



Data Innovation

Introduction

Oxford Policy Management is committed to helping low- and middle-income countries achieve growth and reduce poverty and disadvantage through public policy reform. We provide analytical and practical support throughout the policy cycle, from research and policy design to implementation, performance monitoring, and evaluation.

With over 40 years' experience and more than 400 staff across a global network of offices, we work across the policy cycle to deliver projects that deliver real and lasting change.

Our combination of cutting-edge research and understanding of decision making and policy processes in low- and middle-income countries has enabled us to collaborate with many of the leading names in development policy – including global consultancy practices, universities, and major financial institutions. It has also resulted in a large number of multilateral, governmental, and non-governmental funders commissioning our services. Among others, we have worked with the UN, the European Commission, the World Bank, Oxfam, DFID, and Save the Children.

We facilitate change by working with leaders and key reformers within and outside of government to build teams capable of solving policy implementation

challenges. We work in all areas of economic and social policy and governance, including health, finance, education, climate change, and public sector management. We draw on our local and international sector experts to provide the very best evidence-based support.



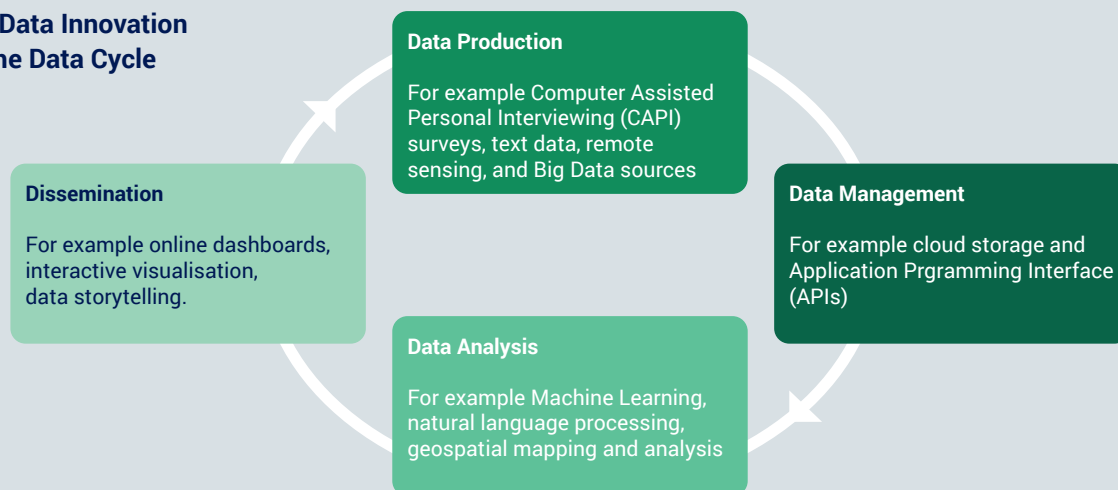
“The innovations resulting from the creative new uses of data could prove to be one of the most life-changing events of this era for everyone.”

From the World Development Report 2021.

Our approach to data

We have significant experience in advising and assisting governments and donor agencies on collecting data and employing data analysis techniques for the public good. Our extensive expertise in delivering data-related work puts us at the forefront of the emergence of data innovation as a new ecosystem. By combining existing methodological approaches with modern data science techniques and our deep domain knowledge, we can deliver the best results for our clients.

Chart 1: Data Innovation across the Data Cycle



How we innovate

While big data techniques have been around for some time, applying data innovation to research and policy analysis in development is relatively new. We are frontrunners in this space, thinking of data innovation holistically and combining it with broad and deep sectoral expertise to address the full data cycle of any project or programme, starting at the data collection stage and ending with results dissemination:

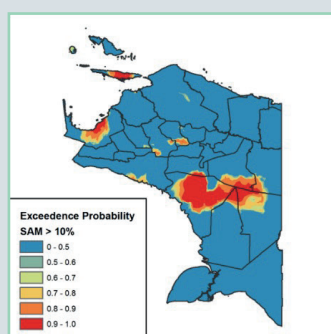
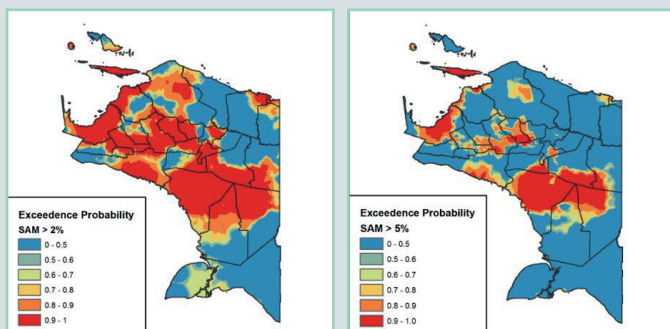
- **Data production & management**
The types of data being used in our work are changing. Our inventive approaches to collect and gather data assist us in establishing an innovative workflow right from the start. For primary data collection, we are able to deploy Computer Assisted Personal Interviewing (CAPI), Computer Assisted Telephonic Interviewing (CATI), or other remote interviewing techniques, with instant online synchronisation and secure data storage on our servers. When necessary, we are able to bring structure into text data and access public social media conversations online. We are able to augment analyses with other large secondary data-sources where needed, for example remote sensing data or data from other online platforms using APIs.
- **Data analysis & dissemination**
Based on project requirements, we deploy a full range of methods and techniques to fulfil the needs of the project. We have used geostatistical analysis techniques to map indicators in data-poor contexts, applied machine learning models for predictive analyses, and used text mining to conduct qualitative research and social media listening. We also use modern data science techniques to improve our causal inference work in impact assessments, where possible.

We focus on presenting results from data-related work as effectively as possible. Recently, this has meant presenting results in interactive dashboards that can be accessed online and updated automatically for a broad range of audiences.

What sets us apart:

- Over 40 years' worth of deep domain knowledge of policy analysis allows us to identify, advise on, and make use of the benefits of data innovation in low- and middle-income countries across a range of policy areas.
- Our data experts can build on extensive experience in the international development data ecosystem to make sense of what is changing for government and policymakers.
- We can deploy the full range of analytical techniques required to maximise data analysis impact in this changing ecosystem: geospatial analysis using satellite imagery, natural language processing, predictive analytics, interactive visualisation using dashboards.
- We know how to integrate these techniques into well-established monitoring, evaluation, research, and learning (MERL) approaches, to augment insights for our clients.
- We have a strong team of in-house experts and access to a tight knit community of associates and experts who can use the latest technology required to do this.

Case Study 1: Using Geospatial modelling approaches to predict Severe Acute Malnutrition risk



The prevalence of child malnutrition is recorded through large-scale household surveys, run at multi-year intervals. However, these surveys have a high cost, estimates are provided at high levels of aggregation, survey waves are run at

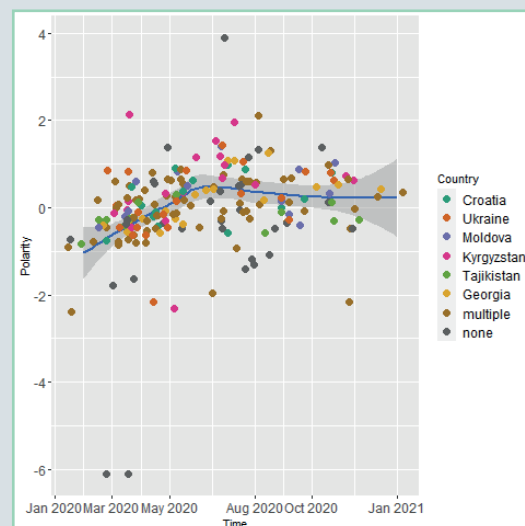
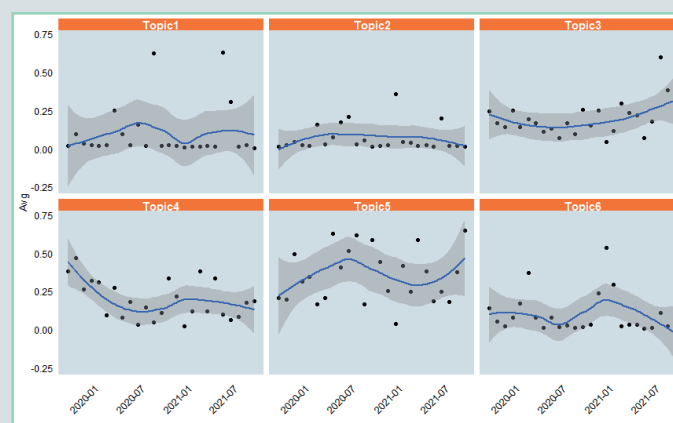
large time intervals, and estimates can have gaps in area coverage. We were contracted by the Children's Investment Fund Foundation (CIFF) to estimate the prevalence of Severe Acute Malnutrition (SAM), the most life-threatening form of malnutrition, using high resolution mapping in Papua, Indonesia and Northern Nigeria.

Together with our partners at Southampton University, we used geospatial modelling approaches by combining geo-located survey data with geospatial data to produce mapped estimates that predicted malnutrition risk in both surveyed and non-surveyed areas. A secondary analysis of cluster-level programme evaluation data mapped SAM for children under two years (0-23 months) of age at 1 km spatial resolution for Papua, Indonesia, and northern Nigeria. The approach used Bayesian geostatistical modelling techniques and publicly available geospatial data layers. We also produced an interactive web-based dashboard to display all the results. This work was published in [BMC Nutrition](#) in 2022.

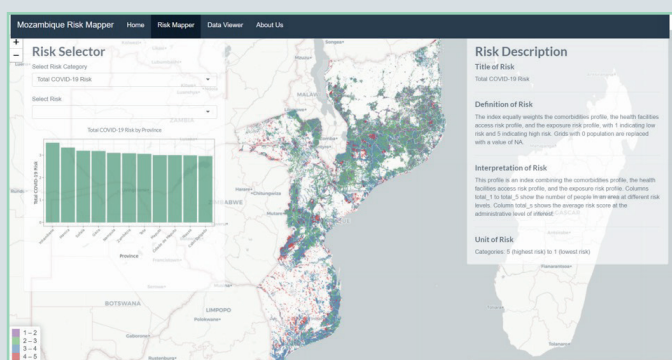
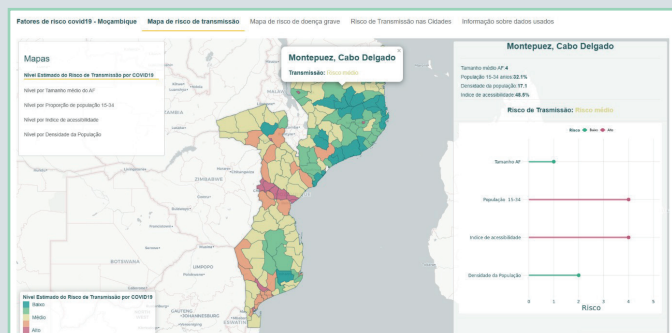
Case Study 2: Natural Language Processing techniques to conduct a Real-Time Assessment

We were contracted by UNICEF ECARO to conduct a Real-Time Assessment of their response to the COVID-19 pandemic in Eastern Europe and Central Asia. In a first iteration of this project, employing a series of Natural Language Processing (NLP) techniques allowed us to draw meaningful insights from a large volume of unstructured text data provided, including sentiment analysis and topic modelling, as well as descriptive visualisations of the most common words mentioned in the context of those topics.

In its second iteration, we used NLP to analyse data from social media in order to identify the topics and issues that mattered for conversations online with respect to COVID-19 and the areas of UNICEF intervention. We analysed data from over 400,000 posts, gaining insights on how topic importance and sentiments towards these topics varied over time.



Case Study 3: Spatial analysis to show the risk level of transmission and risk of severe illness from Covid



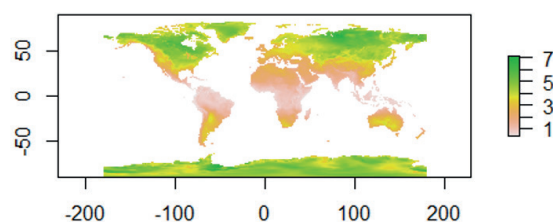
As part of our work with the Government of Mozambique, and partly funded by BMGF, we created a spatial analysis to show the risk level of transmission and risk of severe illness in Mozambique throughout the COVID-19 pandemic. In collaboration with a technical team at the National Health Observatory, and together with colleagues from Fraym and GRID3, we used high-resolution data to map key socio demographic and COVID-19 risk related indicators.

Based on these data, risk levels were calculated and mapped across the country. We included this analysis in an online dashboard used by the National Health Observatory. This dashboard consisted of a dynamic map in which the user could see the different risk levels, and detailed information about districts and areas in the country.

Case Study 4: Using Data Innovation to improve our understanding of extreme poverty

We are managing [DEEP](#), a large, UK FCDO funded research programme on data and evidence to end extreme poverty. DEEP's mission is to build evidence, insights, and solutions that help end extreme poverty. One of DEEP's research themes relates to measuring extreme poverty and how data innovation – using new types of data and new analytical methods – can support governments and decisions makers in more effective targeting of investments.

Day-to-day temperature variability (in Kelvins)



In this context, we have produced a review of how new technology can support better measurement of extreme poverty, which can be accessed [here](#). We are also researching the use of machine learning methods to improve [small area estimation of extreme poverty](#). Finally, we are combining high-resolution poverty estimates derived from geospatial machine learning predictions with high-resolution temperature data to estimate the relationship between [poverty and temperature variability](#).



Contact us

visit our website www.opml.co.uk

For more information on our work in Data and Innovation please click [here](#)

About Oxford Policy Management

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