

# WorldPop

February 2023



Welcome to our new newsletter!

Pictured: Senior Research Fellow Dr Sarchil Qader with a census survey team in Benin.

## Making decisions count everyone, everywhere

Welcome to our first newsletter of 2023. Every 3 months we will keep you up to date with what's happening in our open, geospatial, demographic research programme.

We produce estimates of populations with age/sex breakdowns for each 100m x 100m grid square on the planet. These are often used as default, open access datasets for UN agencies planning humanitarian and development interventions, and help governments fill census gaps

This month we focus on our recent [co-development and capacity strengthening work](#), introduce a [new interactive health and development atlas](#) we produced for the Children's Investment Fund Foundation, review [new projects](#) and summarise how our population open data were [used by academics around the world in 2022](#). We'll also list recent [academic journal articles and datasets](#) produced by our team.



## Co-development and Capacity strengthening



Over the past 3 months we have worked with with national statistics offices, universities, ministries of health and other government and non-governmental organisations in Thailand, Papua New Guinea, Zambia and Kenya, have provided training for Ghanaian colleagues who visited us at the University of Southampton, and ran a virtual online workshop for statisticians in Guinea and Benin.

[In Thailand](#) (pictured above) our Director, Prof Andy Tatem and Senior Research Fellow, Dr Chris Nnanatu, together with the UNFPA, ran a 5-day workshop for more

than 50 participants from the Thai National Statistical Office, other government departments, academia and a range of agencies in Bangkok. The workshop covered GIS in data collection and statistical analysis in Thailand, top-down disaggregation modelling and bottom-up modelled estimation of population and data for modelling.

In November a WorldPop team comprising of Dr Attila Lazar, Dr Hal Voepel and research technician Amy Bonnie travelled to [Papua New Guinea](#) to train staff at the country's National Statistical Office, other government departments and external organisations including the University of Papua New Guinea in population estimation techniques.



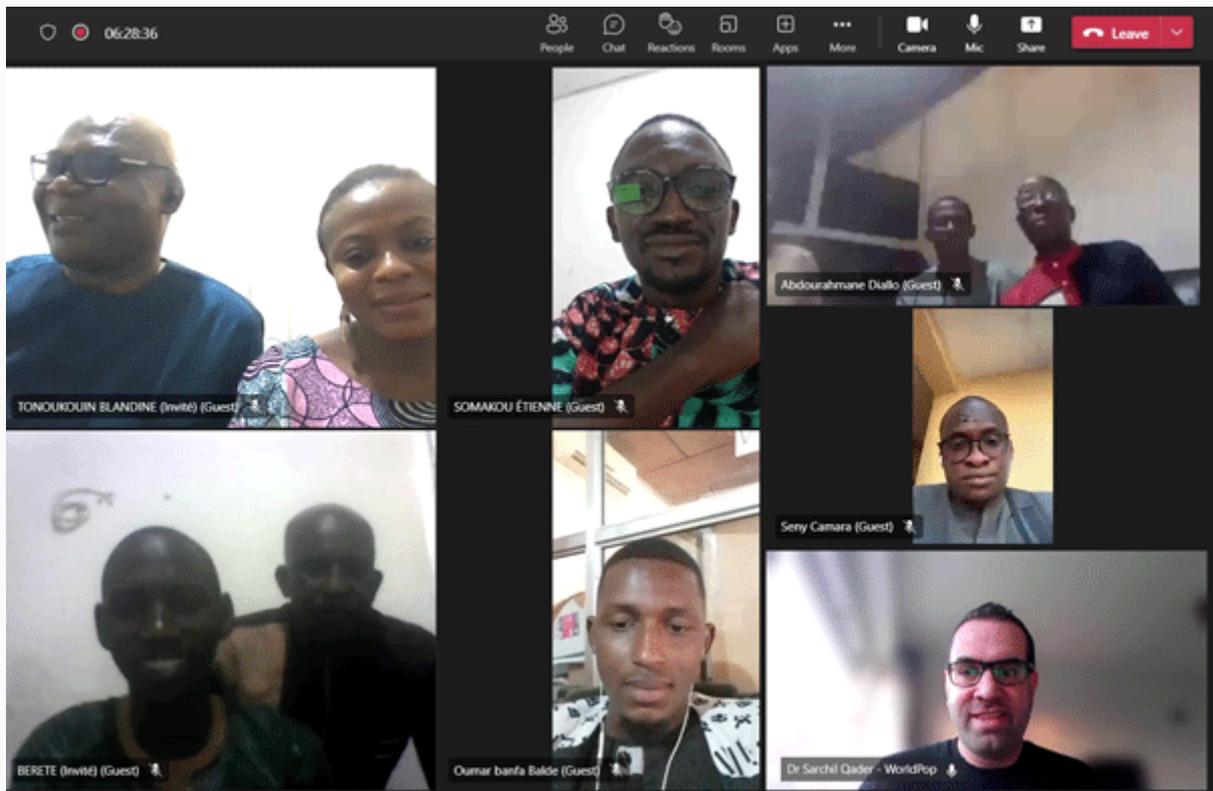
Senior Enterprise Fellow Heather Chamberlain and GIS Research Technician Tom Abbott (pictured above) travelled to Lusaka, Zambia to run workshops for the Zambia National Statistics Agency and the country's Ministry of Health as part of our on-going [GRID3 project](#) work. The aims of the workshops were to support analyses of Zambia's recent national census, and provide training in the use of geospatial data and mapping for COVAX and routine immunisation programmes.



Heather also travelled with Research Fellow Dr Assane Gadiaga (above) to Nairobi, Kenya to present our open population data and gridded population estimates as part of a [workshop organised by the DHIS2 project](#).

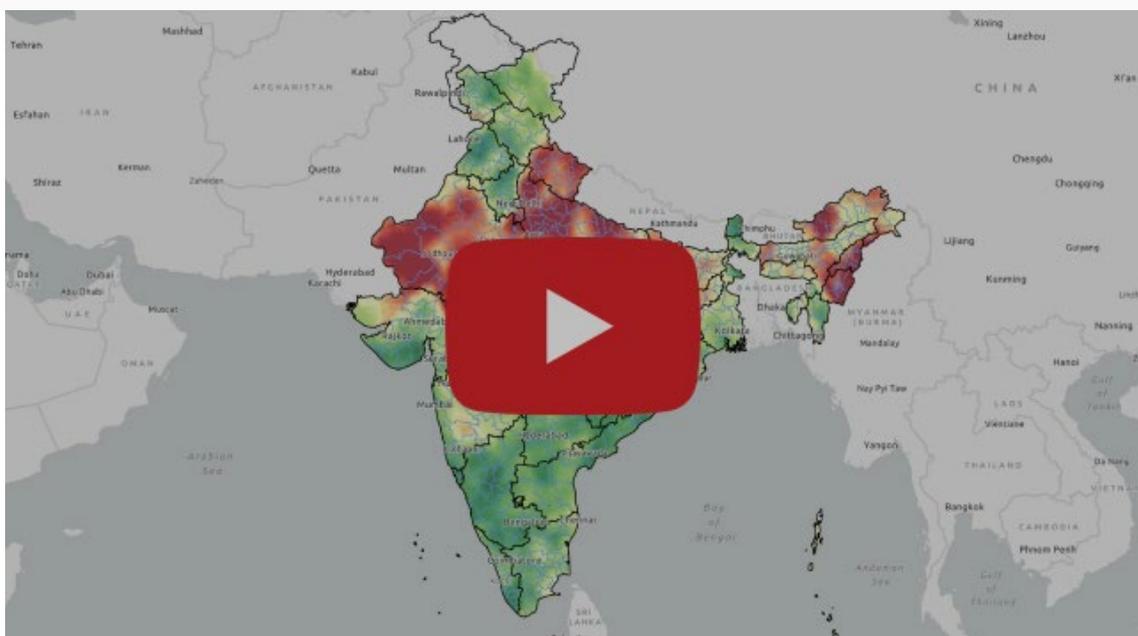


Visitors from the Ghanaian Ministry of Health, Ghana Health Service and University of Ghana joined us at the University of Southampton for [5 days of intensive training](#) in QGIS and programming in R. The workshop was organised by Dr Kristine Nilsen as part of our [Countdown to 2030](#) project and covered the use of GIS applications, QGIS and R programming to estimate and map population sizes by age and sex.



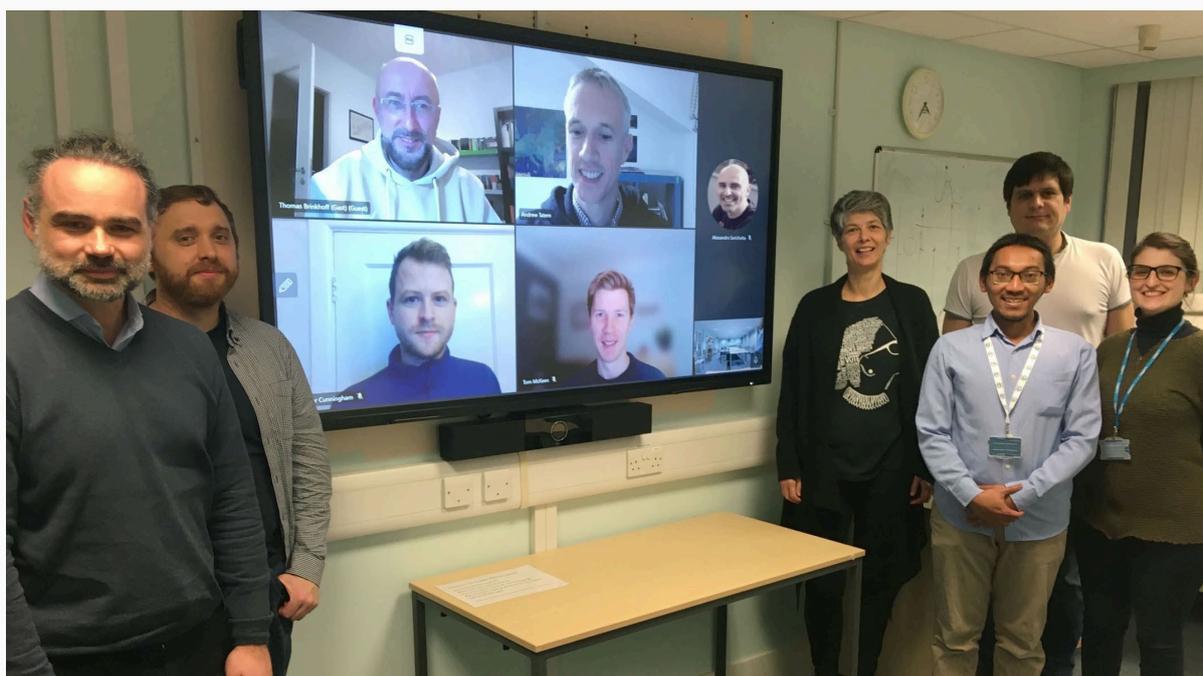
In December Senior Research Fellow Dr Sarchil Qadar ran a [2-day bi-lingual virtual workshop](#) for cartographers working for Guinea's National Institute of Statistics and Benin's National Institute of Statistics and Demography to assist preparation for censuses in their countries.

For more information on top-down and bottom-up population modelling see [WorldPop gridded population estimate datasets and tools. How are they different and which should I use?](#)



Our new interactive [India Web Atlas](#) has been produced with the Children's Investment Fund Foundation ([CIFF](#)) to support their child health and development work in India. Produced by our team led by Senior Research Fellow Dr Carla Pezzulo, the Atlas displays fine grained estimates of multiple child health and development indicators built using georeferenced survey data and satellite imagery derived metrics.

## Updating our global datasets

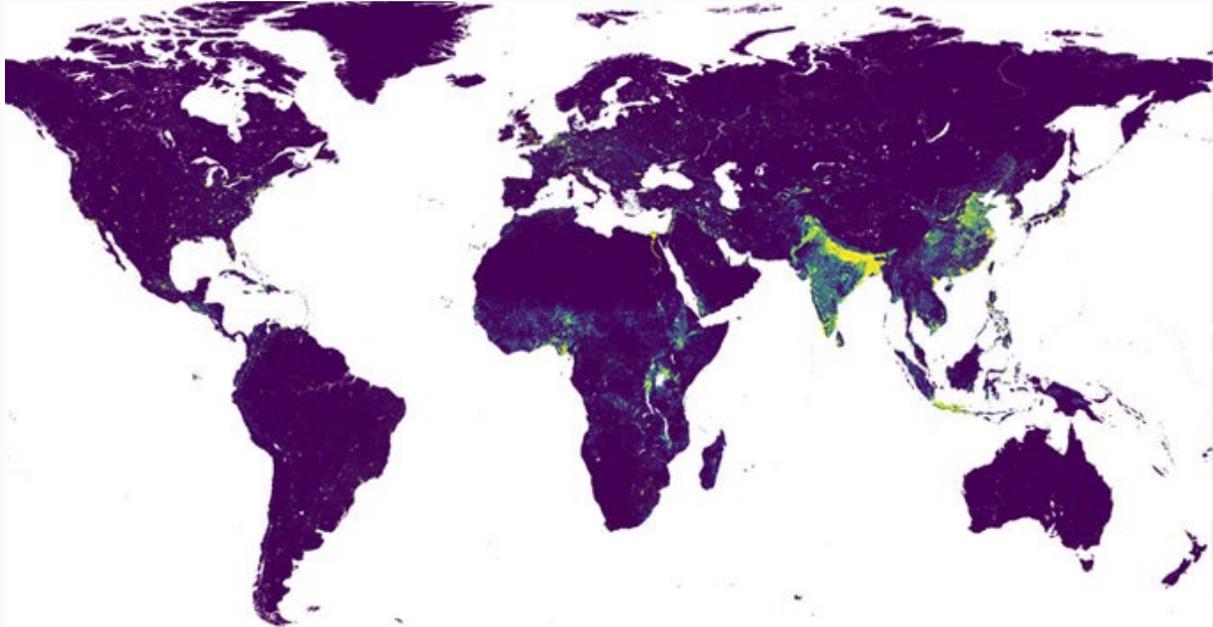


Our Global 2 project kicked off at the end of last year and is already making substantial progress toward updating and improving our global population datasets.

The increasing growth of use of WorldPop open demographic data, particularly for health, humanitarian- and development-related applications, models and platforms, has led to a substantial rise in custom requests for maintenance and updates, and in particular, projections beyond 2020.

[Global 2](#) is our 2-year, Gates Foundation funded project that involves collaboration with colleagues in the University of Southampton's School of Social Sciences and Jade University, Germany. Outputs will include new census, survey, and estimate data, incorporate fine-scale building and settlement mapping, and provide population forecasts to 2030.

## New projects



In addition to the [10 geospatial and demographic projects](#) we are currently working on we have recently started two new projects.

### UNHCR Sample Framework

Senior Research Fellow Dr Sarchil Qader and Research Fellow Edith Darin are working with the United Nations High Commission for Refugees (UNHCR) to gauge if novel sources of data (satellite imagery and digital traces) and advanced modelling techniques (spatial data manipulation and Bayesian statistics) can help define adequate sampling frames for surveying internally displaced people.

### Supporting the Census Capacity of National Statistical Offices in Latin America and the Caribbean

Dr Qader has also recently been awarded a University of Southampton Higher Education Innovation Fund grant (FELS-HEIF) to work with the United Nations Population Fund (UNFPA) to organise and run a workshop and training in Panama. The aim is to train NSO staff on preparing necessary input datasets for our user-friendly preEA Tool package, which will assist with resource and logistics calculations for upcoming national censuses.

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## Introducing WorldPop PhD students



WorldPop is a great place for early career researchers to develop their knowledge and skills in population estimation methodology. Here is an overview of some of the students working towards their PhDs in the group.

Working from top left - [Winfred Dotse-Gborgbortsi](#) was recognised in last year's [ERSC Outstanding Early Career Impact award](#) for his work on geospatial analysis for Ghanaian maternal healthcare delivery and international policy. He has worked on several WorldPop projects including [Mapping vaccination coverage in Nigeria](#), and has recently submitted his PhD thesis for examination.

[Fatumah Atuhaire](#) has a BSc in Education (Mathematics, Economics) from Makerere University, Uganda and a Master in Mathematical Sciences from the University of Stellenbosch, South Africa. She joined us in 2021 as a research assistant on the [Seasonality of COVID-19](#) and [MIDAS](#) projects.

[Theo Chan](#) is nearing the end of his PhD journey focusing on investigating model selection techniques for Bayesian point-referenced spatial and spatiotemporal models. In between completing his thesis, Theo is currently supporting several of our projects on investigating healthcare and immunization inequities in low- and middle-income countries.

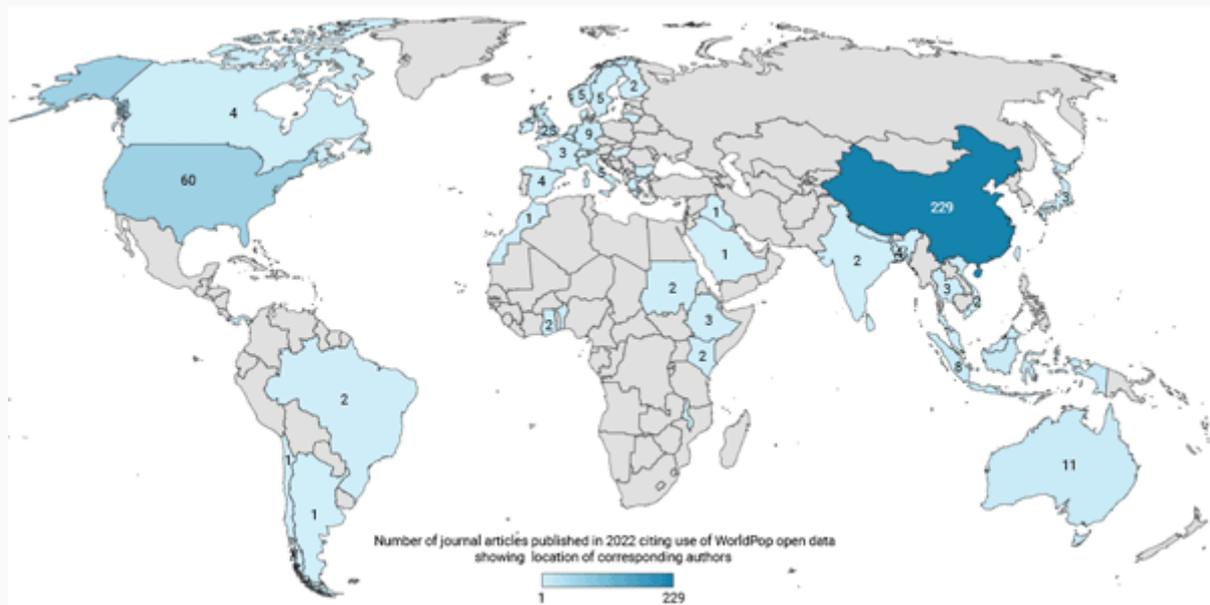
[Tuli Amutenya](#) has extensive data management experience working at the Namibia Statistics Agency. While contributing analytical work on our projects, Tuli is exploring and evaluating various population projection methods, focusing on using geospatial datasets to improve small area estimates.

[Zhifeng Cheng](#) has recently joined us from completing a Masters in Geographic Information Science at the Chinese Academy of Sciences in Beijing. He is investigating how social networks mediate human behaviours and how the resultant discrepant or coordinated behavioural responses matter for public health.

Finally, [Wole Ademola Adewole](#) is a graduate of the University of Lagos and is a recipient of an Alan Turing 2022 Enrichment Award to support his research on improving settlement classification and population estimation. He led geospatial analyses to support a number of African countries through the GRID3 project, which contributed to the global fight against COVID-19.

We wish them the very best in their PhD studies - as well as their valuable contributions to WorldPop's research portfolio.

## [Research impact - who cited our open data in 2022](#)



Our open population data continue to have a vital and influential role in research throughout the world. In 2022 more than 400 journal articles not authored by WorldPop researchers cited [our open data](#) as a source underpinning their work, and many more made use of our open datasets.

Accounting for more than 220 peer-reviewed articles that cited our data, the most frequent users were associated with Chinese research and education institutions. This research was mainly financed by Chinese government initiatives – with the National Natural Science Foundation funding over 80 studies.

Thematically, our data were mainly used on work which focused on climate or environmental issues, which accounted for over 40% of studies. About 20% reporting on health-related issues (including 5% on COVID-19), 20% social or political issues, and about 15% focused on methods.

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## [Our latest research papers](#)

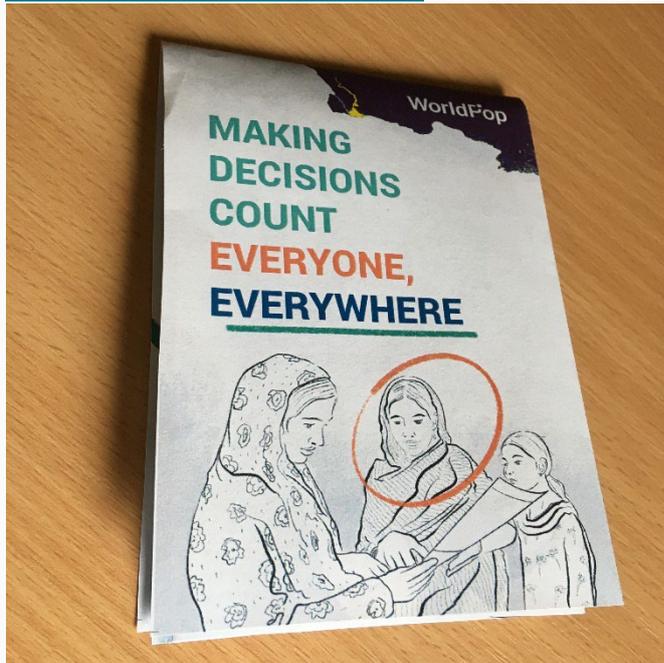
Our team authored or co-authored more than 10 research papers in the past 4 months, including significant papers on:

- zero dose and under immunised children (e.g. [Estimates of the number and distribution of zero-dose and under-immunised children across remote-rural, urban, and conflict-affected settings in low and middle-income countries](#) )
- the use of satellite data in population estimation (e.g. [The Population Seen from Space: When Satellite Images Come to the Rescue of the Census](#) )
- mapping the feasibility of non-pharmaceutical interventions (e.g. [High-resolution estimates of social distancing feasibility, mapped for urban areas in sub-Saharan Africa](#) )
- high-resolution estimation of health coverage inequalities (e.g. [Geographic inequalities in health intervention coverage – mapping the composite coverage index in Peru using geospatial modelling](#))
- providing geospatial analysis of women's health (e.g. [Spatially Varying Intergenerational Changes in the Prevalence of Female Genital Mutilation/Cutting in Nigeria: Lessons Learnt from a Recent Household Survey](#) )
- adding to our understanding of the impact of COVID-19 (e.g. [Prevalence of common adverse events experienced following COVID-19 vaccination and its associated factors in Ghana: Cross-sectional study design](#))

See our [publications list](#) and search more than 200 highly cited papers published since 2004.

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## Our new brochure



Is [online](#) and available to download.

A physical copy of this lovely thing can be yours - for free - just [message us](#) with your mailing details and we'll pop one in the post\*.

\*As our print run is limited only the first 100 requests will be sent a copy.

## **We hope you enjoyed our newsletter.**

If you did, please share it with your friends and colleagues.

Our next edition will be published in May 2023.

**Subscribe to our newsletter**



The WorldPop research programme, based in the School of Geography and Environmental Sciences at the University of Southampton, is a multi-sectoral team of researchers, technicians and project specialists that produces data on population distributions and characteristics at high spatial resolution.

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