UN GLOBAL PULSE

20 22

UN Global Pulse Annual Report

Reflections on our Activities and Achievements

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UN Global Pulse is the Secretary-General's Innovation Lab. We work at the intersection of innovation and the human sciences to inform, inspire and strengthen the ability of the United Nations family and those it serves to anticipate, respond and adapt to the challenges of today and tomorrow.

Learn more at unglobalpulse.org or follow at @UNGlobalPulse.

Reflections on our Activities and Achievements in 2022

2022 was a troubled year in which the world had hardly recovered from one crisis – the COVID-19 pandemic – before it faced another – the damage caused by the war in Ukraine. But this challenging year gave Global Pulse a chance to show the value of its innovative work to the UN family, the wider humanitarian sector and society as a whole.

From Asia and Africa to Europe and the Americas, UN Global Pulse and its partners brought innovation and data to bear on the toughest real-life problems. Whether it was working to unlock data for the common good, enabling Indonesia to identify safe areas during the pandemic or allowing aid teams in Brazil to predict refugee movements from Venezuela, we changed the lives of citizens and communities for the better.

Bold in experimenting, quick to learn and focused on results, UN Global Pulse has gone from strength to strength to become a full-scale innovation lab, serving as the UN Secretary-General's innovation lab to achieve the Sustainable Development Goals for humanity's future. We have a strategy aligned with his priorities, which we finalised in 2022. In particular, we back UN transformation with capacity building and methodological support, strengthening the organization's ability to serve people and the planet.

UN Photo / Jonathan Torgovnik

THE EVOLUTION OF UN GLOBAL PULSE

In 2022, UN Global Pulse completed its evolution from being an initiative using data and AI for crisis response to having a much wider role as the Secretary-General's Innovation Lab. Global Pulse is now a worldwide network, advancing responsible innovation in support of his multilateral agenda for the next 25 years: "Our Common Agenda".

The shift to a full lab was the natural outcome of over a decade of teamwork and experimentation. Starting by studying big data signals, we advanced to using machine learning technology to predict humanitarian scenarios. Now with unconventional data sources such as satellites, we co-create both in emergencies and ongoing projects with colleagues across the UN family. Cutting-edge data innovation and artificial intelligence initiatives remain at the centre of our work.

In a fast-changing world, we try to foresee crises rather than merely reacting to them. Along with partners, Global Pulse is pioneering new methods to support a UN 2.0 with data, digital, innovation, foresight and behavioural science capabilities. Of course we recognise that innovation will only earn public trust if it is ethical, safe and inclusive.

As a team, we see the world's man-made and environmental problems and imagine how the future might be different. Using both digital and non-digital tools, we test ideas and gain insights. We experiment and support our partners in their experimentation. "Imagine, build, mobilise," these are our watchwords.

Spread over four continents, Global Pulse has specialist teams in Jakarta, Kampala, Helsinki and New York. Our repositioning as an innovation lab has required us to change how we operate. Our headquarters was historically in New York but we have now downsized this office to focus on UN operations and communities on the ground. The shift allows our expanding teams in Indonesia, Uganda and Finland to deepen collaboration in support of a forward-thinking and proactive UN; a UN fit for the 21st century.

Across our network, Global Pulse has teams representing a range of capabilities:

Jakarta, Indonesia / Dapiko Moto
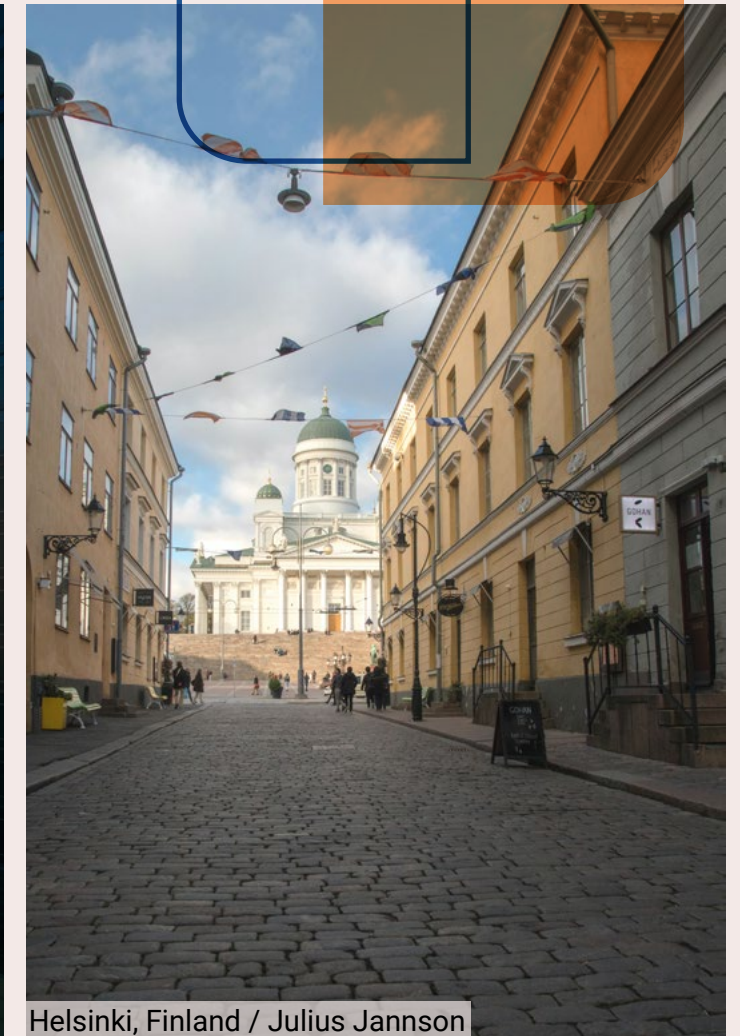
Helsinki, Finland / Julius Jannson

Kampala, Uganda / GettyImages

Specialist Teams

Data Science and AI:

Exploring how new data sources and digital innovations can give insights to decision-makers is the essence of Global Pulse's work. Whether preparing the UN for future crises through real-time event detection capabilities or developing ethical frameworks for data and AI use, our multidisciplinary team works alongside governments and humanitarian and development agencies to make a difference on the ground.

Innovation Scaling:

We scale up the successful innovations and help them to go mainstream. Through an evidence-based support service, the team helps UN agencies and country teams build their capabilities to manage and scale innovations. UN Global Pulse gives colleagues across the UN system access to the necessary mentoring, training, partners and tools to continue their innovation journey.

Social Systems/Behavioural Design:

Global Pulse uses a mixed methods approach, combining qualitative analysis with design principles that give us a range of perspectives when we develop a service or design intervention. The field of social systems contributes to making projects more holistic, as we consider the needs of stakeholders and search for the optimal system to get a project running smoothly.

Strategic Foresight:

Global Pulse defines foresight as a collaborative process to explore possible futures systematically. We do this to anticipate, prepare for and influence the course of change. The team promotes inclusive approaches to thinking about the future, bearing in mind the responsibility we have to future generations and the planet.

Policy:

Innovation must be responsible. Global Pulse contributes to policy frameworks and strategies for the ethical use of AI and digital innovation. We give expertise to governments and the wider UN on data privacy and data protection, as well as guidelines to ensure a safe and equitable digital future.

Knowledge Management:

This involves not only storing and organising information, but also ensuring that everyone is kept informed. We connect teams and facilitate for them, so they have all they need for present tasks and future projects.

Partnerships and Fundraising:

Innovation can't happen without collaboration. Global Pulse nurtures principle-based partnerships that are mutually beneficial. We engage with a broad range of stakeholders, convening both conventional and unconventional partners in the pursuit of sustained funding for innovation and ultimately UN transformation.

Monitoring, Evaluation and Learning:

Global Pulse is not afraid to experiment and try new approaches. At the same time, we recognise that they might not always work. Recently we strengthened our capacity to follow the progress of our projects and make sure we invest our time, energy and money in the most promising areas.

Operations (Administration, Human Resources, Finance, Procurement):

Operations underpins our innovation work at Global Pulse. The team supports colleagues and partners in their projects and seeks to transform how the UN handles procurement, administration and human resources. The team builds trust for new ways of working, increasing efficiency and the effectiveness of Global Pulse's initiatives and projects.

Creative Communications and Design:

Good communications are straightforward, concise and to the point. Global Pulse speaks with a consistent voice while valuing the individuality of contributors. Our team complements traditional reporting with creative practices, making transparent communications an integral part of mobilising action for innovation.

OUR STRATEGY

Global Pulse finalised its Strategy in mid- 2022. Having successfully served the UN in data science and AI, we are now widening our scope to more types of innovation. Our vision is clear: responsible and inclusive digital innovation that serves people and the planet.

The Strategy identified weaknesses at the UN from short-termism to working in silos and suggested opportunities we might take up, such as building coalitions of the like- minded. It called for more out-of-the-box thinking. Our three goals were articulated as advancing digital innovations, facilitating the development of global frameworks and supporting the transformation of the UN family.

In 2022, Global Pulse focused on five thematic areas to which our colleagues contribute, all adding value to the Secretary-General's agenda. These aim to:

- Increase access to the benefits of the digital world
- Include everyone equally
- Restore public trust in tech
- Prevent crises rather than trying to fix them
- Transform the UN into a platform for innovation

The five thematic areas mesh with the Secretary-General's "Quintet of Change", which points the way forward through:

- State-of-the-art data, analysis & communications
- Innovation infrastructure to implement new ideas
- Strategic foresight to help us anticipate rather than react
- Digital tools and transformation to add value
- Behavioural science to help us make better choices

If the themes tell us *what* we are aiming for, then the quintet shows us *how* we will achieve our goals. The UN has vowed to "leave no one behind" as it works towards its Sustainable Development Goals (SDGs) of ending poverty, protecting the planet and ensuring that all people enjoy peace and prosperity.

UN Photo / UNFPA Colombia

OUR STRATEGY:

Ethical Principles

UN Global Pulse was a key actor in an inter-agency working group to set principles for the ethical use of artificial intelligence in the UN system. In particular, we worked closely with the UN Refugee Agency, UNHCR, to give guidance on technical aspects.

In September 2022, the United Nations System Chief Executives Board for Coordination endorsed the Principles for the Ethical Use of Artificial Intelligence in the United Nations System:

The criteria are:

Doing no harm	Defined purpose	Necessity & proportionality
Safety & security	Fairness & non-discrimination	Sustainability
Right to privacy	Data protection & data governance	Human autonomy & oversight
Transparency & explainability	Responsibility & accountability	Inclusion & participation

UN Photo / UNFPA Colombia

EMERGING FROM THE PANDEMIC

From the moment the world learnt it was dealing with COVID-19, Global Pulse sprang into action to help its partners mitigate the crisis. Much of 2020 and 2021 were spent providing the technical support and data needed to understand the spread of the virus and the way people were reacting to and coping with it.

In Bangladesh, there was concern for those packed in Cox's Bazar, the biggest refugee settlement in the world. We worked with UNHCR, the World Health Organization (WHO) and private institutions to conduct epidemic modelling that showed how COVID-19 could spread. This helped health professionals see the implications of proposed policy changes. Minimising the spread of infection, they were able to save health facilities from being overwhelmed and continue holding classes in camp schools.

Indonesia was very hard hit by COVID-19 but the picture was not uniform across this vast country. UN Global Pulse Jakarta took a novel approach, combining traditional data with extremely large data sets gleaned from social media to reveal trends and patterns of behaviour. Our results were so de-

Photo by SJ Objio

Photo by Patrick Assale

Photo by Taylor Brandon

tailed that we were able to pinpoint villages where it was safe to reopen classrooms at a time when most surrounding schools were closed.

And in Africa, in collaboration with WHO, we analysed public discourse on the radio to understand COVID-19-related concerns, rumours and misinformation, leading to vaccine hesitancy. The insights we gleaned enabled health professionals to target correct information to the right audiences.

Over the course of 2022, the outlook for recovery brightened. Despite the emergence of new variants such as omicron, and continued inequality in access to vaccines, the world started to learn to live with COVID-19.

The pandemic served as a wake-up call to organizations, underscoring their need to be resilient, adaptive and ready for future shocks. In light of this, UN Global Pulse Finland conducted a foresight exercise to illustrate what the post-COVID world might look like alongside UN colleagues. Discussion around scenarios teased out the potential implications on the UN system and inspired a brainstorm of actions to mitigate future risks cutting across UN pillars. As a result of the exercise, awareness of emerging issues and the utility of foresight increased.

WAR IN UKRAINE
ANOTHER CRISIS FOR THE WORLD

When war broke out in Ukraine on 24 February 2022, the impact was quickly felt beyond its borders, resulting in a large-scale humanitarian and refugee crisis. By May 2022, eight million Ukrainian refugees had been registered across Europe while a further eight million people were internally displaced in their own country.

UN Secretary-General António Guterres called Russia's invasion "a violation of the UN Charter and international law" and vowed the UN would work to mitigate the impacts of the conflict which has "caused enormous suffering for the Ukrainian people – with profound global implications" on global food, energy and financial markets. Warning that the world is on the brink of a "perfect storm" of crises, the Secretary-General highlights that the war has amplified and accelerated factors such as climate change, COVID-19 and inequalities globally, whilst "threatening to tip tens of millions of people over the edge into food insecurity followed by malnutrition, mass hunger and famine, in a crisis that could last for years."

Humanitarian agencies responded quickly, engaging their long-standing partners. UN Global Pulse began to receive requests from a range of UN counterparts, including UNHCR and the UN Children's Fund (UNICEF).

To respond to the increasingly complex challenges, UN Global Pulse stepped up its work. By early March, we had begun working with UNHCR on estimating population movements. Some of our data science and AI staff in New York shifted their priorities to join the emergency effort for Ukraine.

Assisting UNHCR's Europe Bureau, we used alternative data sources such as Meta to triangulate the mobility patterns of refugees against official figures – or to estimate them in the absence of official figures – with the goal of better understanding the distribution of refugees. We worked closely with UNHCR's Innovation Service and the UNHCR offices in Hungary and Moldova.

Rebeca Moreno Jimenez, Lead Data Scientist with the Innovation Service at UNHCR, commented on how useful the collaboration with Global Pulse had been.

"This was one of the biggest crises in the last 20 years in terms of the speed of displacement. Refugees were crossing the border in a matter of hours, not weeks, and they were going not to one country but to a number of destinations. There was a danger that some countries, needing to account for new arrivals, could be overwhelmed.

"Requests for the same data were coming in from different agencies. UN Global Pulse played a key role in coordinating between them to minimise duplication of data science work. They also provided helpful maps – not necessarily super accurate but showing the trends in real time. This was just what we needed."

"On one occasion, we were trying to locate some refugees we couldn't account for. The map suddenly showed a spike in arrivals at a seaside resort. Out of season, this was strange and we were able to work out that the refugees had gone there."
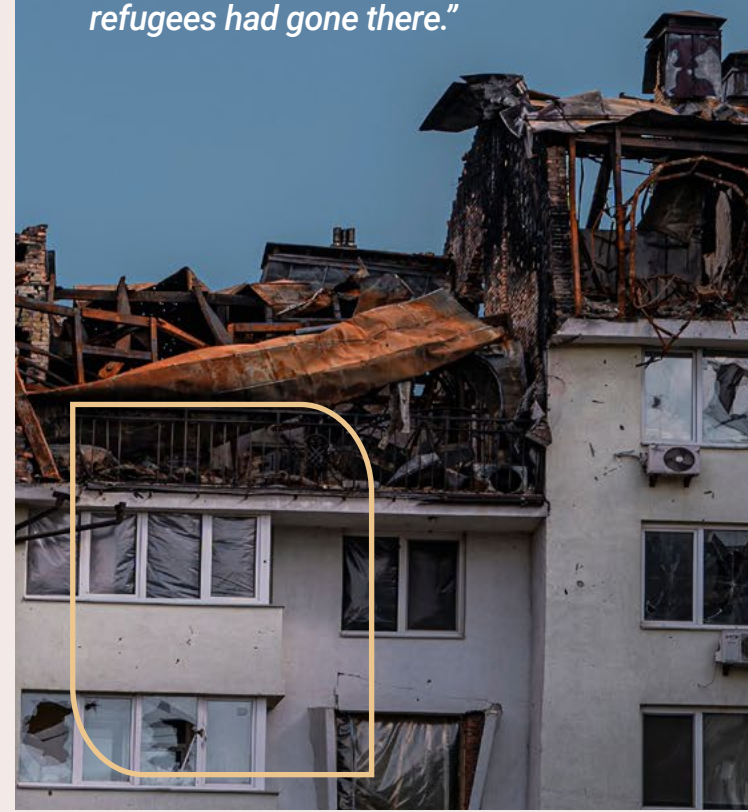
From the early days of the crisis, UN Global Pulse was also in regular contact with UNOCC, which monitors reports and numerous data sources and indicators from country offices around the world to brief the Secretary-General and his Executive Committee.

We received a wide range of requests from UNOCC involving the development and deployment of modern data science techniques, the use of alternative data sources for situational awareness and the development of new methods to address the lack of full data. We generated insights with rapid-turnaround data analysis, contributed to regular briefings of the Secretary-General and his Executive Committee and shared the lessons we had learnt from earlier experiences.

Meanwhile, UN Global Pulse Finland supported internal UN cross-pillar foresight exercises to help think through different approaches to managing crises.

As we entered 2023, our Data Science and AI team convened an informal Ukraine Data Science Cell to build further partnerships. We brought together data scientists and users of big data sources across the UN to share information, methodologies and lessons learnt, as well as coordinate on challenges such as the ethical use of data in the humanitarian response.

The Data Science Cell has emerged as a data science-focused complement to the interagency Information Management Analysis Cell (IMAC), which was chaired by UNHCR and the UN Office for the Coordination of Humanitarian Affairs (OCHA). Currently, the Cell has over 70 members from 16 UN agencies, entities and affiliated organizations.

The Cell identified three main areas where data science could contribute to the Ukraine response:

POPULATION ESTIMATION;
helping to understand the magnitude and nature of displacement

SOCIOECONOMIC IMPACTS;
looking at refugee needs, social integration, livelihoods, return intentions and the broader macroeconomic consequences of the war

SITUATIONAL AWARENESS;
including conflict monitoring and damage assessment

The Data Science Cell is now widening its scope to more general emergency response. In February 2023, it convened to explore ways of helping Türkiye and Syria in the aftermath of the earthquake there.

In 2023, we plan to hand leadership of the Data Science Cell over to a coalition of partner agencies and start publishing some of its work. We hope the Cell can become a standing capacity of the UN and we stand ready to give further support as needed.

Photo by Maksym Tymchyk

Innovation Pathways to Our Common Future

Remaking the UN for modern times is a huge undertaking, involving everyone in our multilateral organization. UN Global Pulse plays a supporting role, helping and empowering our colleagues and partners in this historic upgrade. We run innovation projects, trying out new ideas and approaches, and if we find they work, we scale them up for wider use.

In 2022, the five big issues or themes that UN Global Pulse prioritised in the pursuit of a UN 2.0 continued to be: Achieving fair digital commons and digital Inclusion; restoring trust in tech; preventing and responding to crises and transforming the UN. Specialists from across our network were active in each of these thematic areas.

UN Photo / UN Global Pulse Kampala

FAIR DIGITAL COMMONS

INCLUDING EVERYONE EQUALLY

Although the world is becoming increasingly digitalised, a digital divide persists, with infrastructure and resources still unevenly spread across the globe. UN Global Pulse is working with partners on the ownership and sharing of data, making sure this is done ethically so everyone can benefit.

The Global Data Access Initiative (GDAI), led by Global Pulse, is working to create a platform where the private and public sectors and the UN can share data, tools and insights for the common good. The GDAI aims to harness big data to help people in emergencies and advance development worldwide.

Photo by NASA

The Global Data Access Initiative:
Unlocking stored data for public benefit

Teams involved:

Data Science and AI, with Policy, UN Global Pulse New York

Innovation Scaling, UN Global Pulse Finland

When disasters strike, it can take weeks to find out where the most vulnerable people are and how to help them. Assessments of populations are based on outdated census data and slow, resource-intensive essential needs surveys. Responding organizations need rapid, reliable information on population density and vulnerability, regularly updated and available at a granular level.

This is where the Global Data Access Initiative (GDAI), with advanced tools such as socio-economic mapping, comes in. We aim to speed up the humanitarian response and deliver aid where it is needed most.

The GDAI is a multilateral initiative that aims to make use of the enormous amount of information (big data) that private companies and others hold on members of the public. Our work builds on existing systems.

Data from private telecom companies, stripped of any identifying information about individuals, has already been used to help make better decisions on the ground. GDAI is working to analyse such datasets and expand their use. And we are using AI models on satellite imagery to assess damage caused by natural disasters or conflict.

Throughout 2022, GDAI has been designing repeatable tools, analytical models and codified approaches that can be used in many countries, with different datasets. These efforts will continue in 2023.

Allowing companies and organizations to share not only datasets but also advanced analytics, GDAI's platform is a place for sharing insights. It will offer a rich tapestry of socioeconomic and geospatial information to improve monitoring, targeting and delivery in humanitarian and development interventions.

GDAI in action

We currently have two active "use cases" through which we are trying to develop scalable pipelines to serve end users:

In the Philippines, we have designed a system to use mobile phone data to monitor population density and mobility, and estimate poverty by region. Called "nowcasting", this technique can help humanitarian organizations to predict where people might need food or cash assistance.

In the past, the use of mobile phone data was limited due to challenges in accessing it, extracting the relevant information and applying it on the ground. With our socio-economic mapping tool, we aim to speed up the humanitarian response and support the delivery of aid where it is needed most.

In this project, we collaborate with Globe Telecom, our implementing partner is QuantumBlack, McKinsey's AI arm, and users include Oxfam and Catholic Relief Services.

In another use case with global reach, we are working to develop a collaborative tool to allow human analysts to work with AI models to more rapidly assess damaged buildings after a disaster or conflict. Here we are applying machine learning to satellite images to categorise buildings and critical infrastructure according to the extent of damage, if any. We rely on Very High Resolution (VHR) satellite imagery, a dataset with great potential for reuse in a broad variety of settings.

During the initial response phase of an emergency, gaining information at scale on what infrastructure has been damaged is challenging and can reduce the speed of targeted humanitarian mobilisation. By developing a pipeline that offers data access, AI models for tagging and assessing structures and a user-friendly presentation of results, we hope to give satellite image analysts insights that will enable faster remote evaluations of damage, save on-site resources and support rebuilding.

Our satellite imagery comes from Maxar. Our implementing partners are the Google AI SKAI team, Google. org. and McKinsey. And the key users are the UN Satellite Centre, UNOSAT, UNDP and WFP.

UN Photo / UN Global Pulse

UN Photo / UN Global Pulse

UN Photo / UN Global Pulse
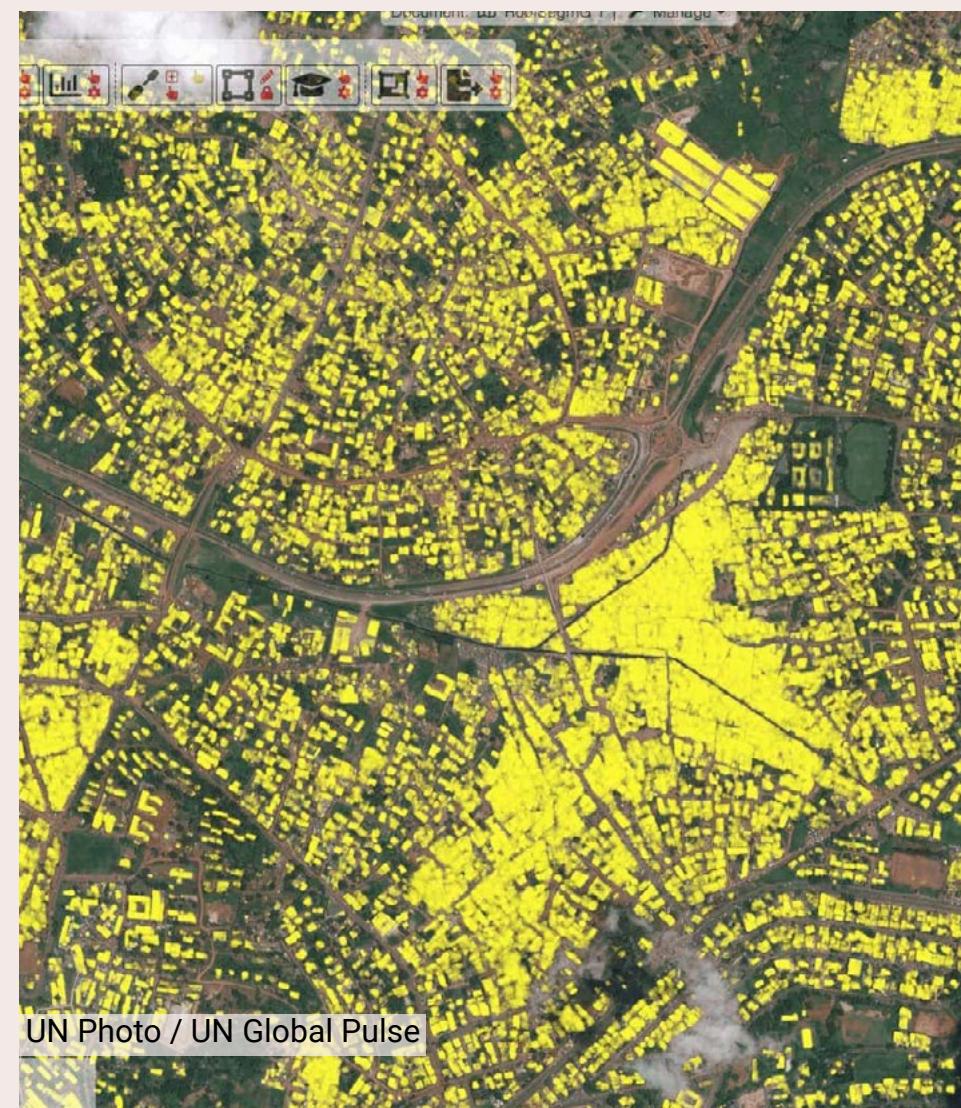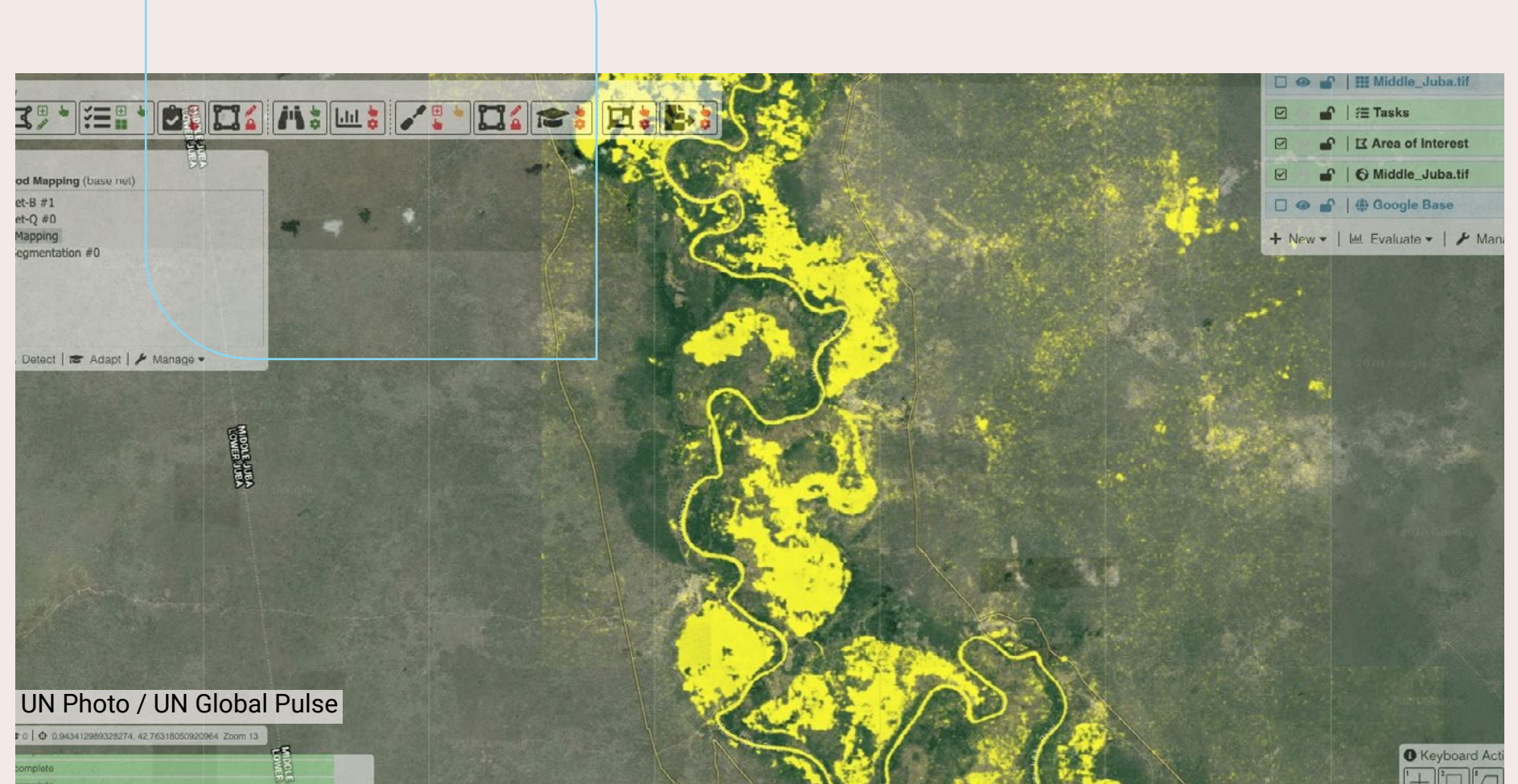
Africa's Data Pioneers:
Harnessing Tech for National Development

Teams involved:

> Data Science and AI, with Policy, UN Global Pulse Kampala

> Data Science and AI, with Policy, UN Global Pulse New York

> Strategic Foresight, UN Global Pulse Finland

New technology offers an opportunity to countries in the Global South to leapfrog over many of their development problems and forge ahead in the 21st century. In this respect, Ghana and Uganda have been pioneers of ethical data sharing for the public good.

Ghana and Uganda are both developing countries that aspire to overcome problems of poverty by bringing the benefits of emerging "Fourth Industrial Revolution" technologies to national development.

Ghana, with a population of 32.83 million, is one of the fastest growing economies in Africa while Uganda is one of the youngest countries in the world. Almost half of its population of 45.85 million are under the age of 15. Uganda also hosts the largest refugee population in Africa.

UN Global Pulse collaborated with the governments of Ghana and Uganda to work out roadmaps for opening up access to data and ensuring the responsible use of Artificial Intelligence. The technical side of exchanging data came under the Fair Digital Commons thematic area while the ethical side came under Restoring Trust – and here our policy team, which helps to develop frameworks for responsible innovation, played an important part.

In Ghana, we worked closely with the Ministry of Communications and Digitalisation. In May 2022, we jointly produced two reports, "Developing Framework for Ethical AI – Roadmap Options for Ghana" and "AI Legislative and Policy
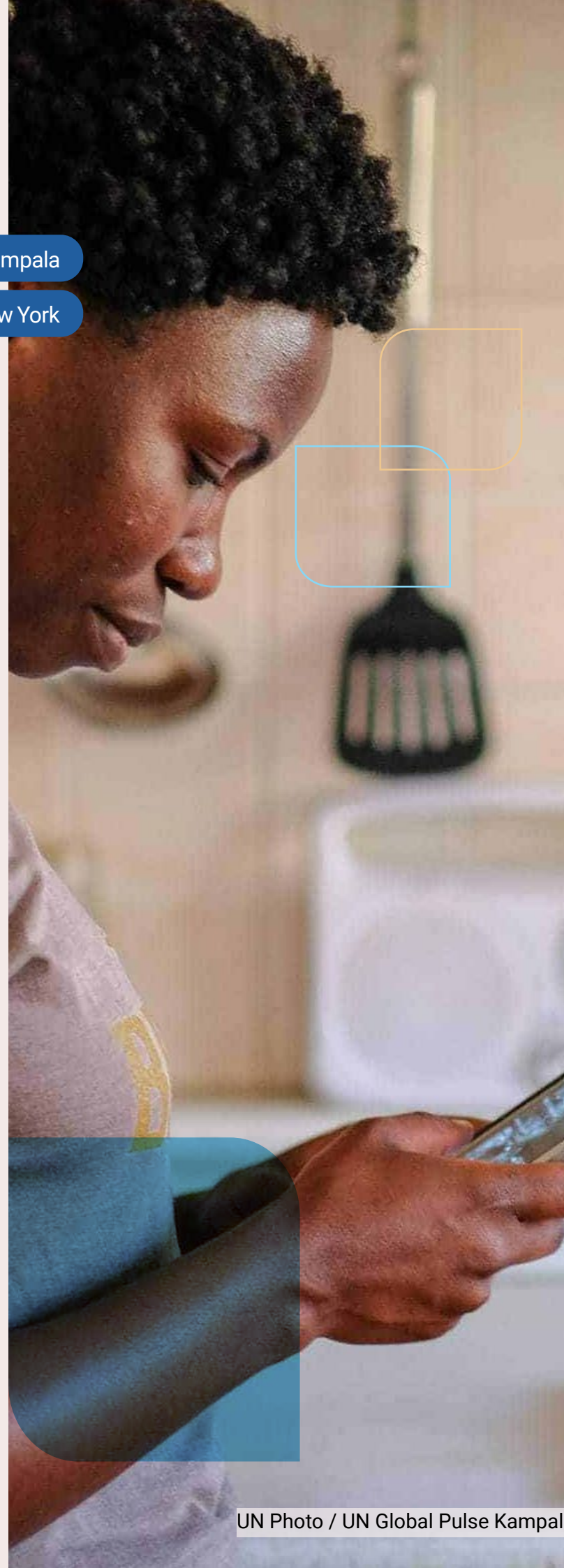
UN Photo / UN Global Pulse Kampala

Mapping in Ghana". We realised that gaps in law and policy gave Ghana a unique chance to innovate and set an example to other countries.

The Roadmap Options noted that the development of frameworks to ensure ethical application of AI technologies to support humanity was "in an embryonic state across all nations". Ghana thus had "a unique opportunity to learn from the steps and missteps of others while developing an approach to the ethics of Artificial Intelligence and related technologies that supports the development of society, promotes social cohesion, empowers individuals and communities and reflects the ethics of Ghanaian society". The report suggested a way forward with eight foundational and 37 guiding principles.

The Legislative and Policy Mapping report reviewed existing laws and policies in Ghana and found that, despite the government's proactive efforts to guide the country towards digital transformation, there was no legislation or policy that specifically addressed risks related to AI ethics or governance.

Regionally and globally, the regulation and governance of AI is in its infancy. "This creates an opportunity for Ghana to establish a robust and appropriate framework early in the evolution of AI application," the report said. "Given the state of development of AI governance and ethics, there is scope for Ghana to innovate appropriate methods and practices to suit the Ghanaian context while at the same time leading by example, not just on the African continent but globally."

Meanwhile in Uganda, UN Global Pulse Kampala partnered with the Ministry of Information and Communications Technology and National Guidance (ICT & NG).

Uganda's National Development Plan to 2025 seeks to make maximum safe use of Fourth Industrial Revolution (4IR) technologies. In 2019, the government established a National 4IR Taskforce, on which UN Global Pulse Kampala was represented. The task force was charged with supporting the development of a Nation-
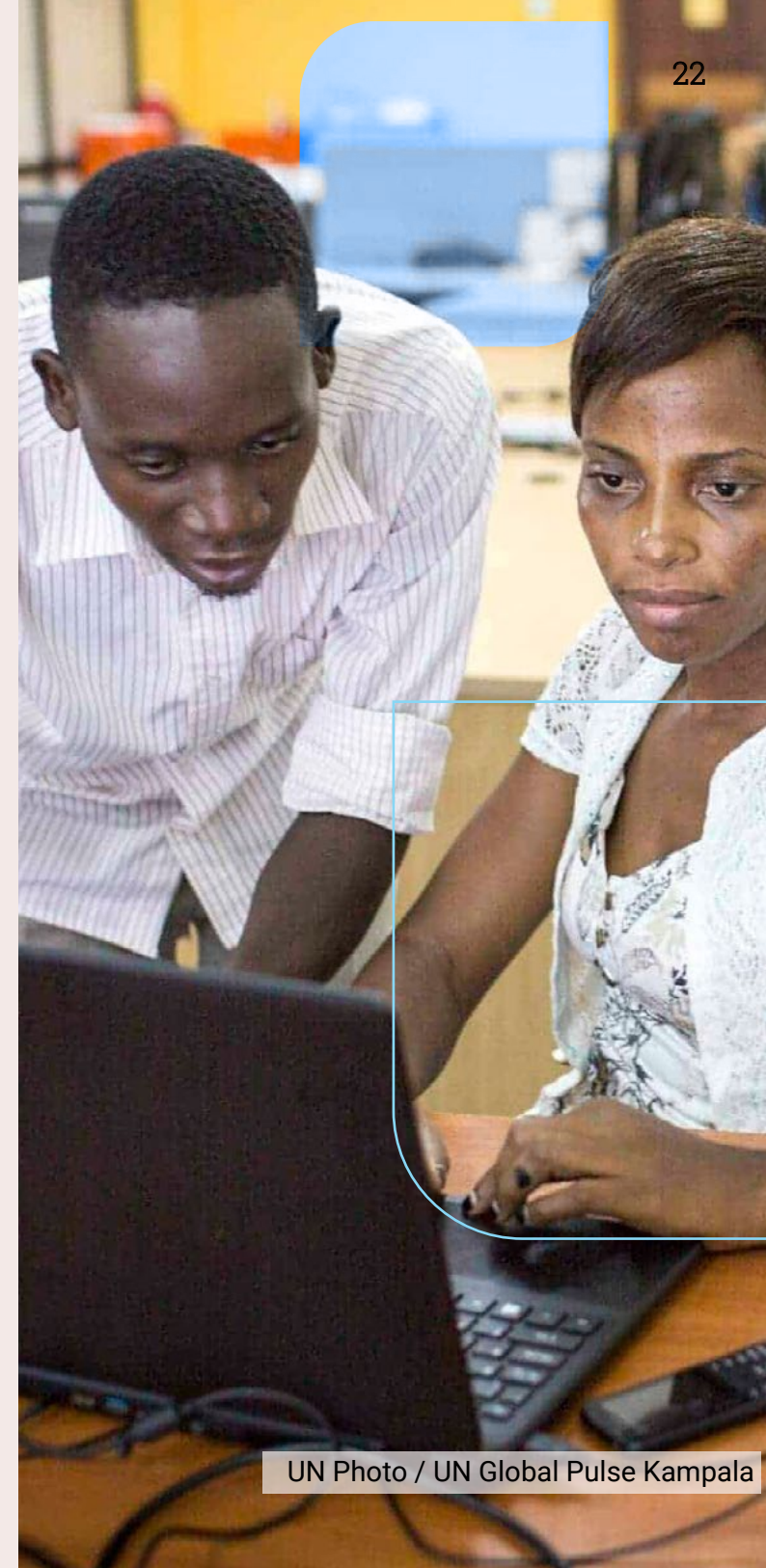
UN Photo / UN Global Pulse Kampala

al Strategy on 4IR. Fast forward to December 2022 and a report on this strategy was finalised and presented to the Right Honourable Prime Minister Robinah Nabbanja.

The National 4IR Strategy identifies potential for the latest technologies to advance Uganda's development objectives. Importantly for us, the 4IR Strategy recognizes data as a critical resource in efficient and sustainable development.

Particularly:

- The 4IR Strategy Critical Enabler #2 stresses the need to identify new regulations and policies to close the legislative, regulatory and strategic gaps created by 4IR technologies. The Strategy expressly calls for developing an ethical AI framework, with guiding principles to ensure the safe and proper design of AI.

- The Strategy highlights data as an essential element of the Fourth Industrial Revolution and a critical national and business asset. As part of its Delivery Mechanism #2, Ecosystem Facilitation, it calls for actions to support an environment of safe data sharing. Technical and other governance protocols should help to unlock the value of data as a national resource.

- The Strategy further recommends actions in three areas: supporting the government data ecosystem; supporting the emergence of strong data institutions that will facilitate sharing among the public and private sectors; and getting Uganda's data exchange to work at its full potential.

Eager to implement the 4IR Strategy, the Ministry for ICT & NG and our teams, with support from Germany's international development agency, GIZ, and the Hewlett Foundation, set out to develop an ethical AI framework roadmap for Uganda, and a roadmap to guide the development of data exchanges to unlock data as a national resource.

Our collaboration led to two roadmap reports, "Developing Framework for Ethical AI: Roadmap Options for Uganda" and "Community-Centric Data Exchanges to Unlock Data as a Resource for the Attainment of National and Regional Priorities: Roadmap for Uganda". They were endorsed in September 2022 in a workshop jointly organized by the Ministry for ICT & NG and UN Global Pulse.

UN Photo / UN Global Pulse Kampala

The data exchange roadmap pointed out that the data space in Uganda is fragmented, with data held in silos, controlled by some entities but isolated from others. This limits Uganda's ambition to maximise value from data that would spur innovation in promising sectors such as tourism. Futures and foresight approaches were identified as key in building a shared vision among the stakeholders and this led to engagements with UN Global Pulse Finland to support the team in Kampala.

In October 2022, we held a three-day retreat on the "Future of Data Sharing and Use for Uganda", which brought together more than 60 players from various government and UN agencies, the private sector, academia and civil society. The workshop took participants on a foresight journey from the current state of play to the future, helping them to identify the steps needed for change.

Participants told us that data subjects in Uganda tended not to trust data collectors. We did a visioning exercise to see how cities, tourism and migration might look if data were better shared. Participants mapped the steps their own organizations would need to take to bridge the gap between aspirational visions and present reality.

The workshop helped stakeholders to:

- Develop a common vision on data sharing and use in Uganda;
- See how a futures and foresight approach can help to build a community of data practice;
- Identify practical actions and collaborations to advance data sharing and use in Uganda.

The participants agreed to continue their dialogue in an informal working group, exploring how they can make Ugandans feel safe sharing their data.

DIGITAL INCLUSION

INCREASING ACCESS TO THE DIGITAL WORLD

Communities around the world are gradually getting better digital infrastructure and access but that doesn't mean people are equally active online. The reasons for this are less technological than social, economic and behavioural. In some societies, those who could be losing out are women and girls, older people, ethnic minorities, the disabled or other marginalised groups.

Digital Inclusion encourages participation and raises confidence, widening involvement in online life. Sometimes our work involves monitoring the manifestations of inclusion's opposite, such as discrimination and xenophobia. The aim is to make sure everyone can safely enjoy what the digital age has to offer.

Specialist teams in various locations contributed to this thematic area in 2022:

Photo by Fikri Rasyid

Archipelago of Enterprises:
Support for Indonesia's small businesses

Teams involved:

Social Systems and Data Science and AI, UN Global Pulse Jakarta

Strategic Foresight, UN Global Pulse Finland

Indonesia is the world's largest archipelago nation, made up of 17,508 islands stretching over some 5,000 kilometres. Across this vast territory are millions of micro, small and medium-sized enterprises (MSMEs), the backbone of the economy. MSMEs employ 97 percent of the workforce and account for 61 percent of gross domestic product. But being small, they are vulnerable to shocks such as COVID-19 and climate change. The government wanted to support them.

Numerous ministries and institutions had introduced support programmes but these efforts were not integrated and there was no single database to give the government a clear picture of the sector's needs or whether its policies were working. To rectify the situation, Indonesia's Ministry of National Development Planning, BAPPENAS, worked with UN Global Pulse Jakarta to map the country's 64 million MSMEs, down to the district level.

Data scientists, analysts and programmers from BAPPENAS and UN Global Pulse Jakarta joined forces with other experts to examine available datasets and gaps. We analysed eight traditional datasets from Statistics Indonesia, the national statistics bureau, and six non-traditional datasets from Meta.

Not only were we able to infer the level of internet access for MSMEs at the district level but we also identified datasets that shed light on issues such as how best to help small agricultural enterprises. Working together, we built expertise in this mixed-methods approach and identified the skills and resources BAPPENAS would need if it wanted to have a fully integrated, country-wide data system for all its MSMEs.

In 2022, with support from UN Global Pulse Finland, our efforts took on more of a foresight emphasis to inform long-term government planning. Strategic Foresight shifts our way of thinking, making people look beyond the obvious and connect the dots. Horizon Scanning is essential to seeing and deflecting problems and understanding what might shape the future in an increasingly unpredictable world.

BAPPENAS is working on a National Development Plan for 2025-2045, which considers the future of MSMEs and what unexpected shocks could alter their prospects. We trained the Jakarta Lab and 12 BAPPENAS staff to scan the horizon for trends that might affect enterprises in Indonesia and the broader Asia Pacific region.

Together we identified over 120 political, economic and environmental indicators that might affect MSMEs for better or worse. The five "drivers" that could alter the business landscape were identified as: tech and new ways of doing business; emerging sectors and shifting consumer preferences; sustainable international economic partnerships; the precariousness of the gig economy; and climate change.

All this was summarised in our report, The Future of MSMEs in Indonesia, which we launched with a lively presentation in Jakarta. The event brought together over 100 stakeholder representatives from the Indonesian government, multilateral organizations, academia, NGOs and private institutions.

UN Global Pulse Finland also facilitated workshops on the Futures Wheel, a tool to understand consequences beyond the obvious, and Scenario Building, a tool exploring plausible futures. We underlined that foresight is a continuous process, not just a one-off report. And indeed BAPPENAS managers have started to apply foresight methods in their planning.

THE OUTCOME

• We produced a manual that can be used beyond this project;

• After our workshops, participants said they felt confident to run their own horizon scanning courses;

• Our report "The Future of MSMEs in Indonesia" will inform Indonesia's National Development Plan;

• BAPPENAS will incorporate foresight methods into their Long-Term National Development Planning process for the Government of Indonesia.

Read more about this important collaboration between Global Pulse and the Indonesian government here.

Read more about our Foresight work here:

Watch our video on this work here:

UN Global Pulse Jakarta

UN Global Pulse Jakarta

UN Global Pulse Jakarta

Breaking Growth Barriers:

Greater growth for women entrepreneurs in Indonesia

Teams involved:

Social Systems, UN Global Pulse Jakarta

The UN has placed women and girls at the centre of its thinking and progress has been made towards gender equality. But the aspirations of women still hit various barriers. UN Global Pulse Jakarta considered the constraints on women entrepreneurs in Indonesia.

The hurdles they face include limited internet access, anxiety about new technology and inadequate training opportunities. But what about the systemic barriers that impede the growth of women-led businesses?

In a joint study with UN Women Indonesia, the Jakarta Lab looked at gender dynamics in the "impact sector", businesses that go beyond generating profit and contribute to improving society. Such businesses could be in health and care, for example, where women entrepreneurs play a major role. Yet studies show that women-led start-ups receive only a small fraction of available venture capital.

With this in mind, we applied systemic design – a method combining human-centred design and systems thinking – to understand the standpoints of both women entrepreneurs and "ecosystem enablers", powerful actors such as investors and business associations.

As part of extensive research, we interviewed 28 women and 14 men holding executive roles in impact sector businesses, ranging from health and care to agriculture. UN Women Indonesia helped us to sharpen our insights and we presented our findings at the G20 International Conference on Women's Empowerment in Bali in August 2022.

The joint study identified three main factors af-

fecting women's advancement. We found that women entrepreneurs were just as growth-oriented as men but they took a different approach to risk. Compared with men, they calculated risk more carefully, taking time to test the viability of their businesses before seeking support. Investors, however, favoured aggressive growth models and perceived women as being too slow.

Women and men also put equal value on leadership skills but women expressed more self-doubt about their managerial abilities. Women's time for self-development was often limited by childcare responsibilities, and it was interesting that women identified family support as a key enabler for business growth while men did not see this as being significant.

Investors sometimes regarded pregnancy and motherhood as a "risk". Both genders said they strove to develop employees' skills and provide

an equitable work environment, although women entrepreneurs did more to support employees with children.

AREAS FOR FURTHER EXPLORATION:

- Diversifying financing options to accommodate a wider range of growth trajectories and business strategy approaches;

- Fostering gender-smart support networks;

- Mobilising action towards a future-fit care economy.

Read the full report here

Photo by Varoza Fikri

Photo by Lek Nitko

Trees of the Future:

Helping youth to branch out in Colombia and Madagascar

Teams involved:

Strategic Foresight, UN Global Pulse Finland

In Colombia and Madagascar, UN Global Pulse ran workshops for young people to empower them as "future shapers" in their communities. In both countries, we found it helpful to use the metaphor of a tree.

In Colombia, the second-largest country in South America, we collaborated with UNFPA, the UN Population Fund, and the Colombian government to enable under-represented communities to design the kind of futures they want.

Our experimental workshops reflected the new Colombian government's decolonisation approach – encouraging participation and listening to people, involving them in decisions instead of dictating from above.

We held our dialogues on participatory futures in remote parts of Colombia, areas that have felt neglected by the centre. We worked with young people in Choco on the west coast and in Amazonas, bordering Peru and Brazil.

How to get 20-year-olds living in a rainforest to understand foresight and innovation? As we trained young leaders from the Amazonian Indigenous and Afro-Colombian communities, we realised what resonated with them was the life cycle of a tree. Planting a seed, watering it, tending it to maturity – with the tree firmly in mind, these young people could start envisioning a world two decades from now.

Using the model they developed, the government scaled up the ideas. Indeed, Colombian government departments have adopted foresight as standard practice for anticipatory planning and such consultations will be part of the national development plan.

The same tree metaphor worked with young people in Madagascar. They found it helpful to think of their prospects in terms of a tree, where the roots were their values, the trunk their strategies and partnerships, and the branches the results coming into flower.

The young people were taking part in a forum on the future of human development and access to employment and entrepreneurship, looking ahead to 2030 and beyond. Problems with employment had been highlighted by the Government of Madagascar. The forum was facilitated by UN Global Pulse Finland, with the UN Resident Coordinator Office (RCO), a team from the International Labour Organization (ILO), CAPEC, a research centre focusing on economics, and the Youth Observatory.

The tree exercise was part of two foresight sessions held with 23 young Malagasy from each of the country's provinces. One session, in November 2022, focused on the future of development and employment while the other, in January 2023, was a two-day training on participatory and inclusive foresight.

Theory and practical exercises and games were combined, giving young people the knowledge and tools to start talking seriously about the future in their own communities.

Lessons learnt:

- It's important for young people to help design the consultation model. Their input helps us to frame and redesign the model and analyse the methodology and results.

- When engaging the community, it's best to group people according to shared ideas rather than by age or gender.

- Futures and foresight approaches can support the building of strategic alliances between citizens and government. By understanding the planning process, communities can shape the future of their regions.

Big Data for Gender Equality:
Supporting women in Latin America

Teams involved:

Data Science and AI, UN Global Pulse New York

Data Science and AI, UN Global Pulse Finland

In 2022, UN Global Pulse collaborated with the UN Women Regional Office for the Americas and Caribbean to gather evidence from big data sources that would help UN Women respond more effectively to the needs of vulnerable women and girls. We explored the potential of big data with three case studies:

GOAL / Silva Calderon

Case study A:
Reporting and analysing radio in zones of migration

Refugees from Venezuela, fleeing violence and harsh economic conditions in their own country, have fanned out across Latin America. Unfortunately, they have not always received a warm welcome but faced suspicion, stereotyping and xenophobia.

Through a Rapid Gender Assessment, UN Women wanted to understand the conditions faced by women migrants along Chile's borders with Bolivia, where xenophobia has been on the rise, with anti-immigration demonstrations, strikes and acts of violence and discrimination against migrants.

We looked at whether radio data could add to the picture we had on the conditions of refugee and migrant women in the region. We believe this is the first use of large-scale radio data in a Rapid Gender Assessment.

We monitored Spanish-language online radio stations in Northern Chile, using UN Global Pulse's ORCA platform to analyse conversations and their evolution over time. As a result, we were able to contribute insights about the unsafe living conditions of Venezuelan refugees and migrants in informal settlements; host communities' perceptions and stereotypes; and risks involved in the border crossing.

UNHCR/Reynesson Damasceno

Case study B:
Media analysis of UN Women country office campaigns

UN Women engages in regular social media and online advocacy, with campaigns to raise awareness of key issues. For this case study, we monitored two social media campaigns by UN Women.

One was promoting activism against gender-based violence. The other was in connection with the 2022 Regional Conference on Women, "The Care Society: a horizon for sustainable recovery with gender equality". Here we wanted to see how UN Women could improve their social media strategy and extend their reach. What effect might they have and how could they measure it? Our analysis studied the networks of accounts involved in each campaign and showed how campaigns evolved across multiple hashtags.

We made recommendations on how UN Women could find and take part in conversations that emerged alongside their planned communications strategy; how they could increase their ties to civil society and tap into broader gender-based social movements; and how they could make more use of hashtags in future campaigns.

IOM/Gema Cortes

Case study C:
Guide to monitoring aggression to women in politics on social media

For the final case study, UN Global Pulse helped UN Women produce a guide to monitoring violence against women in politics (VAWP) on social media. We used UN Women's experience on this topic in Chile, Uruguay and Ecuador, as well as our own experience with social media analysis. The goal was to create a tool that other UN Women teams could use when doing future studies on the subject.

We focused on the nuances of defining and measuring VAWP on social media, as well as giving practical guidance on how to apply data science and AI tools. We advised on challenges, including how to manage an interdisciplinary team of data scientists and experts on gender, politics and the local context; how to frame the study to highlight insights and use the findings for advocacy; and how to play to the strengths of data science approaches.

These case studies may have been small but they helped to show UN Women the value of using big data. UN Women and UN Global Pulse are considering a longer-term engagement, moving beyond pilot projects to more sustainable ongoing projects.

RESTORING TRUST

MITIGATING DIGITAL RISKS AND

STRENGTHENING ETHICS

The digital world confers many benefits, enabling citizens to connect, communicate, organize their lives and find work opportunities. But it also comes with the risks of fake news, fraud, hate speech and other abuses. The downsides can be so worrying that they discourage some people from going online at all.

While pioneering innovation for the whole UN, Global Pulse understands the public's needs for reassurance; we have to restore trust in tech. Specialist teams in various locations contributed to this thematic area in 2022:

UN Photo / UN Global Pulse Kampala

Scrutinising Radio Content:
The battle against hate speech

Teams involved:

Data Science and AI, UN Global Pulse New York

Across the world, hate speech is a pernicious and growing phenomenon that the UN takes very seriously. The Secretary-General has warned that it is not just a matter of a few loud voices on the fringe of society. Hate speech is moving into the mainstream.

Introducing the UN Strategy and Plan of Action on Hate Speech, he said: "With each broken norm, the pillars of our common humanity are weakened. Hate speech is a menace to democratic values, social stability and peace. As a matter of principle, the United Nations must confront hate speech at every turn. Silence can signal indifference to bigotry and intolerance, even as a situation escalates and the vulnerable become victims."

UN research has identified eight drivers of hate speech that cross national boundaries: political competition; the rise of social media; political and social polarisation; rising intolerance; economic inequality; the decline of traditional gatekeepers; misogyny; and disinformation. While addressing these issues, we must not limit freedom of speech.

Playing its role in wider UN efforts, Global Pulse continued to participate in the Principal-level Working Group on Hate Speech, as well as the Interagency Informal Dialogue on Disinformation and Data Transparency, both UN groups. In July 2022, we organized the 10th meeting of the Informal Dialogue, inviting a diverse panel of guests to speak on the subject of "Frontiers of Mis-/Disinformation Research".

Regarding radio content, we started to look closely at discussions of hate speech. Early in 2022, we undertook a pilot, analysing over 70,000 transcripts from South Africa and Nigeria in which "hate speech" came up. We shared the results with the UN Office on Genocide Prevention.

Encouraged by the initial findings, we conducted a further two-day worldwide recording in June 2022, gathering data from over 90 stations in English, French and Spanish to get a picture of a "day of hate speech" across the globe.

"Radio Mining" Proves Its Worth:
Listening in to understand trends

Teams involved:

> Data Science and AI, UN Global Pulse Kampala

> Data Science and AI, UN Global Pulse New York

Social media is where people chat and argue in much of the world but in sub-Saharan Africa, radio is still dominant. That's why Global Pulse decided to "mine" call-in shows and other radio programmes to better understand what Africans were thinking and saying on any given day – a kind of monitoring for the public good.

Misinformation and COVID-19

"Radio mining" played an important role when the COVID-19 pandemic unleashed an "infodemic" of misinformation and disinformation, confusing the public and creating vaccine hesitancy. The UN and other agencies needed to know what was on people's minds in order to target correct information to the right audiences.

Collaborating with the WHO, Global Pulse developed a tool to capture, transcribe and analyse data from online radio stations, sifting out unrelated chatter from specific conversations about COVID-19. Our digital experts combined automated speech-to-text technology with methods to overcome particular challenges of working with radio data, such as transcription errors due to different accents.

Health professionals were interested not so much in the texts of the conversations as in seeing the trends, as people discussed and perhaps changed their minds about the pandemic and vaccination. Using our monitoring tool, we were able to contribute radio insights on these topics to the WHO-led Africa Infodemic Response Alliance's monthly infodemic trends report.

UN Photo / UN Global Pulse Kampala

UN Photo / UN Global Pulse Kampala

Gender-based violence and the Spotlight Initiative

In Uganda, we noticed that the COVID-19 lockdowns had exposed another social evil – gender-based violence, afflicting women and girls in both rural and urban areas. UN Global Pulse Kampala turned its Automated Speech Recognition tool on this problem too. Developed with a team from Stellenbosch University in South Africa, the tool streams radio waves and breaks them down into areas of interest for human analysis. A dashboard of visualised data enables authorities to track trends and respond quickly to local incidents.

Gender-based violence is endemic in Uganda, where a government survey recently showed that 40 percent of respondents saw no problem with wife beating. In our contribution to the EU/UN Spotlight Initiative, we categorised gender-related issues as: Violence Against Children (VAC), Gender-Based Violence (GBV), Violence Against Women and Girls (VAWG), Sexual Reproductive Health Rights (SRHR) and Harmful Practices (HP).

The radio is a universe of conversations from news, sports and music to greetings and announcements. We narrowed this to our galaxy of interest: news (reports of violent incidents, field recordings); incident reports (phone calls and life experiences); sensitization campaigns/messages (talk shows informing the public and people offering advice).

Between June and December 2022, we listened in and discovered a surprising detail – 55.6% of the speakers were men compared with only 44.4% women. While the victims of violence were mostly women, the men were more vocal on the subject. The implications of this are yet to be studied.

But certainly it was clear that Ugandan society is willing to share information and radio presenters are ready to advise the public on gender issues. Our partners see this as an opportunity to raise the awareness of media personalities, who in turn can spread the message that violence is never acceptable. "Radio mining" has proved its worth. UN Global Pulse will now stop doing pilot projects and scale this innovation, ready to hand it over to partners.

Lessons learnt from these projects:

Lesson 1: Extracting radio data is a highly complex undertaking.

Creating a pipeline to capture streaming data on the radio and put it into a database was a tremendous engineering achievement. Monitoring written conversations is relatively easy but with radio, you have lots of people speaking at once, plus music and irrelevant chat that has to be weeded out. The pertinent data is fed into automated transcription tools. It is hard enough to differentiate one voice from another but the transcription tools also have to be taught new words, in the case of this project "COVID-19" and "mask", which took on a new meaning in the context of the pandemic.

Lesson 2: Automated tools aren't always enough.

Human involvement is sometimes needed to review the clips and determine the most useful narratives. The work is time-consuming and labour-intensive but can be worthwhile. For example, if staff at the New York headquarters of UN peacekeepers can hear something that was said in Mali just 15 minutes earlier – practically in real time – they can act quickly in situations where lives might be at risk.

Lesson 3: Make sure data outputs are understandable for end users.

Even the most information-rich data is useless if the recipients can't make sense of it. The data must be turned into content that matters to the users. UN Global Pulse created a dashboard to make it simpler for WHO to interpret the data, and WHO in turn recruited personnel who had an interest in the information we had gathered.

UN Photo / UN Global Pulse Kampala

Crisis Prevention and Response

ANTICIPATING, NOT JUST FIXING PROBLEMS

Since the dawn of time, human beings have examined past experience to make an educated guess at what the future might hold. In the 21st century, Global Pulse has all the modern tools to make sense of previous patterns and foresee how situations are likely to develop.

"Prevention is better than cure," as the saying goes. The UN is looking to data and innovation to improve readiness for crises and give insights to humanitarian teams. As far as possible, we want to anticipate crises before they arise or become full-blown, not just fix things after the event with short-term, sticking-plaster solutions.

Specialist teams in various locations contributed to this thematic area in 2022:

Epidemic Simulation:
Saving lives in the world's biggest refugee camp

Teams involved:

Data Science and AI, UN Global Pulse New York

In 2022, we collaborated with WHO and other partners to support evidence-based public health decision-making in settlements for refugees and the internally displaced. One of our main concerns was Cox's Bazar in Bangladesh, the biggest refugee camp in the world, where we had been active since the emergence of COVID-19 in 2020.

Nearly a million Rohingya refugees settled in this sprawl of camps in south-eastern Bangladesh after they were forced to flee violence in Myanmar in 2017. Several generations of large families share single bamboo shelters. The population density is said to be double that of the Bangladeshi capital, Dhaka, itself the most densely populated city in the world.

What chance, then, for social distancing, one of the keys to combating the spread of the virus? Early in 2020, as the world was beginning to recognise the full threat of the pandemic, many feared that overcrowding in the camps, combined with a lack of sufficient health care, could spell disaster.

Enter UN Global Pulse to support teams on the ground, who were leading a huge public health effort. After our decade of experimentation with data science and AI, we were ready to offer some real-world applications.

The public health measures that applied in the Global North did not necessarily suit the congested camps, where quarantining was difficult, if not impossible. People routinely had to leave their shelters to get food and water and use communal toilets and showers.

UN Photo / UNHCR Bangladesh

Working with UNHCR, WHO, Durham University and MIT-IBM, Global Pulse created an epidemic modelling and visualisation tool to help decision-making. We created a virtual world that mimicked how people moved as they went about their daily business and showed what this implied for the spread of infection. We ran simulations to model the possible effects of planned policy changes and refined the outcomes as the policies were implemented.

Our results helped UNHCR maintain refugees' freedom of movement within the camp, a key principle for the agency. Our findings suggested that patients with mild symptoms could self-isolate at home and did not have to go to medical centres. This did not appear to raise the risk of spreading the disease and freed hospitals to concentrate on the most severe cases.

We found that wearing masks in all indoor communal areas could effectively limit disease spread and protect the most vulnerable, and that wearing reusable cotton masks could have significant positive effects. This led to refugees making their own reusable masks. We also showed safe ways that schools – often open-air shelters with natural ventilation – could reopen safely if teachers wore masks and children attended in shifts.

Now as the world learns to live with COVID-19, the time has come to analyse our findings. We are working with UNHCR and WHO teams to understand retrospectively how COVID-19 hit the camp, so we can be better prepared in future.

We ran a survey on contact patterns at Cox's Bazar – which age groups met at what venues – and that micro data fed into a report published by UNHCR in December 2021. The results of the survey were processed quickly but we are now going over them more closely to harvest further insights.

And with Durham University, at the request of partners who are trying to figure out the true death toll from COVID-19, we are estimating excess mortality at Cox's Bazar between early 2020 and February 2021. The task is grim – but another way of looking at it is to consider how many lives we managed to save.

Building on our work supporting the response to disease outbreaks, we have also started looking at ways of using digital technologies to prevent disease spread by design. The layout of refugee settlements affects the ways in which people interact. In collaboration with UNHCR, we are investigating the implications of different camp layouts as factors in the spread of any disease.

Lessons learnt from this project:

Lesson 1: When a project follows a previous one, look for what works for you
In Cox's Bazar, UN Global Pulse got started with a model first used in the UK. But we quickly learnt that you cannot copy and paste from one context to another. No projects are alike and inevitably there will be gaps in data. Significant information may be missing, such as the level of contact between people and who comes into contact with whom. This project required teams on the ground and at other UN agencies to work with UN Global Pulse's modellers to find out precisely what would close those gaps.

Lesson 2: Don't underestimate the value of monitoring refugee settlements
Because refugee camps are already monitored closely – unlike an environment such as the UK at large – you might be inclined to discount them. But since a data ecosystem exists to facilitate model building, much fruitful work can be done in these settlements.

Lesson 3: When it's relevant, share what you've learnt beyond a single project
The team's findings on topics such as the effectiveness of mask-wearing or whether schools could safely operate were not only useful at Cox's Bazar. UN Global Pulse shared its data with other areas of the UN, so refugee settlements around the world could apply our conclusions to help slow the spread of COVID-19.

UN Photo / UNHCR Bangladesh

UN Photo / UNHCR Bangladesh

Modelling Refugee Movements:
Contingency plans for a welcome in Brazil

Teams involved:

Data Science and AI, UN Global Pulse New York

People have been fleeing Venezuela in their millions, but in March 2020 both Brazil and Venezuela closed their borders to prevent the spread of COVID-19. To make contingency plans, UNHCR and the Brazilian government's Operation Welcome needed to know how many people might start moving again once the borders reopened.

The numbers are shocking. Over seven million refugees and migrants have left Venezuela, escaping violence and shortages in one of the world's largest displacement crises. And Brazil has been one of the main destinations.
When the border closed, thousands were left camping on the Venezuelan side, waiting for a chance to cross. UNHCR needed to know how many arrivals to expect when life returned to normal so they could be ready with shelters, food and medical supplies. If there was a sudden surge, would they cope?

UNHCR's Innovation Service, UNHCR's Global Data team and the Brazil-Boa Vista office played crucial roles in creating the predictive models together with us, proving once again that the best work is done in partnership.

We capitalised on the data analytics expertise that UN Global Pulse has refined over more than a decade to estimate how many people might leave their homes and head for the border, and to develop a queue modelling tool that could simulate border crossings. We used social media and internet search activity, information on protests in Venezuela, data on mobility patterns, satellite images, radio discussions and other public information to "nowcast" current movements and predict the numbers who might be preparing to move.

This kind of work is quite specific. For example, we monitored the schedules of buses refugees would be likely to use to reach the border. And local colleagues provided essential details, such as the dates of school holidays when Venezuelans might be freer to move.
Our input gave UNHCR evidence that helped the agency negotiate with the Brazilian government and the military on behalf of refugees. After arrivals are registered at the border, refugees may be relocated around Brazil to restart their lives, if that is what they want.

UN Photo / Reynesson Damasceno

All in all, we gathered as much information as possible because it is actually unethical to operate from insufficient data, and we made the data visual. Using our tools, we were able to say, "these are the operational consequences of the variations we have modelled".

As we enter 2023, we are continuing to refine our models and simulations to make them easier for policymakers to use. Now that COVID-related entry restrictions have been lifted, we're better able to understand normal movement patterns and to improve our predictive models to support ongoing operations.

Lessons learnt from this project:

Lesson 1: When things look uncertain, try multiple approaches
Helping UNHCR to see how its operations could be affected, UN Global Pulse used three strategies to model what might happen when the border reopened. We modified an existing prediction tool to incorporate aggregated data collected in the past, applied "nowcasting" – which examines the current situation – and built simulations of various potential scenarios.

Lesson 2: Use the expertise of people with first-hand knowledge
UN Global Pulse recognized the value of partnering closely with personnel from UNHCR's operations and bringing them together with UN Global Pulse's data visualisation experts to design a model that would work in a real-life context. Our teams had to build trust, so the operations staff felt comfortable challenging assumptions and being open about their needs.

Lesson 3: Tools designed for humanitarian needs must be custom-built
UNHCR needed specific information to ensure the best possible reception of Venezuelan arrivals to Brazil. Projects like this demand that UN Global Pulse incorporates UN ethics, values and humanitarian principles, which can't be achieved by adapting commercial models built for other purposes.

UN Photo / Catalina Betancur Sanchez

General lessons:

Every project has its unique requirements and challenges but some lessons apply to all. Economies of scale can be achieved by sharing relevant findings:

Tip 1: To move quickly in a crisis, be ready with a rough advance plan
UN Global Pulse's experts are often asked to respond quickly and we have developed an informal standard to handle crisis requests. Once the period of urgency has passed, there's an opportunity to think strategically about what capacity will be needed going forward. Can any elements of a project be adapted for future use?

Tip 2: Whenever possible, seek flexible funding
Especially in a crisis, when events are moving fast, it helps for UN Global Pulse and the agencies it serves to be able to channel funding where it is needed, rather than relying on funding that is earmarked for specific tasks.

UN Transformation

UPGRADING THE UN FOR THE 21ST CENTURY

The United Nations has served the world and the cause of peace since its foundation at the end of the Second World War in 1945. The UN may be cumbersome but if it didn't exist, the world would have to invent it. Luckily it does exist and we believe it can be reinvented for the 21st century.

In September 2021, on the UN's 75th anniversary, the Secretary-General released his report "Our Common Agenda", a 12-point roadmap for global cooperation over the next 25 years. As the innovation experts, our main role at Global Pulse is to support UN transformation with capacity building and methodological assistance.

Specialist teams in various locations contributed to this thematic area in 2022:

UN Global Pulse Kampala

UN Global Pulse Kampala

UN Global Pulse Kampala

Foresight for Systems Change:
Bringing foresight into everyday practices

Teams involved:

Strategic Foresight, UN Global Pulse Finland

UN Global Pulse sees the future not as a runaway train thundering towards us but as a chance for humanity to take the controls and switch to more beneficial tracks. The team in Finland has been leading training programmes to create an "innovation community", spreading the concept and use of strategic foresight to the whole UN system.

Foresight is not just some crystal ball we gaze into but a viable strategy for imagining, planning and creating a better future, by design. To transform the UN and build the UN 2.0 that the Secretary-General envisions, staff are starting to shift the way they think, plan and deliver.

In 2022, UN Global Pulse launched a new training programme, Foresight for Systems Change, to train UN colleagues throughout the system and around the world to use futures and strategic foresight methodology.

One of our main methods is Horizon Scanning, which helps us to see the "lay of the land" in any situation. Our tools include the Futures Wheel, which shows possible consequences beyond the obvious, and Scenario Building, which explores plausible futures.

In the first year we trained nearly 300 colleagues, giving them foundational tools and skills to frame their own experiments. We used action learning, where small groups worked on real problems, then reflected on their experience to start changing their working practices.

In the first training, participants from director to trainee level learnt to become foresight innovation partners. They framed and designed a number of foresight experiments and together we implemented 15 of them. The training paid lasting dividends, as 70 percent of participants said they would use foresight as part of

their daily work in future.

A second training was tailored to UN country teams, with participants from over 60 countries' Resident Coordinator Offices. This gave them a platform to make strategic foresight and long-term thinking an integral part of their planning and strategizing.

The training raised participants' confidence in applying strategic foresight and identifying signals of change, risk and opportunities in their operating environments.

Leading these sessions also brought benefits to UN Global Pulse by expanding the types of issues and the number of countries the Strategic Foresight team covers. We were able to diversify our innovation portfolio, accelerate some experiments and identify and commit to the most promising innovation partners across the UN system.

Our team learnt useful lessons in these training sessions, which will broaden our approach to integrating foresight into the entire programming cycle of the UN country teams:

- Equip participants with foundational capacities and start small to develop new ways of thinking;

- Conduct experiments around a particular systems change challenge. This will result in faster learning;

- Collect the learning material and promote peer-to-peer knowledge-sharing on a training platform. Build a community of experimenters for a more collaborative culture.

From Lab to Mainstream:
Scaling up innovations for wider adoption

Teams involved:

Innovation Scaling, UN Global Pulse Finland

As we have seen in other sections of this report, UN Global Pulse and its partners have found new ways of using data and AI, as well as novel approaches and methodologies, to improve the lives of millions of people.

The challenge has been to move promising experiments out of the lab. After we have shown what is possible, how do we get new ways of thinking, working and imagining the future embedded in the UN, and taken up by other organizations around the world?

Scaling up innovation – expanding pilots or small-scale projects to reach more people and/or make an intervention more effective – is a challenge for all social innovators seeking to change the world. And it is an essential part of work to transform the UN.

UN Global Pulse's Innovation Scaling team supports the UN system in achieving mainstream adoption of innovations that offer hope for sustained results in humanitarian, peace, development and environmental work. With an emphasis on evidence, our team provides mentoring, training, tools and technical assistance to UN agencies and country teams.

Sometimes in our work we discover untapped potential. While examining obstacles to widespread adoption of innovation in healthcare for mothers, newborns and children, we realised our findings applied more generally. We saw that to succeed, a scaled innovation should meet a specific need identified at the outset, and evidence of clear results would aid its adoption. Our complete findings were published last year in What Support do Innovators of Digital Public Goods Need to Succeed?

In a similar vein, we researched challenges and opportunities that UN agencies face in

moving from pilot to widespread adoption for best effect. Our recommendations are included in a newly published report.

Lessons Learnt:

- Listen to your target groups to understand their needs and capacity. Innovation will be more effective and sustainable if it responds to people's needs in a specific context;

- Moving from prototype to seeing impact is a long process that needs structured guidance and support;

- Providing services and programmes safely and ethically, the UN can also innovate to improve their delivery.

UN Global Pulse Finland

UN Global Pulse Finland

UN Global Pulse Finland

Underpinning our Operations

THE VITAL SERVICES BEHIND THE SCENES

The achievements of UN Global Pulse in 2022 were made possible by a number of departments that underpin the whole network, supporting projects in all five of our thematic areas:

Policy Plays its Part:
Ensuring innovation is ethical and responsible

Our policy team supports the development of frameworks and solutions to accelerate responsible innovation for the public good. Most of our work in 2022 centred around responsible digital innovation (data governance and AI ethics). It fell under both the Fair Digital Commons and Restoring Trust thematic areas.

Across the UN system, we sought to identify gaps and barriers in existing policies and frameworks that hinder digital innovation, and spot risks posed by emerging technologies. We proposed solutions to maximise public benefit, with respect for human rights, digital ethics and data protection and privacy.

One of our main tasks in 2022 was to consider solutions that would unlock access to data and AI and enable its re-use for the public good.

We supported the development of data/AI sharing and exchange solutions in the Global South. Through our work on the Global Data Access Initiative (GDAI), we explored ways to overcome the legal obstacles and ethical risks of data access and re-use at scale. And we co-hosted peer-exchanges to explore ways of realising the vision of streamlined access to and re-use of data and AI for the public good. Some of this work resulted in a submission to the Global Digital Compact.

AI technologies have immense potential to benefit the public, providing they are used ethically. Another important part of our work in 2022 was supporting the development of ethical frameworks to address the various human rights and societal risks associated with AI. Continuing efforts initiated in 2019, we supported the development of national ethical AI frameworks in the Global South and shared our findings in Africa through the African Union.

Since 2020, UN Global Pulse has been active in the Smart Africa Data Protection and Privacy Working Group, a collaboration to harmonise data protection and privacy in Africa. In 2022, the group released "Guidelines on Data Protection and Privacy", intended to serve as a guide for Smart Africa Member States, as well as an inspiration more broadly across Africa.

UN Global Pulse and its partners are concerned about the way data is becoming a commodity, which could erode public trust. One of our peer exchanges, with the Jain Family Institute, sought to understand how data is evolving and discuss the risk that its growing commercial importance could overshadow its uses for good.

Going forward, we plan to adopt innovative solutions to policy-making in the hope of anticipating risks in the fast-changing digital world.

Partnerships and Fundraising:
Co-creating for an all-round effect

Where would Global Pulse be without its partners? They share their data, outside expertise and diverse viewpoints – not to mention financial and other resources – that enable us to innovate and create value together for the benefit of the UN and beyond.

The Partnerships team contributes to UN transformation by building collaborative and synergistic partnerships, ensuring a reliable stream of funding for innovation and finding ways to navigate legal and contract bureaucracy.

We work with a variety of partners in the public and private sectors, including other UN entities, multilateral organizations, civil society, foundations and academia. Within our UN system, we are positioned to convene coalitions around UN priorities.

UN Global Pulse is an innovation platform for industries and sectors, voices and ideas – people who might not otherwise come together. We enjoy relationships with "likely and

unlikely partners" – sometimes organizations that have not worked with the UN before, or who work in a specialised niche.

Initially, Global Pulse worked with tech companies to procure services for the UN but now we offer the UN additional specialised innovation services and products, such as foresight and innovation scaling expertise.

In 2022, we gathered our legal, resource mobilisation and partnership management expertise under one umbrella. We created various tools and guidance for managing partnerships through their "life cycle" in what we call the Partnerships Hub.

Any partnership has a natural life cycle. Understanding everyone's positions and needs comes first. Then we define the partnership. As it advances, we maintain the relationship, reviewing and revising periodically. Finally, we draw conclusions and decide what steps, if any, to take next.

Collaboration for innovation can be very dynamic, with roles changing as projects progress. We care not only for the immediate project but for the relationship in the long term.

Operations and Knowledge Management:
Making procedures and information sharing painless for busy innovation teams

UN Global Pulse has a wide variety of projects but none would be possible without our "back office", which ensures efficient hiring, procurement and administration.

Supporting innovation can be a challenge within a bureaucracy that must balance transparency and accountability – spending donors' money wisely – with the need to respond flexibly and quickly to unfolding crises.

Our Operations staff see themselves as en-

ablers of innovation, contributing to UN transformation by helping the organization attract the most qualified people. And we have become experts in navigating UN rules – e.g. on hiring and procurement – so the rest of UN Global Pulse can get on with their work.

Some of our contributions are improved versions of processes that already exist. Take for example the way we have standardised the orientation process for new employees, or the way we have demystified procurement with a streamlined and graphically pleasing online guide. All of this makes procedures painless for our busy teams.

Additionally, the innovators of Global Pulse know there is "nothing new under the sun" and many modern developments have old roots. The ancients had great libraries. In the 21st century, we have Knowledge Management, with up-to-date digital tools and new ways of working.

Knowledge Management was crucial in 2022, as UN Global Pulse made the leap from being a data innovation team to becoming a full-scale innovation lab and worldwide network. No team member was to be left struggling alone in a silo. For that, we needed new media and spaces where we could discuss things together and find ways to collaborate.
The "library" is still being created. We are working on standardising the formats and processes so that when teams contribute their research and insights, they will be clear to everyone. Contributing is a common responsibility.

Creative Communications and Design:
Attracting audiences in new ways

From the political to the scientific, from the ethical to the legal, the UN deals with complex issues that can be hard to put into plain words. No wonder people find communications from the UN jargon-heavy and impenetrable.

In 2022, UN Global Pulse's Jakarta team conducted a survey to learn how stakeholders and the public in Indonesia saw the UN. The respondents perceived us favourably but suggested we should rethink how we communicate.

To transform the UN, we have to transform the way we speak. If we want to encourage new ways of doing things, we need to articulate why this matters in language that anyone can understand.

"Show, don't tell," is the writer's motto. In 2022, UN Global Pulse built a global team of writers, artists, designers and researchers to illustrate the value of innovation.

We developed a new creative strategy and started to update our visual identity to make UN Global Pulse instantly recognisable. We brought in journalists to train colleagues to write crisply and to the point. Communications is no longer an afterthought but an essential element to be factored in at the start of initiatives.

Today, there are two elements to our communications. We still promote our work as an organization through traditional factual reporting. But we are also turning to creative practices to diversify our methods and enrich our stories.

Dry data and statistics alone will not interest or move an audience to take action. By weaving storytelling with the lessons we have learnt, we believe we can have a greater effect. Our aim is to make our output forward-looking, not just reactive.

UN Photo / UNHCR

Looking Ahead

UN Photo / UNFPA Colombia

Our message is simple: Innovation need not be scary but can transform the culture of the United Nations. Indeed, it is already happening.

Colleagues and partners who have collaborated with UN Global Pulse are embracing innovation and embedding it in their practice. Together we are transforming the work of the UN family and the wider humanitarian and development sectors through out-of-the-box thinking and novel approaches to problem-solving.

Of course, the troubles of the world have not gone away. As we enter 2023, there is still no end in sight to the war in Ukraine or other conflicts that have displaced millions. We may be starting to live with COVID-19 but future pandemics remain a worrying possibility. And if natural disasters were not enough, climate change is further exacerbating the threats that face humanity.

But the UN offers hope and Global Pulse looks ahead with a positive mindset. Our portfolio realignment has made space for new projects and possibilities.

Our thematic work will continue, with the overarching goal of UN Transformation. We want nothing less than a renewed UN 2.0 to meet the needs of our modern times.

More than ever, the Quintet of Change will be at the centre of all we do. We will apply its methods – Data, Digital, Innovation, Strategic Foresight and Behavioural Science – to deliver innovation through three avenues:

1) Running use case hubs on two continents:
UN Global Pulse will expand its Jakarta team to cover the wider Asia-Pacific context, becoming a new regional hub in 2023. UN Global Pulse Kampala will also start identifying opportunities to expand its portfolio across more countries.

2) Contributing to UN system initiatives:
A new UN Futures Lab will build a network within the organization to support foresight methodologies. The Global Data Access Initiative (GDAI) will continue building a platform for data and insight-sharing for the public good.

3) Building capability for a UN 2.0:
UN Global Pulse will serve the wider UN system with experimentation, training and embedding Quintet methods across teams and cultures.

Identifying challenges and needs, we can move the needle on many issues and help others to help themselves. If it sounds ambitious, just consider how far we have come.

Global Pulse evolved gradually over more than a decade but in 2022 we completed our transformation to become a full innovation lab at the service of the Secretary-General. Renewed donor and partner support will enable our team to grow in the years ahead and remain at the forefront of a more networked, inclusive and effective multilateralism for the sake of people and the planet.

We thank our partners for their generous support:

Government of Australia (DFAT)

Government of Canada (DFATD)

Government of Finland (MFA)

Government of Ghana

Government of Indonesia (Bappenas and Ministry of Health)

Government of Uganda (Ministry of ICT & NG)

Government of Sweden (SIDA)

GIZ Germany

DataMinr

Google.org

IDRC (International Development Research Centre) Canada

Jain Family Institute

McKinsey & Company

Patrick J. McGovern Foundation

Spotlight initiative

Tides Foundation

Twitter

UN Development Programme (UNDP)

United Nations Population Fund (UNFPA)

UN Refugee Agency (UNHCR)

United Nations Office for Project Services (UNOPS)

UN Women

William + Flora Hewlett Foundation

World Health Organization (WHO)