

Rapid appraisal of food system risks with Covid-19 measures: Voices from the field

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A rapid appraisal among knowledgeable resource persons in eighteen low and middle income countries increased the understanding of perceived Covid-19 measures and potential effects on local food systems against the background of existing local nutrition, health, health care and economic vulnerabilities. This appraisal highlights a few emerging issues. Although the countries addressed are in different phases of the pandemic, the perceived effects are more related to the measures taken to control the pandemic than to the pandemic itself. The expected reduction in food availability and accessibility appears not to be so much a direct food production problem, but is rather related to the disruption of markets due to mobility restrictions and the reduced purchasing power of people due to loss of income and increasing prices. The respondents of the rapid appraisal clearly identify the urban poor to be at highest risk. Striking is the almost universal closing of schools and the suspension of school meals, for many children an indispensable contribution to their diets. Based on the perceptions of our respondents, some priorities of support needed to mitigate Covid-19 effects on food and nutrition emerge and need further elaboration and research.

This note summarizes a rapid appraisal undertaken by Wageningen University & Research to understand vulnerabilities of local food systems following from the Covid-19 pandemics and Covid-19 control measures as perceived by knowledgeable resource persons living in low and middle income countries (LMIC) in Asia, sub-Saharan Africa and Latin America. Understanding of perceived vulnerabilities of local food systems and effects on diets and nutrition could shape further prioritization of key knowledge challenges and potential mitigation measures to respond and recover from the Covid-19 related shocks.

Approach

The information presented is derived from a rapid appraisal of the perceptions of knowledgeable resource scientists identified through our field network. A short online questionnaire was administered with mostly multiple choice questions and some open end questions to capture additional observations. 28 out of 31 respondents are researchers doing research in the respective country for which they answered the questions (Table 2 in Annex). About two thirds of the researchers are Postdocs or PhD students; two respondents combined research with employment by the government and one with private or business employment. 20 of the 31 respondents are women.

The main sources of the information that our respondents indicated to have used to inform their answers include local newspapers, daily news on television, national reports and websites with recent Covid-19 data, briefings by the government and their own experience. This was complemented with background information from the Johns Hopkins University & Medicine coronavirus resource center, World Health Organization (WHO) Covid-19 situation reports, Our World in Data, World Bank

health nutrition and population statistics and world development indicators. Where possible, information is presented per region (Asia, Western Africa, Eastern Africa, Southern Africa and Latin America).

We analysed perceived Covid-19 control measures, early impact and mitigation that relate to the main components of food systems: food supply chains, the food environment and consumer behaviour, against the background of the prevailing socio-economic situation, health and health care systems and nutrition status in the selected countries (Figure 1). Based on this analysis, we identified emerging questions about the [potential effects on local food systems and nutrition](#).

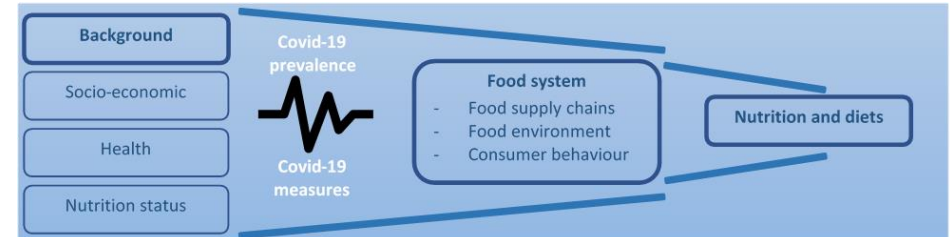


Figure 1 Framework for analysis

Background to the Covid-19 crisis

The impact of Covid-19 depends to a large extent on the prevailing situation before the crisis started. The state of the economy, livelihoods, health services, and nutrition situation determines to a large extent the spread and intensity of Covid-19 and the capacity to respond to or recover from Covid-19. A short description of the background situation for the countries where our respondents live is summarized.

a. Poverty, unemployment and livelihoods

The state of the economy and poverty levels are determinant for a country's and its population resilience potential to shocks. Each of the regions have growing economies (Figure 16 in Annex). Gross domestic product (GDP) growth is slowest in South Africa. The selected African countries have a relatively low GDP per capita, with the exception of South Africa, followed by Nigeria. The selected Latin American countries have a relatively high GDP per capita. In Asia, the Philippines and Indonesia have a higher GDP per capita than Bangladesh and Vietnam.

Poverty headcounts are strongly associated with GDP per capita. Poverty headcounts are high in Eastern and Southern Africa, ranging between 30 and 70 percent of the population (Figure 2Figure 2). Ghana and South Africa have lower poverty headcounts than other sub-Saharan African countries (recent data is missing for Mali and Nigeria). In the selected

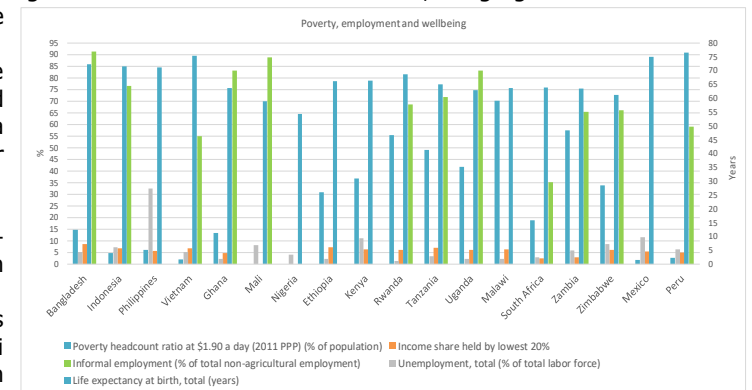


Figure 2 Poverty, employment and wellbeing

Source: World Bank World Development Indicators (latest data point per country)

countries in Asia, poverty headcounts are relatively low, somewhat higher in Bangladesh at 15 percent. Poverty headcounts in the selected countries in Latin America are lower than 5 percent of the population.

Formal unemployment rates are generally low across all selected countries, except for the Philippines where it exceeds 30 percent (Figure 2Figure 2). In the countries where this data is available, the rate of informal employment is high. In Bangladesh and Indonesia, informal employment is over 75 percent of total non-agricultural employment. Rates of informal employment are equally high in sub-Saharan African countries, somewhat lower in South Africa. In Peru, over 50 percent of total non-agricultural employment is informal.

b. Health and health care system

In general, health status is compromised in most countries covered. Communicable (infectious) diseases and maternal, prenatal and nutrition conditions are among the major causes of mortality (more than 40 percent) in all African countries covered, except in South Africa and Rwanda where a higher percentage of the population die from non-communicable diseases (about 50 percent) (Figure 17 in Annex). In the selected countries in Asia and Latin America, non-communicable diseases are the most likely causes of death.

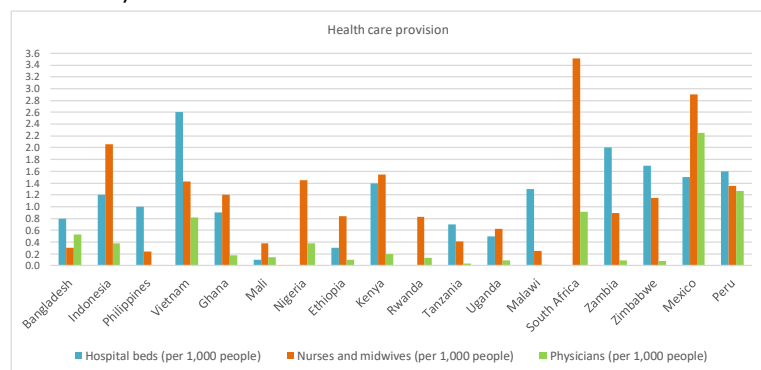


Figure 3 Health care provision

Source: World Bank Health Nutrition and Population Statistics (latest data point per country)

Health care systems are generally weak with limited hospital beds and few physicians per 1000 people (Figure 3Figure 3). Latin America scores better than other regions and Vietnam's health care facilities are relatively well established in comparison to the other countries covered. Health care expenditure takes a small percentage of GDP in all countries (Figure 18 in Annex). Out of pocket expenditures as a percentage of total health expenditures are relatively high at 35 to 70 percent in most countries. Exceptions are most of the countries covered in Eastern and Southern Africa, where out of pocket expenditures are low, both in relative and in absolute terms. The per capita value of out of pocket expenditures is highest in the Latin American countries.

Basic sanitation services and handwashing facilities are important pre-requisites to protect against spreading of the virus. Availability and use of these services and facilities are most problematic in the sub-Saharan African countries covered and particularly in rural areas (Figure 19 in Annex). Of the selected countries in Asia, coverage of basic sanitation services and handwashing facilities is lowest in Bangladesh, and relatively high in the other countries with little difference between

rural and urban areas. In the Latin American countries, Mexico has substantial coverage of basic sanitation services and handwashing facilities, but only about half of the rural population in Peru use basic sanitation services and handwashing facilities.

c. Nutrition

Both undernutrition and overnutrition entail important risk factors for health, amongst others, through an impaired immunity response, increasing the susceptibility to infections such as Covid-19 as well as the intensity of infections, complications and mortality due to Covid-19.

Among children under five, the prevalence of undernutrition, measured by low height for age and weight for age, is relatively high in the selected countries in Asia and Africa (Figure 4Figure 4). It is lower in the selected countries in Latin America. The prevalence of wasting and severe wasting among children under five, as measures of acute malnutrition, is especially alarming in Bangladesh, Indonesia, Mali, Nigeria and Ethiopia. It is less alarming in the other countries in Asia and Africa, and very low in Latin American countries. In each of the regions, there are some countries where overweight among children under five already reaches high prevalence levels between 5 and 10 percent.

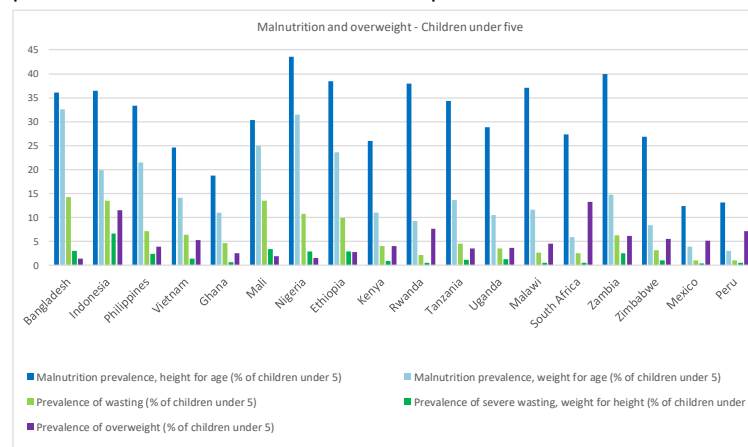


Figure 4 Nutrition status - Children under five

Source: World Bank Health Nutrition and Population Statistics (latest data point per country)¹

Each of the regions faces a double burden of malnutrition in its population, reflected by prevalence of undernourishment in the general population and anaemia among adult women, on the one hand, and overnutrition, measured by prevalence of overweight, on the other hand (Figure 20 in Annex). In the selected countries in Eastern and Southern Africa, with the exception of South Africa, undernutrition is more of a challenge than overnutrition. In the selected countries in Asia and Western Africa, prevalence of overnutrition is higher than prevalence of undernutrition. The selected countries in Latin America particularly face a challenge of overnutrition.

¹ Prevalence of overweight children is the percentage of children under age 5 whose weight for height is more than two standard deviations above the median for the international reference population of the corresponding age as established by the WHO's new child growth standards released in 2006.

Covid-19 prevalence by 23rd April 2020

While the number of Covid-19 cases and deaths depends largely on the extent of testing and reporting, they provide a limited indication of the extent of the Covid-19 pandemic. Of the countries covered in this appraisal, those in Latin America are currently hit hardest with total number of deaths reaching 857 in Mexico and 484 in Peru and total number of cases over 10000 in Mexico and almost 20000 in Peru (Table 1; Figure 21 in Annex). Number of new deaths per day is fluctuating, hence, it is not clear if the pandemic is getting under control (Table 4 in Annex).

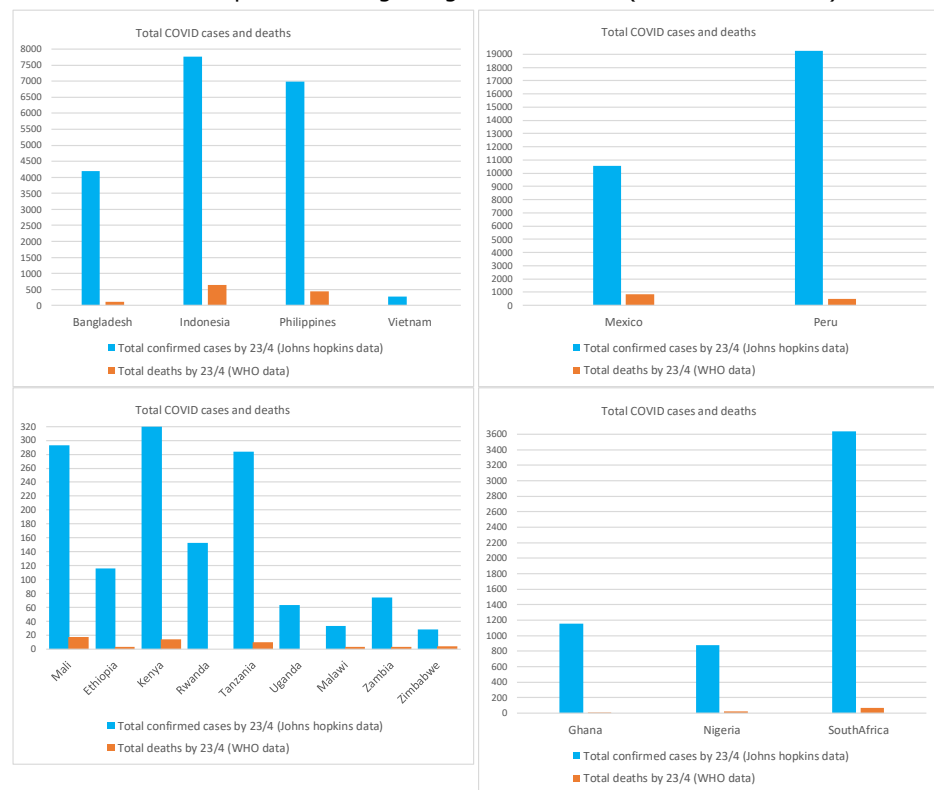


Table 1 Covid-19 prevalence in selected countries, 23 April 2020

Sources: Total number of cases: [Johns Hopkins University & Medicine Coronavirus Resource Center](#); Total number of deaths: [World Health Organization \(WHO\)](#)

In Asia, Vietnam is an exception with few cases and no deaths reported. Total number of cases in the Philippines, Bangladesh, and Indonesia are between 4000 and 8000, total number of deaths between 120 and 650. The number of new deaths seems to have stabilized around 10 to 15 per day for the Philippines and Bangladesh but is higher in Indonesia. In Bangladesh, the number of daily new cases seems on the rise.

The number of reported cases and deaths is still low in Sub-Saharan Africa. South Africa has the highest total number of deaths amounting to 65, and a relatively high number of cases – which may relate to test capacity. Ghana and Nigeria in Western Africa have higher total number of cases – up to 1150 – and deaths – up to 19 – than Mali and countries in Eastern and Southern Africa. The number of new deaths per day does not seem to increase in South Africa, Ghana and Nigeria, even if new daily cases were rising steeply until 20th April.

Covid-19 control measures and perceived early effects

a. Food supply chains

Respondents of most countries experience partial restrictions to markets and transport of goods (Figure 5). Some countries, such as Mali, Malawi and Zambia, are perceived to have none. Trade bans are uncommon in the African and Latin American countries but, in the Asian countries, partial trade bans were reported.

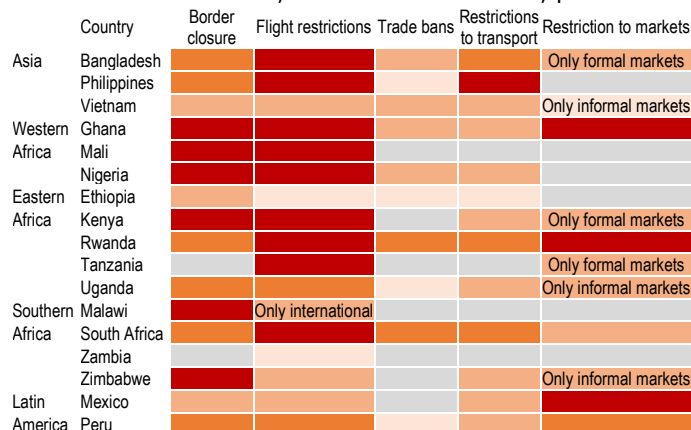


Figure 5 Covid-19 measures as perceived by the respondents – Trade (Legend a)

Source: WUR Covid-19 rapid appraisal

In general, respondents in each of the regions reported that international linkages, international trade, food import and export were expected to decline as result of the pandemic (Figure 12). For some countries, including the Philippines, Uganda and Malawi, an increase of food import is expected.

Rural areas are generally perceived to be less affected by the pandemic than urban areas (Figure 15). While the agricultural sector and agri-food industry are thought to be negatively affected in each of the regions, in most cases, these sectors are seen as slightly better off than small and medium enterprises (SMEs) and the informal sector for instance (Figure 6). However, there are some variations. In Malawi, Tanzania, and Bangladesh, for instance, the agricultural sector and agri-food industry are seen as highly negatively affected.

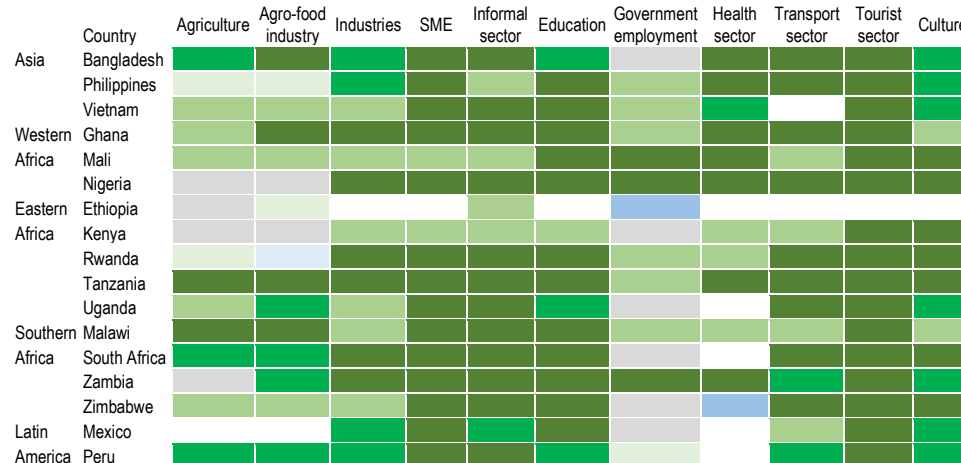


Figure 6 Most affected sectors as perceived by the respondents (Legend b)

Source: WUR Covid-19 rapid appraisal (Missing values due to highly divergent responses)

For the longer term, in Asia, accessibility of seeds and fertilizer is perceived as less affected and would therefore not necessarily impair future agricultural production (Figure 7). In Africa, changes in accessibility of seeds and fertilizer are generally seen as minor. But there is some diversity. Accessibility of seeds and fertilizer is perceived to be decreasing in Tanzania and Ethiopia, slightly increasing in Malawi, possibly through the existing input subsidies.

a. Food environment

Some of the public health measures in response to Covid-19 may affect nutrition through the food environment, which constrains and signals consumers what to purchase and encompasses availability, affordability, convenience, and desirability of various foods.² There is a quasi-universal closing of school and suspension of school meals across the regions covered (Figure 8). In some contexts, school meals are an important way to make nutritious food available and affordable, especially for poorer segments of the population.



Figure 7 Early effects of the Covid-19 as perceived by the respondents – Inputs (Legend c)
Source: WUR Covid-19 rapid appraisal

negatively affected by the Covid-19 crisis in each of the regions covered here (Figure 6).

There is high diversity in perceptions about early effects on food supply and availability in markets as a result of the pandemic and the control measures, with a tendency for no change in rural areas and a slight decrease in urban markets (Figure 9). In Malawi, Zimbabwe and Mexico, rural food availability is perceived to be on the rise, in Malawi, Rwanda and Bangladesh, urban food availability is perceived to increase. The availability of staples such as rice, maize, wheat, potatoes is generally seen as stable in all of the regions.

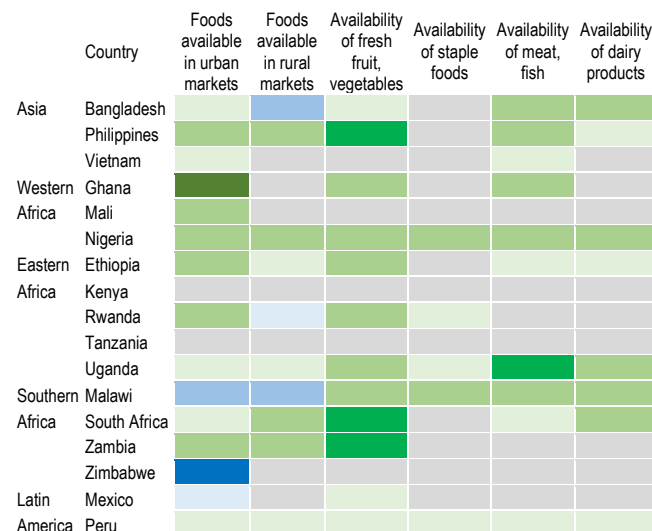


Figure 9 Early effects of the Covid-19 as perceived by the respondents – Food availability (Legend c)
Source: WUR Covid-19 rapid appraisal

The availability of staples such as rice, maize, wheat, potatoes is generally seen as stable in all of the regions. The availability of fresh fruits and vegetables is generally perceived to decline in all regions. In some African countries covered, the availability of animal products appears relatively stable, in others declining. In

Mexico, the availability of animal products seems stable, in Peru it is perceived to decline.

In Asia, particularly prices of staple foods like rice, maize, wheat, potatoes are perceived to rise, in the Philippines the prices of fresh fruits and vegetables and in Vietnam the prices of meat and fish as well (Figure 10). In the African countries covered here, similarly, the prices of staples are perceived to increase. In some of the countries prices of fresh fruits and vegetables, meat, fish and dairy are seen as relatively stable. But in Nigeria, Ethiopia, Tanzania they are perceived to increase. In the Latin American countries covered there are perceptions of relatively stable prices, except for fresh fruits and vegetables which seem to rise.

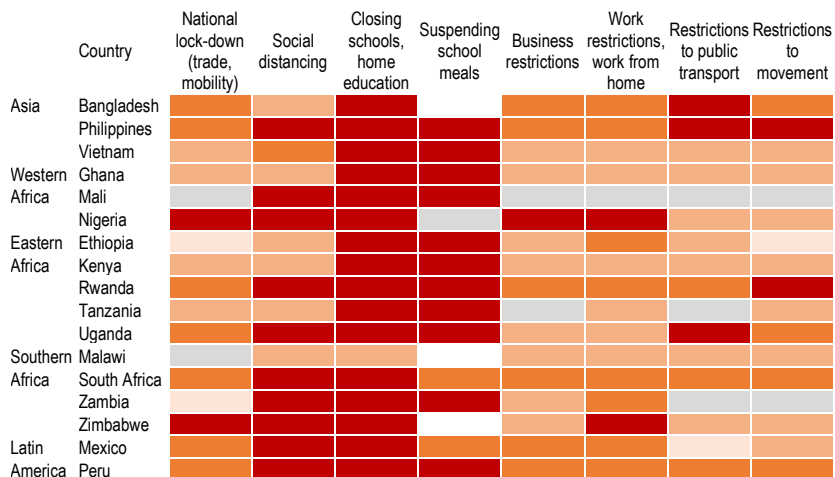


Figure 8 Covid-19 measures as perceived by the respondents – Daily life (Legend a)
Source: WUR Covid-19 rapid appraisal

Markets, formal and informal, are essential places where food supply and consumers meet. As discussed above, in most countries in Asia, Africa, and Latin America, there appear to be partial restrictions to markets (Figure 5). In some countries such partial restrictions apply to formal markets only, in other countries to informal markets. Furthermore, the SMEs and informal sector, of which part can be assumed to be active in food retail are perceived as sectors that are highly

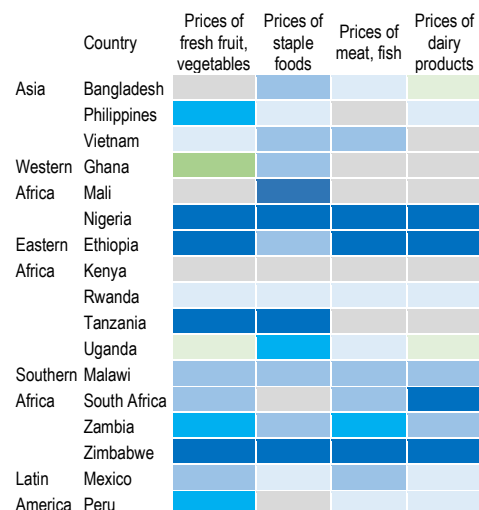


Figure 10 Early effects of the Covid-19 as perceived by the respondents – Food prices (Legend c)
Source: WUR Covid-19 rapid appraisal

² Herforth & Ahmed, 2015.

As early effects in the food environment, across all regions, eating out-of-home is perceived to have seriously reduced (Figure 11). In some of selected countries, particularly in Eastern Africa and Latin America, food home delivery is perceived to be on the rise. In Asia, this remains unchanged, except in Bangladesh where it is perceived to have declined, which may relate to transport restrictions. With a few exceptions, in each of the regions, stockpiling of food and queuing in shops seem to have increased. And in line with measures of social distancing which are (partially) in place in each of the covered countries, our respondents report that physical distancing measures are applicable in stores and shops.

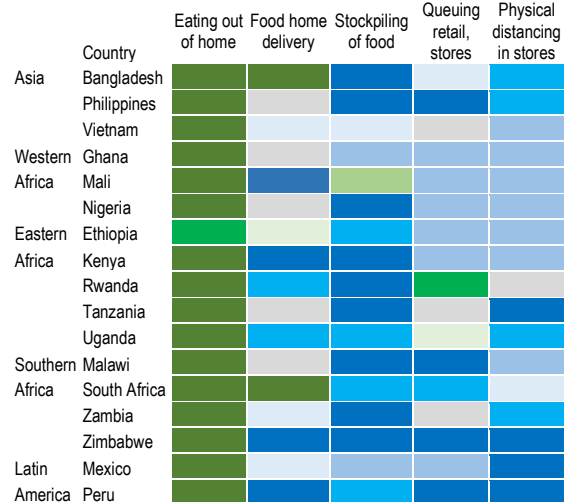


Figure 11 Early effects of the Covid-19 as perceived by the respondents – Food consumption (Legend c)
Source: WUR Covid-19 rapid appraisal

c. Consumer behaviour and purchasing power

There is a general feeling across countries that national economic development may slow down, with Kenya as an exception (Figure 12). Across countries, domestic budget spending, budget deficit and national debt are expected to increase. For Vietnam and Peru, however, expectations are that these will remain relatively stable. The expected impact on foreign aid is varied, even within regions. For the majority of African countries, respondents expect an increase in foreign aid (Figure 12).

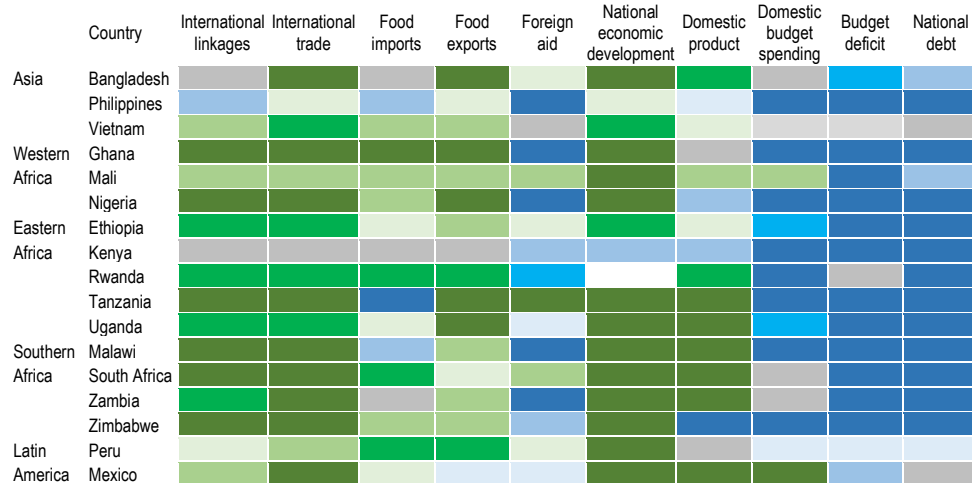


Figure 12 Impacts and mitigation policies as perceived by the respondents – International linkages and national finance (Legend c)
Source: WUR Covid-19 rapid appraisal

Across regions, the general impression is a decline of employment and earnings, except in Nigeria, Tanzania and Malawi where respondents perceive no change yet (Figure 13). As mentioned earlier, SMEs and the informal sectors are seen as sectors that are highly negatively affected by the Covid-19 crisis; the tourist sector as well (Figure 6). SMEs and the informal sector tend to be important for earning a living for a large part of the urban population and for poorer segments of the population. "A huge informal economy has been halted. These people, often male youth, are migrating back to their villages. Also, Overseas Filipino Workers have been repatriated, their employment is threatened" (Respondent for the Philippines). "People in slums are badly affected given their hand-to-mouth kind of living" (Respondent for Zambia). The purchasing power of people employed in the informal sector may therefore reduce significantly. The purchasing power of people in somewhat less negatively affected sectors like government employment and agriculture may not reduce as much. The threats to people's purchasing power concurs with increased food prices in many of the selected countries, as was discussed above.

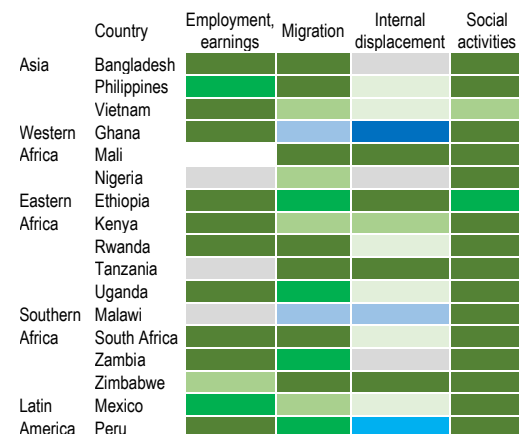


Figure 13 Early effects of the Covid-19 as perceived by the respondents – Daily life (Legend c)
Source: WUR Covid-19 rapid appraisal

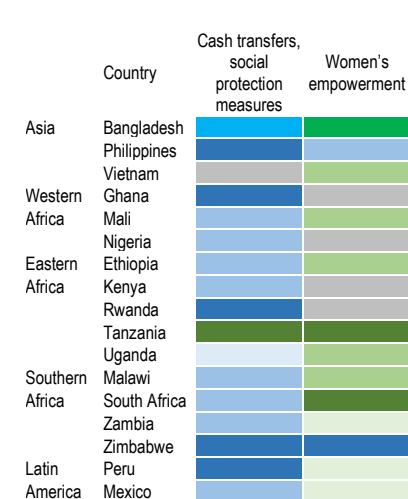


Figure 14 Impacts and mitigation policies as perceived by the respondents – Social protection (Legend c)
Source: WUR Covid-19 rapid appraisal

Women's empowerment is perceived to decline in a number of African countries or remain unchanged (Figure 14). In the Latin American countries, it is perceived to reduce and Asia as well, except in the Philippines where women's empowerment is seen as increasing by our respondents. In our opinion, the perceived decline in women's empowerment could be related to reduced employment and livelihood opportunities in SMEs and the informal sector and/or to increased care work because of school closures. A respondent from Peru also points to "an increase in domestic violence".

The Covid-19 pandemic forms the greatest health risk for the elderly. This is generally the perception in each of the regions (Figure 15). People who are infected or whose household members are infected may face high additional expenses where out-of-pocket health expenditures tend to be high. The period of illness and recovery can

prevent people from earning a living, sometimes for extended periods. Also, "people with disabilities and the chronically ill are finding it difficult to access medical care because of restrictions on movement and transport" (Respondent for Uganda), and

“closure of primary health facilities to protect health workers who lack protective equipment” (Respondent for Zambia).

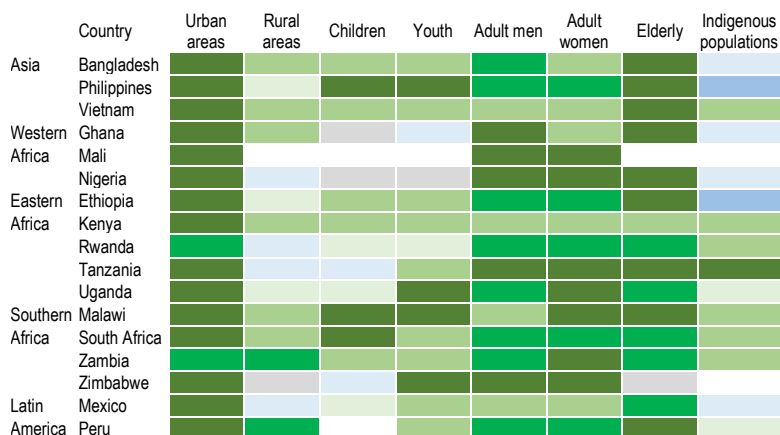
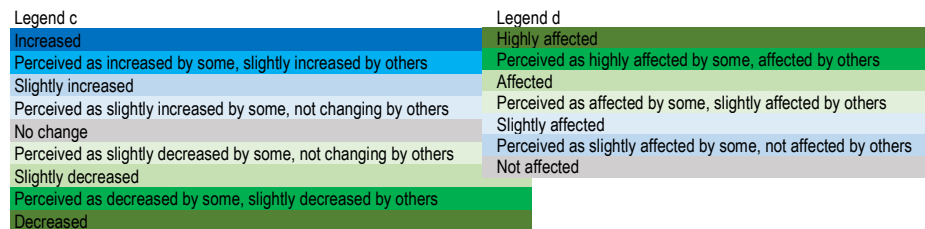
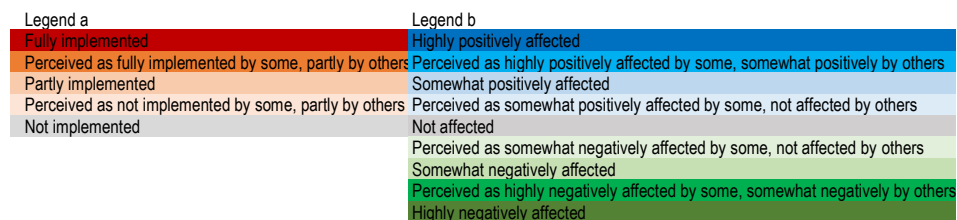


Figure 15 Most affected areas and population groups as perceived by the respondents (Legend d)
Source: WUR Covid-19 rapid appraisal (Missing values due to missing and highly divergent responses or N/A)

Across regions, respondents believe cash transfers and social protection measures are expanding (Figure 14). Respondents from Bangladesh and the Philippines for instance mention food transfers are issued, both in urban and rural areas. “There are cash and food handouts. But the informally employed and refugees are missing out” (Respondent for Peru). Only in Tanzania the perception is a decline of social protection measures.



Emerging issues regarding the potential effects on local food systems and nutrition

Food systems, diets and health care already face major limitations in LMIC, and depend heavily on access to markets, institutions and social networks. Efforts to mitigate Covid-19 tend to lead to early disruption of these vital linkages and are likely to affect employment opportunities, access to food and food prices. Consequently, the number of poor people at risk may sharply increase and urgently demand food systems support to be in place.

Based on the above perceptions concerning the measures and impacts expected, we can formulate some emerging issues that arise from these perceptions when taking into account the background situation of countries against which the Covid-19 pandemic arises. We do realise we have only interviewed selected, albeit knowledgeable, people from a few countries in each region, and the suggested emerging trends should be confirmed in further research.

- In general, it is expected that the agricultural sector and the **food production** will be not directly at risk due to the Covid-19 pandemic. Yet, according to the [World Food Program](#), a [looming food crisis](#) was already eminent, especially Africa. Additional potential risks that emerge due to the Covid-19 pandemic refer to the reduced access to inputs like seeds and access through broken markets, which may endanger food production in the next agricultural cycle, and lack of labour due to mobility restriction measures. Rural areas, where Covid-19 control measures tend to be more relaxed and sanitation and health facilities less well developed, could face high incidence of Covid-19 cases.
- Food markets** might become disrupted because of reduced import of foods due to trade bans. This may reduce food availability. Constrained exports due to trade bans may have economic consequences for already threatened GDP. The risks may differ per country or region, but suggest the importance of ensuring accessibility of agricultural inputs for the food producing areas, and the importance of releasing trade bans and restrictions to international trade. In some places, shorter food supply chains may boost local and regional production.
- Food availability** at markets in urban areas is expected to decline, especially for fresh perishable foods such as fruits and vegetables (all countries) and animal sourced foods (some countries).³ Results seem to suggest that efforts should be made to ensure supply of these [fresh foods to urban areas](#). As for most poor resource populations, informal markets deliver these foods, this suggests that efforts to enable these markets to continue or to find [alternative ways](#) to deliver these foods to urban households should be strengthened, for example based on ICT technologies and platforms for home delivery of food.
- The [restricted accessibility of markets](#), supermarkets, or retail shops, the increased queuing and distancing measures create barriers for the population to **accessing food** and for guaranteeing variable diets. It may discourage regular shopping of fresh foods and make purchasing a diversity of foods less appealing and convenient. It may also increase the desirability of foods that can be stored longer and is processed. This can [affect diets](#). It may therefore be important to intensify [nutrition](#) behaviour change [communication](#) to reemphasize the importance of a diverse diet for health, in addition to the necessary behaviour change messages on [social distancing and good hygiene](#).
- The results of this survey suggest the closure of schools in all countries covered. Where school feeding is implemented, the quasi-universal closing of school and suspension of school meals has likely adverse effects on children’s nutrition,

³ See also GAIN (2020), Impact of COVID-19 on Food Systems: Perspectives from the Field. Edition 2 - 22 April 2020.

especially where school meals form an important source of nutritious food for children. Reassuring schools and **school feeding** seems to be one of the important early actions when the Covid-19 burden reduces to ensure adequate diets for children.

- The effect of the Covid-19 crisis and Covid-19 control measures on the **purchasing power** of urban people and especially the [urban poor](#) is likely to be significant given that household incomes may be seriously reduced and food prices, including of staples, tend to go up. The purchasing power of rural populations may be somewhat less affected as income earning possibilities are less affected. Besides, the less affected availability of (locally produced) foods in the markets may keep prices more stable. Mitigation policies such as cash transfers and [social protection](#) measures which seem to increase across countries, except Tanzania, may prove to be important instruments to avert some of those consequences for nutrition when targeted at the urban poor. This will be a challenge for most low and middle income countries and support from the international community is [needed](#).
- **Women's empowerment** tends to be positively correlated with children's and household's nutrition. If [women's empowerment declines](#), albeit through a reduction in women's income, an increase in care work, or an increase in domestic violence, this could change consumption behaviour of the household and negatively affect nutrition of children and other household members. Protecting and mainstreaming women's empowerment in all above suggested actions is therefore essential to increase the leverage to better diets and nutrition.

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Annex

Respondents of the WUR Covid-19 rapid appraisal

	Country	N	Woman	Man	Occupation: Research	Government	Private/Business
Asia	Bangladesh	2	2	0	2	0	0
	Indonesia	0					
	Philippines	2	1	1	1	1	0
	Vietnam	4	3	1	4	0	0
Western Africa	Ghana	1	0	1	1	0	0
	Mali	1	0	1	0	0	1
	Nigeria	1	0	1	1	0	0
Eastern Africa	Ethiopia	2	2	0	2	0	0
	Kenya	1	1	0	1	0	0
	Rwanda	2	1	1	1	1	0
	Tanzania	1	1	0	0	1	0
	Uganda	3	2	1	3	0	0
Southern Africa	Malawi	1	0	1	1	0	0
	South Africa	2	1	1	2	0	0
	Zambia	2	2	1	3	0	0
	Zimbabwe	1	1	0	1	0	0
Latin America	Mexico	2	1	1	2	0	0
	Peru	3	2	1	3	0	0
	Total	31					

Table 2 Respondents of the WUR Covid-19 rapid appraisal

Country characteristics

	Country	Population (million)	Surface area (1000 km ²)	Population density (pop/km ²)	Population growth (annual %)	Urban population (% of tot pop)
Asia	Bangladesh	161	148	1240	1.1	36.6
	Indonesia	268	1914	148	1.1	55.3
	Philippines	107	300	358	1.4	46.9
	Vietnam	96	331	308	1.0	35.9
Western Africa	Ghana	30	239	131	2.2	56.1
	Mali	19	1240	16	3.0	42.4
	Nigeria	196	924	215	2.6	50.3
Eastern Africa	Ethiopia	109	1104	109	2.6	20.8
	Kenya	51	580	90	2.3	27.0
	Rwanda	12	26	499	2.6	17.2
	Tanzania	56	947	64	3.0	33.8
	Uganda	43	242	213	3.7	23.8
Southern Africa	Malawi	18	118	192	2.6	16.9
	South Africa	58	1219	48	1.4	66.4
	Zambia	17	753	23	2.9	43.5
Latin America	Zimbabwe	14	391	37	1.4	32.2
	Mexico	126	1964	65	1.1	80.2
	Peru	32	1285	25	1.7	77.9

Table 3 Country characteristics

Poverty, unemployment and livelihoods

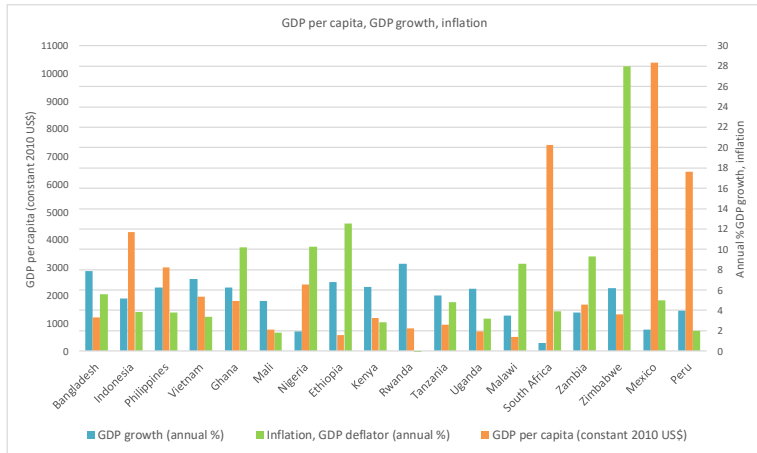


Figure 16 The economy - GDP and inflation
Source: World Bank World Development Indicators (latest available data point per country)

Health and health care system

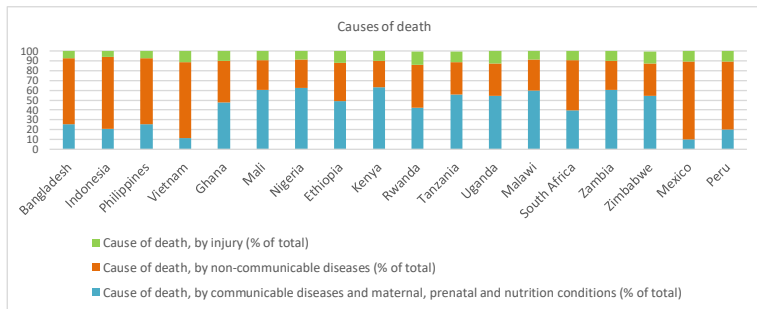


Figure 17 Causes of death
Source: World Bank Health Nutrition and Population Statistics (2016)

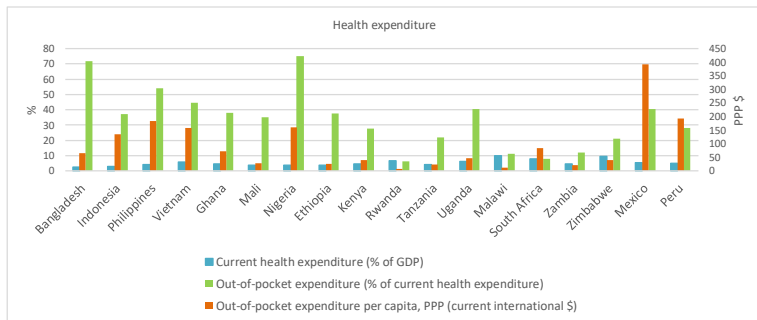


Figure 18 Health expenditure
Source: World Bank Health Nutrition and Population Statistics (2016)

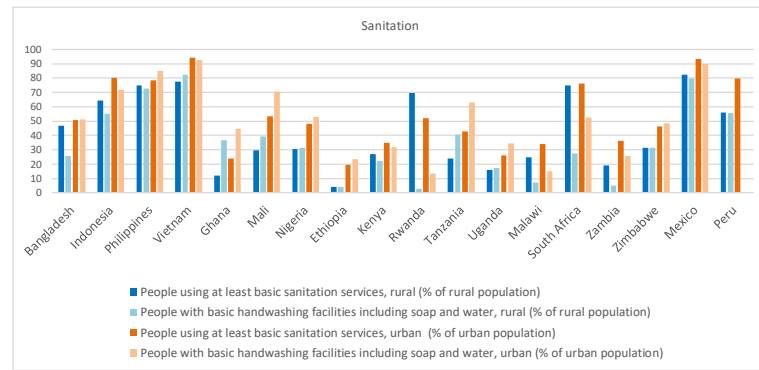


Figure 19 Sanitation
Source: World Bank Health Nutrition and Population Statistics (latest available data point per country)

Nutrition

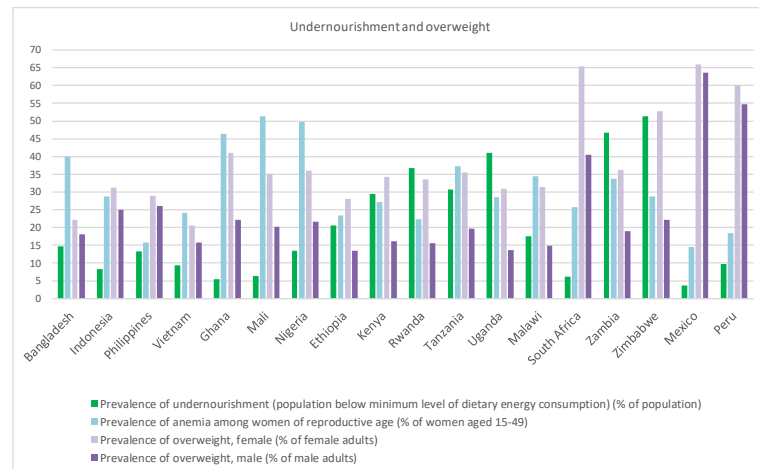


Figure 20 Nutrition status
Source: World Bank Health Nutrition and Population Statistics (latest available data point per country)

Covid-19 prevalence by 23rd April 2020

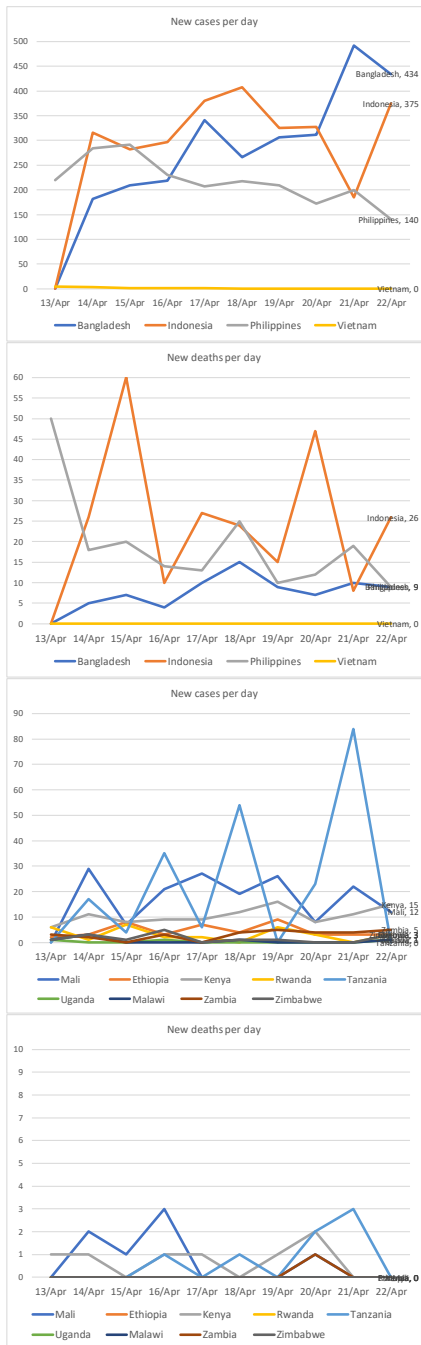
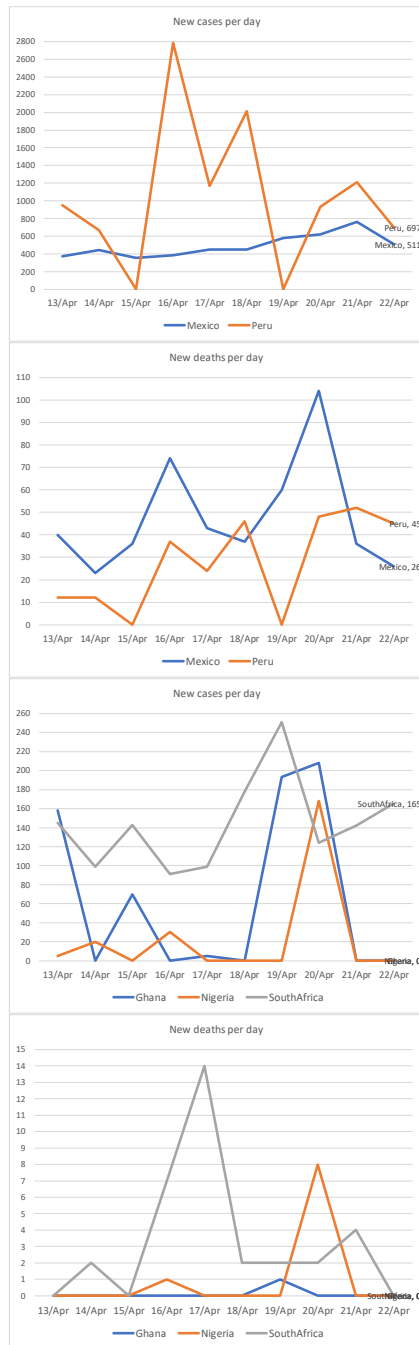
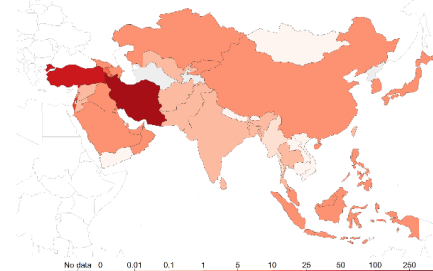


Table 4 Daily new Covid-19 cases and deaths in selected countries
Sources: [World Health Organization \(WHO\)](http://www.who.int)



Confirmed COVID-19 deaths per million people, Apr 21, 2020

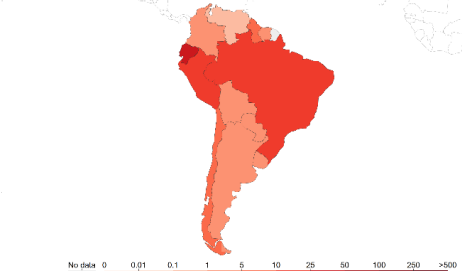
Limited testing and challenges in the attribution of the cause of death means that the number of confirmed deaths may not be an accurate count of the true total number of deaths from COVID-19.



Source: European CDC - Situation Update Worldwide - Last updated 21st April, 11:45 (London time) OurWorldInData.org/coronavirus - CC BY

Confirmed COVID-19 deaths per million people, Apr 21, 2020

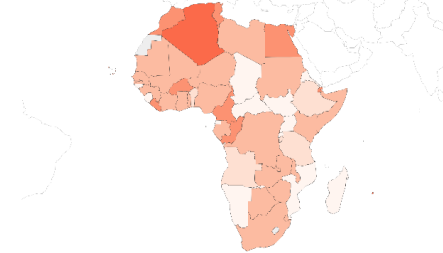
Limited testing and challenges in the attribution of the cause of death means that the number of confirmed deaths may not be an accurate count of the true total number of deaths from COVID-19.



Source: European CDC - Situation Update Worldwide - Last updated 21st April, 11:45 (London time) OurWorldInData.org/coronavirus - CC BY

Confirmed COVID-19 deaths per million people, Apr 21, 2020

Limited testing and challenges in the attribution of the cause of death means that the number of confirmed deaths may not be an accurate count of the true total number of deaths from COVID-19.



Source: European CDC - Situation Update Worldwide - Last updated 21st April, 11:45 (London time) OurWorldInData.org/coronavirus - CC BY

Figure 21 Covid-19 deaths per million people by region

Source: [Our World in Data](http://www.ourworldindata.org) based on data from the European Centre for Disease Prevention and Control (ECDC)