WSIS+20 Review
Action Lines
Milestones, Challenges and Emerging Trends beyond 2025

C7 ICT Applications: E-agriculture

The Evolution of Context

- The WSIS Action Line C7 on e-agriculture specifically focuses on the use of information and communication technologies (ICTs) to enhance agricultural productivity, sustainability, and rural development. Digital initiatives for agriculture under AL C7 should aim at leveraging ICTs to address challenges and unlock opportunities in the agricultural sector, while keeping abreast of the latest developments worldwide to best address the world's global challenges, through targeted interventions to reduce poverty, hunger and increase economic development, directly contributing to the Sustainable Development Goals (SDGS) in a collaborative approach.

- Over the years, the promotion of digital technologies for agrifood systems transformation that impact positively agricultural development and food security has been strengthened with new initiatives to harness mobile technology, remote sensing, geographic information systems (GIS), and other digital tools to further support farmers in decision-making, crop management, and natural resource conservation.

- Focus has been given with renewed impetus to the following initiatives: developing knowledge sharing collaborative platforms and digital resources to facilitate the exchange of information and best practices in using ICTs for agriculture and rural development among agricultural stakeholders; fostering capacity building -to enhance digital literacy and technical skills among farmers, extension workers, and agricultural professionals-; providing policy support and technical assistance to governments and regional organizations in developing ICT policies and strategies for agricultural development; and finally, forging partnerships with other UN agencies, international organizations, academia, and civil society groups to advance the use of ICTs for agriculture within the broader context of sustainable development.

The Evolution of Context

- The need for ICTs in agriculture, fostering innovation and development doesn't need to be highlighted anymore as it is widely recognized now, also through a renewed digital inclusion focus, including empowering women, youth, and vulnerable populations in the agricultural sector.

- Stakeholders have been increasingly emphasizing the importance of capacity building, with boosted acquisition of digital literacy at several levels; as well as strengthening partnerships, through the promotion of cross-country and cross-sectoral collaboration and capitalization on good practices.

- Now with the rise of emerging technologies, that do not entail only a technological shift but trigger a whole economic, social and cultural revolution, the growing interest in AI, Big Data, and other disruptive technologies, open new possibilities to advocate for guidance on their ethical use, including in the food and agriculture sector.

- Scaling up digital solutions can therefore help now more than ever in addressing the current food crisis by using new, high-impact, sustainable digital-based and data driven solutions. Embracing new technologies, such as generative AI, has the potential, if used in a safe and ethical way, to revolutionize agriculture by improving efficiency, productivity and sustainability, through enhanced data-driven decision-making, precision farming, resource management, climate adaptation and resilience of agrifood systems.

Key Milestones: 20 years of Achievements

2002

01

Organization of COAIM

Consultation on Agriculture information System, which paved the way to FAO's work on bridging the rural digital divide

2003

02

Birth of E agriculture portfolio in FAO

2007

03

Creation of e-agriculture community with partners

2012

04

FAO wins the WSIS Prize for the E agriculture CoP

2015

05

Publication of the the e-agriculture 10 Year Review Report - Implementation of the WSIS Action Line C7. ICT Applications: e-agriculture

Key Milestones: 20 years of Achievements

2016

06

FAO Somalia water and land management system (SWALIM) was awarded the 2016 WSIS Prize Champions in the "E-Agriculture" categoryO

2016

07

Publication of the E agriculture strategy Guide

2018- russian version and in 2017 with the World Bank- “Module 4 on “Extending the benefits - Gender – equitable, ICT-enabled agricultural development”

2018

08

Publication of ‘Gender and ICTs - Mainstreaming gender in the use of information and communication technologies (ICTs) for agriculture and rural development’

2019- 2020

09

Publication of FAO-ITU ‘Status of Digital Agriculture in 18 countries of Europe and Central Asia’

2020-2023

10

FAO-ITU Digital Excellence in Agriculture Contests

Key Milestones: 20 years of Achievements

2021 — 11 — **FAO Digital excellence in agriculture in Europe and Central Asia: Good practices in the field of digital agriculture - Stocktaking report**

2021 — 12 — **Digital village Initiative -preparing the grounds, projects in Kosovo, Albania, Uzbekistan in collaboration with AEIDL**

2021 — 13 — **Precision agriculture in seedling production in Albania**

2021 — 14 — **Establishment of the Focus Group on Artificial Intelligence and Internet of Things for Digital Agriculture (FG-AI4A), co lead by FAO and ITU**

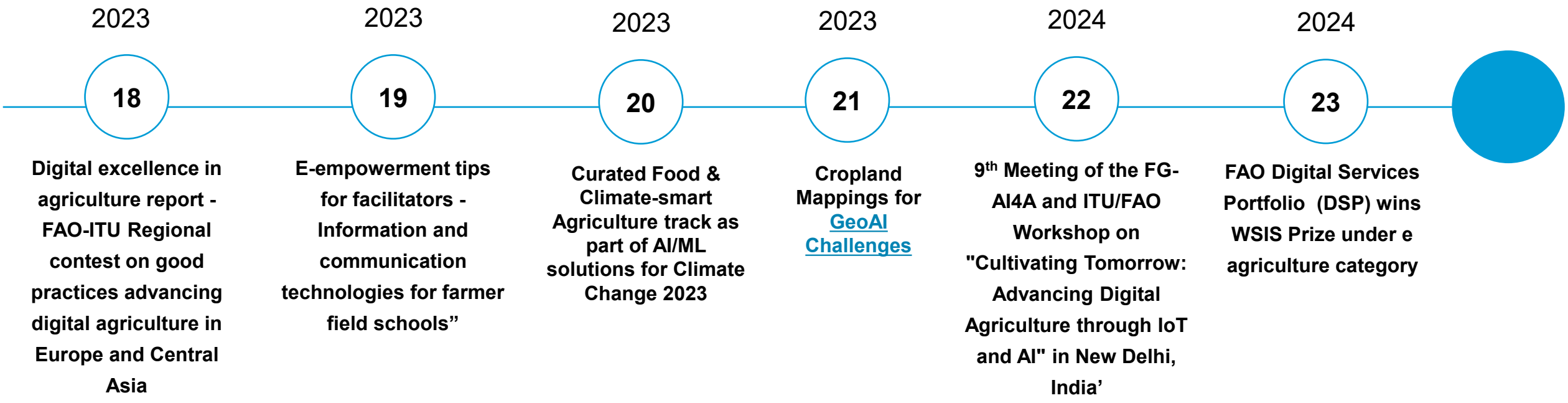
2022 — 15 — **ePhyto solution - An innovative system for electronic phytosanitary certificates ’**

2023 — 16 — **FAO joins the Digital Public Good Alliance (DPGA)**

2023 — 17 — **FAO Hand-in-Hand Geospatial Platform wins Excellence Award at Geospatial Forum in Amsterdam**

FAO’s open-access Hand in Hand (HIH) Geospatial Platform, which provides advanced information, including food security indicators and agricultural statistics, was recognized as the best collaborative platform towards data-driven agriculture

Key Milestones: 20 years of Achievements



Challenges in implementing the Action Line

Infrastructure gap: Despite progress, infrastructure limitations remain a hurdle to wider e-agriculture adoption.

Digital divide. The digital divide still persists despite the efforts made. According to the ITU (ITU, n.d.(a)), an estimated 2.6 billion people are still not online. 94% of the world's 'unconnected' population live in LMICs, and are more likely to be poor, living in rural areas, and women (GSMA, 2022(a)). Digital skills can be a powerful catalyst for women's and girls' economic, social and political empowerment and gender equality (SDG 5) and accelerate progress towards all the SDGs. Thus, the importance of digital inclusion in digital development should be further emphasized, especially compared with the accessibility and efficiency brought by digitalization, as there are still risks in excluding vulnerable groups, widening the digital divide, and solidifying digital inequality. Risk can be exacerbated with the misuse of new emerging technologies such as AI too if raising awareness on digital inclusion and providing technical assistance in this area are not done correctly.

Risk and ethics. Risk can be exacerbated with the misuse of new emerging technologies such as AI too if raising awareness on digital inclusion and providing technical assistance in this area are not done correctly and implementing the relevant safeguards to make a strong and lastly impact on our agrifood systems, ensuring food security thanks and within a digitally safe environment

Trends and Opportunities Beyond 2025

- **TRENDS**

We are now witnessing a trend of evolving demands that need to be addressed in a holistic perspective including the following:

- Countries are increasingly seeking support for institutional capacity building and systemic approaches like digital extension.
- Focus has shifted from just providing digital solutions to building institutional capacity for a systemic approach (e.g., digital extension services)
- A shift is occurring from individual projects to coordinated platforms and strategies for broader impact.
- The need for comprehensive analysis and ex-ante/ex-post feedback mechanisms is growing.
- The interest for new generative models and technologies needs to be regulated under a common global framework for a safe and inclusive digital governance, within a global digital ecosystem, while staying abreast of all the latest changes and trends that affect us to our core, preventing unwelcome new economic, social and ethical challenges and risks.

Trends and Opportunities Beyond 2025

- **OPPORTUNITIES**

- **Global evidence:** evidence-base in agrifood systems should be strengthened, not biased, but based on factual information and accurate data to feed in the most efficient way decision-making with scientific proven and action driven results.

- **Digital inclusion**: Digital inclusion, particularly for women and youth, in the transformation of agrifood systems should be kept as part of the broader focus on ICTs (e.g. rural radio was the most impactful ICT tool during the Covid-19 (WB) so as to ensure an inclusive transformation of agrifood systems that will leave no one behind.

- **Risks and ethics:** international platforms for addressing ethical and regulatory challenges related to emerging digital technologies should be leveraged to further explore common solutions to best serve the interests of the international community, complementing stakeholders'mandates under a robust digital cooperation framework.

- **Enhanced digital cooperation framework:** in the midst of the AI and digital revolution, there is a need to jointly develop context-specific solutions that consider the unique needs and challenges of each region while striving for sustainable agrifood systems and still being careful of still unknown risks. Governements, private sector, academia and civil society need to work together to catalyze new opportunities for furthering partnerships and better coordination of resources and to advance together concrete, integrated and targeted policies and actions to drive SDG transformation and the 2030 Agenda achievement in the midst of the AI revolution.