IS 445 - ACG/ACU: Data Visualization - Fall 2023

Visualization Report 12

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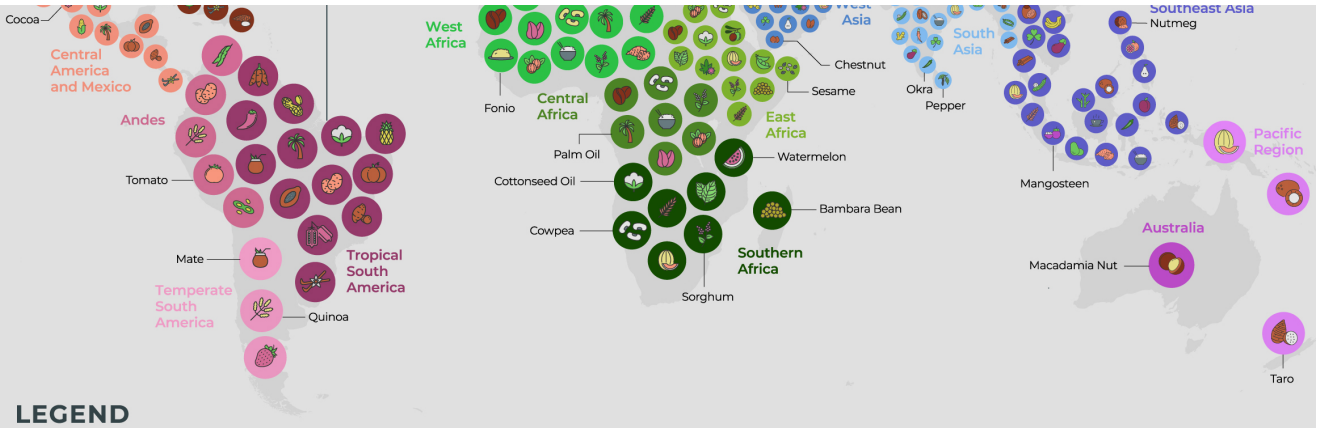
The Visualization titled **"Where Does Our Food Come From"** was obtained from the visual capitalist website and was reported by Tessa Di Grandi on November 22, 2022. The Visualization is a world map showing the historical origin (source of origin) of major agricultural crops before there eventually domesticaded globally. The visualization was constructed using data from the International Center for Tropical Agriculture (CIAT)

This visualization empasizes that massive production of a given crop in a certain region doesnt neccesary indicate that the said region is the source of origin of the crop. Over two-thirds of the world's major crops originated in regions different from where they are primarily cultivated today. Due to human cultivation and selective breeding for over thousands of years, numerous crops have been cultivated in various regions, often far from their original places of origin and domestication. For example, The U.S. is the major producer of maize globally, yet the crop (*Zea mays*) was originally domesticated in Mexico.

This, so far, is my favorite visualization, not only because I am a crop science major but also because of the way the data was presented. They used plant icons to symbolize particular crops, which made the visualization easy to read. They also used different colors to distinguish between regions of origin, such as West Africa, southern Africa, North America, Northern Europe etc. Even though specific countries of origin are not pinpointed, the reader gets a general idea of where certain crops originated. Some of the fruits/crop icons were small and difficult to read, but a legend was provided to solve this issue.



LEGEND

- Alfalfa
- Almond
- Anise
- Apple
- Apricot
- Areca Nut
- Artichoke
- Asparagus
- Avocado
- Bambara Bean
- Banana & Plantain
- Barley
- Bean
- Blueberry
- Buckwheat
- Cabbage
- Carob
- Carrot & Turnip
- Cassava
- Castor Oil
- Cherry
- Chestnut
- Chickpea
- Chicory Root
- Chili & Pepper
- Cinnamon
- Clover
- Cocoa Bean
- Coconut
- Coffee
- Cottonseed Oil
- Cowpea
- Cranberry
- Currant
- Date
- Eggplant
- Faba Bean
- Fig
- Fonio
- Garlic
- Ginger
- Gooseberry
- Grapefruit
- Grape
- Groundnut
- Hazelnut
- Hempseed
- Hop
- Kiwi
- Kola Nut
- Leek
- Lemon & Lime
- Lentil
- Lettuce
- Linseed
- Lupin
- Macadamia Nut
- Maize
- Mango
- Mangosteen
- Mate
- Melon
- Millet
- Mustard & Rape Seed
- Nutmeg & Mace
- Oat
- Okra
- Olive
- Onion
- Orange
- Palm Oil
- Papaya
- Peach & Nectarine
- Pepper
- Peppermint
- Persimmon
- Pigeon Pea
- Pineapple
- Pistachio
- Poppy
- Potato
- Pumpkin
- Quince
- Quinoa
- Raspberry
- Rice
- Rye
- Safflower Seed
- Sesame
- Shea Nut
- Sorghum
- Soybean
- Spinach
- Strawberry
- Sugar Beet
- Sugarcane
- Sunflower
- Sweet Potato
- Tangerine & Mandarin
- Taro
- Tea
- Tomato
- Triticale
- Vanilla
- Vetch
- Walnut
- Watermelon
- Wheat
- Yam
- Yautia

Note: Some crops may have more than one primary region. Due to eco-geographic variation within countries some countries may belong to more than one region (e.g. Colombia is allocated to tropical South America and Andean regions).

Source: CIAT

Depicted representations of crops are solely for visual purposes and are not representative of market size, distribution, or importance.

Now that our food system is completely global, many of the world's crops are grown in countries far from their historical origins.

Countries that produce the world's staple crops today are vital to global food security.

Staple crops are those that are the most routinely grown and consumed. They can vary between country depending on availability.

When the production and distribution of staple crops are threatened, the consequences can be felt globally.

Let's take a look at the top agricultural producers of some of the world's staple crops.

TOP 3 GLOBAL PRODUCERS OF EACH STAPLE CROP % share of global production

Sugarcane | Maize | Wheat | Soybean | Rice

t = Tonne

Key Takeaways

In 2020, Brazil

757,116,855t
40.5%

108,121,000t
5.8%

260,670,000t
22.4%

largest net exporting country of agricultural commodities, with its top export of soybeans.

Brazil is the world's largest producer of sugarcane and soybeans, and one of the top three producers of maize.

Over the past two decades, sugarcane alone accounted for an average of 21% of global crop production.

50% of total global crop production in 2020 was from sugarcane, maize, wheat, and rice paddy.

Brazil

8.9%

121,797,712t
34.5%

China

17.6%

19,600,000t
5.5%

211,860,000t
28.0%

U.S.

360,251,560t
30.9%

112,549,240t
31.8%

India

370,500,000t
19.9%

107,590,000t
14.1%

178,305,000t
23.6%

Russia

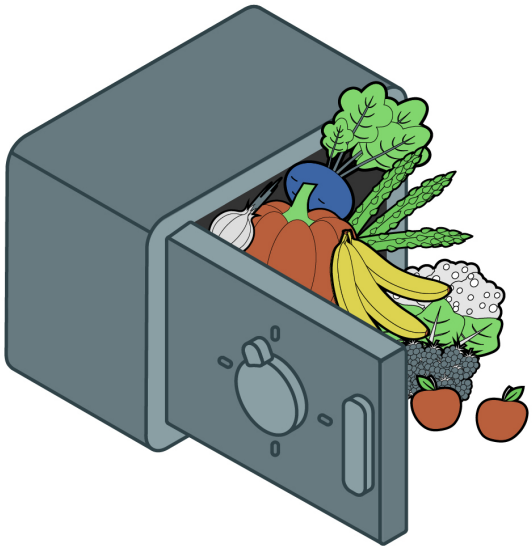
85,896,326t
11.3%

Bangladesh

54,905,891t
7.3%

Global food security is heavily dependent on staple crops and the countries that produce them.

Data as of 2020
Source: FAO



THE FUTURE OF FOOD SECURITY

Early food security solutions involved transplanting crops from other regions to supplement diets. Now crop yields must increase to strengthen our food security — fertilizers are a vital step in this process.

It's estimated that by 2050 the world will need to increase its food output by around **70%** in order to feed an ever-growing population.
Source: FAO

Action must be taken to increase and diversify fertilizer supply across the globe to strengthen food security systems and crop production.

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