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TECHNICAL REPORT

FOOD PRICES IN MALI AND SUDAN

Changes, causes, consequences and responses

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The interpretations and opinions expressed in the report are, however, not necessarily those of the people we interviewed, nor those of the ODI. The authors are solely responsible for any errors and omissions.

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ACRONYMS

BCEAO	Banque Centrale des États de l'Afrique de l'Ouest
CBOS	Central Bank of Sudan
CERF	United Nations Central Emergency Response Fund
CPI	Consumer price index
ECOWAS	Economic Community of West African States
FAO	Food and Agriculture Organization of the United Nations
FCFA	Franc CFA, Mali currency
FEWSNET	Famine Early Warning Systems Network
FFP	Office of Food for Peace
GIEWS	Global Information and Early Warning System on Food and Agriculture
IDP	Internally displaced person
IMF	International Monetary Fund
NGO	Non-governmental organisation
SDG	Sudanese pound
SFSP	Sudan Family Support Programme
SPARC	Supporting Pastoralism and Agriculture in Recurrent and Protracted Crises
t	Tonne, metric ton
US	United States
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
VAM	Vulnerability assessment monitoring
WFP	The World Food Programme

HIGHLIGHTS

This study looks at prices of basic goods – above all staple foods – in Mali and Sudan to see how those prices have changed between 2019 (pre-pandemic) and mid-2022, when prices of wheat, maize, oil and fertiliser spiked on world markets, in part pushed higher by war in Ukraine.

How did prices change? What drove price changes? What effects did higher prices have? What public responses were undertaken by governments and non-governmental organisations (NGOs)? We found:

- **Prices of cereals in both countries had doubled**, or more, since 2019.

- **The price rises were (very) largely a result of domestic drivers.** In Mali, poor harvests have led to higher cereals prices: harvest losses arising from low rains in 2021 combined with conflict that reduced cultivated areas. The ECOWAS (Economic Community of West African States) trade embargo that applied to Mali in the first half of 2022 interrupted the supply of fertiliser, pushing up its price. In Sudan, extremely high domestic inflation explained most of the price increases in cereals.

- **Increases in world prices played only a very small part** in higher cereals prices in the two countries.

- **Most people coped by** economising on their diets, cutting out costly foods; giving up small luxuries such as moto-taxi rides; and trying to earn more by taking on more work.

- Only **those already struggling to make ends meet** – people in households lacking assets, savings and labour – were pushed towards eating wild foods and begging.

- **Public responses – from government, donors, NGOs (both international and local) – were limited** compared to the scale of hardship inflicted by higher prices. In Mali, the government tried to subsidise prices of staple foods and other essential items, but with only a small budget to do so, it had seemingly little effect.

  Otherwise, agencies responded by trying to reach hard-hit households with cash grants and food parcels, or by providing nutrition interventions, for example, to protect infants and mothers against malnutrition.

What does this imply for policy-makers? Given price increases in Mali and Sudan were largely driven by domestic factors, four potential responses stand out, namely:

- **In both countries, domestic harvests depend on the weather.** Whilst that cannot be controlled, irrigation could be expanded to cover four times the current area in Mali and three times the current area in Sudan. Adopting crops and varieties that resist dry spells can help stabilise harvests – something farmers know and practise. Agricultural research can provide them with more options.

- **Increased peace and security**, especially in Mali, would have an immediate impact as farmers displaced by conflict could go back to their farms. The same applies to the many persons also displaced in Sudan.

- **In Sudan, stabilising the macroeconomy** – closing gaps between government spending and revenue; between exports and imports; and between money supply and production – is imperative. Reform, however, is not easy because economic policy is linked to the interests of powerful political and military elites.

- **In Mali, when trade embargoes** are applied by ECOWAS (in response to a coup d'état), agricultural inputs should be exempt.

Economic growth, with broad-based agricultural and rural development, makes these aims easier to achieve. In both countries, growth is hindered by governments that are widely seen as illegitimate and not recognised internationally, governments that show few signs of wanting reform, either political or economic.

Outsiders need to work with local people and local groups who do their best to cope, and sometimes to thrive, in difficult circumstances.

In the short term, some households on low incomes lack the means to cope with higher prices – they need social protection.

SUMMARY

In early 2022, when agricultural and other commodity prices spiked on world markets, higher food prices threatened to harm people on low incomes in the Global South. Hikes in the world prices of wheat and maize, oil and gas, sunflower seed, and fertiliser would probably be transmitted (to some degree) to economies in the Global South – trade liberalisation spanning the last three decades means few countries can insulate their domestic markets from international ones – driving up the price of food on domestic markets. People on low incomes would not be able to afford to eat properly and would go hungry.

That said, international prices do not transmit completely, perfectly or instantly to domestic prices. Transport costs from the main suppliers of commodities to centres of consumption in the Global South drive wedges between world and local prices, especially when domestic markets lie far from ports – as commonly applies in parts of Africa. Furthermore, some staple foods, such as cassava, yams, and millet are barely traded internationally, so their domestic prices are little affected by changes in world markets.

That prompted the questions of how food prices have changed in recent years, why and with what consequences in the countries that Supporting Pastoralism and Agriculture in Recurrent and Protracted Crises (SPARC) serves. Two countries were selected for study: Mali, landlocked, where most people on low incomes consume locally grown millet and sorghum – where in theory international price movements should not much affect local prices; and Sudan, where most rural households eat locally grown sorghum as their staple, but where urban people consume flatbreads baked from wheat, most of it imported – and so should be vulnerable to rising world prices.

We posed four questions:

- **How have domestic prices of key goods changed** – especially fuel for transport and domestic use, staple foods, fertiliser and cooking oil – in real terms, since before the pandemic (early 2020) and since war broke out in Ukraine (late February 2022)?

- **What impact have increased world prices of wheat, maize, sunflower oil, fertilisers and fuel had on domestic prices?** What other factors may have driven up local prices (e.g. overall inflation in the economy, low harvests arising from drought, etc.)?

- **How have consumers and producers been affected by price rises? Have they reduced consumption?** Have they been able to shift consumption away from goods that have become notably more costly to cheaper options? How can we recognise people most at risk?

- **What measures have been taken** by governments, donors, NGOs and civil society to mitigate price rises, or to help households most at risk from price rises?

To answer our questions, we took four different approaches:

- To look at **food price changes**, we drew on data collected by the World Food Programme's (WFP) vulnerability assessment monitoring (VAM) teams. Since the early 2000s, every month, VAM has been recording the prices of basic foods in markets across Mali and Sudan – an astonishingly rich record.

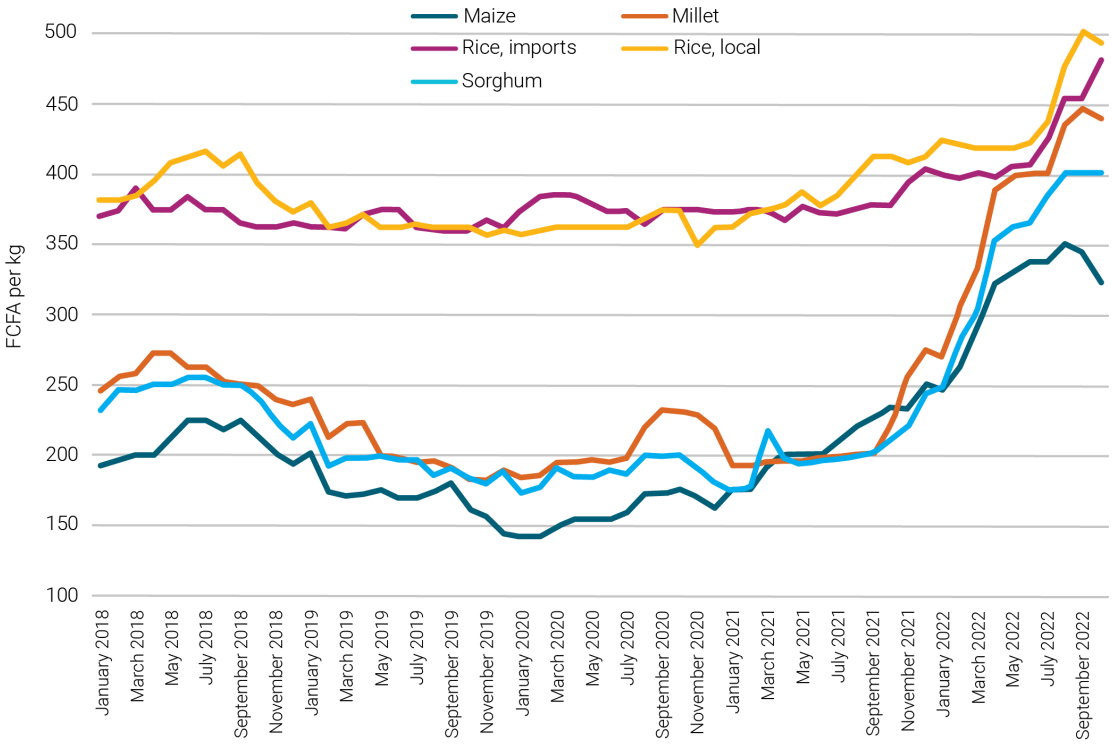
- To look at the **drivers of price changes**, we examined potential causes: local harvests and their fluctuations owing to weather and conflict; imports of staples, whether whole grain or flour; overall inflation in the domestic economy; and any other factor identified in the literature that might affect food prices.

- To see **how people were affected by price changes**, we read secondary literature – above all the reports from the Famine Early Warning Systems Network (FEWSNET), Global Information and Early Warning System on Food and Agriculture (GIEWS) and WFP, which two or three times a year estimate food insecurity in both countries — and we interviewed selected informants about their experiences and observations of living with rising food prices.

- To record **public responses** (e.g. by government, humanitarian agency, civil society) to price rises and their effects, we reviewed government, NGO and donor sources. In Mali, we also asked selected key informants for their observations regarding such public responses.

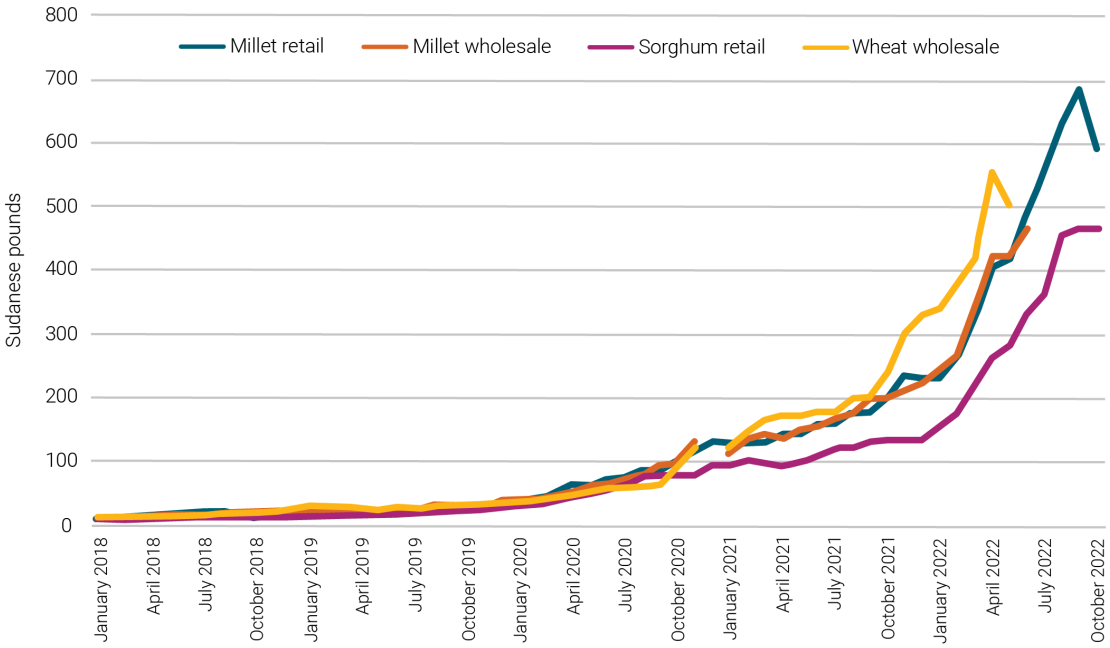
We found that prices of cereals doubled – or more – in both countries since 2020 (Figures 1 and 2). Not surprising for Sudan where inflation has been rampant at rates as high as 300% a year since mid-2019; but for Mali, it is surprising because before 2020, prices had been stable for much of the 2010s.

FIGURE 1: MALI, MEDIAN PRICE OF CEREALS IN FIVE KEY MARKETS, FROM JANUARY 2018 TO OCTOBER 2022



Source: compiled from WFP VAM data on monthly prices, recorded in Franc CFA (Mali's currency).

FIGURE 2: SUDAN, MEDIAN PRICE OF CEREALS IN 12 KEY MARKETS, FROM JANUARY 2018 TO OCTOBER 2022



Source: compiled from WFP VAM data on monthly prices, Sudanese pounds.

Price rises result very largely from domestic drivers. In Mali, the main reason has been poor harvests, due to low rains in 2021, along with conflict that reduced cultivated areas. The ECOWAS trade embargo that applied to Mali in the first half of 2022 interrupted supply of fertiliser, pushing up its price. In Sudan, extremely high domestic inflation explained most of the higher cereals prices.

Only a small part of price increases was caused by the spike of wheat and maize on world markets. The rise in oil prices probably played a larger, yet still minor, part. The spike in world wheat prices helped push up local prices of wheat and flour in Sudan, where people who live in urban settings have long consumed flatbread made from wheat, much of which is imported. But, that only explains a small part of the very large increases in domestic prices.

Drawing largely on information from key informants, **the consequences of higher prices for staple foods** in populations where most people live on low incomes have been unsurprising. People coped by changing their diets, switching from more costly food items to buy the cheapest staples that satisfy hunger – for example, substituting pigeon peas for meat or millet for rice. Most people's diets have become more dull. They may or may not, however, be less nutritious. Take Sudanese rural households switching from meat to pigeon peas; they should suffer little harm as the peas have plenty of protein.

People also gave up small luxuries. In Mali, for example, villagers reported no longer taking moto rides but, rather, cycling on their bicycles.

In Sudan, people tried to earn more. For example, villagers looked for more paid farm work, and young men migrated to cities in Sudan, Egypt and farther afield.

Reassuringly, we came across few accounts of desperation: people turning to famine foods; or people doing anything to earn more, however demeaning (e.g. begging, commercial sex work), dangerous (e.g. gold panning) or illegal (e.g. petty crime).

That said, hardship falls most on those who can least cope. Those people who were able to meet their basic needs before food prices rose probably coped. Those who were struggling – for lack of labour, capital, land and/or livestock – faced very hard times indeed. For them, more desperate measures beckoned.

For example, in Sudan internally displaced persons (IDPs) were reported as gathering wild foods (e.g. green mangoes and sorghum), hunting game and begging. It was also reported that young women were being forced into early marriages.

Public responses – from government, donors and NGOs both international and local – were limited compared to the scale of hardship inflicted by the higher prices. In Mali, the government did try to subsidise prices of staple foods and other essential items, albeit with few means, to seemingly little effect. Otherwise, responses attempted to reach hard-hit households with cash grants, food parcels or additional nutrition interventions to try to protect infants and mothers.

What does this imply for policy-makers?

Given that the most powerful causes of price increases in both countries were domestic, prices should fall back if those causes can be addressed. Four of these causes stand out:

Weather: Ample rains that are well distributed throughout the growing season, with few storms, would do much to restore domestic supply and bring down prices. The weather, in the short term, is largely a matter of chance. The hazard of poor weather can, however, be reduced in the medium term by irrigation and by agricultural development that promotes crops that tolerate dry spells.

Farmers know this, and they do switch to crops that resist dry spells. In Mali, when they heard that manufactured fertiliser may be costly or simply unavailable, as happened in 2022, they planted crops that need less if any additional fertiliser, such as millet and sorghum rather than maize.

When it is an option, and when they have the means to buy the equipment, farmers in both countries invest in wells and pumps to irrigate (e.g. available water from a local watercourse or a high groundwater table). The opportunities to expand irrigation are considerable in both countries: by four times more than the current area in Mali, and by almost three times more than the current area in Sudan.[1]

Peace and security: Where there is conflict, farmers may not be able to access their fields, or they may simply leave their farms fallow to seek safe haven.

This applies in both countries: especially Mali at present; and especially in Darfur, in Sudan, even if conditions are more peaceful than they have been in the past. Restoring peace is largely a matter of reaching a political settlement for the conditions and grievances (some of them long-standing) that cause people to take up arms.

Macroeconomic stability (Sudan): Achieving it is not simple, even if the problems that need addressing are easily stated: closing the gaps between government spending and revenue; between the value of exports and imports; and between the supply of money and the creation of goods and services. Adjustments often cause pain and are often resisted by those who have benefited from the imbalance.

This factor applies in Sudan. There, the problems are doubly knotty because the economy has been distorted to favour the powerful interests of political and military elites. Political reform is necessary, if not sufficient, for economic reform.

Trade embargoes (Mali): When they are applied, agricultural inputs should be exempted.

Economic growth, with broad-based agricultural and rural development, makes these aims easier to achieve. In both countries, growth is hindered by governments that are widely seen as illegitimate and unrecognised internationally, governments that show few signs of wanting reform, either political or economic. This creates the challenge of achieving economic growth and development in the difficult circumstances of ongoing conflict, political disruption and economic turbulence. The ray of hope is how much local people, who are directly affected by overlapping crises, do themselves to cope and even thrive. Outsiders need to recognise these efforts, then seek to complement them wherever possible.

In the short term, for those hit hard by rising prices – who are often the least able to cope because they lack land, labour, marketable skills, savings and so on – social protection is required. It may not prevent all hardship, but it can make the difference between living in austerity and destitution; when people's medium- to long-term prospects are undermined by what they have to do to survive in the short term. Take, for example, the effects of months of malnourishment on the physical and mental development of infants, or on the health of new mothers.

Because funds for social protection, including humanitarian aid, are less than the need, what little there is must be targeted to the most affected persons. A question posed for this study was: is enough known about who these people are?

Regular bulletins from FEWSNET, GIEWS and WFP that assess distress and need, country by country, at least two times a year, provide impressive detail, even when surveying such large territories. After reading them, the systems that have been set up to collect and analyse the information seem to work well. And whilst there may be scope to improve, more detailed study may only generate marginal gains when compared to effort spent on: improving delivery of assistance; refining and tuning what is offered to match the most pressing needs; and reforms that can alleviate root problems, promote growth and development, and reduce the frequency and depth of need for social protection.

SECTION 1

INTRODUCTION

1.1 BACKGROUND

When prices of agricultural commodities on world markets spiked in early 2022 (see Appendix A for more details of commodity price changes since 2010), aggravated by Russia's invasion of Ukraine in February 2022, it seemed as though higher prices — above all, those for wheat, maize, fertiliser and oil — might seriously harm people on low incomes in the Global South. Higher international prices could plausibly transmit to many economies in the Global South, as trade liberalisation spanning the last three decades means that few countries can insulate their domestic markets from international ones. With that, the price of food on domestic markets would be driven up. People living on low incomes would not be able to afford to eat properly and would go hungry. Several international agencies and some media sounded the alarm, such as The Economist (2022), Glauber and Laborde (2022) and IMF (2022).

That said, international prices rarely transmit completely, perfectly or instantly to domestic prices. Transport costs from places where commodities are exported to consumption centres in the Global South drive wedges between world and local prices, especially when domestic markets are far from ports, which is common in parts of Africa.

Moreover some staple foods, such as cassava, yams, millet and sorghum, are little traded despite being widely consumed in parts of rural Africa. Therefore, their prices are not significantly affected by changes in world prices.

With considerable interest by policy-makers across the world in the consequences of rising international prices for some agricultural commodities, it was time to check what was happening to the price of staple foods, and with what consequences, in some of the countries that SPARC serves. Two countries were selected for study: Mali and Sudan. In landlocked Mali, most people on low incomes consume locally grown millet and sorghum, so in theory international price movements should not much affect local prices. In Sudan, most rural households eat locally grown sorghum as their staple, but urban households consume flatbreads baked from wheat, most of which is imported, and so should be noticeably affected by increases in world prices.

1.2 QUESTIONS AND METHODS

We posed four questions:

- **How have domestic prices of key goods changed** – especially fuel for transport and domestic use, staple foods, fertiliser and cooking oil – in real terms, since before the pandemic (early 2020) and since war broke out in Ukraine (late February 2022)?
- **What impact have increased world prices of wheat, maize, sunflower oil, fertilisers and fuel had on domestic prices?** What other factors may have driven up local prices (e.g. overall inflation in the economy, low harvests arising from drought, etc.)?
- **How have consumers and producers been affected by price rises?** Have they reduced consumption? Have they been able to shift consumption away from goods that have become notably more costly to cheaper options? How can we recognise people most at risk?
- **What measures have been taken** by governments, donors, NGOs and civil society to mitigate price rises, or to help households most at risk from price rises?

To answer our questions, we took four different approaches:

- To look at **food price changes**, we drew heavily on data collected since the early 2000s, every month, for many markets in Mali and Sudan. This data records the prices of basic foods and was collected by WFP VAM teams – an astonishingly rich record.
- To look at the **drivers of price changes**, we examined potential causes: local harvests and their fluctuations owing to weather and conflict; patterns in imports of staples, whether whole grain or flour; overall inflation in the domestic economy; and any other factor identified in the literature that might affect food prices.
- To see **how people were affected by price changes**, we read secondary literature – above all the reports from FEWSNET, GIEWS and WFP which two or three times a year estimate food insecurity in both countries – and we interviewed selected informants (see below) about their direct experiences living with rising food prices.
- To record **public responses** to price rises and their effects, we reviewed documents on government policy, and those from NGO and donor sources. In Mali, we also asked 18 informants for their observations regarding these public responses.[2] In Sudan, a focus group was organised to collect observations from a village.

Data, literature and interviews were collected in the second half of 2022.

SECTION 2

FINDNGS

2.1 MALI

2.1.1 Price movements in Mali since 2019

Although no overall inflation was seen in Mali in 2019 and 2020 (see Table 1), these years marked the end of seven or eight straight years of relatively stable prices (see Figure 3). Then, in 2021 and 2022, inflation has run at 9% per year.

Overall inflation, computed as a consumer price index (CPI), hides differential changes in prices by items (Table 1, Figure 4).[3] Looking at the prices of cereals and other basic commodities tells a different story.

Cereals: Prices of most grains, other than imported rice, fell during 2019. However, in 2020, the prices of maize, millet and sorghum began to rise, by 12% to 23%; and rose again, even stronger, from May to July 2021 (Figure 5).[4] Since then, the prices of most cereals have doubled or more – rising by far more than the rate of inflation.

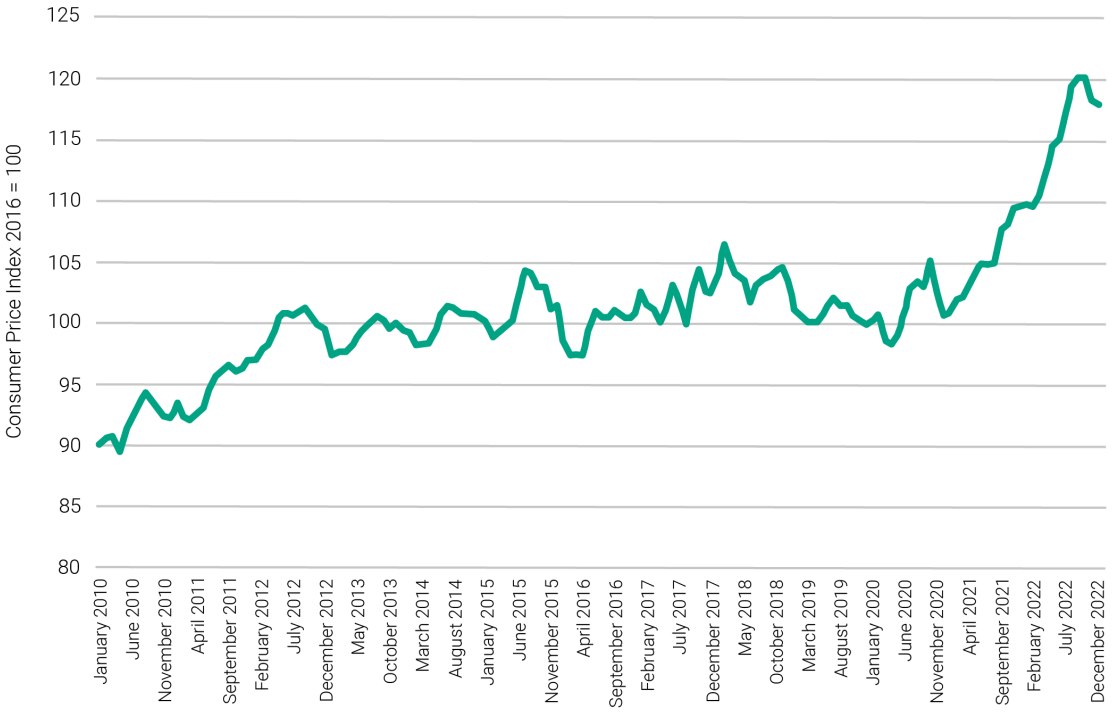
The exception has been **rice**, whether local or imported. Prices barely rose before 2022, but have subsequently risen by approximately 20%.

TABLE 1: PRICE RISES IN MALI, FROM THE YEAR 2019 TO OCTOBER 2022

	Overall inflation, consumer price index (CPI)	Maize	Millet	Rice, local	Rice, imports	Sorghum	Cooking oil	Gas cylinders	Transport fuel, gazoil
2019	-1%	-23%	-24%	-6%	0%	-15%			
2020	0%	17%	23%	0%	-5%	12%	29%	17%	0%
2021	9%	43%	35%	13%	7%	43%	50%	43%	0%
2022 (to October)	9%	40%	64%	18%	20%	49%	33%	55%	27%

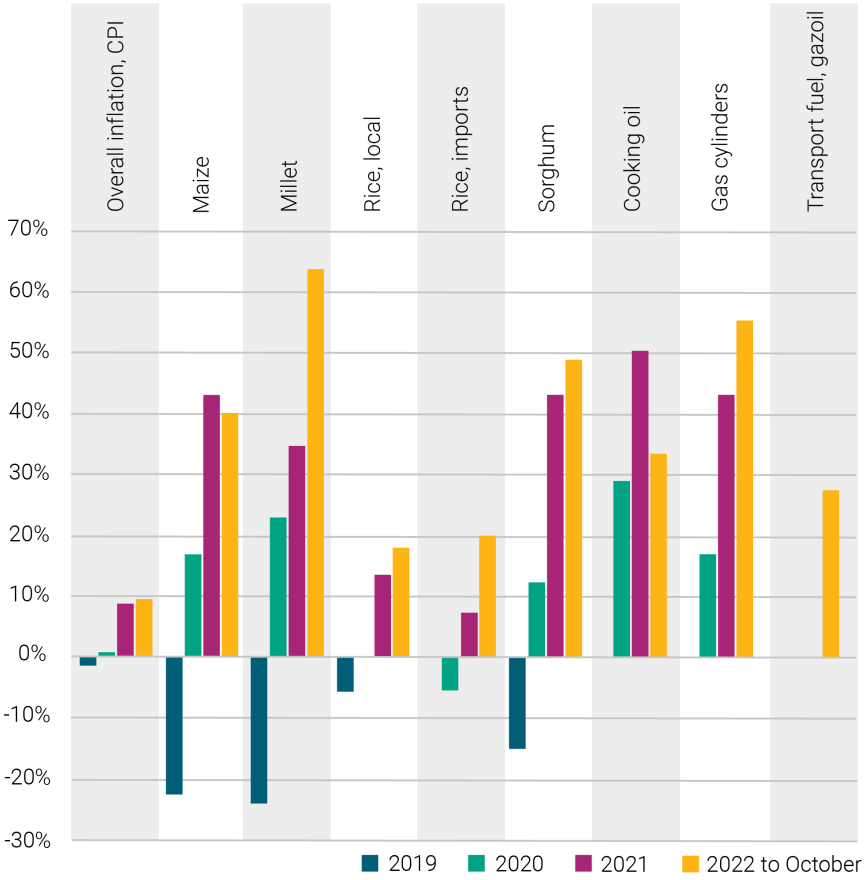
Source: for CPI – compiled from data from WFP VAM, *Banque Centrale des États de l'Afrique de l'Ouest* (BCEAO); for prices of cooking oil, gas and gazoil – compiled from key informant reports.

FIGURE 3: INFLATION IN MALI, FROM 2010 TO 2022



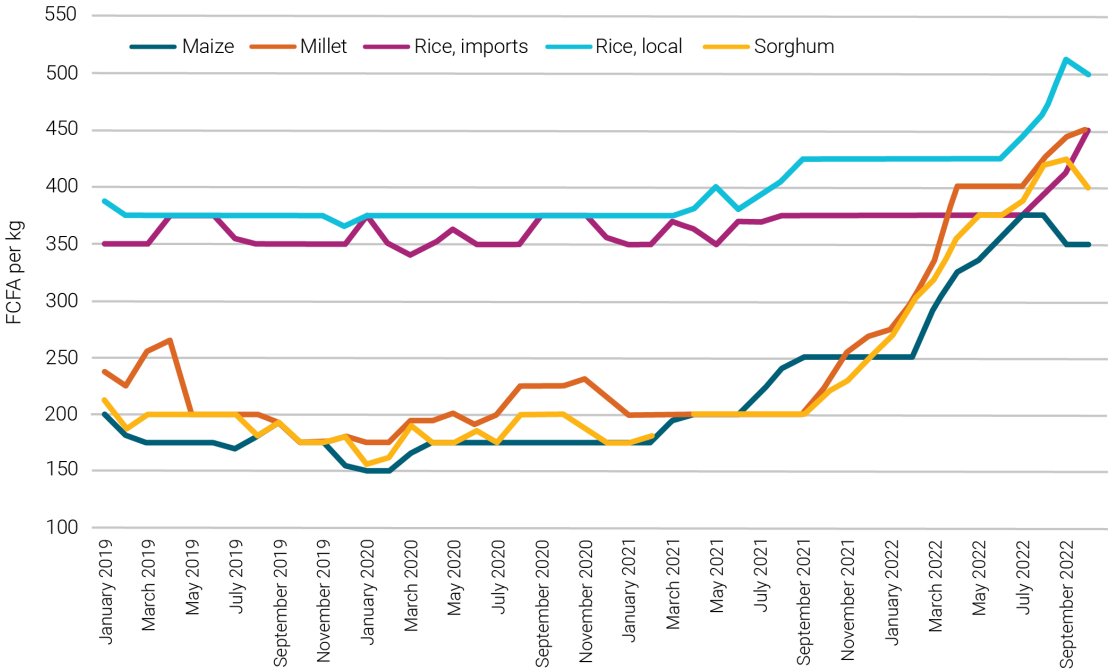
Source: BCEAO CPI for Mali.

FIGURE 4: PRICE RISES IN MALI, FROM 2019 TO OCTOBER 2022



Source: based on Table 1.

FIGURE 5: CEREALS PRICES FOR FIVE MAIN CEREALS IN NIARELA (BAMAKO), FROM 2019 TO OCTOBER 2022



Source: WFP prices database.

Since mid-2021, cereals have not been the only markets where price rises far exceed those of overall inflation. The price of **cooking oil** rose by 29%, 50% and 33% respectively during 2020, 2021 and 2022, whilst that of **gas cylinders** rose by 17%, 43% and 55%. And during 2022 – not before – the price of **gazoil**, which is used for diesel vehicles, rose by 25%.

Fertiliser prices were little affected by inflation until early 2022, in part because the government has been subsidising the cost of fertiliser (since 2008 for rice; and since 2009 for other crops) (Koné et al., 2019; Smale et al., 2020; Sissoko et al., 2022).

Studies of the effect of this subsidy (Smale et al., 2020) suggest that poor-quality fertiliser and late delivery have greatly reduced the impact of additional fertiliser applied to fields, but that some of the better-off farmers have made good use of fertiliser. Cotton, maize and rice have benefited from fertiliser: but only small quantities of fertiliser (if any) have been applied to millet and sorghum, with little impact on their yields.

The year 2022 saw the disruption of fertiliser supplies, owing to the ECOWAS embargo imposed on Mali in the first half of the year. Fertiliser was scarce. For what little fertiliser that was on offer, the price soared: just about doubling from 19,000 FCFA per 50 kg sack in 2021 to 35,000 FCFA per 50 kg sack in 2022.

Less fertiliser was used during the growing season of 2022 than before. But, how much did this affect harvests? Some observers predicted dire consequences whilst others were more sanguine. Our interviewees reported that, when they have little fertiliser, farmers move from cotton and maize to millet and sorghum because the latter two crops yield reasonably well with little or no fertiliser.

IFPRI researchers modelled the effects of less fertiliser and higher prices (IFPRI, 2022). They assumed that crops that would have been fertilised then not fertilised in 2022, would yield 20% less. That is quite an impact, but it applies only to some crops (cotton, maize and rice) and to some areas (the south, the inland delta). Overall, their model showed the value of farm outputs declining by just 0.5% in 2022 – a tiny loss.

Gro agriculture, a US-based consultancy, also has a model for fertiliser in Mali.[5] Their model predicts that the 2022 maize harvest could fall to 2.8 million tonnes from 3.2 million tonnes in 2021; and the rice harvest could fall to 1.5 million tonnes from 1.6 million tonnes. These would be significant losses, especially when considering the 2021 baseline, a year of lower-than-normal harvests. The predicted losses from these crops amount to 500,000 tonnes: a large loss to be sure, but given typical grains harvests in total of around 8 million tonnes — the USDA estimate for 2022 — it represents less than a 7% loss.

Moreover, our informants noted that the rains for 2022 were back to normal after the dry year of 2021, which should make all the difference for the millet and sorghum harvests.

2.1.2 Explaining price rises in Mali

Some of the extraordinary rises in the prices of cereals and basic commodities in Mali can be attributed to the 9% per year overall inflation seen in 2021 and 2002. But, even netting out inflation leaves large price increases to be explained.

For some items, the answer lies in world price movements, most notably for transport fuel gazoil). In 2022, transport fuel rose by around 21%, which is in line with what might be expected given the 43% increase in the price of crude oil on world markets.[6]

However, since early 2021, prices of most cereals, cooking oil and cooking gas cylinders have risen far more: 74% to 84% for maize, millet and sorghum; 86% for cooking oil; and 112% for gas cylinders.

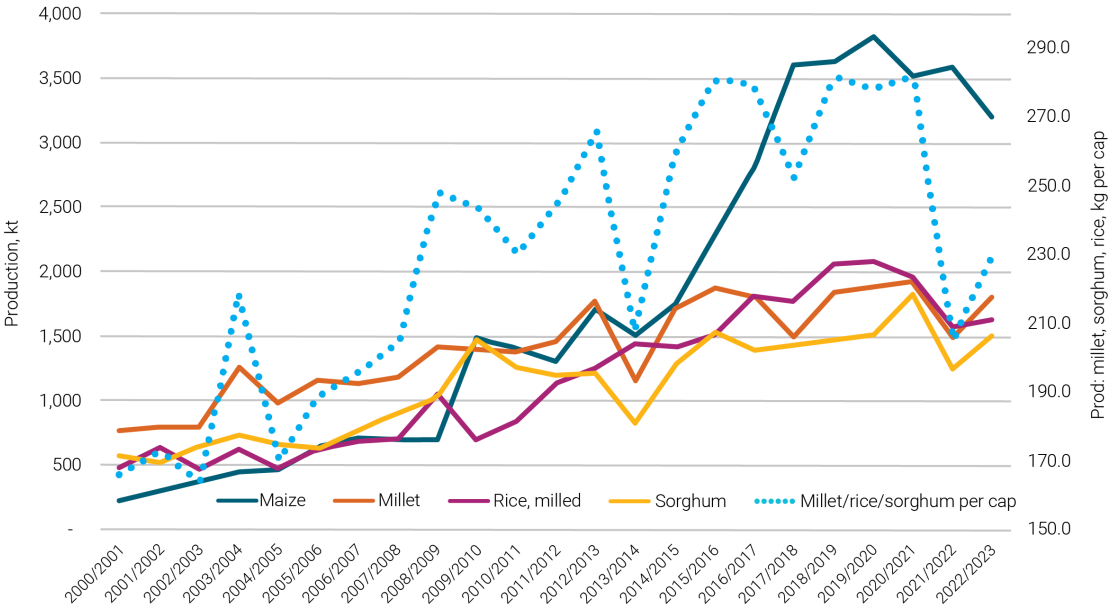
So, what explains these extraordinary increases in most basic food prices? Mali produces almost all the maize, millet and sorghum its citizens consume, so the prices of these grains will be little affected by world prices. The most likely cause of higher prices would be lack of domestic supply, resulting from failures in harvests. What does the record of harvests show? The USDA's estimates of production for the last 20 years can be seen in Figure 6.

Two things stand out:

1. Large increases in cereals production have been registered since the early 2000s. Production of millet, rice and sorghum, per person, rose from around 170 kg/person/year to more than 270 kg/person/year by 2020.

2. There were failed harvests in 2021. Compared to the previous five years, the cereals harvest was down by about 14%.

FIGURE 6: CEREALS HARVESTS IN MALI, FROM 2000 TO 2022



Note: Left-hand axis shows cereals production in total; right-hand axis shows the quantity of millet, rice and sorghum produced per person. Maize (corn) has been omitted from this calculation because part of the maize crop is used as feed for chickens and other livestock.

Source: compiled from USDA data.

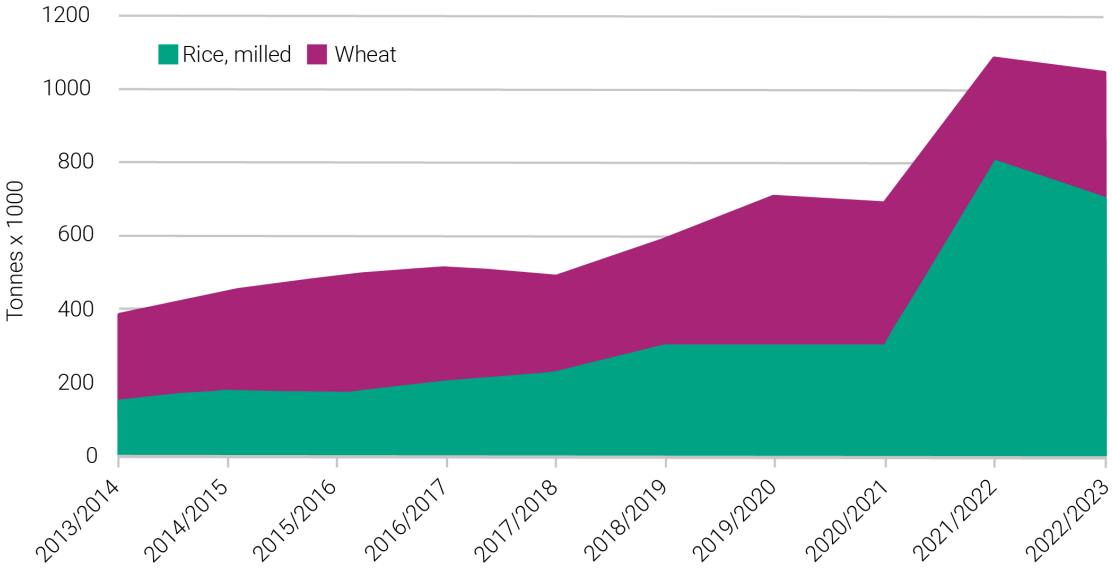
Might a 14% fall in the 2021 harvest lead to the price increases seen in 2022? That depends on the **elasticity of demand for cereals**, which is presumably low as people have to eat, and the **share of the crop that is marketed** (i.e. the more that is retained on farm for home consumption, the greater the impact of a harvest failure on market prices).

The amount retained, however, may be quite modest. In 2004–05, 805,000 farm holdings were estimated to be in Mali; if, by 2021, that number were, say, 1 million[7] and each farm retained 1 tonne of cereals for domestic consumption, that would still leave 75% or more of the crop to be marketed.

Although domestic harvests in Mali are all important for supply, for rice the availability and price of imports also matters because significant amounts of rice are brought into the country. USDA reports estimated imports of cereals to Mali rising in 2021 and 2022 (see Figure 7), especially extra imports of rice. Rice imports prior to 2021 had been running at around 300 kt/year, but in 2021 they were estimated at 800 kt/year, and 700 kt/year in 2022.[8]

A last consideration is storage of crops from one year to the next. In some parts of the world, storing the equivalent of 14% of annual consumption would be normal practice, so that harvest failures can be mitigated by drawing down stocks. How much is stored in Mali is hard to know, given the very many farmers and merchants who may keep some grain in reserve.

FIGURE 7: CEREALS IMPORTS IN MALI, FROM 2013 TO 2022



Note: almost all cereals imports are of rice and wheat: hardly any maize, millet or sorghum is imported.

Source: compiled from USDA data.

In a country where international trade of most grains is minimal, it looks as though the large price increases for maize, millet and sorghum seen since 2021 can be largely attributed to the poor harvest of 2021. Rice prices were much less affected due to the additional supply of 500,000 t of rice imported in 2021.

But, if rice prices did not rise, and those of other cereals did, then why did consumers not switch to rice? The answer lies in price levels. Rice prices have long been much more expensive than those of maize, millet and sorghum – almost twice the price. Since 2021, prices of the latter three cereals have risen strongly, but only recently reached the price level of rice, at which point consumers may indeed change from those grains to rice.

We can thus largely explain the strong rises in prices of cereals in terms of the poor harvest of 2021, with the qualification that rice imports rose to meet any deficit in the rice harvest.

2.1.3 Consequences of food price increases in Mali

For most Malians, the consequences have been unenviable. As prices of basics have gone up, other spending has been cut back. When it comes to meals, the fancier and more costly elements were foregone in favour of cheaper staples – even if staples had also become more costly.

Some adjustment to higher prices saw small luxuries curtailed. Informants mentioned people riding bicycles rather than taking a moto-taxi – the fares of which had risen with the cost of petrol.

Informants also spoke of hardship, but they did not mention more worrying behaviours, such as selling key assets and possessions, and just one informant out of a dozen or more mentioned people going into debt. They mentioned that meals became simpler, duller – but nobody spoke of anyone going days without eating.

Traders we spoke to said business was bad, custom was down and their earnings along with it. One or two said that with less custom they were importing fewer items for resale.

Who was the most affected by the higher prices? Informants spoke about those with the fewest assets being hardest hit. In rural areas, they were, for example, people without oxen or ploughs or seeders. Those displaced by conflict were also much affected.

2.1.4 Public responses to higher food prices: government and civil society in Mali

The government subsidised the prices of key commodities (e.g. cooking oil, sugar, wheat flour, powdered milk, rice, etc.) by drawing on a fund of 14 billion FCFA ($21.5 million). Import taxes were also reduced or suspended on some essential food imports.

The government handed out 10–20 kg bags of cereals to some needy households. It also made cash payments similar in value to those that were handed out during the pandemic in 2020 (then worth about €145).

Donor assistance was barely mentioned. That said, Japan gave food aid to 900k internally displaced persons in the regions of Mopti, Ségou, Tombouctou, Gao, Ménaka and Kayes.

NGOs assisted with support for vulnerable households, including some local charities, such as the church and rotary club, which provided material assistance. Generally speaking, each NGO reached no more than a few hundred households.

When compared to the hardship endured due to higher prices, these responses were insufficient.

2.2 SUDAN

2.2.1 Price movements in Sudan

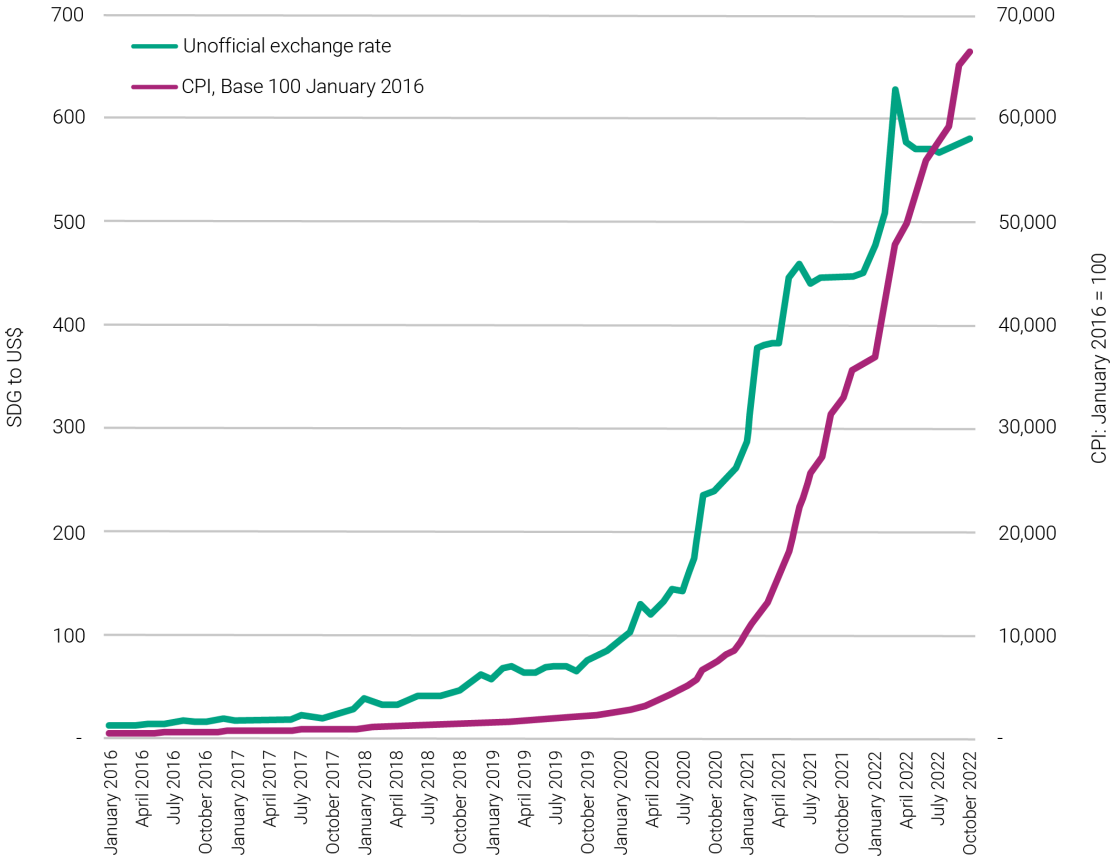
High inflation has been seen in Sudan – 20% or more per year – ever since the country separated from South Sudan in July 2011. However, from late 2019/early 2020, inflation has risen dramatically (Figure 8).

During 2020, it was measured at 304%; in 2021 it was 260%; in 2022 it rose to 80% by October of that year (see Table 2). To a considerable extent inflation has been tracked by the unofficial exchange rate[9] of Sudanese pounds (SDG) to US dollars, as might be expected. Although, the Sudanese pound has not depreciated quite as sharply as inflation has increased.

As in Mali, cereals prices in Sudan have increased markedly since early 2020. Taking the median across the markets observed revealed extraordinary price rises each year since 2019 (see Table 2 and Figures 9, 10). In 2019, prices of millet and sorghum almost doubled, whilst those for wheat rose by just 15%. Cereals prices rose even more in 2020, with the prices of all

cereals increasing around 2.5 times during the year. Price increases were more modest in 2021 for millet and sorghum, rising by around 75%, whilst wheat prices more than doubled. Until October 2022, millet and sorghum prices continued to strongly rise. Wheat price increases, although only until May 2022, were less pronounced.

FIGURE 8: INFLATION IN SUDAN SINCE JANUARY 2016



Note: CPI rebased to January 2016 = 100.

Source: compiled from data from the Central Bank of Sudan (CBOS).

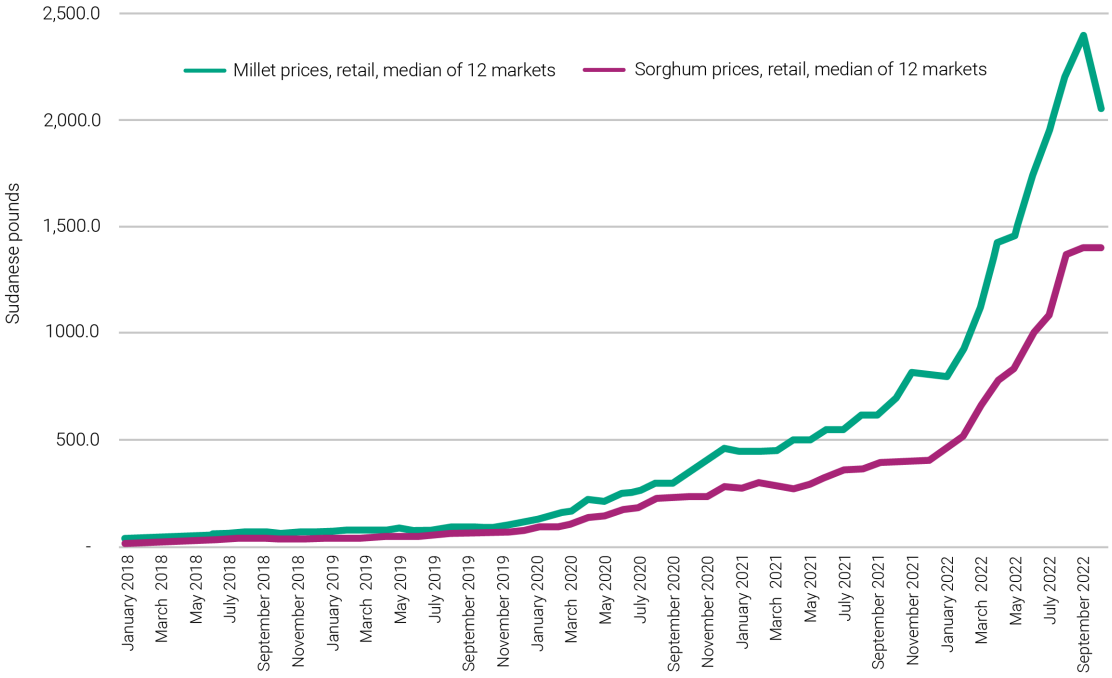
TABLE 2: INFLATION IN CEREALS PRICES AND THE CONSUMER PRICE INDEX IN SUDAN SINCE 2019

	Consumer price index	Millet, retail	Sorghum, retail	Wheat, wholesale
Inflation, 2019	64%	81%	96%	15%
Inflation, 2020	304%	258%	226%	254%
Inflation, 2021	260%	77%	74%	216%
Inflation, 2022 (a)	80% (Oct)	170% (Oct)	198% (Oct)	41% (May)

Note: (a) For millet and sorghum 2022 prices increases measured to October, for wheat only to May

Source: CPI changes from CBOS (they are measured January of year in question to January of the following year[10]) and prices from WFP data.

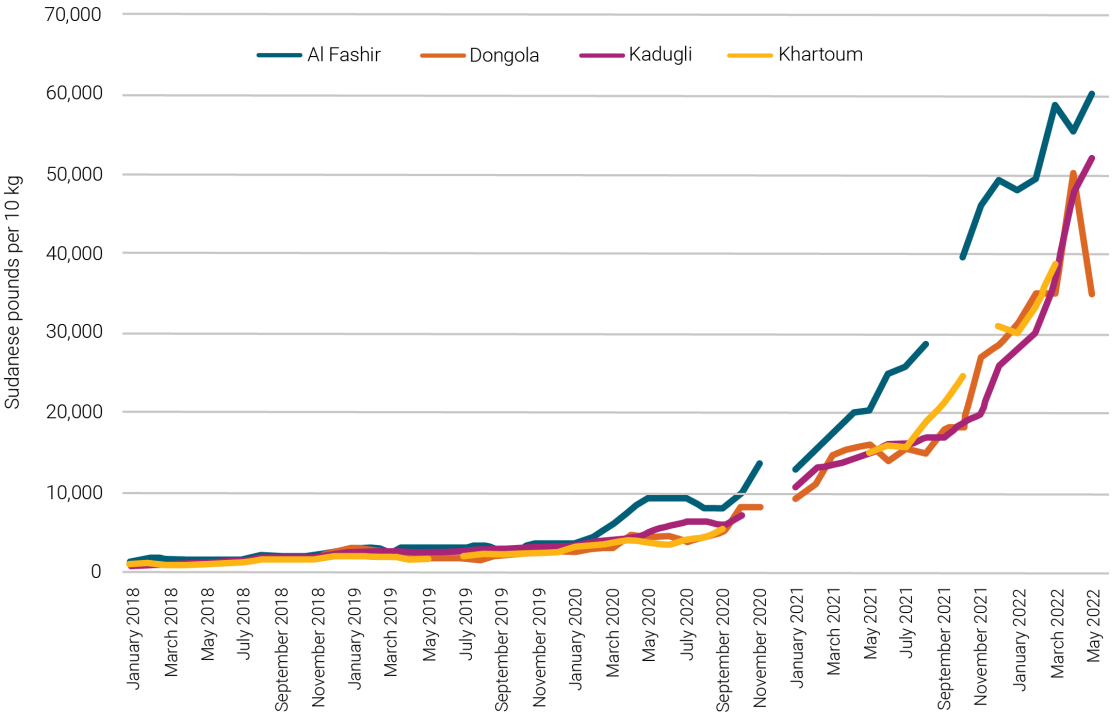
FIGURE 9: SUDAN, RETAIL MILLET AND SORGHUM PRICES, FROM JANUARY 2018 TO OCTOBER 2022



Note: millet prices are retail, SDG current per 3.5 kg measure; sorghum prices are retail for 3 kg measure.

Source: compiled from WFP VAM data.[11]

FIGURE 10: SUDAN, WHEAT PRICES, FOUR MARKETS, FROM JANUARY 2018 TO OCTOBER 2022



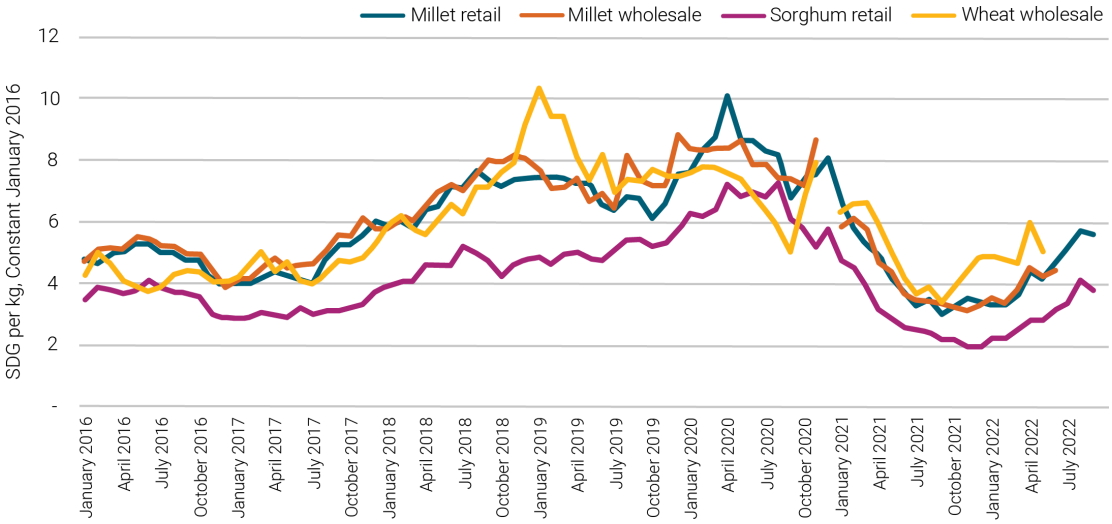
Note: Wholesale, SDG current per 90 kg bag. In recent years, data includes both retail and wholesale prices for millet, but only retail for sorghum and only wholesale for wheat. Prices vary across the markets, as might be expected given transport costs, nevertheless prices move similarly across markets.

Source: compiled from WFP VAM data.

How do cereals price rises compare to strong overall inflation? If cereals prices are deflated to constant SDGs, a different picture emerges (see Figure 11). Relative to overall inflation, cereals prices rose from early 2017 to reach levels almost double their previous level by late 2018. They remained at those levels until May 2020, when they fell in real terms (to levels similar to those of 2016) until the end of 2021. Then in January 2022, prices once again rose, by as much as 50% in real terms, before falling back again after the middle of 2022.

Throughout this time, sorghum was notably less costly per kilogram than millet and wheat – at times, half the cost. Sorghum prices were also more stable than those of millet and wheat, reaching less extreme peaks when prices surged.

FIGURE 11: SUDAN, CEREALS PRICES AS DEFLATED BY THE CPI, FROM JANUARY 2016 TO LATE 2022



Note: median prices across markets, with prices converted to per kg.

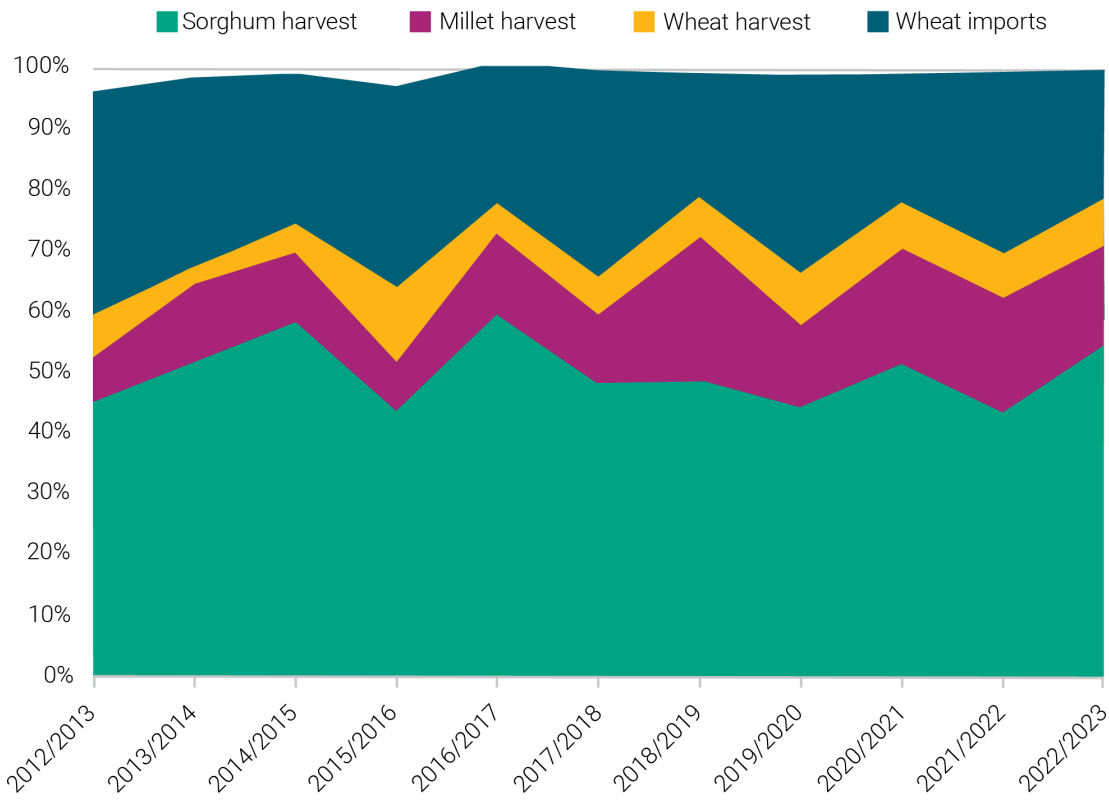
Source: compiled from WFP VAM data, deflated by monthly changes to consumer price index.

2.2.2 Explaining price rises in Sudan

Demand for cereals in Sudan is relatively stable: people have their preferred staple foods they like to eat in similar quantities every day.[12] Demand for cereals rises with population growth and, to a lesser extent, with income. With demand changing gradually, the supply of cereals has more influence on price changes in the short and medium term.

Sorghum, wheat and millet make up more than 95% of cereals consumed in Sudan (Figure 12). Most of them come from domestic harvests of sorghum and millet, with much more sorghum being grown than millet. Wheat is the other main cereal, but in this case, most wheat — three-quarters or more in recent years — is imported. Since 2012, wheat imports have fluctuated from as much as 40% of the domestic supply of all cereals to as little as 20% (Figure 12), with imports tending to become less important over time.[13]

FIGURE 12: SUDAN, SHARES OF DOMESTIC HARVESTS AND IMPORTS IN CEREALS SUPPLIES, SINCE 2012

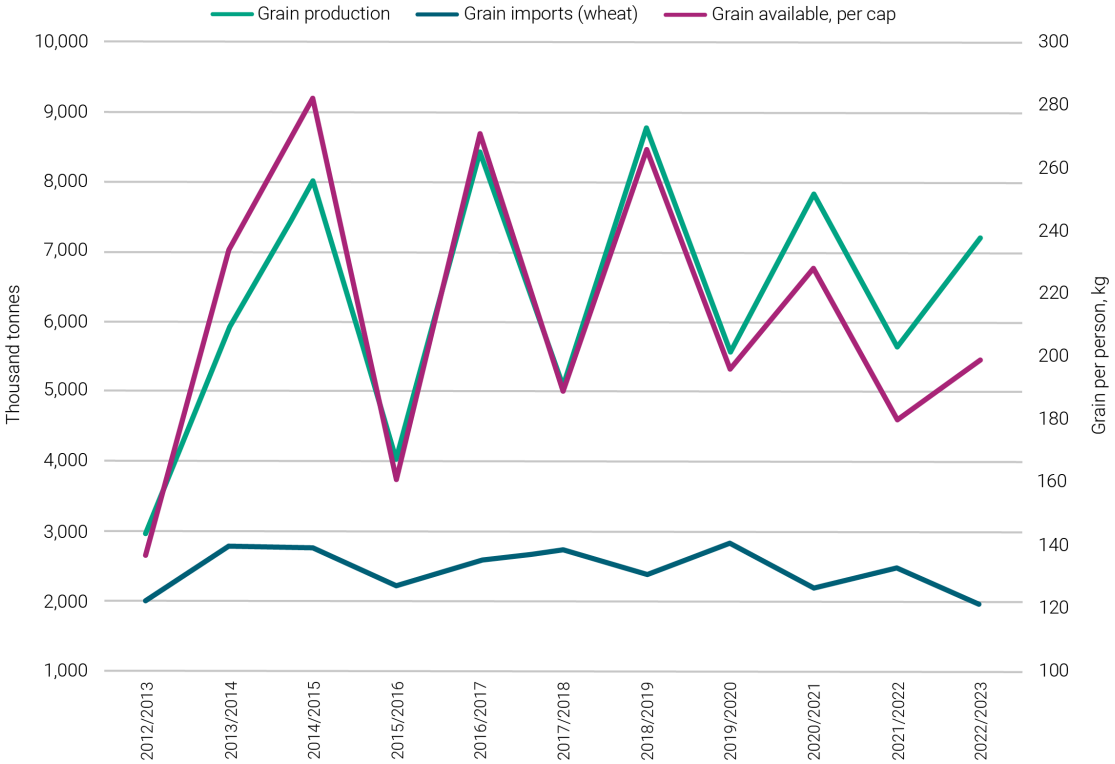


Source: compiled from USDA data.

Domestic harvests are greatly affected by weather (e.g. drought, floods) in the growing season because most land under cereals is not irrigated. Pests and disease can also reduce harvests. Climate and other environmental changes may also be acting to reduce yields: since the early 2010s sorghum yields per hectare have fallen by approximately 7%, although those of millet and wheat have risen.

Production of cereals since 2012 (Figure 13) has thus been highly uneven from year to year, swinging from lows of around 4 million tonnes to highs of 9 million tonnes. These pronounced variations in supply have not been matched by offsetting variations in wheat imports. Consequently, the amount of grain available in Sudan has fluctuated markedly. Measured by the amount kilograms available per person, annual availability has swung from lows of 140 kg per person to highs of more than 280 kg per person. Those variations are very large; they imply either that many people vary their intake by amounts that are hard to believe, or that households are storing grain from good harvests for years when harvests are low. Rural households in Sudan are known to be adept at storing grain.

FIGURE 13: SUDAN, CEREALS PRODUCTION, IMPORTS AND AVAILABILITY PER PERSON, FROM 2012 TO 2022

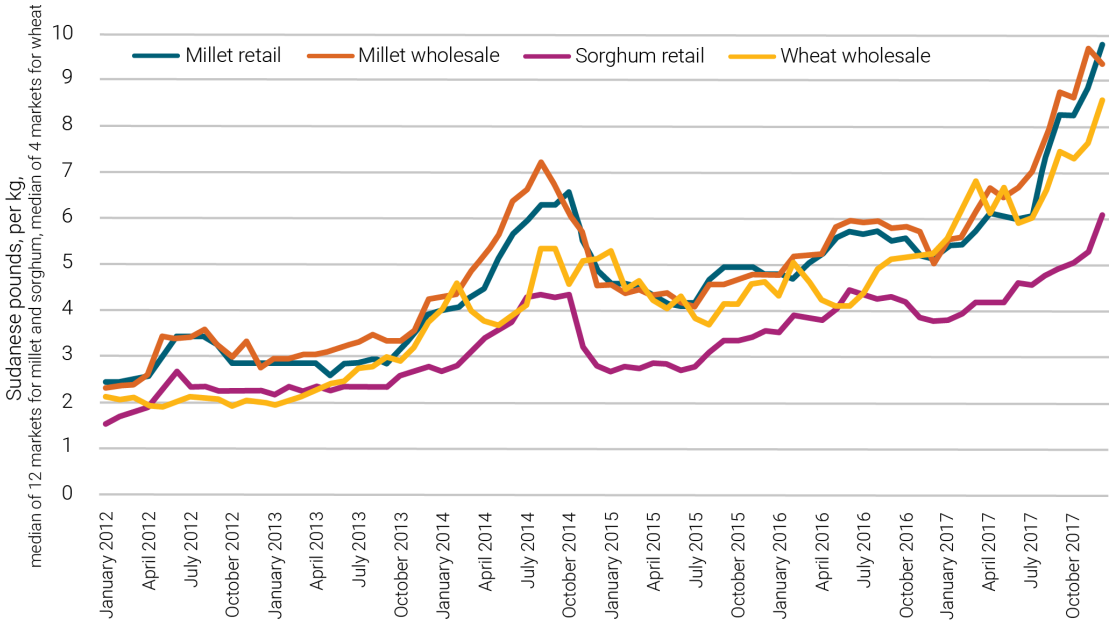


Source: compiled from USDA data.

Can these harvest variations explain price changes?

First, let us look at **price changes before 2018**, when cereals prices were not rising rapidly. Harvests in 2015 and 2017 were much lower than the year before, which is reflected in the price movements. Harvests of sorghum and millet are gathered in from September onwards, so knowing this, cereals prices should fall in the last few months of the year. And, they did in 2014 after a large harvest, but not in 2015 after a poor harvest. They fell a little after a good harvest in 2016, but, again, rose after a poor harvest in 2017 (Figure 14).

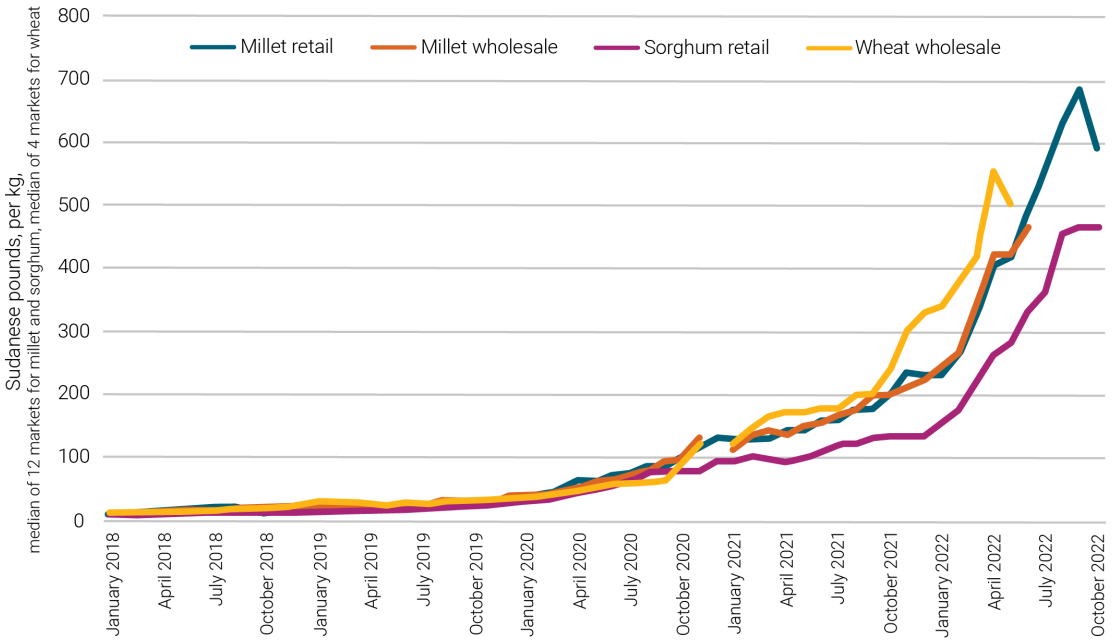
FIGURE 14: SUDAN, PRICES OF CEREALS, FROM JANUARY 2012 TO THE END OF OCTOBER 2017



Source: compiled from WFP VAM data.

Now, **what about cereals prices** since 2018, when they have soared – can these be explained by harvests? Only in part. The poor harvest of 2019 saw prices rise in late 2019; the better harvest of 2020 led to some small falls in price late in 2020. Prices rose greatly during 2021, with no moderation of prices in late 2021 due to the poor harvest that year. The most recent observations of prices falling in late 2022 presumably owe something to the 2022 harvest, which was better than that of 2021 (Figure 15).

FIGURE 15: SUDAN, PRICES OF CEREALS, FROM JANUARY 2018 TO LATE 2022



Source: WFP VAM data.

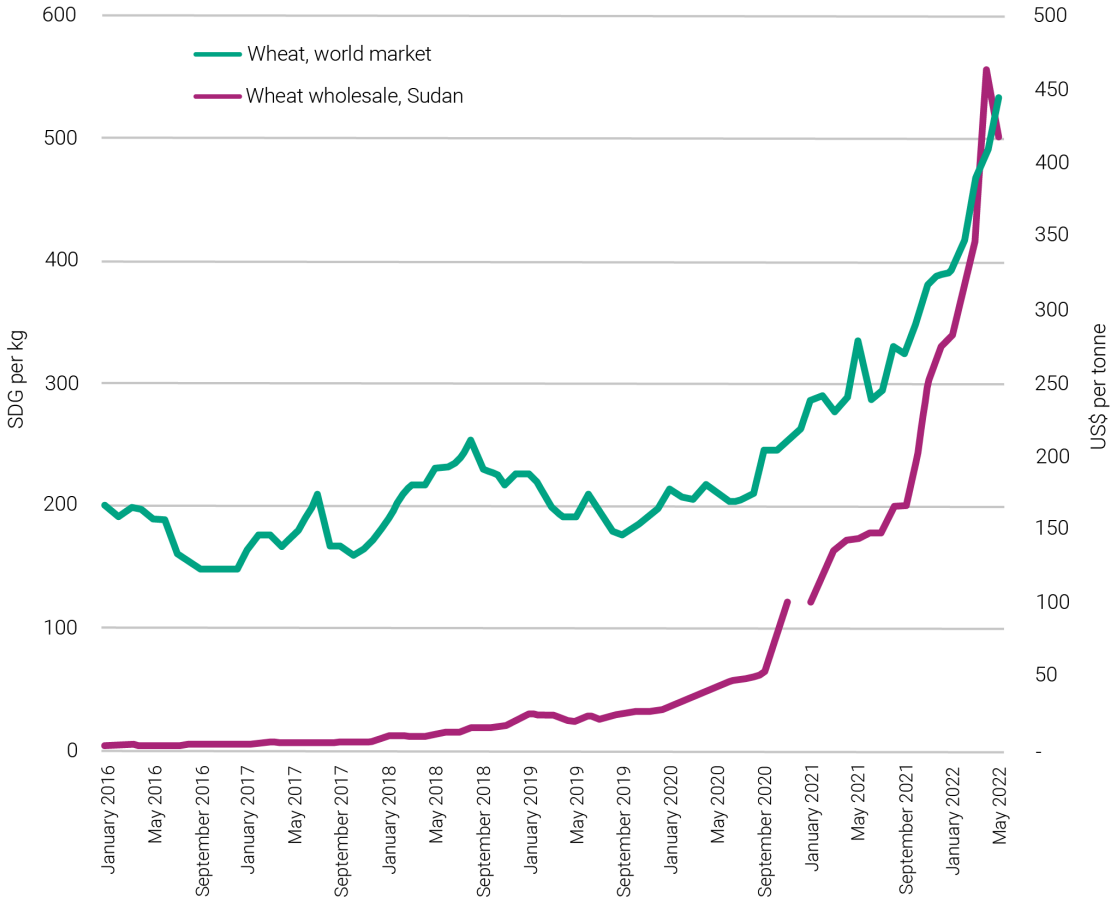
That said, the extraordinary price rises of 2020 onwards must, in large part, be caused by something other than supply: they must come from generalised inflation, in which an excess of money (in relation to goods and services) in the economy drives up prices of cereals.

What about wheat prices? Because so much of the wheat eaten in Sudan comes from imports – between 70% and 80% in recent years – then how much change in wheat prices can be explained by movements in international prices?

World wheat prices have notably risen since mid-2020 (Figure 16). They partially explain the rise in domestic prices, but not by so much.

World wheat prices rose by 2.5 times from May 2020 to May 2022, whilst wheat prices in Sudan rose by 9.5 times. Much of the difference in the size of the effect stems from the depreciation of the exchange rate. Expressed in US dollars, the domestic price rose by 2.1 times from mid-2020 to mid-2022 – slightly less than the rise in international prices. Hence the more important factor, by far, driving up wheat prices was the depreciation of the SDG. To explain that, one needs to look at domestic inflation and exchange rate policy, not world price movements.

FIGURE 16: WHEAT PRICES IN SUDAN AND THE WORLD PRICE



Note: domestic prices plotted on left-hand axis, world prices on the right-hand axis.

Source: compiled from WFP data on wheat wholesale prices in Sudan and IMF commodity price data for world prices.

Domestic inflation thus emerges as the most important factor driving the very large increases in cereals prices since early 2020. For much of 2020 and 2021, cereals prices rose considerably less than the consumer price index, suggesting that, if anything, prices in cereals markets were restraining rather than fuelling overall inflation.

So why has Sudan seen high inflation, with hyperinflation since 2019? The roots of high inflation stem from the nature of the al-Bashir regime. When South Sudan separated from the rest of Sudan in 2011, it took with it a large share of oil revenues. This presented the al-Bashir regime with a balance of payments deficit and a loss of government revenue. The regime tried to cope with the former by controlling foreign exchange – which only led to the creation of a parallel market for the US dollar whilst creating rents for importers able to obtain dollars at the official rate; it dealt with the latter by foreign borrowing, and when that was no longer possible – as Sudan's external debt ballooned – the Central Bank printed money. As the supply of money grew faster than the output of goods and services, inflation set in (Abdelkarim, 2021; Baldo, 2021; Darbo and Nakumuryango, 2019; Elsaui, 2022).

The civilian government that replaced al-Bashir in April 2019 had to deal with this macroeconomic malaise. Subsequently, the government cut or reduced costly subsidies that applied to fuel, electricity and wheat flour, which unleashed the rising costs of transport and bread. Inflation soon became hyperinflation, and it was to stay that way until mid-2021, before monthly inflation rates began to fall.

Under the military government which took over in October 2021, the foreign exchange market was liberalised in March 2022, leading to further depreciation in the (unofficial) rate for the SDG, thereby driving up the costs of imported goods.

2.2.3 Consequences of higher food prices in Sudan

Rises in food prices have led to general misery and strife across both rural and urban communities, with poor households and IDPs worst affected. In areas with a high number of IDPs,[14] the restricted movement of workers and traders has prevented people from reaching their fields as well as limiting farming and agricultural trading, hence reducing employment.

Vulnerable people in both rural and urban areas tried to cope by several means (FAO, 2019; FEWSNET, n.d. 2). For example, they cut food consumption by skipping or reducing meals; eating less meat and turning to pulses as an alternative; adults eating less in order for children to eat. They also spent less, which included taking their children out of school. They drew from their savings, borrowed from family and friends, and sold assets such as livestock. They looked for extra income in casual labour or had children work menial jobs, such as cleaners.[15] For more detail, see Box 1 for an example of a village in Al Gadarif.

Identifying coping strategies was largely seen as the responsibility of women and girls, as reported by FAO and WFP (2022) where they quote a male from Umbeda as saying 'Men and young men are doing nothing in this matter.'

BOX 1: INSIGHTS FROM A VILLAGE IN AL GADARIF

The main livelihoods in Abu Elnaja are growing crops such as millet, sesame, sorghum, okra, groundnut and the recently introduced pigeon pea on lands ranging from 2 to 10 hectares.

Farmers use tractors to plough, but everything else is worked by hand. Women have home gardens to grow vegetables such as *molokhia* (Corchorus olitorius), tomato, okra, arugula and purslane. Sheep, followed by goats and a limited number of cows and donkeys are the main livestock.

To cope with higher prices, people reported:

Changing their diet:

- reducing the number of meals per day from three to two
- eating meat less frequently, from daily to two or three times per week
- supplementing any protein lost with plants that are high in protein – for example, groundnut butter and chickpeas
- reserving milk for children only
- using less cooking oil
- serving typical side dishes as the main dish, for example pigeon peas

Changes to cropping:

- swapping out crops for those that help with daily needs, such as groundnut for oil and butter, and okra and pigeon peas for main dishes
- reducing crops that are too expensive to cultivate, such as sesame, which requires either herbicide or costly labour because it needs two or three rounds of weeding
- irrigating home gardens to get more crop cycles; growing vegetables that are expensive at market; and introducing new crops like pigeon pea

Changes in food storage:

- selling harvests early to repay debts, to meet higher living costs; harvests now last 4–6 months and after that, farmers buy from markets rather than storing their own annual consumption of cereals (such as millet and sorghum; the same goes for oil crops)

Earning extra income:

- in households that have the labour, men seeking jobs on large, mechanised farms in weeding and harvesting
- women seeking such work, which was once for men alone; this is hard on women as they have household chores to do before they leave (before sunrise) plus more when they get back; and some have to take their children with them
- male youth migrating to cities like Gadarif and Khartoum to seek work given there are few jobs in the dry season; if they have funds, they go further afield to Egypt or Europe, or take up artisan gold mining

BOX 1 CONT'D

Changes in livestock sales:

- selling livestock, preferably sheep as they are highly priced, to meet planting costs, school fees and other expenses
- collecting crop residues, which used to be left in fields for livestock consumption, to be stored and sold in the dry season
- changes for women and children:
  - switching from gas cylinders, which are scarce, to charcoal and firewood – consequently smoke and dirt pollute women's kitchens
  - leaving school, especially in years 6 to 8, for casual jobs in Gadarif*

Changes in credit – the 'shail':

- merchants have long offered farmers loans to cover inputs and living costs at the start of the crop season in return for the right to buy crops during harvest at a discount to market price; as prices rise, this discount is ever greater, and farmers complain the system is ever-more unfair, especially as no other finance is available

*Information from elementary school teacher

Source: group discussion on 27 September 2022, with six women and four men, in Abu Elnaja Village in the vicinity of Gadarif City.

Those who had fewer means to cope – those without livestock or jobs, those who were IDPs – had to resort to more desperate measures. In South Kordofan, they gathered wild foods[16] or went hunting for game. In 2022, FEWSNET (n.d. 2) reported asset-less IDPs in Kereneik, West Darfur eating green mangoes and sorghum to stave off hunger. Some of them were reduced to begging. Some household heads subjected their young women to forced marriages.

The only accounts of violence and criminality, reported in the press, were those at protests against political changes. For example, when subsidies to bread and other key goods were cut, this resulted in demonstrations, crackdowns and some looting.[17]

2.2.4 Response from government, donors and NGOs in Sudan

Government response to rising food prices and food security concerns was limited due to lack of funds.

The government tried to increase the buying price for wheat, but lacked funds to buy all that was supplied at the set price.

In April 2019, the al-Bashir military regime was replaced. The post-revolution government then implemented reforms and secured support to clear Sudan's long-standing debt arrears to international financial institutions. This unlocked around $2 billion in development grants, however, the military coup of October 2021 paused that.

In 2021, the World Bank kicked off a $400 million **Sudan Family Support Programme** (SFSP) with the Government of Sudan to provide cash transfers to Sudanese families to help mitigate the impact of economic reforms and other short-term shocks, such as rising food prices.[18]

WFP supported the Federal Ministry of Education in developing the **National School Feeding Policy and Action Plan** to pilot a school feeding programme supplied by locally grown produce ('home-grown'). For the first time, through WFP advocacy, national funds were allocated from the government budget to school feeding, and land was granted to trial home-grown school feeding. WFP continued to provide school meals and nutrition interventions with and through state ministries of education and health (WFP Sudan Annual Country Report, 2021).

Restrictions on humanitarian access, owing to intercommunal clashes in early 2022, coupled with limited WFP food stocks, meant only a limited number of vulnerable people benefited from humanitarian food and cash assistance. The October 2021 coup resulted in a pause of all World Bank programmes with de facto authorities and an initial $100 million of residual SFSP funds were re-purposed for emergency food and cash programming via WFP. This **Sudan Emergency Safety Nets Project** complements humanitarian response by providing cash transfers, where possible by mobile phones, and food to more than 2 million food-insecure people in 11 states for a period of 12 months, starting from July 2022. Where beneficiaries could not buy sufficient food in local markets, they were to receive direct food assistance instead of cash.[19]

Despite these additional efforts, Sudan's humanitarian response plan remains chronically underfunded. By mid-2022, a $172 million funding shortfall remained (WFP Sudan Country Brief August, 2022).

In May 2022, the Food and Agriculture Organization of the United Nations (FAO) announced a $12 million contribution from the United Nations Central Emergency Response Fund (CERF) to address the soaring, acute food insecurity in Sudan – the single largest allocation to FAO from CERF to date. The grant aimed to restore the food and nutrition security of affected farming and pastoral communities by providing agriculture and livestock supplies; and build the resilience of resource-poor farmers and pastoralists in 14 of Sudan's most severely affected counties.[20]

In May 2022, WFP in Sudan received a donation of €2.5 million from the Italian Agency for Development Cooperation to support emergency nutrition. The funds would enable WFP to provide specialised, nutritious food to more than 160,000 children under five as well as pregnant and nursing women in crisis-affected areas.[21]

USAID's Office of Food for Peace (FFP) partnered with WFP, UNICEF and NGOs to provide emergency food and nutrition assistance to vulnerable households in Sudan, primarily through in-kind food assistance. FFP also supported relief actors to provide complementary food security services, including training on agricultural production and natural resource management, and nutrition support to reduce cases of acute malnutrition (USAID Sudan Factsheet, 2020). Since October 2021, USAID has provided Sudan with more than $457 million in humanitarian aid.[22]

Save the Children was implementing food security programmes in five of the most affected states, including the distribution of seeds and agricultural inputs; goats for milk; and cash. It also supported more than 1 million people in 2022 with health and nutrition services, especially children under five (Save the Children, 2022).

Concern Worldwide provided emergency food security and livelihoods assistance to IDPs, and to flood-affected and vulnerable households in West Kordofan, South Kordofan and West

Darfur. It targeted displaced populations, returnees and host communities to meet basic needs and access to essential services in West Darfur, West Kordofan and South Kordofan States (UNOCHA Sudan Humanitarian Response Plan, 2022).

Based on these accounts it seems that, despite the political tensions between the (unrecognised) military government, and the UN and most governments providing assistance, considerable humanitarian aid reached Sudan in 2022.

That said, in spite of the large amounts that were contributed, much of this assistance can only alleviate hardship when compared to the scale of need. For example, USAID's $457 million contribution amounts to slightly under $10 per person when spread throughout the country's 46 million population. Even if the funds were concentrated on the most needy part of the population – which may be as high as one in five – then the amount per person becomes $50 and perhaps five times that per household. This would be enough to fend off starvation and destitution, but probably not enough to either remedy hardship or to re-establish livelihoods.

SECTION 3

DISCUSSIONS AND CONCLUSIONS

3.1KEY POINTS RECAPPED

Prices of cereals doubled – or more – in both Mali and Sudan. For Sudan, where inflation has been rampant since mid-2019, this does not surprise; but for Mali, it does, because before 2020, prices had been stable for much of the 2010s.

Price rises result very largely from domestic drivers: a poor harvest (Mali), conflict that reduced cultivated areas (Mali), and generalised inflation (Sudan).

Very few increases can be blamed on the spike in prices of wheat and maize on world markets, although the rise in oil prices does play a minor part. The spike in world wheat prices helped push up local prices of wheat and flour in Sudan, where people who live in urban settings have long consumed flatbread made from wheat and flour, much of it imported. However, this only explains a small part of the very large increases in domestic prices.

The consequences of higher prices of staple foods for populations where most people live on low incomes, have been as expected. **People coped by changing their diets**, turning away from more costly food items to buy the cheapest staples that satisfy hunger – for example, substituting pigeon peas for meat, or millet for rice. Most people's diets have become more dull. They may or may not, however, be less nutritious. For example, Sudanese rural households switching from meat to pigeon peas should suffer little harm as the peas have plenty of protein.

People also gave up small luxuries. In Mali, for example, villagers reported no longer taking moto-taxi rides but, rather, cycling on their bicycles.

In Sudan, **people tried to earn a little bit more**. They looked for more paid farm work, young men migrated to cities and abroad.

Reassuringly, we came across few accounts of desperation: people turning to famine foods; people doing anything to earn more, however demeaning (begging, commercial sex work), dangerous (gold panning) or illegal (petty crime).

That said, **hardship falls most on those who can least cope**. Those people who were able to meet their basic needs before food prices rose probably coped. Those who were struggling – for lack of labour, capital, land, and/or livestock – faced very hard times indeed. For them, those more desperate measures beckoned.

Public responses – from government, donors and NGOs both international and local – were limited compared to the scale of hardship inflicted by the higher prices. In Mali, the government did try to subsidise prices of staple foods and other essential items, albeit with few means, to seemingly little effect. Otherwise, responses tried to reach hard-hit households with cash grants, food parcels or additional nutrition interventions to try to protect infants and new mothers.

3.2 DISCUSSION AND IMPLICATIONS

3.2.1 On causes of price rises and solutions

Given that the most powerful causes of price increases in both countries are domestic, prices should fall back if those causes can be addressed. Four such causes stand out:

Weather: Simply enough, ample rains that are well distributed throughout the growing season, with few storms, would do much to restore domestic supply and bring down prices. In the short term, weather is largely a matter of chance. The hazard of poor weather can, however, be reduced in the medium term by irrigation and agricultural development that promotes irrigation and crops that tolerate (to some extent) dry spells.

Already aware of this, farmers do switch to crops that resist dry spells. In 2022, Malian farmers heard that manufactured fertiliser may be costly or simply unavailable, so they planted crops that require less if any fertiliser, such as millet and sorghum, rather than maize.

When it is an option, and when they have the means to buy the equipment, farmers in both countries also invest in wells and pumps (e.g. when water is available from a local watercourse or a high groundwater table). The opportunities to expand irrigation are considerable in both countries: by four times more than the current area in Mali, and by almost three times more than the current area in Sudan.

Peace and security: Where there is conflict, farmers may not be able to access their fields, or they may be displaced, leaving their farms fallow as they seek safe haven. This applies to both countries, especially Mali at present. Security is also a concern in Sudan, particularly in Darfur, even if conditions are more peaceful than they have been in the past. Restoring peace is largely a matter of reaching a political settlement for the conditions and grievances (some of them long-standing) that cause people to take up arms.

Macroeconomic stability (Sudan): Achieving it is not simple, even if the problems that need addressing are easily stated: closing the gaps mentioned in Section 2.2.2 between government spending and revenue; between the value of exports and imports; and between the supply of money and the creation of goods and services. Adjustments often cause pain, and are often resisted by those who have benefited from the imbalance. For Sudan, the problems are doubly knotty because the economy has been distorted to favour the powerful interests of political and military elites (The Enough Project, 2017; Baldo and Mailey, 2021). Political reform is a necessary condition, if not a sufficient one, for economic reform.

Trade embargoes (Mali): When trade embargoes are applied, agricultural inputs should be exempted.

Economic growth, with broad-based agricultural and rural development, makes these aims easier to achieve. In both countries, growth is hindered by governments that are widely seen as illegitimate and unrecognised internationally, and which show few signs of wanting reform, either political or economic. This creates the challenge of achieving economic growth and development in the difficult circumstances of ongoing conflict, political disruption and economic turbulence. The ray of hope is how much local people, affected by overlapping crises, do themselves to cope and even to thrive. Outsiders need to recognise these efforts, then seek to complement them wherever possible.

3.2.2 On hardship and relief

Higher food prices cause hardship to many people in countries where most of the population lives on low incomes, where much of the household budget goes on food and other (very) basic needs. When prices rise, doubling or more, the distress is difficult to alleviate, at least in the short term.

The only good news is that most people do their best to cope, tightening their belts and taking on extra work where possible to earn more. For those who are hit hardest – and who are often the least able to cope because they lack land, labour, marketable skills, savings and so on – social protection is required. Whilst it may not prevent hardship, it can make the difference between hard times and times when households slip into destitution, when their medium- to long-term prospects are undermined by what they have to do to survive in the short term. For example, think of the effects of months of malnourishment on the physical and mental development of infants, or the health of new mothers.

In the medium term, much has been done to develop better ways to help people in distress. Improved nutritional interventions and the rise of cash transfers are two examples of progress. But, because funds for social protection – including humanitarian aid – are almost always well below the amount needed, what funds there are must be targeted to the most needy persons. Is enough known about who they are?

That question was posed for this very study. Taking into account the impressive level of detail from regular FEWSNET, GIEWS and WFP bulletins (which assess distress and need at least two times a year, country by country), the systems they have set up to collect information and analyse it seem effective. There may be scope to improve, but more detailed study may only generate marginal gains when compared to efforts spent on improving delivery of assistance; refining and tuning what is offered for the most pressing needs; and on reforms that can alleviate root problems, promote growth and development, and reduce the frequency and depth of need for social protection.

ENDNOTES

1 For example in 2019, Mali's actual irrigated area was estimated to be 140,000 ha, yet irrigation potential was assessed at 566,000 ha; in Sudan, the corresponding areas were 994,000 ha and 2.5 million ha respectively (FAO, n.d.).

2 Informants in Mali were selected to represent different walks of life, they included but were not limited to: a farmer, an organiser in a smallholder federation, a gas cylinder trader, a wholesaler, a transporter, a dispatcher, a shopkeeper, a sheep trader, a journalist, an economics consultant, a watchman, a technician, an office worker, a female head of household, an NGO project manager, and a secondary school teacher.

3 Why is overall inflation so much lower than that of cereals, cooking oil, gas cylinders and oil? Overall inflation is measured by an index that looks at price changes for a basket of goods and services. The difference arises because other items in the basket have seen much smaller price increases than those seen for the items in this study.

4 Prices are shown for the main market in Bamako, in the *quartier* of Niarela. We have statistics for many more markets in Mali and the differences in price movements between those in Bamako and regional centres are, however, small.

5 https://community.gro-intelligence.com/global-fertilizer-impact-monitor/analysis?country=Mali

6 Crude oil is only one component of the forecourt price of fuel: refining costs, transport and distribution, retailer profit and taxes also make up the retail price. In the US, 61% of the pump price corresponds to crude oil, 14% to refining, and the remaining 25% is tax, transport and retail. Hence, a 43% hike in crude prices in the US should result in a 26% rise in pump price.

7 As time passes, farms are likely to be subdivided amongst the offspring of deceased farmers; an effect that persists until a combination of ever-smaller families and ever-more migration out of rural areas means that successors to family land become scarce.

8 For the last five years, from 2017 to 2022, the implied availability of rice in Mali (domestic production plus imports less exports) has run, in million tonnes, at: 2.4, 2.4, 2.3, 2.4 and 2.3 for each year. Imports, it seems, have been ordered to balance fluctuations in local harvests.

9 In February 2021 exchange rates were unified. Before that, large differences could be seen between the official rate and the rate on the parallel market.

10 Apparently in Sudan annual rates are computed by comparing the average rate in one year to that in the next year. Whilst these are annual rates, they are not rates for the calendar year. Those in Table 2 *are* rates for the calendar year, as closely as can be computed from monthly indices.

11 WFP's VAM unit has collected prices for the three main cereals, sorghum, millet and wheat for 15 markets across Sudan, every month since 2003.

12 Diets change for special occasions such Eid al-Fitr and Eid al-Adha. For such feasts, higher value foods such as meat are eaten more, whilst staples consumption barely changes.

13 Most wheat comes from imports – in the last four years, 73% to 80% of wheat has been imported – but because wheat has made up only 29% to 41% of the total cereals output in the last four years, then the wheat imports represent a much smaller share of cereal supply.

14 Areas such as: Jebel Marra, parts of the South Kordofan State (particularly where the Sudan People's Liberation Movement – North has control), and conflict-affected areas in the states of North Kordofan, Kassala and the Red Sea as well as Darfur.

15 FAO and WFP (2022, p. 52) reports the following examples from their informants: 'As a result of transport restrictions one respondent started offering hair cutting services under a tree in his backyard [young man, Kassala]; women and girls sold vegetables and watermelons in front of their house; and, a farmer took up a second job as a night guard as well as selling tea and coffee during his shift to increase income [male, seasonal farmer, Kassala]. Women worked as cleaners in family homes [female head of household, Umbeda], and youth started construction work [female,

teacher, Khartoum North] with some young people in Umbeda making bricks from local materials to sell or build houses [young man, Umbeda].'

16 Foods used during food crises in Darfur include fruits such as roselle and corape seeds (a wild grain), plus preparations such as *Khemiss-tweira* based on pearl millet (Ahmed et al., 2022; Elkhalil et al., 2022; Mohammed et al., 2022).

17 In December 2018, protests broke out in the Red Sea State city of Port Sudan, as well as Barbar in the north, and Nohoud in the western Kordofan region (https://www.france24.com/en/20181220-sudan-protest-corruption-bashir-food-prices-bread-sadeq-al-mahdi-economy).

Then the Sudanese president, Omar al-Bashir, was overthrown in a military coup following months of country-wide protests and demonstrations about the dramatic rise in cost of living. Cuts to fuel and wheat subsidies saw the price of bread triple and fuel prices sharply rise (FEWSNET, n.d. 2). Demonstrations against the rising cost of living turned into an aggressive protest, as buses and shops in the area were looted. North Kordofan and six other states then announced a state of emergency, and a curfew was set for from 6 p.m. to 6 a.m. (https://www.globalcitizen.org/en/content/protests-break-out-sudan-rising-food-costs-covid/).

(https://www.theguardian.com/global-development/2021/feb/16/sudan-declares-states-of-emergency-after-protests-over-soaring-food-prices)

(https://www.africanews.com/2022/03/14/sudanese-demonstrate-high-commodity-prices-as-police-crackdown-on-protesters//)

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APPENDIX A

The recent spike in food prices on world markets

What has been happening to prices on world markets of agricultural commodities, fertiliser and oil since 2010; during the last five years; and, especially, since the start of the pandemic in early 2020? (Figures A1 and A2)

World markets last saw a major spike in agricultural commodity prices in 2007–08, a spike that came after many years during which prices of agricultural produce fell, in constant terms, from year to year. This spike lifted prices for the next five or so years, after which prices fell back to levels as low as they had been before the spike.

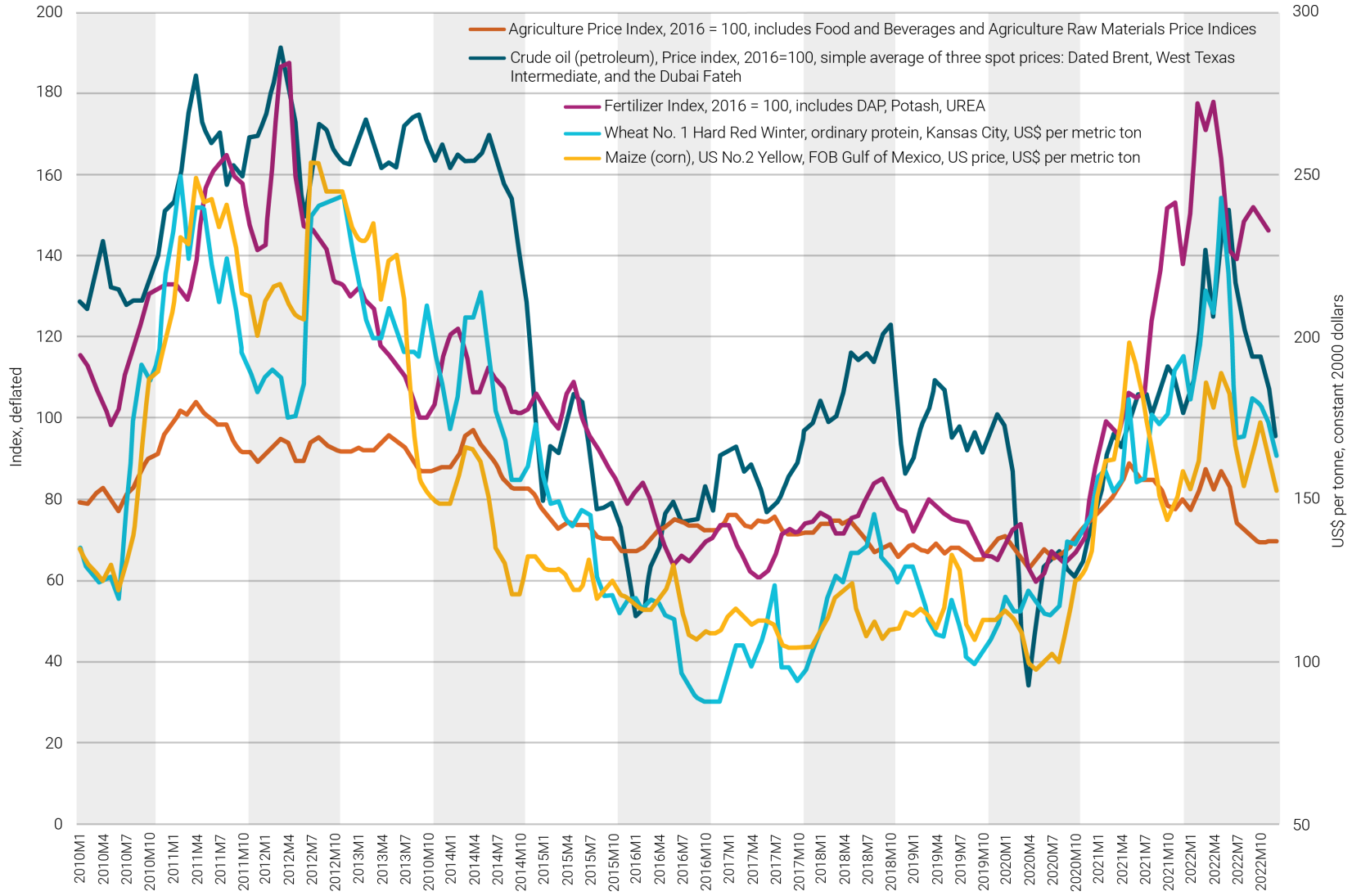
The recent surge in world prices of commodities began in the first quarter of 2020. Subsequently, prices peaked in May/June 2022. During that time prices — in constant terms — rose by 181% for crude oil, 144% for a fertiliser index, 111% for wheat, 73% for maize and 28% for the agriculture index.

Recent increases in prices on world markets are neither unusual nor unprecedented. In comparison to the turbulence seen in the early 2010s, recent price increases for oil, agriculture, maize and wheat have been smaller. The sole exception applies to prices of fertiliser which have increased greatly since early 2020, by more than they did in the early 2010s.

Since May 2022, prices of cereals and fertiliser, as well as oil, have fallen back; although they still have some way to go to return to the early 2020 levels.

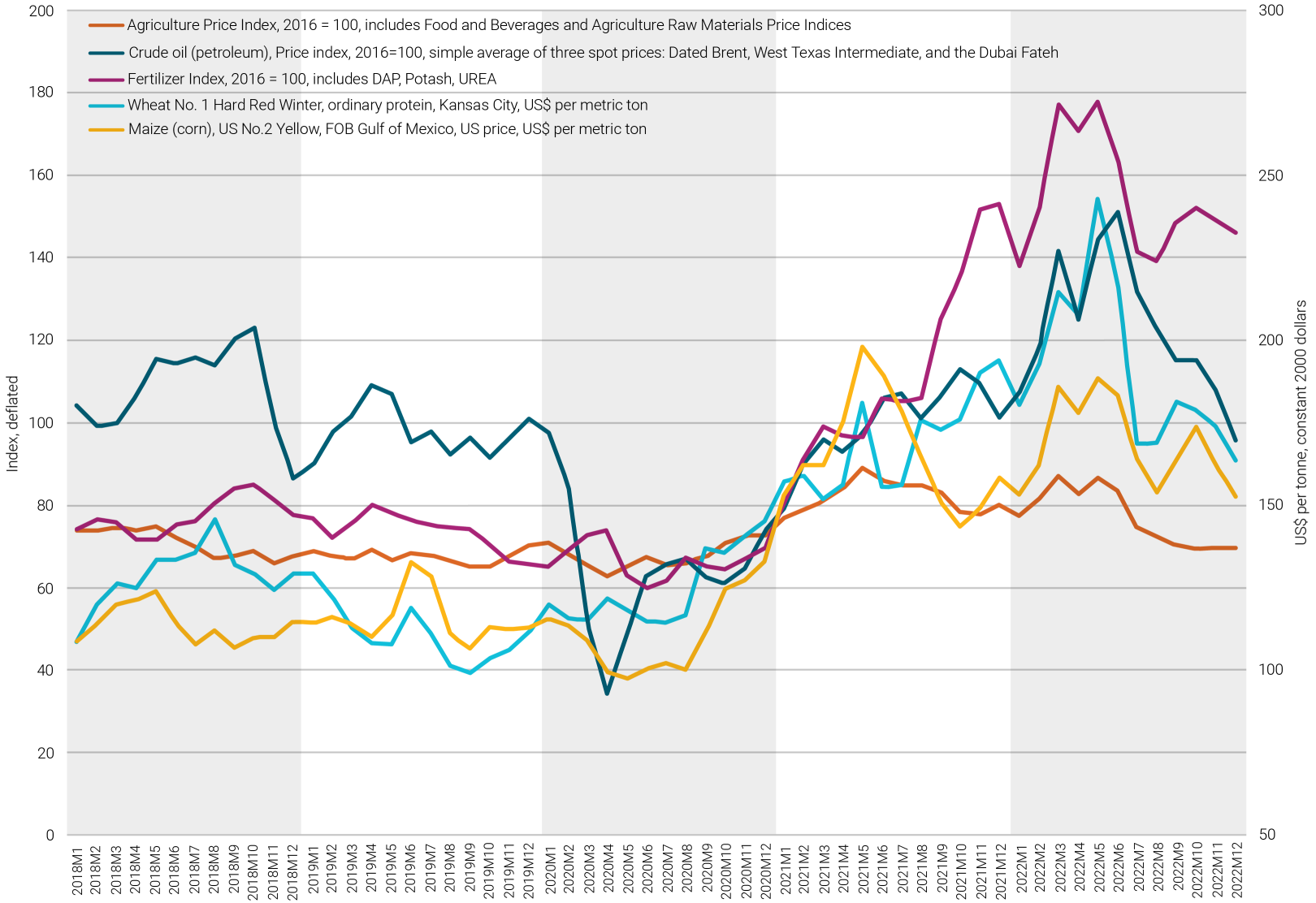
The effect of the Russian invasion of Ukraine seems to have affected oil, gas, coal and fertiliser prices — but little else. If we compare prices in December 2022 to those in January 2022 (just before the invasion) most commodity prices fell in constant terms – netting out the 9% inflation seen in the US, including the prices of maize and wheat, the highest traded cereals. Only the prices of energy and fertiliser were higher at the end of 2022 than at the start.

FIGURE A1: COMMODITY PRICES FROM 2010 TO 2022



Source: compiled from International Monetary Fund (IMF) primary commodity prices, with indices and prices deflated using United States (US) gross domestic product deflator, based on July 2000.

FIGURE A2: COMMODITY PRICES DURING THE LAST FIVE YEARS, FROM 2018 TO 2022



Source: compiled from International Monetary Fund (IMF) primary commodity prices, with indices and prices deflated using United States (US) gross domestic product deflator, based on July 2000.

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Cover: Market in Mopti, Mali, W. Africa
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