The Africa Climate and Health Data Capacity Accelerator Network

Global Partnership for Sustainable Development Data

data.org

Africa CAN Playbook

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Training providers and delivery partners	African Population and Health Research Center Elements OpenUp
Complementary data in action lectures	Data Values Project (Global Partnership for Sustainable Development Data) Data4Change Epiverse (data.org) Group on Earth Observations – Land Degradation Neutrality Humanitarian OpenStreetMap Team Regional Centre for Mapping of Resources for Development Sustainable Development Solutions Network's Thematic Research Network on Data and Statistics University of Chicago University of Florida WeRobotics
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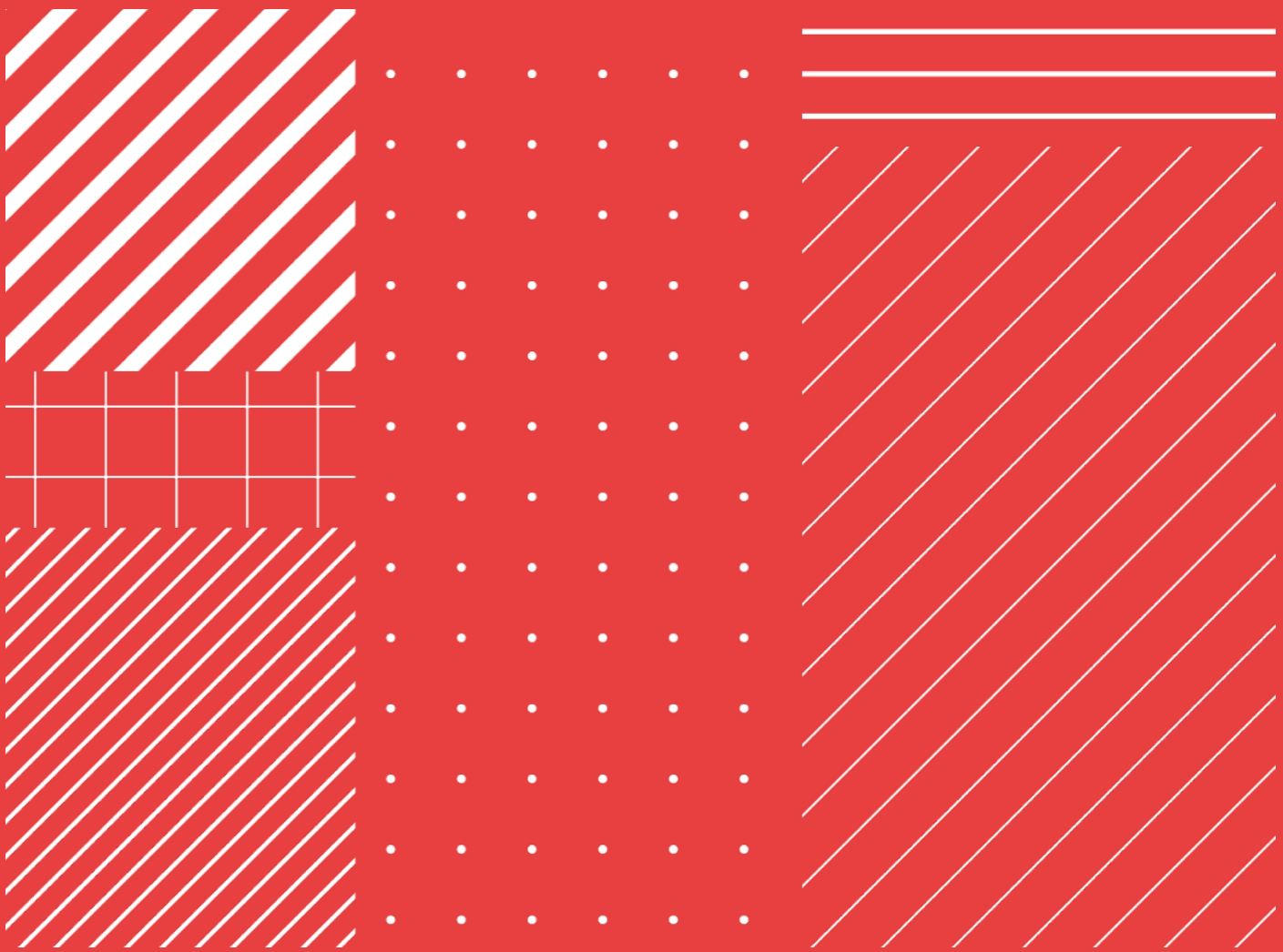


"The Capacity Accelerator Network is about investing in the next generation of data talent across Africa, equipping professionals with the skills they need, where they're needed most, to help governments and civil society tackle pressing challenges like climate change, health crises, and food insecurity. It's about creating a pipeline of capable leaders who can drive data-driven solutions from within the continent."

Claire Melamed,
Former Chief Operating Officer,
Global Partnership

"To build the workforce of tomorrow—one that is skilled in leveraging data and AI—it is critical that we work across both supply and demand. Through CAN partnerships with colleges and universities around the world, we are increasing the supply of data talent, but that alone is not enough. By engaging governments, NGOs, and nonprofits for experiential learning and fellow opportunities, we are creating opportunities to tackle real problems with practical data and AI [artificial intelligence] solutions, and investing in the future workforce."

Cormekki Whitley,
Chief Operating Officer,
data.org

Why this matters to you

Funders
See why targeted investment in data skills and networks can shift climate and health outcomes now.

Partners
Understand the problem space and why a networked, data-driven approach is the right starting point.

Learners
Get clear on the real-world challenges your data skills can help solve.

Whether predicting cholera outbreaks, monitoring the effects of land degradation on communities, or uncovering the impact of traffic pollution on cancer risks, data-driven approaches are transforming the way we understand, track, and respond to climate-related health challenges.

In Africa, a continent facing multiple, complex, and interrelated threats from climate change, data science is proving to be a powerful tool to generate insights, inform decisions, and drive action. To unlock the full potential of data science in Africa, we need better, more accessible data and more people with the skills to analyze and interpret it. Increased data science education, training, and mentorship can help to overcome these challenges and yield more data-driven applications that are relevant, inclusive, and sustainable.

Enter the Africa Climate and Health Data Capacity Accelerator Network (Africa CAN), established by the Global Partnership and data.org and supported by the Wellcome Trust, which had its inaugural run between 2022 and 2025. This accelerator was part of a wider global network of networks powered by data.org, with other hubs in the United States, India, Latin America, and the Asia Pacific. The Africa CAN empowered emerging data professionals across the continent to work with climate and health data to help countries build resilience and respond to interconnected climate and health crises and threats.

A SPECIAL LOOK INSIDE CAN

CAN: A network of networks advancing data talent for impact

The Capacity Accelerator Network is a global "network of networks" conceptualized by data.org in 2020 to build data and AI capacity for social impact across regions. With active hubs in the United States, India, Latin America, the Asia Pacific, and Africa, CAN is reimagining how to equip a purpose-driven, future-ready workforce with the skills to address real-world challenges through data.

The Africa Climate and Health Data Capacity Accelerator Network (Africa CAN), which the Global Partnership ran from 2022 to 2025, applied this model to the intersection of climate and health in Africa. With support from the Wellcome Trust, data.org, and over 50 global and regional partners, Africa CAN combined data science training, fellowships, and strategic convenings to strengthen data ecosystems and empower institutions across the continent.

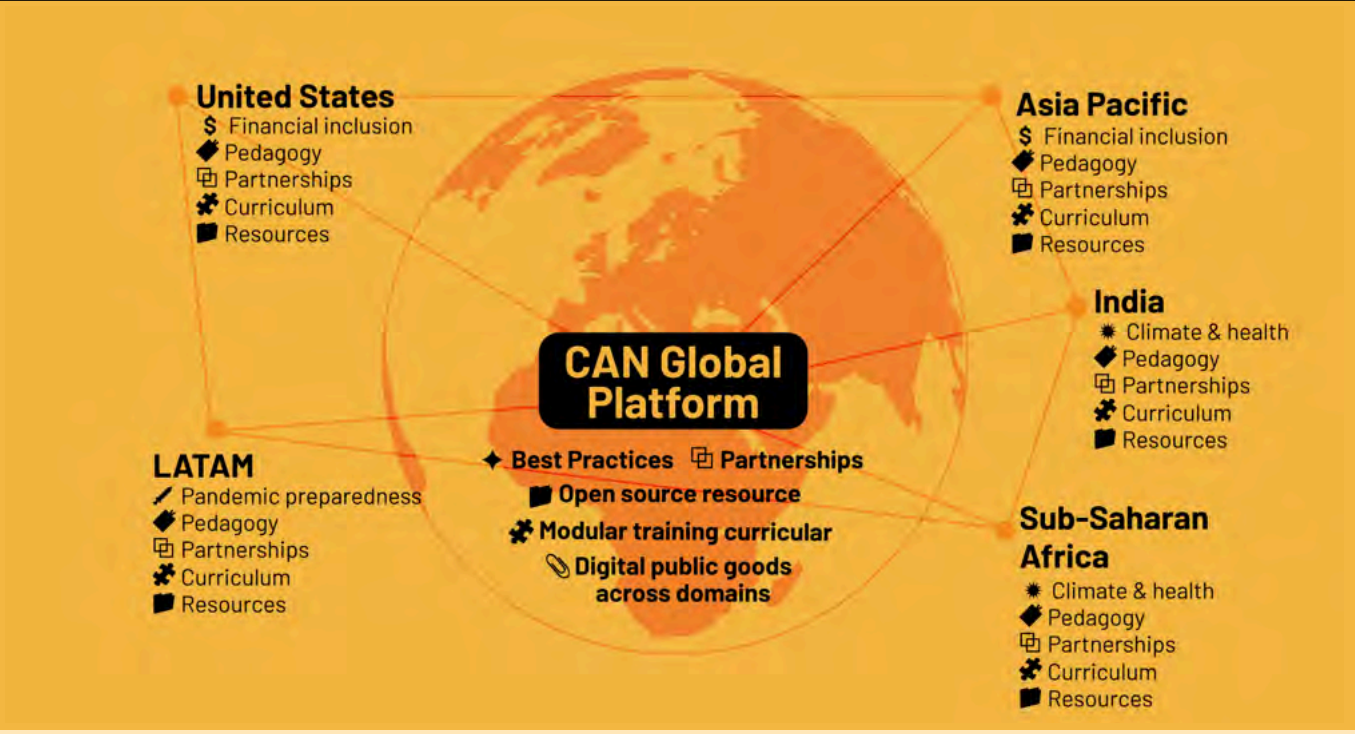
CAN: A Global Platform

50

Global and regional partners

3.5m

Data-for-social-impact jobs created by 2032



To unlock the underutilized potential of data for social impact, a significant investment in diverse, high-quality talent is critical. In recent years, professionals from fields like engineering, public policy, healthcare, and management consulting have begun to apply data skills to complex societal problems. According to data.org's 2022 Workforce Wanted report, up to 3.5 million data for social impact jobs could be created in low- and middle-income countries by 2032 if labor markets are sufficiently supported.

CAN is an answer to this call, mobilizing data professionals through hands-on learning, cross-sector collaboration, and global exchange.

In Africa, the Global Partnership has played a pivotal role as a network convener: brokering partnerships, enabling ethical data sharing, and connecting data fellows with host institutions to co-create solutions. Through Africa CAN, the Global Partnership fostered a collaborative community of government ministries, statistical offices, social impact organizations, climate experts, and health professionals.

Africa CAN combined climate, health, and data science training with experiential learning through a fellowship program that focused on identified, country-specific use cases, enabling participants to work with governments and social impact organizations (SIOs) to apply their data skills. Host organizations benefited from Fellows' technical expertise, while Fellows gained domain knowledge in various sectors as they addressed real-world problems. This fusion of skills created environments where relationships were strengthened and innovation flourished, giving rise to new, data-driven approaches to tackling some of the most pressing challenges of our time—crucially, with the potential to improve lives across the continent.

From 2022 to 2025, 785 learners took part in data science training, and 22 Fellows were selected across three cohorts. Fellows' work with governments and SIOs included:

- Using new data sources, such as Earth observations, and analysis to map and address land degradation in Nigeria and the Democratic Republic of the Congo.
- Using machine learning to identify how environmental factors are driving cholera outbreaks in Yobe State, Nigeria, facilitating surveillance, prevention, and response.
- Combining climate, health, and food systems data to help smallholder farmers build resilience against floods and droughts and improve nutrition in Kenya.

Alongside its core data science curriculum, Africa CAN also offered regular one-off capacity-building workshops in areas such as data analytics and data visualization, along with opportunities for networking and learning exchange, all designed to upskill and support governments and SIOs to use data more effectively. The goal was to build up a network of

institutions working on climate and health data and learning from each other. The power of the network created around Africa CAN magnified the impact of this work, as solutions developed in one country were shared with other projects and nations.

This playbook is designed to offer a behind-the-scenes look at Africa CAN, giving insight into how it worked, the structure of the program, the impact, and lessons learned. The goal is to offer inspiration for learners wanting to use data science for social good, for funders keen to support this type of initiative, and for organizations interested in joining a future iteration of the program or developing a similar venture.

Benefits of this playbook

This playbook aims to offer insights and inspiration for anyone interested in using data science to tackle complex and interrelated climate and health challenges. This target audience includes →

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Partners

Government institutions or social impact organizations looking to get involved in CAN or that are seeking to set up a similar initiative.

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Learners

Data science professionals keen to apply their skills to complex climate and health challenges, whether through CAN or similar climate and health data programs.

///

Supporters

Funders looking to support impactful, data-driven approaches to tackling some of the most pressing climate and health issues of our time.

For partners

If you're interested in getting involved with CAN or implementing a similar initiative, this playbook can help you to →

- ✔ Find out more about the structure of CAN, how the model works, and how (and why) it has evolved since its inception.
- ✔ Identify the benefits of bringing together theoretical learning with experiential practice through the data science training program around which the fellowship was structured. The phased approach to CAN is an essential element of the program, enabling Fellows to put their sharpened data skills into practice and tackle real problems.
- ✔ Understand the impact of the program so far and key lessons learned from the network.

For learners

If you're a data professional interested in taking part in a future CAN training to develop your data skills or apply them to pressing climate and health challenges, this playbook can help you to →

- ✔ Find out more about what the CAN training offered, including the key themes, topics, and areas of focus for making the greatest impact.
- ✔ Read case studies of fellow data scientists who went through the program and learn about how they used their data skills for public good.
- ✔ Learn about the power of working with partners to apply your technical skills to tackle real-world problems.

For funders

If you are exploring how targeted investment in data skills and networks can drive measurable climate and health impact, this playbook can help you to →

- ✔ Read about the potential for using better data and data science skills for tackling some of the most pressing challenges of our time.
- ✔ Learn about the structure of CAN and how the combination of data science training and experiential learning is having a positive impact across Africa.
- ✔ Discover the impact CAN is having on people's lives across the continent, and how the power of the network that has been created around CAN is helping to amplify this significantly.

How to use this playbook

This playbook is designed to support the use of data science skills to tackle pressing challenges at the intersection of climate and health. By sharing the structure of Africa CAN, the impact of the program, and the insights and lessons learned from running the accelerator, we hope to inspire those looking to use or support the use of data skills for the public good.

Rather than providing a step-by-step process to follow, the playbook offers inspiration and ideas from the different elements of the program, including what has worked well and how the initiative has evolved. It shares key things to consider when using data to tackle real-world challenges, with chapters you can dive straight into depending on your needs.

For example, after reading the introduction, an emerging data scientist might be particularly interested in chapter 2, which offers an overview of the structure of Africa CAN and the benefits of combining theoretical data science training with practical application of those skills through the fellowship; chapter 4, which outlines the training curriculum and the particular areas of data science and analysis Africa CAN focuses on; chapter 5, which features case studies of

previous Africa CAN Fellows and their inspiring projects; and chapter 9, which collates lessons learned from running the program.

Potential funders looking to ensure their resources will have an optimal social impact might be interested in chapter 3, which looks at the role the Global Partnership and Africa CAN networks are playing in helping partners to exchange learning, amplify impact, and scale innovative tools and approaches. They may also want to read case studies from the program before heading to chapter 8, which offers insight into how Africa CAN's progress and impact was measured and evaluated.

We hope this playbook will be a valuable resource for anyone looking to strengthen capacity for data skills and analysis within organizations and countries, and to apply these skills to solve pressing societal challenges, in Africa and worldwide.

About the playbook

Aims

This playbook aims to offer insights and inspiration for anyone interested in using data science to tackle complex and interrelated climate and health challenges.

Scope and limitations

This resource offers a detailed look at how CAN was structured, and lessons learned from working with emerging data scientists, governments, and organizations in countries across Africa. However, it's important to keep in mind that there is no one-size-fits-all approach to running this type of program; what works in one country or context may not work in another, and elements may need to be tailored to ensure everyone gets the most from the experience.

That said, there are some key principles underpinning CAN that we believe will support any similar program looking to use data to tackle complex, interrelated challenges. These include the power of:Combining data science training with

experiential learning through the fellowship program, enabling data scientists to apply their sharpened data skills to real-world problems.

- ↪ Creating environments that foster innovation, by blending data science skills with domain and sectoral expertise.
- ↪ Building the capacity for working with data within the public sector and social impact organizations.
- ↪ An engaged network of partners working together to share best practices, scale effective tools and approaches, and amplify impact.

Glossary

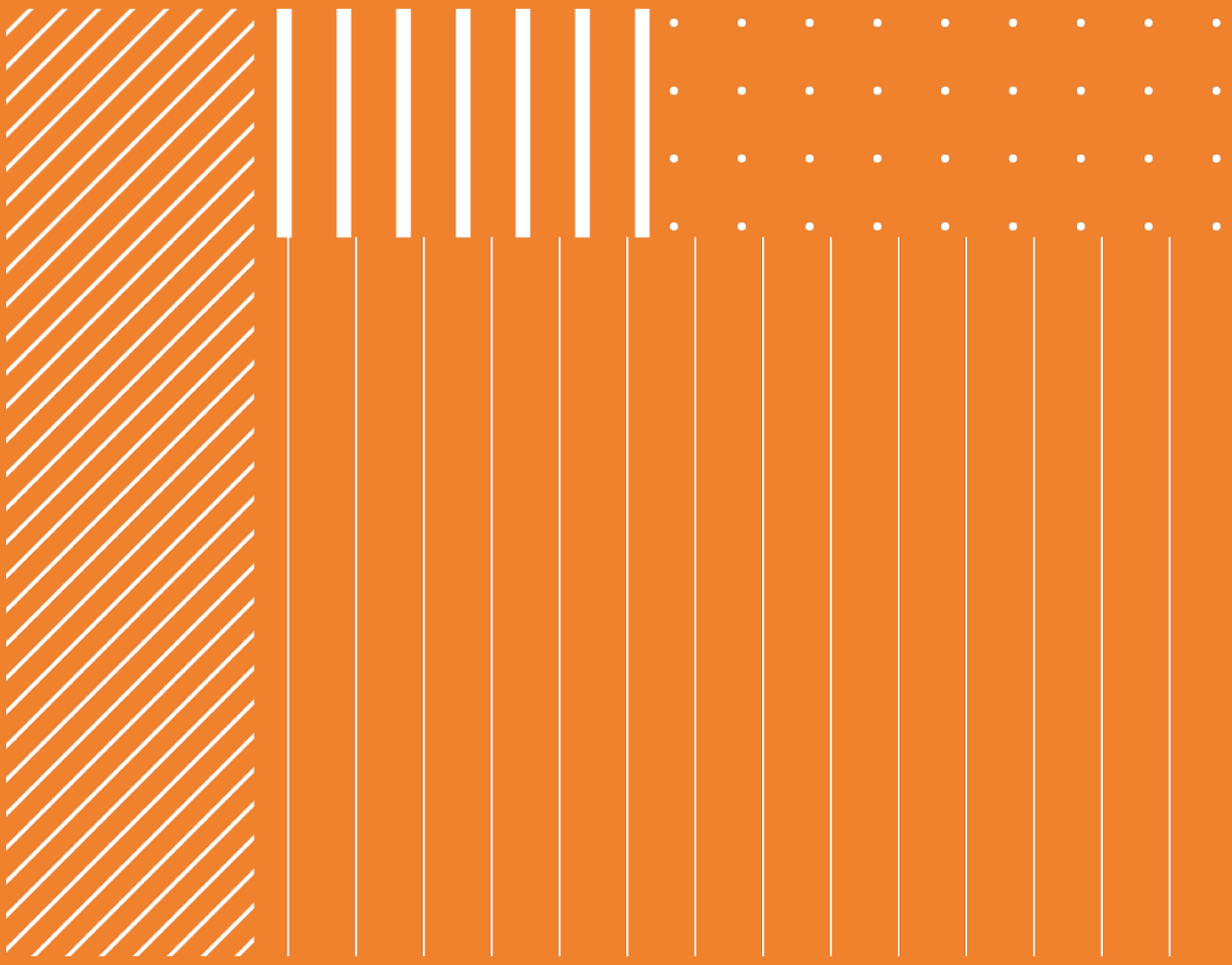
AI	Artificial intelligence.
CAN	Capacity Accelerator Network, which is set up as a network of networks globally.
Africa CAN	The Africa Climate and Health Data Capacity Accelerator Network.
GEO-LDN	The Group on Earth Observations Land Degradation Neutrality Flagship, an initiative launched in 2018 to bring together Earth observation data providers and governments to share datasets and resources to monitor and tackle land degradation. GEO-LDN helps governments access data and tools to prioritize interventions, manage land better, and report on SDG indicator 15.3.1.
Global Partnership	Global Partnership for Sustainable Development Data.
MEAL	Monitoring, evaluation, accountability, and learning.
NGO	Non-governmental organization.
RCMRD	Regional Centre for Mapping of Resources for Development.
SDG	United Nations Sustainable Development Goal.
SIO	Social impact organization—an organization focused on working for the public good and creating positive social or environmental change.

Chapter 1

Why Africa needs a climate and health data revolution

Sections

Pages



Why this matters to you

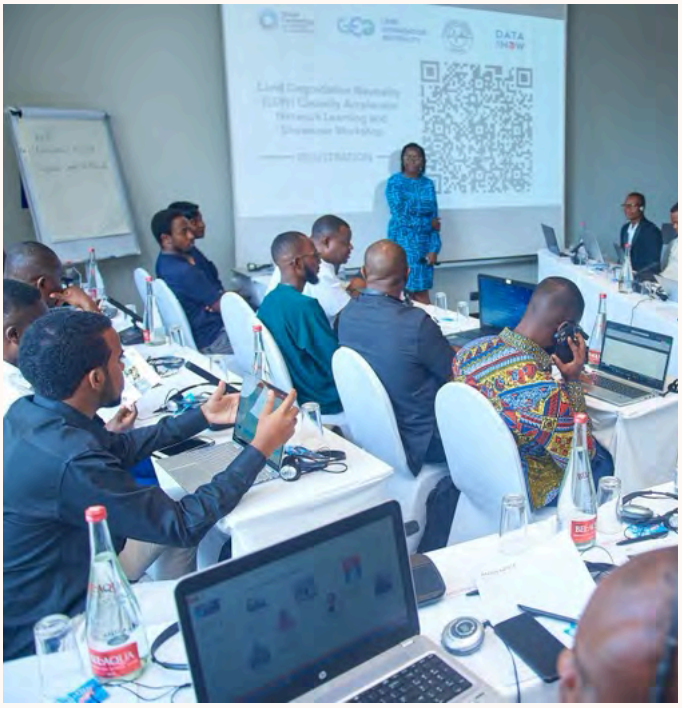
Funders
Spot high-leverage entry points where capacity building unlocks policy and service improvements.

Partners
Align institutional priorities to a continental agenda for impact at scale.

Learners
Anchor your learning in urgent, locally relevant use cases.

The World Health Organization projects that climate change will lead to an additional 250,000 deaths annually between 2030 and 2050, with Africa and Asia bearing the brunt of these impacts.

The World Health Organization projects that climate change will lead to an additional 250,000 deaths annually between 2030 and 2050, with Africa and Asia bearing the brunt of these impacts. Along with direct threats to life from emergencies like flooding, heatwaves, and storms, climate change impacts food systems, water resources, air quality, livelihoods, and other key contributors to human health.



The intersection of climate and health offers a unique opportunity to harness the power of data to inform policy and drive action. New data sources can provide a clearer picture of how the changing climate is affecting people's lives, shining a light on better approaches to help prevent, mitigate, and respond to these threats.

Likewise, new ways of working with, combining, and interpreting the data that already exists within Ministries of Health, Ministries of Environment, and social impact organizations can offer new insights and solutions to these challenges.

The vital role of Africa CAN

"The data science tools and skills developed through the CAN Fellowship are already making a difference across Africa, not just within the Fellows' host institutions, but also in other projects focused on climate resilience, public health, and sustainable development. It's exciting to see this kind of homegrown expertise being shared and scaled where it's most needed."

Linet Kwamboka, Senior Manager, Innovation for Business Development, the Global Partnership

Africa CAN focused on training data professionals across the continent to work at the intersection of climate and health data. The aim was to build a robust data ecosystem; provide actionable insights for policymakers, researchers, and communities; and have the right skills in the right place to prevent and respond to health emergencies resulting from the climate crisis.

The training phase of the program focused on equipping professionals with the skills to collect, analyze, and interpret climate and health data, including understanding the sources of such data, methodologies for data collection, and statistical techniques for data analysis.

The fellowship phase was an opportunity for early to mid-career data science professionals, contracted by the Global Partnership, to apply their skills to real challenges faced by African institutions and communities. Africa CAN's work underscores the importance of capacity-building for informed decision-making on climate and health issues. By training data professionals, the network addressed the

immediate need for data and invested in the long-term sustainability of Africa's data ecosystem.

The power of collaboration

"The eventual goal of CAN, and beyond the program, is to create a network of data professionals that are working on climate and health data, collaborating with and learning from each other, where people's lives are improving as a direct result of this initiative."

Annita Mwagiru,
Project Officer,
the Global Partnership

One of Africa CAN's primary objectives was to create a network of data professionals across Africa who could take the cutting-edge software and skills learned in the program back to their institutions. The aim was to increase both awareness of what the climate is doing to people in terms of public health and the capacity within governments and organizations to understand and use the data being collected.

Three years after the network's inception, governments and organizations are gaining the skills to use data to make better decisions, learning from each other, and sharing innovative ideas that work. For example, a health data expert may not have experience in working with

climate data, or vice versa. Through capacity-building and collaboration under Africa CAN, new innovations and solutions have emerged, offering fresh insights into how climate change is affecting public health.

Chapter 2

How Africa CAN works: Model and partnerships

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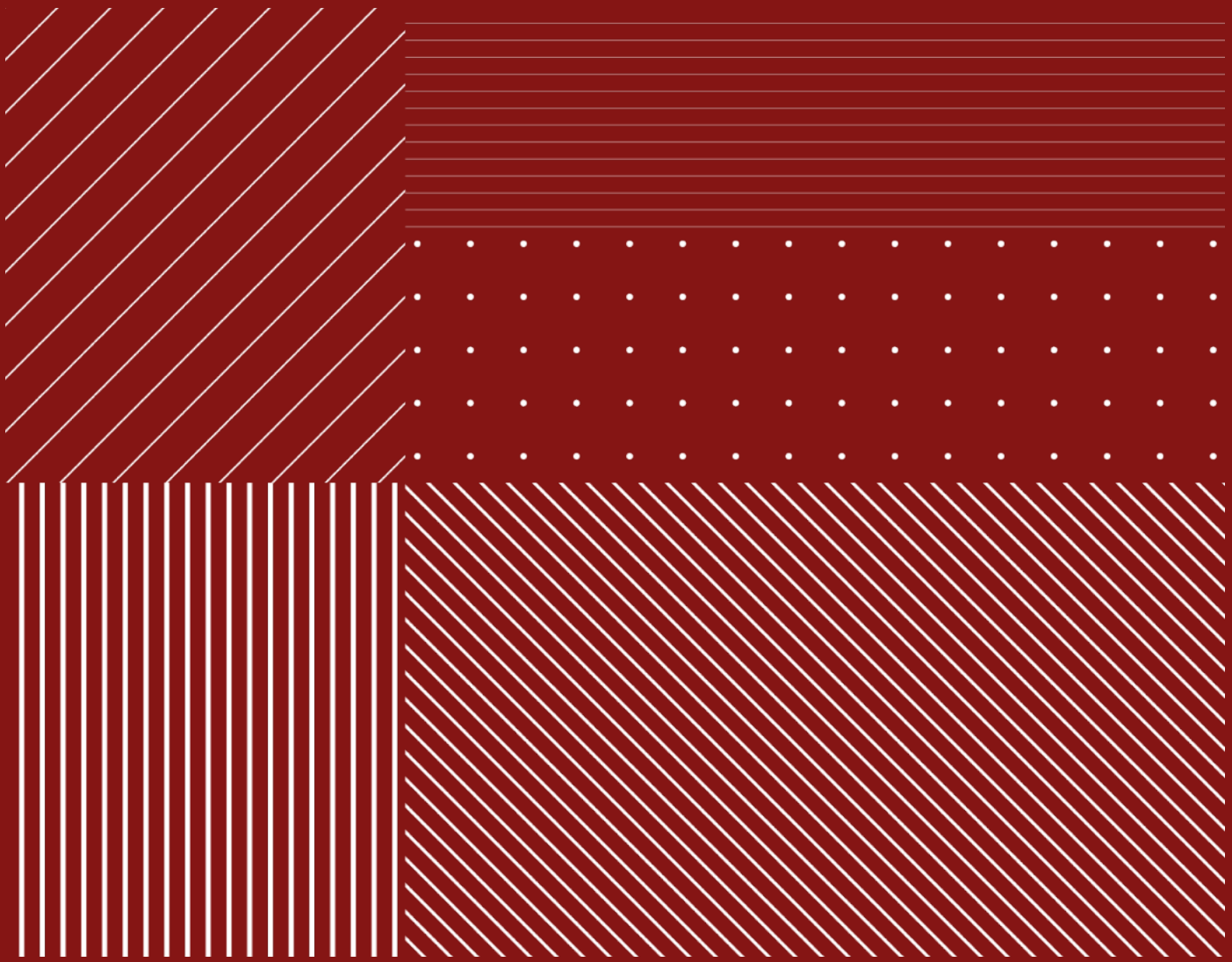


Why this matters to you

Funders
Understand the CAN structure and phased model that converts training plus experiential learning into outcomes.

Partners
See how your organization plugs into delivery, mentorship, and hosting to make the model work.

Learners
Learn how the blend of theory and hands-on fellowships builds practical capability.

The Global Partnership is a network of more than 700 organizations based in more than 80 countries.

Core partners

The Global Partnership for Sustainable Development Data

The Global Partnership is a network of more than 700 organizations based in more than 80 countries, spanning governments, academia, civil society organizations, and the private sector, working together to use the power of data to achieve the Sustainable Development Goals (SDGs).

The organization's 2024–2030 strategy envisions a world where data and technology are driving sustainable and equitable development. In practice, this looks like:

- Strengthening national data systems that use data and technology from across the public and private sector for timely decision-making.
- Making inclusion the norm, putting people at the center of data production, sharing, and use so that their experience is visible and the power of data is used to fight inequality.

↪ Shaping how data is governed, ensuring it is accountable to those whom the data is intended to serve.

Data.org

Data.org is accelerating the power of data and AI to solve some of the world's biggest problems. By hosting innovation challenges to surface and scale groundbreaking ideas, and elevating use cases of the most effective tools and strategies, the platform is building the field of data for social impact. By 2032, data.org will train one million purpose-driven data practitioners, ensuring there is capacity to drive meaningful, equitable impact.

A SPECIAL LOOK INSIDE CAN

How it worked: the Africa CAN model

Africa CAN was launched by the Global Partnership and data.org, with support from the Wellcome Trust, to build expertise in using climate and health data for social impact. Designed as part of data.org's broader Global Data Capacity Accelerator initiative, the Africa Climate and Health Data Capacity Accelerator Network brought together partners, including the African Population and Health Research Center and OpenUp, to train and support purpose-driven data practitioners. The program aimed to strengthen data capacity across government and impact sectors by equipping a new generation of talent to tackle pressing challenges at the intersection of climate and health through data science and analytics.

Africa CAN encompassed several key components: a three-month training on working with climate and health data; the Fellowship, where learners from the training provided real-world use cases for experienced Fellows to solve; capacity-building workshops that homed in on specific data-related subjects; and networking events and activities.

The program began with the data science training, followed by experiential learning through the fellowship scheme, and aimed to build a robust data ecosystem that empowers communities and drives impactful solutions for sustainable development.

The initiative's primary objective was to build data capacity by strengthening the skills and capabilities of data professionals, enabling them to tackle pressing challenges.

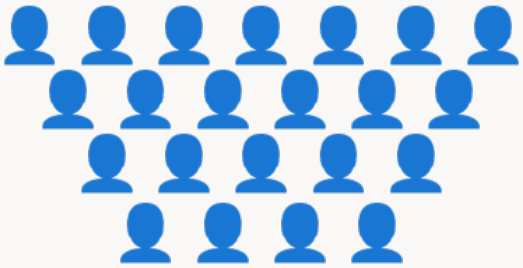
- Annual three-month data analysis training: Following an open call for applications, the training offered a practical introduction to data science, types of health and climate data, and real-world applications.
- The CAN Data Science Fellowship: After the training, emerging data professionals had an opportunity to apply for a fellowship, a five or six-month engagement that offered hands-on experience with a host institution supporting a use case, or to conduct research, and the chance to apply their data skills in the real world. (There were eight Fellows in cohort one, ten in cohort two, and five in cohort three.)
- Capacity-building workshops: One-off complementary workshops on specific topics were held to deepen the skills of data practitioners and offer opportunities for collaboration.
- Collaborative projects and networking events: A range of activities fostered collaboration, peer-to-peer learning, knowledge exchange, and strategic partnerships.

The Africa CAN training

The Africa CAN training was designed to provide learners with a comprehensive and practical introduction to data science in climate and health, covering data collection, analysis, visualization, machine learning, communicating with and about data, cutting-edge tools, ethics, governance, and more. It was delivered through a mix of live virtual sessions, recorded lectures, assignments, quizzes, and case studies. The training included diverse learners from government agencies (ministries, departments, and statistical offices), academia, the private sector, and civil society. Learners were also mentored by experienced data scientists and instructors from the training providers. More than 200 data practitioners were trained in data science and its application in health, climate, and related topics over a three-year period.

For more information on the training curriculum, see chapter 4.

The Africa CAN Data Science Fellowship



Benin, Democratic Republic of the Congo (DRC), Ethiopia, Ghana, Guinea, Kenya, Mali, Malawi, Nigeria, Somalia, Uganda

22 Data professionals

11 African countries

A total of 22 data professionals from 11 African countries were placed in paid data fellowships between 2023 - 2025.

The fellowship program, which provided data professionals with hands-on experience, was central to Africa CAN. Participants focused on identified, country-specific use cases

(projects), working with host institutions and sectoral experts to apply their knowledge and break new ground in the use of climate and health data. In doing so, they increased their data skills, boosting demand for data among public and social impact organizations, developing innovative solutions, and building the capacity of the organizations they worked with to use data more effectively in the future.

The fellowship included practical project work, media training, and opportunities for Fellows to present their work at local, regional, and international events, aiming to produce a network of data professionals committed to sustainable development.

To find out more about the Africa CAN Fellows and their work, read selected case studies and browse profiles of all Fellows in chapter 5, and learn about some Fellows' journeys in chapter 6.

Capacity-building workshops

In addition to the core training, Africa CAN held a number of capacity-building workshops. These standalone events were designed to boost the skills of data practitioners and stakeholders by going in-depth into specific, impactful areas such as advanced data analytics and tools, developing climate and health data applications, data storytelling and visualization, and effective communications strategies. They provided technical training, promoted best practices, and supported ongoing learning among participants.

For more information on Africa CAN workshops, see chapter 7.

A SPECIAL LOOK INSIDE CAN

Spotlight on storytelling: How a CAN campaign sparked interest, connection, and community

In August 2024, the Global Partnership team launched a storytelling campaign to spotlight the work of Fellows and build awareness about the program. By focusing on real people and real impact, the campaign helped people understand what Africa CAN is all about and why it matters.

A wave of interest

As the stories rolled out through newsletters, social media, blogs, and videos, interest in Africa CAN surged. The campaign resulted in the highest organic traffic of the year on the Global Partnership website: over 109,000 visits in August and 96,000 in September. People did not just visit. They stayed to read, watch, and explore, leading to more than 600,000 interactions during those two months.

Shared through the right channels

The campaign reached people through a mix of direct links, search, social media, and email.

600,000	109,000	96,000
Interactions in two months	**Website visits in August**	**Website visits in September**

Real stories, lasting impressions

As of May 2025, 16 Africa CAN videos had been produced and shared, garnering more than 12,000 views on YouTube. More videos are in development.

These short, human-centered stories helped bring the projects to life and made the case for why this work matters.

52.8%	21.3%	10.9%	6.1%
Direct link traffic	**Search traffic**	**Social media traffic**	**Email campaigns**

A growing network across the continent

The storytelling campaign contributed to the growth of a connected community of more than 1,100 African data scientists, researchers, and learners (as of May 2025). Many discovered Africa CAN through these stories and chose to stay engaged.

High demand, strong momentum

Across the three application rounds, the Africa CAN Fellowship received more than 5,000 applications, a strong indicator of the relevance and reach of the program.

Collaborations and networking events

Africa CAN also facilitated collaborative projects by bringing together data professionals, SIOs, and government agencies to address climate and health challenges in peer exchange events. These events and projects promoted interdisciplinary collaboration, developed scalable solutions, and demonstrated the impact of data-driven approaches.

Africa CAN aimed to create opportunities to drive advancements in sustainable development through strategic partnerships with academic institutions, nongovernmental organizations (NGOs), and private-sector organizations. These partnerships strengthened the data ecosystem and amplified impact, contributing to the program's success.

What set Africa CAN apart?

Part of Africa CAN's success came down to the union of data science with sectoral expertise. Through the fellowship, professionals with strong data skills who perhaps lacked the experience to apply those skills within a certain sector (such as health or transport) were paired with government departments and social impact organizations with domain expertise in a particular sector (but who may have lacked technical skills). As Davis Adieno, Global Lead for Innovation for Business Development at the Global Partnership, says: "This is where the magic happens."

> "The Capacity Accelerator Network is a really important program for us because it is providing the opportunity for experiential training, to empower our partners with the technical skills needed to apply new tools and methods when it comes to data science."
>
> **Davis Adieno,**
> **Global Lead, Innovation for Business Development, the Global Partnership**

The result was a partnership that sparked innovation and new ways of solving complex problems. Fellows and host organization mentors worked together and learned from each other. By the end, you had data scientists who understood how to apply their skills within a particular sector, and government officials who were better equipped to use and interpret data to solve problems.

"Now I have a lot of skills in GEO-LDN tools, and I can support partner organizations and other organizations that are also championing land degradation neutrality."

Clement Danso,
Africa CAN Data Science Fellow (Ghana),
cohort one

The network that was built around Africa CAN set it apart from other initiatives. Africa CAN connected Fellows and host institutions from different countries to discuss which approaches worked and what could be replicated in other countries. For example, through the program an official from the Ministry of Environment in the Democratic Republic of the Congo connected with an official in the Ghana Statistical Service Environment Department to exchange knowledge and share what did and didn't work when it came to using data more effectively.

"CAN gave me an opportunity to make an impact to my country."

Agnes Okero,
Africa CAN Data Science Fellow (Kenya),
cohort one

Africa CAN made significant strides in building data capacity and fostering innovation across Africa. This included developing predictive models for climate resilience, creating data-driven health prevention and intervention strategies, and fostering collaborative projects with local partners.

The power of the network created around Africa CAN increased the impact of this work even further, with tools developed in one country being shared with other nations. For example, in Nigeria, Africa CAN Fellow Abubakar Isa-Abubakar developed an innovative data collection tool with support from GEO-LDN, one of the partners in the Africa CAN program. This tool will become part of the GEO-LDN toolbox (a suite of tools for addressing land degradation), where it can be used around the world to support informed decision-making and policy development.

Chapter 3

Growing the ecosystem: Collaboration, policy, and partnerships

Sections Broader external stakeholder engagement

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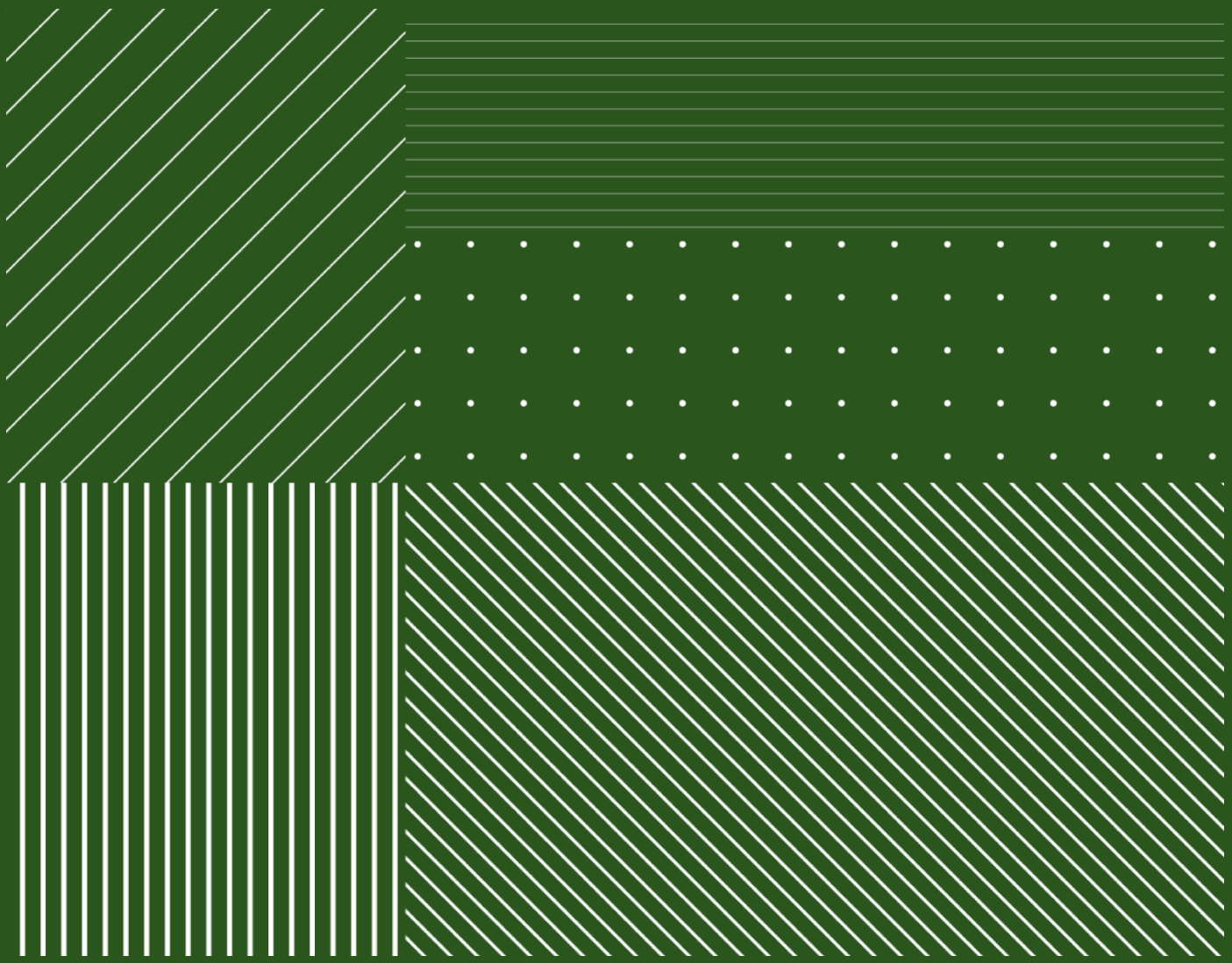


Why this matters to you

Funders
Learn how network effects and open collaboration amplify every grant.

Partners
Connect with peers to share data responsibly and co-create solutions that travel.

Learners
Build relationships that move projects from prototypes to policy and practice.

Through Africa CAN, the Global Partnership has become a central hub and nexus point for climate and health data work in Africa, acting as a network convenor for all the various stakeholders

Broader external stakeholder engagement

The Global Partnership has leveraged and expanded its existing network of more than 700 organizations worldwide to cultivate partnerships and meaningful collaborations for Africa CAN.

Here are some of the most impactful ways that partners have been engaged to take part and collaborate in this initiative.

Convening the network

Through Africa CAN, the Global Partnership has become a central hub and nexus point for climate and health data work in Africa, acting as a network convenor for all the various stakeholders (trainees, Fellows, training providers, governments, academia, social impact organizations, and more), and is proud to have created a network that can scale efforts and amplify impact.

To establish the Africa CAN program, the Global Partnership leveraged its existing connections and partnerships with National Statistics Offices in Africa, then worked with them to bring other stakeholders on board as collaborators or data providers. As Africa CAN became more established, partners were increasingly aware of the program's impact and keen to get involved. This created more direct lines of access to Ministries of Health and Ministries of Environment across Africa, and other partners who could provide valuable skills, lessons, and data to support the program.

Since its founding, the Global Partnership has focused on building enduring collaborations, helping countries to achieve their goals for 2030 (the deadline for the SDGs) and beyond. This ethos ran through Africa CAN; the aim was to broker partnerships that were sustainable and build skills that would endure to inform effective decision-making.

Cultivating Africa CAN as a network within a network

Africa CAN has built its own network, which is similar to and connected to data.org's larger CAN network. This network brings together partners eager to collaborate on climate and health data in Africa, including government ministries, health agencies,

medical professionals, climate scientists, NGOs, and SIOs, to use data more effectively in their work. Once again, the Global Partnership acted as a network convener, bringing various organizations together in different ways to support collaboration.

Brokering introductions and connections

One of the ways this happens is through the brokering of specific connections, where synergies and opportunities exist or a particular need arises. For example, the University of Florida took part in the Africa CAN data science training as a complementary trainer, hosting a session on its cholera dashboard. The potential for the dashboard to generate predictive models for cholera outbreaks elicited a lot of interest from countries seeking to access this tool. Through Africa CAN, the Global Partnership helped to broker connections between the University of Florida, the Kenya National Bureau of Statistics, and the Uganda Bureau of Statistics to work on the dashboard and implement it in Kenya and Uganda.

Through its strong network, Africa CAN helped to ensure that countries could access and incorporate innovative tools like this to use data more effectively to solve problems.

Supporting ethical data sharing

The strong network that formed around Africa CAN also helped to facilitate ethical data sharing, particularly when it came to collecting data that Fellows required for their innovative projects. The Global Partnership leveraged its role as a network convenor to help Fellows get in touch with various data holders, make the case for data sharing for the public good, and set up strong agreements.

For example, in Ghana, one of the fellowship projects examined air quality data and its impact on public health. To gain the most comprehensive dataset, the project required input from several stakeholders, including data from Ghana Health Service; air quality statistics from India's Air Quality Index; local air quality statistics held at the Ghana Statistical Service; and environmental markers held by other organizations. Through leveraging the strength of the network, the Global Partnership was able to connect the organizations and ensure the work moved forward.

Facilitating peer-to-peer learning

Ensuring that the knowledge held within institutions was shared for the benefit of all was an important part of Africa CAN. Peer-to-peer learning ran through the Africa CAN

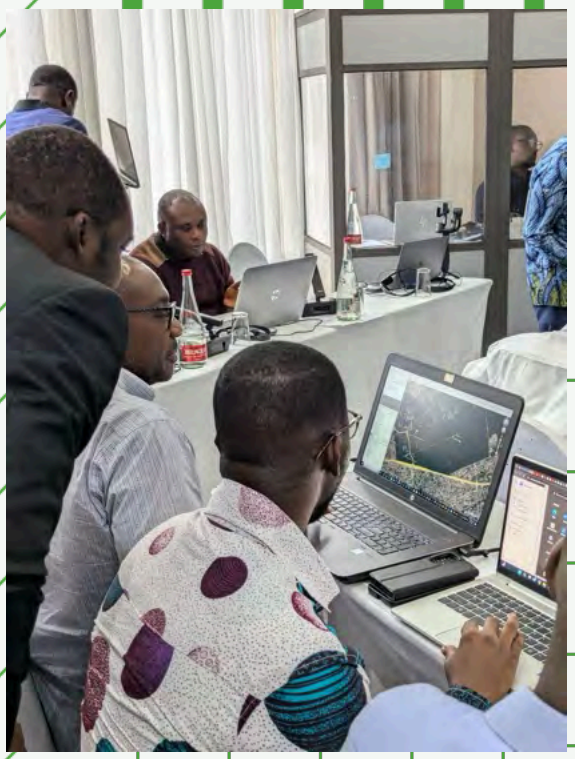
training program; since cohort two, participants were put into smaller groups where they could work together on projects and support and learn from each other.

Community organization

Africa CAN's series of events focused on bringing together diverse groups of stakeholders from across countries to exchange ideas, explore solutions, forge connections, and work together to find the best ways to tackle shared problems.

Again, the focus was on facilitating an environment where attendees working across climate and health in different countries and sectors could meet each other, exchange insights, and lay the groundwork for deeper partnerships and collaborations.

For more on Africa CAN's events and activities, see chapter 7.



Chapter 4

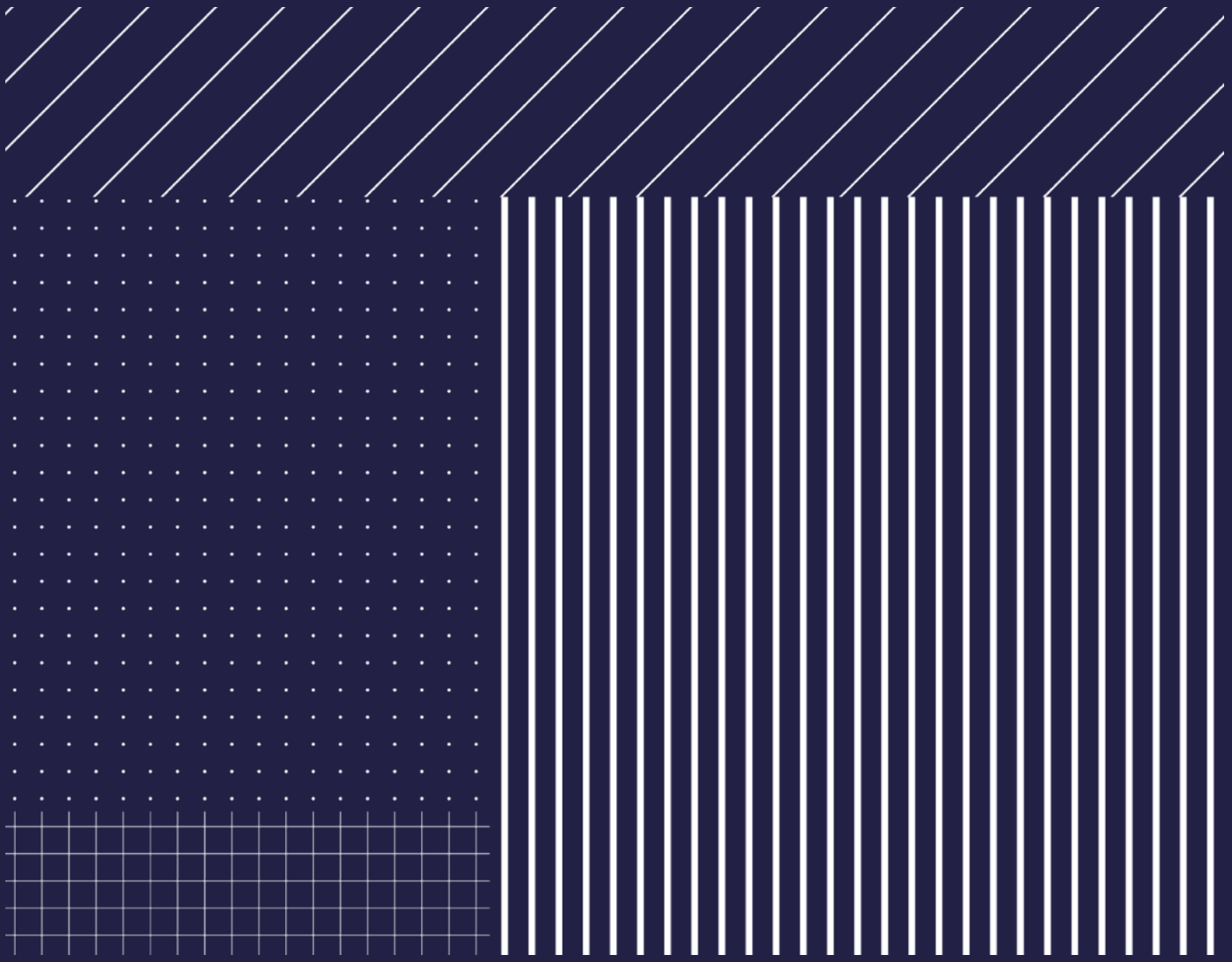
Building the skillset: Inside the Africa CAN training experience

Sections

Training course and modules
How the training program evolved

Pages

30–38



Why this matters to you

Funders
Review the curriculum design that delivers measurable skill gains tied to national priorities.

Partners
Know the competencies graduates bring back to strengthen your teams.

Learners
Preview themes, tools, and assignments you can apply on day one.

The program was designed for government officials, academics, and members of civil society, as well as data professionals who wanted to deepen their data skills and use them for social development.

Training course and modules

The three cohorts of the three-month Africa CAN training program supported participants to strengthen their data science skills and learn how to work with climate

and health data. The program was designed for government officials, academics, and members of civil society, as well as data professionals who wanted to deepen their data skills and use them for social development. It focused on building literacy and analysis skills in climate and health data, then moved on to working with more advanced tools for predictive modeling and data analysis, such as Python, R, dashboards, and geospatial tools.

Table 1 provides a closer look at what this training encompassed and how it was structured. It features the schedule for the third Africa CAN training program, which ran from February to June of 2025. Below this, you can find information on how the curriculum evolved and was updated for cohorts two and three to include more case studies, a greater focus on peer learning, and a tighter focus on the African context. Each program was updated based on feedback and lessons learned from the previous cohort. For more on how the impact of the training was evaluated, see chapter 8.

Table 1: 2025 Africa CAN training schedule for cohort 3.

Module 1

Introduction to data for the climate and health nexus

Training provider: OpenUp

This module looks at the intersection of climate and health, how data can be used and overlaid, and the current landscape.

Week	Level	Session Content
1	**Beginner**	Welcome to CAN
1	**Beginner**	The African data landscape
7	**Intermediate**	Machine learning in the African context

Module 2

Data wrangling basics

Module 2 focuses on how to organize messy data using spreadsheets, simple ways to clean and fix data, and basic techniques to understand and fix patterns in data.

Week	Level	Session Content
2	**Beginner**	The principles of tidy data and how to achieve them using spreadsheets
3	**Beginner**	Data cleaning and standardizations
4	**Beginner**	Basic analysis and exploratory data analysis

Module 3

Health data

Module 3 explores what an ideal and impactful healthcare data system looks like, how data can guide key decisions such as how to manage resources and plan better care for communities, how to use map and location data to track diseases and plan health responses, and a simple view of how our genes can influence health and how scientists study these patterns in populations.

Week	Level	Session Content
2	**Beginner**	The principles of tidy data and how to achieve them using spreadsheets
4	**Intermediate**	Health data for resource allocation and health system planning
7	**Intermediate**	Geospatial data and health
11	**Intermediate**	Introduction to genetic epidemiology

Module 4

Climate data

Module 4 dives into where climate data comes from and why it matters, how climate change affects people and communities, how data can help create smart strategies to adapt to these changes, free and easy-to-use tools for tracking climate issues, and a case study on how data was used to protect mothers and children from extreme heat.

Week	Level	Session Content
3	**Beginner**	Data principles, context, and sources for climate data
6	**Intermediate**	Climate impacts and adaptation strategies with data
10	**Intermediate**	Open tools for tracking climate issues
13	**Intermediate**	Case study: Data-informed adaptation strategies to address risks to mother and child health due to extreme heat

Module 5

Advanced data wrangling

This module covers the basics of using Python and Google Colab, working with data using Pandas, more advanced ways to analyze data (including finding patterns and relationships using statistics), and an introduction to machine learning and building models to make predictions and solve real-world problems.

Week	Level	Session Content
5	**Beginner**	Getting started with Python and Google Colab
6	**Intermediate**	Getting started with Pandas for Python
7	**Intermediate**	Advanced Python and Pandas for correlations and statistics
9	**Advanced**	Machine learning in Python
10	**Advanced**	Modeling for machine learning in Python, part two
12	**Advanced**	Predictive modeling

Module 6

Data visualization and communication

Module 6 centers on how to turn data into clear, engaging stories using visuals that are easy to understand, the basics of visual encoding, how to use charts and graphs to communicate information, what makes an effective data story, how to communicate health and climate issues in ways that connect with different audiences, and using tools like Looker Studio for building interactive dashboards that bring data to life.

Week	Level	Session Content
4	**Beginner**	Principles of visual encoding and what makes a good data story
12	**Intermediate**	Communicating with data: Visual encoding and what makes a good data story
13	**Intermediate**	Health-focused climate communication
15	**Intermediate**	Building dashboards in Looker Studio
15	**Intermediate**	Your projects and wrap-up

How the training program evolved

The training programs in 2024 and 2025 followed a similar structure but evolved to incorporate lessons learned from running the program, and to make the program as useful as possible as Africa CAN began to find its feet.

For example, the cohort 2 training, which began in July 2024 and was delivered by OpenUp, kicked off with an introduction to CAN and the African climate and health data landscape, rather than looking at climate and health data more generally. Participants were split into six learning groups to encourage peer support and learning; each group was given its own breakout room during Zoom calls, and a WhatsApp group for collaborating outside of the workshops.

While going through the program, the groups were encouraged to work together on a number of projects that would be enhanced by the use of data skills, such as preparing a presentation for a conference or communicating health or climate risks to the public, as a way to explore and experiment with some of the skills and tools they'd learned. This involved considering questions such as:

- Where do you find data?
- How do you test if it is reliable?
- Is it clean and tidy?
- How can you begin to explore it and develop hypotheses for testing?
- Do you need additional data to test your hypotheses?

From cohort 2 onward, the program also incorporated more case studies from organizations and projects using data for the public good, including Epiverse by data.org, a global collaborative dedicated to using data to get ahead of the next public health crisis; a session exploring the use of GIS tools for land degradation monitoring by the Regional Centre for Mapping of Resources for Development (RCMRD); and insights on the use of drone technologies for climate and health response by WeRobotics.

There was also a greater focus on making useful insights accessible through strong data storytelling, with sessions on what makes a good data story; health-focused climate communication; visualizing geospatial data with Open Street Maps; and building dashboards in Looker Studio or Microsoft BI.

A SPECIAL LOOK INSIDE CAN

Evolving virtual training strategies

Participation barrier	Strategy	Outcome
Talent pipeline development	Launched storytelling initiatives to inspire participation. Implemented comprehensive data science and data literacy assessments (in cooperation with dataelements.io) to objectively screen registered candidates for more efficient talent pipeline management, and to gauge learning progress during and after training.	Registration surged following the storytelling campaign featuring Fellow success stories and multimedia content. Improved participant commitment through skills-based screening and enhanced program visibility across target sectors.
Completion rate challenges	Adjusted completion threshold based on attendance rates and industry research. Introduced comprehensive onboarding package detailing time commitments, technical requirements, course structure, and clear certification pathways.	Improved learner preparation and commitment with clear understanding of program demands and outcomes. Completion numbers improved from 21 (cohort 1) to 31 (cohort 2) participants, with cohort 3 achieving 198 completions out of 502 registered learners.
Limited learner feedback	Diversified feedback collection methods (Zoom, WhatsApp, Slack) and persistent chat channels for seamless community management. Broke long surveys into topic-based segments. Integrated surveys	Post-training survey responses increased from 18 to 23 responses between cohorts, with cohort 3 achieving over 90 responses.

A SPECIAL LOOK INSIDE CAN

Evolving virtual training strategies

Participation barrier	Strategy	Outcome
	into course materials and linked completion to certification requirements. Incentivized feedback with automated milestone updates helping learners track their advancement toward certification.	
Limited peer interaction	Introduced breakout rooms and WhatsApp groups for six learning groups (cohort 2 onwards); structured group work with 3–4 learners per group completing 4 collaborative projects throughout the course.	Enhanced collaborative learning and peer support networks with regular peer learning sessions and collaborative problem-solving.
Language accessibility barriers	Provided all learning materials in both English and French with simultaneous interpretation for live sessions.	Enhanced participation from Francophone learners and improved program accessibility across Africa.
Technical access barriers	Implemented unified virtual workspace requiring account login, mandatory dedicated email accounts for consistent tracking, comprehensive technical requirements documentation, and session recordings available within 48 hours.	Reduced dropout due to technical difficulties and with improved breakout room functionality and continuous engagement between sessions.
Limited practical application	Expanded focus on data storytelling and visualization skills, with group projects throughout training.	Participants better equipped to communicate findings and apply skills in practice.

Chapter 5

The impact in motion: How Fellows are driving change

Sections

A Closer Look:
Nigeria
Kenya
Guinea

Pages

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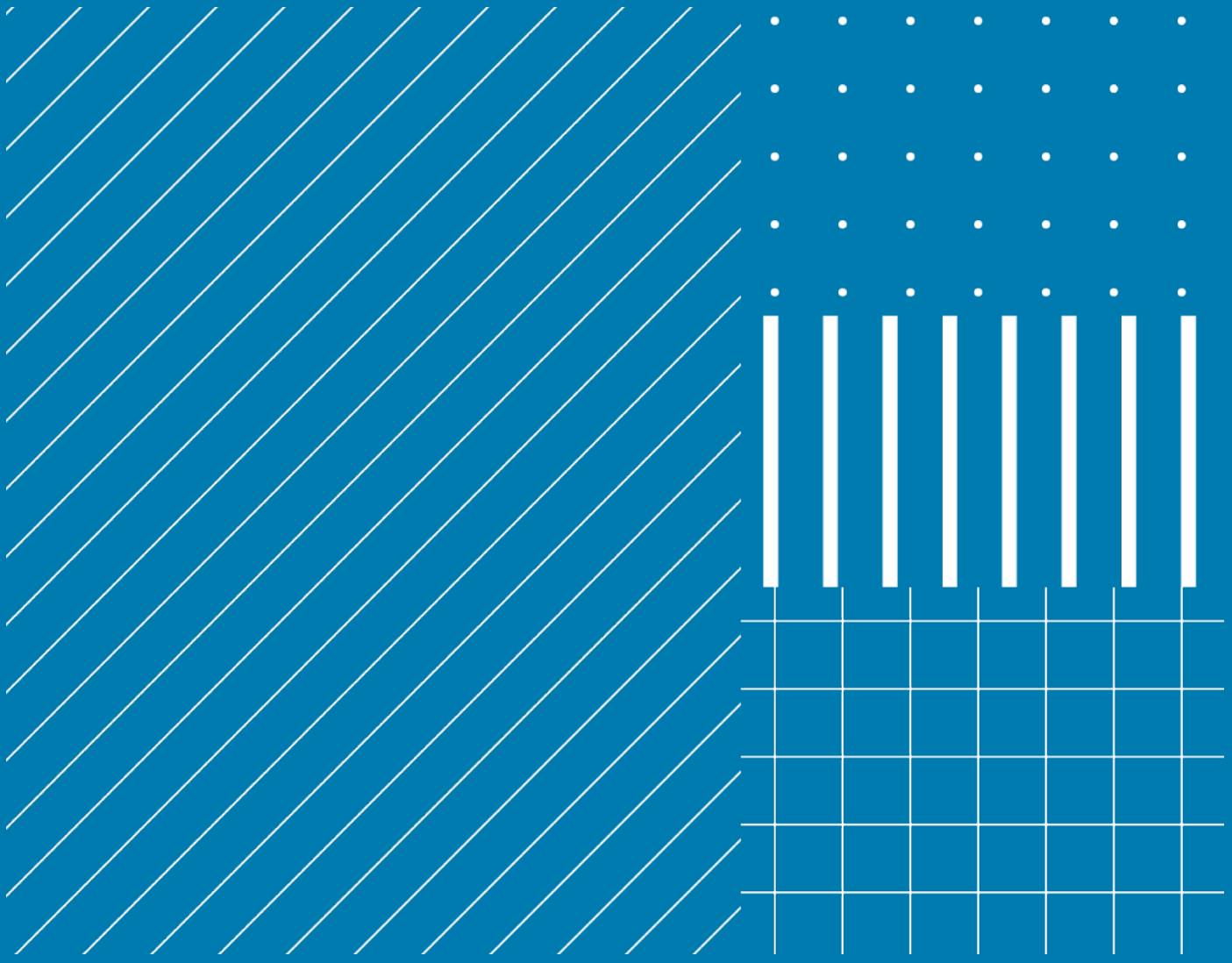


Why this matters to you

Funders
See case studies that link investment to outcomes for people and institutions.

Partners
Identify replicable models and partnerships to adapt in your context.

Learners
Trace clear pathways from training to real-world impact with partners.

Nigeria: Using data science to tackle land degradation

COHORT ONE

Abubakar Isa-Abubakar
Africa CAN Data Science Fellow
Nigeria

Africa CAN Fellow Abubakar Isa-Abubakar worked with the Nigeria Federal Government, in collaboration with GEO-LDN, to use data science technologies to tackle land degradation in Amba Community, Nasarawa State.

The problem

The Amba Community has been experiencing severe land degradation fueled by factors such as deforestation, soil erosion, unsustainable agricultural practices, and climate change. The lack of comprehensive data on the specific causes and extent of land degradation in Amba Community hindered the government's ability to assess the

situation, develop effective land restoration strategies, and make informed decisions to build resilience and protect livelihoods.

The approach

Abubakar was integrated into the Nigeria GEO-LDN Global Dialog Forum intersectoral team (including representatives from the Federal Ministry of Environment, the National Space Research and Development Agency, the International Federation of Red Cross and Red Crescent Societies, and the University of Calabar) as a data science technical support. The support he provided was instrumental in several key areas, including creating a concept note, which helped to secure further funding for the project; developing innovative new tools to monitor and assess land degradation across Nigeria; and training local stakeholders on using advanced geospatial tools.

Challenges and lessons

The project experienced initial data gaps, and local stakeholders had limited capacity in data collection and analysis. Addressing these challenges provided valuable lessons on the role of partnerships and capacity development in managing environmental problems.

Outcomes and results

By addressing the challenges of fragmented data and the limited infrastructure for systematic collection and analysis of land degradation data in the region, the project resulted in a number of positive outcomes, including:

- A comprehensive assessment of land degradation in Amba Community.
- Innovative tools for tracking land degradation, like the Nigeria Decision Support System app and a new data collection tool. The latter will become part of the GEO-LDN toolbox, where it can be used by other countries and intersectoral teams.
- Increased data access for policy, practice, and funding allocation for addressing land degradation.
- Enhanced capacity training for local stakeholders.
- A strategic framework to address land degradation, using data science technologies to map and analyze the state of the land in the target area.

Read the full case study here.

Kenya: Using better data to transform carbon emissions monitoring in Kenya

COHORT ONE

Agnes Okero

Africa CAN Data Science Fellow

Kenya

The Kenya National Bureau of Statistics engaged Agnes Okero to address the critical challenge of accurately monitoring carbon emissions in Kenya's road transportation sector.

The problem

The road transport sector in Kenya contributes significantly to greenhouse gas emissions. However, there was a critical gap in reliable data and methodologies for estimating carbon emissions from this sector, hindering the ability to make sound policy decisions.

The approach

The project aimed to empower stakeholders with the skills and tools needed to effectively manage carbon emissions. Okero worked with multiple stakeholders to broker data-sharing agreements, bringing together different data sources to create a more comprehensive dataset. This included integrating advanced analytics and technologies like machine learning and AI, and combining transport data with information from other sectors to uncover previously hidden insights.

Challenges and lessons

The project faced a number of challenges, including engaging stakeholders with various interests; navigating concerns around data sharing; negotiating clear, ethical data-sharing agreements; and integrating different data sources in diverse formats while ensuring the quality and reliability of the data.

Outcomes and results

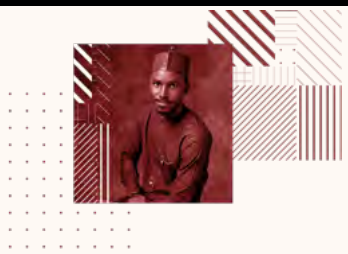
The initiative has significantly improved carbon emissions management within Kenya's road transport sector. Through a new, standardized emissions model and user-friendly interface, stakeholders can simply input the transport sector data (such as vehicle counts, fuel consumption, and traffic patterns) into the system to obtain accurate carbon emission estimates.

The standardized model developed is already being used by key agencies in Kenya to monitor emissions on the country's roads and offers a blueprint that other nations can follow.

Read the full case study here.

Meet cohort one

October 2023 to April 2024



Abubakar Isa-Abubakar, Nigeria

Project: Using data science to tackle land degradation and build resilience in Amba Community, Nasarawa, Nigeria.

Working with: Nigeria Federal Government, in collaboration with GEO-LDN

Agnes Okero, Kenya

Project: Using better data to transform carbon emissions monitoring and inform environmental policy in Kenya.

Working with: Kenya National Bureau of Statistics

Ansoumane Traore, Guinea

Project: Developing a WebGIS platform to combat diarrheal diseases in Guinea.

Working with: Guinean Ministry of Environment and the National Center for Environmental Monitoring and Observation

Beni Nzimba Makumbu, Democratic Republic of the Congo

Project: Mapping and analysis of land degradation in Lubumbashi, Democratic Republic of the Congo.

Working with: Ministry of Environment and Sustainable Development of the Democratic Republic of the Congo

Brahima Diarra, Mali

Project: Analyzing the impact of climate change on malnutrition in children under age five in Mali.

Working with: Institut National de la Statistique in Mali

Clement Danso, Ghana

Project: Building a digital foundation to transform Ghana's land use planning applications and accelerate development projects.

Working with: Land Use and Spatial Planning Authority in Ghana

Ezekiel Adebayo Ogundepo, Nigeria

Project: Using machine learning to model the drivers of cholera and address recurring outbreaks in Yobe State, Nigeria.

Working with: eHealth Africa

Guinea: Mapping health access to inform climate-resilient healthcare in Guinea

COHORT TWO

Aboubacar Diallo

Africa CAN Data Science Fellow

Guinea

The Ministry of Health in Guinea engaged Aboubacar Diallo to improve equitable healthcare access through national healthcare facility mapping and spatial accessibility analysis.

The problem

Guinea faces persistent health inequities, especially in rural areas where infrastructure is sparse and climate-related risks like flooding and extreme weather limit access. The Ministry of Health lacked up-to-date geospatial data on healthcare facilities, with many health posts and private clinics missing from national databases. There was also no system to model facility accessibility or climate vulnerability, hindering evidence-based health planning.

The approach

Diallo worked closely with the Ministry's Bureau de Stratégie et Développement to georeference over 2,300 health facilities and conduct a nationwide analysis using population distribution and climate risk data. He developed a spatial optimization model to identify underserved areas and propose optimal facility placement, and delivered training sessions to strengthen institutional capacity in geospatial tools.

Challenges and lessons

The project faced data access constraints, particularly regarding road networks and climate vulnerability layers. Collaboration across ministries, especially with environmental agencies, was slower than anticipated. Despite these challenges, Diallo established a foundation for integrating climate data into health system planning and highlighted the value of community engagement and mobile clinics in hard-to-reach areas.

Outcomes and results

The project provided the Ministry of Health with an updated national map of healthcare facilities, detailed accessibility models, and recommendations for 20 priority districts needing new health investments. This data-driven approach informed government planning processes and sparked greater interest in climate-resilient service delivery. It also provided a replicable model for other countries working toward universal health coverage.

Kenya: Linking climate change to cancer risks for smarter health responses

COHORT TWO

Florence Nguuni

Africa CAN Data Science Fellow

Kenya

CAN Africa supported Florence Nguuni to investigate the connection between climate change and rising cancer risks in Kenya.

The problem

Cancer is the third leading cause of death in Kenya, yet the role of environmental factors such as air pollution, ultraviolet radiation, and contaminated water in cancer incidence remains under-researched. Policy frameworks seldom address these links, and rural communities often lack access to preventive screening and risk information.

The approach

Nguuni combined data from national cancer registries and environmental indicators with qualitative insights from interviews with around 20 experts. She created Power BI dashboards to visualize correlations between climate variables and cancer types, developed community toolkits for high-risk counties, and drafted a policy brief outlining priority actions for climate-resilient cancer prevention.

Challenges and lessons

Limited access to structured climate-health datasets and stakeholder scheduling issues slowed down some aspects of the work. Florence found that integrating health and environmental data requires not only technical capacity but sustained cross-sectoral collaboration. Ensuring long-term policy impact also will require better advocacy pathways and institutional ownership of tools developed.

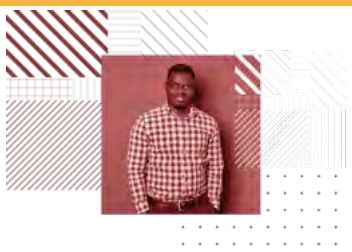
Outcomes and results

Nguuni's work helped spotlight the growing evidence that climate change is increasing cancer risks in Kenya. Her policy brief was endorsed by the Ministry of Health and National Environment Management Agency, and her community awareness materials are being scaled by Amref Health Africa and other partners. By piloting new tools and approaches, Florence laid the groundwork for future policy reforms and community-level interventions across East Africa.

Meet cohort two

January 2024 to May 2025

Elishama Yomi-Agbajor, Nigeria
Project: Leveraging machine learning to analyze the impact of climate factors on mortality rates in sickle cell anemia patients.
Working with: High Performance and Intelligence Computing research group at the University of Nigeria, Nsukka



Enock Mwesigwa, Uganda
Project: Building machine learning models for flood and disease mapping in the Greater Kampala Metropolitan Area.
Working with: Uganda Bureau of Statistics

Andrew Karanja, Kenya
Project: Integrating aquaculture and farming systems to address food security and malnutrition in rural Kenya.
Working with: Integrated Multi Trophic Aquaculture – Health Initiative

Yibeltal Assefa, Ethiopia
Project: Developing predictive models for vector-borne diseases, focusing on malaria prevalence influenced by climate change in Africa.
Working with: Various organizations

Florence Nguuni, Kenya
Project: Exploring the relationship between climate change and cancer risks in Kenya and developing evidence-based strategies for prevention and resilience.
Working with: Various organizations

Mohamed Gele, Somalia
Project: Modeling the complex relationship between climate change, food security, and public health in Somalia, providing critical insights to inform policy and resilience strategies.
Working with: Various organizations

Peace Ododo, Nigeria
Project: Assessing the impact of climate change on food security and malnutrition in Kebbi State, Nigeria, employing GIS and machine learning to design localized interventions.
Working with: Various organizations

Steven Bowah, Malawi
Project: Investigating the impact of flooding on blood transport networks in Northern Malawi, proposing adaptive strategies to maintain healthcare access during climate events.
Working with: Various organizations

Aboubacar Diallo, Guinea
Project: Enhancing healthcare access in rural Guinea by mapping facilities and analyzing climate impacts on health systems.
Working with: Ministry of Health, Guinea

Dan Poku, Ghana
Project: Using climate and health datasets to develop a cloud-native machine-learning application to predict respiratory health outcomes in Ghana, aiming to support early-warning public health outreach and inform policy decisions.
Working with: Various organizations

Meet cohort three

May 2025 to October 2025

Berhe Aregawi Gidey, Ethiopia
Project: Using climate-driven predictive modeling to identify child malnutrition risks in Tigray.
Working with: Mekelle University, College of Health Sciences, Ayder Referral Hospital, Ethiopia

Linda Arthur, Ghana
Project: Building machine learning models for flood and disease mapping in the Greater Kampala Metropolitan Area.
Working with: Accra School of Hygiene, Ghana

Racheal Ogbozor, Nigeria
Project: Evaluating the effectiveness of climate-adaptive malaria reduction and control interventions in Nigeria.
Working with: Auricle Services

Israel Odeajo, Nigeria
Project: Modeling the effects of climate variability on the epidemiology of infectious diseases, using insights from outbreaks of cholera, lassa fever, malaria, and typhoid fever in Benue State.
Working with: Benue State Ministry of Health, Makurdi, Nigeria

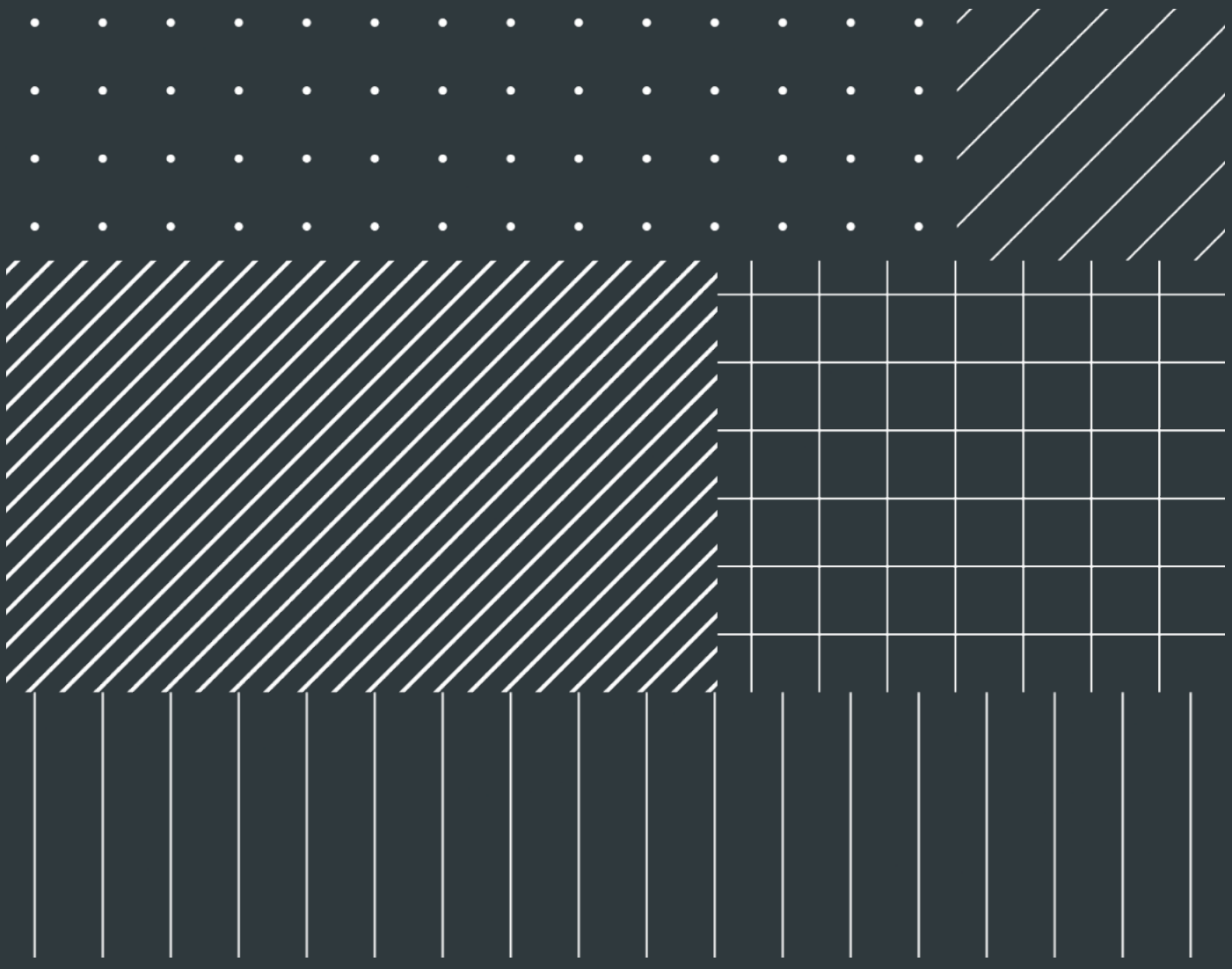
Gouvidé Jean Gbaguidi, Benin
Project: Guiding malaria elimination interventions through a data-driven approach to resource optimization in Benin.
Working with: National University of Sciences, Technologies, Engineering and Mathematics of Aborney, Benin

Chapter 6

Journeys of growth: Voices from across the network

Sections Learners
Fellows

Pages 50–70



Why this matters to you

Funders
Hear human stories that demonstrate value and sustained change beyond the grant period.

Partners
Discover mentorship routes and a talent pipeline for priority roles.

Learners
Map career steps and skills progression from peers who have done it.

Learners

Enock Acheampong
Finding the missing link between climate data and health outcomes

For years, Enock Acheampong knew the data was there. As a health teacher at Ghana's School of Hygiene and a PhD candidate researching environmental engineering, he had collected a wealth of information on how climate patterns were impacting cardiovascular and genetic health. But he lacked the tools to bring that data to life.

"I had always struggled," he said. "I'd look for data scientists to help, but the connection was missing. When I joined the Africa CAN training, it finally clicked."

The training offered by the Global Partnership introduced Acheampong to open-source data tools like Python and R, resources.

"Being introduced to new techniques was a game changer," he said. "The training helped me run my first independent analysis. I'm now just seeking validation from a data scientist, but I know I've done the work."

Beyond the technical skills, the delivery of the training itself stood out to Acheampong. As someone who had enrolled in several online programs in the past without finishing, he was surprised by how engaging the Africa CAN sessions were.

"This was the first online program I completed," he noted. "The facilitators made the content so relevant, even though some moved a bit fast. But the sessions kept me engaged all the way."

One lesson that stuck with him was on the importance of data cleaning, especially how to handle the messy outputs from "select all that apply" survey questions. "

Acheampong also credits the sessions for broadening his research scope. Previously focused on respiratory illnesses, Enock now explores links between climate and skin conditions, including rashes caused by heat waves, an idea sparked by a class discussion on pregnancy outcomes and environmental stress.

"The training helped me reimagine the way climate affects health. It's not just the lungs anymore," he said.

Sheila Humphrey
From policy gaps to pitching for impact

When Sheila Humphrey joined the Africa CAN workshop in Accra, she was already deeply immersed in research. As a research officer at Ghana's Land Use and Spatial Planning Authority, she routinely engages with spatial data to inform national development policies.

"This was my first time participating in a CAN training," Humphrey said. "Listening to participants from across the globe talk about data challenges and solutions helped me see our local issues in a new light."

Whether it was flood risk mapping, healthcare access, or the use of drones for development, the themes echoed what she regularly saw in Ghana. "But what stood out was the global nature of the challenges and how often, like here, research ends up on a shelf."

For Humphrey, the critical question was: how do we move from research to real impact?

"How are institutions collaborating? How is research informing policy and being institutionalized for the future?" she asked. "It's not just a Ghana issue, it's everywhere."

One of the most impactful parts of the training for Humphrey was learning how to make a concise, three-minute pitch. Because she works with developers, ministries, diplomats, and the private sector, she needs the ability to quickly convey the value of a project.

"It's a powerful approach," she said. "If I meet an investor or decision-maker, I now have the confidence to pitch an idea that bridges spatial planning with sustainable development in just a few minutes."

For Humphrey, it wasn't just a training. It was a mirror and a megaphone, reflecting shared challenges and amplifying her voice for action.

Fellows

Beni Nzimba Makumbu
Building data skills to protect the Democratic Republic of the Congo's lands

For Beni Nzimba Makumbu, becoming an Africa CAN Fellow was more than just a professional milestone. It was a turning point. It gave him the tools, structure, and mentorship he needed to take on one of the Democratic Republic of the Congo's biggest environmental challenges: land degradation.

"As an Africa CAN Fellow, I didn't just learn new techniques. I gained the confidence to apply them where they matter most," Beni said.

Placed with the Ministry of Environment and Sustainable Development, Makumbu set out to analyze the extent of land degradation in Lubumbashi, a city where mining and deforestation have taken a severe toll on local ecosystems. With support from the Africa CAN program, he learned how to use remote sensing technologies, time series modeling, and platforms like Digital Earth Africa to map and forecast land conditions.

Although the original plan included field surveys to link land degradation with household health data, Makumbu and his mentors quickly adapted when faced with resource and logistical constraints. Instead, he pivoted to focus solely on satellite data and built a robust geospatial analysis pipeline using Normalized Difference Vegetation Index indicators and the Box-Jenkins modeling approach. The result was a set of data tools and visualizations that helped fill a critical knowledge gap for the ministry.

"The fellowship helped me adapt quickly and think creatively when things didn't go as planned," he said. "Even with limited field access, we created something that can influence real decisions."

Beyond the technical achievements, the fellowship deepened Makumbu's understanding of how to work within institutional systems. He conducted hands-on training for two ministry staff, helping to build internal capacity in data analysis and geospatial tools. His work now supports future land use planning and forest conservation strategies in Haut-Katanga province.

Makumbu credits the Africa CAN Fellowship not just for the skills it provided, but for the long-term vision it helped him form.

Mohamed Gele
Using data to break the cycle of food insecurity in Somalia

Mohamed Gele, an African CAN Fellow from Somalia, established a connection between food insecurity, climate change, political instability, and displacement in his country. As a data analytics advisor to the Somali government, he joined the Fellowship to explore how data science and climate modeling could help address the country's worsening crisis of child malnutrition.

"In Somalia, we face many challenges, but for me, food insecurity is the most pressing," he said. "Because of food shortages, people are displaced, violence increases, and political stability deteriorates."

During the fellowship, Gele led a research project that used data science to predict child malnutrition, specifically stunting and wasting, based on crop yields and climate variables such as drought and extreme precipitation. Somalia's food systems, he explained, are largely rain-fed and heavily reliant on staple crops like maize and sorghum. When drought strikes, yields plummet. In 2022, for instance, maize yields dropped by 32 percent and sorghum by 40 percent. That same year, the rate of child wasting rose sharply from 10 to 16.2 percent.

"I used crop yield data and indices like the Standard Precipitation Index," he explained. "The model showed strong correlations between climate shocks and child malnutrition."

Gele also built future scenarios using IPCC climate pathways to forecast Somalia's nutritional outlook from 2025 to 2050. Even under optimistic green-growth models, his analysis showed that without coordinated, data-driven public policies, child malnutrition rates are likely to persist or even increase.

"The lesson is clear: without multisectoral, data-informed policymaking, the risks of child malnutrition and national insecurity will continue to rise," he said.

For Gele, the Africa CAN Fellowship provided more than technical training; it offered a transformative experience.

"It completely changed my perspective on food security and child malnutrition," he said. "Even as a parent, I became more aware of indicators like stunting and wasting. I now understand what they truly mean."

He also witnessed the potential of data science in the public sector. "Emerging technologies like machine learning are still new in Somalia's government institutions. This presents a huge opportunity for more informed, cost-effective decision-making," he noted.

The fellowship encouraged him to take ownership of his ideas, design original research, and present his findings to diverse stakeholders.

"I had done reporting before," he said, "but this was different. Designing a concept, doing the analysis, and presenting the findings gave me the confidence to develop and communicate scientific research at a global level."

Today, Gele is advocating for stronger technical capacity within Somalia's ministries, particularly in public health, climate, and agriculture and for greater awareness of malnutrition among both policymakers and communities.

"This fellowship didn't just open new doors. It showed me I can contribute not only nationally, but globally," he said. "It gave me the confidence to say: I am a scientist."

Chapter 7

Catalyzing change: Showcases, workshops, and convenings

Sections CAN workshop events

Pages 58–62

Why this matters to you

Funders
Pinpoint catalytic moments to convene coalitions and surface results.

Partners
Use events to translate insights into commitments and next steps.

Learners
Share your work, get feedback, and grow your professional network.

Through the Africa CAN initiative, the Global Partnership organized a number of events with partners to exchange ideas and share best practices with a wider audience, beyond the participants in the program.

Through the Africa CAN initiative, the Global Partnership organized a number of events with partners to exchange ideas and share best practices with a wider audience, beyond the participants in the program. The events were designed to showcase cutting-edge, data-driven approaches to solving climate and health challenges, and to foster an environment of collaboration and learning. Sessions typically bring together diverse stakeholders from different sectors and countries to exchange ideas, explore solutions, and work together.

Table 2 shows the schedule of workshops organized through Africa CAN from 2023 to 2025; below, you'll find more details on selected sessions.

Table 2: CAN workshop events

Event title	Date	Location	Partners	Session focus
Land Degradation Neutrality Capacity Accelerator Network Learning and Showcase Workshop	July 2024	Accra, Ghana	GEO-LDN, Ghana Statistical Service; RCMRD. Funded by Deutsche Gesellschaft für Internationale Zusammenarbeit	Building capacities of governments and organizations to leverage Earth Observation data to tackle land degradation and design effective land restoration policies.
Tracking Cholera with Earth Observations Data	August 2024	Nairobi, Kenya	Kenya National Bureau of Statistics; University of Florida	Utilizing dashboards and other digital tools for real-time monitoring, and examining how the University of Florida's cholera dashboard uses data to track and monitor cholera outbreaks.
Strengthening Data Ecosystems in Lusophone Africa: Harnessing the Power of Data in Cabo Verde and Data Storytelling Workshop	September 2024	Praia, Cabo Verde	Cabo Verde's National Council of Statistics; National Directorate of Planning, Ministry of Finance; National Institute of Statistics; Data4Change	Leveraging the Power of Data Learning effective approaches to data storytelling and visualization, using data to tell compelling stories and shift narratives, and presenting information in ways decision-makers can easily understand.
Data Narratives for Climate and Health in Africa	October 2024	Cape Town, South Africa	OpenUp	Bringing together data experts, policymakers, and health professionals to exchange ideas and explore solutions on how data can address climate and health challenges in Africa.
Climate and Health Data in Action Showcase	September to October 2024	Online	Africa Centres for Disease Control and Prevention; data.org (Epiverse); Humanitarian OpenStreetMap Team; RCMRD; WeRobotics	Sharing insights and inspiration on how data is being used to address climate and health challenges, demonstrating practical applications, cutting-edge tools, and success stories.
Data Narratives for Climate and Health in Africa: Maximizing Impact with Data Learning and Showcase workshop	May 2025	Accra, Ghana	Ghana Statistical Service; OpenUp	Teaching professionals in climate and health fields how to tell clear, compelling stories with data and use basic data visualization skills to support informed decision-making.

Tracking Cholera with Earth Observations Data: A timely data workshop

Cholera remains a significant public health challenge, particularly in regions with limited access to clean water and sanitation. However, data-driven solutions are transforming how we predict and respond to outbreaks.

The University of Florida created a dashboard that uses NASA satellite data and machine learning models to provide a four-week early warning for cholera outbreaks, giving governments and key stakeholders the ability to provide timely interventions to the areas affected.

As part of the Africa CAN initiative, in August 2024, the University of Florida, the Global Partnership, and the Kenya National Bureau of Statistics hosted a joint workshop to demonstrate the use of dashboards for monitoring and responding to health crises. The goal was to foster a collaborative environment for sharing best practices, strengthen capacity, and leverage the expertise of diverse fostering cross-sector collaboration. Representatives worked together to identify synergies between health and climate data initiatives and discussed how to align climate and health goals with national data strategies.

Maximizing Impact with Data Learning and Showcase workshop

When it comes to using data for the public good, having access to the right information is key; but to have a positive impact, this data needs to be presented in a way decision-makers can understand. Storytelling is a powerful tool for turning

complex data into actionable insights.

In this three-day workshop, hosted by the Global Partnership and Ghana Statistical Service, professionals from climate and health fields learned how to tell clear, compelling stories with data to support informed decision-making.

Africa CAN training provider OpenUp taught practical skills to support participants to leverage data visualization and storytelling in their work. The workshop also included an inspiring showcase from the second cohort of the Africa CAN Fellowship, where Fellows shared how they are using data-driven storytelling to present their findings and drive real change.

Peer exchange at the Global CAN event

The Africa CAN Fellows had the opportunity to meet their counterparts from India CAN at a Global CAN event hosted by data.org in Delhi. They connected over shared challenges and openly discussed effective strategies that have worked for them, providing practical guidance and fostering a sense of community. Additionally, a poster gallery walkthrough was held, where over 30 CAN learners and Fellows from India and Africa showcased the results of their work to partner institutions in academia, government, and non-profit organizations. This event highlighted the diverse applications at the intersection of climate and health, including areas such as mental health, health infrastructure, and public health.

Chapter 8

Measuring what matters: Tracking impact and learning

Sections

Pages

Why this matters to you

Funders
Review indicators and learning loops that demonstrate return on impact.

Partners
Track organizational outcomes and embed equity and inclusion in delivery.

Learners
Use practical tools to monitor your progress and reflect on learning.

The initiative aimed to train 200 data practitioners in three cohorts over three years, equipping them with the necessary skills to address climate and health data.

Impact, and how to measure it, is an essential component of an initiative like Africa CAN. To understand whether a project is making a positive difference, you first need to establish what success looks like in practice. What factors or metrics will be measured, and what type of results will indicate a notable impact for good? The initiative aimed to train 200 data practitioners in three cohorts over three years, equipping them with the necessary skills to address climate and health data. It also planned to deploy 20–30 paid data Fellows to collaborate with public-sector and social impact organizations, focusing on real-world problems, building sustainable data science capacity, and developing scalable tools for data-driven decision-making.

These goals shaped the initiative's comprehensive measurement framework, keeping the program on track, assessing and measuring progress along the way, monitoring the effectiveness of the training program and fellowships, and making adjustments to the methodology or approach as needed.

Data collection tool	Brief description
Survey tools	↪ Pre- and post-training surveys with learners to assess skill improvements and practical applications ↪ Post-fellowship surveys with government and SIO officials to gather feedback on skill enhancements ↪ Post-event surveys for convenings and webinars to measure satisfaction and intent to apply knowledge
Key informant interviews	↪ Interviews with learners from government and SIOs involved in hosting Fellows ↪ Periodic interviews with Fellows and host organizations to monitor placements and progress
Qualitative research	↪ Review of fellowship project proposals/action plans to track institutional engagement ↪ In-depth qualitative research with government institutions and SIO representatives to assess data-driven practices and institutional impact ↪ Co-development (and assessments) of case studies between the Global Partnership, Fellows, and government/SIO partner institutions illustrating adopted data-driven practices and their impacts
Event data collection	↪ Attendee tracking and analysis for convenings, webinars, and peer exchanges ↪ Event participation metrics and satisfaction ratings
Database tracking systems	↪ Africa CAN Learner Database for tracking participant completion rates and demographics ↪ Global Partnership Learning Materials Tracker for monitoring content development ↪ Global Partnership Fellowship Overview for placement tracking ↪ Partner databases for routine data collection
Feedback forms	↪ Developed as needed to capture indicators that measured satisfaction of participants and planned use of resources, training, webinars, meetings, conferences, etc.

Designing multi-level impact indicators

The key to effective monitoring, evaluation, accountability, and learning (MEAL) in this context lies in understanding that capacity-building is a multi-level process consisting of:

- ✔ Systemic improvements
- ✔ Institutional change
- ✔ Individual learning

Consequently, the initiative required the development of multi-level impact indicators to help determine whether it was on course to meet its goals and achieve the desired impact. For each indicator, a target was set to help determine whether the initiative was working effectively.

At the highest level, Africa CAN measures system transformation. The ultimate goal of the program—improved data practices within government and SIOs—was captured by this impact indicator: "Number of government and social impact organizations that can demonstrate they are data-driven and how that has impacted their planning, implementation, and results." The formula for this indicator—"Total institutions showing application of skills gained from the virtual training six months later (through a Global Partnership-led verification process) / Total institutions who successfully completed the virtual training component"—ensures that measurement focuses on sustained behavior change rather than mere training completion, which is often an incomplete definition for actual capacity development.

At the institutional level, the framework tracked both organizational readiness and individual capacity development. These indicators helped to determine whether the training translated into practical application and whether organizations were ready to make productive use of embedded Fellows. The framework also demonstrated how to effectively integrate diverse contributions of our partners, through its incorporation of data.org's Data Maturity Assessment within the broader MEAL framework, providing baseline information about organizational readiness while also delivering value to participants through increased self-awareness about their data practices and capacity gaps.

Outcome 1: Country partner organizations

1. Percentage of government and social impact organizations producing successful Fellowship project proposals or action plans.

2. Percentage of case studies demonstrating improved use of data for decision-making (post-Fellowship institutions) in government and SIOs.

Output 1.1: Country partner organizations

1. Number of government and SIOs that have participated in the data.org training on data management and taken the data maturity assessment.

For individual learners, the framework measured not only participants of the training but additional staff members within host institutions who demonstrated improved skills and practical application resulting from the Fellowship. This approach recognizes that effective capacity-building creates a ripple effect, with knowledge and skills spreading beyond the immediate participants to their colleagues and broader institutional networks.

Outcome 2: Learners

Number of learners who completed the virtual training that have increased skills.

Number of additional learners (government, SIO, or public-sector officials/employees) showing improved skills and practical application resulting from the fellowship, demonstrated via specific use cases.

Output 2.2.1: Learning and knowledge sharing

1. Number of learning materials developed as part of the training and made available to learners, disaggregated by audience (internal vs public).
2. Number of Fellows successfully placed with government and social impact organizations or public-sector organizations.
3. Number of knowledge products published and available to the public.
4. Number of attendees at convenings held to share knowledge, experiences, and best practices.
5. Number of convenings held to share knowledge, experiences, and best practices.
6. Number of providers engaged in and delivering capacity as part of the Africa CAN program.

Ensuring equity and inclusion

The initiative paid careful attention to the principles of equity and inclusion, both in program design and measurement approaches. This was addressed through comprehensive disaggregation of all major indicators by gender, disability status, language, and geography, with specific targets for female participation that reflect a commitment to addressing historical inequities in technical fields. The framework not only tracked participation rates, but also completion rates and impact indicators across these demographic categories, enabling staff to identify and address differential outcomes. This approach, which included setting parameters for completion based on attendance and engagement metrics (and rigorously tracking the same), as well as regular reflection points to collect feedback from all stakeholders involved, ensured that measurement activities supported, rather than obscured, efforts to promote equity and inclusion.

Sustaining impact beyond training completion

Perhaps the most challenging aspect of measuring capacity-building impact is determining whether changes will persist beyond the program period. Africa CAN addressed this challenge through several mechanisms, including creating structured opportunities for peer learning, to providing microgrants to support promising Fellowship projects that required longer timeframes than the standard six-month period, and ongoing tracking of institutional practices and case study development well beyond the program's formal conclusion.

The framework also recognizes the value of external validation and coverage from partners and independent observers, thus tracking mentions and features in partner communications and coverage by development sector media outlets, among other touchpoints. This type of external recognition signals that the program has achieved sufficient impact and quality to warrant attention from respected voices in the field, which in turn can attract additional resources and replication opportunities.

Further, Africa CAN leveraged the broader awareness and visibility that a successful capacity development initiative can generate by showcasing its impact through various mediums, including complementing case studies with multimedia content, from organizing or participating in convenings and knowledge-sharing events discussed earlier in this document, to producing videos and blogs documenting Fellow experiences and testimonials from host institution staff describing institutional transformations.

By focusing on all these dimensions of sustainability, the MEAL framework helps ensure that capacity-building investments generate lasting returns.

Chapter 9

What we've learned: Insights for the future

Sections Key Eleven Insights

Pages 69–74

Why this matters to you

Funders
Use these 11 lessons to de-risk grants and target support where it catalyzes collaboration, unlocks data access, and converts training into applied results.

Partners
Turn the takeaways into an implementation checklist for cross-institution work, ethical data sharing, and context-fit program design that scales.

Learners
Apply the insights by prioritizing hands-on practice, strong storytelling, and human-centered design to move your projects from analysis to impact.

Each cohort was built upon lessons learned from the previous cohort, and these insights will be applied to future programs aimed at building capacity for data skills in climate and health and beyond, and using these skills for the public good.

The inaugural three years of Africa CAN yielded a number of key lessons, including how to structure the program; how to foster collaboration; how to access, use, and analyze data for social change; and how to amplify and scale the impact of individual innovations. Each cohort was built upon lessons learned from the previous cohort, and these insights will be applied to future programs aimed at building capacity for data skills in climate and health and beyond, and using these skills for the public good.

We hope these lessons can support anyone looking to use data more effectively to tackle complex and interconnected challenges.

1. There is no one-size-fits-all approach.

What works in Anglophone (English-speaking) Africa does not necessarily work in Francophone (French-speaking) or Lusophone (Portuguese-speaking) Africa. In the first cohort of Africa CAN, a somewhat blanket approach was used to recruit learners across

all the different countries, as well as with the different host organizations, whether government agencies or SIOs. However, working with governments and with SIOs requires different approaches. Government organizations tend to be more formal and have specific processes in place when it comes to data management, access, or use. NGOs may have their own frameworks in place but are often more flexible. This was a big lesson learned in the first year: it is important to have different approaches to collaboration for governments and social impact organizations.

Climate and health challenges may vary in how they manifest and are prioritized within countries or regions, requiring context-specific curriculum design. A blanket approach assumes uniformity where significant differences exist. For training to be effective across Africa, it must be linguistically accessible, respect institutional diversity, address context-specific gaps, leverage regional expertise, and build inclusive ecosystems that promote cross-border and cross-linguistic collaboration, without imposing models that may not fit local realities.

2. Institutions want to work with one another.

Since the first cohort, it was clear that while there can be differences in how organizations work and prefer to collaborate, there is strong interest in collaborating within and between governments, and working alongside NGOs or SIOs to address climate and health challenges. Particularly when it comes to the climate and health data space, there's a recognition of how much work there is to do and a willingness and appetite from organizations to collaborate and learn from one another.

3. Use a network approach.

We learned the value of global collaboration in strengthening regional CAN efforts. Highlights included a training session by Professor David Uminsky (United States CAN Hub) for Africa learners, bilateral exchanges between the Global Partnership and J-PAL South Asia (India CAN Hub), and Fellow-to-Fellow collaboration, such as Dan (Africa) and Anuja (India) working together as peers. These interactions show how cross-hub learning and co-creation drive a stronger, more connected impact.

4. There is a strong appetite for data science training.

Training and capacity-building have always been an essential part of Africa CAN, but at first, the training was viewed as the precursor to the fellowship. As time went on and the initiative evolved, the training took on a life of its own and grew to become an event in and of itself within the Africa CAN calendar. There has been a lot of interest

from a range of institutions, from the smallest entities of government all the way to national health ministries. There is also a lot of interest from the organizations within the network to learn from one another.

5. Growth follows depth, allowing the community to grow organically.

Starting with a handful of members in cohort 1, we focused on building trust and relevance before scaling. By using accessible platforms like WhatsApp and LinkedIn, we created low-barrier spaces for ongoing peer exchange and support. Rather than centralizing control, we fostered a culture where members could lead conversations, which strengthened ownership and sustainability. The community also benefited from a balance between digital engagement and in-person interactions, such as meet-ups and in-country workshops, which helped transform online connections into real-world collaboration. Social media shares by learners played a vital role in organically expanding our reach, while our willingness to listen and adapt to evolving needs has kept the network vibrant, inclusive, and member-driven. By mid-2025, we had over 1,500 community members including data scientists, academics, independent researchers, and government officials.

6. Lusophone Africa is keen to take part.

So far, Africa CAN has focused on Anglophone and Francophone Africa. However, following an event in Cabo Verde in 2024, where representatives from countries in Lusophone Africa discussed some of the challenges they were facing around climate and health issues, it was clear there was an appetite for a similar training from a Lusophone perspective, tailored to their regions and language. A targeted training program for the Lusophone countries is now being developed. The interest within Francophone Africa in data science skills has also been exciting to see, and Africa CAN partners are keen to expand the work in these countries, as well as continuing to work with Anglophone Africa.

7. Data collection and access are recurring challenges.

One of the biggest challenges the Africa CAN Data Science Fellows faced was accessing the data required to deliver their innovative projects; this data was often held by various separate organizations and in different formats, or sometimes did not exist at all. For example, when working with the Kenya National Bureau of Statistics to develop a new model for carbon emissions monitoring on Kenya's roads, Africa CAN

Fellow Agnes Okero collaborated with various organizations across sectors to access the data she needed to build a more comprehensive dataset. While the Global Partnership and Africa CAN partners brokered connections, Agnes worked with the various organizations to make the case for sharing their data, including setting up ethical data-sharing agreements, in alignment with Kenya's relevant climate policy goals. Then, having successfully negotiated the agreements, Agnes worked to integrate diverse formats, digitize records, and implement quality assurance protocols to enable efficient sector-wide analysis.

8. Capacity-building can help make the case for data access.

Inter-governmental data sharing has proved challenging because it involves different levels of access. For instance, Africa CAN Fellow Enock Mwesigwa, in cohort two, worked with the Uganda Bureau of Statistics and needed cholera statistics held by the Ministry of Health. In this case, the Global Partnership was well placed to act as an independent third party to support establishing those links and processes. However, capacity-building through the Africa CAN program also helped with this. It's important that those working within the different ministries understand what data is needed and why. The Africa CAN training helped to raise awareness of how data science can support government organizations to achieve their missions and empowered participants to make the case for ethical data sharing. Organizations may not understand the need for other institutions to have access to their data; the training helped to empower participants to advocate for data access and to increase awareness of the merits of ethical data sharing.

9. With data, effective storytelling is key.

There has been a lot of interest in the innovations developed through the Africa CAN Fellowship, and sharing this work via Fellows' own online networks, through partners' communication activities, and with the media has helped to raise awareness of data-driven approaches to pressing challenges and to amplify the impact of this work. However, while they have strong data skills, Fellows are not necessarily experienced in communications. Supporting Fellows to share their work and stories through media training and storytelling workshops helped to empower them to speak more confidently about their work and the difference it is making. Likewise, since cohort two, data visualization became a bigger part of the Africa CAN training program. This helped participants to understand the power of sharing data insights in a way that was accessible and clear for decision-makers.

10. Applying data skills in practice is powerful.

The fellowships illustrated how bringing together parties with different skill sets and backgrounds can create environments where innovation can flourish. Through applying their theoretical skills to real-world challenges and combining this with the sectoral expertise of host institutions and mentors, Africa CAN Fellows developed new datasets, tools, and approaches that offered more timely and accurate information on

issues such as the state of land degradation, levels of air pollution, and drivers of cholera outbreaks. This will help to empower decision-makers with better information, leading to more effective responses that improve people's lives in local communities.

11. Human-centered design enhances learning outcome optimization.

Alongside the highlighted opportunities, the virtual delivery format of the Africa CAN training also presented some unique challenges for learners. Through three cohorts, the program incorporated outcome learnings and evolved significantly to address participation barriers and improve learner engagement. The most significant improvements came from recognizing that completion metrics needed to reflect the realities of adult learners balancing work commitments with professional development, while ensuring program quality through multiple engagement touchpoints rather than simply tracking session attendance. This continuous improvement required maintaining two-way communication with learners, feedback collection, reflection sessions, and implementing lessons learned from monitoring, evaluation, and learning processes.