Keynote Address at ICT4Eval Conference

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Key messages

- We use technology to bring data from "farm to table". Technology is involved every step of the way: collection, curation, analysis & dissemination.
- Much of this technology is already available, it's just not evenly distributed. We can help by investing in technical & institutional capacity, partnerships and data integration.
- Our responsibility doesn't stop with producing data - we've got to put *data to use* for development.

We use technology to bring data from farm to table

- There are over a billion fewer people living in extreme poverty today than there were in 1990.

- When we think of data and technology, the first thing you might think of a visualization like this one

- For the World Bank, this is one of the defining stories of the last twenty years. This treemap shows the dramatic reduction in the number of poor people living across the world. The falls in in East Asia and South Asia are especially striking. It shows that we've gone from a world where almost 4 in 10 people live on less than $1.90 a day to a world where only 1 in 10 do.

- That's an impressive headline but there's a lot more to this story. This big picture is assembled from hundreds of thousands of data points which have been collected, managed and analyzed in the past two decades

- The first idea I'd like to share with you is this: technology is a fundamental part of every step of this data's journey from farm to table.

- Let's take a look at one number - 35% - the extreme poverty rate for Uganda in 2013, where does this figure come from?

- Let me introduce you to my colleague Talip - he works here in Rome at the Center for Development Data as part of our Living Standards Measurement Study Team.

- He's been working in Uganda to support the National Statistics Office to carry out the household surveys that are used to produce the kinds of numbers we're talking about. Some of this work was recently featured in a documentary called "The Crowd and The Cloud" - (the next few pictures are from this documentary - do go and check it out if you like what you see).

- Once it's been decided what to measure, and how to measure it, it's time to go and get the data - in a country like Uganda this can be very challenging.

- Collecting data - especially in rural, hard to reach involves vehicles like this, roads like that and beautiful landscapes like this one

- And once enumerators are trained on how to administer the questionnaires, the process of conducting a survey might take 5 or 6 hours, spread over multiple days for each of hundreds of households visited in a study.

- Now in the past, paper questionnaires would be used as the primary tool for collecting survey data. So what are the technologies now involved in the process?

- Tablets: inexpensive tablet computers combined with software like the World Bank's free "Survey Solutions" system are now the preferred method of getting high quality data quickly for dozens of countries around the world.

- GPS devices: often built into Tablets now, GPS units are an important tool for measuring distances to services like banks, schools, roads and water points and can be used to measure areas of land plots - all important aspects of understanding individual livelihoods.

- Satellites: When it comes to detailed, frequent observations of large areas, satellite imagery is an increasingly common source of remotely captured information. This imagery has been used it to get estimates everything from the areas of land plots and estimations of population to details of how crops are growing and understanding what materials roofs on houses are made of – something that can tell you about the welfare of that home's occupants.

- Drones: For higher-resolution mapping and ad-hoc data collection, drones are now also being used in both urban and rural environments - there's growing expertise in how to effectively use them and costs are also coming down.

- Sensors: inexpensive telecommunications and computing hardware make is possible to use low cost sensors to monitor everything from air and water quality to soil pH and in this example, power outages. In Tajikistan, the Bank's team designed cheap sensors built around mobile phones which can be installed in household to monitor power outages throughout the day. In a short period, this data has built up a rich picture of how electricity availability varies across the country – an issue that's highly relevant to current policy discussions.

- Finally, other "big data" sources such as metadata from mobile phones are proving useful for offering a picture in places where data are scarce and for combining with existing data to provide a more current or more detailed perspective. This example in Cote D'Ivoire shows a population density map produced from census data on the left and the same map produced using metadata from a cell phone company – they're remarkably similar and point to the potential for using this approach in other applications.

- These data sources are either published individually or combined and made available to experts who can use a range of both proprietary, but increasingly, open tools to analyse them and produce the kinds of statistics we're used to seeing

- Finally, when organizations like the World Bank harmonize and publish these data, we get a figure like Uganda's 35% poverty rate and visualizations like this one.

Technology is already here, it's just not evenly distributed.

- We've seen some of the roles technology can play in the data lifecycle, the question becomes, why doesn't this happen everywhere and what can we do about it?

- It's a question of capacity and infrastructure. Human capacity, and the technological and institutional infrastructure to take advantage of it.

- One measure that shows this is the World Bank's Statistical Capacity Indicator – you can see the variation in the strength of national statistical systems globally and how the weakest ones remain in Africa

- Weak statistical capacity means a lack of plans, policies and standards and as well as the resources and expertise needed to produce and disseminate data about a country.

- It also means rooms like this one where paper records are still the norm, data collection happens infrequently, and when it does, it may take years for the results to be made available and used.

- We must invest in improving this state of affairs, but we also need to invest in the partnerships needed to make this happen.

- The Global Partnership for Sustainable Development Data, formed as part of the call for a Data Revolution in the SDG agenda is a network of collaborators we're proud to be part of. Their goal is to bring together civil society, academia, governments and the private sector together to identify, test and scale solutions which help to both monitor and achieve the SDGs.

- ($2 million of funding for 10 development data innovation projects. From improving vital registration of Syrian refugees in Lebanon to helping health workers predict patient behavior in Africa, and from using low-orbit satellites to detecting illegal fishing in Southeast Asia to using signal attenuation between mobile phone towers to estimate rainfall, the selected projects include a rich mix innovations in development data being carried out in 20 countries across Africa, the Middle East and Asia.)

We can't stop at producing data: we've got to put data to use for development

- We've seen that technology is involved in every step of the process; we know we need to invest in the capacity of more countries to be able to take advantage of these new tools and methods, but our responsibilities go beyond that.

- We can't stop at producing data, we've got to help put it into use.

- At the Bank, we realized in 2010 that one of the best ways to get data used was to remove as many barriers to accessing it as possible. Since then, our Open Data initiative has grown to be the most widely accessed source of knowledge the World Bank publishes, with an almost 20-fold increase in use compared to when access was more restricted. There are now hundreds of open data initiatives worldwide

- Access is an important barrier to remove, but what if you're able to access data but don't have the skills to do anything with it? This is why data literacy programs like the one we've worked in collaboration with DFID on in South Sudan are so important.

- This work has brought together government officials, journalists and academic and improved their skills in generating, analyzing and visualizing data, and using it to inform better decision-making in Sudan. The program has also made available e-learning modules in Arabic and English, which are open to everyone.

- Lastly, getting data used means presenting it to people on their own terms, and at a time and a place that's right for them. Whether it's the weather forecast on the radio, the election results in a newspaper, market price information on a mobile phone or some influential billionaire sharing the story of the fall in extreme poverty on social media.

- As Talip said in the documentary – "every data point tells a human story". Technology is helping bring that story from farm to table, and when they're in the right hands, every data point can change a human life.