Fostering Digital Agriculture in Europe and Central Asia

Joint FAO-ITU webinar

22 June 2020

Jaroslaw Ponder
Mihaly Csoto
Sophie Treinen
Overview

- Introduction
- Key findings related to e-agriculture components
- Key findings related to country specific results
- Recommendations
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.
ICTs as key enablers to achieve 3 dimensions of sustainable development:

- economic growth
- environmental balance
- 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
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

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
Key findings related to e-agriculture components
• 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
• Development of e-agriculture intersection of
  o information society
  o digital economy
  o 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.
• **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.
• 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.

<table>
<thead>
<tr>
<th>Country</th>
<th>Fixed broadband subscriptions (100 inhabitants)</th>
<th>Population covered at least by 3G mobile network (100 inhabitants)</th>
<th>Population covered by at least LTE/WiMAX (100 inhabitants)</th>
<th>Internet users (100 inhabitants)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td>12,5</td>
<td>99,2</td>
<td>85,5</td>
<td>71,9</td>
</tr>
<tr>
<td>Armenia</td>
<td>11,8</td>
<td>100</td>
<td>90,1</td>
<td>64,7</td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>18,2</td>
<td>96,9</td>
<td>49</td>
<td>79,8</td>
</tr>
<tr>
<td>Belarus</td>
<td>33,9</td>
<td>99,9</td>
<td>75,7</td>
<td>79,1</td>
</tr>
<tr>
<td>Bosnia and Herzegovina</td>
<td>20,9</td>
<td>96</td>
<td>-</td>
<td>70,1</td>
</tr>
<tr>
<td>Georgia</td>
<td>21</td>
<td>99,98</td>
<td>99,72</td>
<td>64</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>13,4</td>
<td>87,9</td>
<td>75,3</td>
<td>78,9</td>
</tr>
<tr>
<td>Kyrgyzstan</td>
<td>3,8</td>
<td>88</td>
<td>70</td>
<td>38</td>
</tr>
<tr>
<td>Moldova</td>
<td>15,4</td>
<td>100</td>
<td>97</td>
<td>76,1</td>
</tr>
<tr>
<td>Montenegro</td>
<td>25,3</td>
<td>98</td>
<td>98</td>
<td>71,5</td>
</tr>
<tr>
<td>North Macedonia</td>
<td>19,9</td>
<td>99,88</td>
<td>99,53</td>
<td>79,2</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>22,2</td>
<td>78</td>
<td>70</td>
<td>80,9</td>
</tr>
<tr>
<td>Serbia</td>
<td>17,4</td>
<td>98,67</td>
<td>96,7</td>
<td>73,4</td>
</tr>
<tr>
<td>Tajikistan</td>
<td>0,1</td>
<td>90</td>
<td>80</td>
<td>22</td>
</tr>
<tr>
<td>Turkey</td>
<td>16,3</td>
<td>98,32</td>
<td>93,17</td>
<td>71</td>
</tr>
<tr>
<td>Turkmenistan</td>
<td>0,1</td>
<td>75,8</td>
<td>67</td>
<td>21,3</td>
</tr>
<tr>
<td>Ukraine</td>
<td>12,3</td>
<td>90</td>
<td>3</td>
<td>58,9</td>
</tr>
<tr>
<td>Uzbekistan</td>
<td>12,7</td>
<td>75,5</td>
<td>44</td>
<td>52,3</td>
</tr>
</tbody>
</table>
• 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.
• 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.
• 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.
• 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 **role of intermediaries** (connecting farmers with digital technologies)
## Key findings – Country specific results
(most relevant policy documents and initiatives)

<table>
<thead>
<tr>
<th>Country</th>
<th>Relevant Documents and Initiatives</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Armenia</strong></td>
<td>The strategy for sustainable agricultural development in the Republic of Armenia - Vision 2029. <strong>In 2019, an EU-funded FAO ENPARD project supported the development of a vision for the national e-agriculture strategy.</strong> FAO continues supporting the development of the action plan for digital agriculture in 2020.</td>
</tr>
</tbody>
</table>
# Key findings – Country specific results
(most relevant policy documents and initiatives)

<table>
<thead>
<tr>
<th>Country</th>
<th>Policy Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kyrgyzstan</td>
<td>Digital Kyrgyzstan 2019 – 2023; &quot;Roadmap&quot; 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. <strong>FAO was officially approached in February 2020 to provide its technical support in the development of a national draft e-agriculture strategy.</strong></td>
</tr>
</tbody>
</table>

FAO was officially approached in February 2020 to provide its technical support in the development of a national draft e-agriculture strategy.
## Key findings – Country specific results
(most relevant policy documents and initiatives)

<table>
<thead>
<tr>
<th>Country</th>
<th>Relevant Documents and Initiatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moldova</td>
<td>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). <strong>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.</strong></td>
</tr>
<tr>
<td>Montenegro</td>
<td>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</td>
</tr>
<tr>
<td>North Macedonia</td>
<td>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</td>
</tr>
<tr>
<td>Russia</td>
<td>Government Program 2018 “Digital Economy of the Russian Federation”, Ministerial project (Ministry of Agriculture) &quot;Scientific and technological development of digital agriculture&quot;, which <strong>holds the vision for the national e-agriculture strategy, proposed by academics and policymakers yet not adopted.</strong></td>
</tr>
</tbody>
</table>


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

<table>
<thead>
<tr>
<th>Country</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serbia</td>
<td>National Programme for Rural Development (2018-2020), Smart Specialisation Strategy will be related to ICTs and food for the future.</td>
</tr>
<tr>
<td>Tajikistan</td>
<td>Concept of digital economy in the Republic of Tajikistan, National Development Strategy of the Republic of Tajikistan for the period to 2030. <strong>Tajikistan has requested FAO’s assistance for the development of their national e-agriculture strategy in 2019.</strong></td>
</tr>
<tr>
<td>Turkey</td>
<td>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.</td>
</tr>
<tr>
<td>Turkmenistan</td>
<td>Draft (not public) digital economy vision, Digital Turkmenistan State Programme.</td>
</tr>
<tr>
<td>Ukraine</td>
<td>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).</td>
</tr>
<tr>
<td>Uzbekistan</td>
<td>Presidential Decree “Measures for agricultural reform and promotion from 2016 to 2020”. <strong>Uzbekistan has requested FAO’s assistance for the development of their national e-agriculture strategy in 2019.</strong></td>
</tr>
</tbody>
</table>
Recommendations
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
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!