Closing Keynote Address

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[Thanks and appreciation]

To start with, I would like to express my thanks and appreciation to all who came together to create this forum for discussion and learning: our gracious hosts in Mexico, as well as the conference organizers, and of course all of the speakers and attendees. It has been my pleasure to be here with you over the past three days, to hear your thoughts and insights, and to see the conversation moving forward.

[Why I am here]

I'd like to offer some additional context about my role and position, where I'm coming from and the perspective I'm bringing to this stage. As Mr. Balé mentioned, I lead the Geospatial Insights portfolio at the Gates Foundation.

As geospatial is fundamentally cross-cutting, so too is my role at the Foundation. I work across program teams: Polio, Malaria, Immunization, Agriculture, among others. I engage with stakeholders and solutions at global, regional, national, and sub-national levels. I think about geospatial in global health and development as a value pipeline: data, analysis and operationalization into impact, all underpinned by governance and capacity.

While I do not work *in* a national geospatial agency, I work closely *with* these agencies in my focus geographies, alongside sub-national governments, multilateral institutions, regional agencies, research and training institutions, the non-profit and private sectors.

My role hinges on two key functions: listening and connecting. I have the privilege of working across diverse sectors, aligning priorities, identifying

shared goals, and helping to foster partnerships and build buy-in both within the Foundation and with stakeholders, in order to address some of the world's most pressing challenges. In this sense, my work is about making sure that the power of geospatial information is fully realized by connecting the right people, organizations and resources to drive change.

At its core, my job is about delivering impact. It is about ensuring that the incredible potential of geospatial approaches and data is translated into real world solutions that improve lives. Whether it's supporting global health initiatives or addressing agricultural challenges and food security, or advancing gender equity, I focus on how we can turn geospatial tools into actionable outcomes. I work to bridge the gap between innovation and implementation, between theory and practice, and ensure that we deliver results that matter.

I'm here because, like you, I believe in the transformative potential of geospatial information and tools to help solve critical problems challenging humanity.

[Thoughts on Day 1 and Day 2]

Over the past few days, we have engaged in rich discussions, explored tools and technologies, and deepened our understanding of how geospatial information can be the cornerstone of resilience in a constantly evolving world. We have explored both the challenges and opportunities we face in building a sustainable and resilient future.

To echo some of the opening remarks, this is a forum for making connections, fostering collaboration, and developing shared solutions based on common principles. At its core, this is an information community driven by a development agenda.

On the first day, we heard the importance of governance and the need for coordination across government agencies to manage data effectively. We also learned about the power of regional networks to jump-start national

engagement, and how building communities across borders can be a key ingredient in making progress toward our goals.

Yesterday we saw a rich array of case studies on how geospatial approaches can contribute to climate resilience, from community mapping for resource management to the contributions of satellite imagery and data visualization to disaster response. We heard about the importance of collaboration and data exchange among government agencies.

Perhaps you saw opportunities to translate some of these case studies to different contexts or different applications. The presentation of ditch mapping for water management using AI on LiDAR got me thinking about how the methodology could be used for malaria control applications.

We also heard about key ingredients to achieving impact: Translation across domains to improve collaboration with end users by speaking their language; Local community ownership of data, processes, use and solutions; Attending to the importance of local contextual differences; and securing buy-in of government authorities through showing the value of geospatial solutions. These are indeed critical components of success that I have witnessed in my work, and hallmarks of how I work with partners, grantees and my internal foundation collaborators.

[Thoughts on Day 3 theme]

Today's theme, "Building a Sustainable Future: Innovation, Technology, and AI," underscores a key point---there is a tremendous opportunity at hand to adapt and incorporate the rapidly changing data and technology landscape to most effectively contribute to solving global development challenges. So too must the users and institutions behind the data and methods evolve and grapple with this new territory and all of the complexities and considerations it comes with.

Even with these exciting new datasets and methods, to maximize these bright possibilities on the horizon, and more importantly, leverage them to address immediate and future global challenges, there is a lot of work to be done. And I don't want to lose sight of the fact that across the stakeholders in global health and development communities, there is a wide range of technology landscapes.

I'll offer a perspective on the importance of context in the consideration of the value of AI in achievement of impact at the last mile. Years ago when I interviewed for my current position, I talked about the potential untapped value of advanced analytics, AI and machine learning in geospatial approaches for health and development applications. My technical background includes depth in machine learning: training pattern recognition algorithms on remote sensing data for land cover identification and estimation of poverty and health indicators; using self-organizing mapping methods to understand climate change dynamics and potential impacts on agriculture. Surely, we are leaving so much value on the table toward achieving on-the-ground impact if we don't make use of evolving advanced analytics in a data field that is richer than ever.

But I know enough to know that I don't know everything and one of my first initiatives in my new role was to check my assumptions.

I commissioned a rapid landscape assessment of the readiness of geospatial stakeholders in low-and-middle income countries to adopt advanced geospatial analytics in the global health and development space. Over 50 geospatial organizations in Africa were reviewed during the desk research. This was followed by a survey and interviews with 28 of these organizations.

The key findings included the following:

- Limitations of geospatial capacity hamper the expansion of current geospatial interventions and the adoption of advanced geospatial analytics tools by willing organizations.
- Low levels of awareness and literacy about the capabilities of geospatial technology among principal government officials and programs officers

limit the adoption and funding of geospatial solutions among government officials and ministries.

- The demand for new frontiers of geospatial innovation – especially from government partners - remains low, ascribed to the level of awareness of government partners on the capabilities of geospatial technology for social interventions.
- The lack of sustainable funding for infrastructure limits geospatial expansion and deployment.
- The high cost of geospatial software and licenses limits the sustainability of geospatial interventions and the use of geospatial technology.

Based on these gaps, the priority areas of interventions include investments in data access and availability, capacity building programs, geospatial data infrastructure and tools. Yes, absolutely, building footprint datasets built from machine learning algorithms are incredibly impactful inputs. Yes, modeling population mobility can transform our understanding of epidemiological dynamics in a pandemic. But advanced analytics is not the end all and be all. Context matters. On-the-ground realities matter. You can do a lot with a paper map and a marker. At the end of the day, in the world of global health and development, what truly matters is impact. Data and analytics are *ingredients* toward making that impact.

[Take Away Thoughts]

As we close out these three days of dialogue, I would like to leave us with some thoughts, drawing from the conversations over the course of the week as well as the perspective I bring from my work in the sector.

The power of geospatial information can only be realized when it is integrated into the broader networks of decision-making – when it addresses the needs of those on the ground, from policy makers to end users at the last mile. This is where coordination plays a critical role. For example, in Nigeria, coordination across government agencies has driven the recent progress made towards the

enactment of the national geoinformation policy which has stalled for over a decade. It has also generated momentum and government buy-in to provide funding for the implementation of the National Geospatial Data Infrastructure, NGDI. The NGDI will hopefully act as a lighthouse example for data sharing, offering both near and long-term benefits to local populations as more robust data-driven decisions are made possible for local and federal ministries.

Fostering connections across government agencies with different mandates such as geospatial agencies, statistics offices, departments of agriculture, census bureaus, ministries of environment, and ministries of health will not only result in more comprehensive data but will also minimize inefficiencies and duplication of efforts.

The ability to connect information from diverse sources for applications and insights across different sectors is a unique strength of geospatial approaches. And the solutions we need – whether for climate resilience, sustainable development, or resource management – cannot be achieved in isolation. They require integrated approaches and collaborative networks. We have heard throughout the week at every step along the way: we must engage with each other *and* with those outside our circles, speak their languages and understand their priorities.

Build Partnerships

The discussions this week have repeatedly underscored the importance of partnerships. And it's not just about building relationships within familiar circles. It's about fostering deep, collaborative connections that cross national borders, engage both the public and private sectors, and bridge gaps between national and sub-national governments.

Partnerships have the potential to catalyze long-lasting impact. They turn single engagements into movements that spread across regions. One such example is the WorldPop collaboration with UNFPA-LACRO in the Latin America and Caribbean region.

In this partnership, WorldPop worked closely with Colombia's Statistics Office (DANE) to address gaps in census data in conflict-prone and inaccessible regions. The project began with the co-development of methods to fill these data gaps, leveraging DANE's existing skills and helping them grow their own capabilities. Together, they created solutions that didn't just resolve the immediate challenges but also advanced the technical capacity of the Colombian team.

Brazil, hearing of Colombia's success, saw the potential for similar applications in their census work. UNFPA-LACRO played a critical role in bringing together Brazilian and Colombian experts, facilitating knowledge transfer, and co-designing solutions. This cross-learning model then spread across the region.

What's remarkable about this partnership is that it didn't stop at bilateral exchanges. WorldPop and UNFPA-LACRO went on to develop online courses in Spanish and host workshops across the region. These efforts empowered experts from Ecuador, Colombia, and other nations to contribute to regional geospatial advancements. PhD-level experts who took part in these workshops now lead initiatives in their own countries, further amplifying the impact.

A regional expert network has emerged, with monthly check-ins to continue supporting countries like Haiti, which is now working on population modeling with only occasional consultation from WorldPop. What began as a localized initiative in Colombia has cascaded into a region-wide movement, with nations now self-sustaining their geospatial data efforts.

This example shows the power of partnerships and capacity building—when done right, they enable countries to move from dependence on external expertise to independent, regionally-led growth. Partnerships like these aren't just about knowledge transfer—they're about fostering long-term resilience and empowering nations to take charge of their own development.

Promote Cross- Learning

Closely linked to building partnerships is promoting cross-learning. We've heard this week about the transformative power of on-the-ground applications of geospatial solutions to demonstrate their value and secure stakeholder buy-in. Without initial stakeholder engagement, however, it can be difficult to secure the resources needed to develop those example applications. The question then becomes: How can we share success stories across contexts to translate the value proposition? How do we build the partnerships and forums needed for the value you have to share to enable broader impact?

Over the course of my deep engagements with geospatial stakeholders in Nigeria and the DRC, I've consistently heard the immense need for cross-learning across sectors and geographies. In Nigeria, stakeholders asked for use-case sharing between industry and academia. In the DRC, the need was specifically about developing use cases for advocacy. In both contexts, there was an expressed need for platforms to share lessons learned in geospatial data generation, analysis and operationalization. To truly accelerate the achievement of our development goals, we must actively share our knowledge, tools, and experiences—not just within sectors, but across them.

Effective cross-learning is not just about sharing case studies of geospatial solutions. It's about how sectors like health, environment, and agriculture can work together to tackle complex challenges. Geospatial is a powerful tool, but its true value lies in the insights and learnings that come from its application across different sectors and levels of governance.
And while platforms like UN-GGIM have created opportunities for nations to share insights and best practices, we still have work to do in ensuring that these lessons are impactful. We must ensure that knowledge isn't trapped at one level or in one forum but moves freely to support equity and progress at every stage.

Advance Equity

All our efforts—whether it's building partnerships or promoting cross-learning—should work toward ensuring that no one is left behind. Cross-learning is a key driver of equity because it allows knowledge to flow across borders, sectors, and levels of government.

But equity also means broadening our circles. We need to ask ourselves: Who isn't in the room today that should be? What communities, governments, or organizations haven't we engaged with yet? The benefits of geospatial tools should reach the most vulnerable and underserved populations.

A key takeaway from this week is that we are stronger when we work together. We all know the power of geospatial technology, but now we must challenge ourselves to expand that knowledge, push beyond familiar networks, and build a community that truly reflects the diversity of experiences and perspectives that geospatial data serves.

[Call to action and closing]

Every conversation this week has underscored an imperative: that we must take something valuable back with us, something tangible we can implement in our own spheres of influence and action. The discussions we've had here and the partnerships we have forged are useful, but the real work begins when we leave this room and return to our respective countries and organizations.

We have the knowledge and tools to make a difference, but knowledge alone is not enough. We need to put our plans into action, ensuring that geospatial data is integrated into decision making processes at every level – from local governments to international organizations. We must focus on building capacity; developing the skills, institutions, and infrastructure needed to fully harness the power of geospatial technologies. This means collaborating with those countries and regions that may lack the resources to implement these systems on their own. No one should be left behind in this effort.

In this room, we are fortunate to have a wealth of experience, knowledge, and diverse perspectives, and this is a tremendous asset that can be leveraged. At the same time, it's worth reflecting on how we can further enrich these discussions. Could broader representation from regions like Africa and Southeast Asia bring new insights and opportunities for collaboration? What critical voices are missing from the conversations? What are the forums and platforms for partnership that raise voices from across contexts to share best practices and foster deeper connections?

I think these questions present an exciting opportunity for the cross-learning and exchange of ideas we've been discussing all week. By creating spaces for representatives from, for example, a health ministry in one region to engage with their counterparts in another on geospatial approaches for service delivery, we can address common challenges related to data and technical capacity toward achievement of our development goals. These types of conversations can enrich our collective understanding and help geospatial technology benefit everyone, especially the most vulnerable and underserved populations. Geospatial technology has the potential to benefit everyone, and we must ensure it reaches the most vulnerable and underserved populations. We all have a role in finding and creating these opportunities, myself included.

Let's continue to foster partnerships. The power of geospatial data lies not just in the technology, but in how we collaborate across sectors, borders, and disciplines. Whether through public-private partnerships, academic collaborations, or regional networks, we must expand our efforts to work together. The challenges we face are too complex for any one organization or sector to tackle alone.

I urge everyone to take the knowledge and networks gained here and ask yourselves: What is one thing that you will implement when you return home? What would you change in your work or in your country as a result of what you've learned here? The future of geospatial information management depends on the steps we take individually and collectively. Let us leave here

with a renewed sense of purpose and commitment, ready to make the changes necessary to build a resilient, sustainable future for all.