Integrating Food and Nutrition Security into Economic Transformation and Industrialization Agenda:
How can agriculture be the driver rather than follower of economic transformation in Tanzania?

New Dodoma Hotel, Dodoma

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Industrialization and Edible Oils

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Objective: The study assesses market opportunities, value chain dynamics and potential investments in Tanzanian edible oils

- The study is informed by the Government of Tanzania’s commitment to industrialize the economy, as framed in the latest Five-Year Development Plan
- Edible oils value chains have been identified as key to the success of the agriculture sector
- Two other edible oils studies were conducted in parallel.
  - Tariff regime study (Palladium I4ID)
  - Demand analysis (MSU/ASPIRES)
- Findings will be used by the government to prioritise sector support, and enable and attract new investment into local value addition
**Methodology:** Sunflower, palm and cotton value chains were selected from initial oil crops based on assessment criteria below, and stakeholder group priorities.

- **Soybean** – small but rapidly growing seed industry (currently for animal feed high premium on oil vs. seeds and large global market; currently low smallholder participation,

- **Groundnut** – high smallholder participation in nut farming, but gains from establishing oil industry are unclear.

- **Sesame** – limited domestic oil production. Low smallholder participation in oil.

- **Sunflower oil** – high and growing domestic consumption/production, large smallholder base; large potential for improved seed supply and further processing / packaging.

- **Palm oil** –a) large and growing domestic consumption, and b) high import levels (97%); further opportunities in refining.

- **Cotton** – high smallholder participation, but commercial opportunities for oil currently limited. However, strong government focus may increase commercial opportunities.
Methodology: Following desk research, we conducted 150 interviews across 5 regions - in areas with the most stakeholders in the respective value chains

1. Mwanza

*Cotton:* interviewed LGAs, input companies and providers, farmers, aggregators, ginners, crushers, retailers, and consumers

2. Kigoma

*Palm:* interviewed LGAs, input providers, farmers, plantations, aggregators, crushers, refineries, distributors, retailers, consumers, and service providers

3. Tabora

*Sunflower + Cotton:* interviewed LGAs, input companies and providers, farmers, aggregators, crushers, refineries, distributors, retailers, consumers, and service providers

4. Dodoma & Singida

*Sunflower:* interviewed LGAs, input companies and providers, farmers, aggregators, crushers, refineries, distributors, retailers, consumers, and service providers

5. Dar es Salaam

*Market Research & Stakeholder Consultation:* interviewed end users and edible oils stakeholders including donors, ministries, regulators, financiers, retailers, and private sector players
Methodology: Value chain and cost analyses were used to develop investment approaches and assess their feasibility.

1. Identify

2. Evaluate

3. Assess

4. Address

5. Recommend
**Analysis:** Palm and cottonseed value chains face more significant growth challenges than sunflower

<table>
<thead>
<tr>
<th>Critical enablers for value chain growth</th>
<th>Severity of growth barriers</th>
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</thead>
<tbody>
<tr>
<td><strong>SUNFLOWER</strong></td>
<td></td>
</tr>
<tr>
<td>Improving access to high yield seeds</td>
<td>Medium</td>
</tr>
<tr>
<td>Providing extension services focused on Good Agricultural Practices to increase production and reduce costs</td>
<td>Low</td>
</tr>
<tr>
<td><strong>PALM</strong></td>
<td></td>
</tr>
<tr>
<td>Improving access to high yield seeds</td>
<td>High</td>
</tr>
<tr>
<td>Large scale production of palm</td>
<td>High</td>
</tr>
<tr>
<td>Lowering transport costs</td>
<td>Medium</td>
</tr>
<tr>
<td><strong>COTTON</strong></td>
<td></td>
</tr>
<tr>
<td>Processing overcapacity in the sector (5x seed supply) limits need for additional investment even with production growth</td>
<td>Medium</td>
</tr>
<tr>
<td>Improving awareness of cottonseed oil in the local consumer market</td>
<td>High</td>
</tr>
</tbody>
</table>
Findings: Prioritized investments in production and refining are necessary to realize the potential of the edible oil industry

<table>
<thead>
<tr>
<th></th>
<th>PRODUCTION</th>
<th>CRUSHING</th>
<th>REFINING</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUNFLOWER</td>
<td>High seed demand to meet crushing and refining needs</td>
<td>30% utilization of existing crushing capacity</td>
<td>Opportunity to displace palm’s demand share of 64%</td>
</tr>
<tr>
<td>PALM</td>
<td>Production of only 2%, but high palm oil demand</td>
<td>Artisanal crushing that does not meet global standards</td>
<td>Contingent on increased fruit production</td>
</tr>
<tr>
<td>COTTONSEED</td>
<td>Increasing production with government support</td>
<td>50% utilization of existing crushing capacity</td>
<td>Opportunity to expand the 2% national demand</td>
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Relative priority of investment: Low | Medium | High
### Findings:
Investments in palm and cotton can be made more attractive in the medium- to long-term, if challenges within the two value chains are resolved.

<table>
<thead>
<tr>
<th>Sunflower</th>
<th>Cotton</th>
<th>Palm</th>
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<tr>
<td><strong>Sunflower</strong></td>
<td><strong>Cotton</strong></td>
<td><strong>Palm</strong></td>
</tr>
<tr>
<td>• The <strong>highest share (83%) of domestic production volumes</strong></td>
<td>• <strong>Underutilized crushing capacity</strong> (c. 50% utilization)</td>
<td>• <strong>Poor access to high-yielding seeds.</strong> Farmers require concessionary financing to offer long-term and low-interest loans</td>
</tr>
<tr>
<td>• Second <strong>most consumed edible oil</strong> in Tanzania (30% of consumption)</td>
<td>• <strong>Low incentive for ginners to crush cottonseeds</strong> given low margins</td>
<td>• <strong>Poor land access for plantation models</strong> to circumvent smallholder input finance issues</td>
</tr>
<tr>
<td>• <strong>Strong distribution networks</strong> between farmers and crushers</td>
<td>• <strong>Low consumer awareness</strong> of double-refined cottonseed oil beyond Lake Zone</td>
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**Sunflower provides the best opportunity to expand domestic edible oils production**
Findings: Sunflower provides the best opportunity to expand domestic edible oils production

Proposal:
Replace crude palm oil imports with c. 200,000 MT of domestically produced refined sunflower oil
Implications: Addressing the bottlenecks that limit offtake will unlock several investment opportunities for the sunflower sector.

**Inputs**
- High-yielding improved seeds
- Extension services

**Extension services**
- Smallholders
- Cooperatives

**Middlemen / agents**
- Small crushers
- Large refineries

**Crude oil**
- Refined oil
- Oily seedcake
- De-oiled seedcake

**Sold to**
- Animal feed industry
- Rural consumers
- Animal feed industry

**Local solvent extraction and refining**
- High availability, low prices
- Organic oil exports

**Investment and sector support to the sunflower value chain will benefit**
- Tanzanian smallholders and SMEs who can help serve domestic oil demand
Implications: Farmers could use high-yielding seeds, and good agricultural practices to increase production; these efforts could be supported by development partners.

- **1.6m** Existing sunflower farmers
- **2.6m** Farmer livelihoods improved

Farmers should use high-yielding seeds and good agricultural practices to support the value chain:
- Improved seeds increase yields by c. 3x current production volumes
- Spacing alone increases farmer yields by 25%, leading to higher incomes from seed sales

Development partners can support farmers’ efforts through training and financing programs:
- Provide high quality seeds to farmers
- Train farmers in Good Agricultural Practices,
- Support access to markets, both domestic and exports
- Support organic certification and compliance

Notes: Based on refined oil production increase of 188,000 MT, 28% seed oil content, and average annual seed production of 0.64 MT per farmer.
Implications: The sunflower value chain can create additional jobs in small and medium enterprises

2,800
Existing crushers and aggregators

Potential to include 7,500 additional SMEs

10,300
SMEs included in supply chain

VAT reductions lower costs and improve margins all through value chain

• Lower producer costs allow expansion of local production and processing
• Lower consumer prices help to increase local demand for refined sunflower oil
• Industry links are supported by cheaper seed and animal feed inputs

SMEs should improve processing efficiency and off-taker relationships

Crushers
• Improve crushing efficiency by adopting better technology
• Supply additional refineries and consumers with crude oil

Aggregators
• Increase presence in new sunflower production areas
• Offer farmers and crushers fair (market) prices for inputs to build trusting relationships

Notes: Based on refined oil production increase of 188,000 MT, 28% seed oil content, and average annual seed production of 0.64 MT per farmer
Implications: Banks should develop more farmer-oriented products and programs to ensure farmer cashflows and industry expansion.

- **TZS 300k**
  - Average input loan per farmer
  - Up to 1m more farmers could grow sunflower

- **TZS 300B**
  - in credit services to farmers

Farmers and SMEs will require financing for inputs and processing equipment to meet rising demand:
- Farmers need access to affordable loans to invest in improved seeds and inputs
- SMEs need working capital to purchase farmer produce and invest in processing equipment, seeds and inputs

Banks can support farmers by developing new credit and insurance products to fit their needs:
- Innovate tools for credit checking and risk management
- Train farmers on savings and business practices
- Expand access to physical and mobile banking services
- Partner with input and training providers

Source: Finscope 2017 Financial Inclusion by survey
Implications: New investments in sunflower solvent extraction are needed to make sunflower oil competitive to imports

- **20,000 MT** of refined sunflower oil currently produced by solvent extraction
- **188,000 MT** of new solvent extraction required for import replacement
- **12,000 MT** of additional refined oil projected by 2022

Investments in solvent extraction are needed to drive down production costs:
- Seedcake is a low cost input to refining, compared to seed and crude oil
- Of the 5 major sunflower refineries, only Mt. Meru has solvent extraction capacity
- At least 200,000 MT of oil needed to displace food-use oil imports, through solvent extraction

Investments in solvent extraction will help to drive increases in seed output:
- Lower prices for refined sunflower oil will encourage demand for domestic oils
- Increased processing output will require more seed as raw material
- Seed demand will create farming opportunities and support employment throughout the sunflower value chain, from farms to feed industries
Implications: Refined sunflower oil offers a healthier oil variety, that when processed using solvent extraction could be sold at retail price that is on par with refined palm.

- **50%**
  - Saturated fats in refined palm oil
  - Switching oils provides an **80% reduction** in saturated fats intake

- **10%**
  - Saturated fats in sunflower

- **TZS. 6,500**
  - Price per liter of refined sunflower oil
  - Potential cost savings of TZS 3000* from new entrants

- **TZS. 3,500**
  - Per liter of refined sunflower oil

Lower retail price will increase demand, that is driven by health benefits of sunflower:

- Retail **price on par with imports**, and can lead to substitution
- **Perceived health benefits** of sunflower oil drives consumer demand
- Refined sunflower oil is a **healthier oil variety than palm oil**, which has more saturated fat content

*Assuming solvent extraction is used for processing*
**Recommendations:** The government should support value chain actors and create policies that encourage investments in locally produced sunflower oil.

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<tr>
<td>• Support <strong>temporary VAT zero-rating</strong> of domestically sourced and produced sunflower products to make sector price-competitive</td>
</tr>
<tr>
<td>• <strong>Maintain 10% tariff</strong> on imports of crude palm oil</td>
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</tbody>
</table>

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<th>Practice</th>
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<td>• Support the SAGCOT Center in creating a platform for <strong>rapid seed registration and local multiplication</strong> for wider access and lower prices of high-yield seed</td>
</tr>
<tr>
<td>• <strong>Train farmers on good agronomic practices:</strong> high-quality inputs use and proper seed spacing</td>
</tr>
<tr>
<td>• Support <strong>seed grading and quality premiums</strong> to farmers from offtakers</td>
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**Impact:**

- **Farmer incomes and job opportunities**
- **FOREX savings and corporate tax revenues**
- **Local industries and value addition**
**Recommendations:** VAT-supported import replacement could *increase* edible oils tax revenues by at least 12% and lower the national import bill by up to TZS 413B in later years.

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**Public revenue from edible oils**, (TZS B)

- Current model
- Zero-rated

- Corporate tax increases are higher than lost VAT revenue

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**Projected palm import bill** (TZS B)

- Potential to completely displace palm imports over time

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**Current model**

- Zero-rated

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**Initial investment**

- 613

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**Import displacement**

- 200

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**+12%**

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**-28**

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**-413**
GROWING THE EDIBLE OILS INDUSTRY IN TANZANIA

- **TZS. 25b** initial minimum investment committed from the private sector to refine sunflower oil
- Up to **1500** direct jobs (permanent hires), and **45,000** seasonal jobs generated from additional solvent extraction investments to replace palm imports
- Increasing refined oil production to 200,000 MT could attract **c. 1,000,000** new farmers into sunflower
- Potential to include **7,500** SMEs (small crushers + aggregators) in the value chain
- **TZS. 400 billion** in annual forex saved (from import substitution/reduced import bill)
- **30m** more consumers of a healthier product (**80% less saturated fats** in sunflower than palm oil)
- **200,000 MT** additional domestic oil production from **20%** increase in extraction efficiency