



Food and Agriculture Organization
of the United Nations

ISSN 2709-006X [Print]
ISSN 2709-0078 [Online]



FAOSTAT ANALYTICAL BRIEF 42

Agriculture producer prices indices

2016–2021

HIGHLIGHTS

- Globally, during the period 2016–2020, producer price indices showed a generalized increasing pattern for cereals and oil crops, and a generalized decreasing trend for vegetables and meat.
- In 2019 and 2020, large variations in producer price indices were observed, mainly due to COVID-19 pandemic restrictions, which disrupted the supply chain and pushed many countries to stockpile food reserves out of food security concerns, unfavourable weather events in key exporting countries and strong demand for biofuels by non-commercial traders.
- For oil crops, the increases were mostly due to the continuing rise in the price of soybeans, sunflowers and oil palm fruit.
- The producer price index of meat peaked in 2019, mostly due to the increase in China, as the African swine fever outbreak of 2018 resulted in a significant increase in pork meat imports.
- Estimates for 2021 show a sustained increase in producer prices.

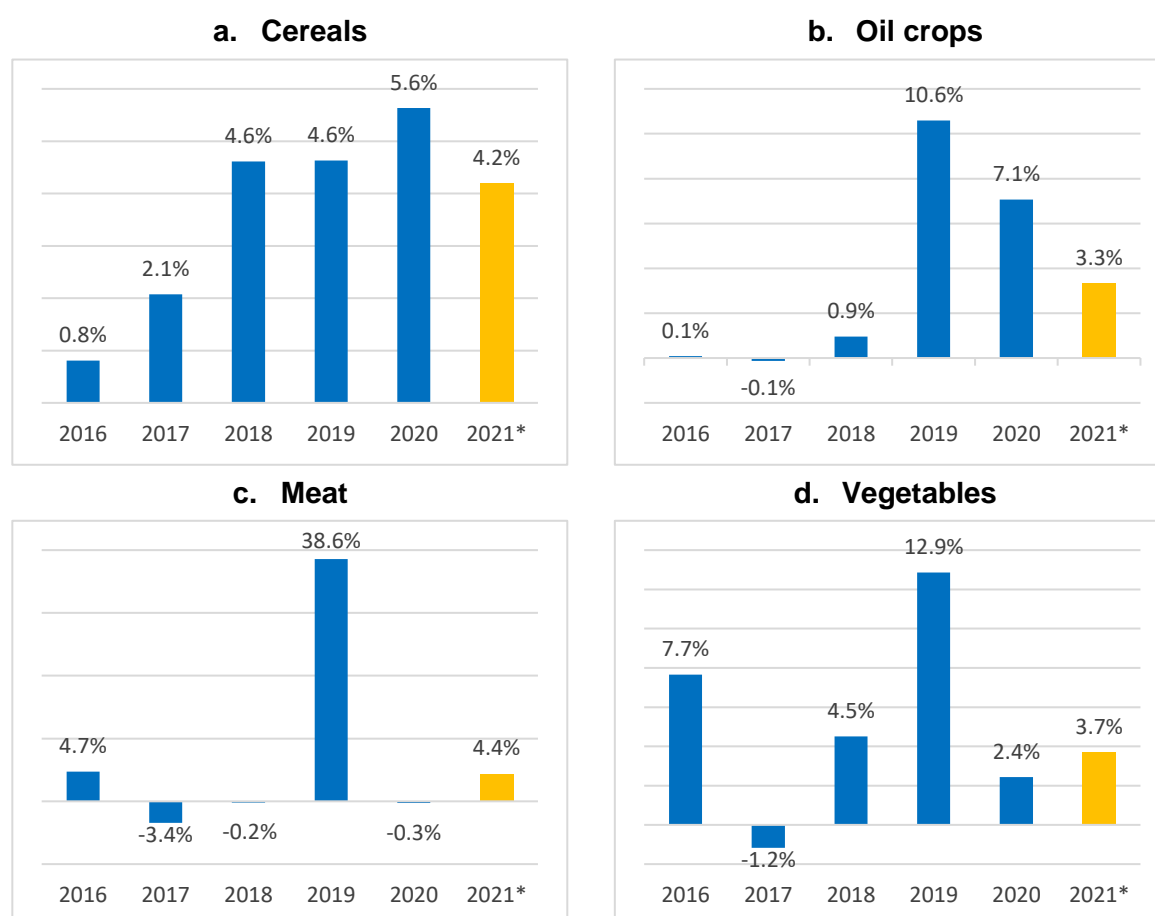
FAOSTAT PRODUCER PRICES

GLOBAL

Globally, the producer price index (PPI) for cereals increased faster in 2020 than in 2019. For oil crops, meat and vegetables, the change in 2020 was smaller than in 2019 and, in the case of meat, was slightly negative overall, with peaks in some countries and reductions in others. Due to the COVID-19 pandemic and related concerns about food security, many countries built large stocks and restricted the exports of staples, animal feeds and oil crops, while the worldwide demand for these commodities continued to grow in 2020, especially for feed stocks from China and for biofuels in the United States of America (Ash and Golden, 2021). Moreover, unfavourable weather conditions, such as heatwaves and droughts, led to a lower harvest in key food exporting countries (Argentina, Brazil, the Russian Federation, Ukraine and the United States of America). As of mid-2021, international food producer prices had reached, according to the International Monetary Fund, their highest real levels in May 2021 since 2014 (Bogmans, Pescatori and Prifti, 2021), mainly supported by a generalized increase in energy prices and agricultural inputs prices, especially for fertilizers and feeds (FAO, 2021).



Figure 1. Global annual change rate of the producer price index for cereals, oil crops, meat and vegetables



Source: Author's own elaboration based on FAO. 2022. FAOSTAT: Producer prices. In: FAO. Rome. Cited May 2022. <http://www.fao.org/faostat/en/#data/PP>

Note: Data for 2021 are estimates.

Estimates for 2021 show a sustained increase in producer prices, although at a slower pace than 2020 (Table 1). Only in the Americas were oil crops prices expected to drop.

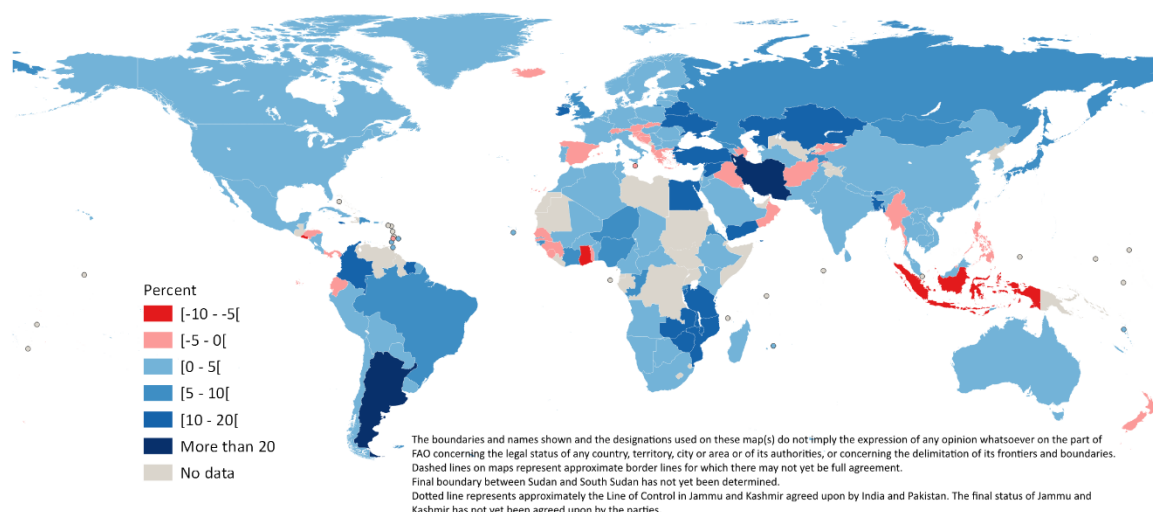
Table 1. Change rate of the producer price index estimates for 2021 (percent)

	Cereals	Oil crops	Meat	Vegetables
Africa	4.0	2.8	5.0	5.3
Americas	11.4	-5.3	1.5	6.6
Asia	2.2	4.8	5.3	2.9
Europe	6.0	6.9	2.3	2.5
Oceania	4.3	3.6	4.5	4.7
World	4.2	3.3	4.4	3.7

Source: Author's own elaboration based on FAO. 2022. FAOSTAT: Producer prices. In: FAO. Rome. Cited May 2022. <http://www.fao.org/faostat/en/#data/PP>

CEREALS

Figure 2. 2016–2020 average annual change rate of the PPI for cereal products



Source: FAO. 2022. FAOSTAT: Producer prices. In: FAO. Rome. Cited May 2022. <http://www.fao.org/faostat/en/#data/PP> based on UN Geospatial, 2020.

Note: Average increases over 20 percent are mainly due to general hyperinflation in all economic sectors.

The annual growth rates of PPIs for cereal products increased at the global level from 2016 to 2020, with peaks in South America, Eastern Africa, Eastern Europe, Southern Asia and Western Asia, and large reductions mainly located in South-eastern Asia (Figure 2). The largest average growth rates in cereal PPIs between 2016 and 2020 in Europe occurred in Belarus and Ukraine (11 percent each), Ireland (10 percent), the United Kingdom of Great Britain and Northern Ireland and the Russian Federation (7 percent each). The rise of cereals (along with oil crops) products prices in Eastern Europe, especially Belarus, has been mainly driven by a reduction in yields between 2015 and 2017 and a context of increasing inflation (including energy and fertilizers), along with the liberalization of bread prices (FAO, 2021). In 2020, the largest surges in prices were recorded in the Republic of Moldova (29 percent), Ukraine (23 percent), the Russian Federation and North Macedonia (15 percent each). The main reason for such increases was a combination of increased importers' demand in the last months of 2020 and the announcement of export quotas in Ukraine and the Russian Federation (FAO, 2020).

In Latin America, Argentina (35 percent), Suriname and Colombia (18 percent each), Jamaica (13 percent) and Brazil (8 percent) are the main contributors to the annual average increase price for cereals in 2016–2020. The main reason of the PPI increase was the above-normal inflation, the severe devaluation of the Argentinian Peso and the Brazilian Real, larger exports of maize and persistent dry conditions in 2020 (FAO, 2020, 2021, 2022b).

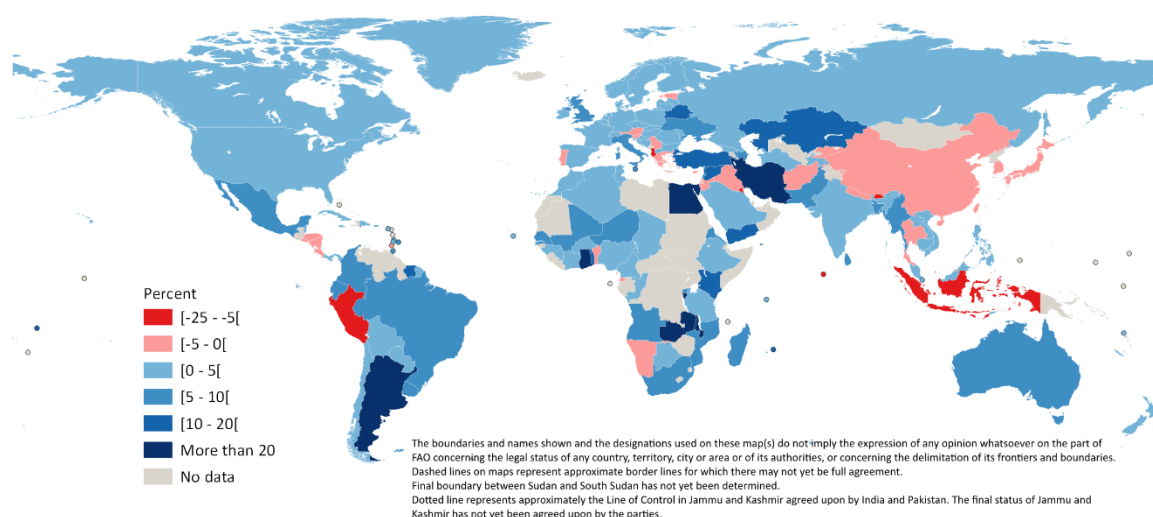
In Africa, and especially in Eastern Africa, the PPIs for cereals were negatively affected by the COVID-19 restrictions and unfavourable weather conditions that induced a reduction in cereals harvest and higher imports. Indeed, in countries such as Burundi and Kenya, the production of maize dropped sharply as a result of the 2016 drought, the 2020 dry season and fall armyworm infestations (FAO, 2017, 2022b).

In Asia, the larger average annual increases in the PPIs for cereals during the 2016–2020 period were recorded in the Islamic Republic of Iran (22 percent), followed by Kazakhstan (18 percent), the Syrian Arab Republic (17 percent), Turkey (14 percent) and Bangladesh (11 percent).

Estimates for cereals indicate a generalized increase in all regions (Table 1), with the largest increase (11 percent) in the Americas, sustained by Brazil, the United States of America and Argentina, followed by 6 percent in Europe, led by the Russian Federation, 4.3 percent in Oceania, supported by Australia, and 4 percent in Africa, driven by Egypt and Nigeria. The PPI for cereals in Asia is estimated to increase by 2.2 percent in 2021, mainly due to a reduction in China.

OIL CROPS

Figure 3. 2016–2020 average annual change rate of the PPI for oil crops



Source: FAO. 2022. FAOSTAT: Producer prices. In: FAO. Rome. Cited May 2022. <http://www.fao.org/faostat/en/#data/PP> based on UN Geospatial, 2020.

Note: Average increases over 20 percent are mainly due to general hyperinflation in all economic sectors.

The prices of oil crops increased by 7.1 percent in 2020 (Figure 1b) mainly due to the continuing rise in the price of soybeans, sunflowers and oil palm fruit, mainly concentrated in the United States of America, South America and Eastern Europe. This is linked to reduced production and limited crushing along with a steady increase in the demand of oil crops meals (FAO, 2021; Ash and Golden, 2021). As seen on Figure 3, between 2016 and 2020, the oil crops PPI has increased in most countries; China, where a decrease was observed, can keep domestic prices stable by operating on the level of stocks.

In South America, Argentina, Suriname and Ecuador had the largest rise of PPIs for oil crops, with average annual growth rates of 33 percent, 17 percent and 10 percent between 2016 and 2020, respectively. In the same period, Brazil has seen an average annual growth rate of 5 percent in its oil crops prices, with a spike of 26 percent in 2020.

In Africa, strong increases in oil crops PPIs were observed in Burundi, Zambia, Ghana, Egypt and Malawi, which all record average growth rates above 20 percent.

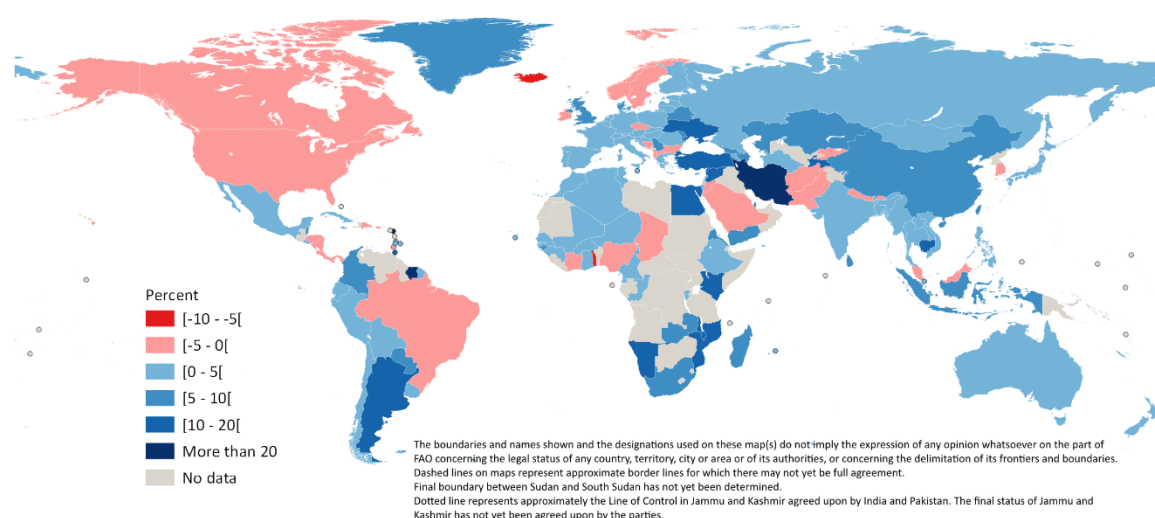
In Europe, the year 2020 saw record increases in the oil crops PPI mostly in Eastern Europe, especially in the Republic of Moldova (40 percent), Ukraine (32 percent), the Russian Federation (30 percent) and Belarus (20 percent).

In Asia, the larger average increases of the PPIs for oil crops between 2016 and 2020 were observed in the Islamic Republic of Iran (26 percent) and Kazakhstan (20 percent), as well as by three countries in Western Asia: Yemen (19 percent), the Syrian Arab Republic (16 percent) and Turkey (14 percent).

PPI estimates for oil crops in 2021 indicate an increase in all regions, except for the Americas (Table 1). In Africa and Oceania, the PPIs for oil crops are estimated to increase by 2.8 and 3.6 percent, respectively, mainly supported by peaks in Ethiopia, Kenya, Australia and New Zealand. The estimated increase in Europe of 7 percent is mainly due to the Russian Federation together with Eastern countries. China is leading the estimated increase of 4.8 percent for oil crops in Asia. In the Americas, instead, the PPIs for oil crops are estimated to decrease by 5.3 percent due to the fall in the United States of America, Peru and Brazil, which results to be stronger than the increases in Colombia, Argentina, Uruguay and Mexico.

MEAT

Figure 4. 2016–2020 average annual change rate of the PPI for meat products



Source: FAO. 2022. FAOSTAT: Producer prices. In: FAO. Rome. Cited May 2022. <http://www.fao.org/faostat/en/#data/PP> based on UN Geospatial, 2020.

Note: Average increases over 20 percent are mainly due to general hyperinflation in all economic sectors.

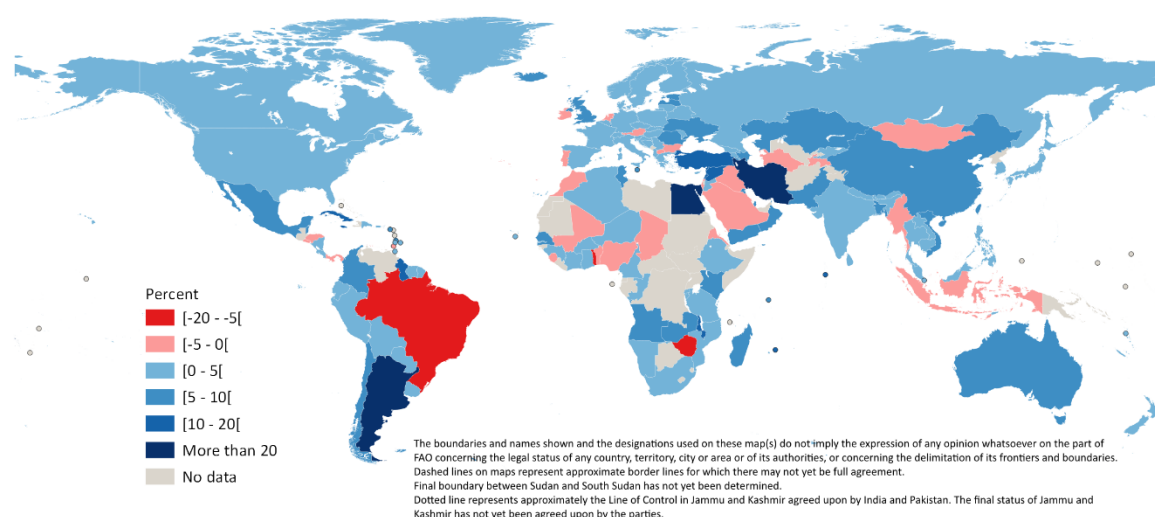
The PPI for meat peaked in 2019 mainly due to the 113.5 percent increase of meat prices in China (Figure 1c). In turn, this is largely stemming from the African swine fever outbreak in 2018, which killed a large number of pigs and resulted in a significant increase in pork imports to meet the domestic demand (Jiang, 2021). In 2020, the global economic situation, strongly affected by the pandemic, induced a stability in the level of prices and made the PPI for meat slightly negative with respect to 2019. Two of the main reasons are the continued sustained growth in meat imports from many Asian countries, in particular China, which outpaced the generalized reduced domestic consumption in advanced economies, and the processing disruption in meat facilities in Brazil and in the United States of America, where entire plants were forced to shut down due to COVID-19 cases among workers.

While the PPI of meat increased in most countries between 2016 and 2020 (Figure 4), overall decreases were observed in some of the largest producers in the Americas (United States of America, Brazil and Canada) and Western Africa (Nigeria and Côte d'Ivoire). In the case of Brazil, the decrease was mainly due to the expansion of the domestic cattle industry, as beef production in the country expanded substantially between 2015 and 2019.

The PPI estimate for meat in 2021 reaches 4.4 percent globally (Table 1). The highest rise is estimated in Asia (5.3 percent), supported by China, India and the Islamic Republic of Iran, followed by Africa (5 percent) and Oceania (4.5 percent) where PPIs are estimated to increase the most in Malawi and Australia, respectively. Meat PPI estimates in 2021 are lower in Europe (2.3 percent) and in the Americas (1.5 percent), where increases in South America counterbalance a fall in the United States of America.

VEGETABLES

Figure 5. 2016–2020 average annual change rate of the PPI for vegetable products



Source: FAO. 2022. FAOSTAT: Producer prices. In: FAO. Rome. Cited May 2022. <http://www.fao.org/faostat/en/#data/PP> based on UN Geospatial, 2020.

Note: Average increases over 20 percent are mainly due to general hyperinflation in all economic sectors.

The global PPI for vegetables increased remarkably between 2016 and 2019 and fell strongly in 2020. The COVID-19 pandemic affected the production of fresh produce, as the movement of seasonal workers was restricted. The pandemic also constrained domestic and international trade, and pushed demand upward (FAO, 2021). The price of energy and fertilizers plays an important role as well: while fertilizers prices were generally low in 2020, their sharp increase in 2021 is estimated to contribute towards pushing the PPI up for vegetables (FAO, 2021). Indeed, the estimate of PPI for vegetables in 2021 shows a growing trend to 3.7 percent (Table 1).

At the country level, the largest average increases over the 2016–2020 period are observed in Argentina (33 percent), Egypt (32 percent), the Islamic Republic of Iran (28 percent), Fiji (23 percent) and Guyana (17 percent). The largest decreases are observed in Togo and Zimbabwe (-16 percent).

The PPI estimate in 2021 for vegetable shows increases in all regions. The largest increases are estimated in the Americas (6.6 percent) and Africa (5.3 percent), supported by increases in Argentina,

Chile and the United States of America, and Northern African countries and Nigeria, respectively. In Oceania, the estimate of PPI for vegetables reaches 4.7 percent, supported by Australia and New Zealand. Asia and Europe show estimated vegetable PPI of 2.9 and 2.5 percent, respectively, mainly driven by increases in China, India, the Russian Federation and Spain.

EXPLANATORY NOTES

Definitions

The FAO indices of agricultural producer prices measure the average annual change over time in the selling prices received by farmers (prices at the farm-gate or at the first point of sale). The indices are constructed using the Laspeyres formula with price data in standardized local currency (SLC). This is an aggregate index for primary crops and livestock products. For a country, the aggregate would include primary crops and livestock products that are produced in that country, and for which both production and producer price data are available.

The index is calculated by summing the SLC price for a given year multiplied by production quantity in base year for all items in the aggregate and dividing by the sum of the SLC price in the base year multiplied by production quantity for the base year for the same items. The single item indices are calculated by dividing the SLC price in a given year by the SLC price in the base year.

Producer prices are prices received by farmers for primary agricultural products as defined in the System of National Accounts 93. The producer's price is the amount receivable by the producer from the purchaser for a unit of a good or service produced as output minus any value added tax (VAT), or similar deductible tax, invoiced to the purchaser. It excludes any transport charges invoiced separately by the producer. Time series refer to the national average prices of individual commodities comprising all grades, kinds and varieties, received by farmers when they participate in their capacity as sellers of their own products at the farm gate or first point of sale.

Producer prices are prices received by farmers for primary crops, live animals' weight and livestock primary products as collected at the point of initial sale (prices paid at the farm gate).

The source of official country agriculture producer prices is a questionnaire sent annually to the national statistical offices in all countries in May of the reference year in addition to the two previous years.

Price gaps are filled by employing imputation techniques, including interpolation and ARIMAX methods, up to 2020. Prices for 2021 are estimated using the Holt-Winters double-exponential smoothing method. More details are available in the section *Related Documents* of the Producer Prices domain in FAOSTAT.

The following countries were removed from this analysis: Antigua and Barbuda (vegetables), Burundi (oil crops), Guyana (oil crops), Sierra Leone (oil crops), the Bolivarian Republic of Venezuela (cereals, oil crops, meat and vegetables) and Zimbabwe (oil crops).



Next release

Country agriculture producer price indices are updated in FAOSTAT on an annual basis. The next release presenting global and regional trends will be in December 2022.

REFERENCES

Ash, M. & Golden, D. 2021. *Oil Crops Outlook: January 2021*. U.S. Department of Agriculture, Economic Research Service. <https://www.ers.usda.gov/webdocs/outlooks/100218/ocs-21a.pdf>

Bogmans, C., Pescatori, A. & Prifti, E. 2021. Latin America's inflation challenge. In: *International Monetary Fund*. Washington, D.C. Cited March 2022. <https://blogs.imf.org/2021/06/24/four-facts-about-soaring-consumer-food-prices/>

FAO. 2017. *FPMA Bulletin #6, 10 July 2017*. <http://www.fao.org/3/i7536e/i7536e.pdf>

FAO. 2020. *Crop Prospects and Food Situation - Quarterly Global Report No. 4, December 2020*. <https://doi.org/10.4060/cb2334en>

FAO. 2021. *Food Outlook – Biannual Report on Global Food Markets*. Food Outlook, November 2021. <https://doi.org/10.4060/cb7491en>

FAO. 2022a. FAOSTAT: Producer prices. In: *FAO*. Rome. Cited May 2022. <http://www.fao.org/faostat/en/#data/PP>

FAO. 2022b. *FPMA Bulletin #1, 10 February 2022*. <https://www.fao.org/3/cb8622en/cb8622en.pdf>

Jiang, H. 2021. China: Evolving Demand in the World's Largest Agricultural Import Market. In: *U.S. Department of Agriculture*. Washington, D.C. Cited March 2022. <https://www.fas.usda.gov/data/china-evolving-demand-world-s-largest-agricultural-import-market>

UN Geospatial. 2020. *United Nations Clear Map* [online]. Cited June 2021. <https://geoservices.un.org/Html5Viewer/index.html?viewer=clearmap>

This analytical brief was prepared by Michele Vollaro and Jean Marie Vianney Munyeshyaka under the supervision of Veronica Boero, team leader of the Social and Economic Statistics Team, FAO Statistics Division.

Required citation: FAO. 2022. *Agriculture producer prices indices. 2016–2021*. FAOSTAT Analytical Brief Series No 42. Rome.

Cover photo: ©FAO

CONTACTS

Statistics Division – Economic and Social Development
statistics@fao.org

www.fao.org/food-agriculture-statistics/en/

Food and Agriculture Organization of the United Nations
Rome, Italy