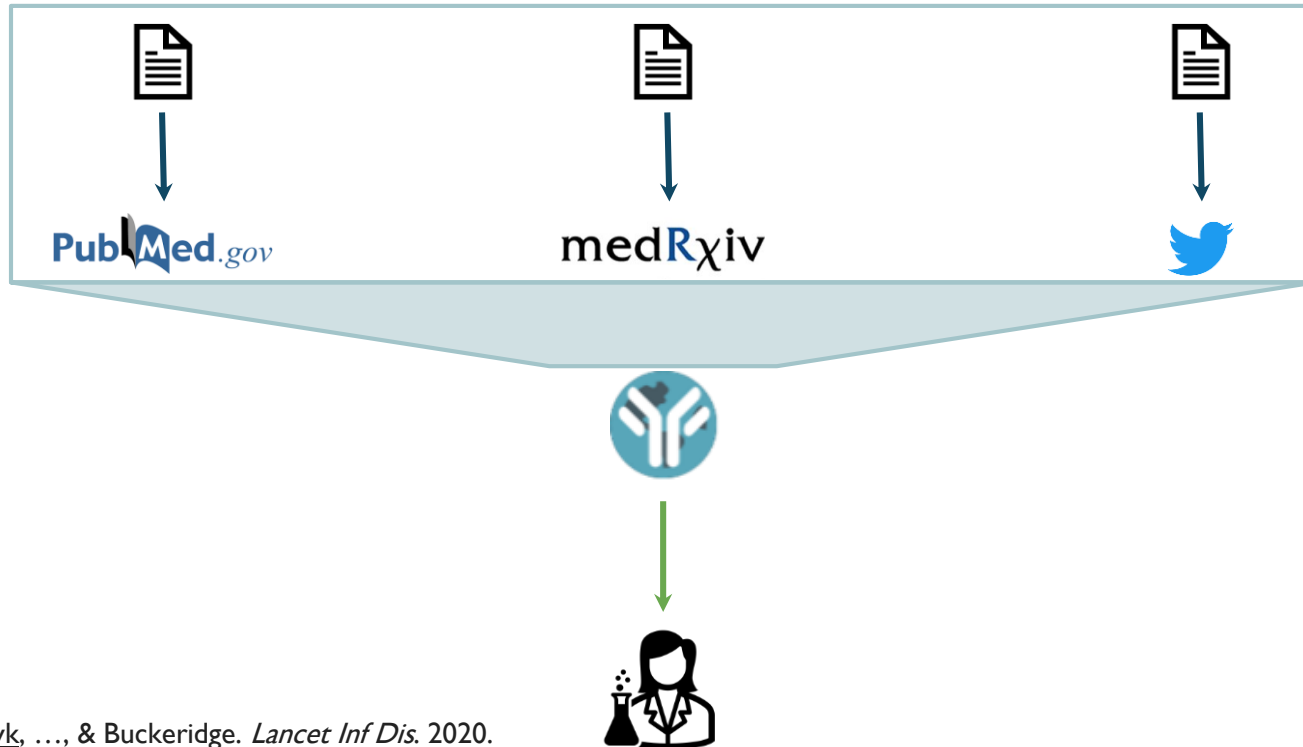


EPI-WIN: Introducing MERSTracker, its functionalities, and use cases

Mairead Whelan | Harriet Ware | November 21, 2024

We built [SeroTracker.com](https://serotracker.com) to unify seroprevalence data, creating one harmonized resource for researchers and decision-makers



SeroTracker made SARS-CoV-2 seroprevalence data accessible through the largest live systematic review of its kind



Identify serosurvey sources weekly



100,000+ abstracts screened



4500 studies from 148+ countries

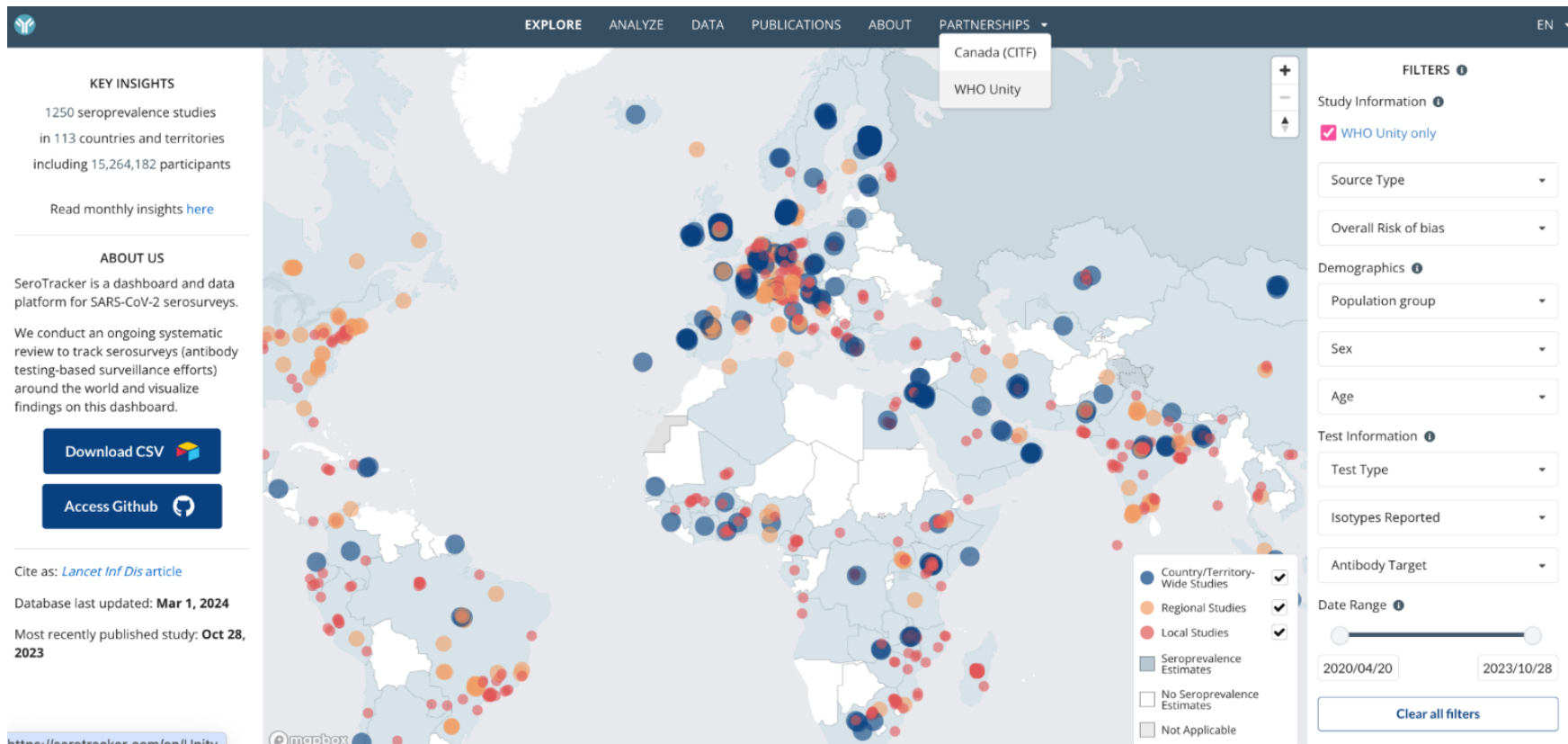


38 million participants



Pipeline to dashboard and repository

Co-branded with WHO to visualize the Unity studies, Serotracker.com let users explore, download, and visualize seroprevalence data





WHO COVID-19 dashboard

Crucial part of our understanding of COVID-19 epidemiology:

- Set context for the **World Health Assembly**
- Informed **International Health Regulations Emergency Committee on COVID-19 (IHR-EC)** decisions

Circulation

Cases

Deaths

More COVID-19 data from WHO and partner agencies

WHO Global COVID-19 data

WHO Global COVID-19 detailed surveillance dashboard

Data visualization and access to data sets for more detailed COVID-19 surveillance data.

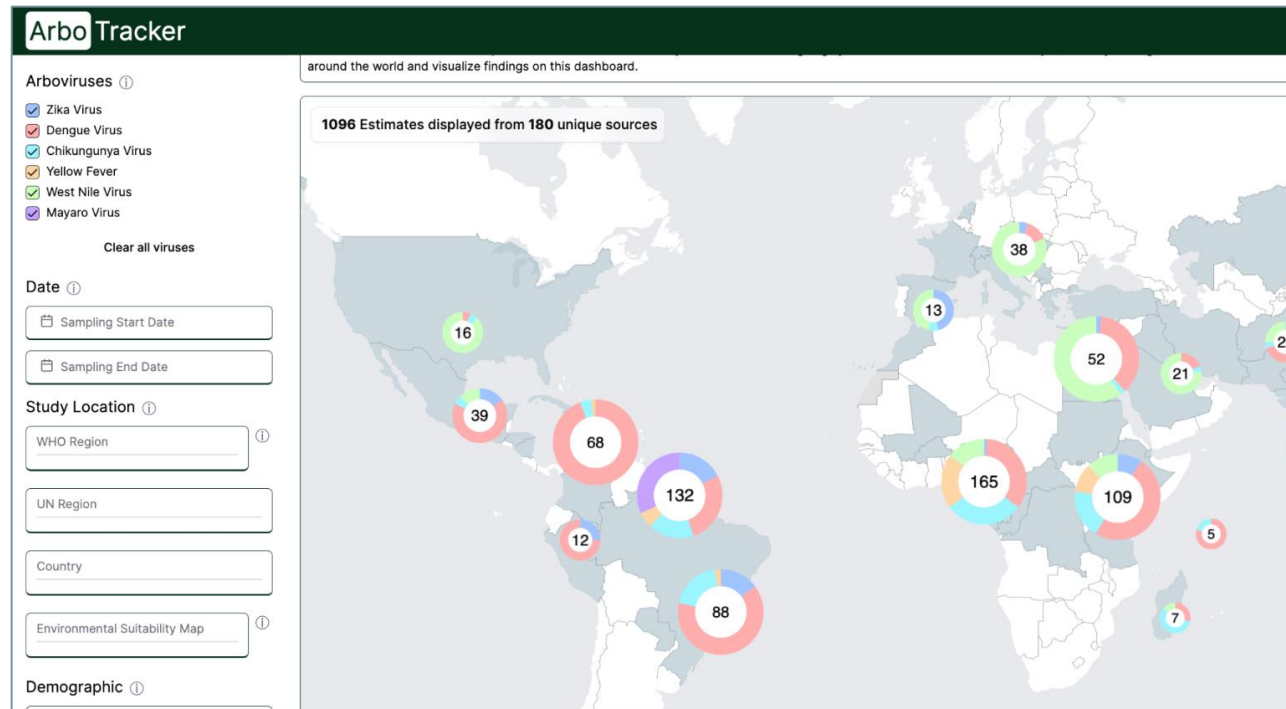
SARS-CoV-2 SeroTracker

Data platform and dashboard for SARS-CoV-2 serosurveys.

[Visit the SeroTracker](#)



ArboTracker: 1000+ seroprevalence estimates from 6 pathogens are available to explore on our new tailored dashboard



- Interactive filters and visualizations
- Downloadable custom datasets
- Update bi-annually
- Submit sources directly to our team
- Dashboard demo



Introducing our newest dashboard in collaboration with
WHO and FAO: MERSTracker

New and notable compared to other SeroTracker dashboards: More epi data types, and more species!



Includes studies **beyond seroprevalence**, including viral/PCR testing and studies with genomic testing



Bringing **OneHealth** to the forefront, now including studies in both **animal and human populations** to understand the scope of infection data across important reservoirs

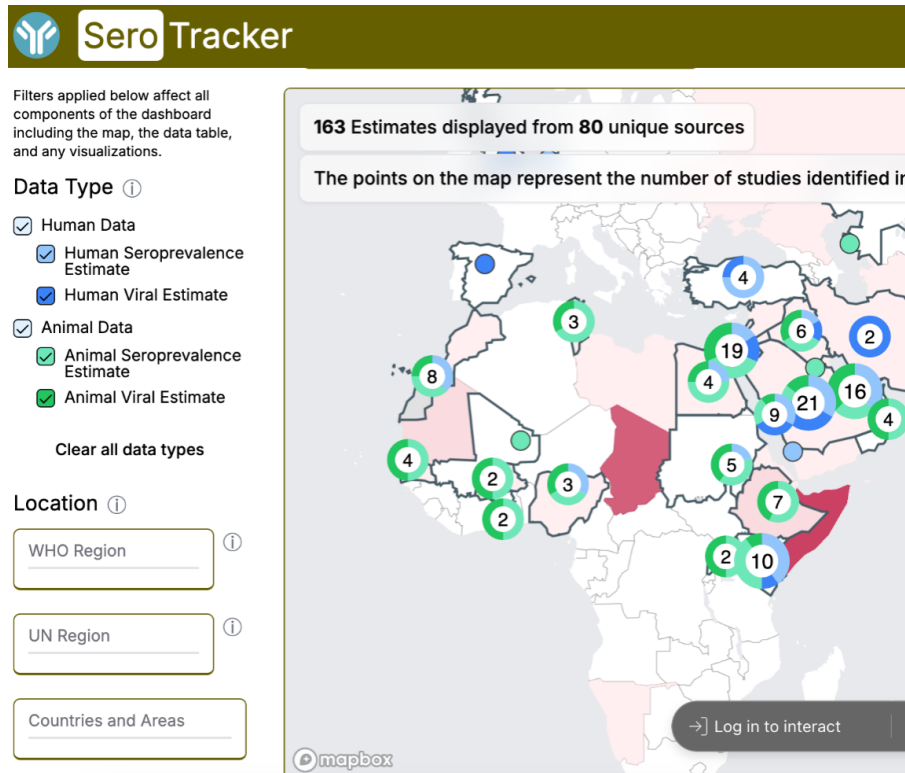


New filters and visualizations **tailored to unique MERS use cases** in consultation with WHO and FAO, laboratory and MERS research experts, academics, on-the-ground field researchers, and relevant policy makers/MoH members.



Map overlays featuring FAO and WHO data to further explore context of MERS research

Live demo: 160+ viral, serological, and genomic studies in animals and humans displayed on our new dashboard



<https://new.serotracker.com/>

- Exploring studies on our map dashboard
- Map overlay features using the 'customize' tool
- How to use our filters to explore available data
- Data table view
- Visualizations across studies & population types

Example use case: Complete a background literature review targeted at niche areas of interest, with linked studies

1

Data type

☒ Human Data

☒ Human Seroprevalence Estimate

☒ Human Viral Estimate

☐ Animal Data

☐ Animal Seroprevalence Estimate

☐ Animal Viral Estimate

Clear all data types

Human Estimates

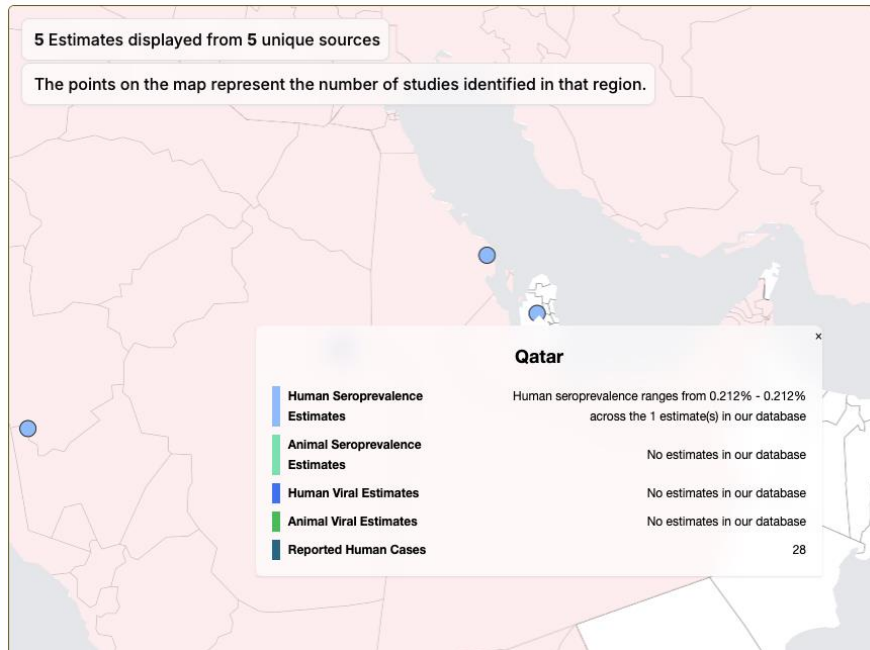
Age Group

Sample Frame

Blood donors

Countries and Areas

Saudi Arabia Qatar



Download CSV

Cite Us

Data Dictionary

Reset all filters (2 currently applied)

- Compile set of studies according to topic of relevance, **completing a background literature review for a report, paper, or situational brief in seconds**
- Easily download filtered studies into Excel sheet

Example use case: Explore studies that did genomic sequencing to understand circulating clades, test info, and accession numbers

2

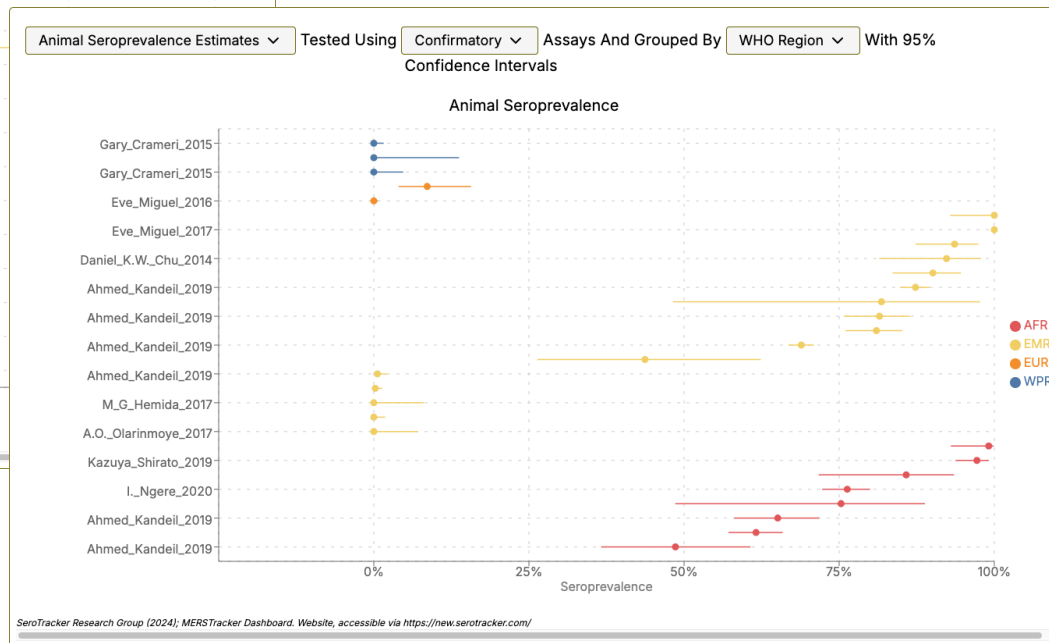
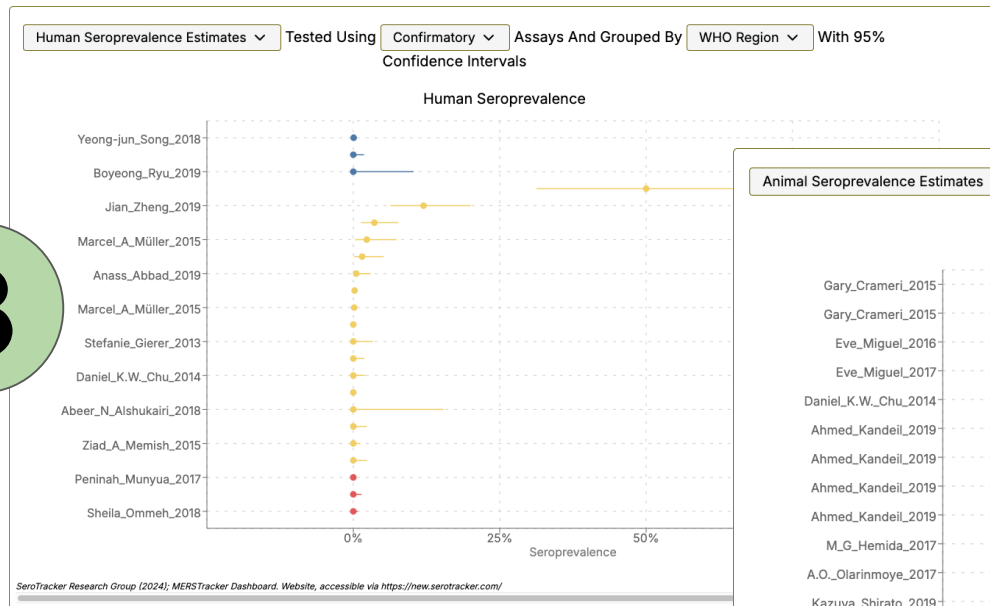
Explore Genomic sequencing data in our database ⓘ

[Download CSV](#) [Cite Us](#) [Data Dictionary](#) [Add/Remove Columns](#)

| Estimate ID ↑↓ | Animal Species ↑↓ | Genome Coverage ↑↓ | Clade ↑↓ |
|---|--|--------------------|----------|
| Animal_Oman_Notreported_2013 | Dromedary Camel | Partial S gene | B |
| Animal_Kenya_Free-roamingherds_2016_2018 | Dromedary Camel | Full length | C2 |
| Animal_UnitedArabEmirates_Farms_2015_2014 | Dromedary Camel | Full length | A |
| Animal_Qatar_Animalcontactsofhumancases_2013 | Dromedary Camel | Partial S gene | N/A |
| Animal_SaudiArabia_Farms_2014_2015 | vab or NP Horse | Full length | N/A |
| Animal_SaudiArabia_Farms_2017 | Dromedary Camel | Partial S gene | C |
| Animal_Egypt_Farms_2015_2017 | Goat Horse Cattle Sheep Donkey Buffalo | Partial S gene | N/A |
| Animal_UnitedArabEmirates_Livestockmarkets_2015 | Dromedary Camel | Full length | B |

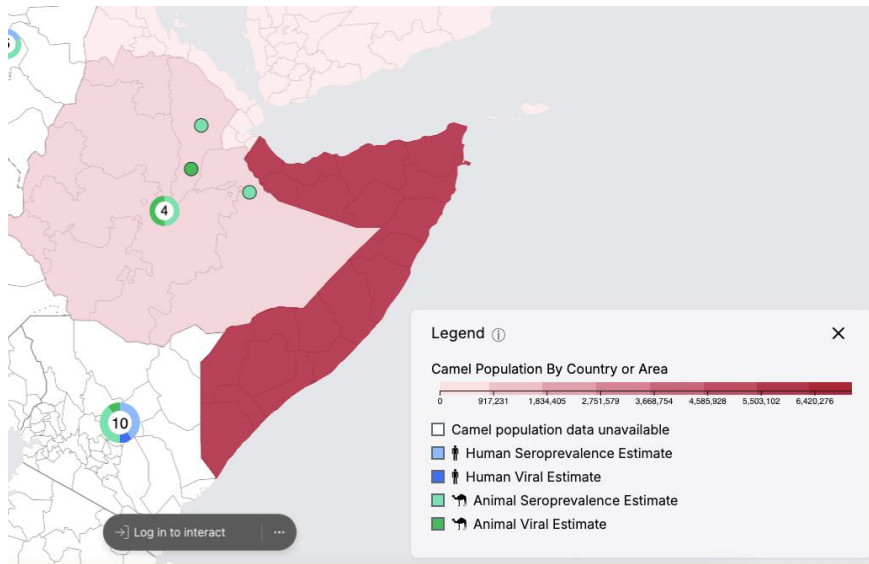
Example use case: Compare estimates across key variables including animals vs. humans; general population vs. higher risk of exposure, viral vs seroprevalence estimates, and more

3



Example use case: Visualize surveillance data gaps against camel density maps and other FAO/WHO data (more tools to come)

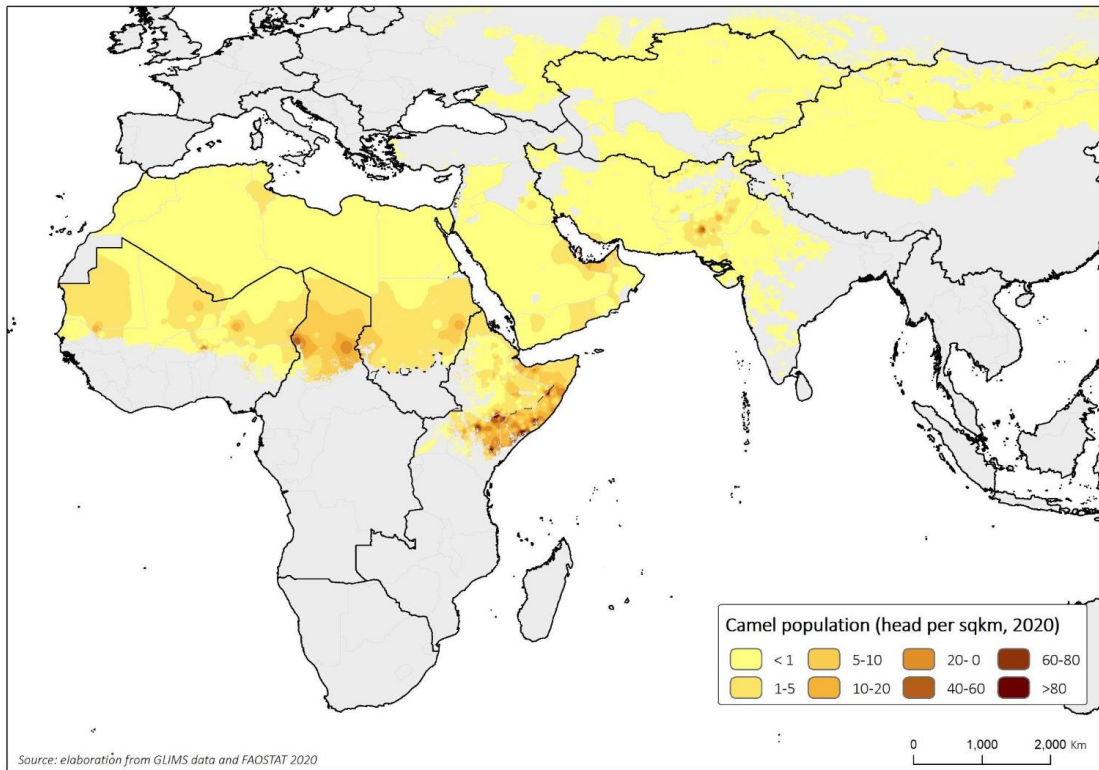
4



- **Maps showing camel population** - darker means higher density
- **Investigate gaps in serosurveillance and viral surveillance** where there may be exposure risk
- Further exciting feature development to come!

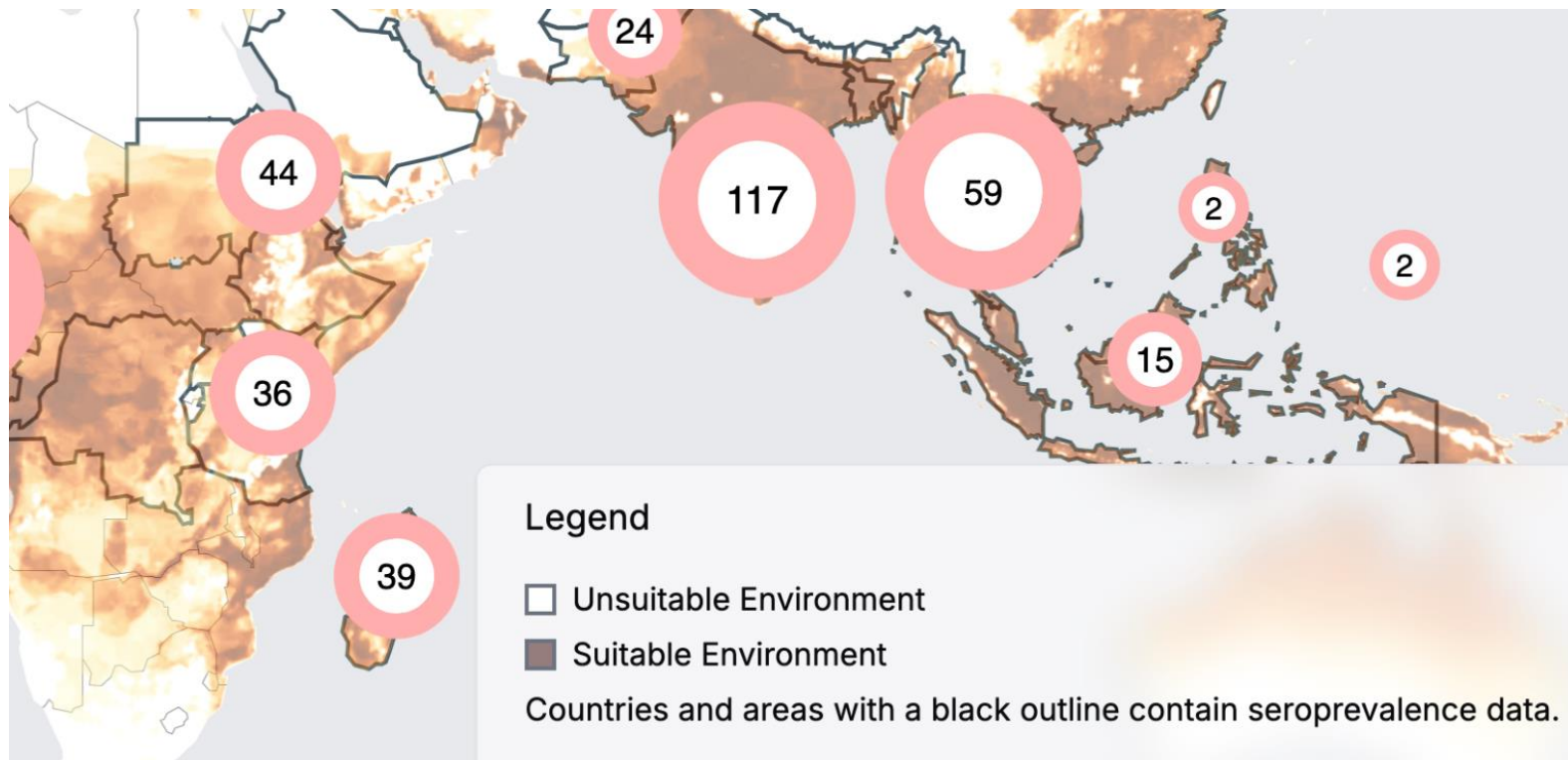
Camel population data from the dashboard is supplied entirely by the Food and Agriculture Organization of the United Nations, through the FAO STAT Statistical Database for Live Animals, last updated on 2 August 2022 and available at: [Live Animals \(National - Global - Annual\) - FAOSTAT - Datasets - FAO catalog](#)

Upcoming features: Swapping out our camel population map overlay with modelled densities from FAO, and more overlay options to come



- **Static map underlayer** with more geographically specific information on camel population
- Head per square kilometer (2020)

Upcoming features: Swapping out our camel population map overlay with modelled densities from FAO, and more overlay options to come



Similar example from our Arbovirus dashboard with map showing vector density.

Prospective ideas for 2025 and beyond: Expanded features, data update, meta-analyses, automated literature review tools



Continuing MERSTracker

- New search to capture additional sources - **submit to us on our new site!**
- Additional dashboard features to launch
- Contact us if you have requests, feedback, or ideas



Updating meta-analyses

- Working with WHO and FAO to analyze synthesized data and describe metadata in joint paper
- Continuing to expand visualization and data feature options



AI Automated Lit Reviews

- Training AI to conduct search & screening using various review datasets
- Very high prelim Sn & Sp: approaching 90%+
- Generalizable results, promising future for automated dashboard updates

Thank you very much to WHO and FAO for support in creating the MERS dashboard.

We would also like to acknowledge funding from the Canadian Institutes of Health Research (CIHR) for SeroTracker, the Public Health Agency of Canada via the COVID-19 Immunity Task Force, the University of Calgary, and contributions from other partners & funders over the last four years.



Re CoD ID



colorado school of
public health



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Country/Territory-
Wide Studies

Regional Studies

Additional resources & references

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A world map with a light blue background. Numerous colored dots are scattered across the map, primarily concentrated in North America, Europe, and Asia. The dots are in three colors: blue, orange, and red. Some dots are solid, while others are semi-transparent or have a gradient. The size of the dots varies, with larger dots appearing more frequently in Europe and North America. The map shows the outlines of continents and countries in a light grey color.

Q&A

Moderated by Alice Simniceanu

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