Are international food markets holding-up during the COVID-19 pandemic?

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Abstract

The onset of the COVID-19 pandemic triggered alarmist views on whether international markets would still have the capacity to meet demands from countries who are dependent on trade, including their food security. This paper analyses whether international food markets have been holding up since the start of the pandemic and whether countries, especially those that are economically disadvantaged and dependent on food imports, have been able to meet their dietary needs through international trade.

Are international food markets holding-up during the COVID-19 pandemic?

1. Early alarms

The onset of the COVID-19 pandemic triggered alarmist views on whether international markets would still have the capacity to meet demands from countries who are dependent on trade, including their food security. Leading authorities, such as the World Trade Organisation (WTO) and the International Monetary Fund (IMF) forecasted precipitous (record) declines in global merchandise trade, reasoning that international supply disruptions and lower global demand would result in sharp contractions in world trade.

More recently, the IMF, in their World Economic Outlook (October 2020)[1], slightly upgraded their forecast for the volume of world trade, to fall now by 10 percent from 2019 (compared to 12 and 14 percent in the June and April forecasts, respectively), with trade by Advanced Countries, and Emerging Market and Developing Economies, currently foreseen to contract in 2020 by 11 percent and 9 percent, respectively. In June 2020 also, the WTO maintained its April forecast of a global trade contraction of 13 percent under an optimistic scenario and a 32 percent contraction under a pessimistic scenario.[2] While the WTO underlined that world trade shows signs of bouncing back from a deep, COVID-19 induced slump, it still cautioned in October that any recovery could be disrupted by the ongoing pandemic effects. Finally, the latest forecast by the United Nations Conference on Trade and Development (UNCTAD) has the value of global trade falling by 4.5 percent in the third quarter of 2020 on a year-on-year basis and overall a decline of 7 percent in 2020.[3] Among these agencies, UNCTAD is the only to provide a sectoral breakdown of changes in merchandise trade values in 2020 with respect to last year. They estimate that the value of agri-food trade has increased by a couple of percentage points in the first quarter and will stay relatively stable in the second quarter as well as in July and August of 2020.

2. How did trade in food and agriculture fare?

Data available up to September 2020 and projected to the full calendar year of 2020 suggest a strong, albeit not complete, resilience of the global food sector to COVID-19 shocks. The pessimistic overall trade forecasts do not concord with the observed data for food and agriculture that were reported for the first nine months of 2020. Tables 1 and 2 present these data at the global level, with values and volumes (valued at prices of 2015) of food imports in the first and second halves of 2020 (with the fourth quarter estimated) , contrasted with the periods from H1-2018 to H2-2019. Overall, global food imports are expected to expand in 2020 relative to 2018 and 2019, both in value and volume terms. The commodities for which global food trade underwent the highest contraction in 2020, compared to H1-2019 and H2-2019, can be regarded as highly income elastic, and are those for "beverages" and "fish products", and also dairy products.

COVID-19 has had an unarguable and profoundly negative impact on GDP in countries integrated with global markets. In October of this year, the IMF slightly upgraded global GDP growth in 2020 to -

[1] https://www.imf.org/en/Publications/WEO/Issues/2020/09/30/world-economic-outlook-october-2020
[2] https://www.wto.org/english/news_e/pres20_e/pr858_e.htm#:~:text=Trade%20falls%20steeply%20in%20first%20half%20of%202020,-World%20trade%20fell&text=However%2C%20rapid%20government%20responses%20helped,case%20scenario%20projected%20in%20April.
[3] https://unctad.org/system/files/official-document/ditcinf2020d4_en.pdf

4.4 percent in contrast to -5 percent in June 2020. While international prices have generally fallen in 2020[4] for all of these high-valued foodstuffs, lower incomes have rendered these particular products even less affordable, offsetting the beneficial price effects, resulting in lower volumes transacted.

Assuming seasonal effects in patterns of international procurement, current estimates suggest that food imports in both value and volume terms, exhibited a high degree of resilience throughout 2020 (table 1 and 2). Imported volumes of staple foodstuffs, such as cereals, vegetable oils and oilseeds, sugar, and fruits and vegetables, which are less income elastic, recorded an increase in 2020 compared to 2019 in both value and volume terms. Furthermore, a considerable amount of trade in them (with the exception of fruits and vegetables) takes place in bulk shipments, in a highly capital-intensive setting, and trade logistics in many routes are highly automatized with little human interaction, thus sustaining trade.

Table 1. Recent trends in the World Food Import Bill, products and total (USD billion, current).

Food Group	H1-2018	H2-2018	H1-2019	H2-2019	H1-2020	H2-2020	change 2020 H1 over 2019 H1 (%)	change 2020 H2 over 2019 H2 (%)	change 2020 over 2019 (%)
Animal and vegetable oils, fats and waxes	47.7	45.0	43.4	45.4	47.4	51.3	9.2	12.9	11.1
Beverages	55.5	60.4	55.6	60.6	49.3	59.6	-11.3	-1.7	-6.3
Cereals and cereal preparations	91.6	92.5	92.0	93.3	94.2	100.8	2.4	8.0	5.2
Coffee, tea, cocoa, spices and manufactures thereof	53.9	54.9	52.9	55.2	52.9	56.7	0.0	2.8	1.4
Dairy products and birds' eggs	48.9	46.8	48.8	48.2	48.5	48.7	-0.5	1.0	0.2
Fish, crustaceans, molluscs and preparations thereof	77.0	81.9	76.9	81.8	69.5	75.7	-9.6	-7.4	-8.5
Meat and meat preparations	73.5	73.2	73.1	80.6	78.5	80.2	7.4	-0.5	3.3
Miscellaneous edible products and preparations	46.5	47.5	48.0	48.4	48.9	51.6	1.7	6.7	4.2
Oilseeds and oleaginous fruits	48.9	47.2	43.9	46.5	48.1	51.8	9.5	11.3	10.4
Sugar, sugar preparations and honey	23.9	23.9	22.1	23.8	23.3	25.8	5.5	8.0	6.8
Vegetables and fruits	146.3	129.1	144.3	132.4	148.9	135.9	3.2	2.7	2.9
6-MONTH TOTAL	**713.9**	**702.5**	**701.0**	**716.2**	**709.4**	**738.1**	**1.2**	**3.0**	**2.1**
ANNUAL TOTAL	**1 416**		**1 417**		**1 447**				

Source: TDM, author. Note that H1 and H2, respectively, refer to the first and second half of the year in question.

[4] See https://www.imf.org/en/Research/commodity-prices

Table 2. Recent trends in the World Food Import product volumes (USD billion, 2015 prices).

Food Group	H1-2018	H2-2018	H1-2019	H2-2019	H1-2020	H2-2020	change 2020 H1 over 2019 H1 (%)	change 2020 H2 over 2019 H2 (%)	change 2020 over 2019 (%)
Animal and vegetable oils, fats and waxes	44.9	45.9	46.7	49.2	48.0	51.0	2.7	3.6	3.2
Beverages	51.5	54.8	52.4	55.2	48.5	53.4	-7.5	-3.2	-5.3
Cereals and cereal preparations	91.5	91.5	91.2	94.6	95.7	98.4	4.9	4.0	4.5
Coffee, tea, cocoa, spices and manufactures thereof	55.8	55.6	56.2	55.4	54.7	53.8	-2.7	-3.0	-2.8
Dairy products and birds' eggs	43.6	42.6	45.7	44.6	44.9	43.6	-1.7	-2.4	-2.0
Fish, crustaceans, molluscs and preparations thereof	64.1	69.6	66.8	73.4	64.4	70.0	-3.6	-4.7	-4.2
Meat and meat preparations	70.3	72.0	71.6	76.2	74.7	76.3	4.4	0.1	2.2
Miscellaneous edible products and preparations	42.4	42.2	46.2	45.3	47.3	47.8	2.4	5.6	4.0
Oilseeds and oleaginous fruits	48.6	47.7	46.0	50.1	51.4	55.5	11.7	10.6	11.1
Sugar, sugar preparations and honey	22.3	23.1	21.0	23.0	21.9	23.3	4.3	1.3	2.7
Vegetables and fruits	135.0	123.9	140.3	126.9	144.3	128.7	2.9	1.4	2.2
	669.9	**668.9**	**684.2**	**694.0**	**695.9**	**701.7**	**1.7**	**1.1**	**1.4**
	1 339		**1 378**		**1 398**				

Source: TDM, author. Note that H1 and H2, respectively, refer to the first and second half of the year in question.

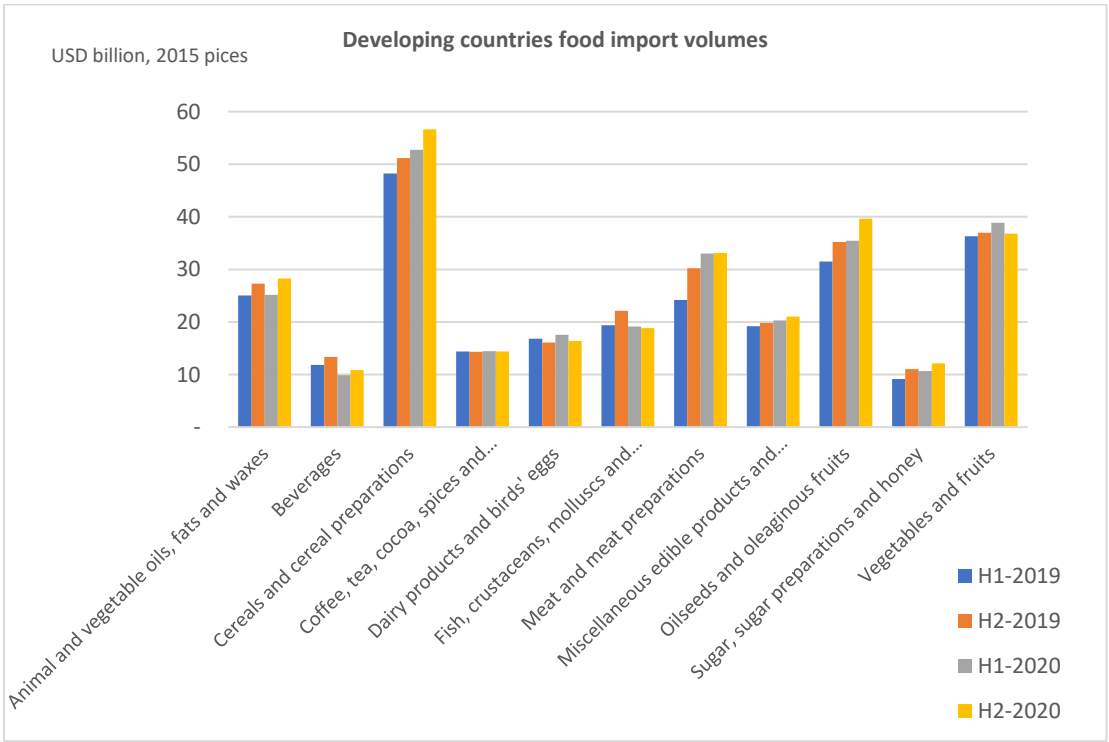

Figure 1: Recent trends in Developing Countries' Food Import product volumes (values, 2015 prices).

Source: TDM, author

3. Economically disadvantaged countries far less resilient in sustaining food imports

The regularities in world-level trends in importing foodstuffs during the COVID pandemic are not shared by the most economically disadvantaged regions. This is particularly true for sub-Saharan Africa (SSA) and for Least Developed Countries (LDCs), noting that reported data from these countries are sparse and are imputed from partners' reported export data.

The food import bill for SSA is estimated to have declined by 1 percent for the full calendar year of 2020. For almost all food groups, the declines are on account of substantial contractions in volumes especially beverages, fish, sugar, meat products, and fruit and vegetables. Oilseeds, vegetable oils and cereals stand as the main product groups that have defied this trend. Noteworthy, is the importance of imported cereals to SSA's total food import bill, which have held up in volume terms, while the region has also benefited from lower cereal import costs for at least the first half of the year.

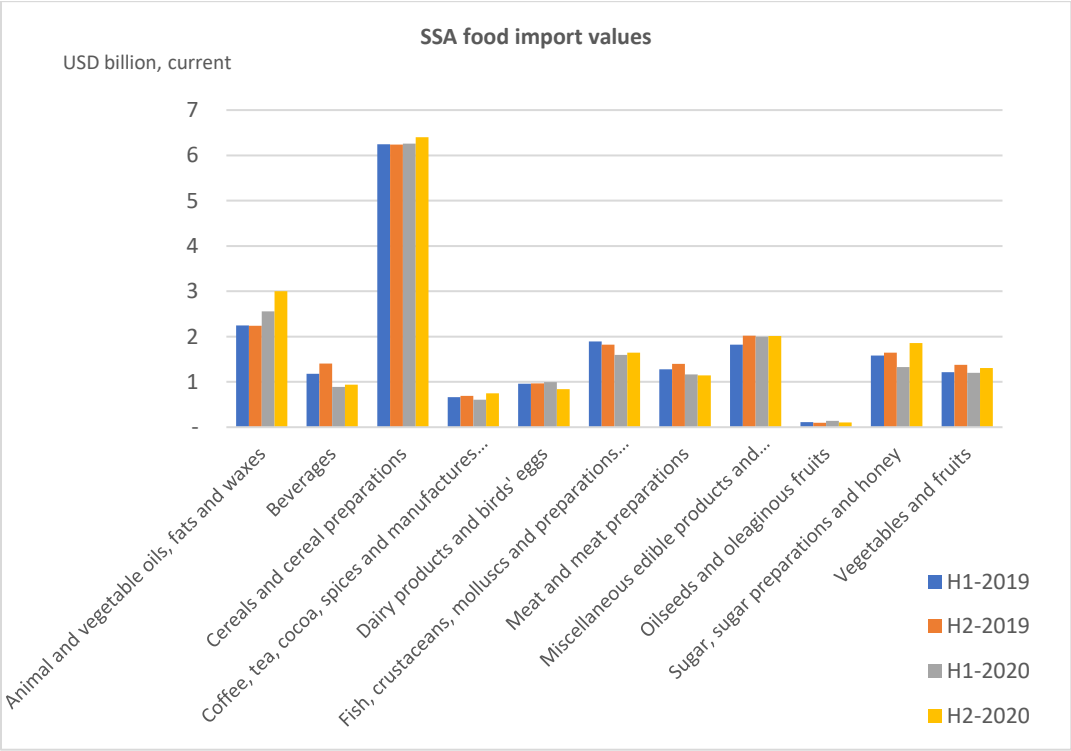

Figure 2: Recent trends in the sub-Saharan African Food Import Bill, products and total (USD billion, current).

Source: TDM, author

LDCs, by contrast, faced higher food import bills to the tune of 2 percent in 2020, compared with the full calendar year 2019. Again, volume contractions for higher value foods are culpable, especially beverages, fish and livestock products, while for cereals that constitute the mainstay of total food imports, volumes remained largely unchanged from last year. A more pronounced contraction in LDC food inflows in 2020 was countered by a sharp rise in vegetable oil imports.

Lower import volumes by SSA are a reason for concern. Import volumes can be regarded as surrogates for aggregate import quantities, and lower food import volumes therefore mean lower nutrient (calorie) imports. While imported food items are not necessarily destined for food use,

neither in the past nor during the pandemic, imports of food items by the poorest countries for non-food purposes (feed or industrial use) seem unlikely. Shrinking import volumes and further population growth therefore suggest that lower import volumes have resulted in lower per capita food supplies of imported food. As domestic production is likely to have contracted in tandem, not least owing to the widespread lockdown measures that were necessary to contain the spread of the disease, the overall food supply situation is likely to have worsened with the pandemic, often starting from an already precariously low level.

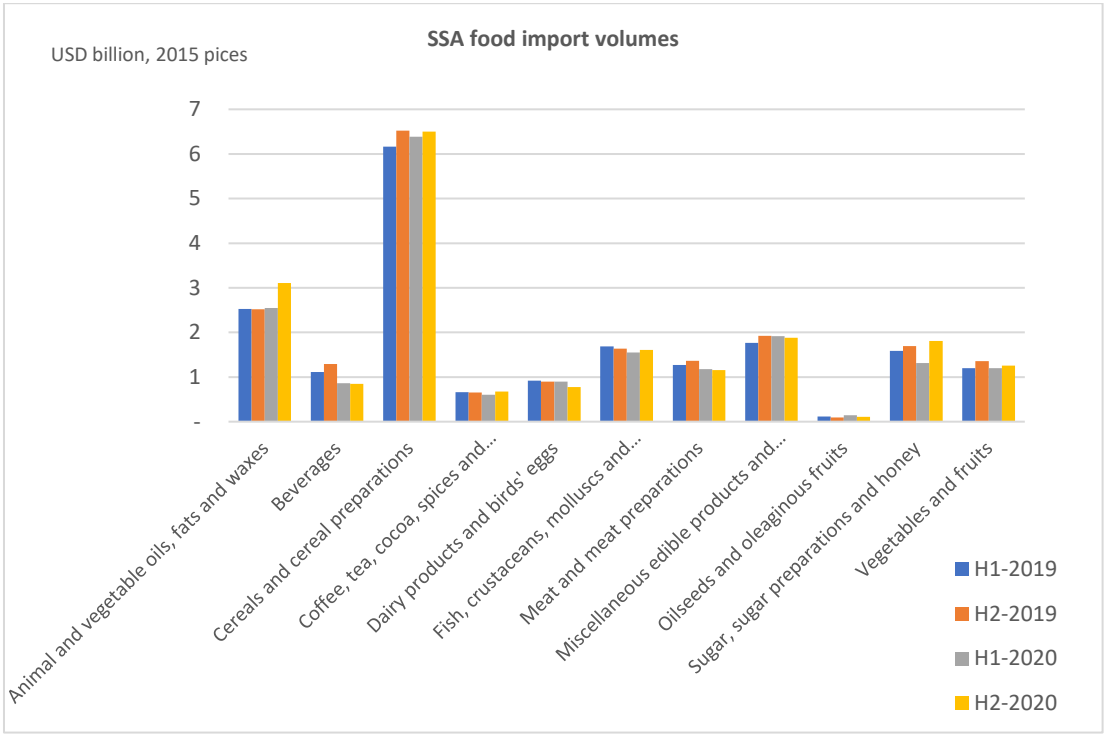

Figure 3. Recent trends in sub-Saharan African Food Import product volumes (USD billion, 2015 prices).

Source: TDM, author

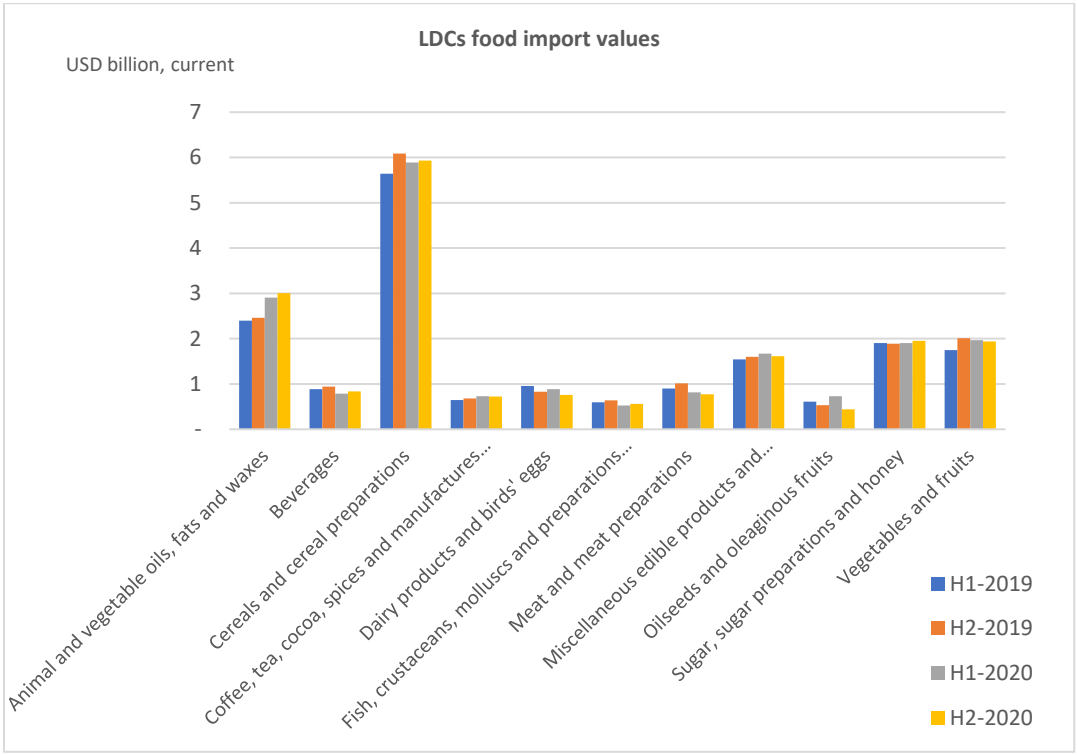

Figure 4: Recent trends in the LDC Food Import Bill, products and total (USD billion, current).

Source: TDM, author

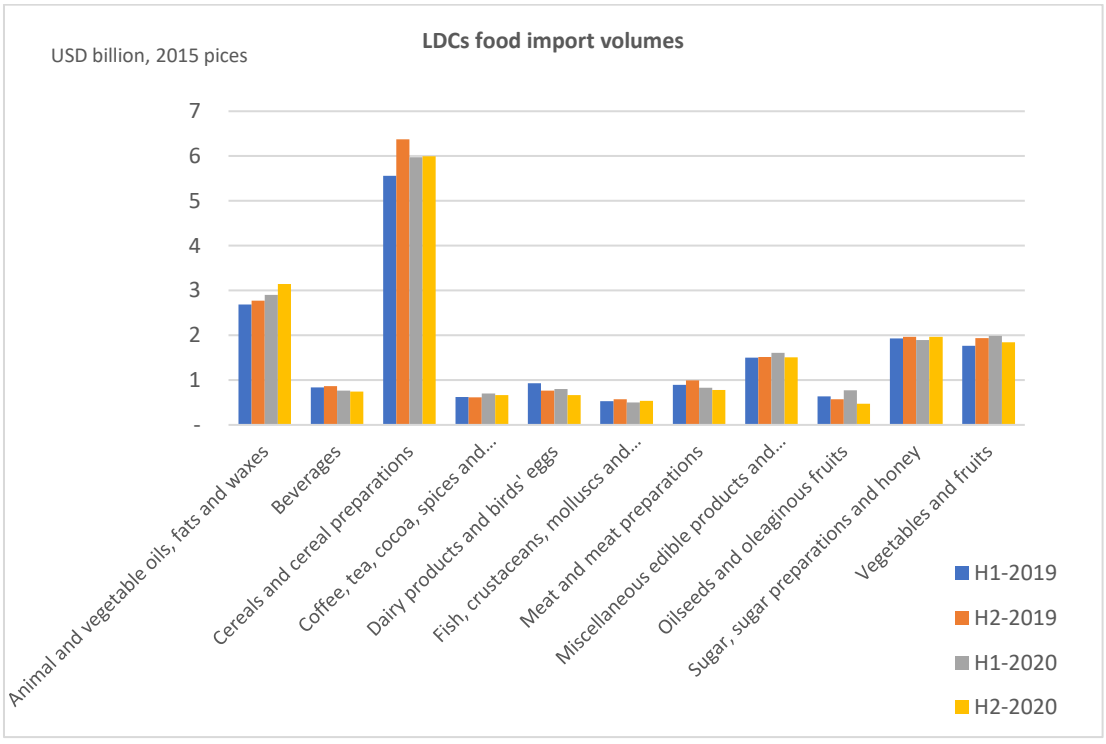

Figure 5: Recent trends in LDC Food Import product volumes (USD billion, 2015 prices).

Source: TDM, author

4. Vulnerabilities in financing food imports

COVID-19 is also accentuating the exposure of already economically vulnerable countries in the financing of their food imports. To set the scene, figures 6 to 10 map the countries that are burdened by the need to finance food imports through having an inherently high rate of dependency on international markets to meet their food and nutritional needs, while prone to exogenous income shocks stemming from COVID-19. It can be seen that countries in North Africa and the Near East have food import dependency rates in the proximity of up to 90 percent, while 27 countries situated in SSA have rates well above 40 percent. Indeed, SSA dominates the intersection of the maps depicting food import dependency, primary commodity dependency, dependency on tourism and inbound remittances, which are all being influenced by the global pandemic. Exposure to COVID-19 can be amplified through a number of sources or a combination of such sources:

- **Primary export dependency**. Countries that are heavily reliant on primary commodities, such as hydrocarbons and minerals for their export earnings, by implication, are subjected to the vagaries of international markets with respect to prices and demand (volumes). A downturn in demand, such as that of petroleum during the pandemic can thwart revenues leading to the inability to finance essential goods and services, such as food, and an inability to service debt obligations.
- **Exchange rate volatility**. Allied to the above, "commodity currencies" are those that co-move with world prices of primary commodity products, owing to countries' excessive dependence on the international sales of those products for their export earnings. A more diversified export base can pave the way for additional sources of revenue to finance basic needs.
- **Foreign exchange reserves**. These foreign currencies are often held exclusively by a country's central bank. In the case of a non-convertible currency, the most important reason for holding sufficiently high foreign exchange reserves is to finance imports. Other reasons include managing the value of their currency, such as pegging to stable international currencies (e.g. USD, Euro); to ensure export competitiveness and macroeconomic stability; assuring foreign investors in the protection of their investments to counter any prospect of capital flight; and to ensure a country can meet its external debt obligations. How much are enough reserves? At a minimum, countries should have enough to pay for three to six months of imports, e.g. that would prevent food shortages.[5]
- **Sovereign debt**. This pertains to debt issued by governments in a foreign currency for financing economic growth and development. The stability of the issuing government can be assessed by sovereign credit ratings, guiding investors to weigh relative risks in debt investments. Fitch Ratings – a renowned international credit-ratings agency – released a report in June 2020[6], warning that sub-Saharan Africa (SSA) sovereign debt burdens are rising at a fast pace, "heightening the risk of further downgrades and defaults". The report anticipates that the average government debt-to-GDP ratio could rise to 71 percent at the end of 2020, compared to 26 percent in 2012, attributing COVID-19 and the negative oil price shock, as well as being amplified by currency depreciation. In September 2020, Zambia (Africa's second largest copper producer) requested investors in its US dollar bond holdings for a 6-month moratorium on interest payments, making the country the first in the region to default since the pandemic.[7] Fitch also foresees a further rise in sovereign debt defaults in

[5] https://www.thebalance.com/foreign-exchange-reserves-3306258#:~:text=Countries%20use%20foreign%20currency%20reserves,and%20profit%20from%20diversified%20portfolios

[6] https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjsxtjk6vrrAhXRDewKHfAlDUUQFjAAegQIBBAB&url=https%3A%2F%2Fwww.fitchratings.com%2Fresearch%2Fsovereigns%2Fdebt-distress-rising-in-sub-saharan-africa-30-06-2020&usg=AOvVaw09Wk_nD1RGeX9EFJeiTNp4

[7] https://www.ft.com/content/0b744d46-46b1-48c3-81cd-be0d78d99262?segmentId=b0d7e653-3467-12ab-c0f0-77e4424cdb4c

the region as probable in the near future. In fact, on 13 November 2020, Fitch downgraded a key rating for Zambia from CC (which is a non-investment grade implying strong probability of default) to restricted default[8].

- **Credit: affordability and access**. COVID-19 is having a negative impact on vulnerable countries to access international credit markets, given their already high indebtedness with foreign lenders and lending institutions. While many central banks around the world intervened in lowering interest rates in response to COVID-19, market rates for borrowing fresh capital have often risen, particularly in low-income countries. A Jubilee Debt Campaign[9] reported that interest rates have on average risen by 3.5 percentage points for low- and middle-income countries since mid-February 2020, and that costs for new borrowing stood at 10 percent.
- **Dependence on tourism**. COVID-19 has severely disrupted the tourism sector, for which many developing countries, especially Small Island Developing States (SIDS), are highly dependent on tourism to generate export earnings. Twenty-five such nations have dependency rates (as a share of total export revenues) ranging from 50 percent to 95 percent (see figure 9). The UN's World Tourism Organisation (UNWTO) estimated in June 2020 a 93 percent year-on-year fall in international visitors.[10]
- **Dependence on remittances.** COVID-19 has induced massive rates of unemployment and underemployment as well as restricting international labour mobility through lockdowns and travel bans. Remittance inflows to low-income states represent an important economic lifeline, and as of 2018, remittance flows to vulnerable countries reached USD 350 billion, surpassing foreign direct investment, portfolio investment, and foreign aid as the single most important source of income from abroad.[11] A World Bank Report predicted that remittances in 2020 could fall by as much as 20 percent from the previous year.[12]
- **"Affordability" of food imports.** Contrasting food import expenditures with foreign exchange earnings at the country level can provide a perspective on the "affordability of food imports". Affordability can also serve as an *ex-ante* indicator for the likely resilience to an exogenous shock, for instance, as emanating from the COVID-19 pandemic. To illustrate different degrees of resilience, three levels of affordability are distinguished[13]. The first simply juxtaposes food import expenditures with revenues from total merchandise exports. At the second level, revenues from exports of services are added to the revenues from exports of goods. Earnings from the exports of services can, for example, play a major role in the foreign exchange availability of those countries that depend on tourism for their foreign exchange revenues. The third level of resilience includes other foreign exchange inflows, notably remittances. All three contributors to foreign exchange earnings were expected to be heavily affected by the COVID-19 pandemic. For instance, the SIDS, who depend heavily on imported food and at the same time on revenues from tourism and remittances are particularly exposed to the impacts of COVID-19 pandemic.

[8] See for instance: https://www.cnbc.com/2020/11/23/zambia-becomes-africas-first-coronavirus-era-default-what-happens-now.html
[9] Jubilee Debt Campaign [online]. London. https://jubileedebt.org.uk/
[10] https://www.unwto.org/international-tourism-and-covid-19
[11] https://www.imf.org/external/pubs/ft/fandd/2020/06/COVID19-pandemic-impact-on-remittance-flows-sayeh.htm
[12] https://www.worldbank.org/en/news/press-release/2020/04/22/world-bank-predicts-sharpest-decline-of-remittances-in-recent-history
[13] A more complete picture of affordability could be obtained by analyzing the overall Balance of Payment (BOP) statistics of a given countries, distinguishing the shifts in all three underlying BOP accounts, i.e. the current account, the financial account and the capital account. The approach taken here focuses only on those elements of the BOP system that are readily available or can easily be now-casted.

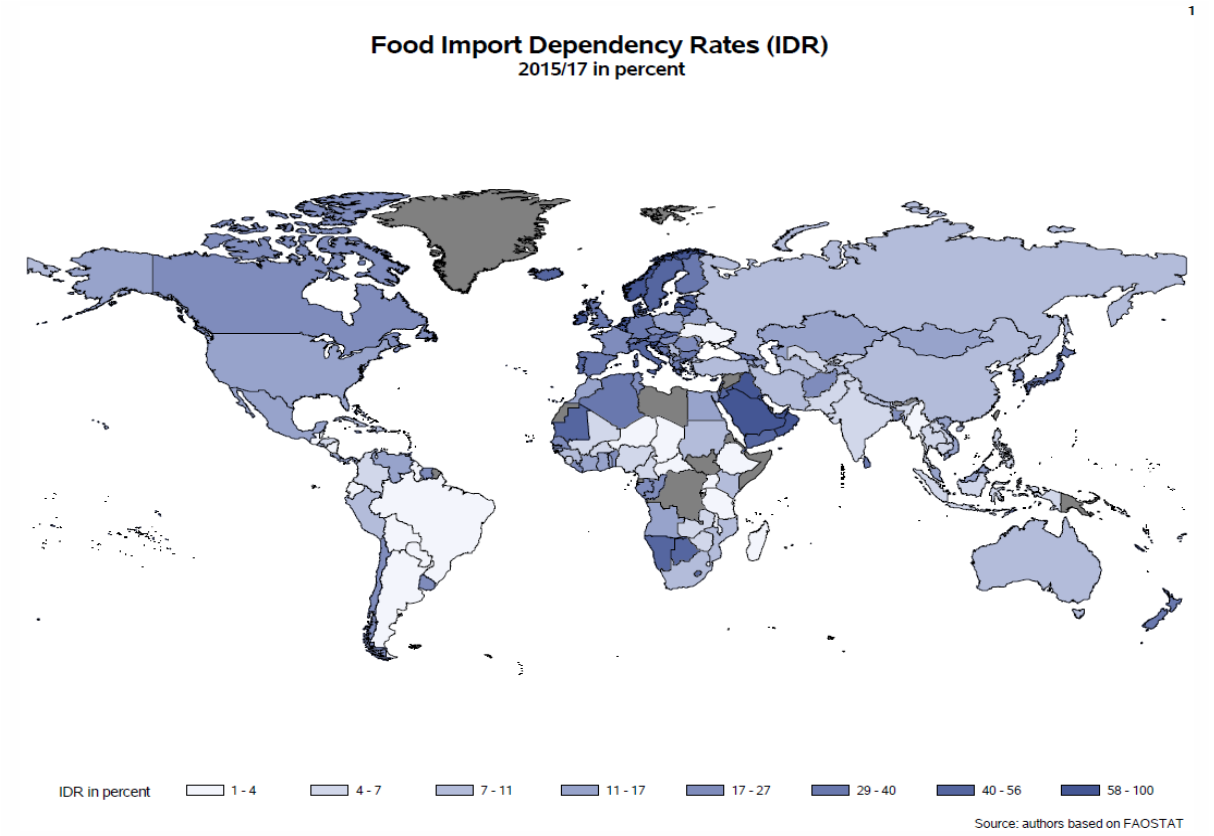

Figure 6: Food Import Dependency (2015/17). Source author, raw data: FAOSTAT and TDM

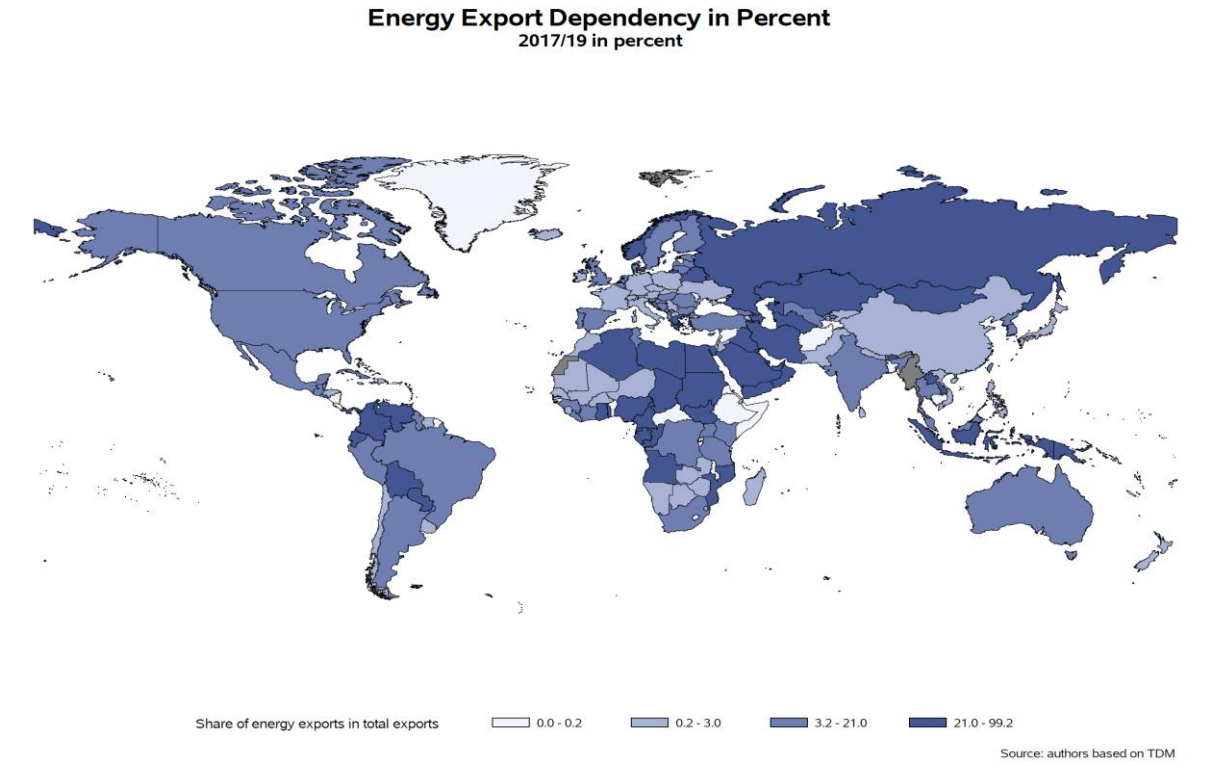

Figure 7: Energy Export Dependency (2017/19). Source: author, data from TDM

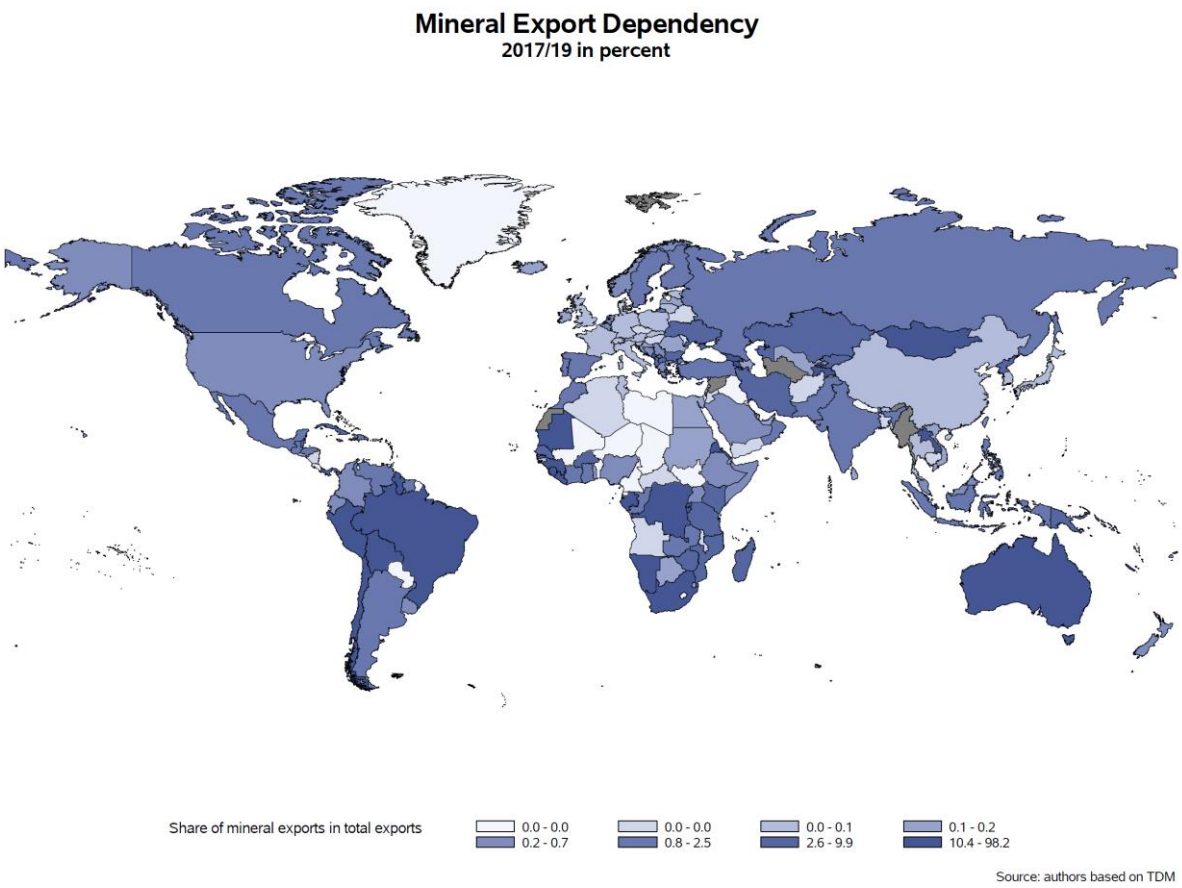

Figure 8: Mineral Export Dependency (2017/19). Source: author, data from TDM

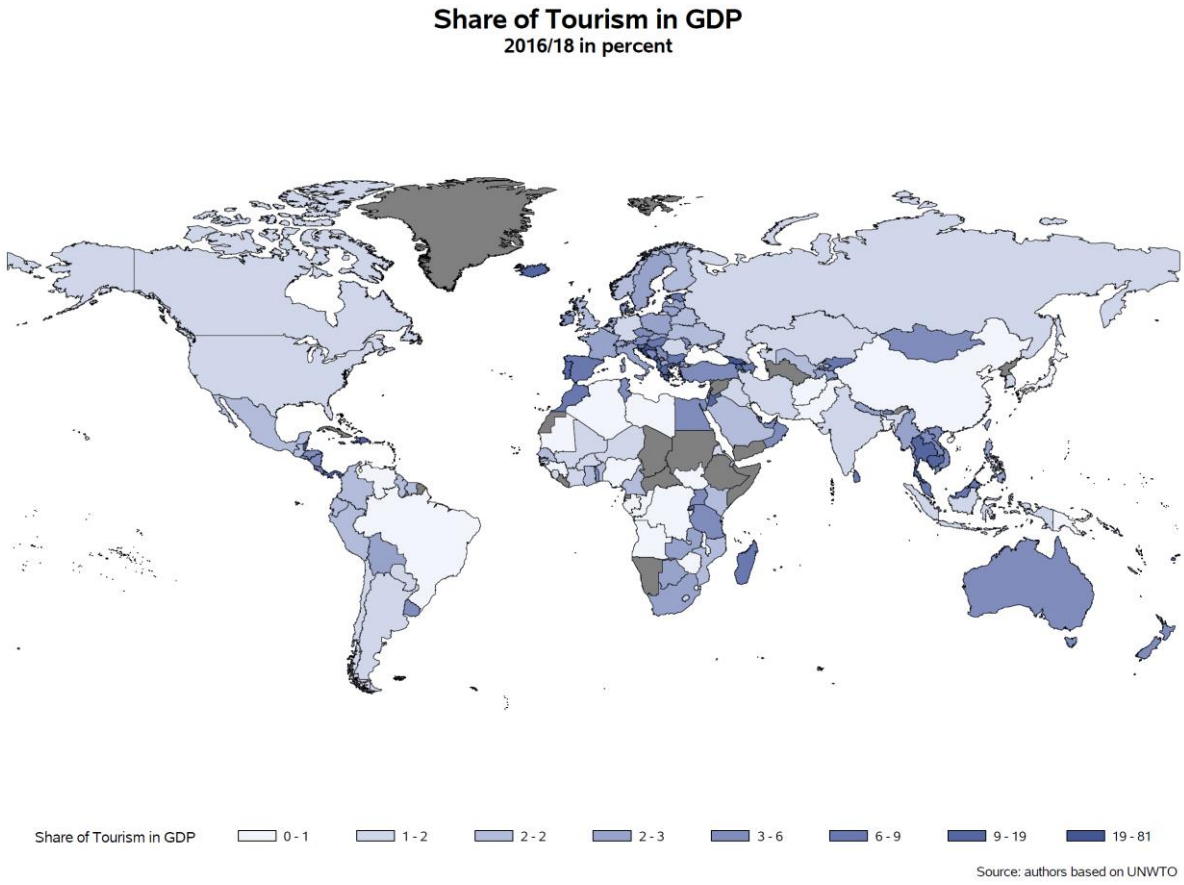

Figure 9: Dependency on tourism (2016/18). Data UNWTO

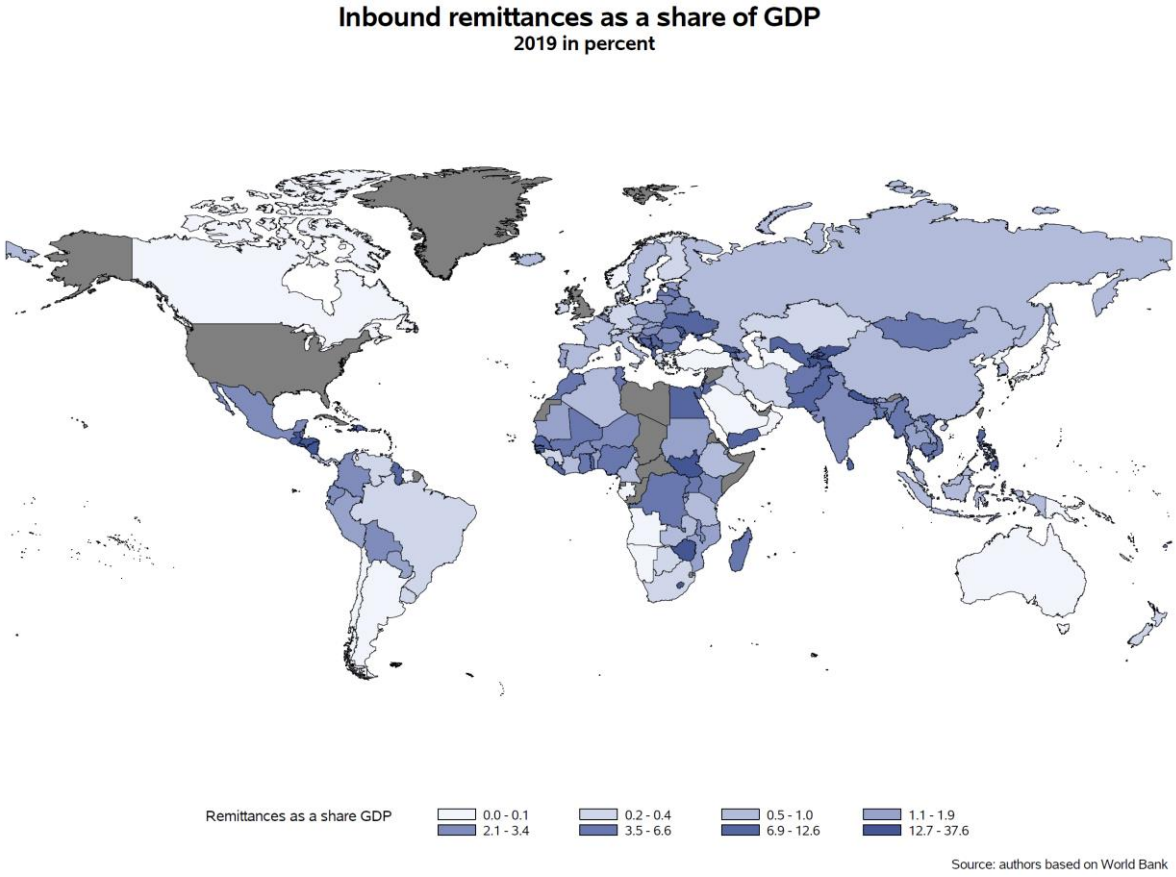

Figure 10: Dependency on remittances (2019). Data: World Bank

Table 3 provides a sample of countries' exposure in the form of key indicators that show the direct and indirect ways that COVID-19 is burdening their ability to finance their food imports and other essential needs. The indicators exclude all impact pathways that work through the supply side of food production, notably the exposure to high labour intensity of high capital intensity (intermediate inputs and fixed capital) of production[14]. The 24 countries listed in Table 3 also represent only a small subset of the overall total of 205 countries for which impact pathways have been examined.

[14] For a more complete picture of possible impact pathways, see J. Schmidhuber, J. Pound & B. Qiao., (2020): COVID-19: Channels of transmission to food and agriculture, http://www.fao.org/documents/card/en/c/ca8430en/

Table 3. A taxonomy of countries facing multi-dimensional exposure to COVID-19 shocks.

	Food Import Dependency (%) 2016/18	Foreign Exchange per capita (USD)	Share of tourism in total GDP (%) 2016/18	Share of food expenditure in total income (%)	Share of remittances in total GDP (%) 2017/19	Current Fitch Credit Rating* 2020	% Change in Real Exchange Rates (H1-2020/H1-2019)	% Change in Mineral Revenues (H1-2020/H1-2019)	% Change in Oil Revenues (H1-2020/H1-2019)
Algeria	33.9	1.15	0.12	26.9	1.05	-	-3.15	-72	-42
Angola	13.4	0.52	0.62	30.7	0.00	CCC+	9.77	22	-35
Azerbaijan	13.6	0.71	7.19	27	2.68	BB+	0.00	96	-39
Bahrain	-	2.11	11.68	10.8	-	B+	1.19	-47	-44
Bolivia (Plurinational State of)	1.4	0.58	2.43	22.9	3.49	B+	0.47	-44	-16
Cameroon	4.6	0.10	1.59	31.1	0.88	B-	2.99	-	-16
Chad	2.1	0.01	0	30.7	-	-	2.49	-	23
Chile	21.8	1.98	1.47	12.4	0.02	A+	-5.03	-4	-28
Colombia	4.6	1.12	1.95	13.7	1.92	BBB-	-5.98	2	-39
Congo	16.8	-	0.55	22.2	-	CCC+	-0.46	36	-46
Gabon	22.9	0.39	0.2	17.9	0.11	-	4.24	-19	-42
Guinea-Bissau	16.6	0.17	1.19	32.4	8.78	-	-1.40	-	-
Guyana	3.1	0.66	2.12	-	8.49	-	-0.96	-25	-
Iran (Islamic Republic of)	8.5	1.05	1.01	16.2	0.30	-	0.00	-76	-88
Iraq	63.0	1.60	1.42	22.1	0.42	B-	0.00	-100	-33
Kazakhstan	13.0	1.81	1.51	18.3	0.32	BBB-	-5.09	12	-16
Kuwait	90.3	11.20	0.64	14.1	0.02	AA-	-0.68	-95	-30
Libya	-	7.37	0.18	-	-	-	0.73	-	-72
Nigeria	4.5	0.18	0.48	21.9	5.76	B-	-1.16	-41	-25
Oman	69.1	3.26	3.74	15.2	0.05	B+	0.00	-52	-16

Saudi Arabia	70.2	13.08	2.14	12.8	0.04	A-	0.00	8	-38
Sudan	7.3	0.00	1.45	32.2	1.45	-	-0.18	-66	-68
Turkmenistan	8.1	3.47	0	-	0.01	-	0.00	-	-28
Venezuela (Bolivarian Republic of)	14.8	0.20	0.02	11.8	-	Default	-0.04	11	-75
Yemen	40.1	0.01	0.28	23.9	14.51	-	0.00	-	-23

* ***Investment grade***. **AAA**: best quality, reliable and stable; **AA:** slightly higher risk than AAA; **A**: an economic shock can affect risk; **BBB**: medium class, satisfactory. ***Non-investment grade***. **BB**: more prone to changes in the economy; **B**: financial situation varies noticeably; **CCC**: currently vulnerable and dependent on favorable economic conditions to meet its commitments; **CC**: highly vulnerable, very speculative; **C**: highly vulnerable, possibly in arrears but still continuing to pay out on obligations; **D**: has defaulted on outstanding obligations and will generally default on future obligations

Creating an overall exposure score to food imports

To quantify the overall degree of exposure for a given country, an unweighted *Manhattan distance* is derived that integrates the exposure through the various different impact factors, and is presented in Table 4. The scores compiled in the table for every pathway are based on the entire set of countries. The analysis here is limited to the food import demand side. The main channels of transmission or impact pathways are the sum of exposures for all impact factors, with ranges from 6 to 25, the criteria to classify four degrees of exposure from low to high are 6 to 10, 11 to 15, 16 to 20, and 21 to 25[15].

While so far no weights have been attached to any of the impact pathways, the approach proposed would allow to attach such weights, specific to every country and each impact pathway. This is an important feature to be implemented as more data emerge in the future. The approach chosen also allows to compare results across countries and regions and to rank countries by their degree of exposure to an exogenous shock such as COVID-19.

Every overall score is therefore the result of 9 individual vulnerabilities, as presented in Table 3 (limited country scope), including, *inter alia*, food import dependency, primary commodity dependency, foreign exchange constraints, sovereign indebtedness and real exchange rate movements.

The results at a glance

The results suggest a number of characteristic exposure patterns across geographic regions, country grouping and development levels. Figure 11 provides synoptic overview of countries at different levels of exposures by geographic region and socio-economic belonging. Using development levels as a classification criterion, practically all developing countries fall in the high and the intermediate-high rubric. Emerging markets generally rank lie in the intermediate-high and the intermediate-low categories, while developed countries are almost exclusively in the low exposure rubric.

Countries belonging to the group of Least Developed Countries (LDCs) appear most frequently in the high exposure group, many of which are SSA. The highest exposure relative to the number of countries, however, is observed for Small Island Developing States (SIDS). Of the total of 34 countries with high exposure, 13 of which are SIDS. Their particular vulnerability arises from the intersection of high food import dependencies, high shares of tourism in total GDP as well as middling to high dependencies on remittances.

[15] From a methodological perspective, it is important to note that no effort has yet been made to avoid a possible overlap in the explanatory power of the various impact pathways. Some of the variables listed in the score cards may partially or completely overlap in their power to explain vulnerability or exposure to food imports. This is envisaged as a next step in the analysis, potentially employing, for instance, a Principal Component Analysis (PCA) to focus on the independent impact pathways. These could then be further aggregated into an overall metrics with appropriate weights rather than merely listing them.

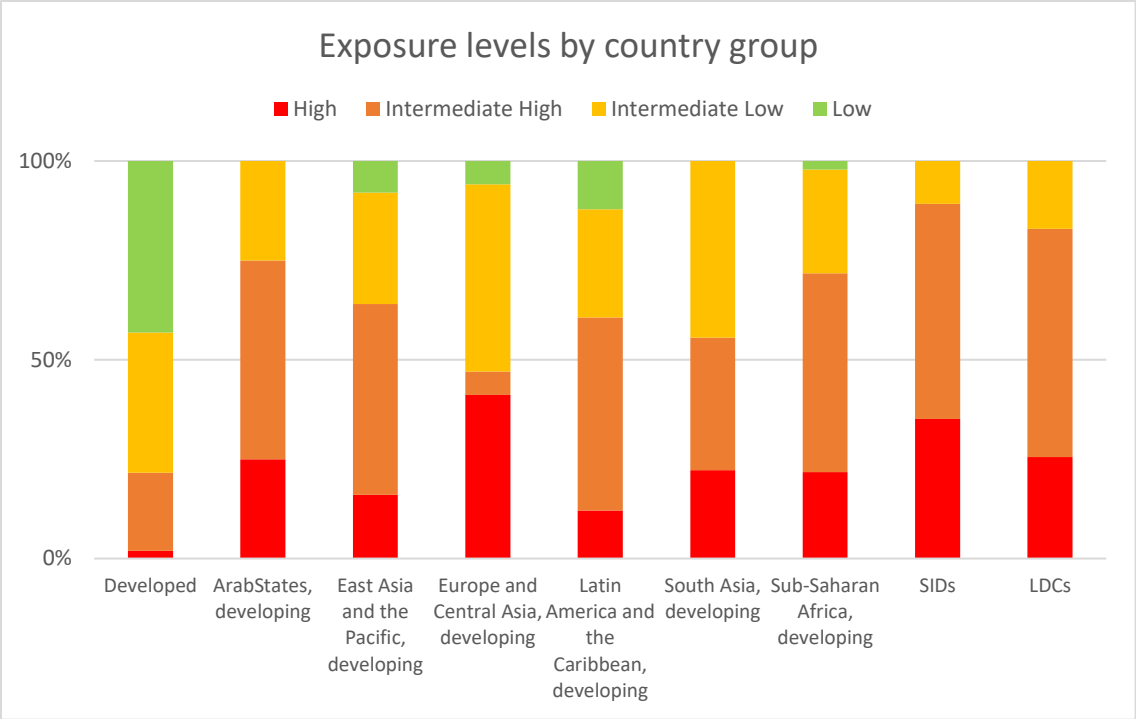

Figure 11: Headcount of countries at different levels of exposures

High overall exposure also arises for countries in North Africa, many of which have a high food import dependency ratio. Servicing their food import bills is made difficult by often low levels of foreign exchange reserves, relatively high sovereign debt and default risks, and contractions in hydrocarbon export revenues over the COVID-19 period. These indicators point to severe difficulties in financing the large, imported food needs that characterise many of these countries. Even countries with lower food import dependencies face constraints arising from faltering revenues from mineral and crude oil exports; while added concerns arise from their currently low foreign exchange reserves.

Concerning countries situated in the Near East and in Asia, high dependency on food imports are a typical feature, but in servicing food bills, many are insulated by high credit ratings, high levels of foreign exchange reserves, in spite of sharp contractions in oil exports, and in some cases by both oil and mineral earnings.

Countries in South America benefit from low rates of food import dependency, but are still exposed through falling revenues of oil and mineral exports and real depreciations of their local currencies. In terms of sovereign debt, many countries in the region are facing low credits ratings, Venezuela (Bolivarian Republic of) has already defaulted in its repayment obligations. Lower credit ratings weigh on access to credit and result in high credit costs, i.e. higher interest rates.

Juxtaposing exposure with performance scores

In tandem with the import exposure scores, actual import performance scores can be calculated. Performance scores are based on indicators that capture the actual food imports for a given country during or in the aftermath of the COVID-19 shock. Juxtaposing exposure with performance scores allows to draw inferences on actual degree of trade vulnerability, on the resilience to shocks across countries. It also allows to make informed estimates about the drivers behind different levels of resilience, the policies that provide higher/lower resilience and the overall and food policy (enabling) environment that ensures resilience, or otherwise. Differences across countries could of course also

emanate from random factors such as weather effects or windfall gains or losses caused by other, non-COVID-19-related, events.

A first set of indicators for such a performance scorecard is compiled in Table 5. At this early stage, the set of available indicators is still too limited to allow a conclusive evaluation of the performance of countries in managing food imports and ultimately their food security. A more conclusive evaluation would need to wait for the pandemic to be brought under control, fully and globally. The preliminary list would ultimately need to be supplemented with a broader array of indicators capturing key food availability and food security indicators such as the prevalence of undernourishment (PoU) or the Food Insecurity Experience Scale (FIES) and their respective changes.

Table 4. Exposure of countries to food import shocks.

Country	Cereal Import Dependency (%)** 2017/19	Food Import Dependency (%)** 2015/17	Share of food imports in TMT exports (%) 2019	Share of tourism in total GDP (%) 2016/18	Share of remittances in total GDP (%) 2017/19	Share of food expenditure in total income (%)	Foreign Exchange per capita (1000 USD)	Current Credit Rating* 2020	Share of Oil and Mineral in TMT Revenues 2019	Overall exposure score	Exposure level
Gambia	69.7	42.0	240.9	8.8	14.5	25.0	0.09		2.1	25	High
Yemen	93.1	40.0	218.0	0.3	14.5	24.0	0.01		73.8	25	High
Jamaica	95.1	17.0	61.8	18.9	16.1	19.0	1.43	B+	10.4	24	High
Togo	18.9	15.0	67.7	5.1	8.4	26.0	0.03	B	44.6	24	High
Tajikistan	50.0	10.0	83.8	2.3	29.6	29.0	0.14	B-	23.0	24	High
Jordan	96.3	52.0	40.9	13.8	10.5	18.0	1.72	B+	2.5	23	High
Comoros	78.3		101.8	8.0	12.5	32.0	0.23		0.0	23	High
Haiti	62.4	10.0	60.6	6.3	34.5	39.0	0.18		0.0	22	High
Kyrgyzstan	28.0	7.0	46.9	6.5	31.1	24.0	0.45	NR	10.0	21	High
Dominica	100.6	26.0	56.4	28.3	8.6	12.0			0.0	20	Intermediate High
Grenada	100.1	38.0	209.0	43.3	4.1	13.0		BB-	0.0	20	Intermediate High
Madagascar	21.9	4.0	22.9	7.9	2.9	27.0	0.06	B-	7.2	19	Intermediate High
Honduras	61.9	6.0	25.7	3.2	20.0	23.0	0.83	BB-	2.5	18	Intermediate High
Myanmar	0.0	3.0	12.3	2.9	3.5	34.0	0.09		23.8	18	Intermediate High
Iraq	52.9	63.0	7.6	1.4	0.4	22.0	1.60	B-	97.1	17	Intermediate High
United Republic of Tanzania	9.7	2.0	27.7	4.4	0.7	42.0	0.07		8.0	17	Intermediate High
Cambodia	1.5	6.0	8.6	18.5	5.8	32.0	1.18		0.0	15	Intermediate Low
Bolivia, Plurinational State of	0.0	1.0	7.0	2.4	3.5	23.0	0.58	B+	53.8	14	Intermediate Low
Malawi	5.1	1.0	19.7	0.6	2.2	29.0	0.04		0.0	13	Intermediate Low
Botswana	84.8	52.0	14.8	3.1	0.2	14.0	3.25	BBB+	0.3	12	Intermediate Low
Ecuador	38.0	4.0	7.0	1.6	2.9	15.0	0.19	B-	42.2	12	Intermediate Low
India	0.3	4.0	5.7	1.1	2.8	21.0	0.44	BBB-	13.8	11	Intermediate Low

Thailand	21.5	4.0	5.2	13.5	1.4	19.0	4.19	BBB+	3.3	10	Low
South Africa	17.8	8.0	7.0	2.8	0.3	16.0	0.93	BB-	25.1	10	Low
Argentina	0.2	1.0	5.9	1.0	0.1		0.89	CCC+	6.0	7	Low
France	0.0	18.0	9.8	2.6	1.0	13.0	3.30	AA	2.7	7	Low
Italy	0.0	41.0	8.0	2.4	0.5	13.0	3.44	BBB	2.9	7	Low
Brazil	11.1	1.0	4.1	0.3	0.2	16.0	1.69	BB-	23.9	6	Low

* ***Investment grade***. **AAA**: best quality, reliable and stable; **AA:** slightly higher risk than AAA; **A**: an economic shock can affect risk; **BBB**: medium class, satisfactory. ***Non-investment grade***. **BB**: more prone to changes in the economy; **B**: financial situation varies noticeably; **CCC**: currently vulnerable and dependent on favorable economic conditions to meet its commitments; **CC**: highly vulnerable, very speculative; **C**: highly vulnerable, possibly in arrears but still continuing to pay out on obligations; **D**: has defaulted on outstanding obligations and will generally default on future obligations

** In cases that a country/region reports a lower quantity of production than the sum of exports and change in stocks, the imported amount for cereal/food import dependency could be >100%

Table 5. Performance of countries after the COVID-19 shocks.

Country	Change in TMT Revenues (%) H1-2020/H1-2019	Cereal Import Dependency (%) 2020	Change in Cereal Import Dependency (%) 2020/2019	Change in Oil+Mineral Revenues (%) H1-2020/H1-2019	Change in Oil+Mineral Revenues (%) JulAug-2020/JulAug-2019
Gambia	-37.6	70.7	1.0	88.6	-85.7
Yemen	-10.3	86.4	-6.7	-100.0	11.6
Jamaica	-34.2	97.1	2.0	-20.0	-28.1
Togo	-40.0	20.0	1.1	-99.0	-30.0
Tajikistan	-27.8	49.2	-0.8	-75.3	31.4
Jordan	-3.6	96.9	0.6	-19.9	-86.4
Comoros	29.0	82.6	4.2		
Haiti	-29.9	67.2	4.8		
Kyrgyzstan	-9.6	28.3	0.4	10.7	-12.9
Dominica	-35.4	99.3	-1.3	-100.0	
Grenada	-35.2	100.3	0.3		
Madagascar	-5.5	21.2	-0.8	-15.5	-19.7
Honduras	-16.3	61.7	-0.2	-20.5	108.5
Myanmar	0.6	3.9	3.9	-39.4	-23.9
Iraq	-26.5	32.9	-20.0	-99.8	-38.6
United Republic of Tanzania	22.5	10.4	0.7	46.7	7.6
Cambodia	5.9	1.7	0.2	-99.0	-41.3
Bolivia, Plurinational State of	-25.2	17.7	17.7	-43.7	-36.3
Gabon	-34.1	81.6	1.3	-18.7	-27.0
Malawi	-18.8	5.4	0.3	-97.2	
Zambia	-19.4	2.6	0.2	852.5	14.9
Botswana	-52.0	96.0	11.2	12090.9	88.8
Ecuador	-15.0	36.8	-1.2	174.7	-38.0
India	-23.6	0.2	-0.1	38.3	-38.4
Thailand	-8.5	23.9	2.4	-19.9	-30.9
South Africa	-11.6	16.0	-1.8	-16.6	-20.5
Argentina	30.9	0.2	0.0	17.4	-3.3
France	-23.6			-17.9	-34.4
Italy	-16.8			-21.7	-38.9
Brazil	-1.8	10.8	-0.3	-2.9	-8.0