E-agriculture Strategy

- The need for developing national e-agriculture strategies -
Challenges facing agriculture

- Access to nutritious food – no malnutrition
- Sustainable Farming
- Crop Intensification
- Food loss and waste
- More crop per drop
- Sustainable Livelihoods
- Climate smart agriculture
- Disaster preparedness
- Safe food
- Drought
- Loss of arable land
- Pest & Disease
- Loss of biodiversity
- Floods

A world without hunger
ICT prices are dropping significantly

By end 2015, 83 developing countries had achieved the Broadband Commission's affordability target.

In 2011, the Broadband Commission for Digital Development set the following target:

"By 2015, entry-level broadband services should be made affordable in developing countries through adequate regulation and market forces (amounting to less than 5% of average monthly income)."

Five LDCs achieved the Broadband Commission target, but in the majority of the world's poorest countries broadband remains unaffordable.

Source: ITU. Note: Broadband prices refer to the most affordable service: either fixed or mobile broadband.
Mobile broadband is rapidly expanding

Seven billion people (95% of the global population) live in an area that is covered by a mobile-cellular network.

Mobile-broadband networks (3G or above) reach 84% of the global population but only 67% of the rural population.

LTE networks have spread quickly over the last three years and reach almost 4 billion people today (53% of the global population), enhancing the quality of Internet use.

Source: ITU.
Note: * Estimates. Mobile network coverage refers to the population that is covered by a mobile network.
Leveraging ICT development in other sectors for agriculture
A more connected future....

Source: ITU
What is e-agriculture?

- an emerging field focusing on the **enhancement of agricultural and rural development** through improved information and communication processes.

- involves the conceptualization, design, development, evaluation and application of **innovative ways to use ICT in the rural domain**, with a primary focus on agriculture.

- Includes standards, norms, methodologies, tools, development of individual and institutional capacities, and policy support are all key components.
ICT in agriculture

**Precision Agriculture**
- Sensor networks
- Drones, UAVs, GIS mapping
- Internet of Things (IoT)

**Big Data, Cloud Computing & Connected Networks**

**Reliable, hyper-local weather data**
- agri. advisories, insurance, etc.,

**3D food printing**

**NASA’s food in space**
ICT and agriculture application trends

Source: FAO-ITU E-agriculture Strategy Guide
ICTs assist with implementing regulatory policies, frameworks and ways to monitor progress.

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

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

ICTs help deliver more efficient and reliable data to comply with international traceability standards.

ICTs bridge the gap between agricultural researchers, extension agents and farmers thereby enhancing agricultural production.

ICTs improve access to climate-smart solutions as well as appropriate knowledge to use them.

ICTs provide actionable information to communities and governments on disaster prevention, in real-time, while also providing advice on risk-mitigation techniques.

Source: FAO-ITU
E-agriculture Strategy Guide
FAO-ITU

E-agriculture Strategy Guide

Available online!

http://www.fao.org/3/a-i5564e.pdf
Why an E-agriculture Strategy

A *guiding framework* to develop sustainable national e-agriculture services/solutions
Technical assistance to countries in developing their National E-Agriculture Strategy

- **Pilot** Bhutan and Sri Lanka
- **ICT strategy** Lao PDR
- **2016-2017** – Philippines, Papua New Guinea, Fiji and Vanuatu
Developing the National E-Agriculture Strategy

1. National Agriculture Vision
2. ICT sector leverage opportunity
3. Leveraging inter-sector developments

- E-agriculture Vision
- Action Plan
- Monitoring & Evaluation

National E-agriculture Strategy
Agriculture Goals

Priorities

Challenges

ICT solutions

Agriculture Goals

E-agriculture vision

Expected Outcomes

ICT solutions
**Table 2.4.2. Sample e-agriculture action plan**

<table>
<thead>
<tr>
<th>Action Plan in Phases (Outputs and Activities)</th>
<th>Year 0</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
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</thead>
<tbody>
<tr>
<td>Examples (Non-exhaustive) of Outputs</td>
<td>Activities</td>
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<tr>
<td><strong>Interconnection of databases critical for agriculture</strong></td>
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<tr>
<td>(e.g. GIS data, Land use, Soil map / land fertility, Forest resources, Irrigation and water management, Bio-diversity, Weather forecasting, Fire history etc.)</td>
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<tr>
<td><strong>E-market place and information system for agriculture</strong></td>
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<tr>
<td>(Creation of e/m-market place, market information and scalable payment systems for national and international, promotion and awareness raising on use of e/m-services)</td>
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<tr>
<td><strong>Agriculture e-advisory services</strong></td>
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<tr>
<td>(Advisory services offered by extension workers, consultants, researchers in country or abroad through electronic media (phone, Internet, email, video chat, face to face meetings or paper reports)</td>
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<td><strong>Farm mechanization information and service</strong></td>
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<tr>
<td>(Creation of online machine and equipment information system linked with machine availability and rentals)</td>
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<tr>
<td><strong>Universal mobile broadband connectivity</strong></td>
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<td><strong>Logistics management concerning storage and transport</strong></td>
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<tr>
<td>(Information management linking agriculture service providers and markets)</td>
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<td><strong>Electronic pest surveillance system</strong></td>
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<td><strong>Traceability of agro-chemical movement through value chain</strong></td>
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<td><strong>Weather information Services and alerts</strong></td>
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<td><strong>Guideline on data sharing, data classification, data formats, secure e-documents</strong></td>
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<td><strong>Credible GAP content aggregation and packaging</strong></td>
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<tr>
<td>(Creation of Agriculture content and packaging for information delivery on ICT channels (video, audio, website, text), streamlining interoperability of future content creation, capacity building, awareness raising)</td>
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<td><strong>Certified higher yielding seeds, planting, breeding materials verification and traceability</strong></td>
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**PHASE 1 FOCUS (example):**
- Strengthening existing services.
- Launch of high impact feasible services.
- Creating enabling environment for advanced services.
- Content creation and alignment.
- Capacity building, Partnerships development, Digital Literacy.

**PHASE 2 FOCUS (example):**
- Launch advanced services.
- Interoperability of databases and application platform.
- Promote take up of existing services.
- Enhance integration with existing e-services.
- Increase private sector engagement.
- Digital literacy.

**PHASE 3 FOCUS (example):**
ICT Solutions Identified (examples)

- Online Content
- Disaster Management
- Communication
  ICT Infrastructure
  Connectivity
- Data Collection, Data Bases, Data Analytics, Modeling
- Capacity Building
- Banking, Trading, Insurance
- Services, Logistics, Climate Change and Monitoring
Thank you

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