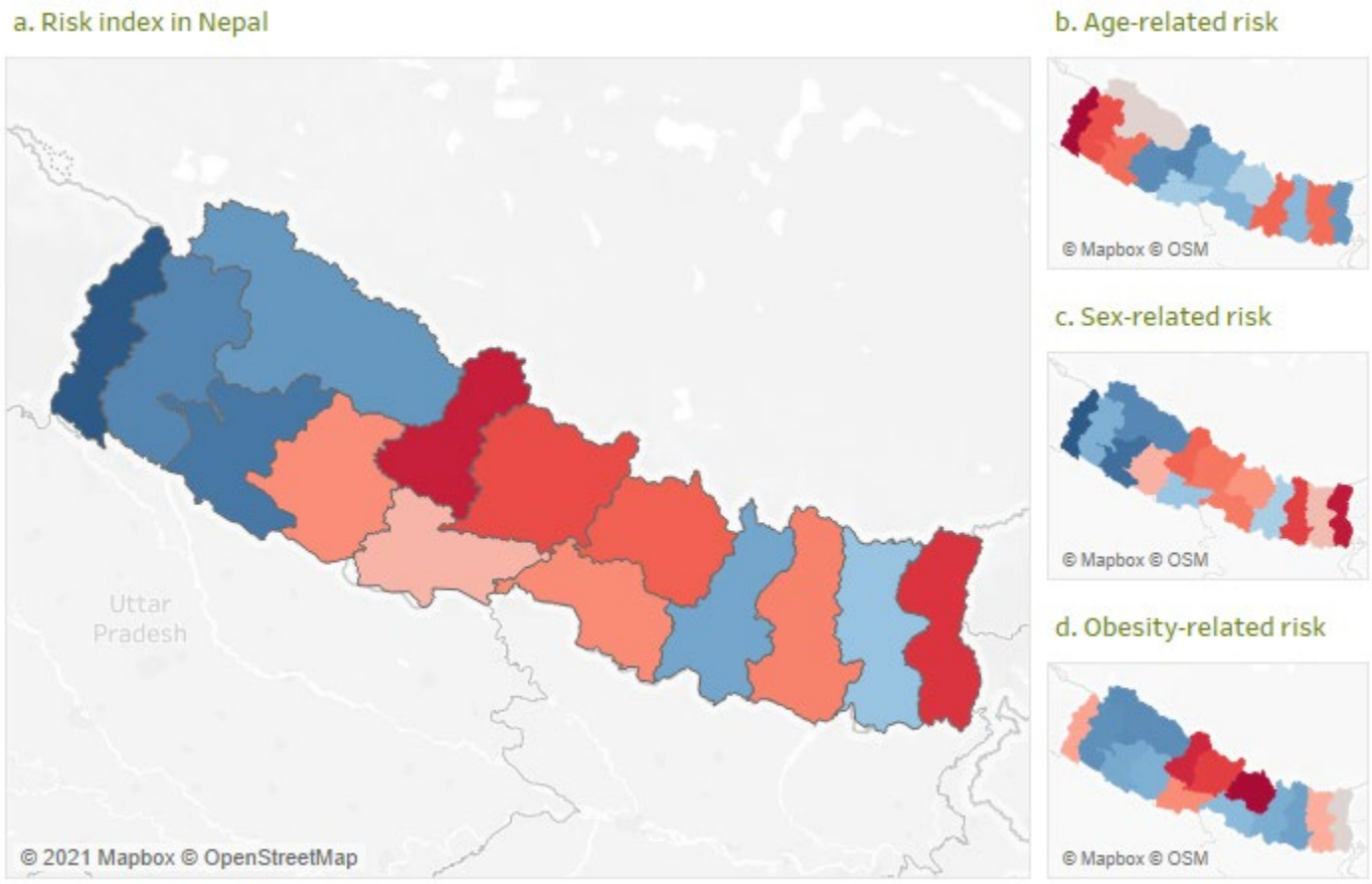
ASSESSING THE RISK OF COVID-19 IN NEPAL

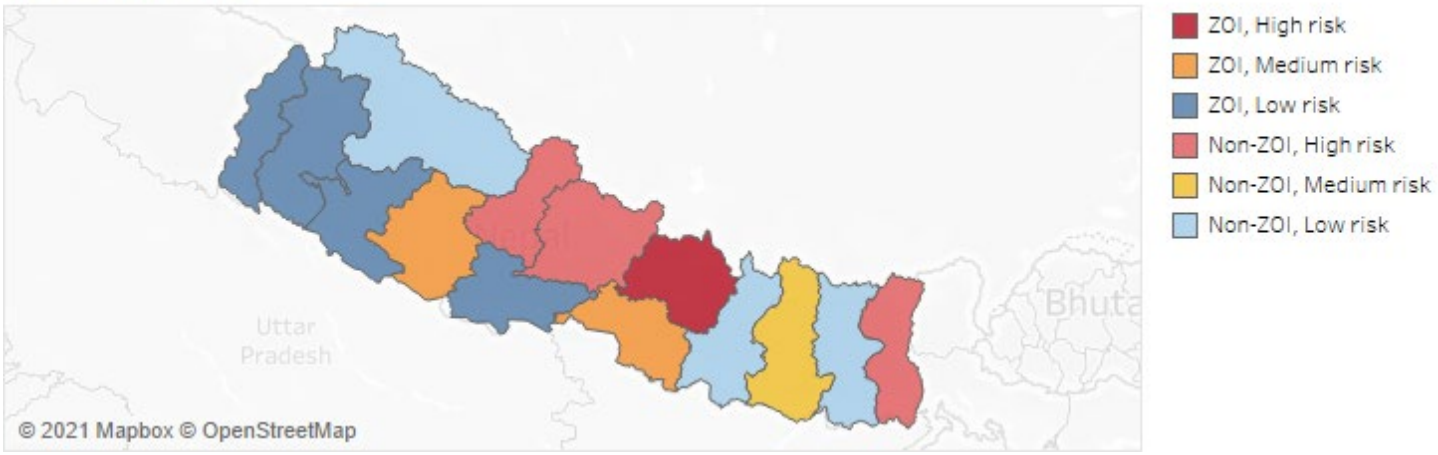
As COVID-19 vaccines are becoming available, governments will need to assess the number and location of the most vulnerable people within their populations. However, problematically, tracking data for most low- and middle-income countries are only available at the national level. To support the COVID-19 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).

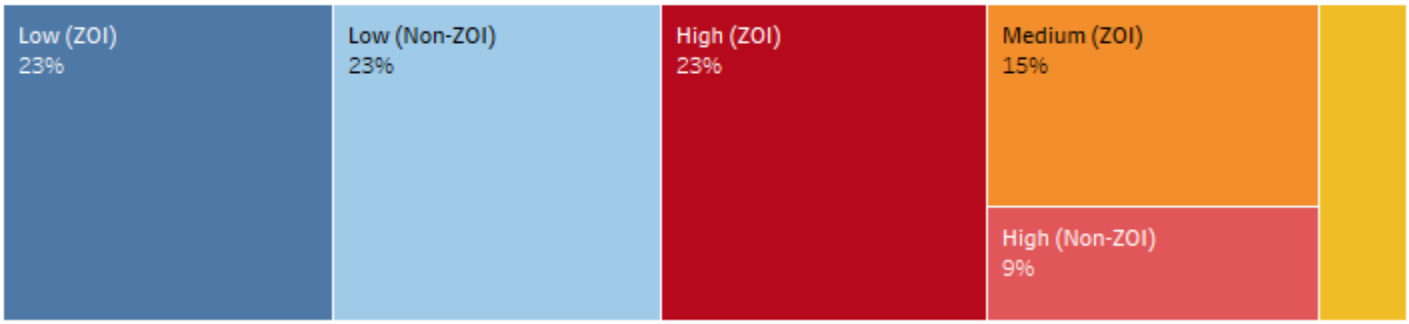
The age-related risk is highest in the Far-Western Region (Mahakali and Seti Zones), while the sex-related risk (i.e., more male) is highest in the East Region (Mechi and Sagarmatha Zones). The obesity-related risk is highest in the West Region (Bagmati and Dhaualagiri Zones). Overall, the highest risk is estimated in the West Region, followed by East and Central Regions.



e. Risk index classes



f. Distribution of adult population in each class of risks



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 in the Central (Bagmati), East (Mechi), and West (Dhaualagiri and Gandaki) Regions. Among these, Bagmati Zone is located in the ZOI.

The total number of adults in the high-risk areas is about 7.8 million (32% of the country's total adult population). Except for Bagmati, all high-risk areas are located in rural areas. Given the relatively high estimated risk in rural areas, supporting interventions targeting agricultural laborers should be encouraged. To minimize the virus transmission risk in rural communities during the crop season, socially distanced farming practices should be practiced whenever possible. Interventions practiced in other countries include collecting harvested grain at the farm gate to minimize farmers' travel to markets and draw on social networks to coordinate fieldwork on rotating days. Other vulnerabilities in rural areas relate to access to clean water and resource pressure from return migrants. Only 43% of the rural population in Nepal has access to a basic handwashing facility with soap and water, compared to 67% of the population in urban areas[1]. Country-wide lockdown measures have disproportionally impacted rural women. IFPRI's phone survey in mid-2020 revealed that rural women had insufficient food more often than men while working more to care for family and a large influx of returning migrants[2].

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[1] *WASH and COVID-19*. UNICEF, 2020. https://data.unicef.org/topic/water-and-sanitation/covid-19. Accessed 9 February 2021.

[2] *COVID-19 Challenges to Equity: Insights from Rural Nepal and Senegal.* Agrilinks, 2020. https://agrilinks.org/post/covid-19-challenges-equity-insights-rural-nepal-and-senegal. Accessed 9 February 2021.