

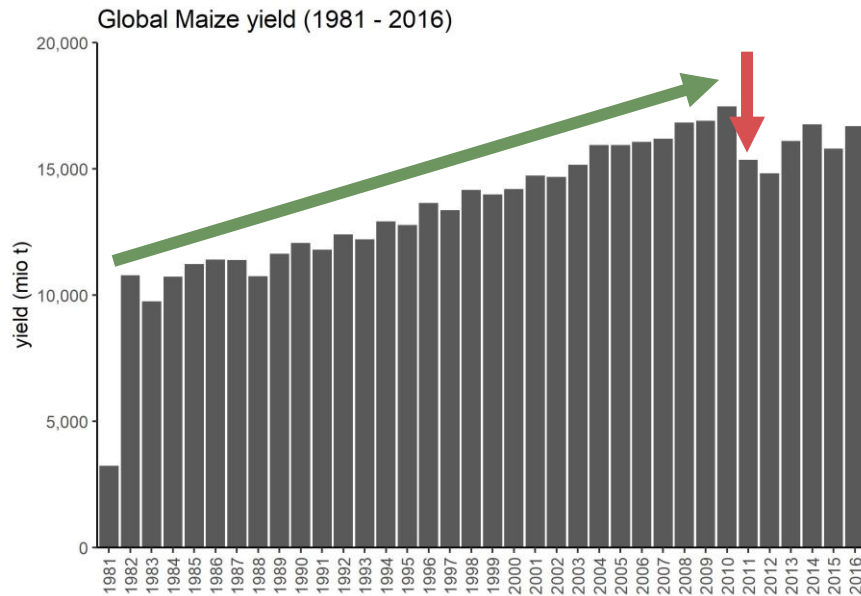
The background of the slide is a photograph of a lush green cornfield. The corn plants are tall and healthy, with long, pointed leaves. The sky above is a clear, bright blue, filled with large, white, fluffy clouds. In the top-left corner, there is a green diagonal stripe.

# Analysis of global maize production between 1981 and 2016

CrisprCat  
September 2022



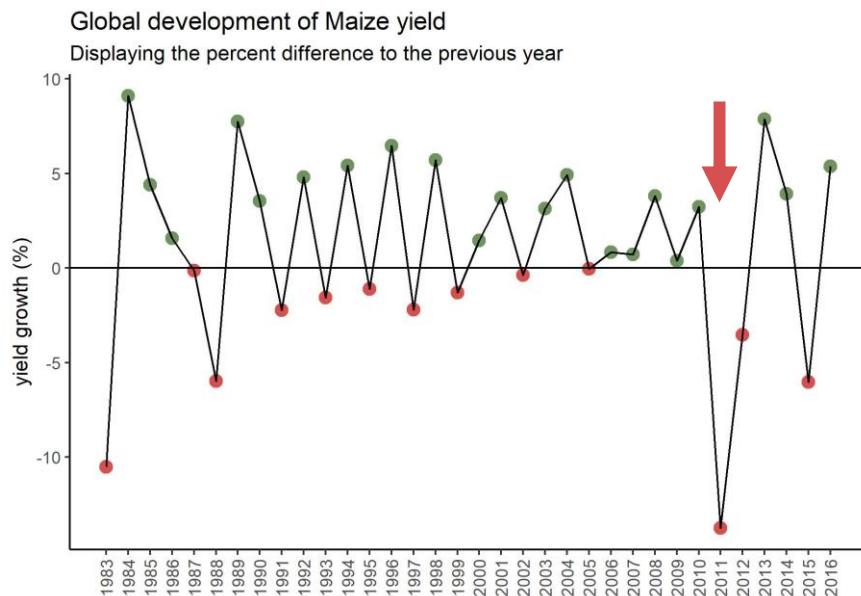
# How did the global maize yield change over 35 years?



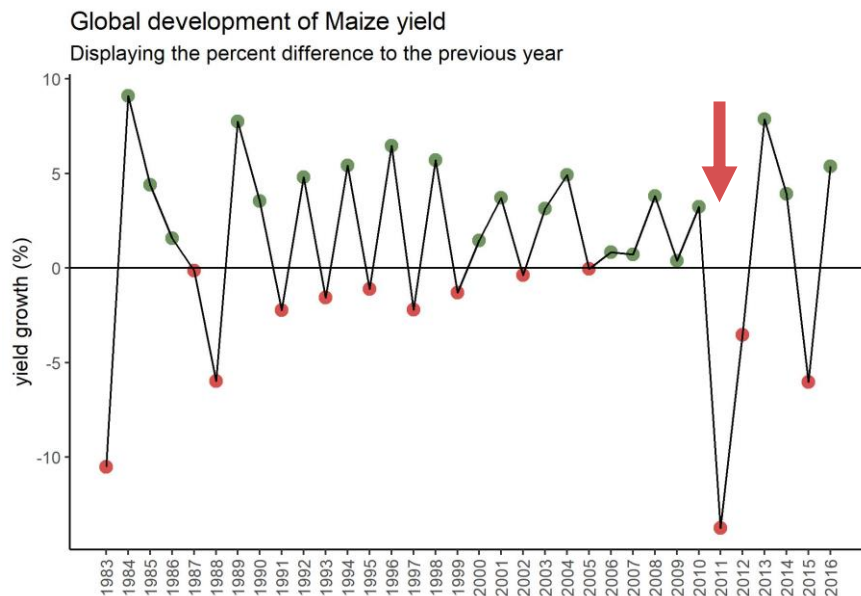
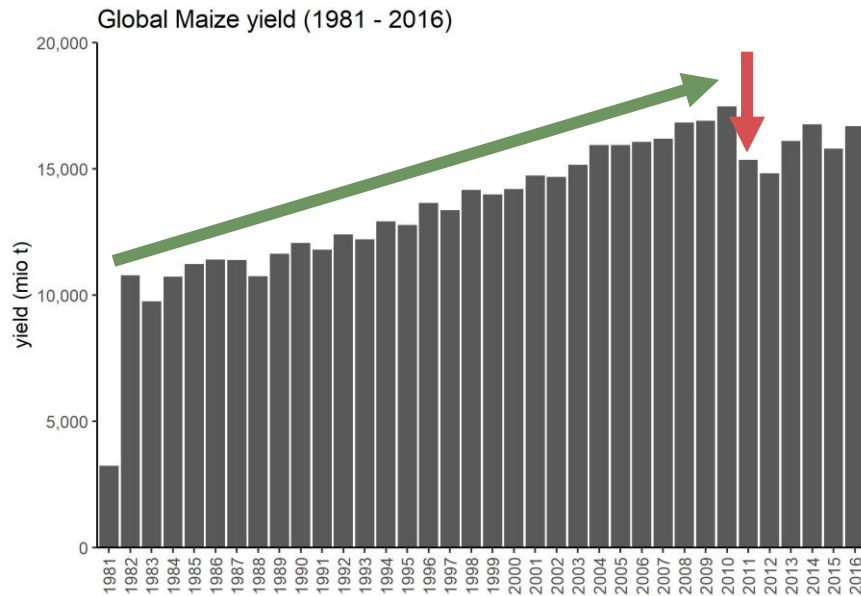
→ The **global maize yield** generally **increased** from ~ **10 to 17 bio t** between 1982 and 2010

- The **yield growth** is subject to an **annual fluctuation**

→ In 2011 maize production **dropped** by ~ **14 %**



# How did the global maize yield change over 35 years?



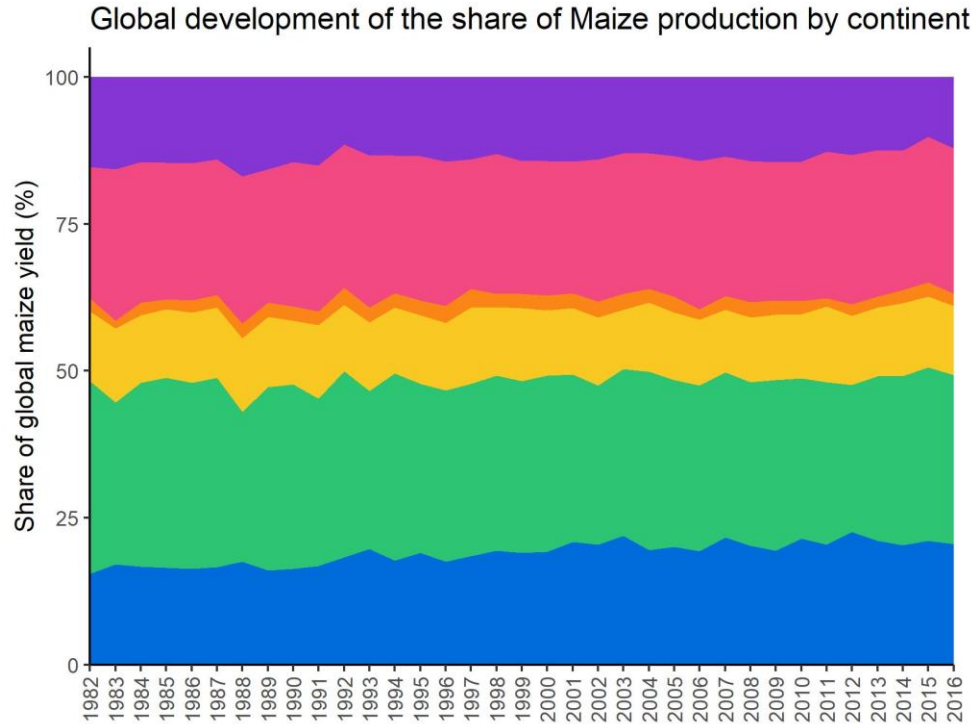
## Possible reasons for the maize yield drop in 2011

### 2011 Global Top 10 Weather/Climate Events

Rank	Event	When Occurred
1	Drought, eastern Africa	Throughout 2011
2	Flooding, Thailand	July-October, 2011
3	Flooding, eastern Australia	Austral Summer (Dec 2010-Feb 2011)
4	Double-Dip La Niña	Throughout 2011
5	Flash Floods, Brazil	January 6-12, 2011
6	Tropical Storm Washi (Sendong)	December 16-17, 2011
7	Arctic Sea Ice Extent	Sep 11
8	Rain & Floods, Colombia	March-May
9	Drought, Mexico	Throughout 2011
10	Drought, Europe	Autumn (Sep-Nov)

NOAA National Centers for Environmental Information, State of the Climate: Monthly Global Climate Report for 2011, published online January 2012, retrieved on September 10, 2022  
from <https://www.ncei.noaa.gov/access/monitoring/monthly-report/global/201113/supplemental/page-1>.

# How is the maize production divided among continents?

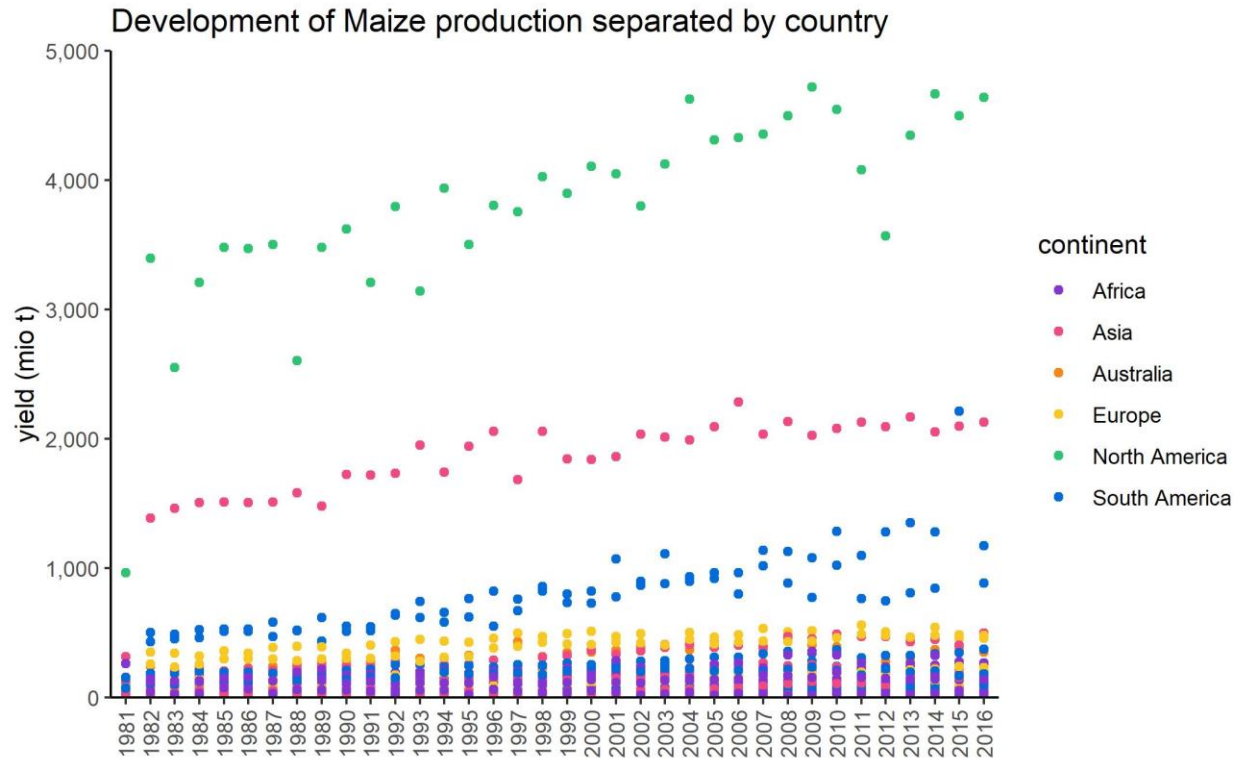


- Africa's share of global maize production falls from 15 % to 12 %



- South America's share of global maize production rises from 15 % to 20 %

# How is the maize production divided among countries?



**Top 3 maize producing countries are**

- North America (USA)
- Asia (China)
- South America (Brazil)

# How is the maize production divided among countries?

Maize yield growth from 1981 - 2016

Displaying the ratio of yield differences



The **largest increase** in maize yield is in

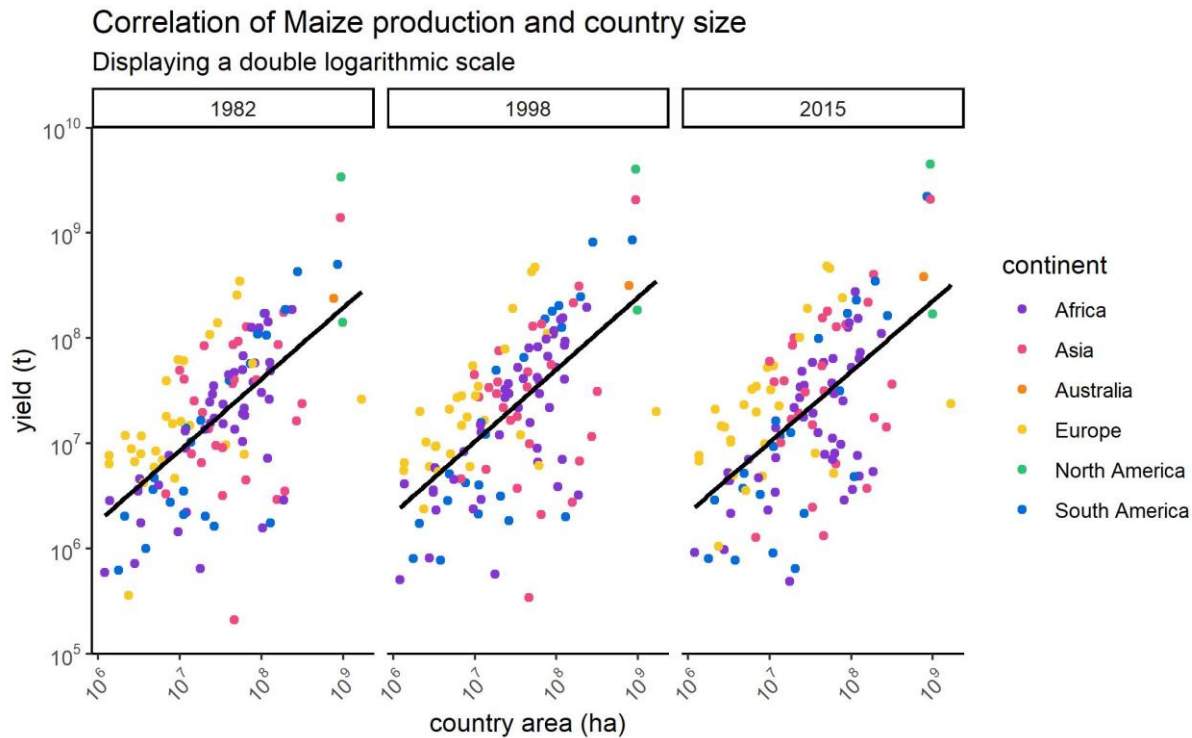
- South Sudan
- Iran
- Italy

The **largest decrease** in maize yield is in

- Egypt
- Haiti
- Botswana
- Belize

■ What could be reasons for differential maize production among different countries?

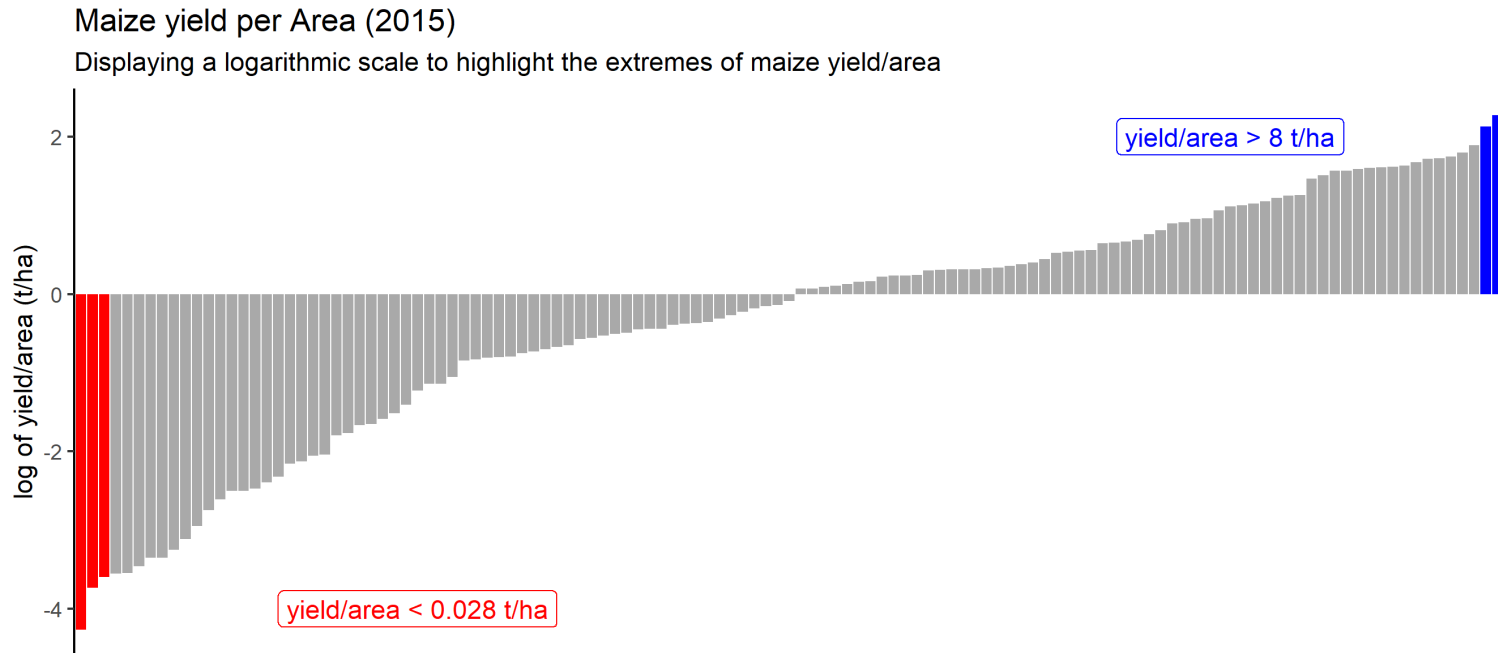
# How does country size influence maize yield?



- A **1 % increase in country area** is associated with an approximately **68 % increase in maize yield**

⇒ **Large countries produce more maize**

# How does country size influence maize yield?



Despite the correlation between maize yield and country size there are

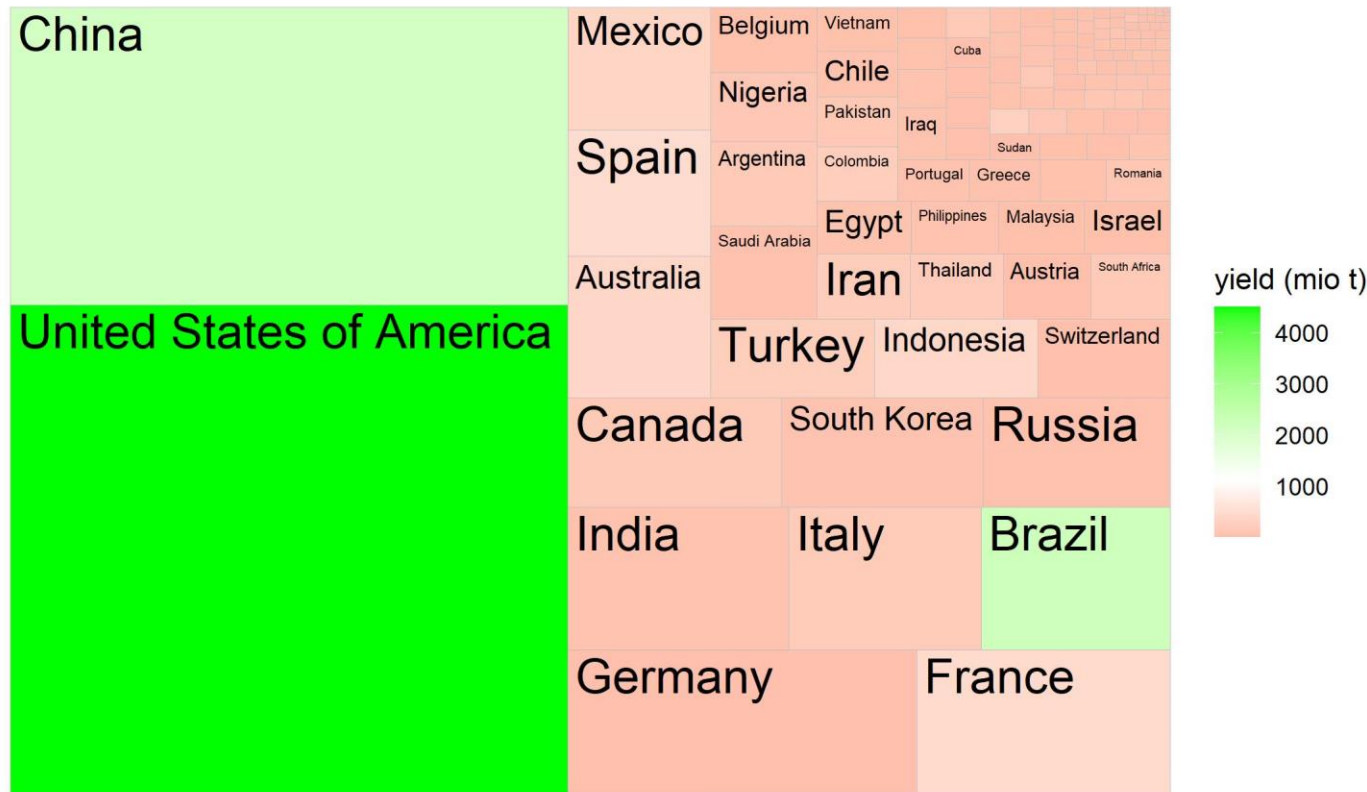
- **Big countries** that **produce** relatively **little** maize
- **Small countries** that **produce** a relatively **large amount** of maize

	country	yield (t)	area (ha)	yield/area (t/ha)
1	Slovenia	21018759.35	2140688.764	9.819
2	Spain	485008748	50150367.22	9.671
3	France	457795832.4	54571626.37	8.389
4	Somaliland	485613.9854	17702955.31	0.027
5	Mongolia	3731034.108	156347559.5	0.024
6	Russia	23674644.16	1682390531	0.014



# How is prosperity distributed among maize producing countries?

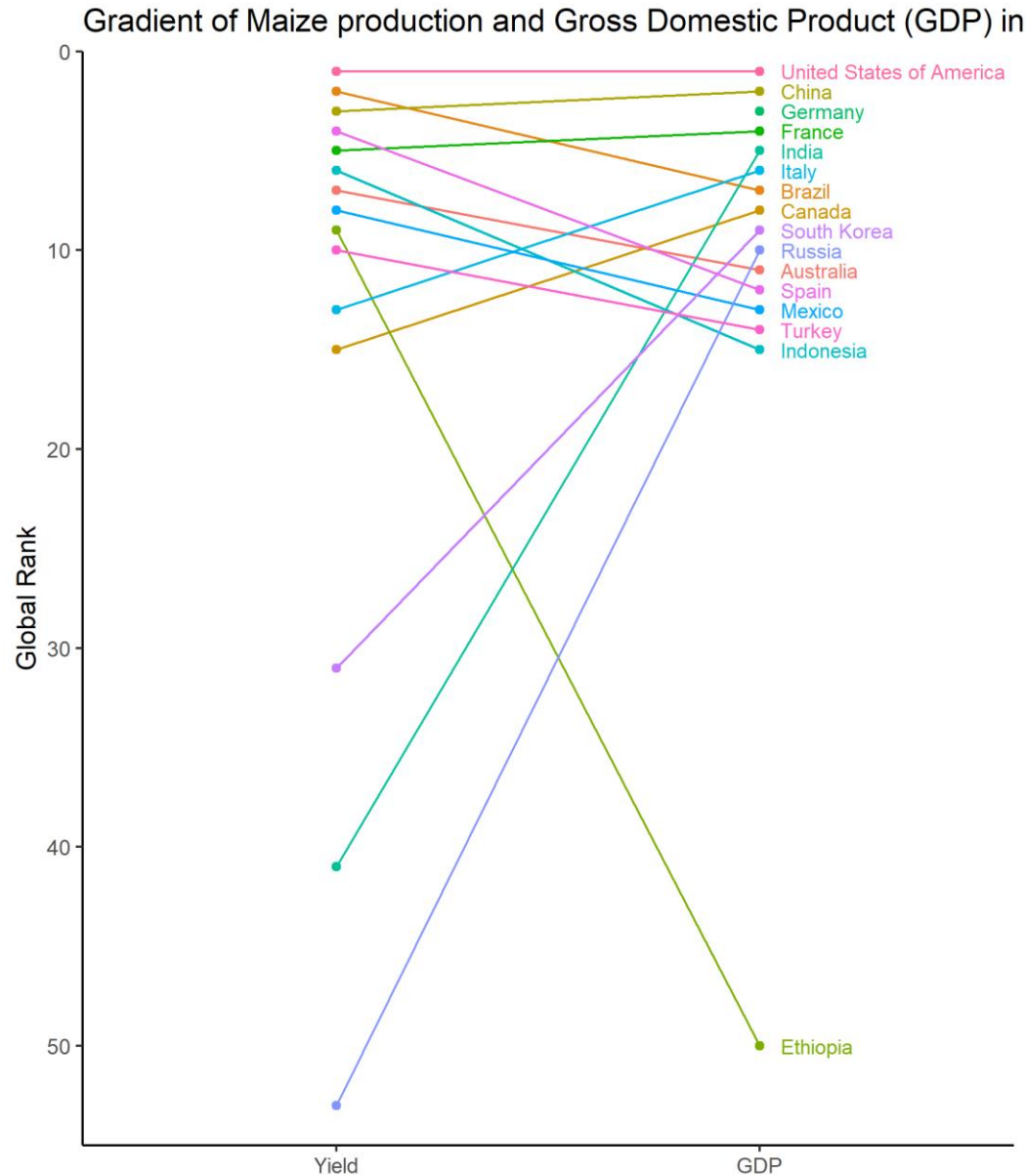
Gradient of Gross Domestic Product (GDP) and Maize production in 2015



The **top maize producing countries** are also among the **wealthiest countries**

- USA
- China
- Brazil

# How is prosperity distributed among maize producing countries?



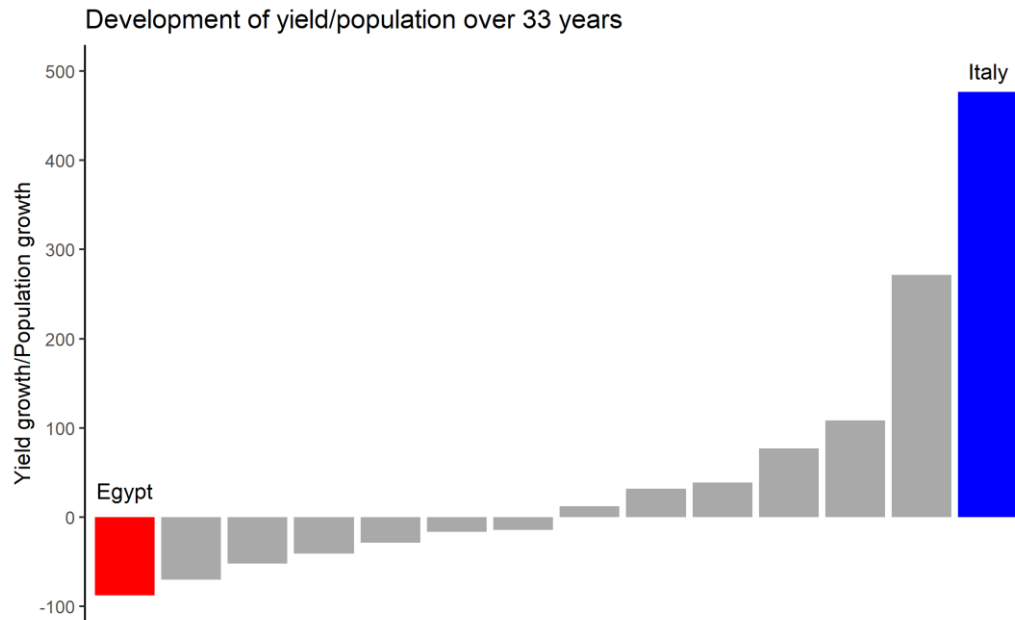
The **top maize producing countries** are also among the **wealthiest countries**

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## Exceptions:

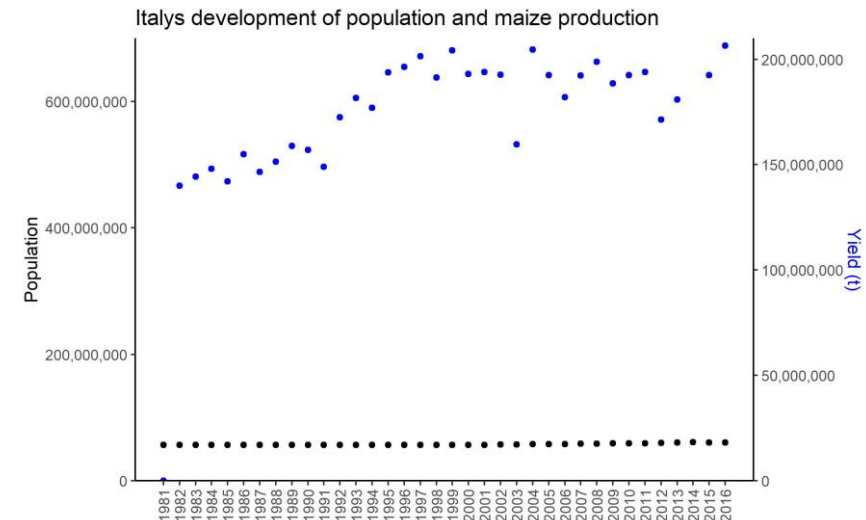
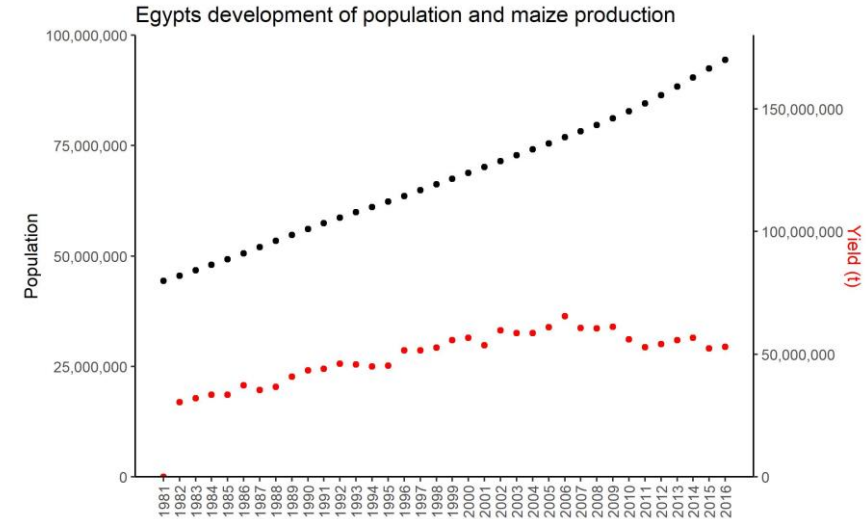
- **Germany:** among the wealthiest countries, but produces little maize
- **Ethiopia:** among top 10 producers of maize, but not very wealthy

# How did maize production and population change among countries?



The **biggest change** in maize **yield/population** occurred in

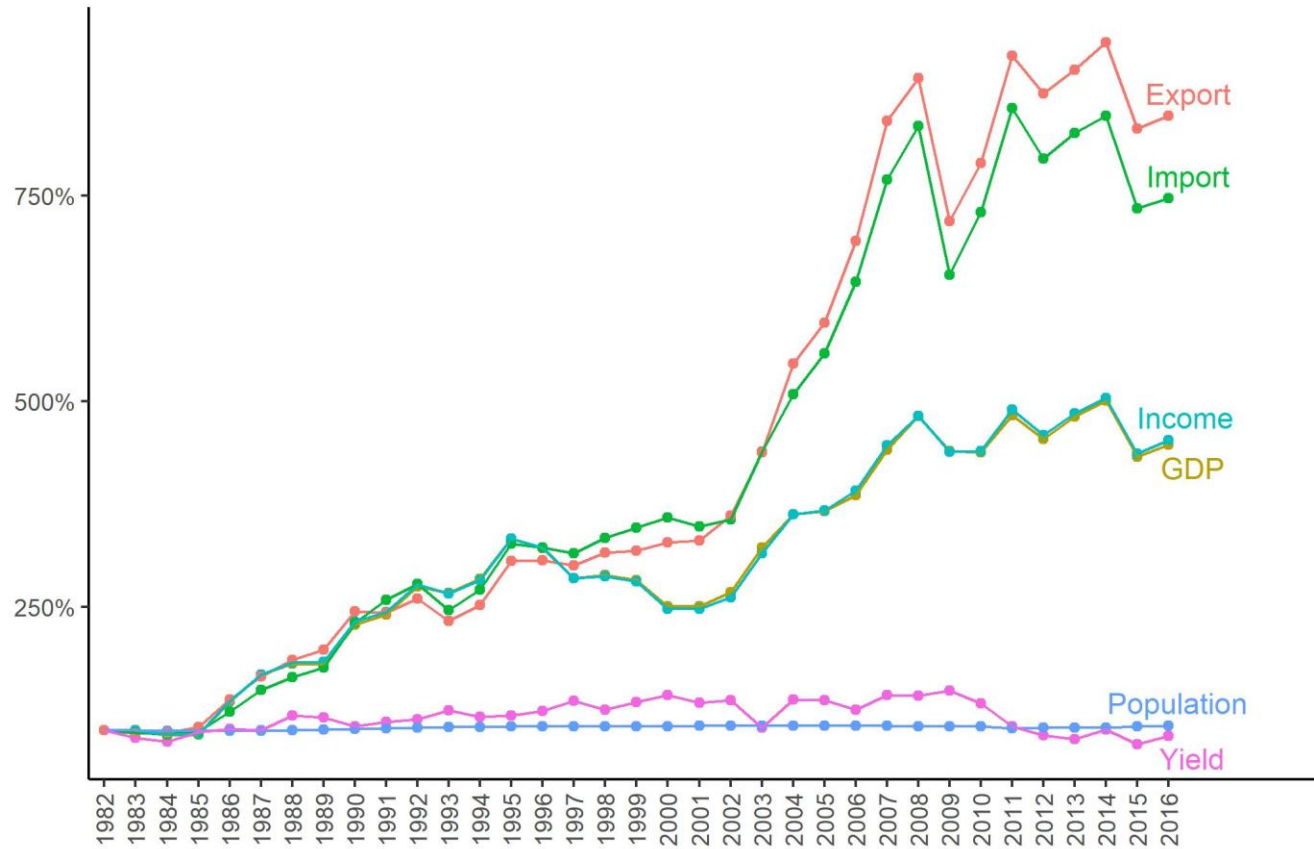
- Egypt
- Italy



# How did maize production and population change among countries?

## Development of Germany

Displaying the percent difference to 1982



Maize production does not seem to have a big influence on the development of German economy.