Fostering Digital Agriculture in Europe and Central Asia

Joint FAO-ITU webinar

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Overview

- **Introduction**
- **Key findings related to e-agriculture components**
- **Key findings related to country specific results**
- **Recommendations**

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Introduction – Aim and methodology

- Aim of the report

  Assess e-agricultural preparedness of the countries
  in the region

- Methodology

  1. Questionnaire on programmes and strategies at the national level.
  2. Results analyses + ITU, World Bank, and UN indicator database describing countries current .
  3. Country descriptions checked by heads and experts of official bodies in each country.

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Introduction – ICT4SDG

ICTs as key enablers to achieve
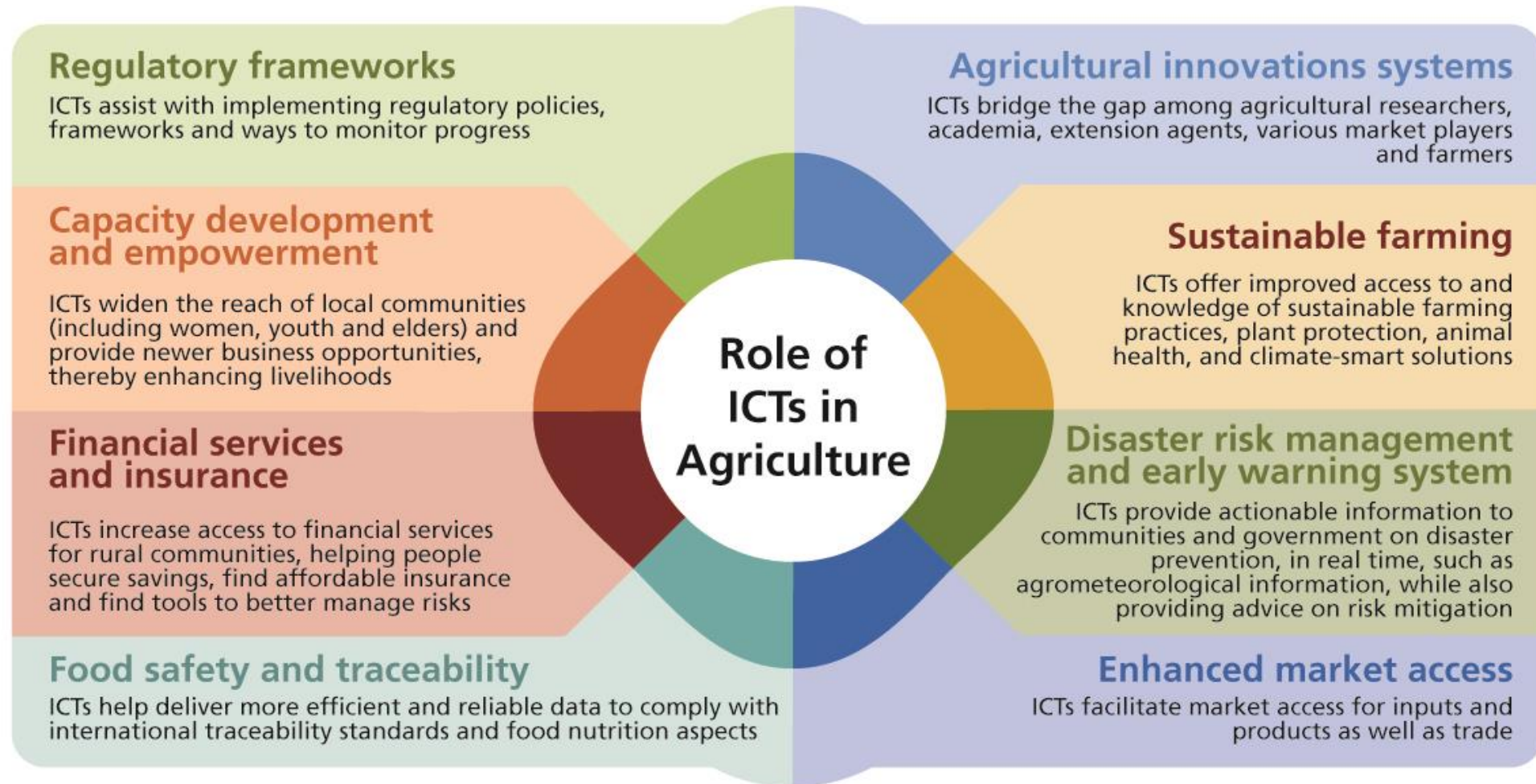3 dimensions of sustainable development:

- o economic growth
- o environmental balance
- o and social inclusion.

Introduction - 18 countries

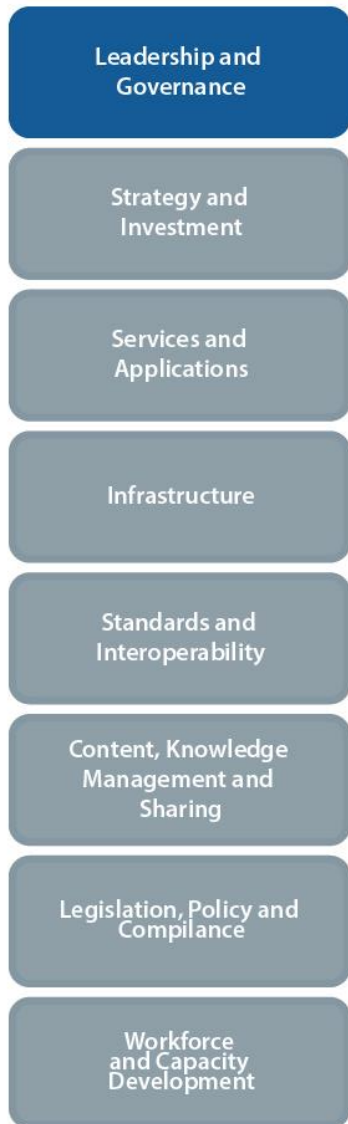Report covers the state of digital agriculture and related strategies in

- Albania
- Armenia
- Azerbaijan
- Belarus
- Bosnia & Herzegovina
- Georgia

Kazakhstan
Kyrgyzstan
Moldova
Montenegro
North Macedonia
Russian Federation

Serbia
Tajikistan
Turkmenistan
Turkey
Ukraine
Uzbekistan

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Introduction – Role of ICTs in agriculture

Regulatory frameworks

ICTs assist with implementing regulatory policies, frameworks and ways to monitor progress

Capacity development and empowerment

ICTs widen the reach of local communities (including women, youth and elders) and provide newer business opportunities, thereby enhancing livelihoods

Financial services and insurance

ICTs increase access to financial services for rural communities, helping people secure savings, find affordable insurance and find tools to better manage risks

Food safety and traceability

ICTs help deliver more efficient and reliable data to comply with international traceability standards and food nutrition aspects

Role of ICTs in Agriculture

Agricultural innovations systems

ICTs bridge the gap among agricultural researchers, academia, extension agents, various market players and farmers

Sustainable farming

ICTs offer improved access to and knowledge of sustainable farming practices, plant protection, animal health, and climate-smart solutions

Disaster risk management and early warning system

ICTs provide actionable information to communities and government on disaster prevention, in real time, such as agrometeorological information, while also providing advice on risk mitigation

Enhanced market access

ICTs facilitate market access for inputs and products as well as trade

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Key findings related to e-agriculture components

Leadership and Governance · Strategy and Investment · Services and Applications · Infrastructure · Standards and Interoperability · Content, Knowledge Management and Sharing · Legislation, Policy and Compilance · Workforce and Capacity Development

Identifying required e-agriculture components

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Leadership and Governance

Strategy and Investment

Services and Applications

Infrastructure

Standards and Interoperability

Content, Knowledge Management and Sharing

Legislation, Policy and Compilance

Workforce and Capacity Development

- Most of the governments have a **clear understanding** what e-agriculture means and how it can help to achieve their goals in agriculture development.

- Digital solutions are dedicated to production **efficiency** and economic growth.

- In many countries, **new organizational** units set up for digital development in relation with the existing agricultural institutions

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Leadership and Governance

Strategy and Investment

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Workforce and Capacity Development
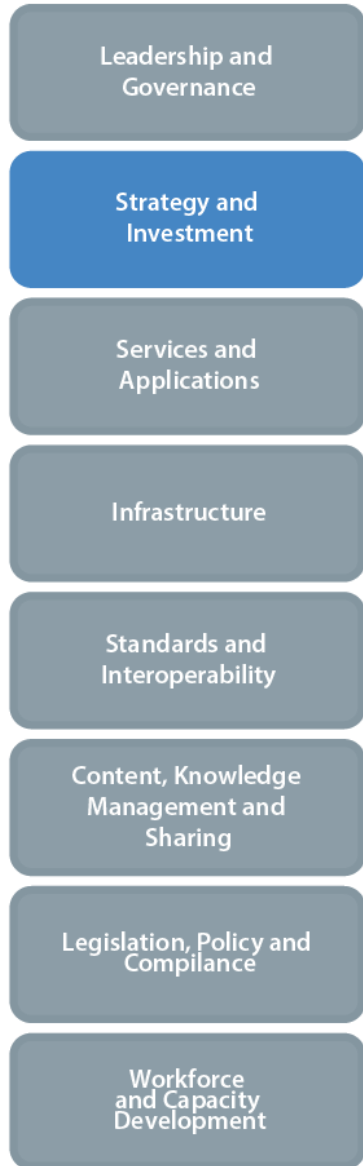
- Development of e-agriculture intersection of
  - information society
  - digital economy
  - agricultural and rural development policies.

- **Existence of a strategy does not guarantee successful implementation**.

- Concrete measures have dedicated state funding, but private entities are also active.
Many initiatives funded by international donor organizations.

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Leadership and
Governance

Strategy and
Investment

Services and
Applications

Infrastructure

Standards and
Interoperability

Content, Knowledge
Management and
Sharing

Legislation, Policy and
Compliance

Workforce
and Capacity
Development

- **Government to business** (G2B) services, based on systems with control functions = important development direction

- **Precision farming** plays a key role in public and private sector development in countries with larger economies.

- A variety of **mobile applications** developed by different actors, smartphone being main tool for internet use by farmers in the region.

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Infrastructure

- Internet users > **70%** but some countries only **20%**.

- Wired infrastructure usually **underdeveloped** in the study countries.

- **Wireless** broadband (3G and LTE) available in majority of rural areas

- Some **remote regions** still lacking adequate connectivity.

Leadership and Governance

Strategy and Investment

Services and Applications

Infrastructure

Standards and Interoperability

Content, Knowledge Management and Sharing

Legislation, Policy and Compilance

Workforce and Capacity Development

	Fixed broadband subscriptions (/100 inhabitants)	Population covered at least by 3G mobile network (/100inhabitants)	Population covered by at least LTE/WiMAX (/100 inhabitnts)	Internet users (/100 inhabitants)
Albania	12,5	99,2	85,5	71,9
Armenia	11,8	100	90,1	64,7
Azerbaijan	18,2	96,9	49	79,8
Belarus	33,9	99,9	75,7	79,1
Bosnia and Herzegovina	20,9	96	-	70,1
Georgia	21	99,98	99,72	64
Kazakhstan	13,4	87,9	75,3	78,9
Kyrgyzstan	3,8	88	70	38
Moldova	15,4	100	97	76,1
Montenegro	25,3	98	98	71,5
North Macedonia	19,9	99,88	99,53	79,2
Russian Federation	22,2	78	70	80,9
Serbia	17,4	98,67	96,7	73,4
Tajikistan	0,1	90	80	22
Turkey	16,3	98,32	93,17	71
Turkmenistan	0,1	75,8	67	21,3
Ukraine	12,3	90	3	58,9
Uzbekistan	12,7	75,5	44	52,3

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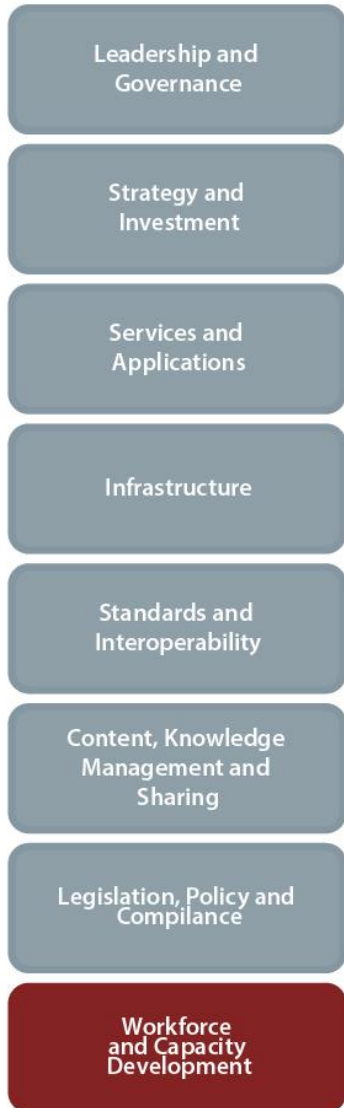| Leadership and Governance |
| Strategy and Investment |
| Services and Applications |
| Infrastructure |
| **Standards and Interoperability** |
| Content, Knowledge Management and Sharing |
| Legislation, Policy and Compilance |
| Workforce and Capacity Development |

- Achieving interoperability **within public administration** is a priority in many countries.

- **Monitoring systems** are crucial and are being developed in many countries. Parallel to this task, in many countries, new standards have to be implemented for proper statistical data collections.

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Leadership and Governance

Strategy and Investment

Services and Applications

Infrastructure

Standards and Interoperability

Content, Knowledge Management and Sharing

Legislation, Policy and Compilance

Workforce and Capacity Development

- Agricultural **content and applications** growing in the region

- Knowledge management and information sharing needs to be developed, **particularly among smallholder farmers**.

- Agricultural **advisory services** in some countries need significant development.

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Leadership and Governance

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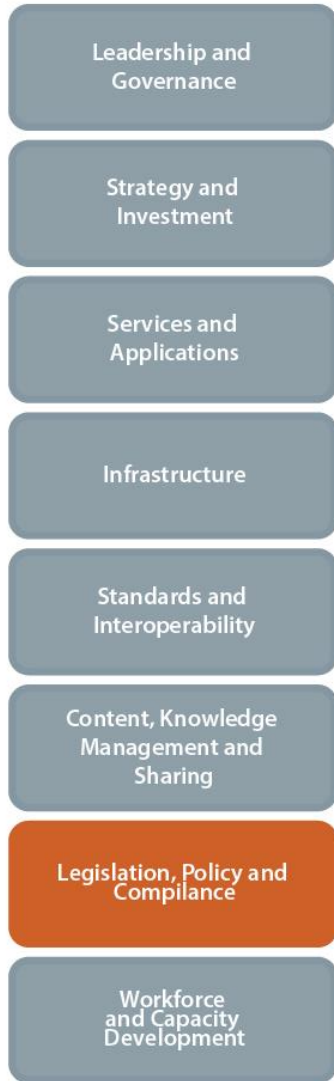
- **Often the legislation is lagging behind** the different actions and measures being taken, especially as digital solutions are constantly changing, and being a "moving target" in terms of regulation.

- Country **integration process** into regional economic organizations such as the European Union and the Eurasian Economic Union = key catalyst for increasing the efficiency of institutional systems and legislative work.

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- Only **a few** initiatives in the field to boost the digital skills of agricultural actors.

- **Lack of data** on the level of digital skills of farmers in the sector.

- Important r**ole of intermediaries** (connecting farmers with digital technologies)

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Key findings – Country specific results
(most relevant policy documents and initiatives)

Albania	Digital Agenda of Albania (2015 – 2020), Digital Agenda Strategy Economic Reform Programme (ERP) 2019 – 2021, National Broadband Plan. **Albania is preparing for the development of their national e-agriculture strategy and vision with the support of FAO. The process started in 2019 and continues in 2020.**
Armenia	The strategy for sustainable agricultural development in the Republic of Armenia - Vision 2029. **In 2019, an EU-funded FAO ENPARD project supported the development of a vision for the national e-agriculture strategy. FAO continues supporting the development of the action plan for digital agriculture in 2020.**
Azerbaijan	Azerbaijan 2020: Look to the Future, The National Strategy of Information Society Development in the Republic of Azerbaijan 2014 – 2020, Strategic Roadmap on Agricultural Production and Processing, Electronic Agriculture Information System (EKTIS)
Belarus	Presidential Decree No. 8 "On the Development of the digital economy", Strategy of Informatization Development in the Republic of Belarus for 2016 – 2020, State programme for digital economy and information society, Programme for the Socio-Economic Development of Belarus for 2016 – 2020, The State Programme for the Development of Agricultural Business in the Republic of Belarus for 2016 – 2020. Digital agriculture is part of the agriculture complex development state program.

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Key findings – Country specific results
(most relevant policy documents and initiatives)

Bosnia and Herzegovina	Policy for the Development of the Information Society of Bosnia and Herzegovina for the Period 2017 – 2021, Strategic Plan for Rural Development of BiH 2018 – 2021: Measures: 6.3.1., 6.9.
Georgia	State Programme on Broadband Infrastructure Development, Strategy of Agricultural Development of Georgia 2015 – 2020, Rural Development Strategy of Georgia 2017 – 2020, Strategy of Agriculture and Rural Development 2021 – 2027. Market information e-system, Data Warehouse
Kazakhstan	"Digital Kazakhstan" State programme, State Program for the Development of the Agro-Industrial Complex of the Republic of Kazakhstan, National E-agriculture Vision, Program for e-agriculture (E-АПК)
Kyrgyzstan	Digital Kyrgyzstan 2019 – 2023; "Roadmap" on the implementation of the Digital Transformation Concept "Digital Kyrgyzstan 2019 – 2023", Agricultural Sector Development Program using ICTs and an Action Plan for its implementation for 2019 – 2022. **FAO was officially approached in February 2020 to provide its technical support in the development of a national draft e-agriculture strategy.**

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Key findings – Country specific results
(most relevant policy documents and initiatives)

Moldova	Digital Moldova 2020, Strategy for the development of the information technology industry and the digital innovation ecosystem for the years 2018 – 2023, Broadband Development Programme for the years 2018 – 2020, National Strategy for Agricultural and Rural Development for the years 2014-2020 Strategic Program for technological modernization of the government (e-Transformation). **In 2014, Moldova decided to develop a national e-agriculture strategy, but the concept of e-agriculture was elaborated in the last two listed strategies.**
Montenegro	Strategy for Development of the Information Society of Montenegro for the period 2017 – 2020 (and its action plan for the years 2018 – 2020), Smart Specialisation Strategy S3.me - Centre of Excellence program
North Macedonia	The Strategy and Action Plan for Open Data 2018 – 2020, Drafting a long-term National ICT Strategy, on the basis of a Roadmap that was developed in 2018, Strategy for Public Administration Reform 2018 – 2022
Russia	Government Program 2018 "Digital Economy of the Russian Federation", Ministerial project (Ministry of Agriculture) "Scientific and technological development of digital agriculture", which **holds the vision for the national e-agriculture strategy, proposed by academics and policymakers yet not adopted.**

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Key findings – Country specific results
(most relevant policy documents and initiatives)

Serbia	National Programme for Rural Development (2018-2020), Smart Specialisation Strategy will be related to ICTs and food for the future.
Tajikistan	Concept of digital economy in the Republic of Tajikistan, National Development Strategy of the Republic of Tajikistan for the period to 2030. **Tajikistan has requested FAO's assistance for the development of their national e-agriculture strategy in 2019.**
Turkey	Digital Turkey Roadmap, The Strategic Plan 2019 – 2023 of the Ministry of Agriculture and Forestry. The Ministry has started developing its National E-agriculture Strategy with the technical assistance of FAO.
Turkmenistan	Draft (not public) digital economy vision, Digital Turkmenistan State Programme.
Ukraine	Digital economy vision, Digital Agenda for Ukraine (with digital agriculture subsection), New strategy of the Development of Agriculture in process (expectedly will cover digital agriculture).
Uzbekistan	Presidential Decree "Measures for agricultural reform and promotion from 2016 to 2020". **Uzbekistan has requested FAO's assistance for the development of their national e-agriculture strategy in 2019.**

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Recommendations

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Recommendations

Asking the A questions

- Availability
- Accessibility
- Affordability
- Adaptability
- Appropriateness
- Ability
- Agency

Overcoming the C barriers

- Connectivity
- Cost
- Content

With P responses

- People
- Participation
- Partnership
- Process
- Practices

Recommendations at national level

- **People - Process**

  Farmers at the heart of national digital strategies and included during formulation process

- **Process**

  Implementation, monitoring & evaluation phases included **as from formulation** of national digital strategies

- **Partnership - Content**

  Horizontal **coordination and interoperability** for developing e-agriculture-related systems

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Recommendations at national level

- **Process - Content**

  Agriculture-specific ICT-indicators incorporated into national development of agricultural data gathering methods and systems (rural + urban + age + gender disaggregated)

- **Partnership - Process - Practices**

  Mechanism to share lessons learned from **other industries** and **other regions**

Recommendations at regional level

- **Practices - Partnership**

  Promotion, collaboration, and knowledge sharing through online communities of practice and through existing regional networks and global platforms

- **Partnership – Process - Practices**

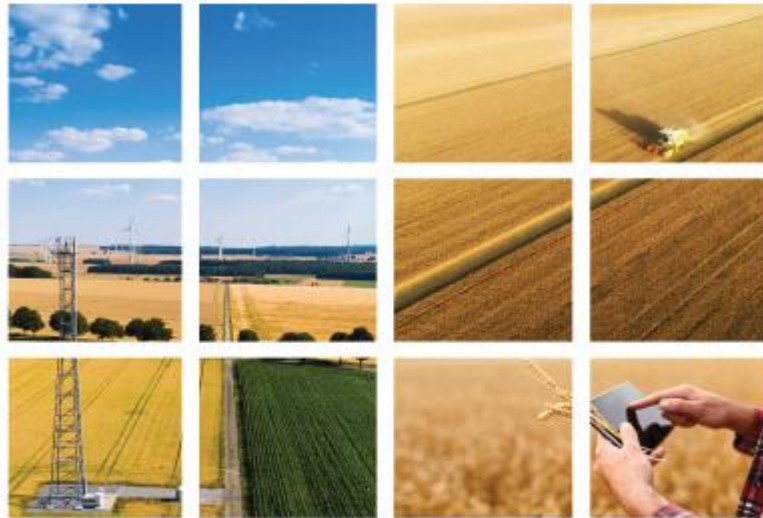 Regional database of ICT-based agricultural services and projects

Thank you!

Enjoy the reading!