Connectivity strengthens livelihoods, preserves peace in Colombia

Lavazza

Meta Region, Colombia

When making the business case for connecting underserved communities, we tend to focus on hard numbers like return on investment or percent increase of production. Yet as the rural community of Mesetas in Colombia shows, these effects are just the beginning.

An alliance of private companies, nonprofits and governmental agencies is tackling the digital divide in this dispersed pocket of coffee growers—and, in addition to helping farmers produce more and better beans, they are helping strengthen families, improve community health and even preserve peace.

Take, for example, Oveida Quinceno. Her farm, which she began cultivating with coffee after her first husband was killed by paramilitary fighters, was one of five recently connected to high-speed broadband via TV White Space (TVWS) technology, which leverages unused TV channels. Before, she had to wait to send and receive WhatsApp messages to agriculture experts or her coffee buyer representatives until she traveled two hours away to the closest Wi-Fi hotspot. Now she has instant access to online trainings on coffee cultivation, data on market demands and an open line of communication with experts who can help her troubleshoot cultivation problems.

"We didn't use to have internet access, but now we can depend on it," Quinceno says. "We've all benefited from it."

99

Percentage of the
unconnected who live outside
the United States

160x

The potential increase in range
from Wi-Fi to TVWS, from 330
feet to up to 10 miles under ideal
line-of-sight conditions

70 Million

the number of people worldwide
now under coverage through
Microsoft TVWS pilot projects

Uniting a coalition around a common cause

The Italian coffee company Lavazza, the energy and agricultural supply chain innovator ALO&Partners and the Colombian nonprofit MAKAIA spearheaded a diverse group of actors to execute this pilot, which connected two schools and five farms to high-speed broadband via TVWS technology. The region's jungled and mountainous terrain made it a perfect application for TVWS, which doesn't need line of sight and can be deployed much more economically than more traditional modes such as fiber. Each stakeholder contributed unique strengths:

* Lavazza Foundation: initial project design to connect this coffee-growing region and funding to do so
* ALO&Partners: coordination between all stakeholders and project management
* MAKAIA: on-the-ground digital skills training and capacity building
* Microsoft Airband Initiative: technical expertise to deploy TVWS solutions
* Colombia's National Spectrum Agency: created national policy and rules allowing access to unlicensed spectrum, becoming the first country in Latin America to do so
* Carcafé: provide coffee technicians to support growers online and in person

"We take the best of everybody and put that into this project," says Catalina Escobar, co-founder of MAKAIA. "We couldn't do this without everybody's contribution."

Connectivity to preserve peace

When the Colombian government and rebel groups signed an end to the decades-long armed conflict in 2016, part of that peace treaty included plans to connect all regions of Colombia to the internet. Realizing that inclusion in 21st century economies and education opportunities is a key aspect to preventing outbreaks of violence, former Colombian President Juan Manuel Santos threw his support behind projects such as the pilot in the Meta region.

Escobar agrees. "If you think about isolated communities like this one, which was one of the former epicenters of the conflict in Colombia, they're the perfect environment for conflict. But when the public is connected, informed, and with access to information and government institutions, there's less chance conflict will reemerge."

Many of the coffee growers of this isolated region used to produce coca, the source of cocaine and a money-maker that funded the violence that displaced more than 5 million civilians. Growing coffee requires more up-front investment and agricultural expertise—but yields higher profits in the long term. "If growers see that coffee can continue to improve their quality of life, they're going to stay with coffee and legal crops," says Escobar.

Improving local economies through internet training

Before this region was connected to the internet, coffee growers like Quinceno were all but cut off from the rest of the world—including their contacts at Lavazza, where they sold their coffee beans. The result: Local farmers weren't taking advantage of opportunities to improve their crops and strengthen relationships with buyers.

Now that Quinceno is connected on her land, she can instantly message coffee technicians to troubleshoot problems. She can communicate directly with representatives at Lavazza to discuss her bean production. She can research market trends to better understand price fluctuations and plan for the future. Soon enough, she may even utilize Microsoft Azure and Internet of Things solutions to apply precision agriculture tactics.

What's more, she has taken advantage of local digital skills trainings offered through the pilot. "We make sure coffee growers see technology as an enabler and friend, not an enemy," Escobar says. "We build their capacity based on daily needs, like social development, health, and communications so they can take advantage of more advanced opportunities like technical agricultural training."

Although the pilot is still too young to provide hard data on improvements in crop yields, quality of coffee beans, or income, Quinceno isn't waiting to weigh in: "It's been marvelous for us."

Connectivity and digital skills impact generations

The impacts of connectivity extend beyond coffee value chains. "If young people don't have possibility in this region, they leave," explains Andrea Londono, a representative at ALO Partners who has worked on the accessibility project from day one. The project's partners believe that internet access can help keep communities growing—and thriving. "An important aspect of connectivity is the idea of a generation of renewal—that now young people can do a lot of things they couldn't before, like study through the internet. This brings more opportunity to entire families."

For example, until a few months ago Quincena's son Juan Pablo couldn't research school projects or find help on subjects where he struggled. Now he can do his homework online, look up answers to questions his parents can't answer, and even learn more about his dream career—civil engineering.

Internet Wi-Fi hotspots have also become community hubs for communication. Residents gather at the now-connected schools to search the internet and send messages to family, friends and potential buyers of their crops.

What's more, with a telemedicine pilot run in coordination with the University of Antioquia, isolated residents are being treated by specialists in Medellin, a 14-hour drive away.

"With telemedicine, the people wouldn't need to leave the countryside, and they could stay here working," says Jose Leonel Buitrago, a coffee grower who participated in the pilot.

The alliance is now embarking on the next phase of the pilot, says Giuseppe Lavazza, group Vice President. By incorporating precision agriculture technology and data collection with smart devices, growers will be able to fine-tune their production—and grow peace in the long-term. Lavazza explains, "Deeper integration of economic growth, social inclusion and environmental protection are the way to protect the world we live in."

"Access to technology makes the greatest difference for children... between those who can and can't use the internet."
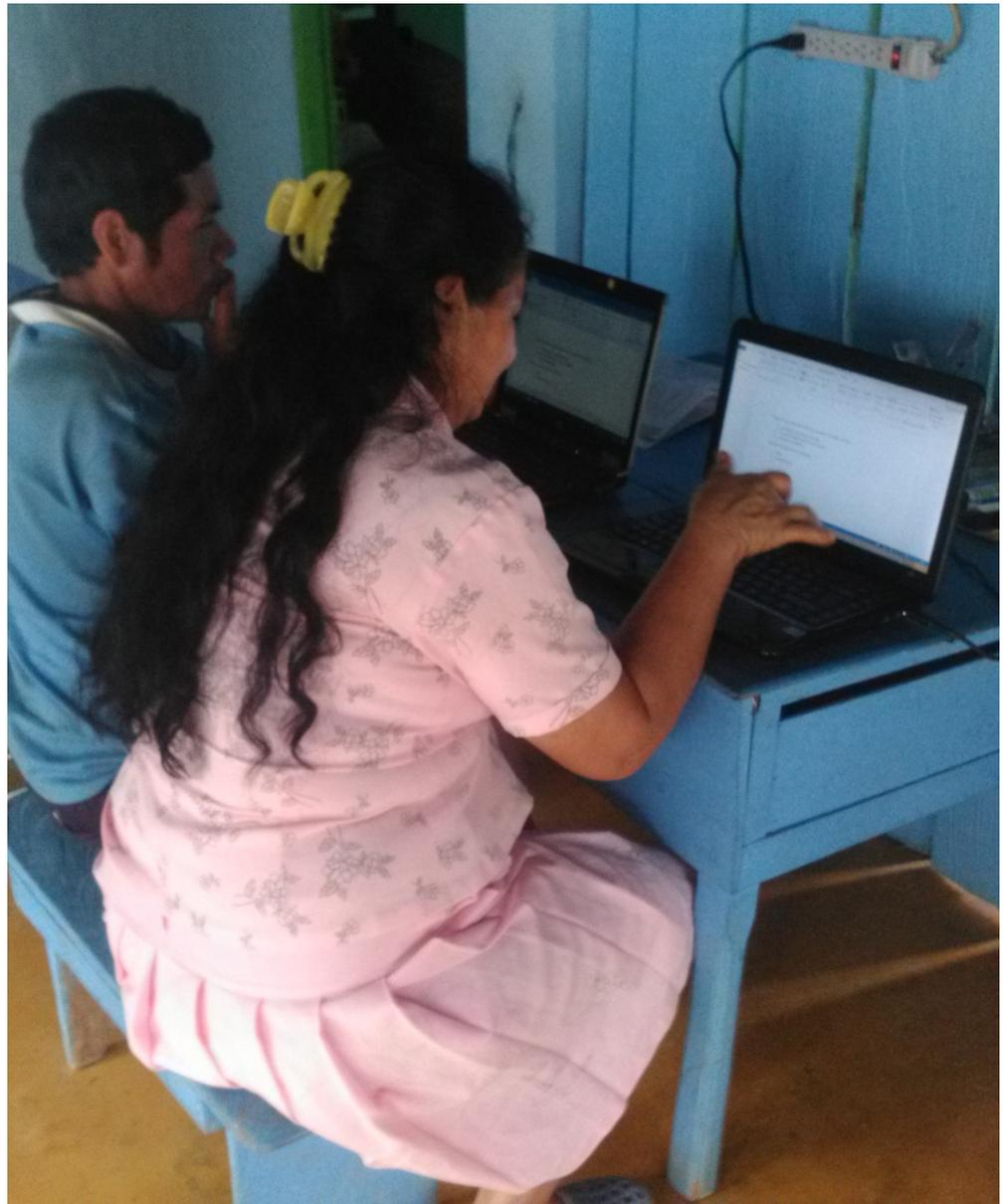
Juan Manuel Santos
President of Colombia, at the launch of the connectivity project in Mesetas.

"Technology opened our eyes to use computer tools that we didn't know how to apply. The internet represents new frontiers and more knowledge we can share with students."

Marleny Orjuela
Teacher
La Guajira, Colombia

"Connectivity improves all aspects of life. This project is bringing more opportunity to families, thanks to technology."

Catalina Escobar
Co-founder,
MAKAIA