

Distinguished colleagues, with all protocols observed,

Thank you for the invitation to speak here today on behalf of CGIAR.

First of all, for those of you in the audience that are unfamiliar...

... CGIAR is the **world's largest publicly funded agricultural research organization**. We are a global organization with **over 9000 staff** – primarily scientists – working in over 80 countries and with a network of over **3000 partners** worldwide.....

CGIAR's original focus was on **boosting agricultural productivity** and **reducing hunger**. But today, our work is increasingly about **finding the right balance between benefits and trade-offs** for **people, prosperity** and the **planet**.

Today, we have more people to feed with less land; climate change and water security challenges; and a **biodiversity crisis**. Plus, **geopolitical challenges** are acting as threat multipliers.

Recognizing the interconnected nature of the environment, society, and economy, **CGIAR now adopts a systems approach to our research**. We examine every aspect from the initial stages of growing food, including natural resources, environment, land, and water, to seed and farming practices, cold storage, consumer preference, markets, and ultimately, ensuring people are well-nourished. And in important principle is that innovations are **context-specific**. This means being **demand-led and codeveloped** with local partners, so that they meet local and regional needs.

Even though we have seen the **power of technology** in other sectors to effect change and drive development, **agriculture remains one of the least digitized sectors**.

The fact is that **digital solutions are out of reach** for the majority of small farmers.

In recent years many of us have been **building the evidence** to show the great **potential for the digitalization of agriculture** to achieve meaningful livelihood improvements for smallholder farmers and pastoralists.

The **potential of digital technology** to transform farming and agriculture in countries across the Global South is increasingly compelling.

Producers in sub-Saharan Africa who adopted online services have been found to increase their incomes by [up to 40 per cent](#) while new forecasting and early warning systems can also help farmers stay ahead of climate shocks.

[Digital innovations](#) are therefore an essential component of agricultural research strategies to strengthen food and economic security around the world.

This includes **advisory and information** services; solutions to **better link smallholders to markets or supplies; financial access** and timely, relevant information from **remote sensing by satellite or drone...**

At CGIAR we believe that digitalization could drive **greater engagement in agriculture** from women and youth and create employment opportunities along the value chain.

Studies in sub-Saharan Africa have found that **farmers adopting digital extension and financial services** increased their incomes by 20 to 40 percent.

For rural women and girls in low-income countries who rely on small-scale agriculture, ICT can unlock financial services, training and networks, and, importantly, information and knowledge.

- Women in sub-Saharan Africa are [15 per cent](#) less likely to own a cell phone and more than 40 per cent less likely to use mobile internet than are men. Yet when women were given cell phones, SIM cards and time charge cards in one study in Tunisia, [75 per cent](#) said they benefitted either through better connectivity to agricultural information, such as veterinary advice, or greater levels of communication.
 - Subsidising technologies like cell phones for women can be one effective way for governments and NGOs to start closing the digital gender divide while boosting overall agricultural productivity.
- Meanwhile, a project to provide [app-based drone delivery](#) of livestock vaccines is set to allow women in Ghana to overcome gender norms that dictate men farmers liaise with men veterinarians, and better care for their chickens and goats.

Digitalization gives us better tools to sense and respond to **acute crises** like the ones we face today. It also provides us with a **systemic view** of how our food systems work -- or fail.

For example bringing together **earth system observation and big data analysis** can inform the co-design of global solutions and provide an evidence-base for national policies to maintain planetary boundaries where there are changes in biodiversity or water, nutrient or land-use.

- For example, a partnership between IWMI/CGIAR and Digital Earth Africa leverages remote-sensing and data management technologies to enhance the ability of African Governments, communities and companies to better manage their water. The partnership is developing applications for “water accounting”. This is a means to take stock of available water resources in order to arrive at better informed water management decisions. For example, balancing water allocations across different sectors, or understanding the downstream implications of new irrigation schemes.

The partnership is also working on developing applications for flood and drought mapping and early warning systems.

As in other sectors, **artificial intelligence shows great potential**. Researchers at IRRI (our Centre based in Philippines) have used AI to screen 132,000 accessions of rice in just a few months. By analysing the genetic makeup and characteristics of different samples, they've pinpointed specific genes responsible for producing compounds that show promise in combating cancer cells. Researchers have identified several rice varieties with potent anti-cancer properties and are working to make them more accessible.

Our research centers have also developed **AI-powered programs** that can help farmers anticipate climate conditions and pest threats to maximise yield and streamline inputs.

- The [tumaini smartphone app](#) which allows banana farmers to solve 90 percent of major diseases and pests.
- [Artemis is a computer vision technology system](#) that helps breeders develop locally adapted, climate-resilient crop varieties.

For smallholders digitalization can **boost productivity, profitability** and **resilience** to climate change.

A key concern and focus of CGIAR's **Research Initiative on Digital Innovation** is that we must ensure that we are **fully aligned on addressing weaknesses in information systems** that undermine evidence-based policy responses.

If we do not do this in tandem with supporting **effective national statistical systems**, we are missing a **powerful opportunity to enhance food security** and increase economic growth.

CGIAR works with **multiple partners** in this space. Please allow me to give a **few examples**:

- With the WFP we have worked to **leverage data to improve food aid distribution systems** and **design social protection programs** that aim to improve nutrition through food and cash transfers.
- FAO and CGIAR established a **collaboration** aimed at enhancing the AGROVOC thesaurus that provides a common language for agencies working in this space.

Standards are so important if we are to be able to gain a better, **bigger picture understanding** of our food systems landscapes.

We also **collaborate with the Linux Foundation** to create a standard way of sharing data about agricultural fields ...

Access to timely, **reliable, actionable data for rapid analysis** and decision support are essential for developing well-targeted interventions, foresight, crisis response, and policy development.

Last year **the official think tank of the G7**, Think7 (T7) tasked CGIAR and the Linux Foundation to co-design a dashboard, infused with real data from farmers at the first-mile of the value chain, demonstrating their impact as important agents of change at the forefront of decision-making. The dashboard will be used to inform policy decisions and track G7/G20 commitments.

Through last year's G20 meetings CGIAR also advocated for the **development of digital public infrastructure for agriculture**. Drawing on the experience of India the paper calls for DPI as a pathway for more equitable and responsible development for agriculture.

It is our **collective responsibility** to continue to be “**good neighbours**” and **build the actionable data pools** and **digital public goods** that will allow us to better reach and serve the most vulnerable stakeholders.

Solutions that are collaboratively developed and **deeply rooted in the realities of regions and countries** will **support local food and equitable livelihoods** while **ensuring that agriculture is a net positive contributor** to nature.

Today's panel represents an **enormous amount of influence**.

Let's **embrace that power**. Collectively we can achieve so much by **digital solutions** into our plans to transform food, land and water systems to address poverty, hunger and malnutrition.