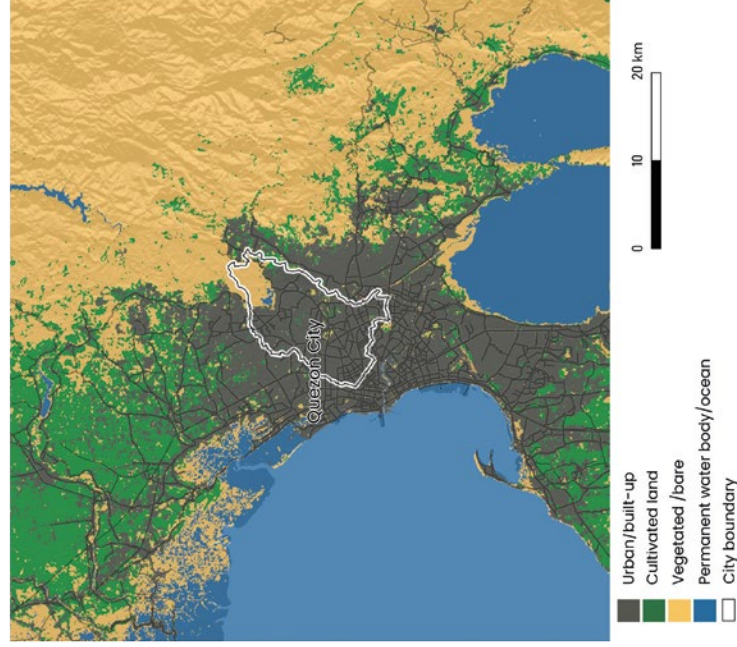




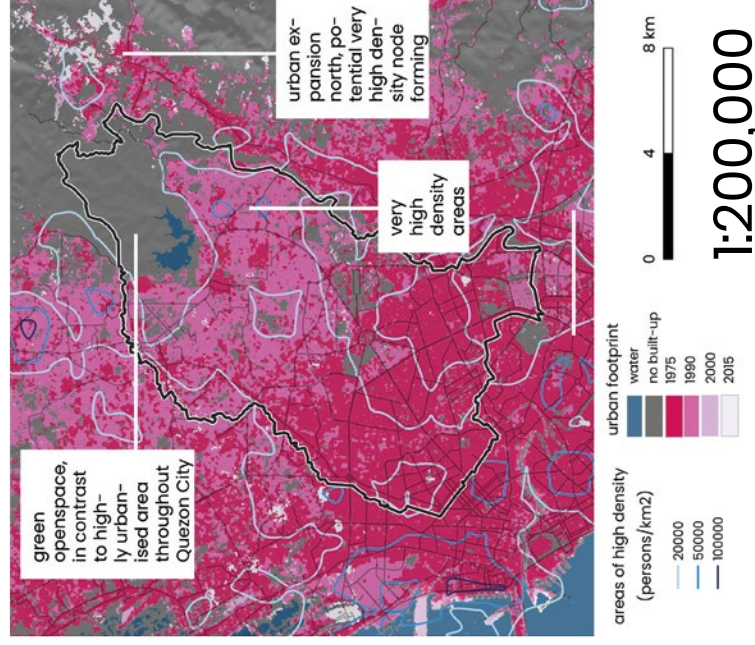
External drivers

The landcover and urbanisation maps illustrate some key external drivers that shape the food system in Quezon City. These include the use of land and indications of where population density and growth are most intense, highlighting the relationship cities have with food production, and suggesting areas of higher vulnerability during crises that affect the food system

Landcover 2015



Urbanisation trends



Key spatial indicators

Indicator	Quezon City	Average, similar size, LMIC cities in the region (excl. CxB)	Average, similar size, LMIC cities in the region
Population density, persons per km ²	16,943	9,468	11,677
Slum population	appr. 810 760		
Total built-up area in 2015, km ²	115	471.0	776.0
Total resident population in 2015	2,505,917	11,002,460	
Surface of the built-up area per person in 2015, m ²	45.9	37.3	37.5
Proportion of total resident population potentially exposed to floods in 2015 (%)	31%	38%	
Proportion of cultivated land in 50km radius	15.8%	33.3%	
Cultivated land in 50km radius per 100,000 persons, km ²	6.0	44.0	
Number of supermarkets per 100,000 persons	25.7	4.8	
GDP per capita	3,607.6	4,200.4	
Growth rate	1.4	2.4	1.8
Proportion of population of the urban agglomeration living outside the formal boundaries of the city	0%	37%	

Food supply chains

The following table illustrates the location of the suppliers and customers of surveyed private sector entities, giving an indication of the proximity of food supply chains to the city.

The proximity of food supply chains to the city

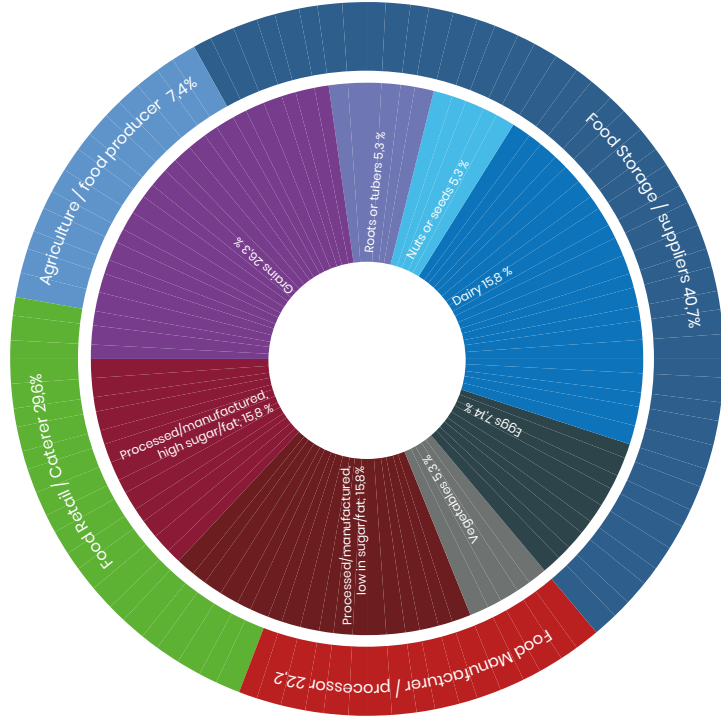
	Markets/ Customer locations	Supplier locations
Within the city	25.9%	37.0%
Surrounding region	59.3%	37.0%
Other regions of the country	14.8%	25.9%
Internationally	0%	0%

Quezon City is the largest city in the Philippines by population though sits within the Manila Metropolitan Area. The city is highly urbanised with c. 85% urban land cover, very little cultivated land (<3%) and the remaining land area mainly open water and forest, in the northern most corner of the city. Much of the urban fabric was built during the period between 1975 and 2000, with the city densifying as population has grown at around 1.4% per annum. The city is inextricably linked to the wider Metropolitan area, representing around 17% of the contiguous area of the Manila urban agglomeration which covers around 650km².

Food environment

The local food system actors and the types of food available in the local market are shown in the below figure. The inner circle consists of the types of food businesses while the outer circle shows the types of food the system produces, processes or sells.

Food system actors & foods available in the local market



4. Outcomes & Pre-COVID-19 vulnerability

Nutritional status, dietary diversity and consumption of unhealthy foods

The following figures date from pre-COVID-19 and indicate vulnerabilities before the crisis, unless recent figures are available in which case a comparison between pre-COVID-19 and recent data is presented.



Women

Prevalence of minimum dietary diversity (MDD-W) during COVID-19, Quezon City slums



Children, 6-23 months

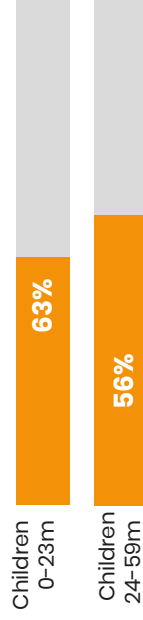
Foods consumed by breastfeeding children (6-23 months) during COVID-19, Quezon City slums



Change in minimum acceptable diet (6-23 months), Quezon City and slums



Consumption of unhealthy foods by children, Quezon City slums



Children under 5 years

Proportion of wasted and stunted children, Quezon City



Food security

Changes in the food security levels of Quezon City's population before and during COVID-19 is presented based on the available data, using the Food Insecurity Experience Scale (FIES) and the Livelihood Coping Strategy Index (LCSI). The Food Consumption Score (FCS) was not available.

Prevalence of moderate or severe food insecurity (Food Insecurity Experience Scale), Quezon City slums

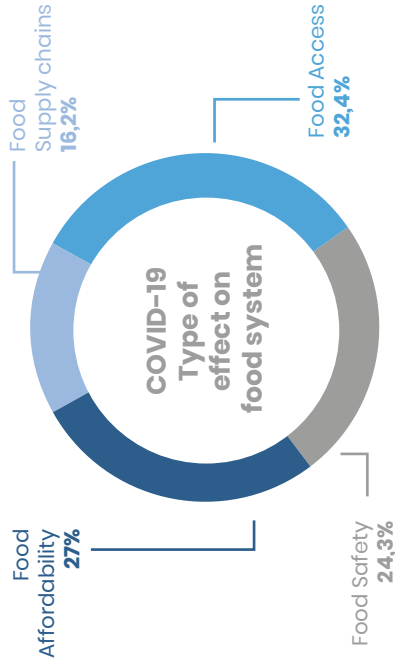


Livelihoods coping strategy index (LCSI) in households with children 0-59m, Quezon City slums, 2020



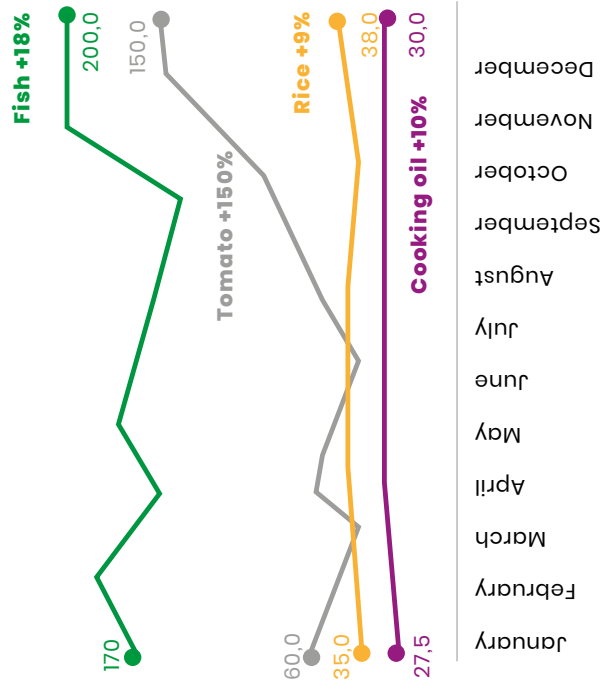
5. COVID-19 impact & response

This section explores the effects of COVID-19 on Dhaka's food system, examining supply chains, food prices and responses.

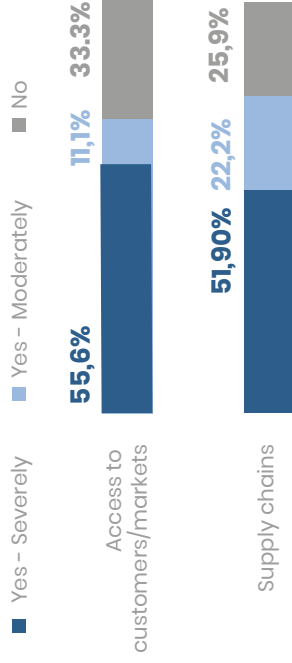


Change in food prices since COVID-19

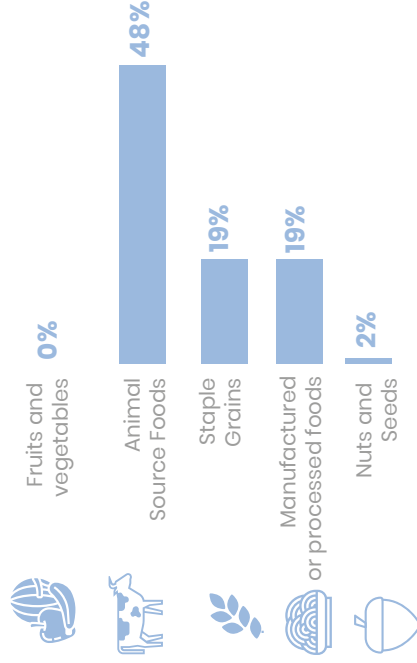
Change in food prices from January to December 2020 on four selected food items, PHP



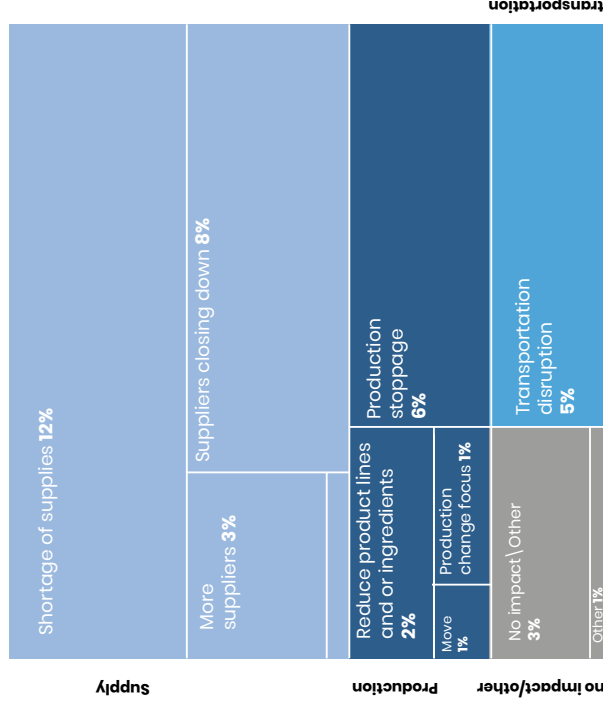
Extent of disruption of the COVID-19 pandemic on markets and supply chains



Foods that were short in supply



Effects of COVID-19 on company supply chains



Proportion of surveyed businesses whose income decreased between 25% and 50%



Data Sources

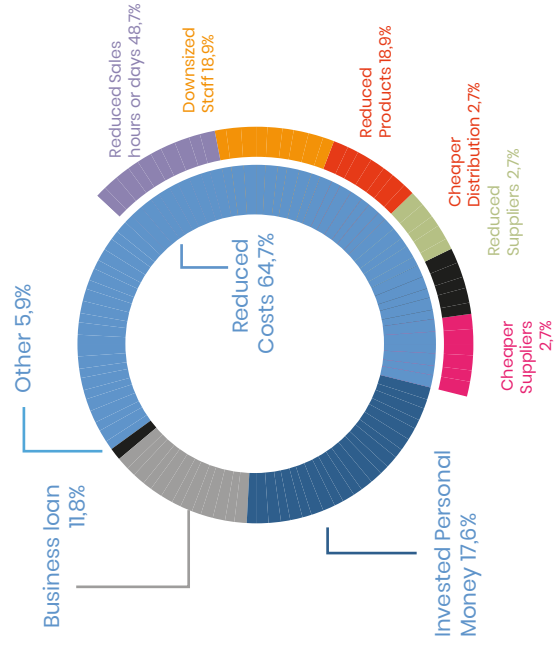
MDD-W Philippines Urban Survey (SDFU) 2020
 Foods consumed by **breastfeeding children (6-23 months)** Philippines Urban Survey (SDFU) 2020
Minimum acceptable diet ENNS 2018, Philippines Urban Survey (SDFU) 2020
Consumption of unhealthy foods by children Philippines Urban Survey (SDFU) 2020
Proportion of wasted and stunted children ENNS 2018. Stunting prevalence is classified as high and wasting prevalence as medium by WHO standards.

Prevalence of **moderate or severe food insecurity (Food Insecurity Experience Scale)** Philippines Urban Survey (SDFU) 2020
Livelihoods coping strategy index (LCSI) Philippines Urban Survey (SDFU) 2020
Monthly food prices Philippine Statistics Authority, Retail prices for National Capital Region.
Sections Food supply chains, Food environment, COVID-19 Impact and response Dikoda 2021

Responses and coping mechanisms

Impacts of COVID-19 on the food system are mitigated by responses by development partners and the government and by adaptations taken by food companies to changing conditions. This section illustrates some of these adaptations and responses, highlighting possible vulnerabilities and opportunities presented by the crisis

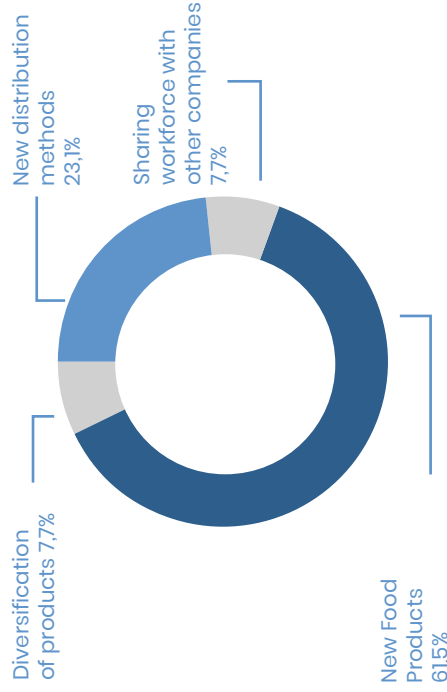
Private sector's methods to cope with lower income with breakdown of reduced costs



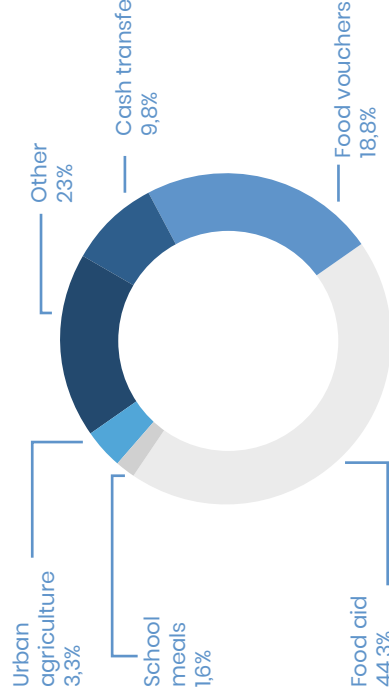
Methods and data sources

The brief describes the city's food system based on the Food Systems Framework presented in the report, with focus on available data and components that are likely to be impacted by COVID-19. All data is on city level unless indicated otherwise. Sources for the city brief include primary and secondary data and are listed after each figure or table. DHS data has been disaggregated to strata level to obtain figures specific to the city. Dikoda surveys took place in March 2021 and were carried out on governance, NGO and private sector stakeholders. The development of the typology and the full survey methodology is detailed in the report. Key spatial indicators apart from slum population are from 2015 because data was consistently available across cities.

Other methods of adaptation by companies during COVID-19

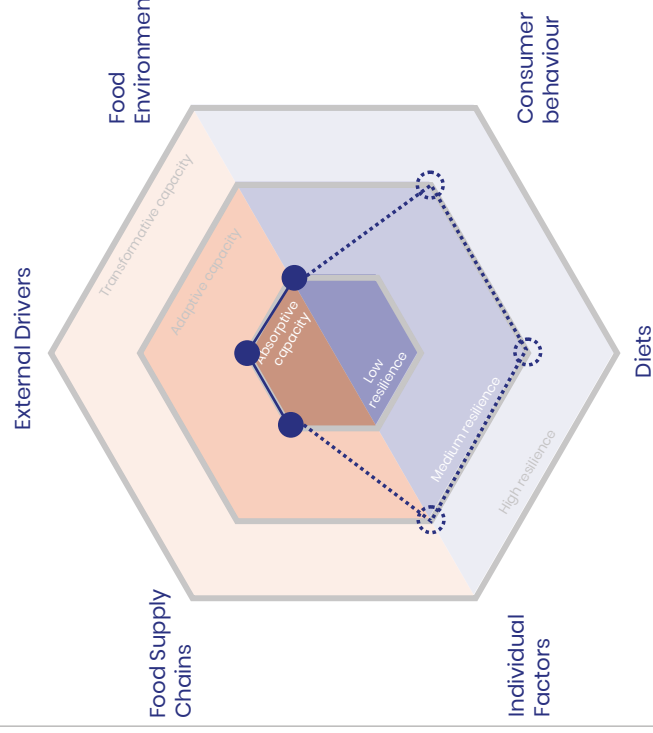


Response by Development Partners to food insecurity



Typology

The typology contains one core indicator for each dimension, giving an indication to the food system's vulnerability and resilience in the face of COVID-19. No indicator was chosen for consumer behaviour.



Population density, persons per km2

Calculated from DHS, data. Florczyk, A et al. (2018), GHS Urban Centre Database 2015, multitemporal and multidimensional attributes. R2018A. European Commission, Joint Research Centre (JRC) PIR. <https://data.jrc.ec.europa.eu/dataset/53473144-b88c-44bc-b4c3-4583eaff547e>

Slum population

Calculated using number of informal settlement households in Quezon city (688,549) and average HH size in Quezon City in 2015 (4.3). Source: CHAPTER 3: Demographic Profile and Social Development Quezon City, 2018. https://quezoncity.gov.ph/wp-content/uploads/2021/01/Eco_Profile_2018_Chapter-3.pdf

Cultivated land in 50km radius, km2

Calculated using GIS spatial analysis techniques by Dikoda using Copernicus Global Land Service data (2018) Buchhorn, M. et al. Copernicus Global Land Service: Land Cover 100m: collection 3, epoch 2018; Globa 2020. Accessed Feb 2020

Cultivated land in 50km radius per capita, km2

Copernicus as above

Number of markets/supermarkets per 100,000 persons

Calculated using GIS and OpenStreetMap data for each city