



Food and Agriculture  
Organization of the  
United Nations

Global nutritional study





## Context

- The aim of our organisation is ‘to help to build a world free of hunger’.
- To this end, we carried out a large-scale study
- The study focussed on food and malnutrition worldwide.



# Methodology

4 Excel documents:

- Food aid
- Food availability
- Population
- Malnutrition

Jupyter notebooks with Python libraries:

- Pandas
- Matplotlib
- Seaborn

RGPD was not applicable for this study.







# Proportion of people in a state of malnutrition in 2017

535.7 million

Worldwide population in a state of malnutrition (2017)

7.1%

Percentage of worldwide population in a state of malnutrition (2017)

# Theoretical number of people who could be fed in 2017

2075.97

Average Kcal requirement per person per day<sup>1</sup>

10,076,727,808

People who could be fed in 2017

133.6 %

% of world population that could be fed in 2017

## <sup>1</sup> Sources:

- Appendix 2. Estimated Calorie Needs per Day, by Age, Sex, and Physical Activity Level - 2015-2020 Dietary Guidelines [health.gov](https://www.health.gov), (Pour les directives caloriques, j'ai décidé d'utiliser les chiffres des personnes "Moderately Active".)
- Population by Single Age - Both Sexes (XLSX, 160.91 MB),







## Theoretical number of people who could be fed only with plant products in 2017

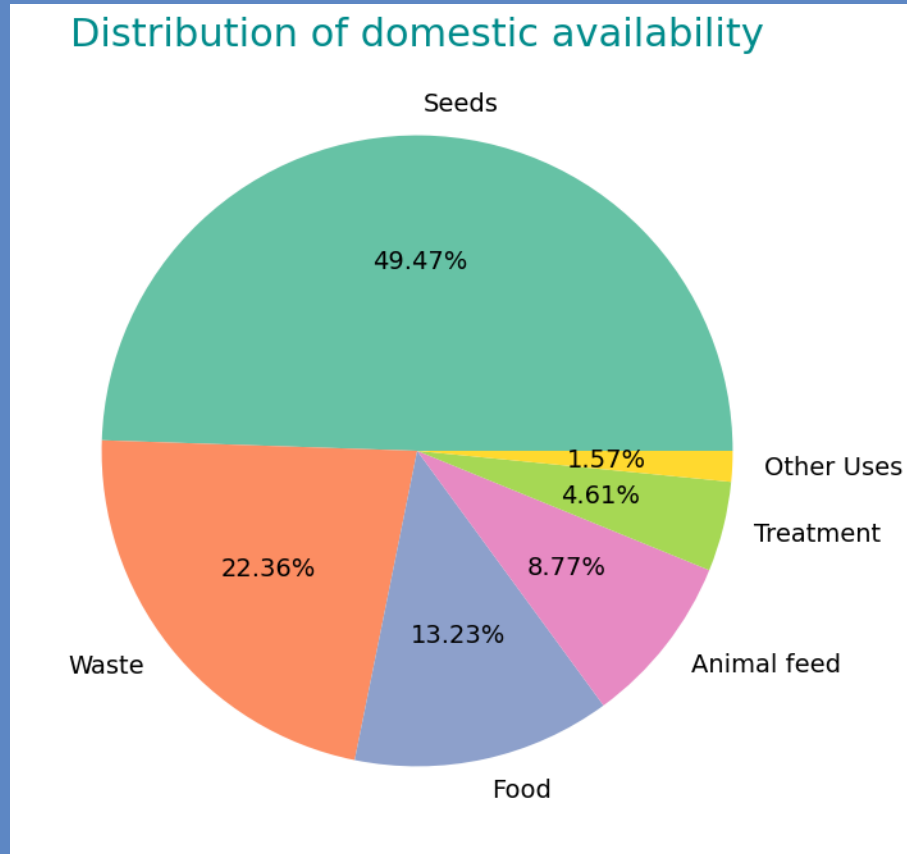
8.31 milliards

People who could be fed only  
plant products in 2017

110.2%

% of the world population that could  
be fed only with plant products in  
2017

# Distribution of domestic availability



9,848,994,000,000

Total domestic availability  
(kg)

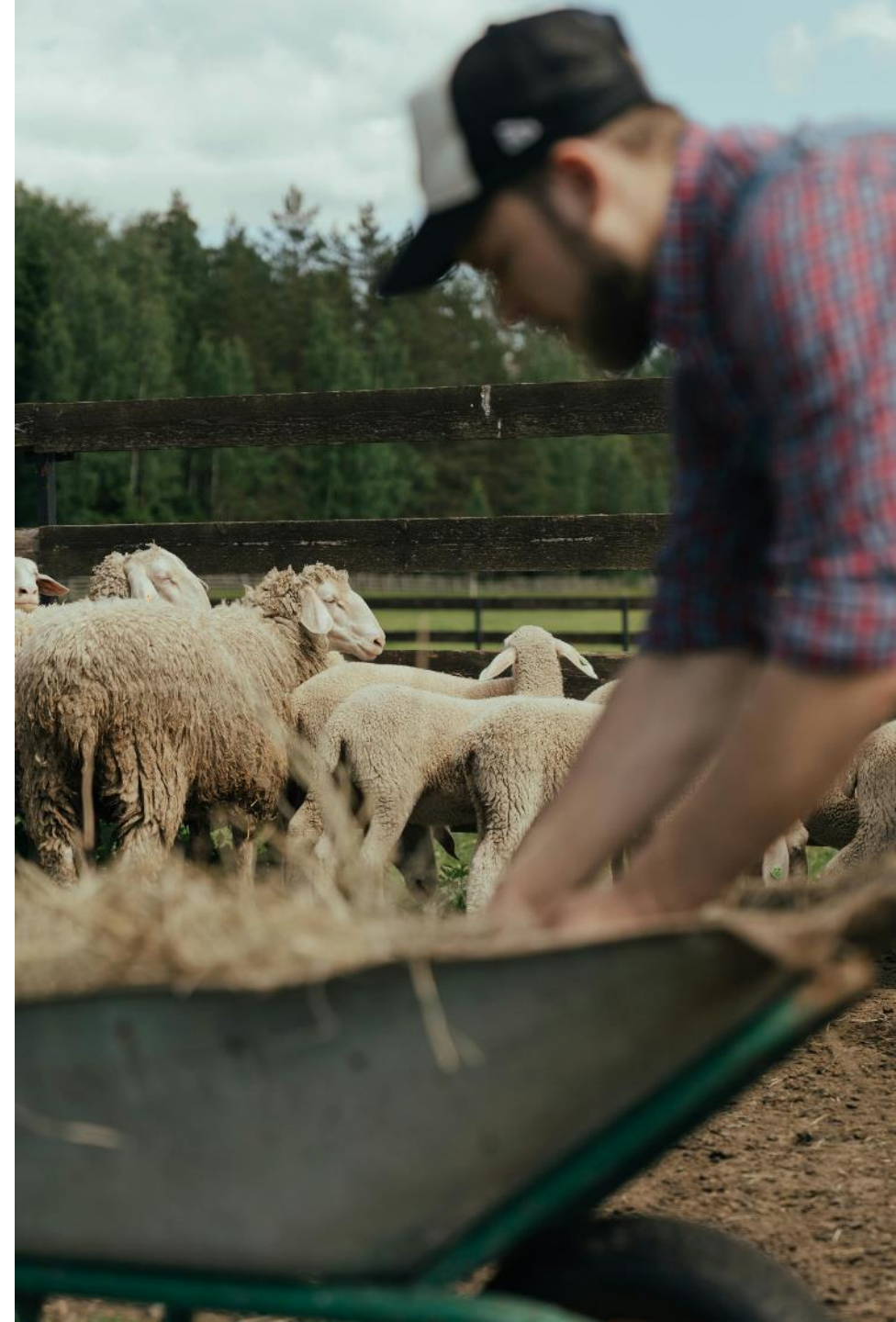
# Share of cereal use between human and animal food

36.29%

The proportion of cereals used  
for animal feed

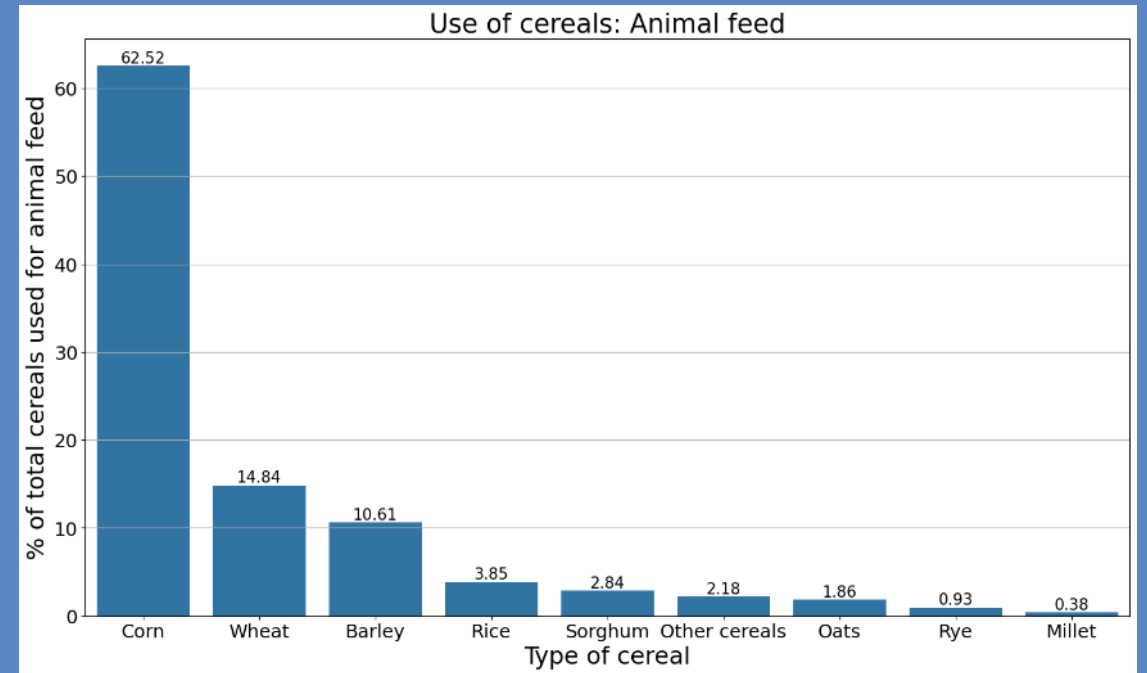
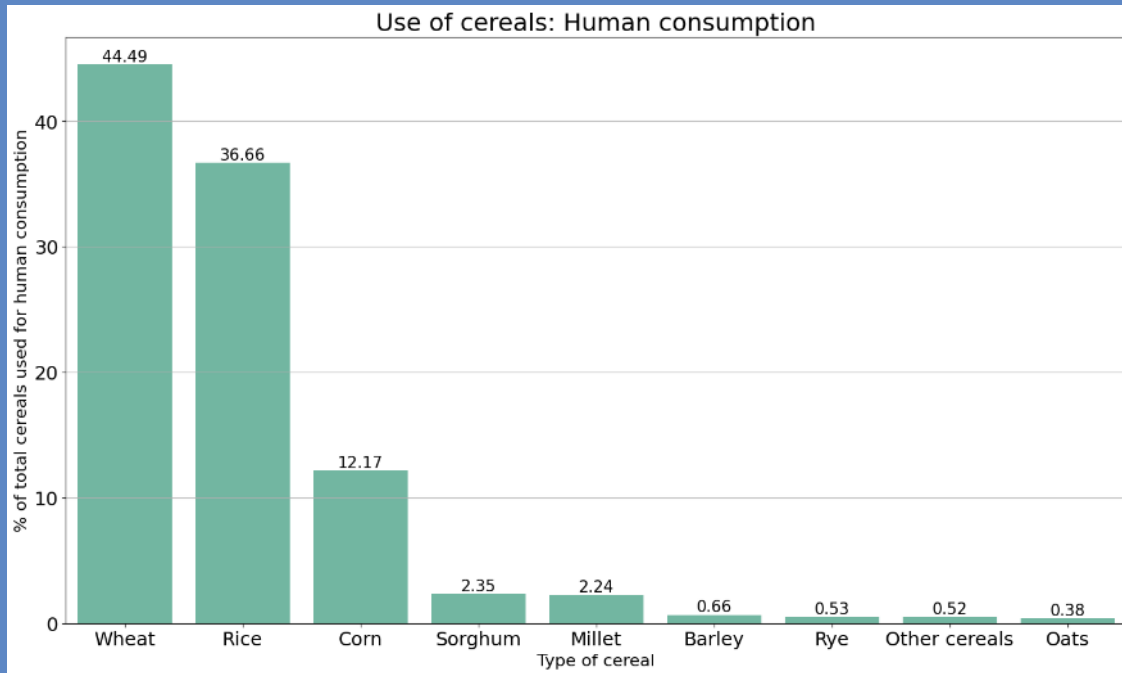
42.75%

The proportion of cereals used  
for human food

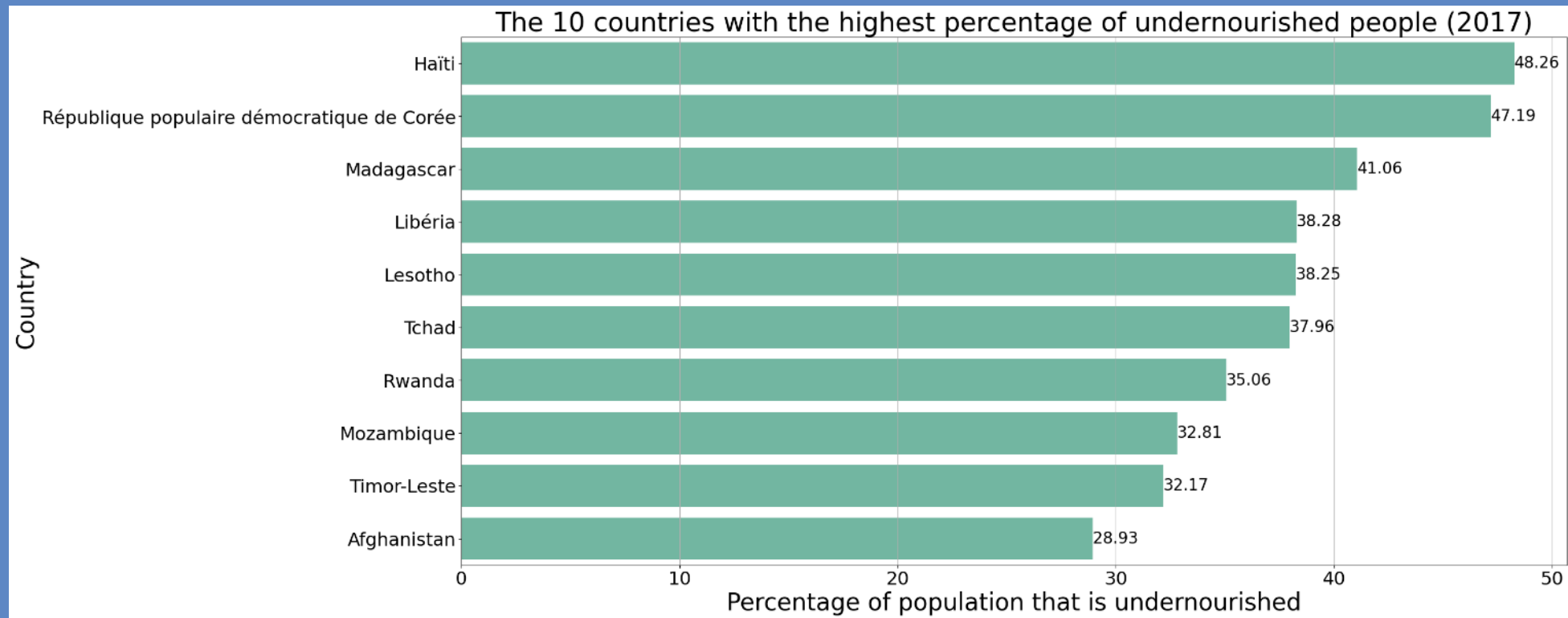




# Share of cereal use between human and animal food

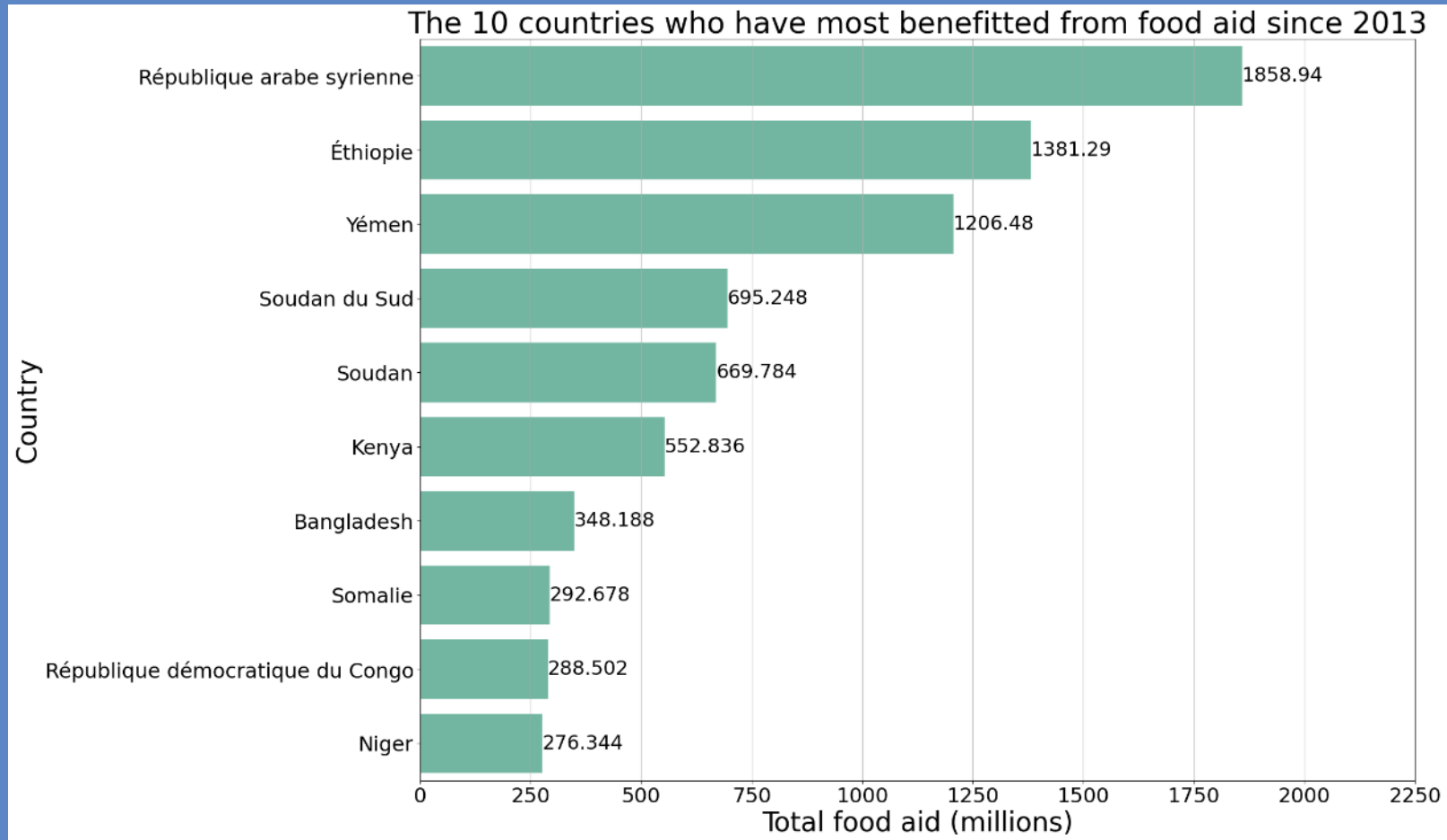


# The 10 countries with the highest proportion of undernourished people in 2017

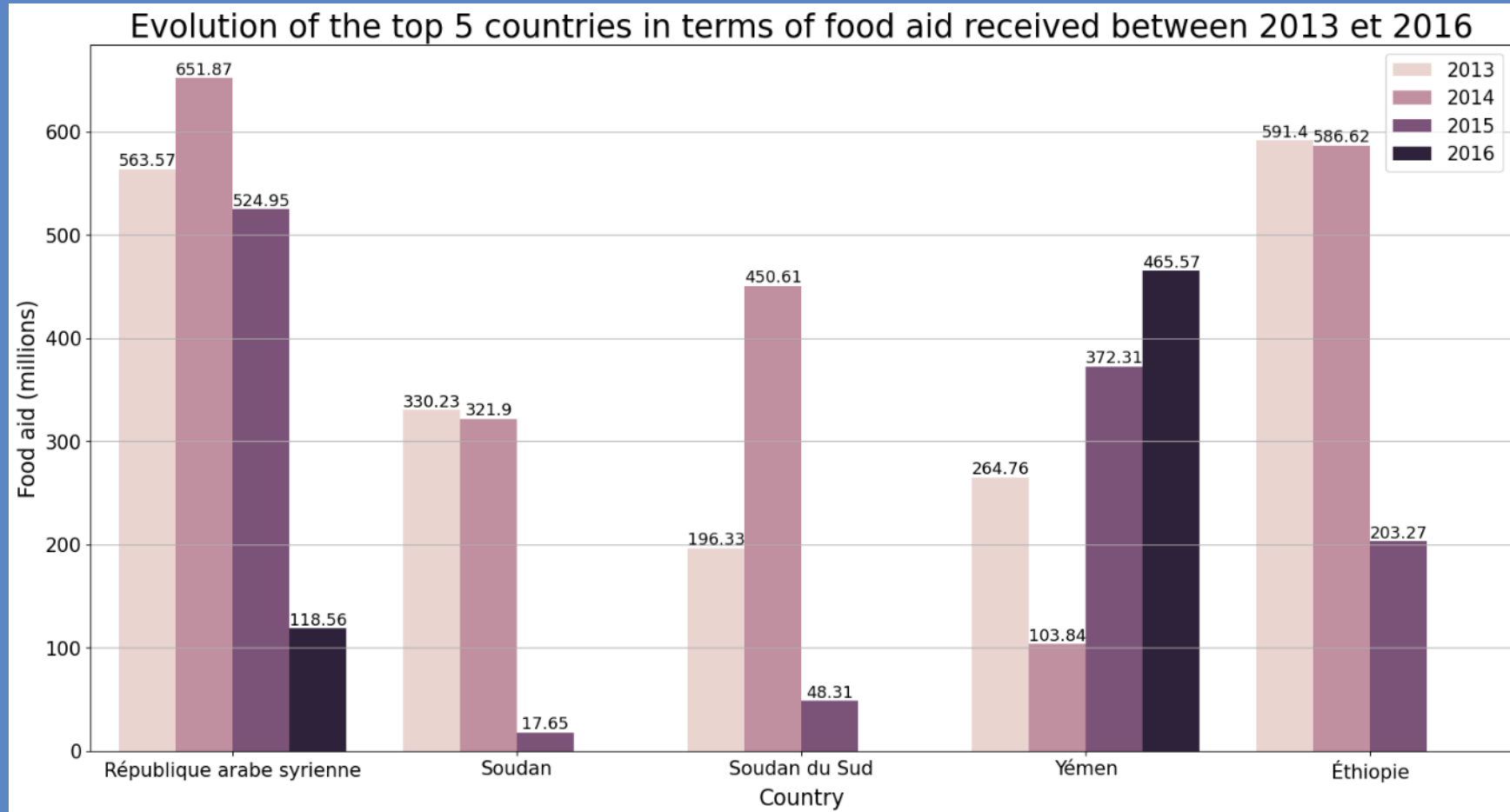




# The 10 countries that benefitted the most from food aid between 2013 and 2016

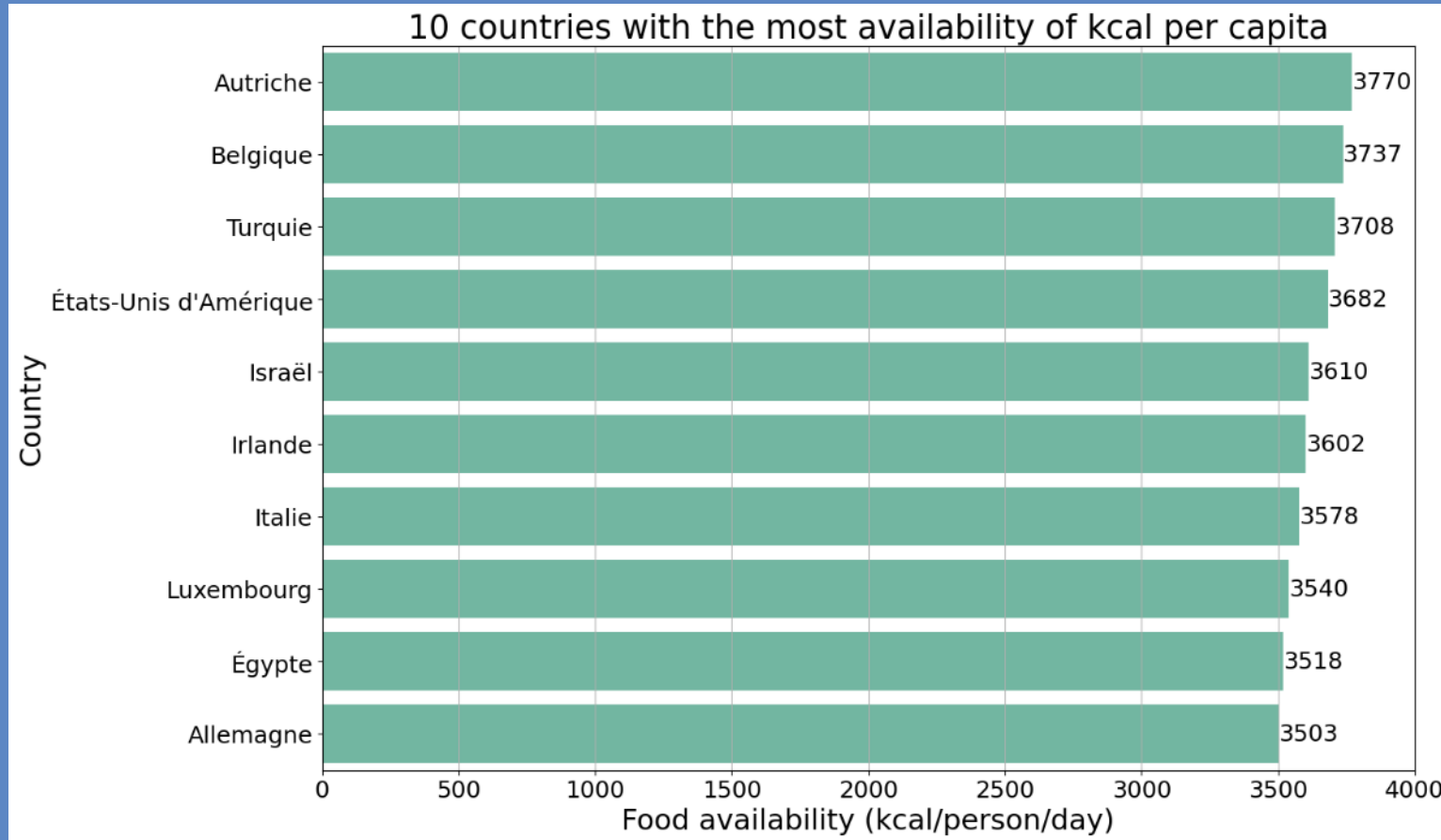


# Evolution of food aid for the 5 countries that benefited the most between 2013 and 2016

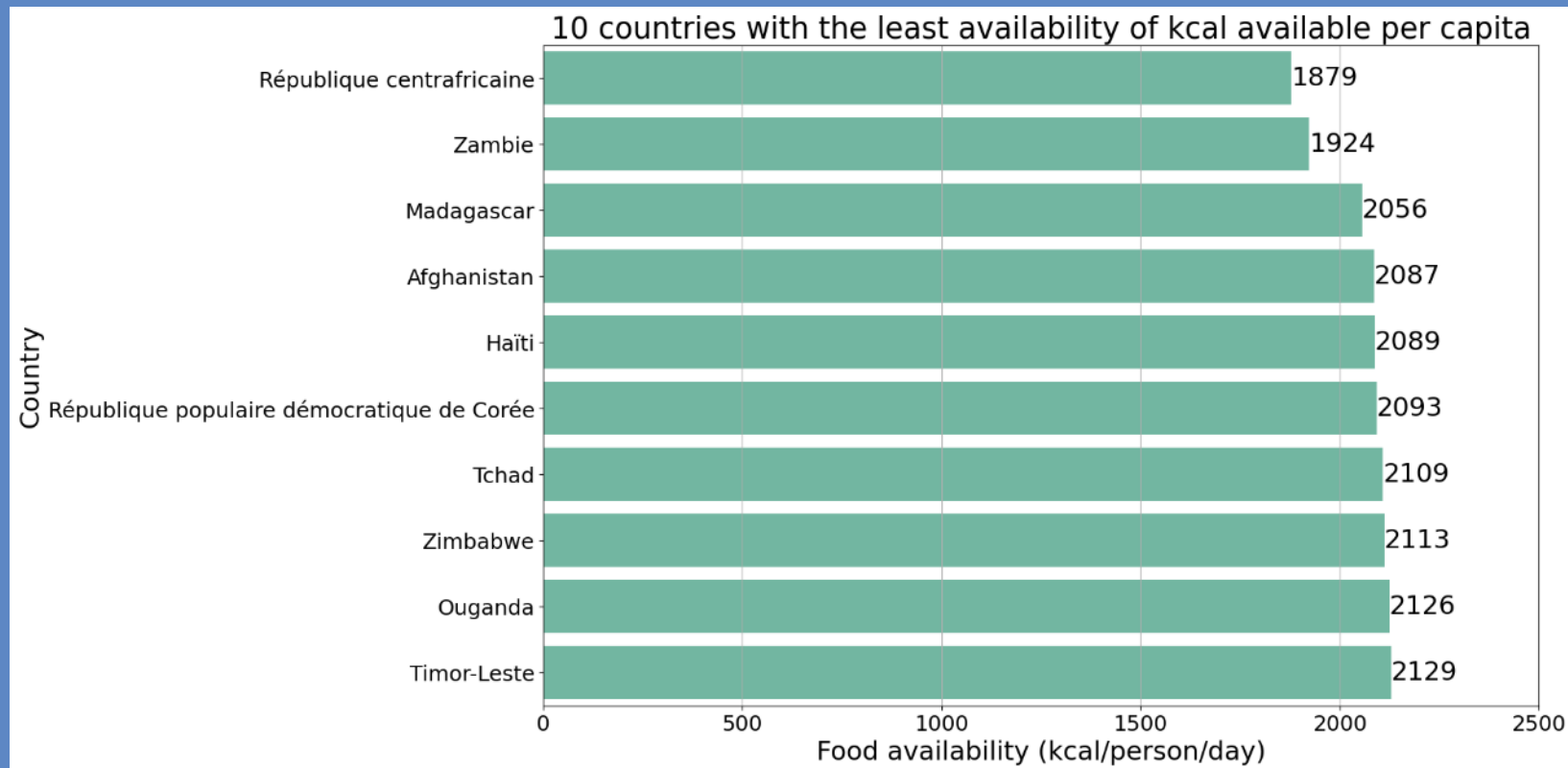




# The 10 countries with the highest food availability per capita



# The 10 countries with the lowest food availability per capita





# Cassava in Thailand

30.23

Billions of kilograms of cassava  
produced

25.21

Billions of kilograms of cassava  
exported

83.41%

Proportion of cassava produced  
that is exported

8.96%

Percentage of Thailand's  
population in a state of  
malnutrition

40

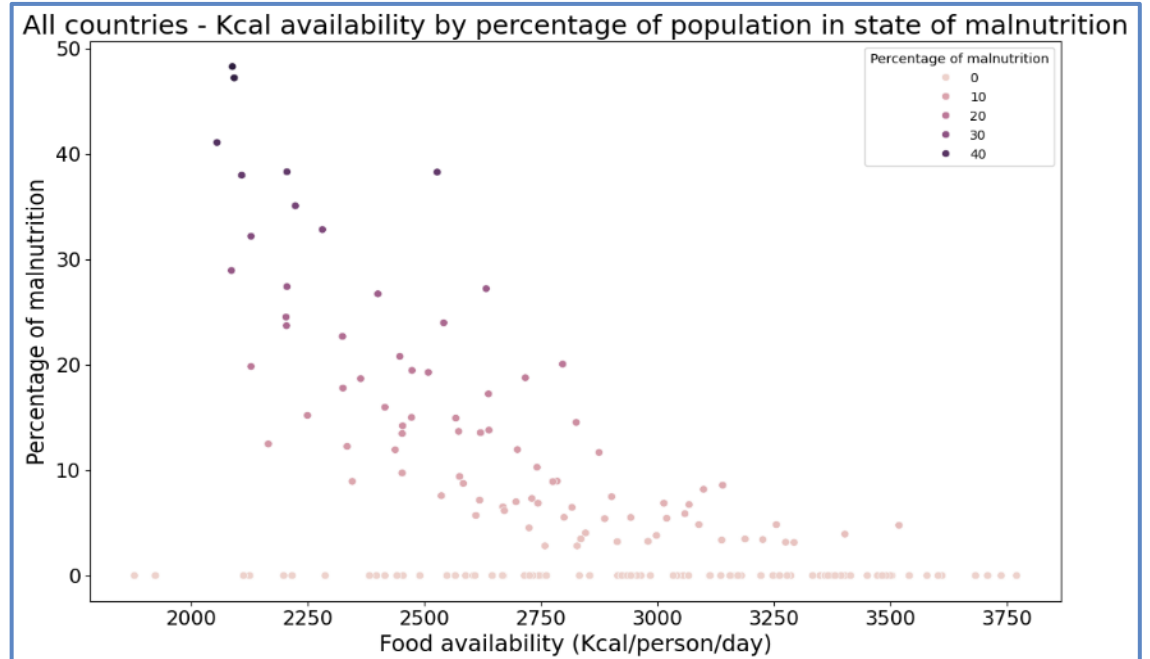
Kcal available per person/per  
day from cassava

241

Theoretical kcal available per  
person/per day from cassava if  
none was exported



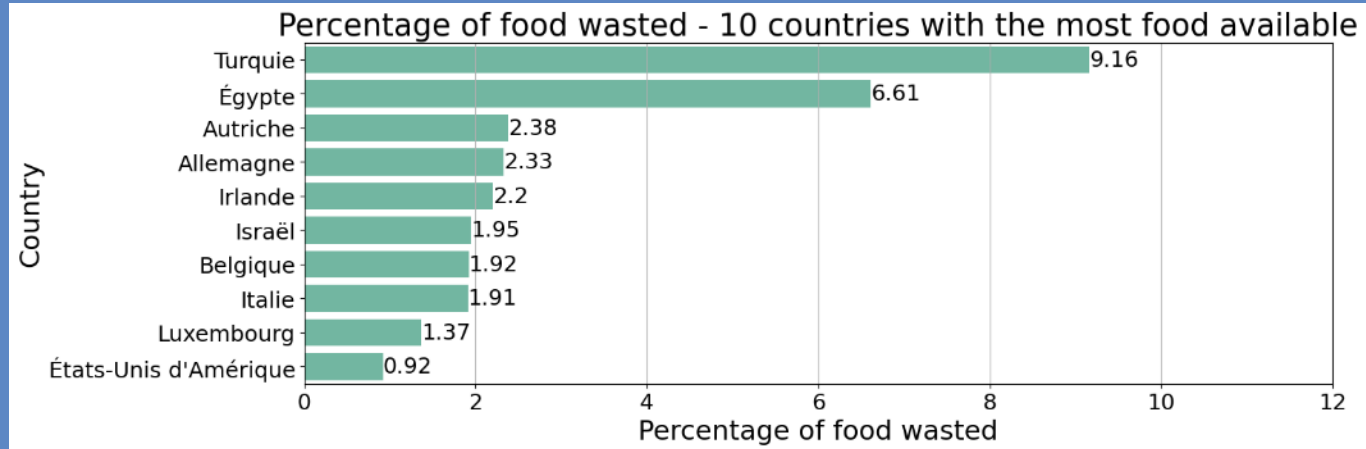
## Additional analysis



30%

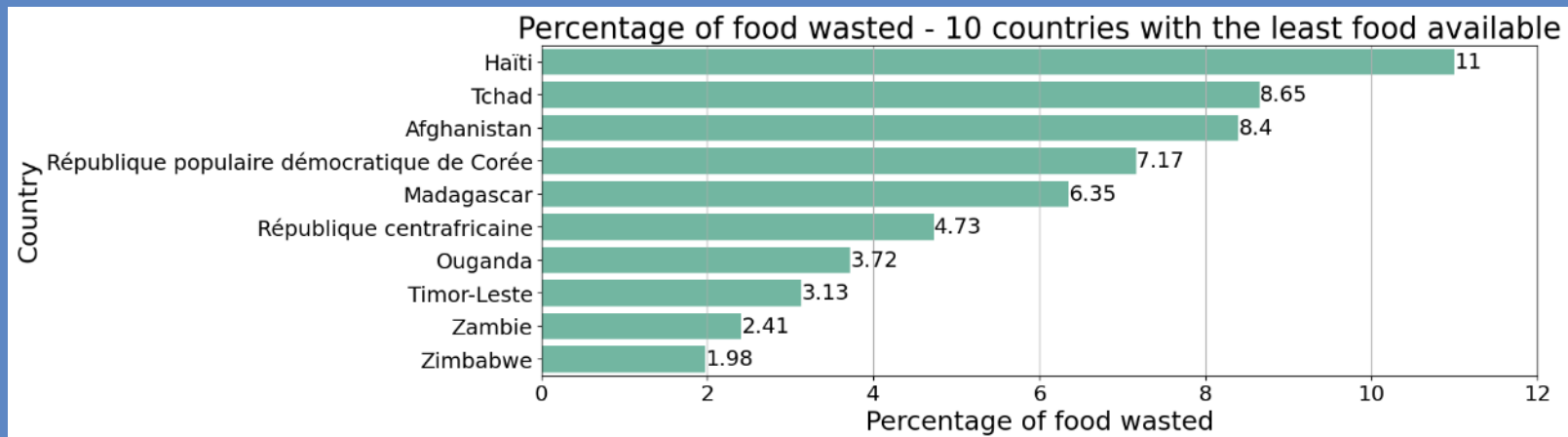
Pourcentage des 50 pays avec les disponibilités alimentaires les plus faibles avec des valeurs nulles pour les niveaux de sous-nutrition.

# Additional analysis



3.08%

Average percentage of food wasted by the 10 countries with the most food availability



5.75%

Average percentage of food wasted by the 10 countries with the least food availability





# Conclusion

- 1 7.1% of the world's population is in a state of [malnutrition](#). This figure may be higher as we appear to be missing data for some countries.
- 2 BUT there is enough food to feed over 10 billion people. We must therefore find ways to encourage countries to better support each other.
- 3 We need more data on [malnutrition](#). We lack some data on this subject, which would be valuable in identifying how best to help countries most in need.
- 4 Given the [high rate of food waste in countries with low food availability](#), it would be valuable to further investigate the reasons for these losses and see if we can reduce them.