

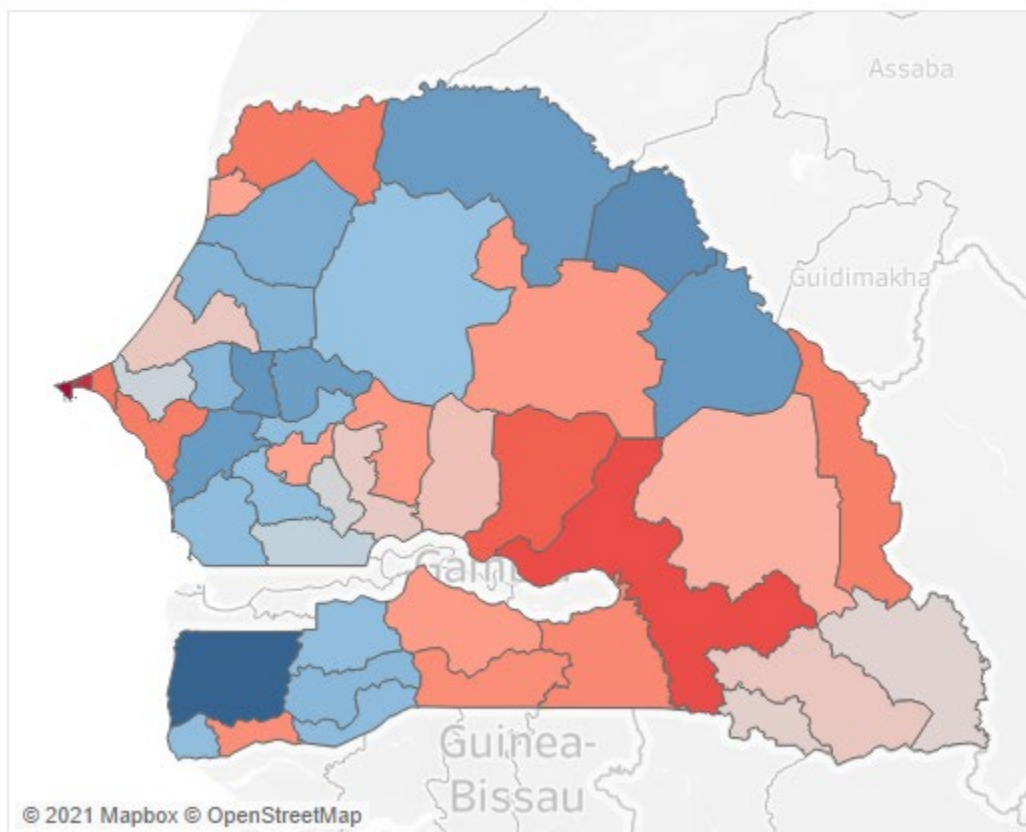
ASSESSING THE RISK OF COVID-19 IN SENEGAL

As COVID-19 vaccines are becoming available, governments will need to assess the number and location of the most vulnerable people within their populations. However, problematically, tracking data for most low- and middle-income countries are only available at the national level. To support the COVID-19 relief effort, the Gender, Climate Change, and Nutrition Integration Initiative (GCAN) was commissioned to develop a subnational dataset of key COVID-19 risk indicators and potential risk hotspots.

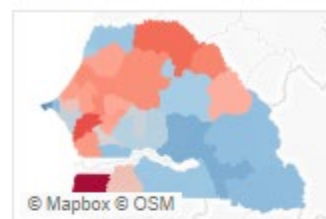
Based on patient data compiled and analyzed worldwide, the science community's consensus is that key COVID-19 risk factors include age, sex, and obesity. Being old, male, and obese increases both vulnerability to infection and the likelihood of negative outcomes. Based on each indicator's COVID-19 death hazard ratio, a composite index for the second-level subnational administrative units was constructed using exploratory factor analysis (a statistical technique that reduces the number of variables). The results of the subnational risk index (map a) and the risk indicators (maps b, c, and d) are presented visually below, resulting in hotspots (the redder colors) and cold spots (the bluer colors).

The three risk indicators show somewhat different patterns. The age-related risk is high in the northern regions, including Saint-Louis and Louga, and highest in Ziguinchor. The sex-related risk is highest (i.e., more male) in Dakar, and the obesity-related risk is highest in Kaolack. The overall risk index is high in Departments in Dakar and Tambacounda Regions.

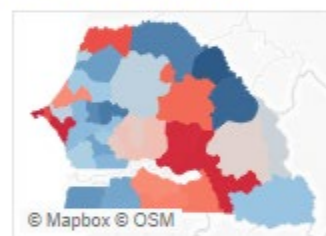
a. Risk index in Senegal



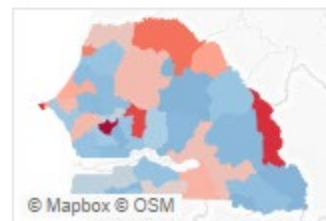
b. Age-related risk



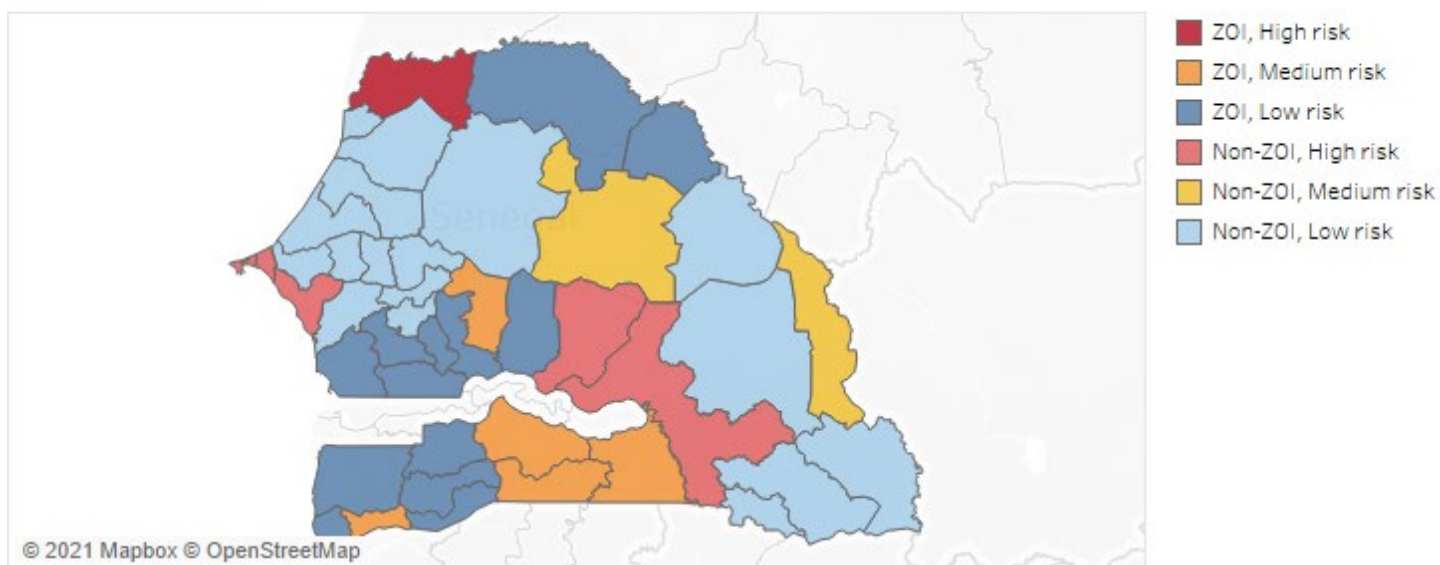
c. Sex-related risk



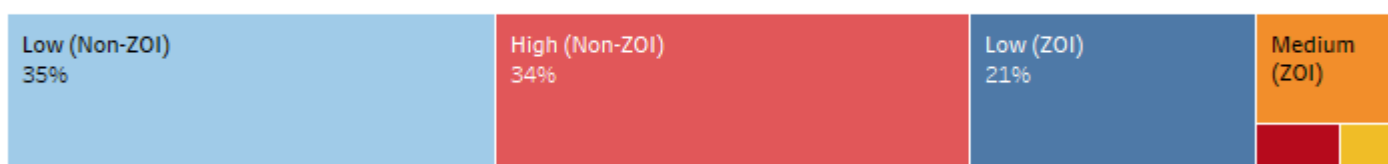
d. Obesity-related risk



e. Risk index classes



f. Distribution of adult population in each risk class



The above figures categorize the risk index values into areas of low, medium, and high risk (map e) and visualize the number of adults (≥ 18 years old) in each category (figure f). ZOI indicates the zone of influence of the U.S. Government's Feed the Future program. Areas of high risk are Dakar (Dakar, Guédiawaye, Pikine, Rufisque Departments), Saint-Louis (Dagana Department), Tambacounda (Koupenroum, Tambacounda Departments), and Thiès (Mbour Department). The Dagana Department in the Saint-Louis Region is the only high risk area in ZOI. These risk hotspots overlap with the list of regions with a high number of reported COVID-19 cases, including Dakar, Thiès, Diourbel, Kaolack, and Saint-Louis.¹

The total number of adults in the high-risk areas is about 2.7 million (36% of the total adult population), of which 27% (0.7 million) are in rural areas. Given the high estimated risk in rural areas, interventions targeting agricultural laborers should be encouraged. To reduce the risk of COVID-19 transmission, guidelines from other countries advise farmworkers to group into cohorts for work shifts while keeping minimum precautionary distance. Younger, less vulnerable farmers are encouraged to participate in labor-intensive activities. Collection of grain at the farm gate has also been promoted to minimize farmers' travel to markets as has been the use of existing social networks to coordinate fieldwork on rotating days. Moreover, across low- and middle-income countries, rural areas show lower accessibility to safe water for personal hygiene and healthcare facilities than urban areas. In Senegal, only 9% of the rural population has access to a basic handwashing facility with soap and water, compared to 42% of the urban population.² Another notable vulnerability is related to household structure and composition. About 40% more rural households in Senegal live with elders than urban households. Thus, rural households are more likely to be particularly vulnerable to the spread of COVID-19.

This publication was prepared by Jawoo Koo (IFPRI), Carlo Azzarri (IFPRI), Aniruddha Ghosh (CIAT), and Wahid Quabili (IFPRI), under the Gender, Climate Change, and Nutrition Initiative (GCAN). GCAN was made possible with support from Feed the Future through the U.S. Agency for International Development (USAID) and is associated with the CGIAR Research Program on Climate Change, Agriculture and Food Security, which is carried out with support from CGIAR Fund Donors and through bilateral funding agreements. The fact sheet has not been peer reviewed. Any opinions are those of the authors and do not necessarily reflect the views of IFPRI, USAID, or Feed the Future. Copyright ©2021 International Food Policy Research Institute. Licensed for use under a Creative Commons Attribution 4.0 International License (CC BY 4.0).

¹ Senegal : Coronavirus (Covid-19) Subnational. HERA, 2021. https://data.humdata.org/dataset/senegal_covid19_subnational. Accessed 9 February 2021.

² WASH and COVID-19. UNICEF, 2020. <https://data.unicef.org/topic/water-and-sanitation/covid-19>. Accessed 9 February 2021.