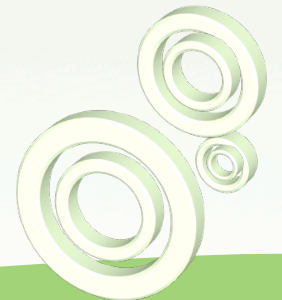


# Can Africa Escape the Maize?: A Look Into the History of How One Crop Changed the Diet of an Entire Continent



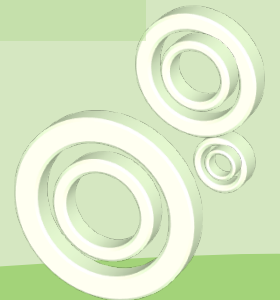
# General Outline

## I. Refresher

- Origin
- Types
- Cultivation
- Dispersal
- Uses

## II. Africa

- Arrival
- Consumption
- Explanations
- Summary & Implications



# Origin of Maize

*Zea mays* (Gramineae) “grass family”

- Original habitat & ancestor obscure
- Best Estimate:
  - Teosinte was the wild ancestor of maize
  - Central America Mexico around (7,000 yrs. ago)



- <http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=10975&oldid=5678>



# Common Types of Maize

Around 50 Species with 5 phenotypes



Flour



Sweet



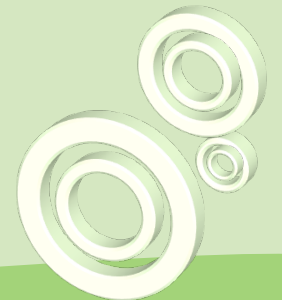
Pop



Dent (soft) → soups

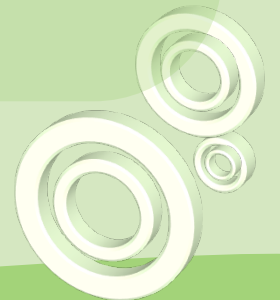


Flint (harder) → gruel



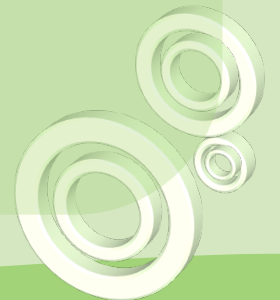
# Consumption of White vs. Yellow Maize

- 90% of Africa's total maize production is white
- 90% of world production of maize is yellow



# Cultivation/Dispersal

- Maize does not exist in a wild state
- Not naturally dispersed
  - Husk covers seeds
- Cannot reproduce without human intervention



# Uses: Developed World

As Industrial Raw Material:  
Embryo → cornstarch etc.

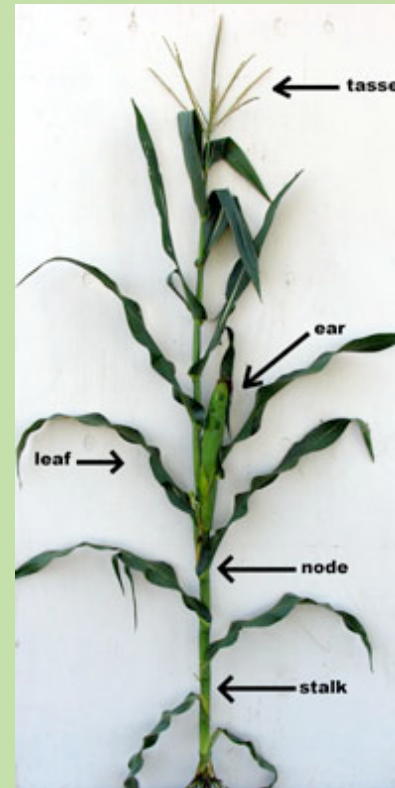
Grain → alcoholic beverages

Stalks → paper and yarn

Pith → light packing material

Inner husks → cigarette papers

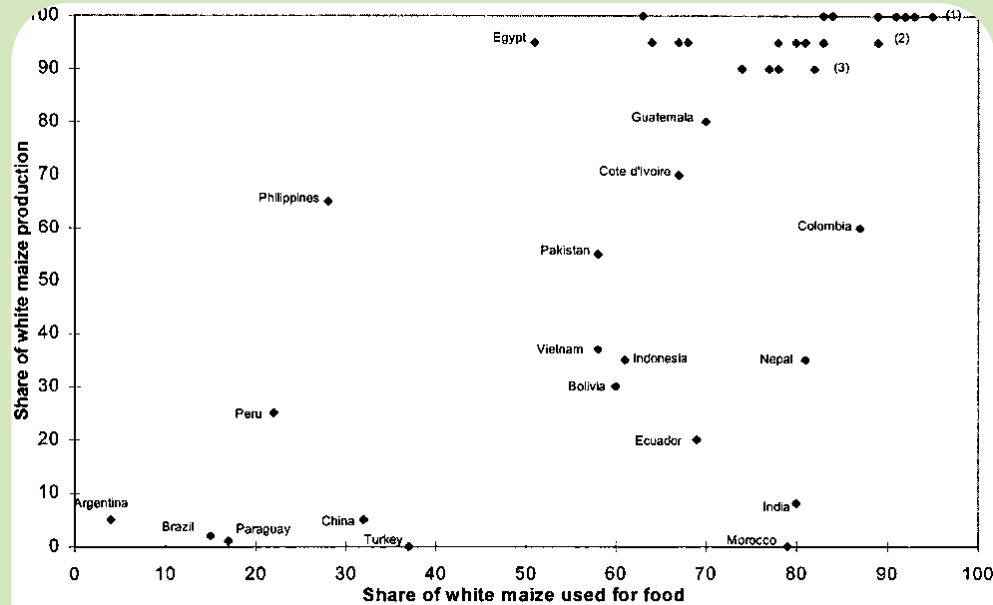
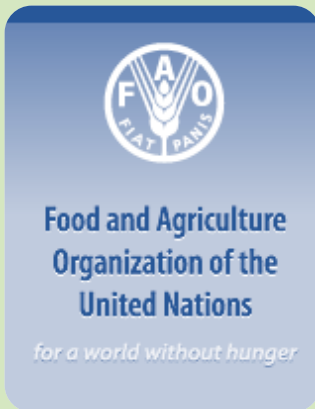
Cobs → fuel, explosives, plastics,  
synthetic rubber and nylon



# Uses: Africa

– What proportion of harvested maize is used as a food resource?

– 95%!

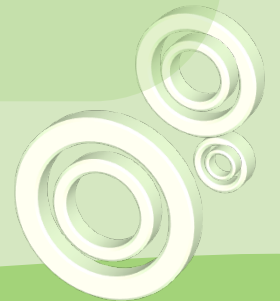


(1) From left to right: Uganda, Tanzania, Angola, Kenya, Somalia, Malawi, (Mozambique, Ethiopia, Zambia) and Lesotho.  
(2) From left to right: Mexico, Benin, Zimbabwe, El Salvador, Nicaragua, Zaire, Honduras and Cameroon.  
(3) From left to right: Nigeria, Ghana, Togo and Venezuela.

<http://www.fao.org/docrep/W2698E/w2698e01.gif>

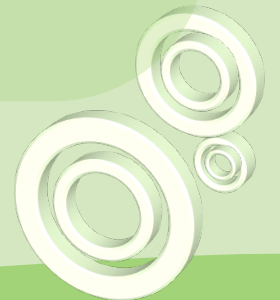


# Part II



# Arrival

- 1500 → The New World provided Africa with many new cultigens:
  - cassava, beans, potatoes, and maize
- African natives used a variety of maize until 20<sup>th</sup> century



# Arrival of Hybrids

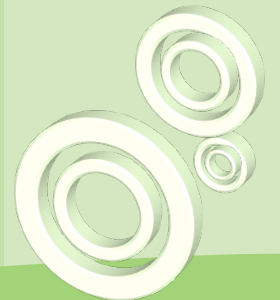
20<sup>th</sup> century:

- Large scale Industrialization
- Monocropping of hybrid white corn
- Colonial Rhodesia (1964)SR-52
  - 48% increased yields
  - 150 day long season
  - No fertilizer



Farmers Happy : )

- high yielding & profitable
- Less labor intensive than traditional crops



(Staatz & Eicher, 553)

<http://ohhs71.tripod.com/sitebuildercontent/sitebuilderpictures/.pond/corn-emil.jpg.w560h379.jpg>

# Consumption

- Maize displaced indigenous crops that were higher in nutrition:

## Sorghum



## Yams

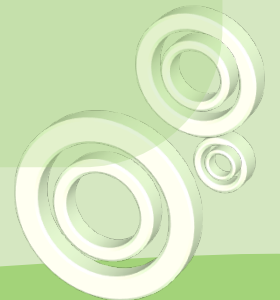


## Millet

([www.flickr.com/photos/marksda1/1811287292/](http://www.flickr.com/photos/marksda1/1811287292/))

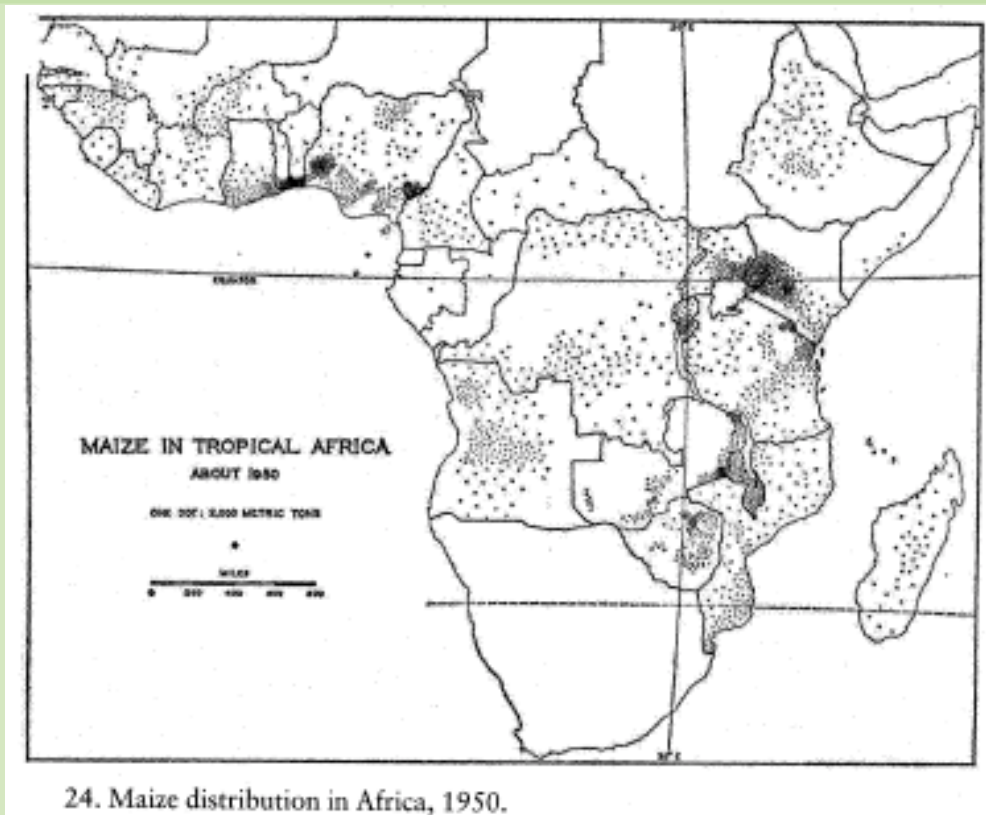
([http://www.farmsciencegenetics.com/stock/pearl\\_millet\\_thumb.jpg](http://www.farmsciencegenetics.com/stock/pearl_millet_thumb.jpg))

([www.onlineathens.com/images101003](http://www.onlineathens.com/images101003))

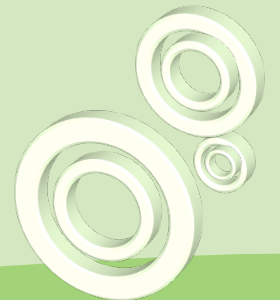


# Consumption

20<sup>th</sup> cent on: Maize continued to spread across Africa

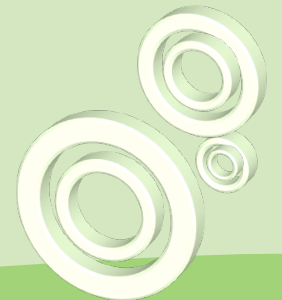
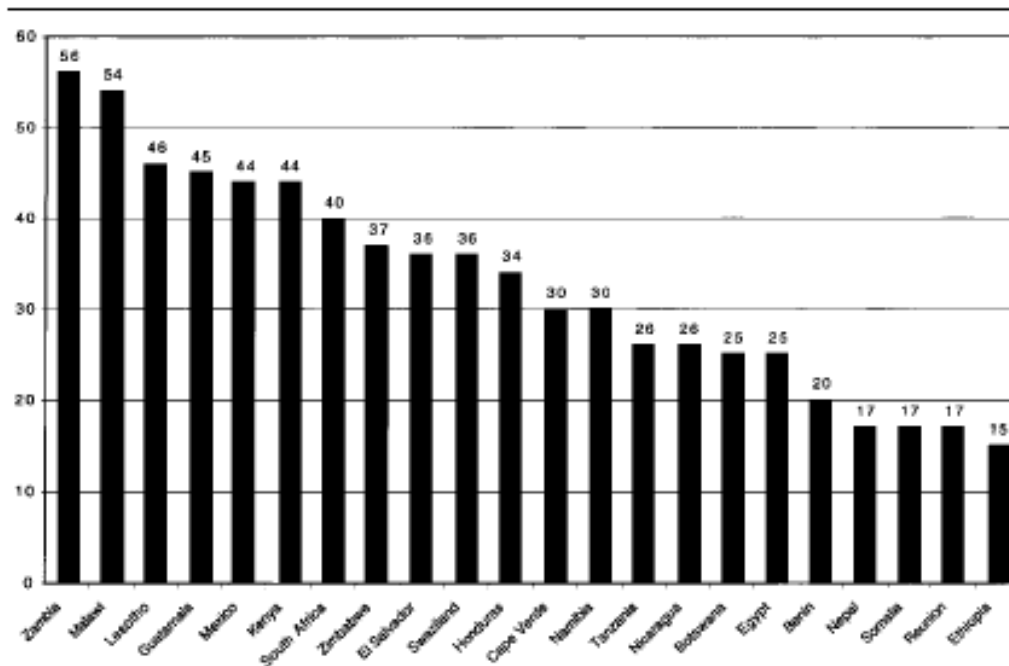


24. Maize distribution in Africa, 1950.

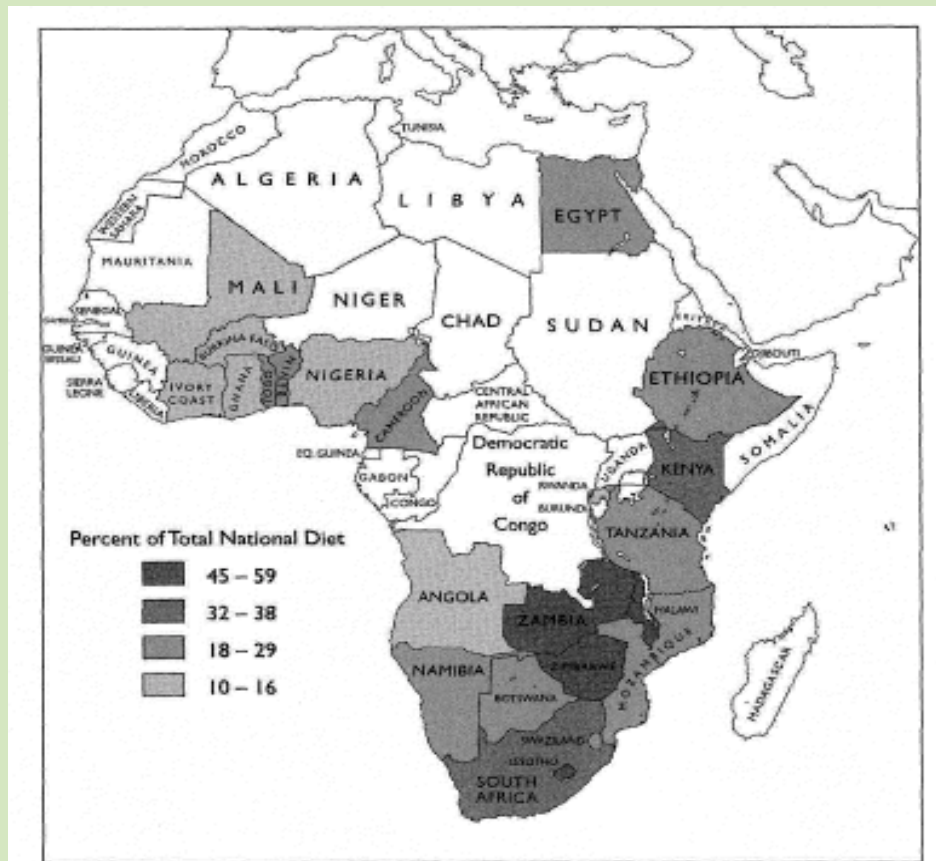


# Maize Consumption: 2001

TABLE 1:  
*Maize Calorie Consumption as % of Total Diet*



# Maize Consumption 2002



2. African maize consumption as percentage of national diet, 2002.

# Possible Explanations

- Hammer Mill 1920s
- Cheaper processing
- Maize vs. millet & sorghum
- No de-hulling prior to hopper for grinding



(Smale and Jayne, 19)

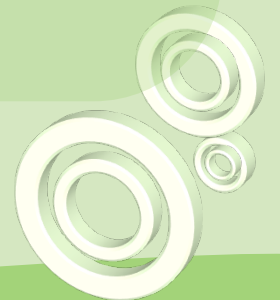
(Shopo 1985) as cited in (Smale and Jayne)

<http://georgiafarmwoman.blogspot.com/2008/11/grinding-oats-with-hammer-mill.html>



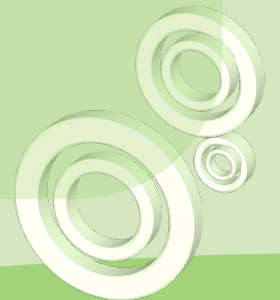
# Possible Explanations

- British starch market: 1920's
  - Demand for white maize
    - Primarily dent
    - Easier on mills



# Summary & Implications

- Since the arrival of maize in the 1500's:
  - Grown to be the most consumed food in the continent
  - Poor nutrition has emerged due to a high dependency on maize as top food source
  - Monocropping still a risk to farmers



# QUESTIONS?



<http://en.wikipedia.org/wiki/File:CornWaterTowerRochesterMNday.jpg>

<http://www.agry.purdue.edu/ext/corn/pix/FldofCorn.jpg>

