

## Background

Increasing food self-sufficiency of Sub-Saharan Africa could reduce the high food price escalations that are often related to the increasing demand for, and import of, food commodities.

In Tanzania, as in most of Sub-Saharan Africa, edible oil crops production has been among the most vibrant activities. Currently, annual edible oil demand in Tanzania is increasing at a rate of 3 % driven by population growth and increased health concerns.

The data show that Tanzania domestic production is about 40 % of the national edible oil requirement while the deficit is imported.

Policy makers are keen on keeping edible oil affordable while also increasing domestic production. Hence, the government imposed a 10% import tariff on imported edible oil to foster local production.

Regardless of the government's intention, it is unclear how the Tanzania's edible oil sector and, in particular, the sunflower sub sector has responded to the growing demand.

## Objective

To discern the response of sunflower edible oil production to demand in Tanzania.

## Research Question

Is there a long run relationship between the demand for local sunflower edible oil and its major determinants.

To answer this, we examine the causal and dynamic relationships to see if there are interdependence among the variable in the short and long run exist.

## Methods

This study used a multiple log-linear regression model to estimate the relationship between sunflower edible oil consumption, sunflower and palm oil prices, and economic growth.

The Nerlove's Partial Adjustment model is adopted and specified in the short run.

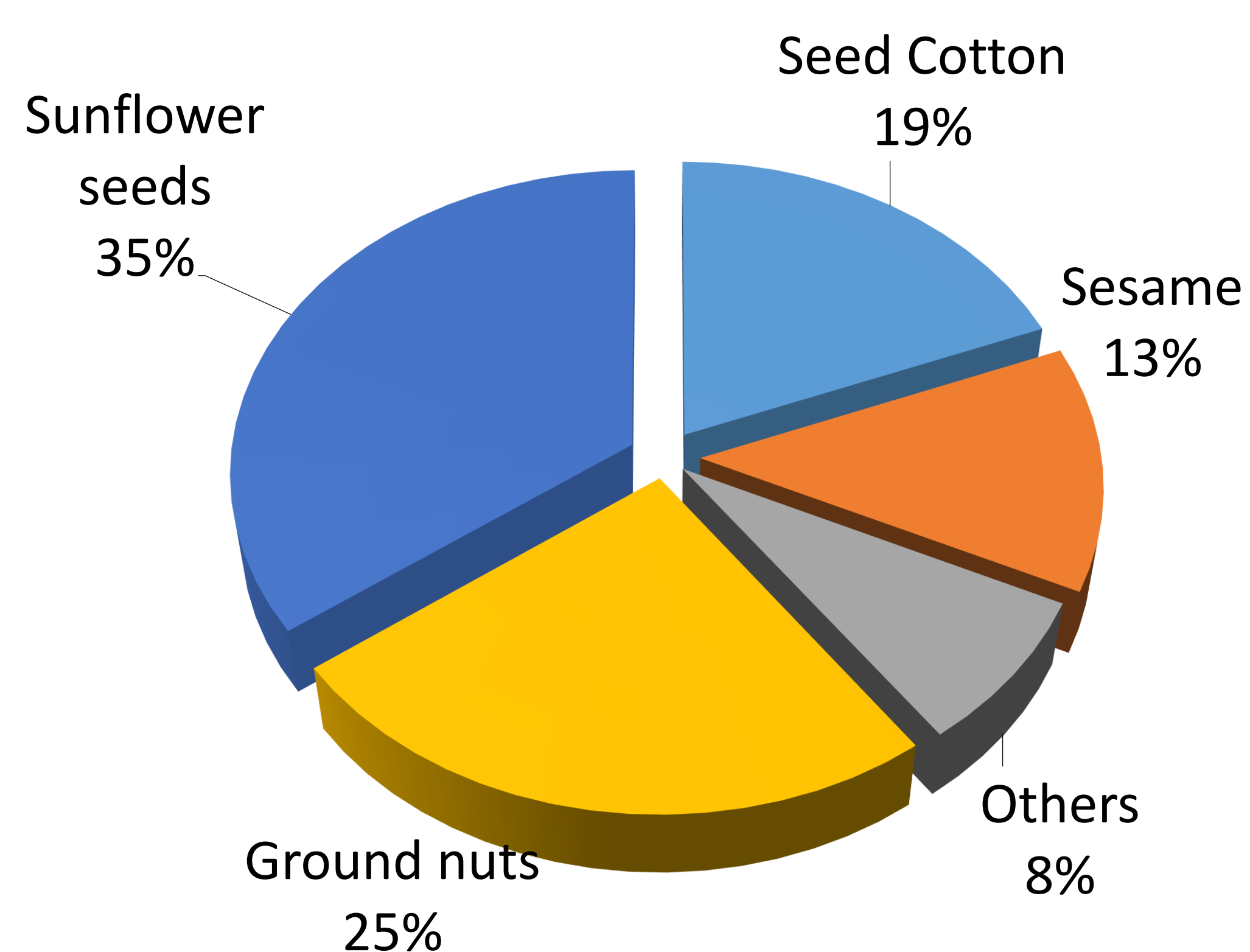


Figure 1: Edible oil sources in Tanzania

## Data description

The study used annual time series data ranging from 1995 to 2014, and considers the sunflower oil sub-sector for the purpose of estimating price and income elasticities of oil demand in Tanzania.

The variables used are per capita sunflower oil consumption (in metric tons), international oil prices converted in local currency, and per capita real GDP (in Tanzania Shillings).

$$\ln D_{ts} = \ln \alpha + \beta \ln P_{st} + \gamma \ln Y_t + \mu \ln P_{pt} + \delta \ln D_{t-1} + \varepsilon_t$$

Where:

$D_{ts}$  = Per capita consumption of sunflower oil in year t

$D_{t-1}$  = Lagged per capita consumption of sunflower oil

$P_{st}$  = Real price of sunflower edible oil in year t

$P_{pt}$  = Price of palm oil in year t

$Y_t$  = Real GDP per capita in year t

$\varepsilon_t$  = Assumed random error term

$\ln$  = Natural logarithm

$\alpha, \beta, \gamma, \delta$  are coefficients to be estimated

## Results and policy recommendation

The short run price elasticities for sunflower oil and palm oil are 0.087 and -0.284, while the long run elasticities are 0.114 and -0.369 respectively.

Short and long run elasticity for income are 4.077 and 5.301 respectively.

The speed of adjustment of per capita sunflower edible oil consumption was relatively high at 77% per period.

The results indicate that Tanzania's sunflower edible oil sub sector may not have enough capacity to produce and to achieve self-sufficiency in the near future.

This situation can be improved if the Tanzanian Government reconsiders its taxes rate on imported technologies and other materials required for processors. Hence, moving the sector toward self-sufficiency.