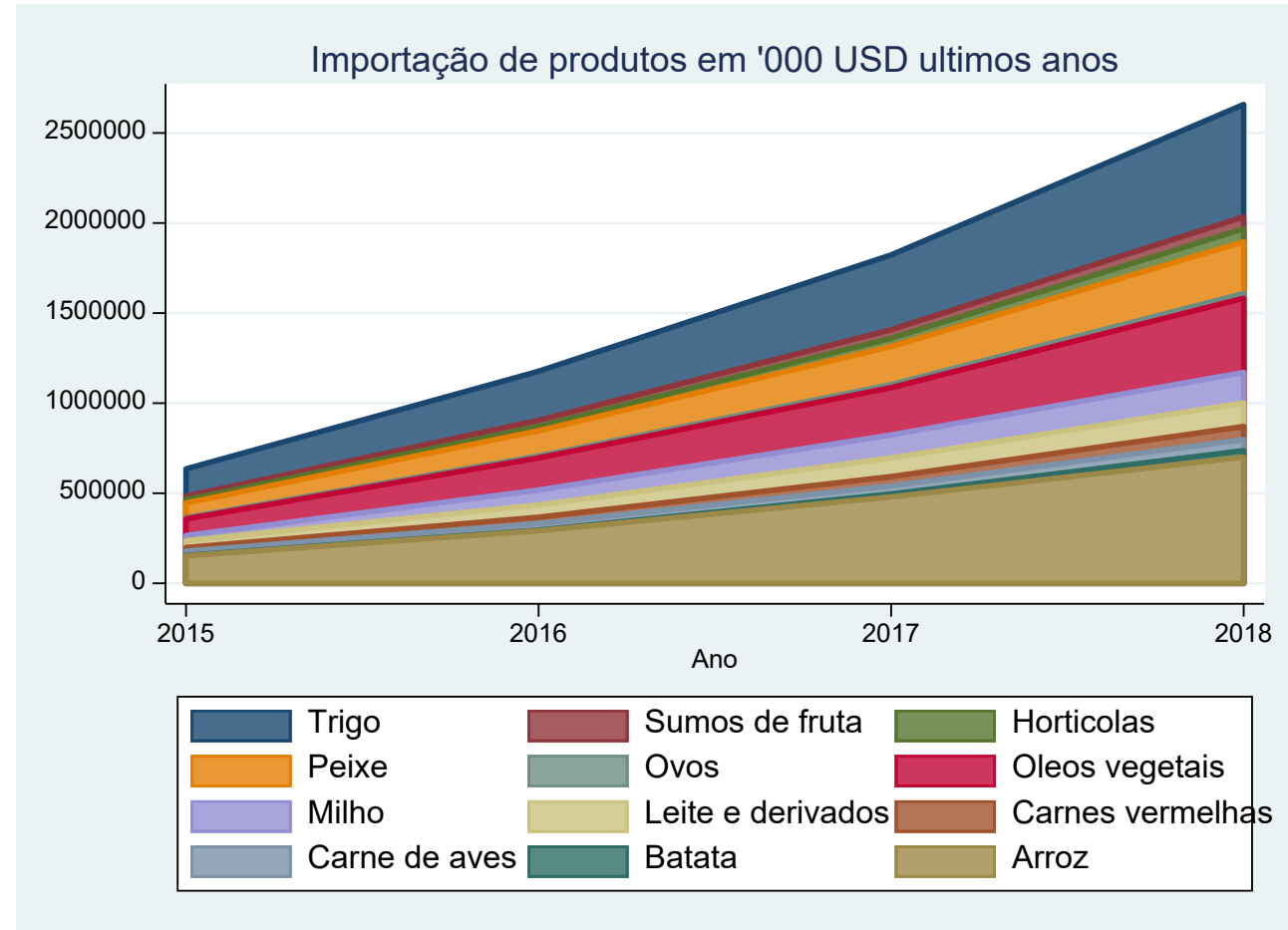
WTO Meeting

Maputo, November 12, 2020

# Roadmap

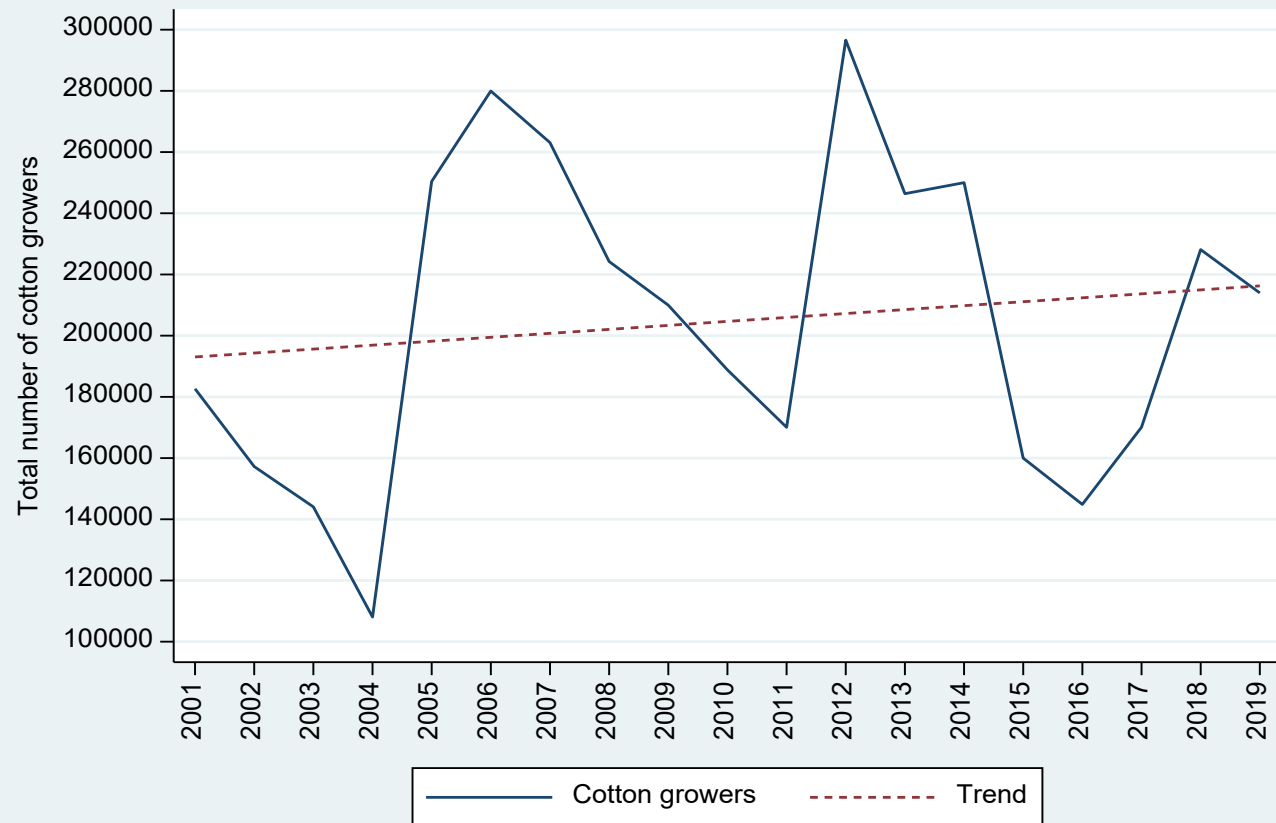
- Background
- Objectives
- Methodology
- Results
- Conclusions and recommendations

# Background (1)



- Cooking oil imports accounts for 14% of total imports of agricultural products (3<sup>rd</sup>);
- It is **Government priority** to revert the current situation by investing more on oilseeds and domestic production
- But cotton is mainly **grown for its fiber**

# Background (2)



Source: IAM - Mozambique Cotton Institute

- Cotton sector creates **20 thousand jobs**
- More than **200 thousand households grow cotton annually**
- Number of growers varies based on **cotton price and that of competing crops**

# Background (3)

- Cotton is one of the priority crops in Mozambique
  - Agricultural sector strategic documents highlight the importance of cotton, including the following key documents:
    - PARPA 2001-2009 (Poverty Reduction Strategy Papers)
    - PEDSA 2010-2019 (Strategic Program for the Development of the Ag Sector)
    - PODA 2013-2019 (Operational Plan for the Development of the Ag Sector)
    - PNISA 2011-2019 (National Plan for the Investment in the Ag Sector)
    - Programa 2020-2024 (the current development program)

# Background (4)

- Neighboring countries are already exploring cotton by-products for
  - Better household income stability
  - Value-chain addition in cotton production
- WTO has been supporting cotton by-product development in Tanzania, Zambia and Uganda, and intends to expand the support to Mozambique.

# Study objectives/Research questions

- Which cotton by-products should be prioritized;
- What is currently being explored in Mozambique, and who are the main stakeholders;
- What are the potential constraints for the development of these products, and what is their potential for poverty reduction.

# Methodology

- Literature review
- Interviews with key informants
- Analysis of secondary data
  - TIA/IAI – national agricultural surveys conducted by the Min. of Agric
  - Data from the Cotton Institute (IAOM)
  - Data on imports/exports from INE, the Statistics Bureau
- Validation Workshop in Nampula



# Examples of cotton by-products (1): cooking oil



- Cotton oil:

Health benefits,  
lowers the bad  
cholesterol

In Mozambique  
it is produced by  
GEIN

# Cottonseed oil

- Strengths:

- well-aligned with government overarching goal of reducing importation of cooking oil, and the industrial strategy and policy envisioning increased cooking oil production
- also aligned with government current agricultural development strategy of value addition
- greater impact on poverty reduction because the project would be located in the north where poverty and food insecurity are widespread

- Weaknesses:

- Farmers are skeptical that benefits will go more to the firm and there will not be spill-over effects to the smallholder farmers

- Opportunities:

- Employment creation in the cooking oil factory
- Investment in small oil press that can be run by smallholders
- Through social responsibility the industry can invest in the community

# Cottonseed oil (continued) – threats

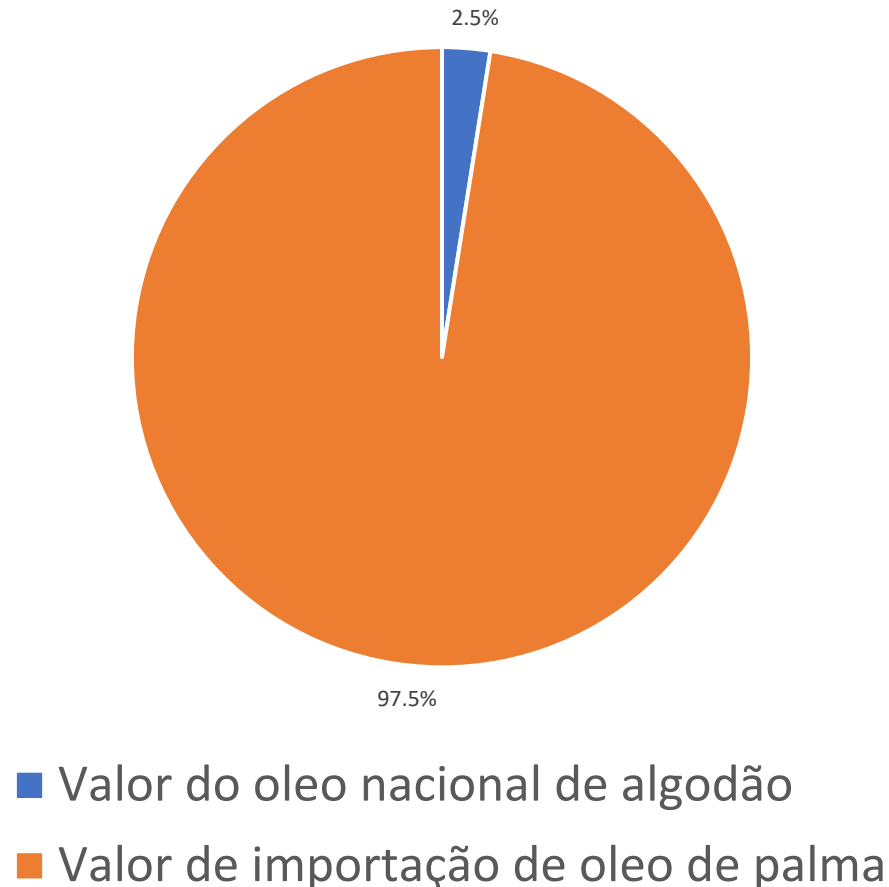


- **Only 8% of the rural population has access to electricity from the national grid, making it expensive to invest in agricultural projects (factories, agro-processing) (World Bank, 2018);**
- High transaction costs due to poor road infrastructure

# Main stakeholders of cottonseed oil

- GEIN
  - Produces cottonseed oil and soap
  - 1200 jobs
  - Collaborates with about 52 000 cotton farmers
  - Social responsibility: constructed boreholes to improve people's access to safe water
- Other stakeholders/ginners:
  - JFS and Plexus

# Value of local cottonseed oil vs palm oil imports



- Local production in blue
- Value of palm oil imports in orange
- Mozambique possesses huge potential to produce cottonseed oil locally
- But palm oil imported without Value Added Tax, therefore cheaper

# Examples of cotton by-products (2): soap



- Health benefits:
  - It is anti-oxidant
  - Revitalizes the skin
  - Moisturizes the skin
- In Mozambique it is currently produced by GEIN

# Soap

- Strengths

- Suitable for both industrial and artisanal production
- Industrial production creates more jobs and salaries can help boost the rural economy
- With artisanal production, farmers feel more in control of direct benefits as some have raised concerns about how an industrial product can benefit them

- Weaknesses

- Unavailability of cottonseed in sufficient quantity which prompts the importation of cheap palm oil as a substitute

- Opportunities

- CIRAD and GIZ are conducting a study to improve cottonseed quality in Mozambique

## Examples of cotton by-products (3): Briquettes



Used for cooking;

Used for heating;

Decreases the pressure over the exploitation of firewood

In Mozambique JFS has been purchasing cotton stalks to produce briquettes



# Briquettes

- Strengths

- Preferred cotton by-product by farmers because unlike cottonseed oil that goes directly to the industry, they have more control over it
- Can reduce the burden of women collecting firewood

- Weaknesses

- Current legislation encourages the destruction of cotton stalks

- Opportunities

- Increase household incomes through sales of cotton stalks

- Threats

- Since briquettes can also be processed by the industry, the price the industry pays for cotton stalks can be low and create disincentive for farmers

## Examples of cotton by-products (4): Animal feed



# Examples of cotton by-products (5): Fertilizers



Cottonseed Meal - How to enrich your ...  
[youtube.com](https://www.youtube.com)

- Improves soil fertility;
- Currently not traded but farmers collect it from GEIN

## Examples of cotton by-products (6): Particle board



- Used in the construction sector
- Currently not produced in Mozambique

# Comparison of Mozambique with other countries (1)

Year	Cropped area (ha) in Mozambique	Cotton production (ton)	Yield (ton/ha)
2008/09	165,248	60,303	0.3650
2009/10	125,775	41,287	0.3280
2010/11	128,000	70,649	0.5520
2011/12	188,890	184,181	0.9750
2012/13	142,857	67,392	0.4720
2013/14	157,143	82,063	0.5220
2014/15	120,000	45,824	0.3820
2015/16	101,404	42,641	0.4210
2016/17	114,068	35,832	0.3140
2017/18	180,835	65,653	0.3630
2018/19	100,000	60,000	0.6000

- Mozambique case quite similar with Tanzania, Uganda and Zambia
  - Low yields, 300 a 600 kg/ha
  - Low use of external inputs
  - Oil and soap are the main cotton by-products

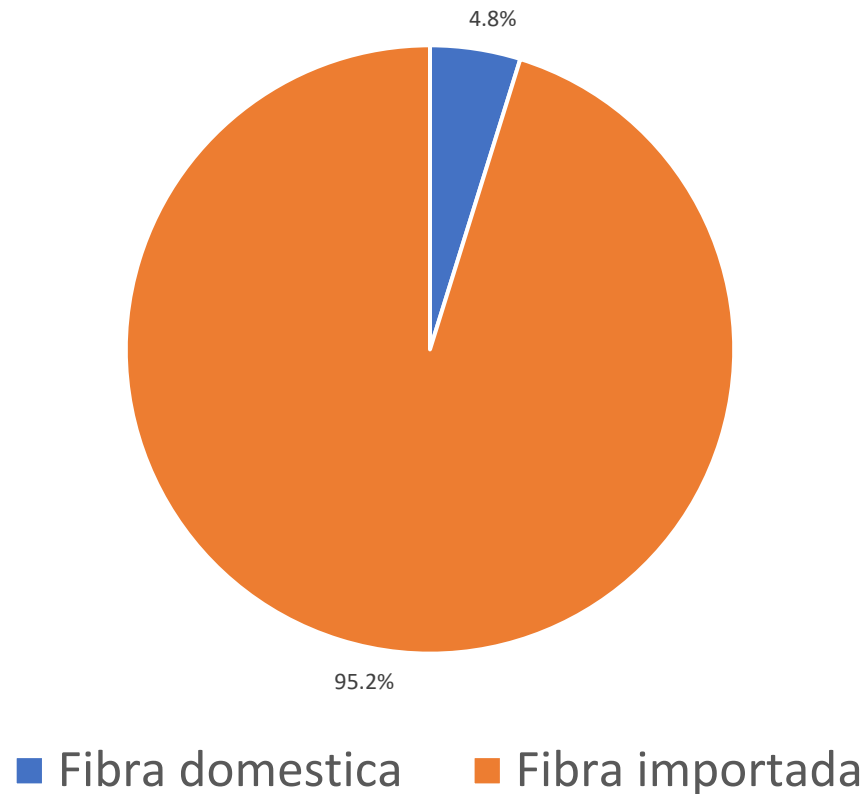
# Comparision of Mozambique with other countries (2)

- Cotton legislation encourages the destruction of crop residues
- Some differences with Mozambique
  - There is some use of animal feed in other countries whereas in Mozambique cotton producing areas practically do not have cattle

# Current initiatives other than cooking oil, soap, and briquettes

- MCM
  - Located in Marracuene, 30km from the capital Maputo city
  - They produce cotton thread
  - They work 6 times a week, 24 hours/day
  - They rely heavily on cotton fiber imports because the local available fiber is short in length

# Raw material: imported vs domestic fiber



- Domestic fiber in blue
- MCM installed capacity can consume all fiber produced locally in just 15 days
- Thus, even if Mozambique were to expand fiber production 20-fold, the local industry would still be able to absorb it all, provided good quality
- More efforts should be put in place in improve the quality, and reduce transport domestic transport costs

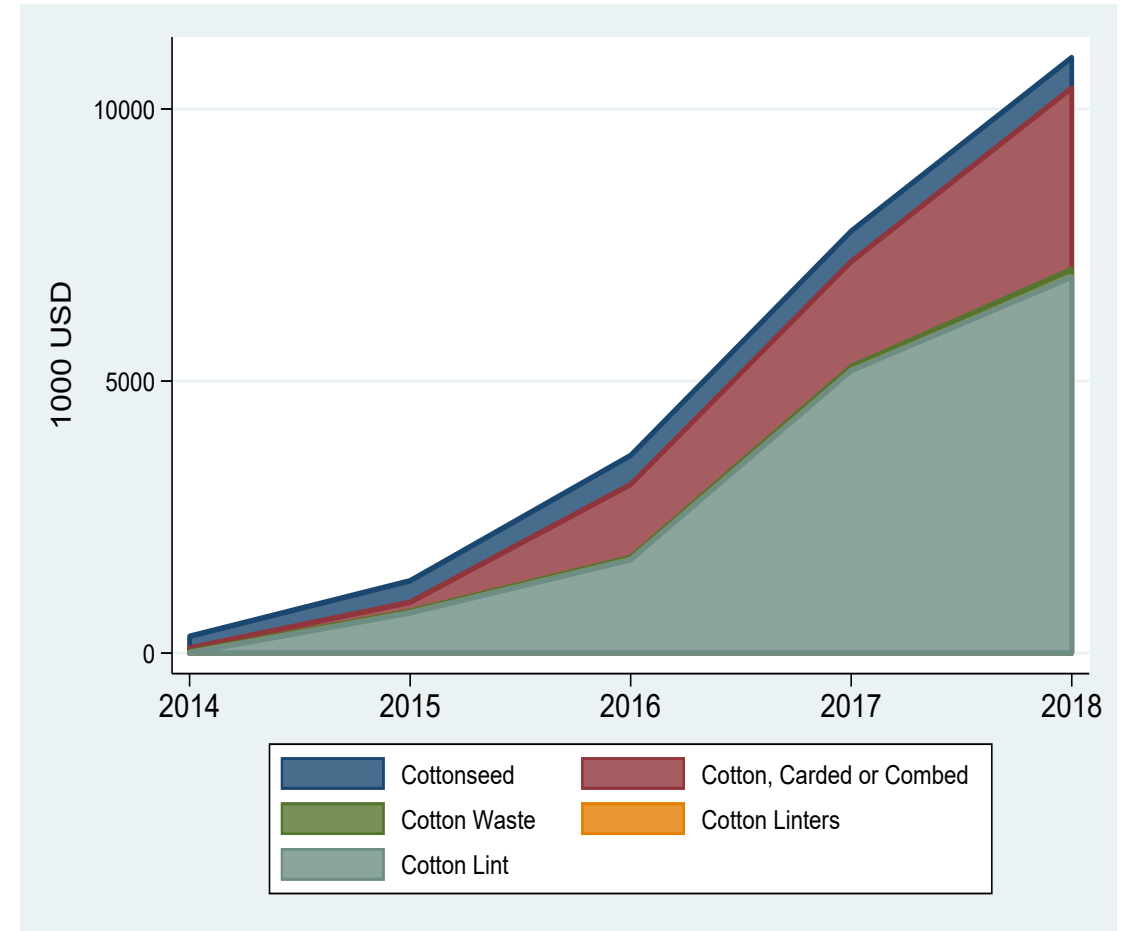
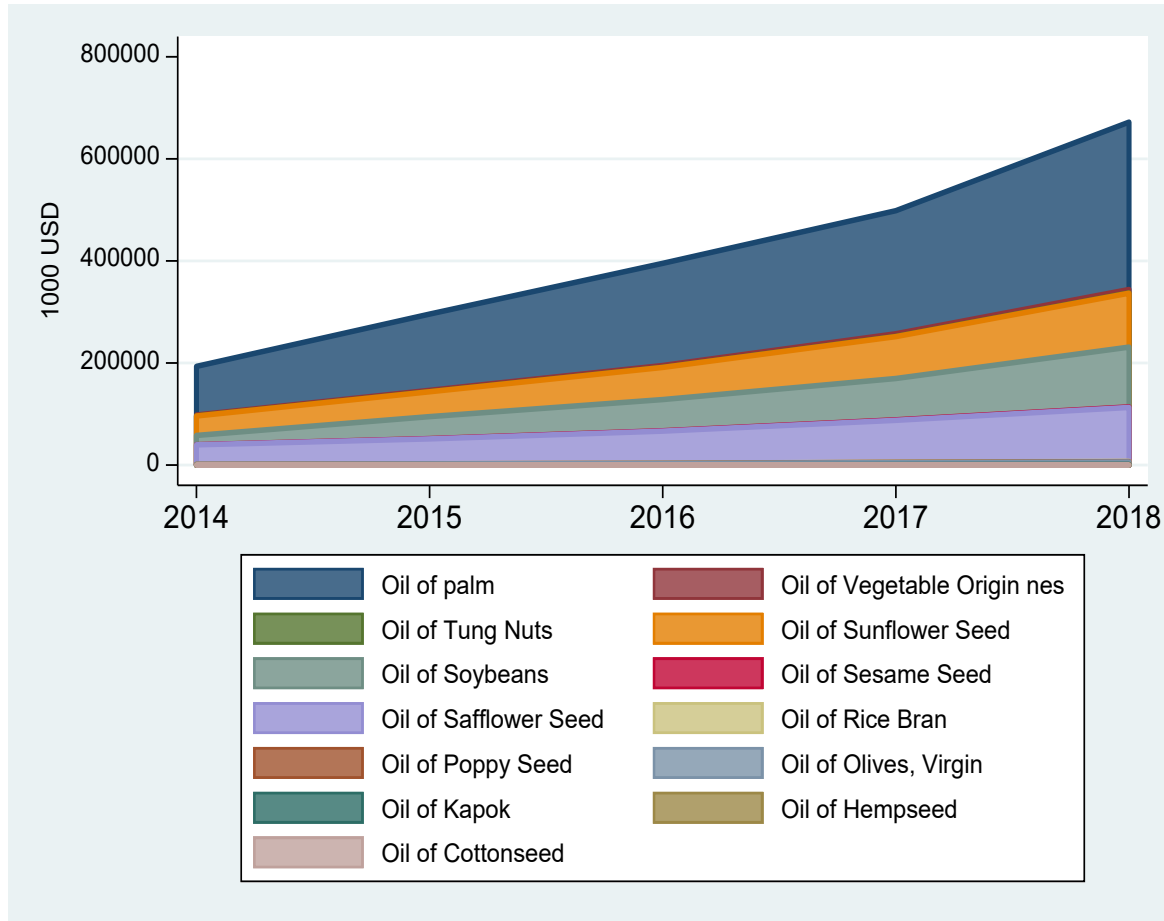


# Other initiatives

- Beyond Cotton – Cooperation Mozambique/Brazil
  - Scheduled for October 2019 – October 2022
    - Activities have not started due to COVID 19
  - Implementation provinces: Manica and Tete
- Artisanal textiles
  - Pilot project being implemented in Namialo/Nampula province
  - Farmers association of 30 members established in November 2019

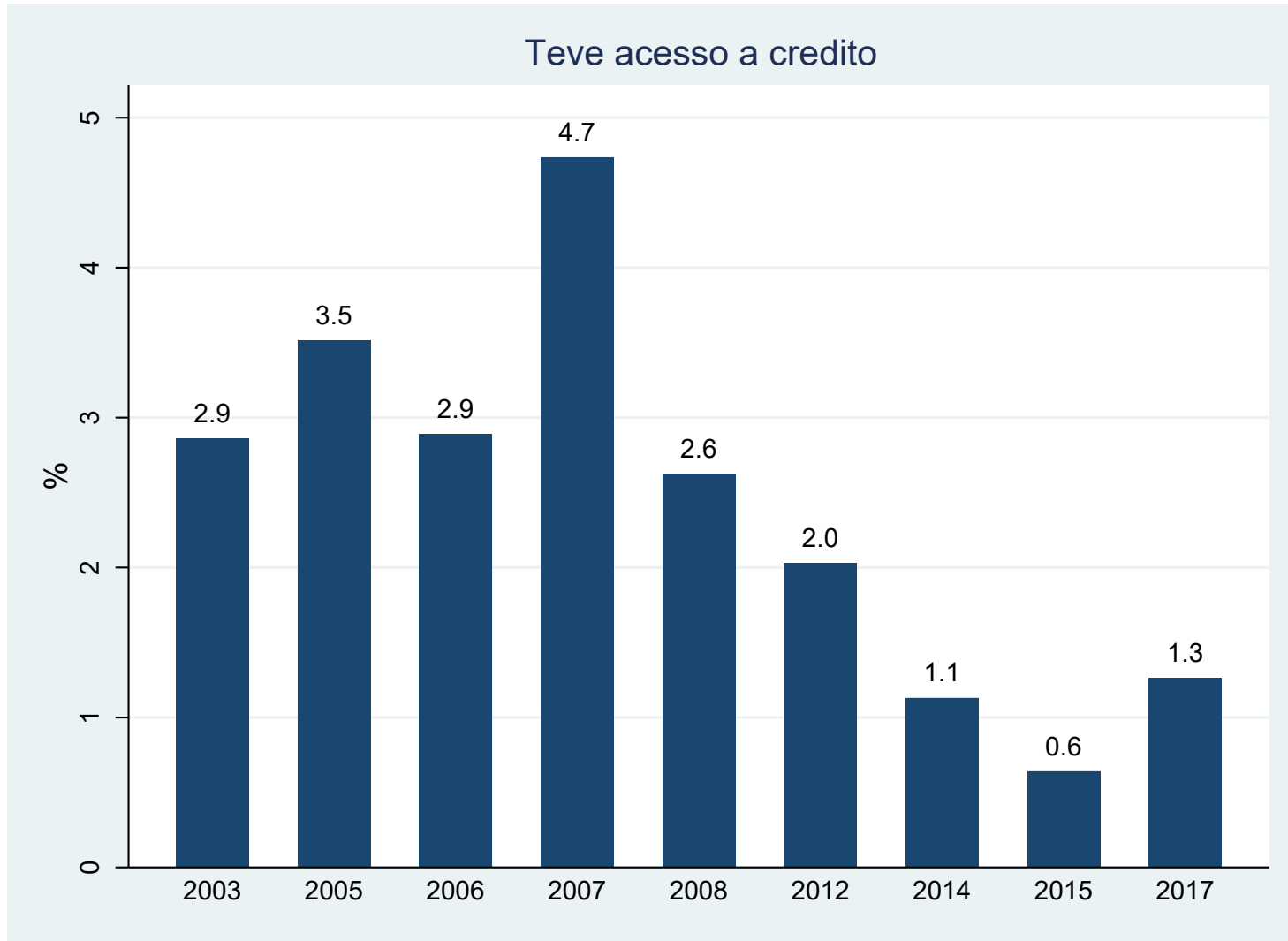
Some constraints to technology adoption

# (1) Unavailability of raw-material: importation of oil (left) and lint/linters (right)



- MCM and GEIN import large volumes

## (2) Weak access to agricultural credit



Data from the Ministry of Agriculture show:

- Less than 5% of farmers have access to agricultural credit annually last 17 years
- Currently less than 2% have access to credit

### (3) Current cotton legislation and lack of knowledge

- Current legislation encourages farmers to destroy cotton plant residues to prevent the spread of pests and diseases;
- There is lack of knowledge about cotton by-products.

# Which cotton by-product should be prioritized?

- Poverty and food insecurity are more widespread in cotton producing areas in the north;
- Reduction of the importation of cooking oil, and environmental conservation are top government priorities;
- It is better to prioritize **cooking oil, soap, and briquettes** (to reduce environmental pressure on the extraction of firewood), and the main stakeholders would be the following:
  - GEIN
  - JFS
  - Plexus
  - Outros

# Main conclusions and recommendations

- Cotton legislation should be revised to motivate farmers to invest in cotton by-products;
- There is large potential to replace imports, and there is a need to revise tax policies when importing palm oil and other raw materials that can be produced locally;
- More investments should be directed to improve yields and quality