HARNESSING DIGITALIZATION AND INNOVATION CONTRIBUTING TO FOOD SYSTEM TRANSFORMATION

KEYNOTE SPEECH

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UN Food Systems Summit and UNFSS+2 Stocktaking Moment

We need food systems that support the health and well-being of all people.
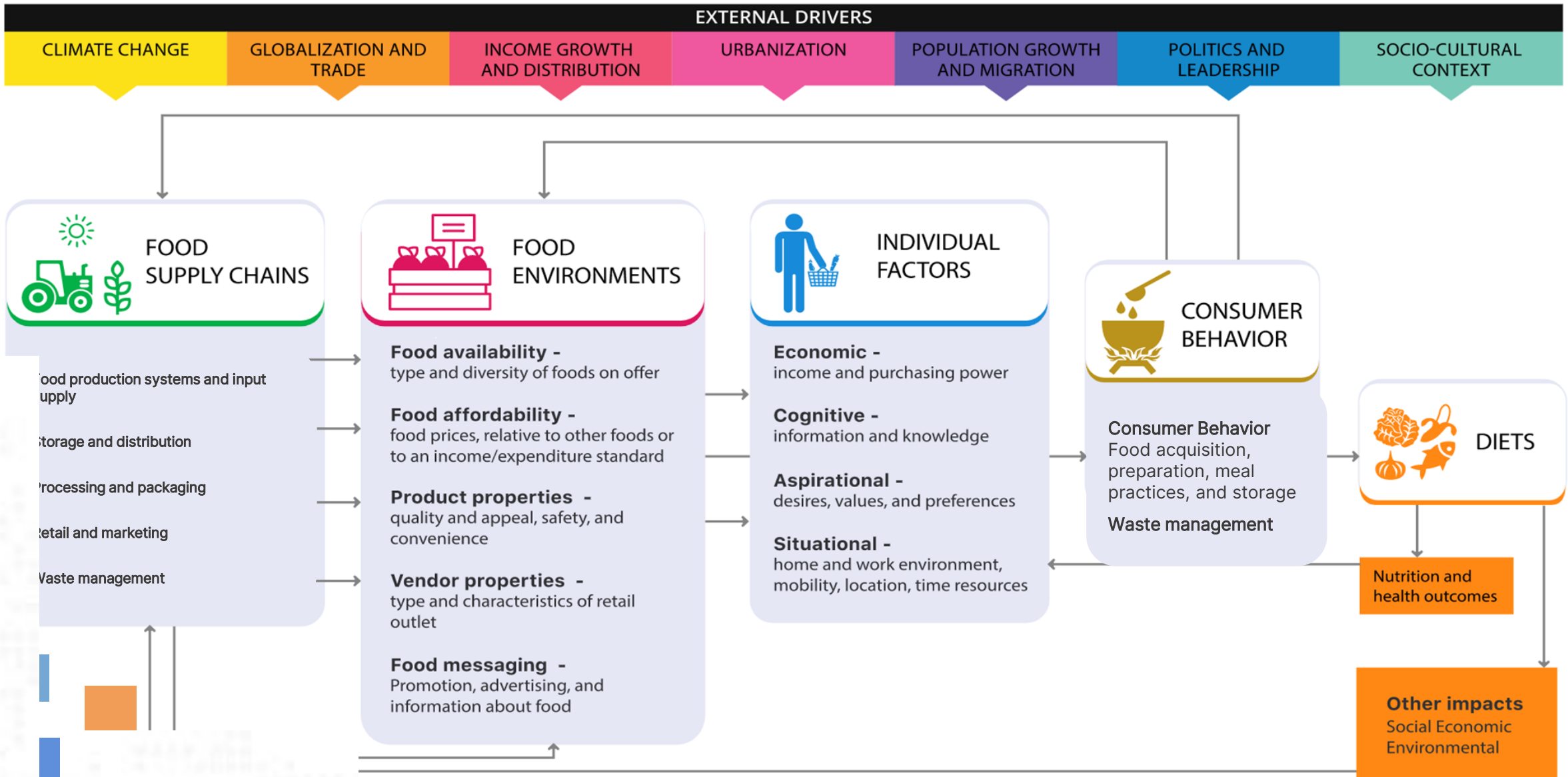
"We need food systems that protect our planet"

"We need systems that can support prosperity. "

António Guterres,
United Nations Secretary-General, 2021

External Drivers

EXTERNAL DRIVERS

| CLIMATE CHANGE | GLOBALIZATION AND TRADE | INCOME GROWTH AND DISTRIBUTION | URBANIZATION | POPULATION GROWTH AND MIGRATION | POLITICS AND LEADERSHIP | SOCIO-CULTURAL CONTEXT |

FOOD SUPPLY CHAINS

Food production systems and input supply

Storage and distribution

Processing and packaging

Retail and marketing

Waste management

FOOD ENVIRONMENTS

Food availability - type and diversity of foods on offer

Food affordability - food prices, relative to other foods or to an income/expenditure standard

Product properties - quality and appeal, safety, and convenience

Vendor properties - type and characteristics of retail outlet

Food messaging - Promotion, advertising, and information about food

INDIVIDUAL FACTORS

Economic - income and purchasing power

Cognitive - information and knowledge

Aspirational - desires, values, and preferences

Situational - home and work environment, mobility, location, time resources

CONSUMER BEHAVIOR

Consumer Behavior
Food acquisition, preparation, meal practices, and storage

Waste management

DIETS

Nutrition and health outcomes

Other impacts
Social Economic Environmental

NUTRITION AND FOOD SYSTEMS. A REPORT BY THE HIGH LEVEL PANEL OF EXPERTS ON FOOD SECURITY AND NUTRITION OF THE COMMITTEE ON WORLD FOOD SECURITY, ROME, ITALY.

Regional food system challenges

A growing malnutrition burden, with overweight and obesity rising rapidly while pockets of stunting, wasting and micronutrient deficiencies remain

Increasing resource stress (land, water), as a result of overexploitation and unsustainable farming practices and of the changing climate.

■ Climate change

■ Soil and water erosion

■ Increased temperatures, altered precipitation and more frequent weather extremes

■ Loss of biodiversity

Shocks and instability

- Building resilience to shocks and instability are central to sustainable food systems

- Managing resources sustainably and responsibly

- Empowering and enabling small-scale producers

- Improving food safety and quality

- Delivering nutrition security

- Empowering women and attracting young talent

- Mitigating and adapting to climate change

FAO, with Chatham House
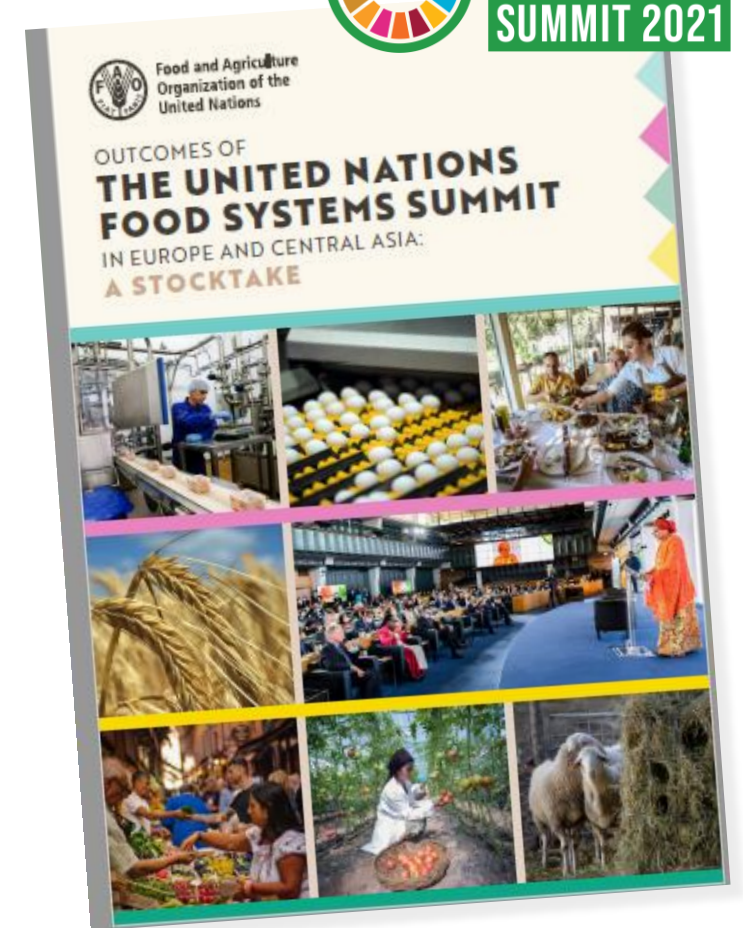
Science and innovation: ECA regional framework

FAO Science & Innovation Strategy

Members harness **science and innovation** to realize context-specific and systemic solutions for MORE efficient, inclusive, resilient and sustainable agrifood systems for
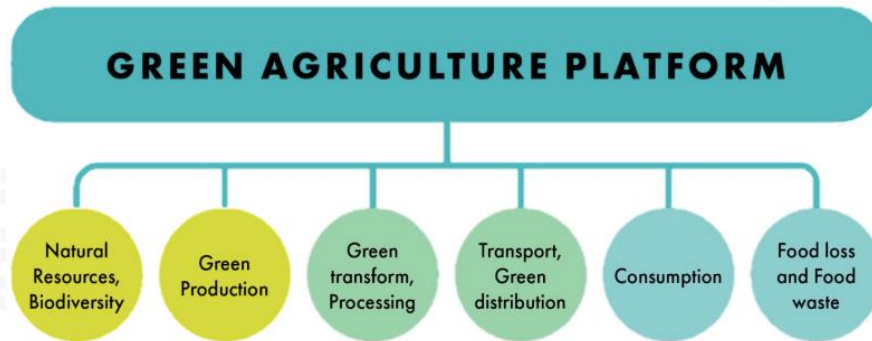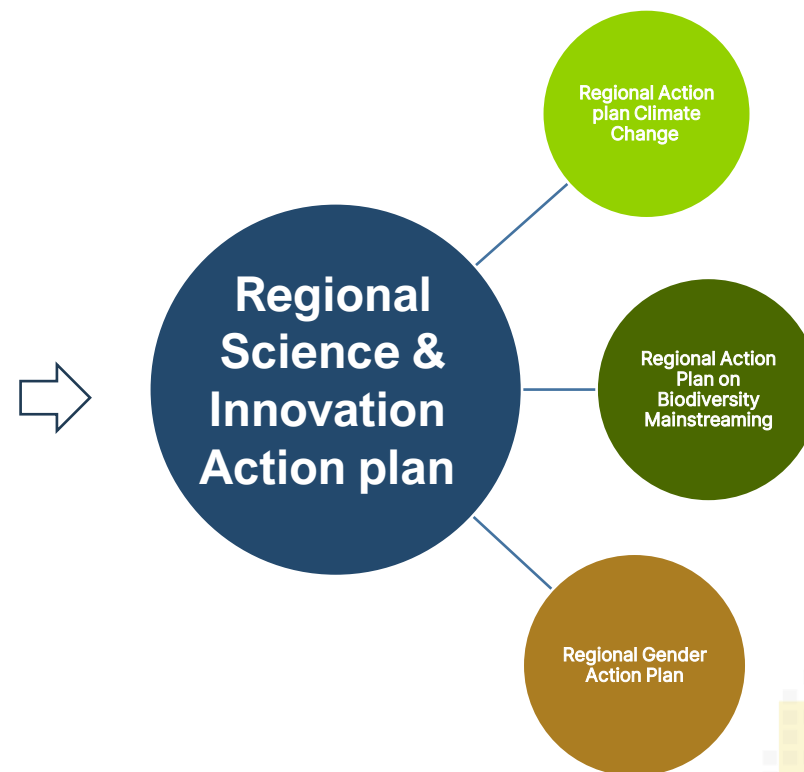
Harnessing science and innovation for agrifood system transformation

Unlocking transformative potential and accelerating the capacity of science, technology and innovation across the four priorities of the ECA region

Enhanced agrifood systems knowledge and evidence

- Analysis of the socioeconomic impacts of food self-sufficiency policies
- Geospatial mapping of the risk of establishments / spread of animal diseases
- Data and information management system to track the progress of the mitigation actions

Strengthened science-policy interfaces

- In-country dialogues and policy discussions on food systems
- Science-policy dialogue on soil bioremediation
- Interstate dialogue, multi-country collaboration and information sharing

Enhanced access to innovations and technologies

- Support democratization of technological solutions for small-scale and family farmers
- A regional catalogue of innovative green agricultural practices
- Develop capacities of rural women smallholders to apply innovative practices

Strengthened capacities of national agrifood innovation systems

- E-community of connected Digital villages
- Knowledge transfer with smallholders and family farmers
- Innovative model for increasing the forests areas and reducing CO_2 emissions

Digitalization for agrifood systems transformation

Optimizing farm management activities, such as record keeping, accounting, administration, forecasting, resources planning, etc.

Collecting real-time farm data, remotely controlling agricultural operations, reducing the need for human labor and allowing to farm more precisely
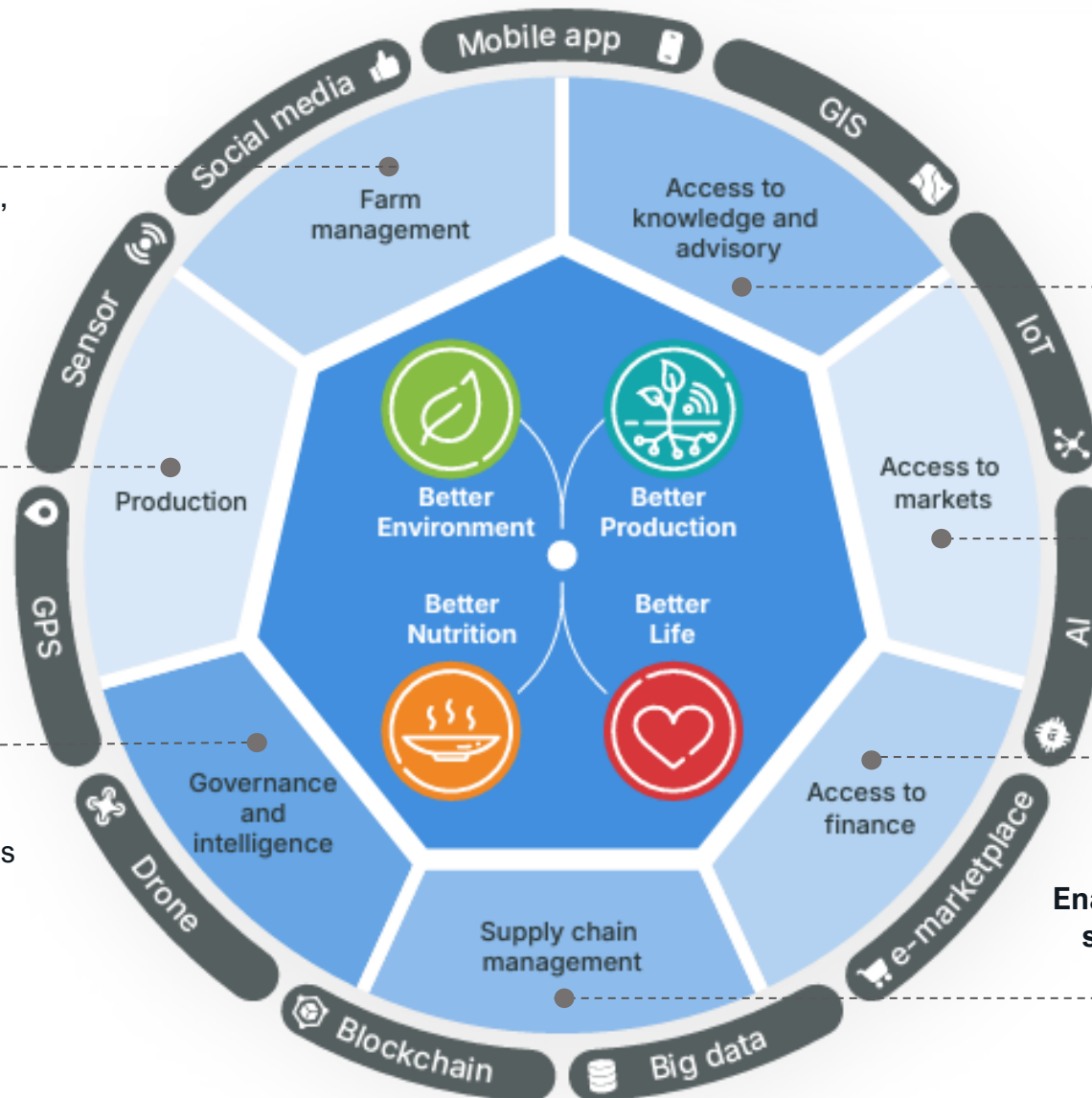
Enabling data-based decision support tools for social, economic, and political actors, assisting with implementing policies and providing services

Facilitating the provision of agricultural advice and information to food producers or other actors and improving their access to knowledge.

Fostering market linkages, access to inputs, pricing information, products and services

Increasing access to financial services such as online banking, credit, insurance, and subsidies

Enabling food traceability and transparency of supply chains and managing the flow of goods from the point of origin to consumption

First Regional Science and Innovation Week

a forum for discussing and sharing experiences on the needs, gaps, and opportunities to integrate science-policy interfaces and for better understanding the role of science, research and innovation in accelerating the transformation to more sustainable, inclusive, and resilient agrifood systems in ECA region

- Held from **2 to 5 October 2023** in Budapest, with collateral events in Azerbaijan, Georgia, Kyrgyzstan, Tajikistan, Türkiye, and Uzbekistan

- **over 400 participants** from over **20 countries in the region**

Resulted in:

- The **gaps identified and needs assessed** for effectively supporting science- and evidence-based decision-making

- Shared k**nowledge and experiences** to support harnessing S&I at regional and national level

- Strengthened capacities in **SPIs and science communication** for policy purposes.

Science-Policy Interface mechanisms

for strengthening evidence-based decision-making with relevance to topics, critical for the region and the member nations

- The **status of Science-Policy Interfaces in the ECA region**

- Science-Policy Interface **model framework**

- **Methodological guidelines** for building the SPI country-level capacities.

- Two **resource materials "Science-Policy Interface in Action"**

- A **Roadmap for strengthening Science-Policy Interfaces** to enable spurring agrifood systems transformation in the region

- **Five pilot countries**, Armenia, Georgia, Kyrgyzstan, Moldova, and Uzbekistan engaged in country-level actions

- **Regional Dialogue on Soil Protection and Science Policy Interface** held in Serbia

Governments should develop conducive and inclusive policies to stimulate ICT update in agriculture

Provide access to meaningful rural connectivity

Affordable, high-quality and equitable access to internet connectivity (especially mobile) in all rural areas

Establish solid regulatory frameworks and incentives

Regulations on data protection, use of drones, AI, etc. - coupled with incentives to stimulate investments, research and entrepreneurship

Ensure appropriate governance

Governance structures within the MoA and at Gov level to ensure digitalization is prioritized with responsibilities and accountabilities

Develop digital capacities at all levels

Farmers, government extension workers, should develop the necessary skills to make productive use of ICT in agriculture

E-government systems and services

MoAs and related Ministries sh eGovernm and offer e inclusive d services in

Be data-driven and provide open data

Integrated, full and up-to-

Figure: Countries that have developed strategies, policies and plans for the digitalization of agriculture with the support of FAO:
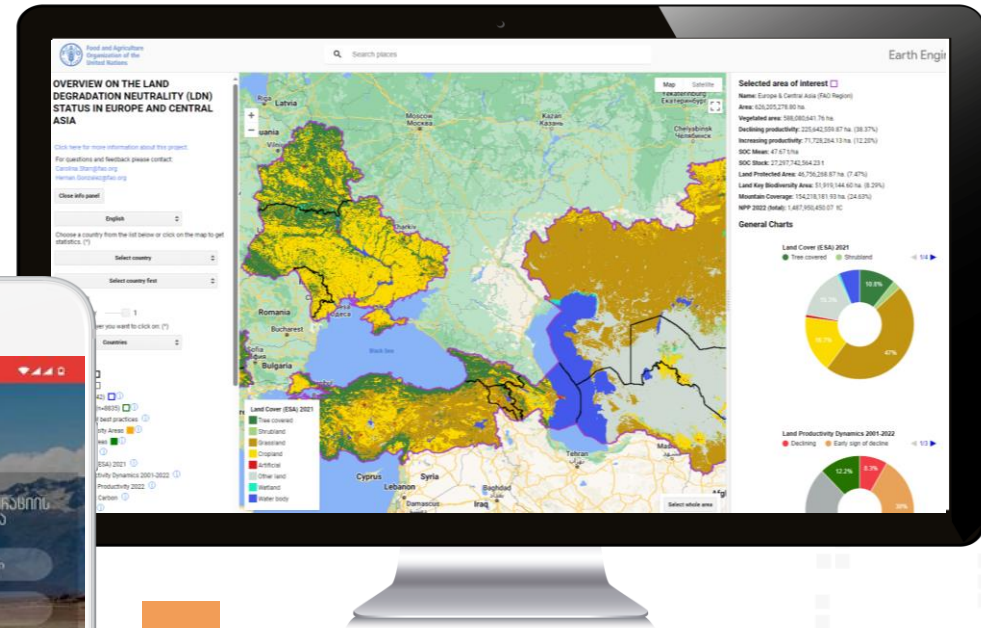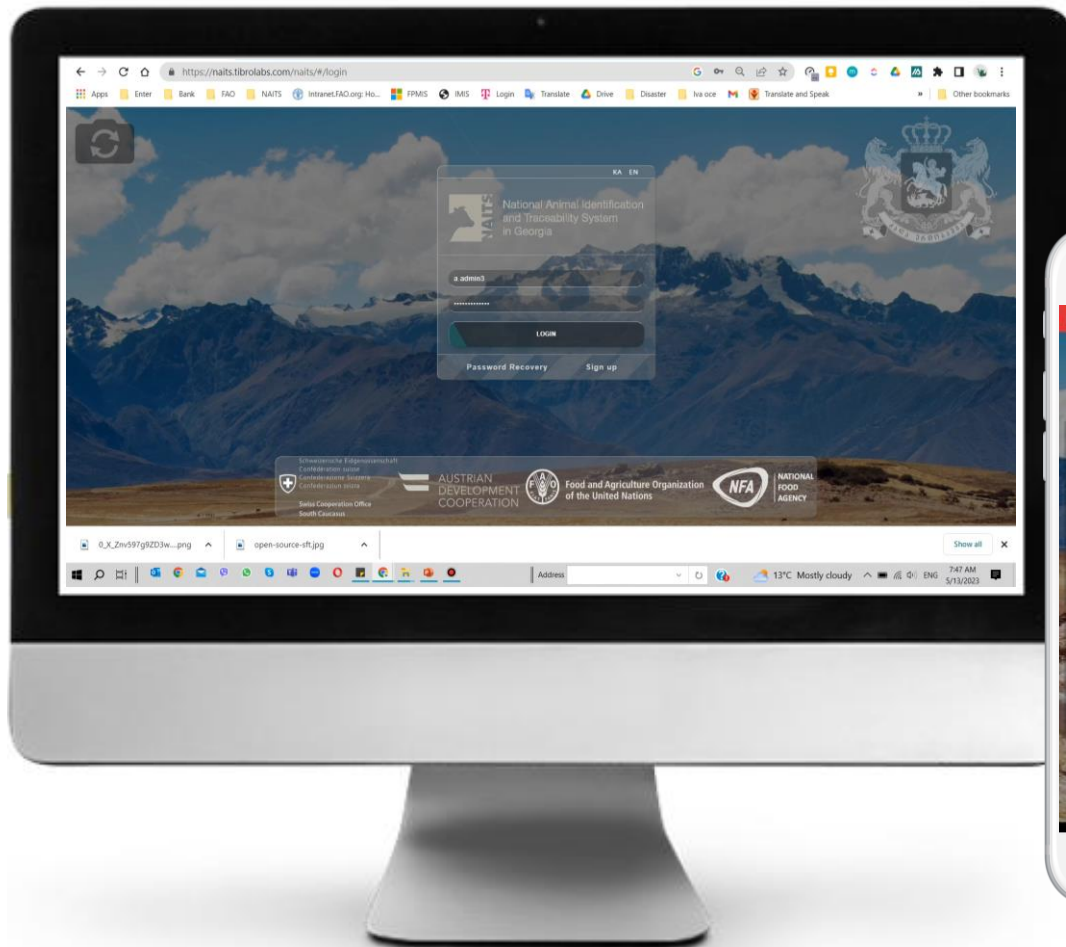
References to Kosovo shall be understood to be in the context of Security Council Resolution 1244 (1999)

Data, e-government and solutions for farmers

Establishing e-Government systems, offering efficient and inclusive digital public services to farmers and data as open data is essential to stimulate ICT uptake and innovation in the sector
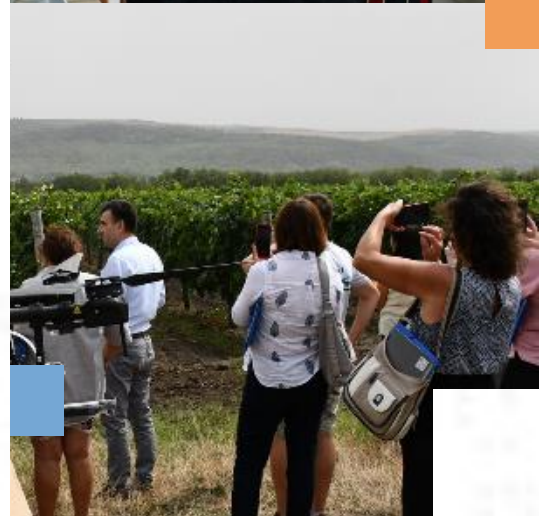

FAO supported the development of several "**digital public goods**", such as NAITS in Georgia or the LDN DSS, eDLA tool, among others

Developing digital skills at all level, including farmers and rural women is an essential enabler for the digitalization of agriculture

GOVERNMENTS:

Equipping government officials with the necessary skills to develop farmer-centric digital services, operate eGov, data privacy and protection

EDUCATION, PRIVATE SECTOR, EXTENSION:

University curricula that focuses on integration of digital technologies in agriculture, vocational training, training of extensionists, and initiatives to stimulate entrepreneurship in agriculture

FARMERS:

Develop digital skills to apply simple or more sophisticated ICT to access information, public services or to operate agritech devices in agriculture production

EMPOWERING RURAL COMMUNITIES THROUGH DIGITAL INNOVATION

AGRICULTURAL PRODUCTION → **Stimulating the use of ICTs and digital technologies in agricultural production**

DIGITAL SERVICES → **Enhancing farmers' access to services via ICT and digital means**

RURAL LIVELIHOODS → **Improving the delivery of digital rural services and improving capacities for the entire rural community**

Disseminating knowledge on digital agriculture and innovation

Visit:

https://www.fao.org/europe/resources/digital-agriculture/en

Regional Green Technical Platform on Green Agriculture:
https://www.fao.org/platforms/green-agriculture/en

AgriTech Observatory

Food and Agriculture Organization of the United Nations

The first virtual space where users can navigate digital agriculture initiatives across Europe and Central Asia

This space can be used by practitioners, innovators, policymakers, researchers, and other stakeholders to explore agritech solutions, good practices, policies, projects, and resources.

As a knowledge hub, the Observatory can aid in:

- guiding investment decisions
- performing regional and country level analyses
- informing policy making and programmes
- monitoring digital agriculture developments

AgriTech Observatory: submit your project!
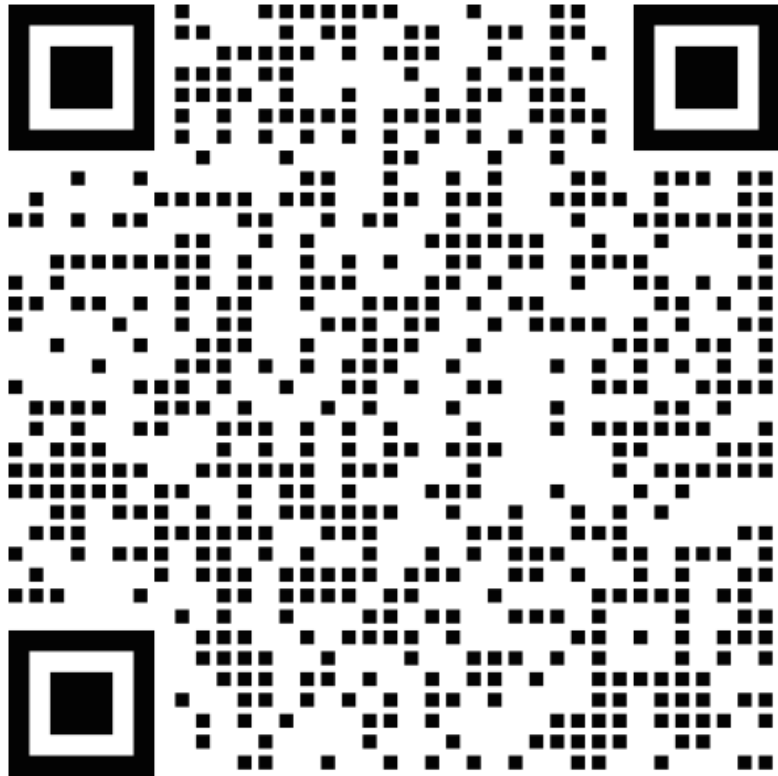
**SUBMIT
your ICT-AGRI-FOOD
project to have the chance
to be featured in the
FAO's regional
AgriTech Observatory!**

https://forms.office.com/e/uEMJEXgmn8