

WorldPop

May 2023



Welcome to our new newsletter!

Pictured: Senior Research Fellow Dr Chris Nnanatu with the Hon Nasir Isa Kwarra, Chairman of the National Population Commission at our Population Modelling workshop in Abuja, Nigeria.

Making decisions count everyone, everywhere

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

WorldPop produces 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](#), we update our progress on our [Global 2 project](#), review [new projects](#) and list recent [academic journal articles and datasets](#) produced by our team.

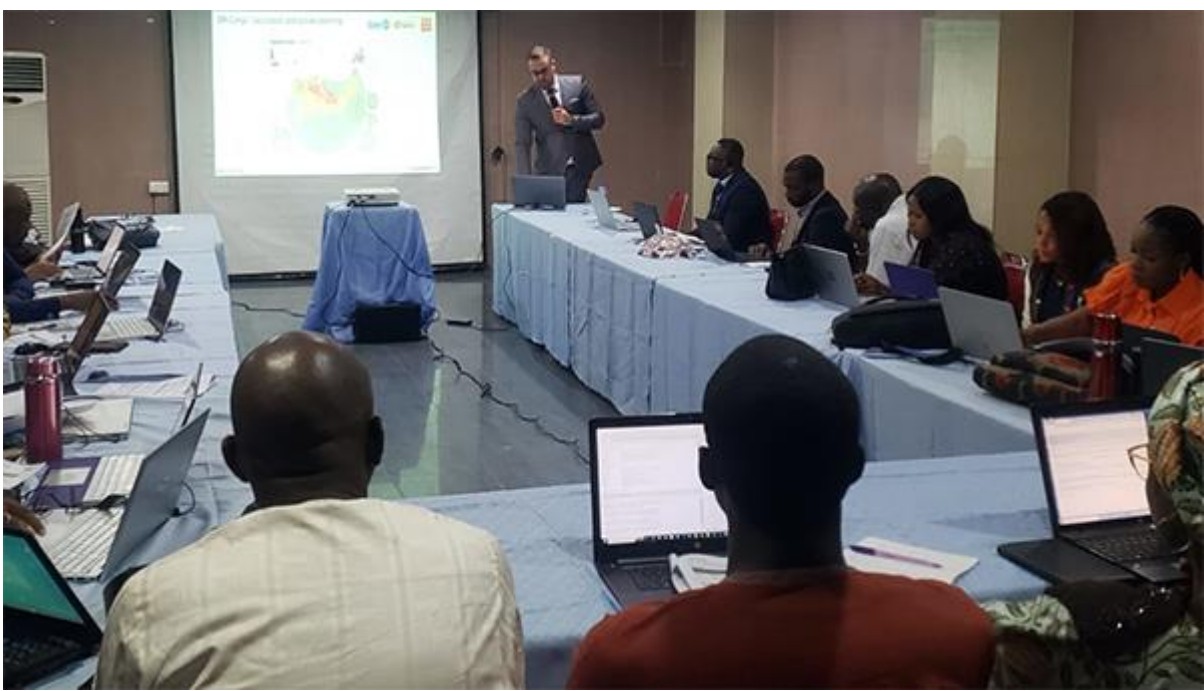


[Co-development and Capacity strengthening](#)



NPC Chairman, the Hon. Nasir Isa Kwarra, Federal Commissioners and participants at the WorldPop workshop

WorldPop experts visited Abuja, Nigeria to run two workshops as part of our GRID3 Phase II project. The workshops were run for staff at the National Population Commission (NPC) and the National Bureau of Statistics (NBS) in support of Nigeria's 2023 national population and housing census. Senior Research Fellows Dr Sarchil Qader and Dr Chris Nnanatu with Research Fellow and Geospatial Data Analyst, Dr Ortis Yankey were supported by GRID3 Country Director, Muhammad Nazir Haliru in running the consecutive 5-day workshops. [Read more...](#)



Dr Sarchil Qader presenting the preEA Workshop

Following his work in Abuja, Chris Nnanatu travelled to Nnamdi Azikiwe University in the south of Nigeria to run a 4-day workshop for statisticians and students and work with academics at the university's Laboratory for Interdisciplinary Statistical Analysis. [Read more...](#)



Chris Nnanatu running a population modelling workshop at Nnamdi Azikiwe University

In April Research Fellow Dr Assane Gadiaga travelled to Hoima, Uganda to run a week-long workshop on Digital Microplanning - Geospatial Population Modelling for Ministry of Health statisticians as part of our [GRID3 UNICEF project](#).



Dr Assane Gadiaga leading a population modelling workshop

WorldPop researcher Winfred Dotse-Gborgbortsii journeyed to Ghana to join deliberations at the Ghana Health Service Senior Managers Meeting. The theme of the 3-day meeting was "Enhancing Primary Healthcare Approaches Towards Achieving Universal Health Coverage", and Winfred gave an address highlighting progress achieved during our recently completed [Countdown to 2030](#) project and plans for future work with our Ghanaian partners.



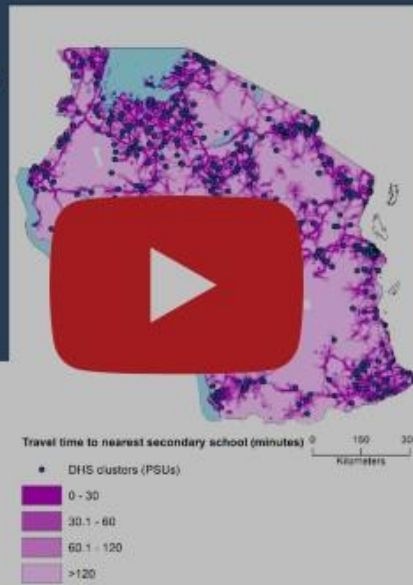
Winfred Dotse-Gborgbortsii addressing the Ghana Health Service Senior Managers Meeting



Data ^{2/3}

2. Cluster locations superimposed to the travel time to nearest secondary school map in Tanzania (mainland).

- **Computing travel time surface:** school locations triangulated with ancillary spatial data on elevation (DEM), obtained from HydroSHEDS dataset, land cover, obtained from MERIS GlobCover, and road networks (Open Street Maps) and other online resources such as the National Geospatial-Intelligence Agency (NGA) and MapCruzin, using Access Mod version 5 software



- travel time to the nearest school as a measure of access to secondary school
- The map shows that 91% of clusters fell within 2 hours of distance to the nearest secondary school, 43% of clusters were within 30 minutes, 30% between 30 minutes and 1 hour and 18% between 1 to 2 hours. Only 9% of clusters, were greater than 2 hours from nearest school.

United Nations Commission on Population and Development

On 14 April Senior Research Fellow, Dr Carla Pezzulo spoke on Factors associated with attending secondary school in Tanzania at the United Nations Commission on Population and Development, 56th Session side event:

[Application of](#)

[Geospatial Approaches to Facilitate Universal Education and Lifelong Learning](#)

- co-hosted by UNFPA and UNESCO.

Journal paper: [Understanding factors associated with attending secondary school in Tanzania using household survey data](#)

[Global 2 update](#)

Global 2 is a Gates Foundation-funded project, where we are working to update our gridded population estimates to 2030. We have been working at pace over the past few months and much of the ground work for the project has been accomplished. The 'Mastergrid' which establishes country boundaries is complete and covariates used to inform estimates have been verified and evaluated. Next steps include a review of available censuses and age/sex data sources.

We aim to release country datasets as they are completed and are very much on track to publish these new updated datasets in the coming months.

[Read more...](#)

Geospatial insight: The Women Transforming Our World



Dr Natalia Tejedor Garavito (on the far left of the photo) at the Women Transforming Our World event

Senior Enterprise Fellow [Dr Natalia Tejedor Garavito](#) took part in the panel discussion at a Southampton Geospatial initiative, *The Women Transforming Our World* as part of International Women's Day on 10 March. Speakers included Charlie Dacke, Head of Geospatial Technology and Standards at the Office for National Statistics. Dr Kate New, Data Scientist at Ordnance Survey and Dr Dianna Smith, Associate Professor at the University of Southampton. As well as hearing from women who are leading innovative work using geospatial data, the event provided support and encouragement to build professional networks for women starting and navigating their geospatial careers.

WHO-GVIRF 2023

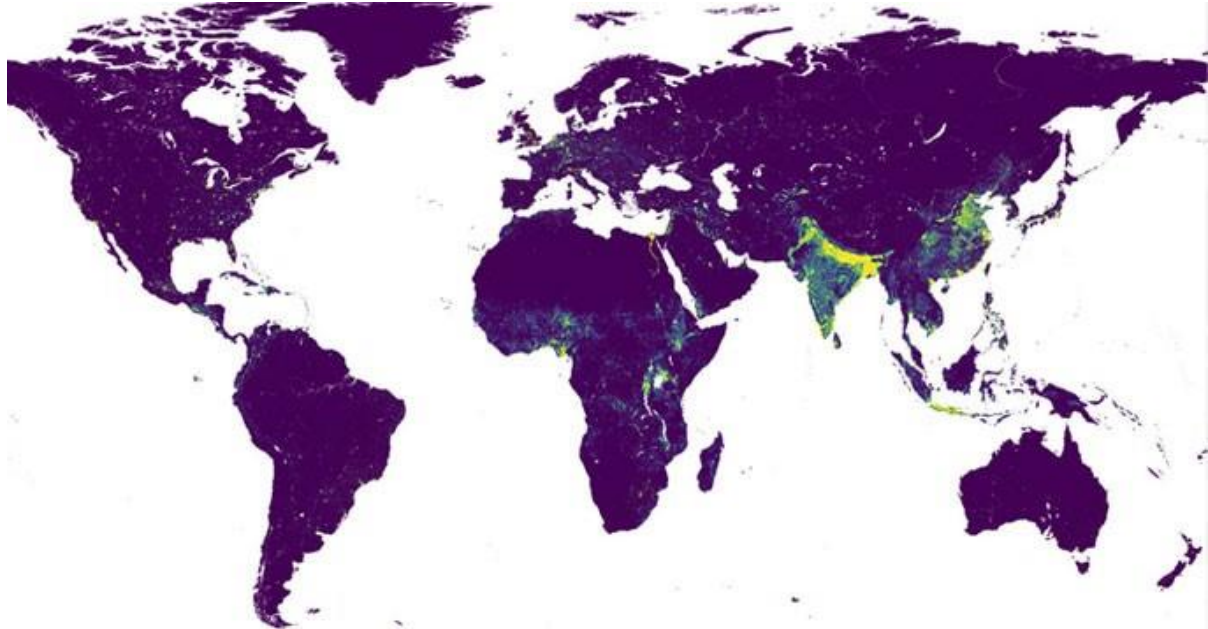


Dr Edson Utazi speaking at the Global Vaccine and Immunization Research Forum

In March Dr Edson Utazi attended the World Health Organisation's [Global Vaccine and Immunization Research Forum \(GVIRF\)](#) in the Republic of Korea, where he presented and discussed [our work with Gavi, the vaccine alliance](#) on mapping the distribution of zero-dose children and their characteristics in low- and middle-income countries (LMICs).

This was a great opportunity to interact with scientists and other stakeholders involved in vaccine development and manufacturing. Dr Utazi highlighted the need for vaccine technologies and delivery mechanisms that will enhance the ability of vaccination programs in LMICs to reach zero-dose and under-vaccinated communities and distribute life-saving vaccines.

New projects



Four new projects have been started in the past 3 months, adding to our programme of [18 geospatial and demographic projects](#).

Population and SDG indicators by Degree of Urbanisation (DEGURBA)

In March 2020 the 51st Statistical Commission of the United Nations adopted the Degree of Urbanisation (DEGURBA) method. DEGURBA is a standardised means to delineate cities, towns, suburbs, and rural areas for international statistical comparison. Led by WorldPop Director, Professor Andy Tatem, the aims of the project are to test the strength of the DEGURBA concept and encourage its use by National Statistical Offices in low- and middle-income countries.



Photo credit: UN Women [Humanitarian Work with Refugees in Cameroon](#), 2016 cc by-nc-nd 2.0

[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.

[Our latest publications](#)

The United Nation's International Organization for Migration (IOM) have published our chapter on *Geospatial data integration to capture small-area population dynamics* as part of their free-to-download handbook: [Harnessing Data Innovation for Migration Policy: A Handbook for Practitioners](#).

GEOSPATIAL DATA INTEGRATION TO CAPTURE SMALL-AREA POPULATION DYNAMICS

Andrew J. Tatem,¹ Claire A. Dooley,² Shengjie Lai,³ Dorothea Woods,⁴ Alex Cunningham⁵ and Alessandro Sorichetta⁶



SATELLITE DATA



MOBILE PHONES

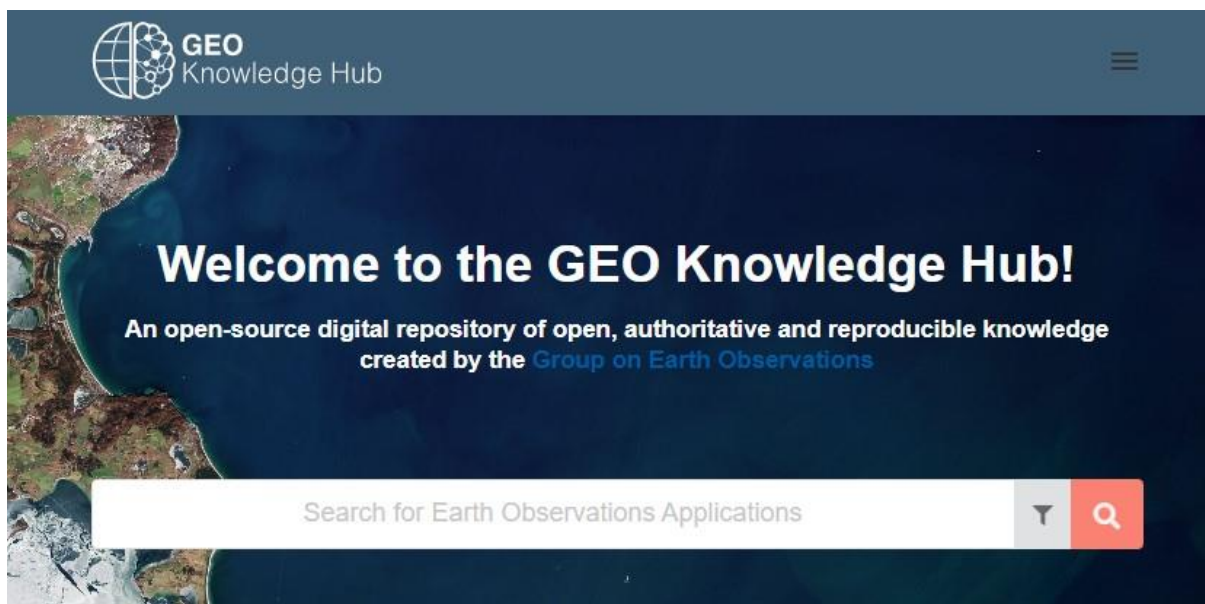


OTHER

Summary

In this chapter, we highlight the importance of small-area data on population distributions for supporting policymaking. We emphasize how population distributions vary in different ways at different spatial and temporal scales. Various “big” data sets now exist to capture some of these dynamics, each with their own strengths, but also many drawbacks. We discuss how harmonizing and integrating data sets into a common geospatial framework enables the strengths of different data sets representing features of mobility and migration to be brought together, building on each other. We provide an overview of data sets and methods for such integration, then present three illustrative case studies where such integration has been used to support decision-making.

The **Group on Earth Observations (GEO)** have published two WorldPop high resolution national population mapping packages on their Knowledge Hub, covering [Top-down population disaggregation modelling](#) and [Bottom-up population estimation](#)



Our team have also authored or co-authored several research papers in the past 4 months, including significant papers on:

- [Social cartography and satellite-derived building coverage for post-census population estimates in difficult-to-access regions of Colombia](#)
- [A subnational reproductive, maternal, newborn, child, and adolescent health and development atlas of India](#)
- [National variation in patterns of bone disease treatment-seeking behaviors: A study of more than 50,000 hospital admissions between 2008 and 2021](#)
- [Exploring the use of Sentinel-2 datasets and environmental variables to model wheat crop yield in smallholder arid and semi-arid farming systems](#)
- [Quality of maternal healthcare and travel time influence birthing service utilisation in Ghanaian health facilities: a geographical analysis of routine health data](#)

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

Farewell, Adelle

GIS Technician Adelle Wigley leaves WorldPop this month to work as a GIS Analyst at ABPmer - Marine Environmental Research.

Adelle has had a big positive impact on our work since she started with us shortly after completing her MSc in Applied GIS and Remote Sensing at the University of Southampton. Highlights over the past 6 years were her work on the [ZIKA project](#), mapping births and pregnancies, and her outstanding contribution to Gavi-funded [Zero-dose projects I and II](#), mapping un- and under-vaccinated children in vulnerable settings. Her skills have been in great demand as she has also made important contributions to a range of other projects during her time with us, and has contributed to [several academic journal articles](#) in collaboration with colleagues at WorldPop and further afield.



Adelle says: "I have really enjoyed working at WorldPop and being part of such a great team, and I will be sad to leave! Though I am looking forward to learning new skills and contributing to projects such as offshore wind development and marine conservation. This may seem a bit different to my work with WorldPop - but I have spent many years sailing, living, and working on boats!"

We're sad to see Adelle leave, but wish her the very best in her new post and are sure she will flourish in her work with the GIS and Data team at ABPmer.

We hope you enjoyed our newsletter.

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

Our next edition will be published in October 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.

