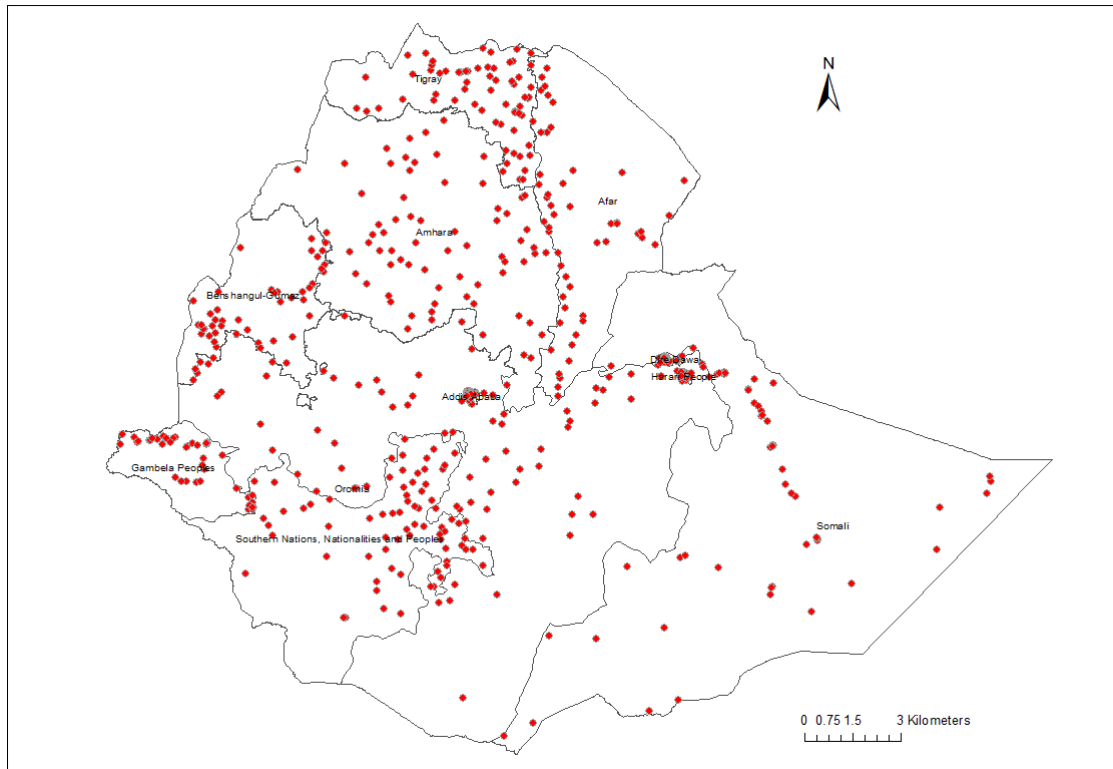
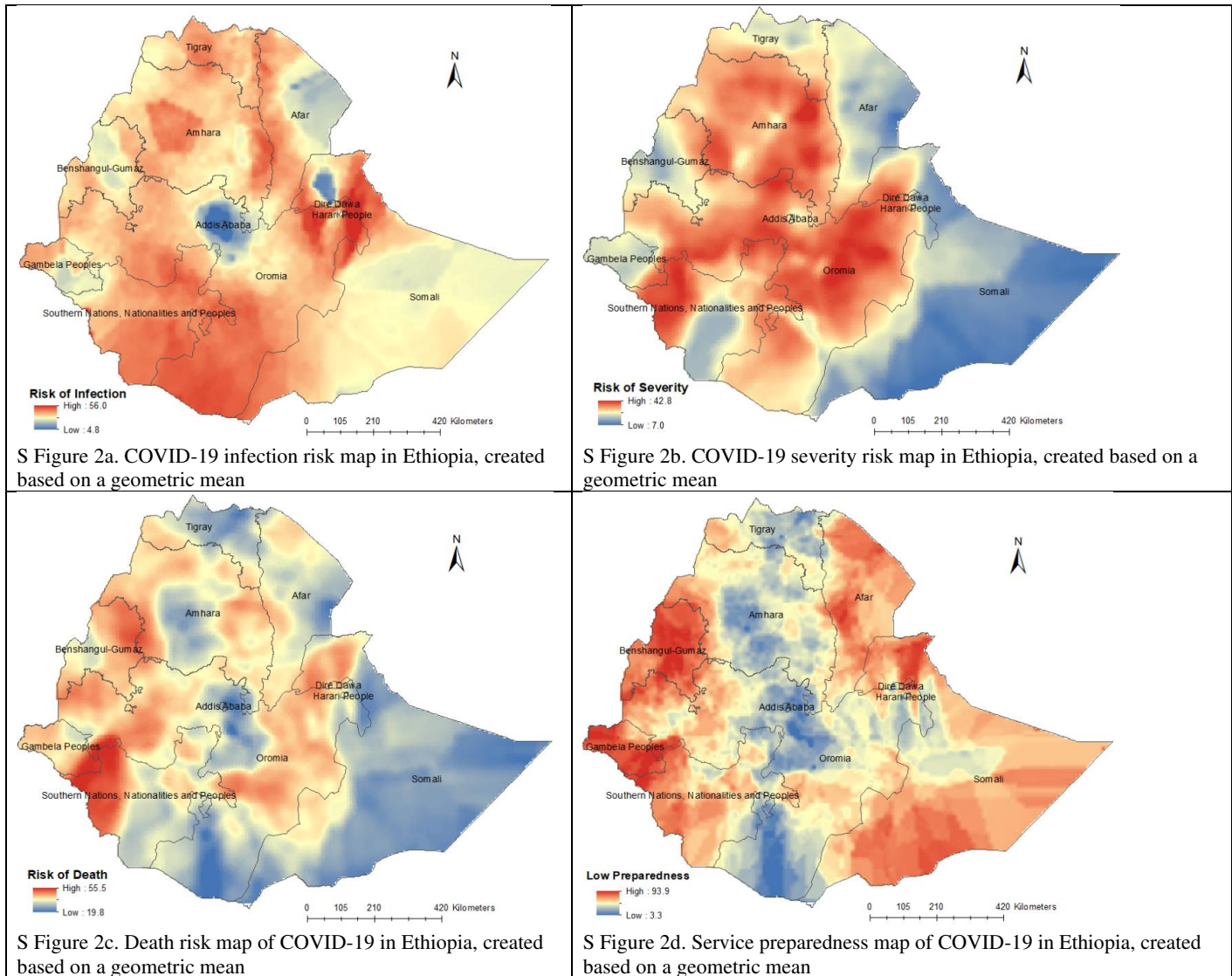


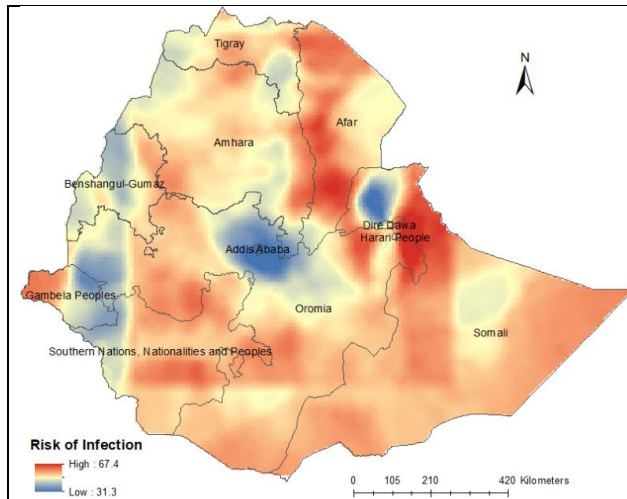
Supplemental Information



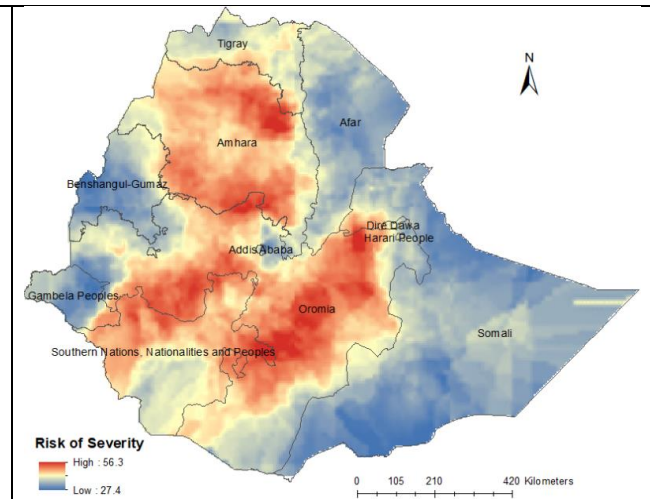
Supplemental Figure 1: A map showing the distribution of the Ethiopia Demographic and Health Survey (EDHS 2016) datapoints.



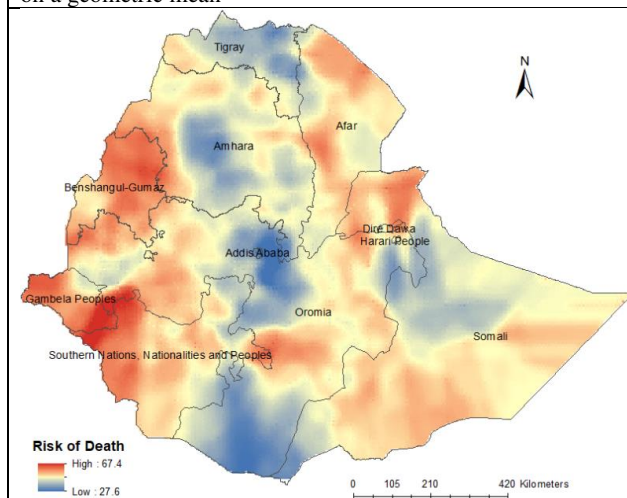
Supplemental Figure 2: Vulnerability maps of COVID-19 infection, severity, preparedness, and death in Ethiopia, created based on a geometric mean as alternative aggregation method.



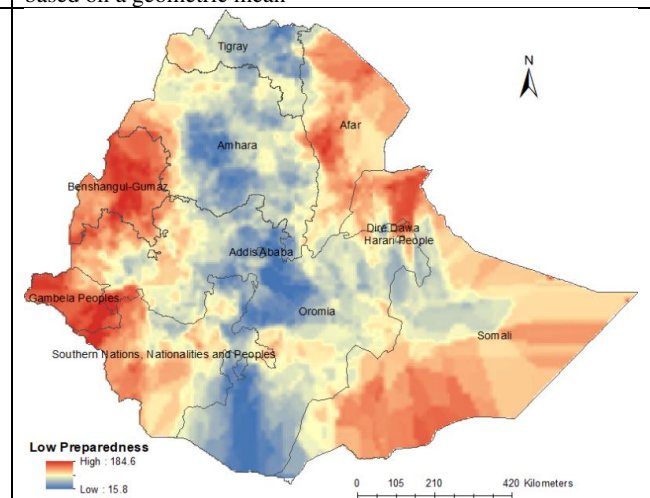
S Figure 3a. COVID-19 infection risk map in Ethiopia, created based on a geometric mean



S Figure 3b. COVID-19 severity risk map in Ethiopia, created based on a geometric mean

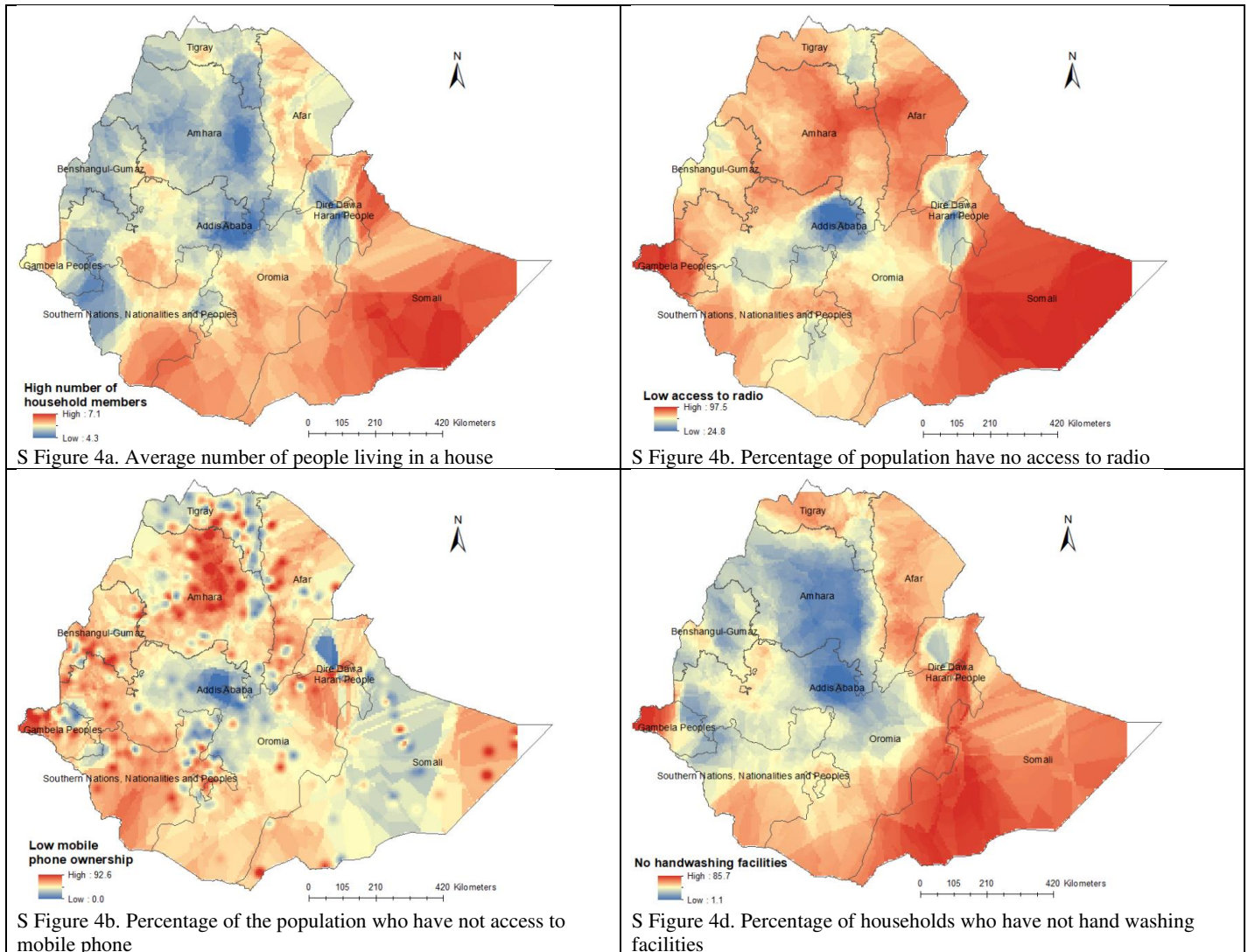


S Figure 3c. Death risk map of COVID-19 in Ethiopia, created based on a geometric mean

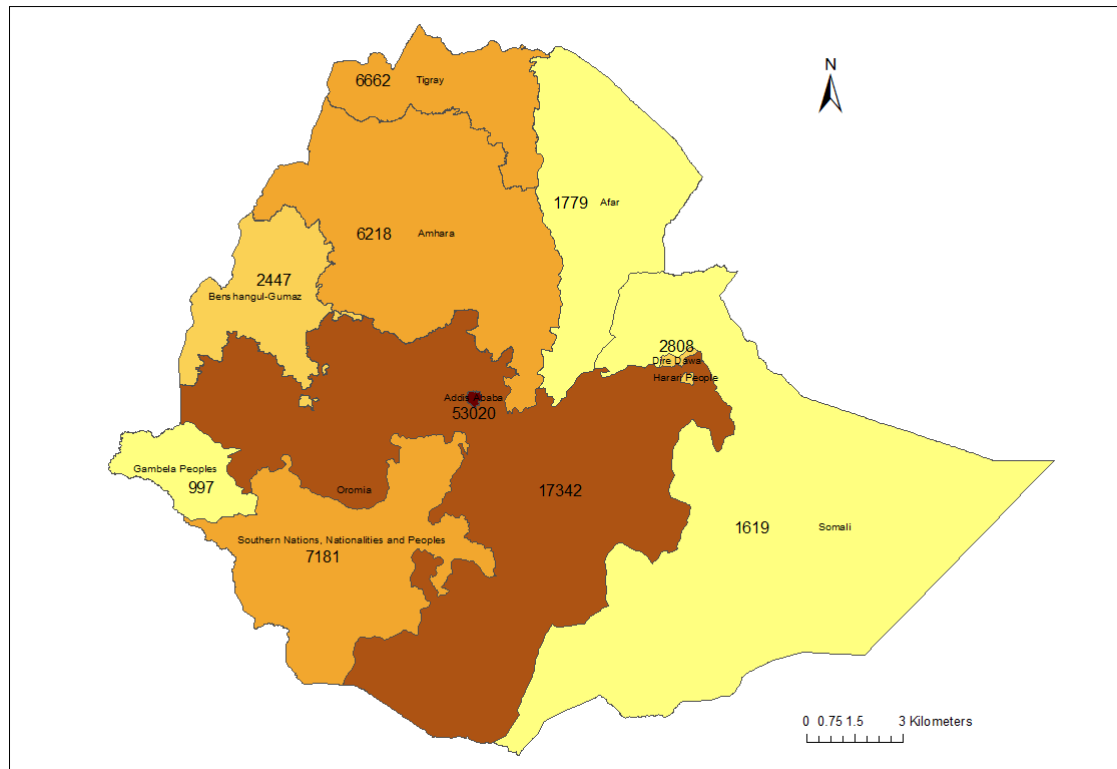


S Figure 3d. Service preparedness map of COVID-19 in Ethiopia, created based on a geometric mean

Supplemental Figure 3: Vulnerability maps of COVID-19 infection, severity, preparedness, and death in Ethiopia, created based on a principal component analysis (PCA) as alternative aggregation method.



Supplemental Figure 4: Selected indicators showing the risk of COVID-19 infection in Ethiopia



Supplemental Figure 5: Number of COVID-19 confirmed cases at regional level in Ethiopia on 15 November 2020.

Supplemental Table 1: STROBE Statement—Checklist of items included in this study

| | Item No | Recommendation | Page number |
|---------------------------|----------------|--|--------------------|
| Title and abstract | 1 | (a) Indicate the study's design with a commonly used term in the title or the abstract | 1 |
| | | (b) Provide in the abstract an informative and balanced summary of what was done and what was found | 3 |
| Introduction | | | |
| Background/rationale | 2 | Explain the scientific background and rationale for the investigation being reported | 5 |
| Objectives | 3 | State specific objectives, including any prespecified hypotheses | 6 |
| Methods | | | |
| Study design | 4 | Present key elements of study design early in the paper | 6 |
| Setting | 5 | Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection | 6 |
| Participants | 6 | (a) Give the eligibility criteria, and the sources and methods of selection of participants | 6, 7 & 8 |
| Variables | 7 | Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable | 6, 7 & 8 |
| Data sources/measurement | 8 | For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group | 6, 7, 8 & Table 1 |
| Bias | 9 | Describe any efforts to address potential sources of bias | 9 |
| Study size | 10 | Explain how the study size was arrived at | NA |
| Quantitative variables | 11 | Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why | 8 & 9 |
| Statistical methods | 12 | (a) Describe all statistical methods, including those used to control for confounding | 8 & 9 |
| | | (b) Describe any methods used to examine subgroups and interactions | 8 & 9 |
| | | (c) Explain how missing data were addressed | 8 & 9 |
| | | (d) If applicable, describe analytical methods taking account of sampling strategy | NA |
| | | (e) Describe any sensitivity analyses | 9 |
| Results | | | |
| Participants | 13 | (a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed | 9 & 10 |
| | | (b) Give reasons for non-participation at each stage | 9 & 10 |
| | | (c) Consider use of a flow diagram | Figure 1 |
| Descriptive data | 14 | (a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders | Table 1 |
| | | (b) Indicate number of participants with missing data for each variable of interest | NA |
| Outcome data | 15 | Report numbers of outcome events or summary measures | 9 & 10 |
| Main results | 16 | (a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included | NA |
| | | (b) Report category boundaries when continuous variables were categorized | NA |
| | | (c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period | NA |
| Other analyses | 17 | Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses | 9 |
| Discussion | | | |
| Key results | 18 | Summarise key results with reference to study objectives | 10 |
| Limitations | 19 | Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias | 13 |
| Interpretation | 20 | Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence | 10-13 |
| Generalisability | 21 | Discuss the generalisability (external validity) of the study results | 13 |
| Other information | | | |
| Funding | 22 | Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based | 15 |