# **JOINT MARKET MONITORING INITIATIVE (JMMI)**

Cross-crisis analysis of price trends and market functionality throughout the COVID-19 pandemic



GLOBAL

## INTRODUCTION

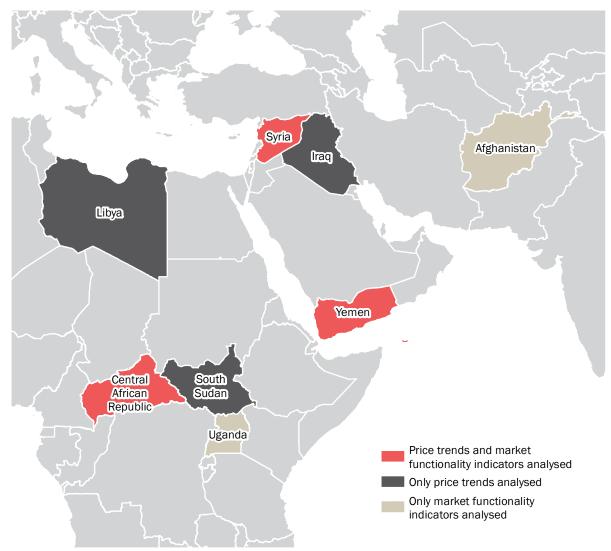
As of late October 2021, observers of the COVID-19 pandemic had recorded 247 million cases of the disease and 5 million deaths worldwide since December 2019. In its first two years, the global pandemic exposed deep socioeconomic inequalities within and among nearly every country it touched, negatively affecting poorer populations' access to everything from income-generating opportunities to medical facilities to basic protective supplies to vaccination against the disease.

The most visible economic impact of the pandemic has come in the form of global shortages of key market commodities, stemming from border closures, understaffing at key producers and export facilities, and breakdowns at every stage of international supply chains.<sup>2</sup> For crisis-affected populations, however, an even more potent economic challenge has been the unintended—or, in some cases, deliberate—side effects of ordinances imposed to protect public health. Restrictions on freedom of movement, mandatory closures of non-essential businesses, bans on the use of public transportation, limitations on daily labour, and constraints on the number of vendors and customers allowed to enter marketplaces have disproportionately affected the poorest members of society, in many cases cutting them off entirely from their livelihoods and their ability to afford basic goods to support their families.<sup>3</sup>

Throughout the COVID-19 pandemic, in conjunction with Cash Working Groups (CWGs) worldwide, REACH has been collecting market data through its Joint Market Monitoring Initiatives (JMMIs): response-level monitoring platforms that bring together many actors working in humanitarian cash and voucher assistance (CVA) to jointly collect data on key commodities and marketplaces. These JMMIs are generally constructed around the commodities and services included in local Minimum Expenditure Baskets (MEBs) and Survival Minimum Expenditure Baskets (SMEBs), calculating MEB or SMEB costs over time and tracking changes in key indicators on market functionality.

This factsheet aims to use historical JMMI data to quantify some of the major changes observed in markets in humanitarian contexts between January 2020 and August 2021. The analysis revolves around cross-crisis comparisons of key indicators with the goal of discovering common trends, as well as developing initial, non-causational hypotheses around which of these trends may be connected with the global COVID-19 pandemic and which are more likely to stem from local or national dynamics.

Map 1: Countries included in JMMI cross-crisis analysis



<sup>1</sup> Center for Systems Science and Engineering at Johns Hopkins University, COVID-19 Dashboard, retrieved 1 November 2021, https://systems.jhu.edu/research/public-health/ncov.

<sup>3</sup> United Nations Department of Economic and Social Affairs (UN DESA), "Everyone Included: Social Impact of COVID-19", retrieved 4 November 2021, https://www.un.org/development/desa/dspd/everyone-included-covid-19.html.





<sup>2</sup> PWC, Impact of COVID-19 on the supply chain industry, 2020, https://www.pwc.com/ng/en/assets/pdf/impact-of-covid19-the-supply-chain-industry.pdf.



## METHODOLOGY

#### PRICE TREND ANALYSIS

Price data covering the full period from January 2020 to August 2021 was compiled from JMMIs in six countries: Central African Republic (CAR), Iraq, Libya, South Sudan, Syria, and Yemen. Though REACH launched JMMIs in many new countries during the COVID-19 pandemic, JMMIs that were not producing data in January 2020, and that therefore did not offer a comparable starting point for trend lines, were excluded from the analysis.4

Time series analysis was performed to understand the evolution of the cost of the standard locally endorsed monitoring basket in each country. Where possible, each basket was also broken into components for food, hygiene, and fuel and the components analysed separately to isolate price trends for specific types of goods.

Because these baskets were tailored to the culturally specific needs of crisis-affected populations in each country, differences in composition, currencies, and base prices were evened out by creating price indices: the local price of each basket and basket component in January 2020 was normalised to 1.00, and prices in each subsequent month were expressed as a fraction of the price in month 1. In addition, to further correct for the appreciation and depreciation of local currencies, all prices were converted to United States dollars (USD) using parallel-market exchange rates where available and official exchange rates elsewhere.<sup>5</sup> Further price indices were created to track the evolution of these USD figures.

#### MARKET FUNCTIONALITY ANALYSIS

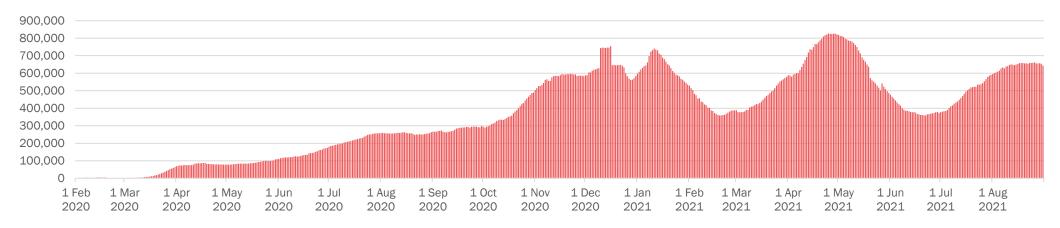
Market functionality indicators, meanwhile, could not be standardised as precisely due to slight differences in how they were constructed across different JMMIs. To enable cross-crisis analysis,

selected comparable indicators were grouped into five categories: decrease in number of open shops, decrease in number of customers, supply challenges, transport difficulties, and safety/ security concerns. The percentage of KIs providing the appropriate response to each relevant question was tracked over time for all months in which data was available without normalisation. Indicators from Afghanistan, CAR, Syria, Uganda, and Yemen were identified for these analyses.

#### LIMITATIONS

- Vendors in each JMMI were purposively selected for key informant interviews (KIIs) based on the marketplaces in which they operated and the items they sold. All results and analyses should be read as indicative, not representative. For this reason, it is also not possible to attribute causality, i.e. to definitively state that certain trends were shaped by the COVID-19 pandemic or any other factor; any similar observations should be read as hypotheses only.
- Though most analysed JMMIs produce data on a monthly basis, their data collection windows are not perfectly aligned; for instance, JMMI partners in Libya and South Sudan collect data during the first week of the month, and those in CAR, during the last week. There are therefore slight mismatches in the precise dates to which each trend line is indexed. To partly mitigate this issue, January 2020 was identified as the index month for all price analyses, and JMMIs that did not produce data within that five-week window were excluded from analysis.
- Due to differences in the precise phrasing and construction of market functionality indicators across countries, it is not possible to precisely compare these indicators across JMMIs, meaning that all such analyses must be interpreted as indicative. Only the most similar indicators were included in cross-crisis analyses, and all others—including the entire slate of market functionality indicators from certain countries—were excluded.

Figure 1: Global cases of COVID-19 (running 7-day average), 1 February 2020 to 31 August 2021



<sup>4</sup> Additional REACH JMMIs were launched in Afghanistan, Bangladesh, Colombia, Democratic Republic of the Congo (DRC), Ethiopia, Haiti, Kenya, Nigeria, Somalia, Uganda, and Venezuela during the COVID-19 pandemic and have been active for various periods in 2020 and 2021. JMMI factsheets, datasets, and trend analyses are available for all covered countries on the REACH Resource Centre at https://www.reachresourcecentre.info.





Figure 2: Local-currency price indices for full monitoring baskets, January 2020 - August 2021 (normalised, January 2020 = 1.00)

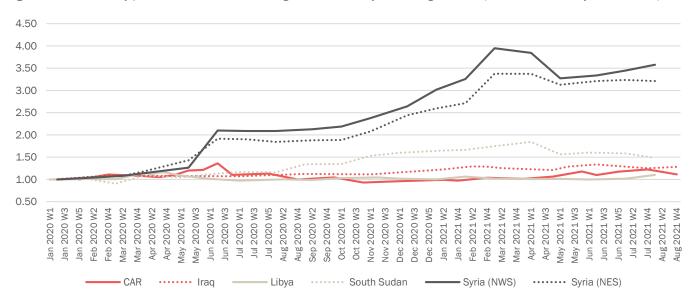
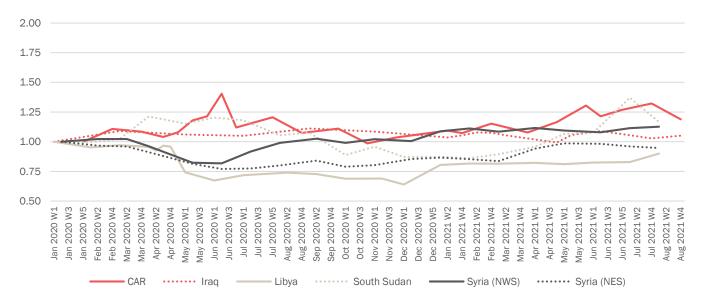


Figure 3: USD price indices for full monitoring baskets, January 2020-August 2021 (normalised, January 2020 = 1.00)



## PRICE TRENDS FOR FULL BASKETS

Of the six countries where REACH was collecting JMMI data as of January 2020, data on the cost of the full locally endorsed monitoring basket (generally an MEB or SMEB) was available for five: CAR, Iraq, Libya, South Sudan, and Syria.<sup>6</sup> Between January 2020 and August 2021, local basket prices rose by an average of 25% across these five countries, or 68% including Syria. Consumers in each country saw gradual rises in the prices they paid for basic commodities over this time period, ranging from 10% in Libya to 49% in South Sudan to 240% in Syria. This eroded households' capacity to purchase basic goods at a time when many people had temporarily lost their livelihoods due to business closures and movement restrictions mandated by local authorities.

Tracking the USD cost of these baskets, however, presents a more mixed picture. The monitored basket prices rose by just 8% in USD terms on average (or 7% including Syria) between January 2020 and August 2021, with Libya and northeast Syria reporting lower USD basket costs at the end of this period compared to the beginning.

It should be noted that in several analysed countries (Syria, Iraq, and South Sudan), local basket costs were highly correlated with USD-to-local-currency exchange rates on the parallel market (r = 0.90 to 0.98). This suggests that in these import-dependent countries, the observed local price changes for basic commodities were driven ultimately by currency fluctuations and the cost of importation, rather than by market-level difficulties faced by local retailers and suppliers.

Exceptions to this dynamic included CAR, where seasonal price changes, conflict dynamics, and poor market integration created a disconnect between local market prices and region-wide exchange rates for the Central African CFA franc, and Libya, where sharp commodity price rises in the second quarter of 2020,7 triggered by a freeze on the issuance of letters of credit, were eventually reversed by the imposition of strict price controls on 16 essential goods.





Figure 4: Local-currency price indices for food baskets, January 2020 - August 2021 (normalised, January 2020 = 1.00)

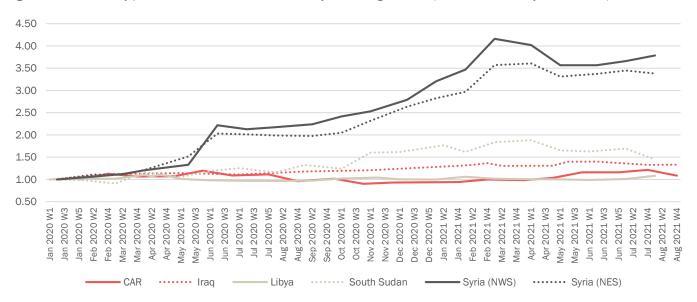
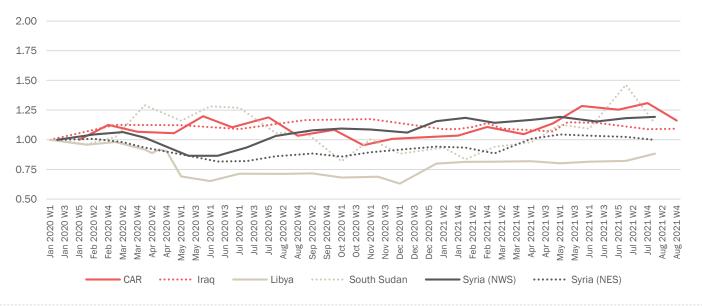


Figure 5: USD price indices for food baskets, January 2020-August 2021 (normalised, January 2020 = 1.00)



## PRICE TRENDS FOR FOOD BASKETS

Food items comprise by far the largest component of many humanitarian MEBs and SMEBs, and thus changes in food prices frequently drive changes in the cost of the full baskets.<sup>8</sup> Trend analysis in CAR, Iraq, Libya, South Sudan, and Syria from January 2020 to August 2021 reinforces this tendency. Over this period, the local cost of the food portion of each locally defined MEB or SMEB rose by an average of 24% (or 71% including Syria), with country-level rises ranging from 8% in Libya to 45% in South Sudan to 258% in Syria.

Analysing the food basket costs in USD, too, presents dynamics similar to those discussed in the previous section, with food basket prices rising by 7% between January 2020 and August 2021, with or without the inclusion of Syria. Food basket price changes were slightly more erratic than those for the MEBs or SMEBs as a whole, with some countries exhibiting larger swings from month to month, but the trends were overall the same.

The gradual upward slope of most of the local-price trend lines throughout 2020 may be surprising given reports of COVID-19related volatility in worldwide food prices. The Food and Agriculture Organization's (FAO's) global Food Price Index, for instance, showed that food prices worldwide dropped by 11% between January and May 2020, only to rise gradually by 39% between May 2020 and August 2021 for a net increase of 23%.9 A major driver of these early 2020 price decreases, however, was a price slump in more developed countries driven by a lack of demand for imported foodstuffs, due in part to reduced household incomes and in part to widespread closures of restaurants and other nonessential businesses. 10 These dynamics did not apply equally to the staple commodities monitored in REACH JMMIs worldwide, for which demand tends to be inelastic, nor to many humanitarian contexts in which crisis-affected populations were already living in poverty and were unable to reduce consumption further.

That said, small early 2020 drops in food prices were observed in REACH JMMI countries such as Yemen, Nigeria, and Uganda, which have not been included in the graphs at left due to a lack of continuous data throughout the analysis period. Anecdotally, some of these price decreases were connected to failed consumer transactions, driven in part by a tightening of informal credit, as struggling vendors were unable to extend further credit to households that had lost large portions of their incomes.







Figure 6: Local-currency price indices for hygiene baskets, January 2020 - August 2021 (normalised, January 2020 = 1.00)

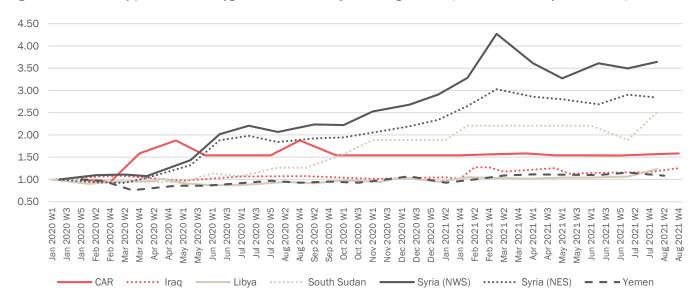
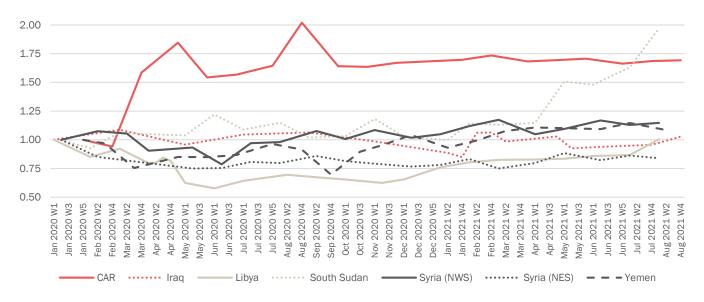


Figure 7: USD price indices for hygiene baskets, January 2020 - August 2021 (normalised, January 2020 = 1.00)



## PRICE TRENDS FOR HYGIENE BASKETS

Historical data on the prices of hygiene MEB and SMEB components is available from six REACH JMMIs: CAR, Iraq, Libya, South Sudan, Syria, and Yemen. While these hygiene components differ greatly by country, ranging from a basket of eight commodities in Iraq to just six bars of soap in South Sudan, their prices have been normalised to account for the differences. It must be noted that all hygiene baskets analysed here consist of general-use commodities such as water, soap, toothpaste, sanitary pads, and the like; they do not include COVID-19-oriented items such as hand sanitiser or face masks, which were rarely monitored by humanitarian actors prior to March 2020 and were integrated into few MEBs or SMEBs in response to the pandemic.

Between January 2020 and August 2021, the local prices of these hygiene components rose by an average of 57% in the assessed countries, or 85% including Syria. These prices rose not only in local currency, but in USD as well; consulting the USD price indices shows that, in most assessed countries, hygiene prices increased by an average of 36%, or 30% including Syria.

These increases in USD prices were primarily driven by changes in South Sudan (+97%, largely since May 2021) and CAR (+69%, persistently since March 2020), suggesting severe supply issues in these countries affecting imported hygiene items that are difficult to produce locally. Though some food items in these countries' SMEBs must also be imported, the bulk are locally grown or raised, thus insulating food prices slightly more from COVID-19-related constraints on global supply chains.





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Figure 8: Local-currency price indices for fuel baskets, January 2020 - August 2021 (normalised, January 2020 = 1.00)

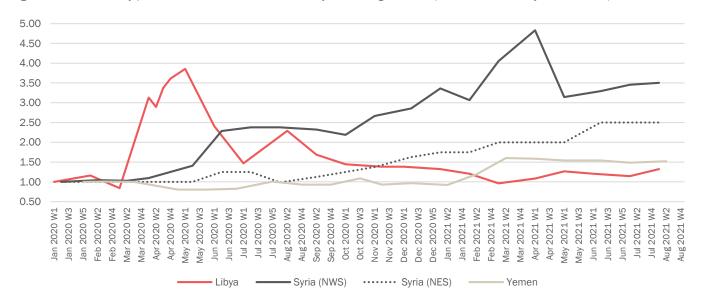
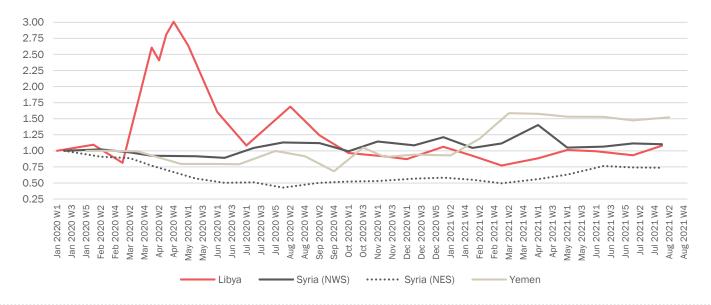


Figure 9: USD price indices for fuel baskets, January 2020-August 2021 (normalised, January 2020 = 1.00)



## PRICE TRENDS FOR FUEL BASKETS

Of the six countries where REACH was collecting JMMI data as of January 2020, only three—Libya, Syria, and Yemen—included a robust fuel component in their MEBs or SMEBs, generally comprising locally preferred types of cooking fuel (LPG or kerosene) but also, in the case of Yemen, including petrol and diesel for vehicles.<sup>11</sup> The January 2020 to August 2021 trends in each country are highly individual, underscoring the degree to which local and national dynamics have driven fuel prices independently of COVID-19related global supply chain challenges.

- In Libya, cooking fuel prices were volatile throughout 2020, particularly between March and June, when the local price of LPG (liquefied petroleum gas) spiked by 271% between early March and late April before nearly halving again by early June. These price spikes, which also affected the vehicle fuel required for transportation of goods, were correlated with a 10% jump in the price of the food component of the Libya MEB over the same period. The fuel shortages stemmed from a shutdown of Libyan oil production in the first half of 2020, which halted the country's crude oil exports and deprived the Central Bank of Libya of the foreign currency needed to import refined fuel and many other items from its trading partners.<sup>12</sup>
- In Syria, local and regional currency depreciation was again the main driver of dramatic local-currency price spikes for cooking fuel (246% in northwest Syria and 150% in northeast Syria). In the northeast, however, strict price controls at fuel vendors affiliated with the local authorities succeeded in mitigating the effects of these inflationary pressures, limiting price increases to well below the rate of inflation. In August 2020, for instance, USD fuel prices in northeast Syria dropped to just 43% of their January 2020 levels, and by August 2021 had still only risen to 74% of that level.
- In Yemen, after a relatively stable 2020, local-currency fuel prices jumped by 74% between January and March 2021 due to new regulations that restricted official importation of fuel through the port at Al Hudaydah and redirected supplies to the parallel market. This reliance on the parallel market, coupled with the need to redirect fuel shipments through southern ports, ensured that fuel prices remained on this higher plateau through at least August 2021.<sup>13</sup>

<sup>11</sup> For consistency, REACH has analysed only fossil fuels, thereby excluding the energy component of the South Sudan Multi-Sector SMEB, which consists of firewood and charcoal only 12 The Guardian, "Divided Libya to restart oil production after six-month shutdown", 10 July 2020, https://www.thequardian.com/world/2020/jul/10/divided-libya-to-restart-oilproduction-after-six-month-shutdown. 13 ACAPS, Yemen: Effects of the Fuel Embargo at Al Hodeidah port on fuel supply dynamics and fuel prices, 17 August 2021, https://www.acaps.org/sites/acaps/files/products/







## MARKET FUNCTIONALITY INDICATORS

In addition to its devastating impact on global public health, the COVID-19 pandemic has also represented a crisis of market functionality, particularly in its early stages. During the lockdowns imposed in many countries in early to mid-2020 and thereafter, many governments and local authorities enacted restrictions that specifically sought to hinder market functionality: for instance, closing non-essential businesses, preventing vendors and customers from gathering in marketplaces, restricting the entry of foreign goods and transporters to limit the spread of COVID-19, and the like. With this in mind, it is essential to analyse aspects of market functionality to fully understand the impact of COVID-19 on markets in humanitarian contexts.

Because each REACH JMMI is tailored to the humanitarian context it seeks to inform, the market functionality indicators included in these JMMIs are not always perfectly comparable across countries. However, comparable indicators have been identified from Afghanistan, CAR, Syria, Uganda, and Yemen highlighting five aspects of market functionality of particular concern during the COVID-19 pandemic. For each global indicator category, the countries analysed are listed alongside the specific wording of each country-level indicator.

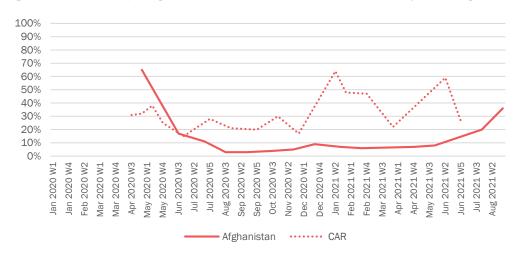
#### VENDORS REPORTING A DECREASE IN THE NUMBER OF OPEN SHOPS

**Afghanistan:** % of KIs reporting the number of traders open for business to have decreased in the 30 days prior to data collection

**CAR:** % of vendors reporting the closure of their colleagues' businesses in this location over the previous 2 weeks

In both Afghanistan and CAR, as in many other countries, widespread temporary business closures accompanied the arrival of the COVID-19 pandemic due to lockdowns imposed by national or local authorities. Further waves of business closures in Afghanistan and CAR accompanied major episodes of insecurity in these countries, including the rapid escalation of armed group activity across Afghanistan from May 2021 and the violence and border closures surrounding CAR's disputed December 2020 elections.

Figure 10: % vendors reporting a decrease in the number of open shops, January 2020-August 2021



#### VENDORS REPORTING A DECREASE IN THE NUMBER OF CUSTOMERS

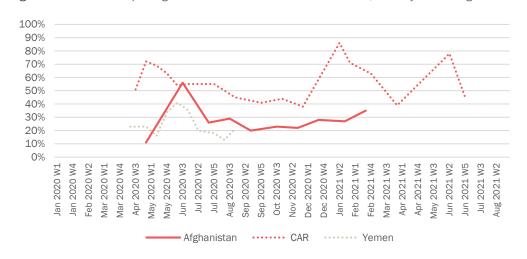
**Afghanistan:** % of KIs reporting the number of customers per day to have decreased in the 30 days prior to data collection

 ${\it CAR:}\ \%$  of merchants reporting a reduction in the number of their customers over the previous 2 weeks

**Yemen:** % of vendors indicating a decrease in the number of customers in the 2 weeks prior to data collection

Sharp decreases in numbers of daily customers were reported in all three countries in the second quarter of 2020, peaking at various points between April and June 2020 depending on local dynamics. Further peaks in CAR in January and June 2021 were connected with major episodes of insecurity in the country, as detailed above.

Figure 11: % vendors reporting a decrease in the number of customers, January 2020-August 2021



<sup>12</sup> Potentially matching indicators in some JMMI countries, including Bangladesh, Nigeria, and others, were excluded from this analysis, as the historical data covered a period too short to allow for meaningful trend analysis.





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## MARKET FUNCTIONALITY INDICATORS

#### VENDORS REPORTING SUPPLY CHALLENGES OR RESTOCKING DIFFICULTIES

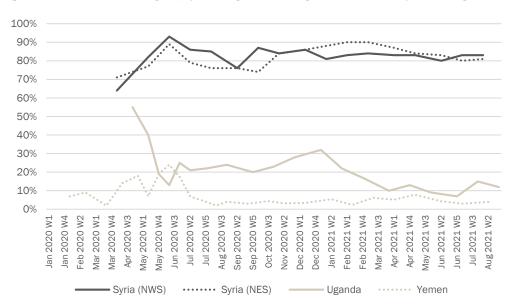
Syria: % of vendors reporting facing one or more supply challenges in the 30 days prior to data collection

Uganda: % of interviewed traders reporting concern that their stocks will run out within 1 week following data collection

Yemen: % of vendors reporting difficulties obtaining key commodities due to disruptions caused by COVID-19 in the 2 weeks prior to data collection

Though these three indicators are constructed in similar ways, their wording is quite different. Supply challenges in all three countries were at their worst during the early days of the pandemic (April to June 2020). Peaks in the Uganda trend line were correlated with strict national lockdowns lasting from March to May 2020 and from June to July 2021, as well as with major supply difficulties in mid- to late 2020 stemming from new border restrictions on commercial vehicle operators.<sup>13</sup> Similar dynamics were observed in Yemen in mid-2020 due to movement restrictions and port quarantines.<sup>14</sup> Supply challenges in northern Syria were reportedly almost universal throughout the assessed period, though this is due to the indicator being more broadly constructed than in Uganda or Yemen; in most months, nearly all Syrian vendors who reported supply challenges cited the depreciation of the Syrian pound as the main challenge they faced, as opposed to factors linked to the COVID-19 pandemic.

Figure 12: % vendors reporting supply challenges/restocking difficulties, January 2020-August 2021



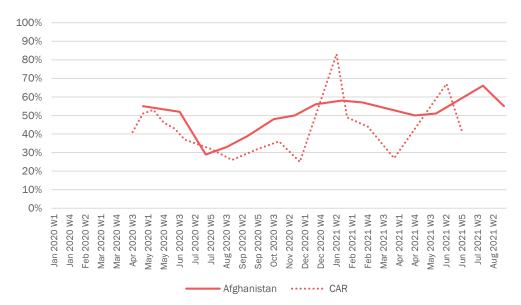
#### VENDORS REPORTING DIFFICULTY WITH TRANSPORT

Afghanistan: % of KIs reporting difficulties with road-based transportation of goods in the 30 days prior to data collection

CAR: % of merchants reporting an increase in the price of transporting goods over the previous 2

These two indicators, too, are worded in slightly different ways despite covering similar themes. Transportation in Afghanistan and CAR is generally challenging due to insecurity, poor roads, difficult terrain, and seasonal blockages; throughout the year, in both countries, the proportion of interviewed vendors reporting transport challenges never dropped below 25%. The early 2020 COVID-19-related movement restrictions in both countries, which included the closure of many Afghan border crossings, 15 were a significant factor contributing to transport difficulties, as were the previously discussed escalations in insecurity that increased the risk and cost of commercial travel. These dynamics were layered on top of pre-existing weather-related challenges that are evident in the trend lines, including the peak August-to-October rainy season in CAR and heavy winter snow in Afghanistan that routinely renders parts of the country inaccessible.

Figure 13: % vendors reporting difficulty with transport, January 2020-August 2021







## MARKET FUNCTIONALITY INDICATORS

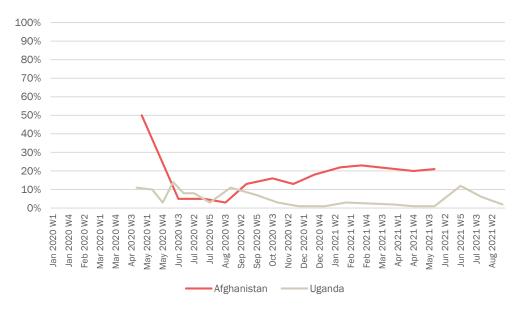
#### VENDORS REPORTING SAFETY OR SECURITY CONCERNS IN MARKETPLACES

**Afghanistan:** % of KIs reporting that consumers faced security constraints preventing them from accessing the market in the 30 days prior to data collection

**Uganda:** % of interviewed traders reporting feeling less secure in their marketplace in the 1 week prior to data collection

In the early days of the COVID-19 pandemic, according to enumerator reports, vendors in some humanitarian contexts reported feeling increasingly unsafe going about their daily routines in the marketplace. The large number of people who had abruptly lost their livelihoods due to an inability to access their workplaces created fears of a spike in crime and theft from marketplaces. Meanwhile, in countries that had implemented strict public health measures, some vendors also anecdotally feared harassment or, in some cases, even physical assault for failing to follow all COVID-19 protocols. In Uganda, jumps in the proportion of vendors reporting safety concerns corresponded roughly with the dates of the country's main COVID-19 lockdowns, which brought with them widespread closures of non-essential businesses, marketplaces, and public transport services; the main reported reason for feeling less secure was a fear of coming into contact with COVID-19-affected individuals, but fears of criminality were also reported. In Afghanistan, meanwhile, security constraints accompanied both the dates of the 2020 COVID-19 lockdown and a general uptick in insecurity throughout the country in 2020 and 2021.

Figure 14: % vendors reporting safety/security concerns in marketplaces, January 2020-August 2021



## CONCLUSION

Because markets tend to be highly open systems affected by myriad factors, it can be difficult at times to disentangle the effects of various contributing factors on prices and market functionality: a necessary step to say with certainty which economic developments can be attributed to the COVID-19 pandemic and which were unrelated. Across the eight countries treated in this analysis, though, increases have been observed in the local-currency costs of most full monitoring baskets and sectoral components of those baskets, a development that has eroded vulnerable households' capacity to purchase basic food and non-food items at a moment when they could hardly afford further financial stress. In some countries, these increases were closely correlated with depreciation of the national currency, and in others may have been driven by highly local factors. In either case, though, the effects of the global COVID-19 pandemic on prices could be discerned mostly in the form of temporary, localised price changes in response to country-level restrictions on movement and trade.

Analysing indicators of market functionality over time, meanwhile, shows that certain aspects of functionality were closely correlated with lockdowns, restrictions on movement and importation of goods, and other aspects of country-level public health ordinances imposed to stall the spread of COVID-19. Other local factors, such as insecurity, seasonality, and pre-existing weather patterns, had strong effects on market functionality as well. Further research, in the form of both primary data collection and synthesis of existing country-level studies, will be needed to more fully understand the effects of COVID-19 on local markets by collecting local market actors' perspectives on the differing dynamics that affected their businesses before, during, and after the pandemic.

#### **ABOUT REACH**

REACH facilitates the development of information tools and products that enhance the capacity of aid actors to make evidence-based decisions in emergency, recovery, and development contexts. The methodologies used by REACH include primary data collection and in-depth analysis, and all REACH activities are conducted through inter-agency aid coordination mechanisms. REACH is a joint initiative of IMPACT Initiatives, ACTED and the United Nations Institute for Training and Research - Operational Satellite Applications Programme (UNITAR-UNOSAT). Visit <a href="https://www.reach-initiative.org">www.reach-initiative.org</a> and follow us on Twitter at <a href="https://www.reach-initiative.org">@REACH\_info</a> for further information.

#### ABOUT REACH'S COVID-19 CASH AND MARKETS RESEARCH

As an initiative deployed in many vulnerable and crisis-affected countries, REACH is deeply concerned by the devastating impact the COVID-19 pandemic may have on the millions of affected people we seek to serve. Throughout 2020 and 2021, REACH has worked with Cash Working Groups and partners to scale up its programming in response to this pandemic, with the goal of identifying practical ways to inform humanitarian responses in the countries where we operate. COVID-19-relevant market monitoring and market assessments are a key area where REACH aims to leverage its existing expertise to help humanitarian actors understand the impact of changing restrictions on markets and trade. Updates regarding REACH's response to COVID-19 can be found in a devoted thread on the REACH website. Contact cashandmarkets@impact-initiatives.org for further information.



