E-agriculture Strategy

- The need for developing ***national e-agriculture strategies*** *-*

Food and Agriculture Organization of the United Nations

ITU

Presented at

agriculture SOLUTIONS FORUM 2016

Challenges facing agriculture

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Access to nutritious food – no malnutrition

© discover.isif.asia

Sustainable Farming

Crop Intensification

food loss and waste

A world without hunger

Drought

More crop per drop

Safe food

Climate smart agriculture

Sustainable Livelihoods

Disaster preparedness

© www.ong2zero.org

Loss of arable land

Floods

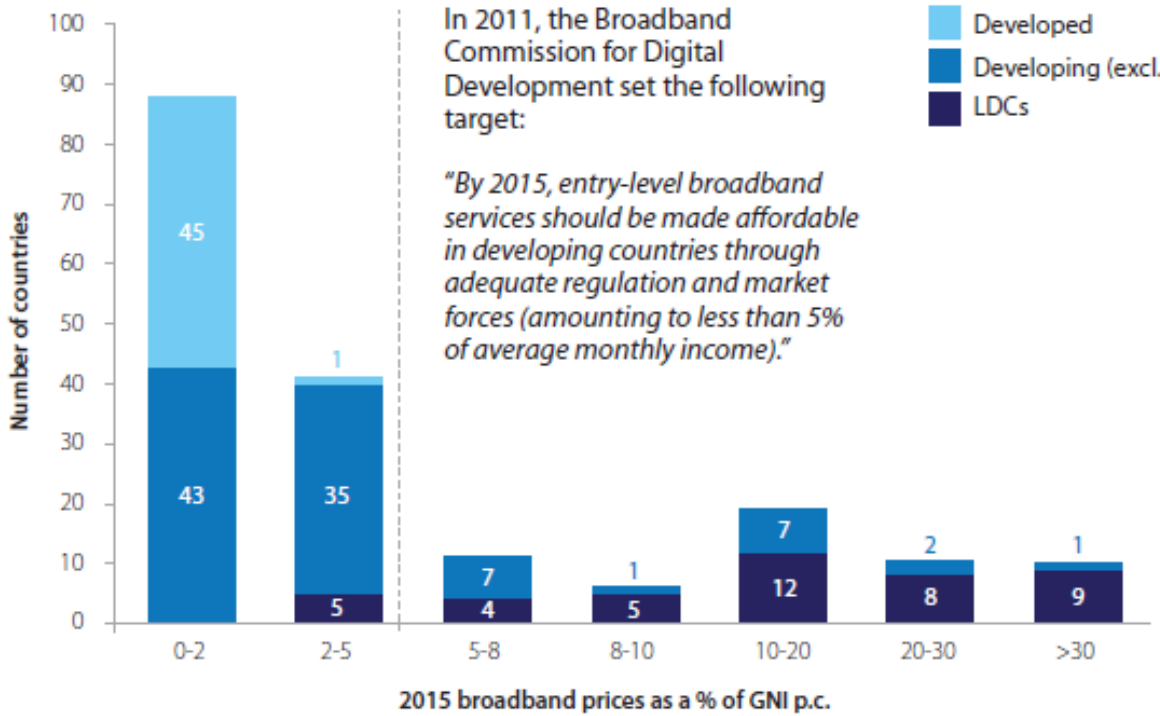
Pest & Disease

Loss of biodiversity

© www.agriculturesnetwork.org

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:

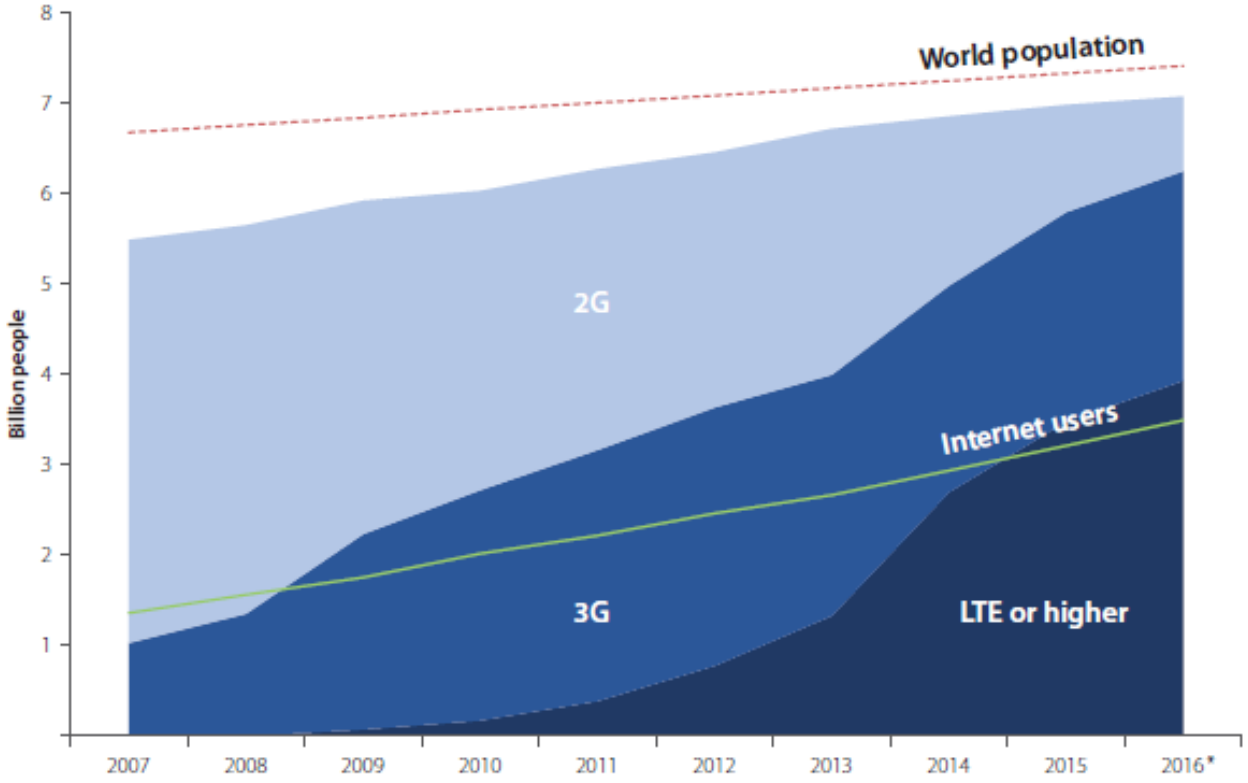
"By 2015, entry-level broadband services should be made affordable in developing countries through adequate regulation and market forces (amounting to less than 5% of average monthly income)."

Developed
Developing (excl. LDCs)
LDCs

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


Emergency


Education


Health


Agriculture

Governance


Investment

Applications


Policy & Regulation


Capacity Building


Transport


Sensor Networks


Universal Broadband


Green ICT & E-Waste


Measurements


Electricity


Infrastructure Security


Privacy & Security


Water

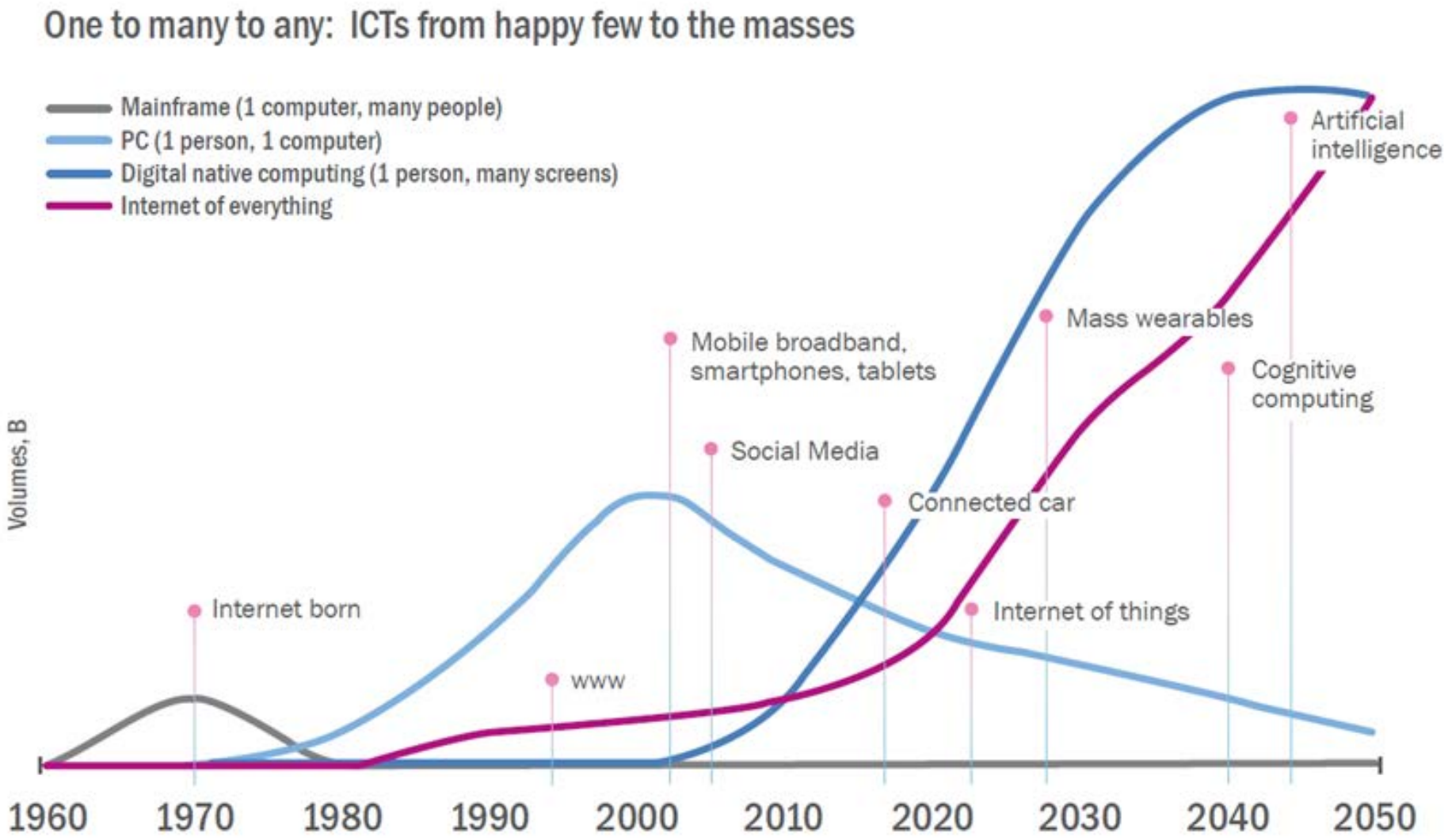

Digital Inclusion


Spectrum Management


Standards, Conformity & Interoperability


Teleworking

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

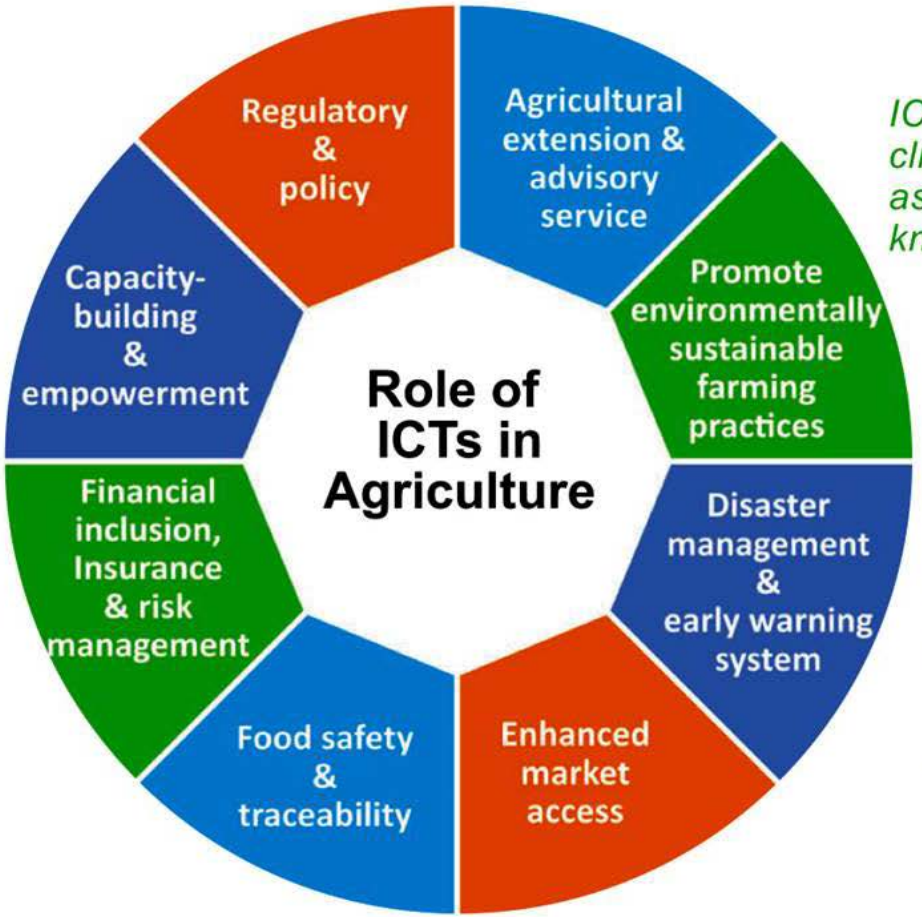
- agri. advisories, insurance, etc.,

3D food printing

NASA's food in space

ICT and agriculture application trends

Source: FAO-ITU E-agriculture Strategy Guide



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

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

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

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

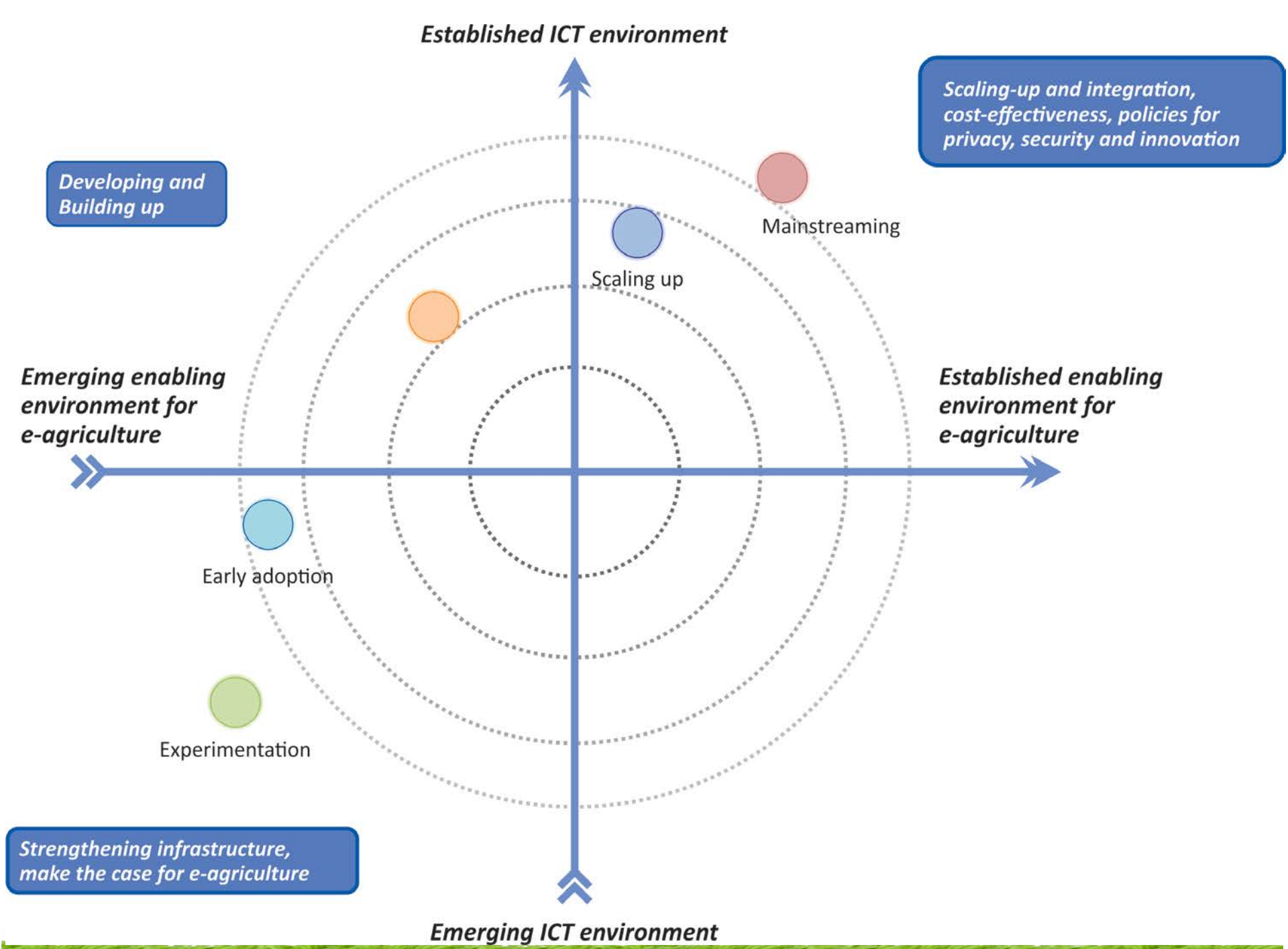
ICTs provide actionable information to communities and governments on disaster prevention, in real-time, while also providing advice on risk-mitigation techniques.

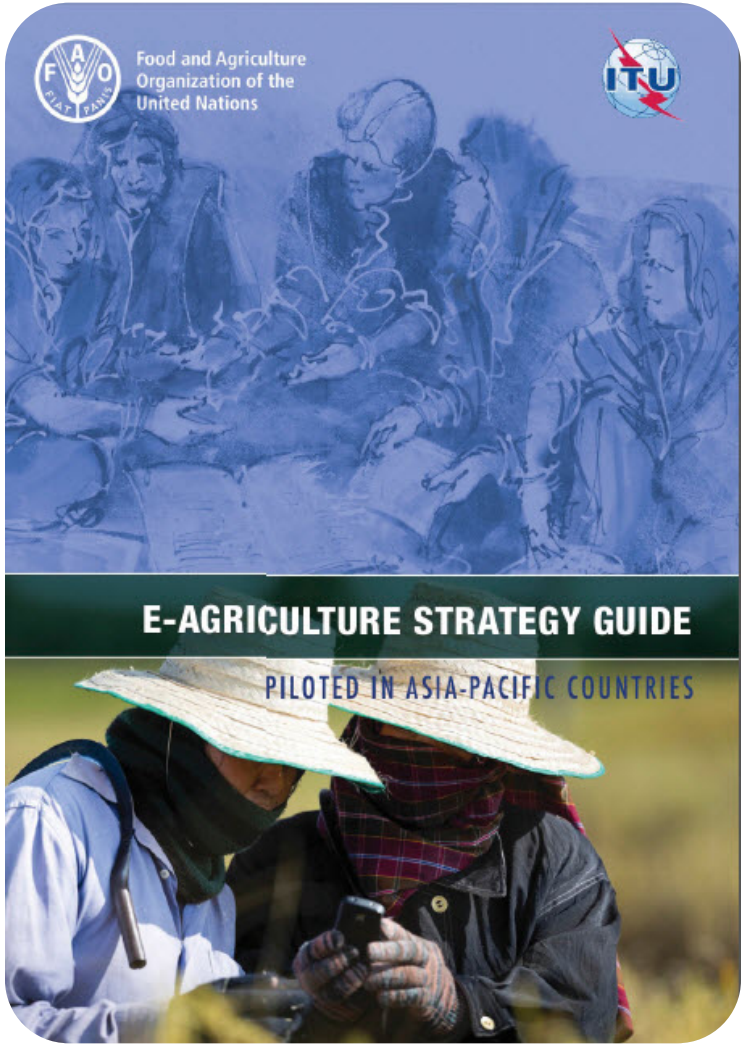
ICTs increase access to financial services for rural communities, helping to secure savings, find affordable insurance and tools to better manage risk.

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

ICTs facilitate market access for inputs as well as product marketing and trade in a variety of ways.

Source: FAO-ITU E-agriculture Strategy Guide


Established ICT environment
Scaling-up and integration, cost-effectiveness, policies for privacy, security and innovation
Developing and Building up
Mainstreaming
Scaling up
Emerging enabling environment for e-agriculture
Established enabling environment for e-agriculture
Early adoption
Experimentation
Strengthening infrastructure, make the case for e-agriculture
Emerging ICT environment



FAO-ITU

E-agriculture Strategy Guide

Available online!

http://www.fao.org/3/a-i5564e.pdf

Why an E-agriculture Strategy

Ministry of Agriculture (MoA)

Agriculture Policy

Department of Agriculture, Livestock, Fisheries, Forestry

Ministry of Communication & IT, Regulator

IT/Digital eGov Policy

Department of Telecom, IT, Regulator, e-Gov agency

National E-agriculture Strategy

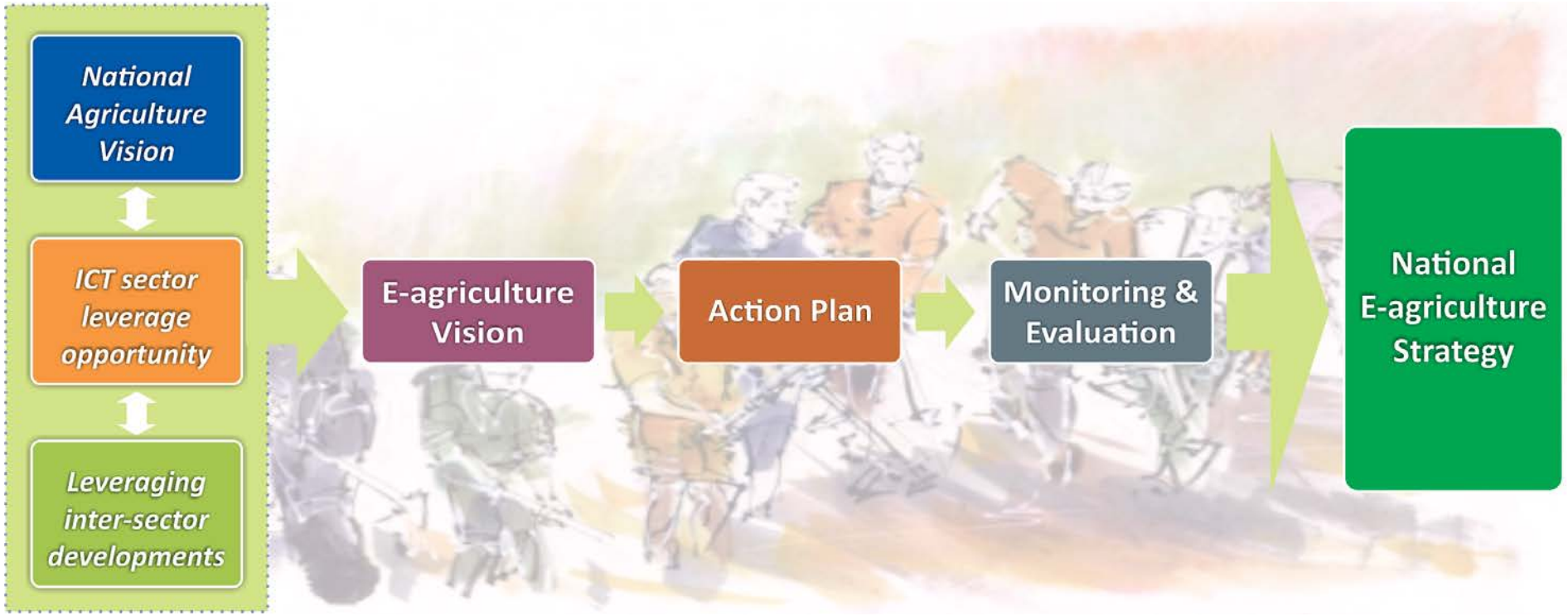
A guiding framework to develop sustainable national e-agriculture services/solutions

Technical assistance to countries in developing their

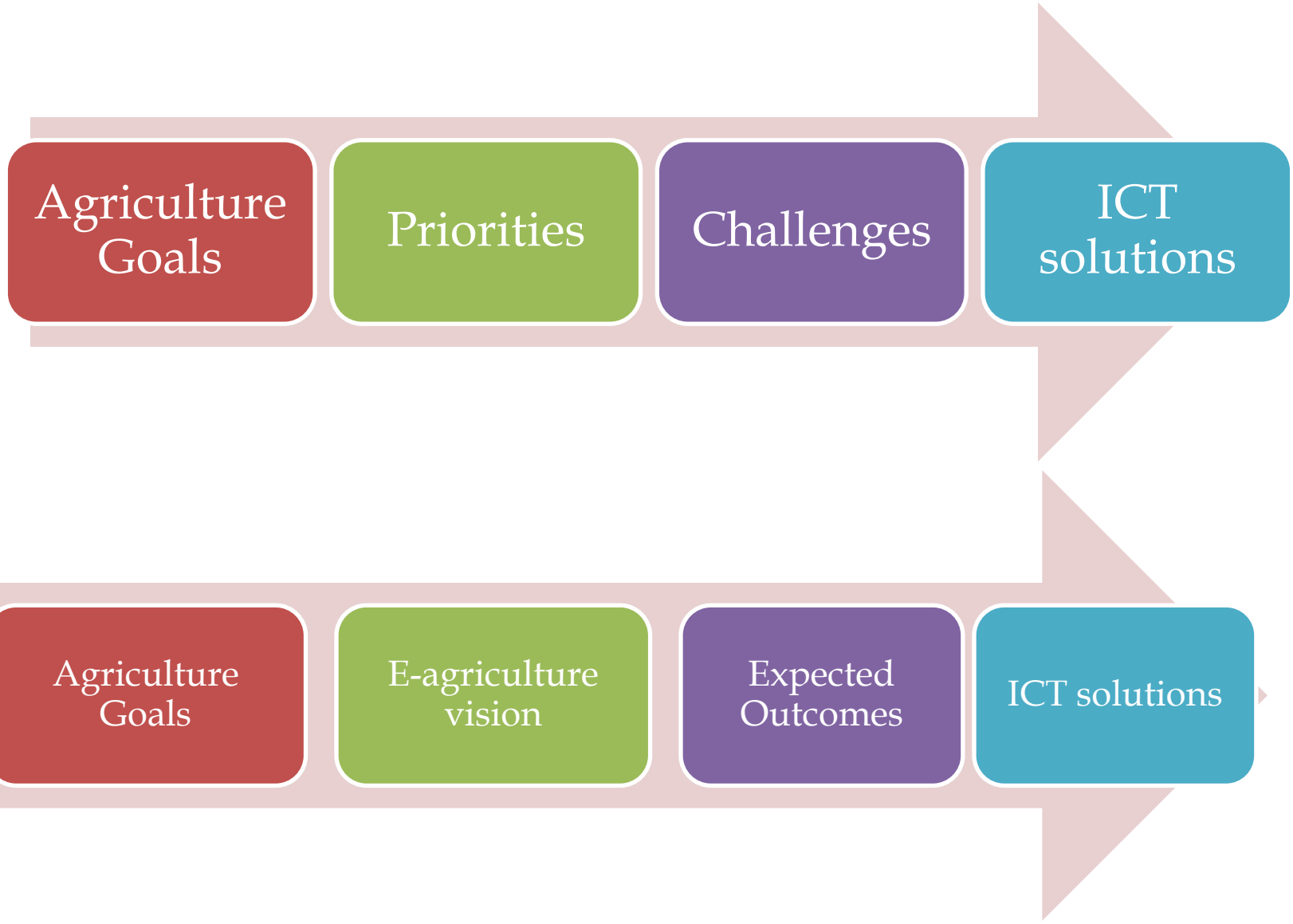
National E-Agriculture Strategy

- *Pilot* Bhutan and Sri Lanka
- *ICT strategy* Lao PDR
- *2016-2017* – Philippines, Papua New Guinea, Fiji and Vanuatu

Developing the National E-Agriculture Strategy



Approach


Agriculture Goals
Priorities
Challenges
ICT solutions
Agriculture Goals
E-agriculture vision
Expected Outcomes
ICT solutions

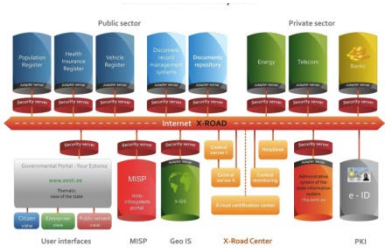
ACTION PLAN EXAMPLE

Table 2.4.2. Sample e-agriculture action plan

Action Plan in Phases (Outputs and Activities)	Year 0	Year 1	Year 2	Year 3	Year 4
Examples (Non-exhaustive) of Outputs					
Interconnection of databases critical for agriculture *(e.g. GIS data, Land use, Soil map /land fertility, Forest resources, Irrigation and water management, Bio-diversity, Weather forecasting, Fire history etc.)*		*Activities*	*Activities*	*Activities*	*Activities*
E-market place and information system for agriculture *(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;)*	*Activities*	*Activities*	*Activities*		
Agriculture e-advisory services *(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)*	*Activities*	*Activities*	*Activities*	*Activities*	
Farm mechanization information and service *(Creation of online machine and equipment information system linked with machine availability and rentals)*			*Activities*	*Activities*	
Universal mobile broadband connectivity	*Activities*	*Activities*	*Activities*		
Logistics management concerning storage and transport *(Information management linking agriculture service providers and markets)*			*Activities*		
Electronic pest surveillance system		Activities			
Traceability of agro-chemical movement through value chain			Activities	Activities	
Weather Information Services and alerts		Activities			
Guideline on data sharing, data classification, data formats, secure e-documents	Activities				
Credible GAP content aggregation and packaging *(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)*	*Activities*	*Activities*	*Activities*		
Certified higher yielding seeds, planting, breeding materials verification and traceability			Activities	Activities	
	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)*

Disaster Management

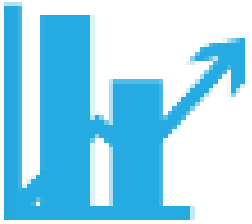


Data Collection, Data Bases,
Data Analytics, Modeling

Online Content

Communication
ICT Infrastructure
Connectivity

Capacity Building



Services, Logistics,
Climate Change and
Monitoring

Banking, Trading, Insurance

Thank you

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Food and Agriculture Organization of the United Nations

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