



Global agriculture food and feed Report.

A public health study of management and agricultural production and use.



The state of human nutrition and its trend.

An analysis of production food, feed country, populations and undernourishment.

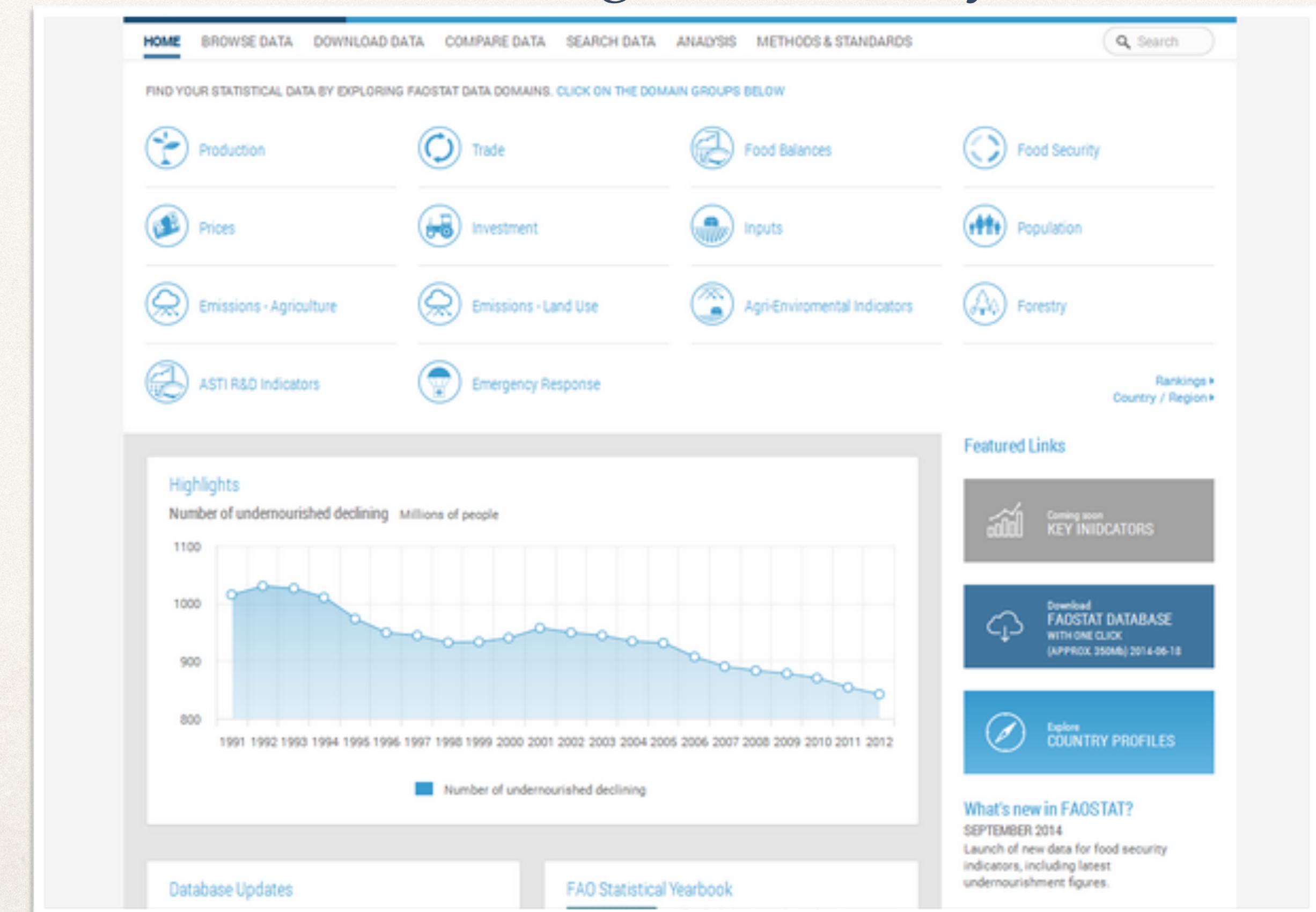
The FAO statistical data web platform

A short introduction on data collection, discovery and analyses

- ✿ In this analysis we will have a close look at what are the nations producing, using and consuming based on its population,
- ✿ we will also get insight into some specific countries and issues related to overproduction, waste, and miss management of food and feed.
- ✿ With this information, we will so be able to pinpoint some of the causes of global undernutrition.
- ✿ Let us start with a short introduction to our data sets!
- ✿ Our data was of curse acquired from our FAOSTAT data web platform:
- ✿ <http://www.fao.org/statistics/en/>

Data collection:

This maid our analyses much faster because our data sets were already processed and prepared for the examination, never the less to answer the questions, we still had to carefully select, understand the values and the equations that they have been calculated from. Therefore we conclude that some columns and values had to be cleared or adjusted to fit a more appropriate data set facilitating so our analysis.



For crops data:

we have selected 9 item as 'Wheat and products', 'Rice (Milled Equivalent)', 'Barley and products', 'Maize and products', 'Rye and products', 'Oats', 'Millet and products', 'Sorghum and products', 'Cereals, Other'. Area or Country is World + Total. Contains only one element: Production.

	Domain Code	Domain	Area Code	Area	Element Code	Element	Item Code	Item	Year Code	Year	Unit	Value	Flag	Flag Description
0	FBS	New Food Balances	5000	World	5511	Production	2511	Wheat and products	2014	2014	1000 tonnes	724952	A	Aggregate, may include
1	FBS	New Food Balances	5000	World	5511	Production	2511	Wheat and products	2017	2017	1000 tonnes	771775	A	Aggregate, may include
2	FBS	New Food Balances	5000	World	5511	Production	2805	Rice and products	2014	2014	1000 tonnes	741547	A	Aggregate, may include
3	FBS	New Food Balances	5000	World	5511	Production	2805	Rice and products	2017	2017	1000 tonnes	767558	A	Aggregate, may include
4	FBS	New Food Balances	5000	World	5511	Production	2513	Barley and products	2014	2014	1000 tonnes	144312	A	Aggregate, may include

For vegetal data:

we have selected all 75 items:

'Wheat and products', 'Rice (Milled Equivalent)', 'Maize and products', 'Potatoes and products',
 'Sugar cane', 'Cassava and products', 'Roots, Other', 'Beans', 'Coconut Oil',

	Domain Code	Domain	Area Code	Area	Element Code	Element	Item Code	Item	Year Code	Year	Unit	Value	Flag	Flag Description
0	FBS	New Food Balances	2	Afghanistan	5511	Production	2511	Wheat and products	2017	2017	1000 tonnes	4281.0	S	Standardized data
1	FBS	New Food Balances	2	Afghanistan	5611	Import Quantity	2511	Wheat and products	2017	2017	1000 tonnes	2302.0	S	Standardized data
2	FBS	New Food Balances	2	Afghanistan	5072	Stock Variation	2511	Wheat and products	2017	2017	1000 tonnes	-119.0	S	Standardized data
3	FBS	New Food Balances	2	Afghanistan	5911	Export Quantity	2511	Wheat and products	2017	2017	1000 tonnes	0.0	S	Standardized data
4	FBS	New Food Balances	2	Afghanistan	5301	Domestic supply quantity	2511	Wheat and products	2017	2017				

Data discovery findings.

Observing this similarity and differences in columns and values, I could deduce that animals and vegetables could be merge together and adding an origin column as "vegetal or animal".

Doing so, I can quickly answer some future questions and look at its values aggregate as a statistical summary: 'min', 'max', 'sum', 'median', 'mean', 'skew', 'count'.

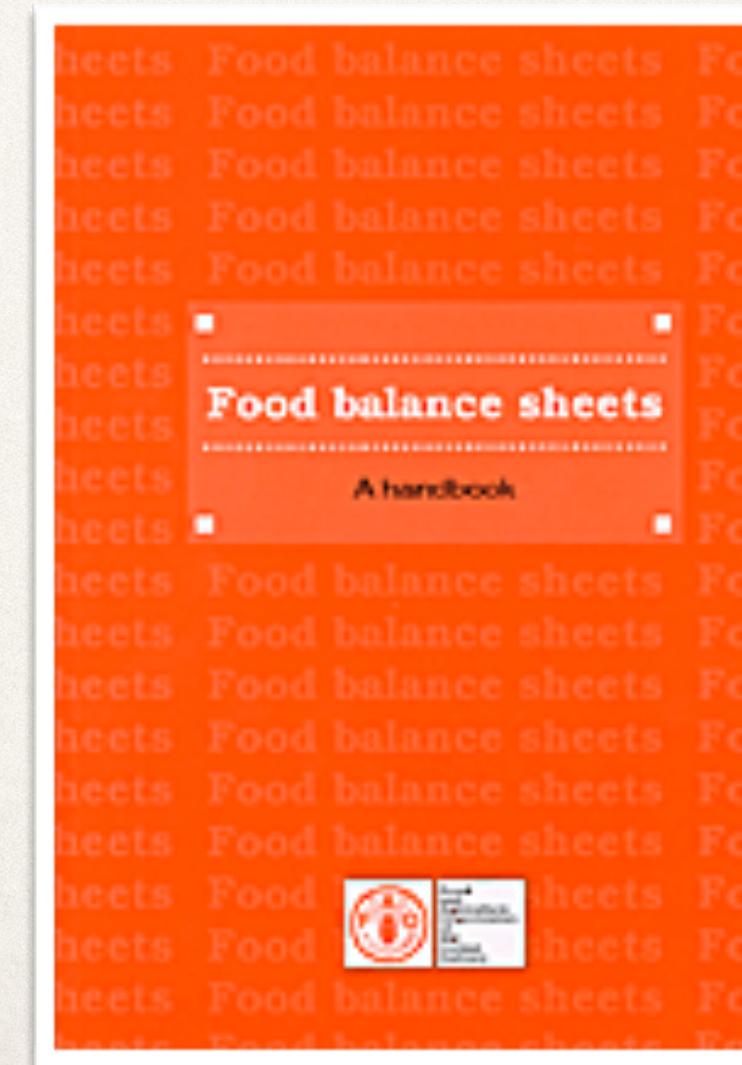
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Calculation guide book.

After the data collection, discovery, and clearing, we had some questions that require new calculations based on the guidebook describing how the elements on our data set were calculated:

Source: <http://www.fao.org/3/X9892E/X9892E00.htm>

Source: <http://www.fao.org/3/X9892E/X9892e03.htm#TopOfPage>



Data discovering the calculated values.

One example of values that were calculated from others is explained here.

If we only select France and its wheat and products item, we can see that some of its columns values are part of an equation, so we deduce that.

Production + Import Quantity - Export Quantity - Stock Variation = Domestic supply quantity.

This equation evaluates as true.

On the data population, I found some anomaly with the country China, had double values China and China's mainland.

This had to be removed in order to correctly calculate the WORLD_POPULATION.

This is What our data tell us!

Trends and Insights



1. Considering only plant products, what proportion of the global domestic supply is used as: food, feed, losses, other uses

- From the Global Total of domestic supply quantity, we can see how much food-related to feed, lost and how much it is used for other proposes.
- Much of it, is used for food and feed. Losses are quite stable compare to industrial or other uses proposes.

year	variable	proportion
2014	feed	14.22
2014	food	42.29
2014	losses	6.06
2014	other_uses_non_food	8.78

year	variable	proportion
2017	feed	14.48
2017	food	41.89
2017	losses	6.03
2017	other_uses_non_food	9.06

2. How many humans on earth could be fed if all the plant-based food supply (crops), including food and feed, was used for human consumption? Give the results in terms of calories, and protein. Express these two results as a percentage of the world's population.

So if we could use all plant-based food supply, how many humans could be feed?

year	percentage_human_feed_energ y	percentage_human_feed_prote ins
2014	125.175238630946	14.8409016698852
2017	112.624625106531	14.6046075699558

We could had 112% for the need energy in kcal of the global population and produce 14.60% of the need daily need protein.

3. How many humans could be fed with the global food supply? Give the results in terms of calories and protein. Express these two results as a percentage of the world's population.

This insight lets us ask how many Humans could we feed with our global food supply?

year	percentage_human_feed_energy	percentage_human_feed_proteins
2014	140.873571	19.329163
2017	122.114983	17.819073

That would be more than 100% of the energy and 17.81% protein available for the entire global population.

4. From the collected data on undernutrition, what proportion of the world's population is considered undernourished?

All right, but what proportion of the world population are really in undernourishment.

2014 10.325170

2017 10.202092

more than 10 million.

5. Considering the 25 items most exported by the countries with a high rate of undernutrition, which three of them:

Have the greatest other_uses to domestic_supply_quantity ratio and what are they used for?

Have the greatest feed to (food+feed) ratio and what are they used for?

From the top 25 most exported items from the most undernourished country, What are these items are used for.

Are they used more in the industries or for humans consumption for domestic uses.

So what are they ratios?

On the 1 question here they are most used for Cassava products in 3 countries.

But Spain and Malasya has the hight feed food ration used for sweet products.

For the 2 question the greatest feed food ration Cassava once gain and now soya beans are present used in countries like Venezuela and Turkey.

This is clear on the data tables slides.

1 Have the greatest feed to (food+feed) ratio and what are they used for?

	country	item	year	other_uses_no n_food	domestic_supp ly_quantity	ratio
0	Egypt	Cassava and products	2014	2.0	1.0	2.000000
1	China, Taiwan Province of	Cassava and products	2014	337.0	308.0	1.094156
2	Italy	Cassava and products	2014	2.0	2.0	1.000000
3	Spain	Sweeteners, Other	2017	123.0	28.0	4.392857
4	Malaysia	Sweeteners, Other	2017	58.0	22.0	2.636364
5	United Arab Emirates	Cocoa Beans and products	2017	5.0	2.0	2.500000

2 Have the greatest feed to (food+feed) ratio and what are they used for?

	country	item	year	food	feed	ratio
0	Italy	Cassava and products	2014	0.0	1.0	1.0
1	Venezuela (Bolivarian Republic of)	Soyabean	2014	0.0	54.0	1.0
2	Tajikistan	Soyabean	2014	0.0	2.0	1.0
3	Benin	Soyabean	2017	0.0	2.0	1.0
4	Sri Lanka	Soyabean	2017	0.0	1.0	1.0
5	Turkey	Cassava and products	2017	0.0	259.0	1.0

6. Taking only grains (cereals) for food and feed into account, what proportion (in terms of weight) is used for feed?

If we only consider the Cereals products, there is a proportion of

2014 43.0%

2017 44.0%

of items used for feed.

7. How many tons of grains (cereals) could be released if the US reduced its production of animal products by 10%? Convert this quantity to kcal, and the number of potentially fed humans.

If we only reduce the feed usage of cereals in the USA by 10% and used for human consumption, it would amount to

10%_feed_kg	10%_feed_kcal	potential_humans_fed
14042400.0	39155970000	15662387.0

15662387 humans feed

This means we could have almost more than 14 million kg, and more than 3 billion kcal the can be used to feed the global population.

8. In Thailand, what proportion of cassava is exported? What is the proportion of undernutrition?

Concerning the last example, let us consider the management of food exported by one of the undernourish country in this case Thailand.

Its most exported Product is Cassava in 2014 only it had a proportion of more than 25% at the time with an undernourished population proportion of more than 8%.

2014

25.425589

8.036383

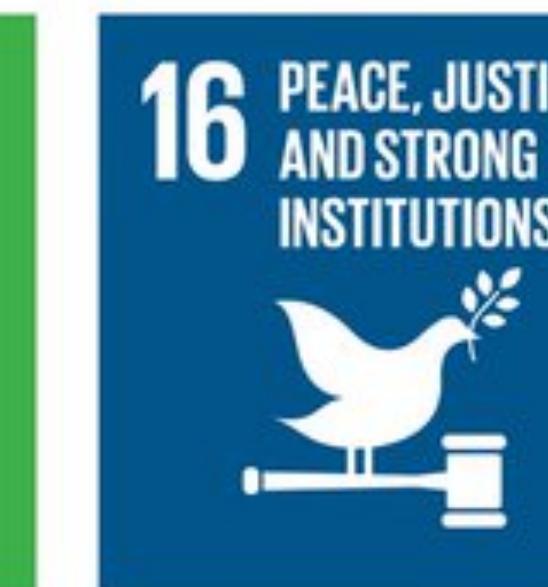
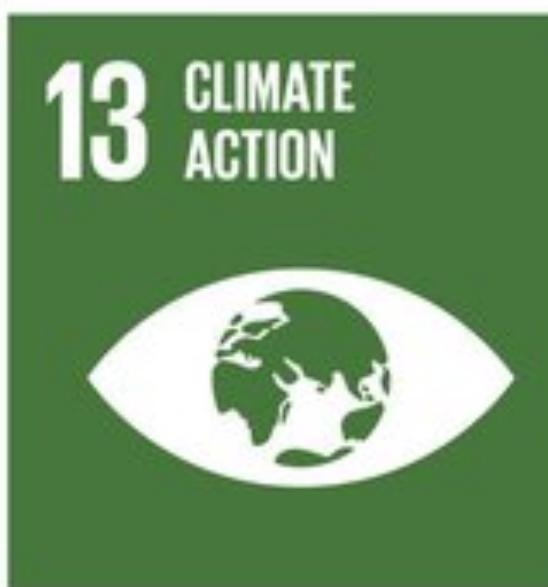
year	country	item	proportion_exported_quantity	u_percentage
2014	Thailand	Cassava and products	25.425589	8.036383
2017	Thailand	Cassava and products	28.882315	7.802362

From the last calculated year the Cassava Exported are 28.882315 with a undernourished percentage of 7.802362

2017

28.882315

7.802362



The fight against hunger is not over!

Recognising our progress without underestimating the future challenges.

1. How many people die from hunger (per minute, year, etc.)?

This year before winter alone, more than 5,737,100 people have died for hunger; every 10 seconds, a child died caused by hungry. They never reach 5 years of age.

1 child 10 seconds ago!

The total people undernourished until 2021 will be more than 827 million.

2. Is the number of chronic undernutrition decreasing or increasing?

Since 1990 the number of hungry people has decreased to 189 million, but in recent years from 2015 on, it has increased to 2.8 million.

+ 2.8 million

Clearly, there was a decline from 1990 from 19% to 10% until 2018. Sadly this positive development had stopped, actually reversed, meaning increased.

3. What is the projected population size in 2050?

