



## - developing **National E-agriculture strategies** -

*Experience from countries in Asia & Pacific*



Food and Agriculture  
Organization of the  
United Nations

August 21-22, 2015 @ Bangkok



# Challenges facing agriculture & food production

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*Access to nutritious food - no malnutrition*

*Sustainable Farming*

*Zero food loss and waste*

*A world without hunger*

*Crop Intensification*

*Sustainable Livelihoods*

*Safe food*

*More crop per drop*

*Climate smart agriculture*

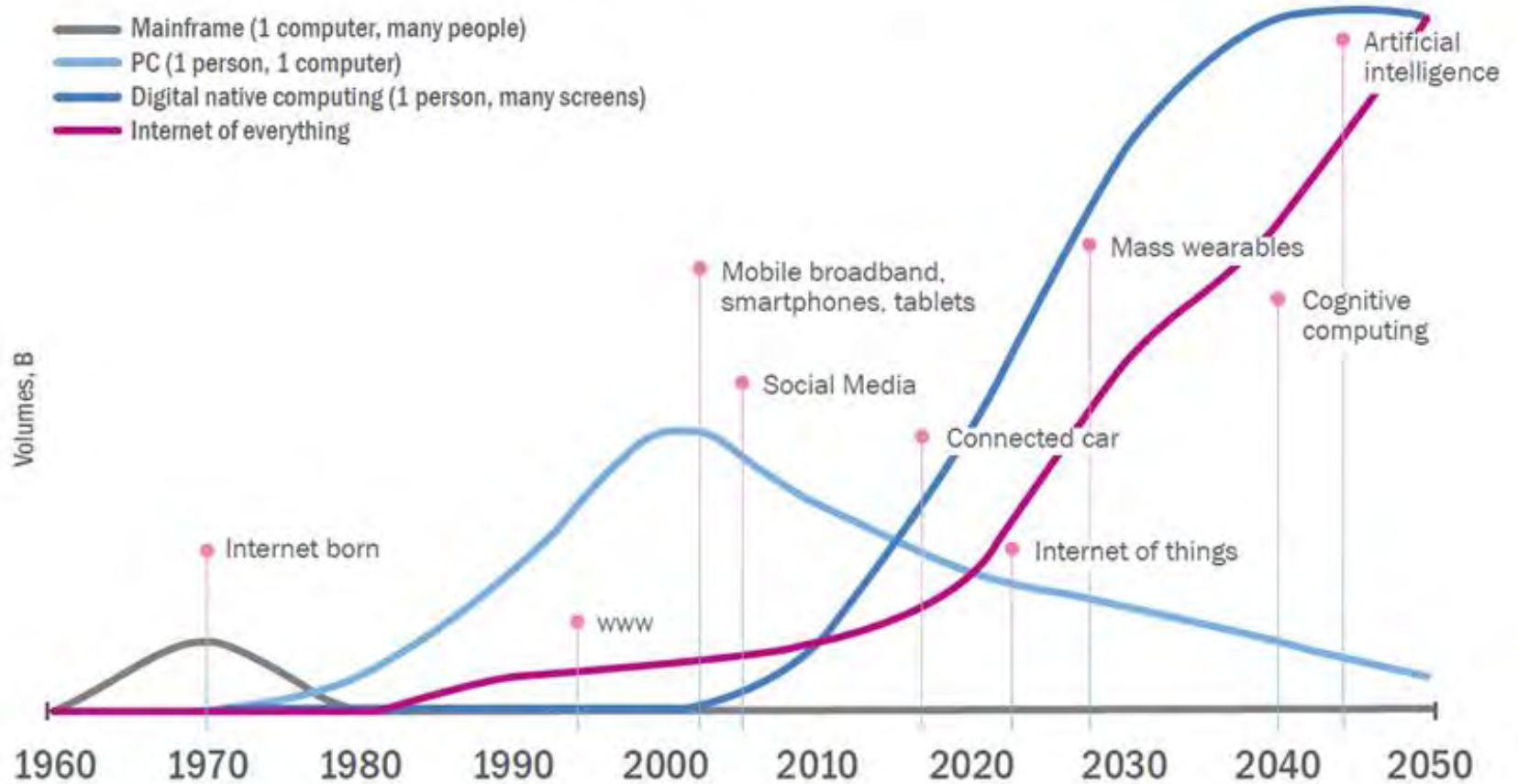


# ICT Technology and Agriculture application trends



# A more connected future...

## One to many to any: ICTs from happy few to the masses



# A peak into the future of ICT in agriculture

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## **3D food printing** *is it the next big thing?*

\* Foodini - prints Pasta & Chocolate



## **Precision Agriculture** *on a larger scale*

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



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



© <http://www.incrediblethings.com>

*NASA Funding 3D Printed Pizza*

# What is e-agriculture?





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- 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



# REDUCES risk and adverse effects

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-  Identifies counterfeit crop production products
-  Mitigates through micro-insurance
-  Encourages more investment in the sector
-  Ease of enabling traceability & recall

*Uganda pilot authenticates input products using scratch-cards and text messages (SMS)*



# IMPROVE planning and consensus building

*- for land and water use*



**Support adaptation and resilience**



**Informs land reform/agrarian reform**



**Engages communities (social inclusion)**



**Improves information flows**

*“Application of new and contemporary ICTs for rural and agricultural development in the Asia-Pacific region has been advancing quite rapidly over the last decade.”*



credit: FAO

credit: ICRISAT

Credit: TELEFONICA



# SUPPORT environmentally sustainable farming

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**Reduces negative environmental impact of inputs**



**Optimizes water management**



**Reduces production related costs**



*“An initiative by the Government of Turkey that provided higher granular-ity of weather and pest information resulted in a dramatic reduction in farming costs and in some cases a 50% reduction in pesticide use.”*

*ICT in Agriculture Sourcebook*

# ENHANCE environmental and agricultural innovations

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- ☀️ Enables real-time communications to/from farmers
- ☀️ Realizes “big-data” in the agricultural sector
- ☀️ Facilitates hyper-local information flows



Photo credit: RML



Photo credit: FAO/IAEA

# Examples of e-agriculture initiatives

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The logo for farmforce features the word "farmforce" in a bold, lowercase, sans-serif font. Above the letter "a" in "farm" are three green curved lines representing a signal or Wi-Fi icon.

Supply Chain Management Services



Data Collection & Analysis Services

AGRICULTURE AND RISK  
ENTERPRISE LTD (ACRE)

Financial Services



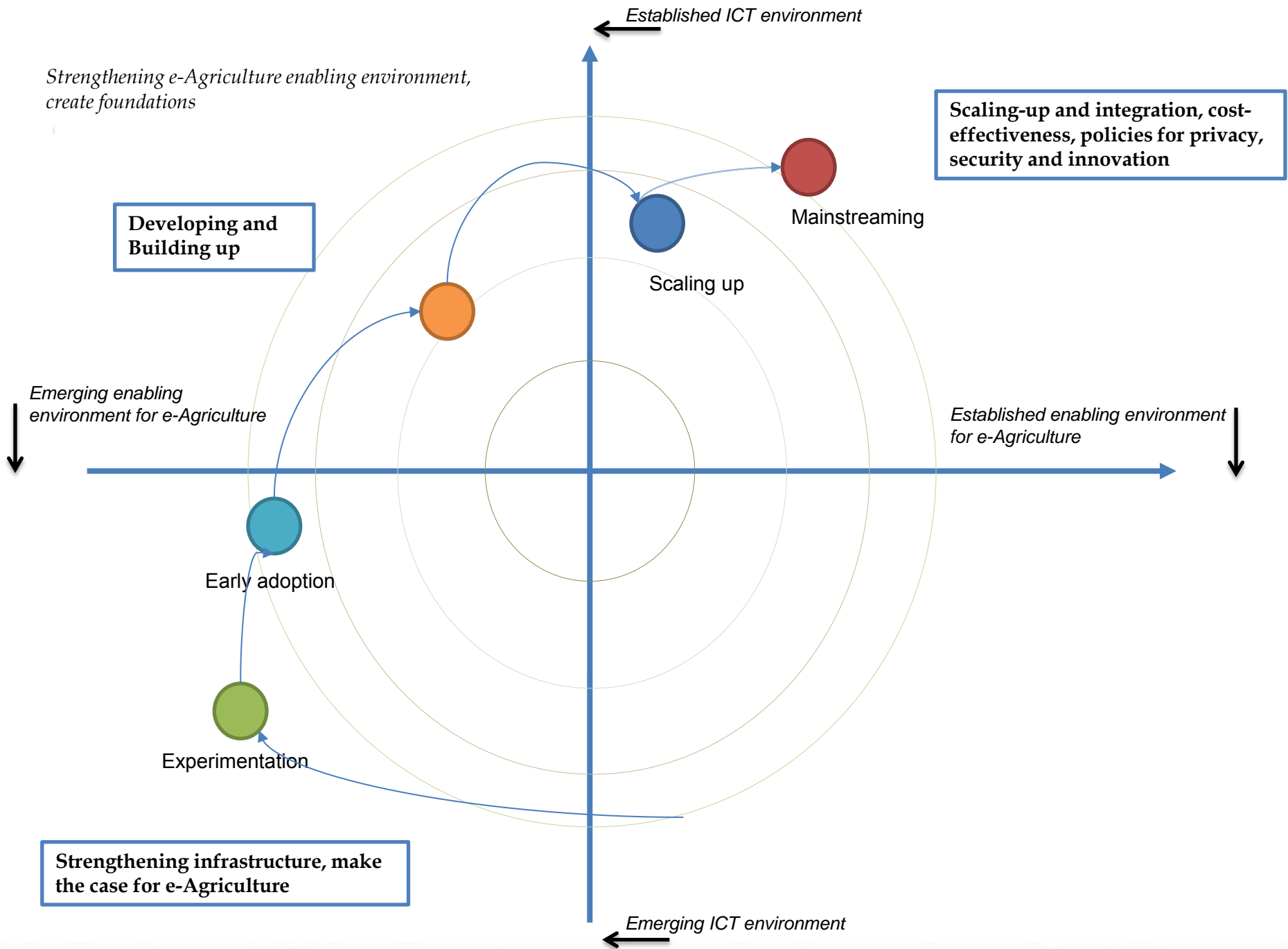
Reuters Market Light

Agriculture  
Knowledge Management



© [theextinctionprotocol.wordpress.com](http://theextinctionprotocol.wordpress.com)

Disaster Risk Management



*Strengthening e-Agriculture enabling environment, create foundations*

**Developing and Building up**

**Scaling-up and integration, cost-effectiveness, policies for privacy, security and innovation**

*Emerging enabling environment for e-Agriculture*

*Established enabling environment for e-Agriculture*

*Established ICT environment*

*Emerging ICT environment*

**Strengthening infrastructure, make the case for e-Agriculture**

Early adoption

Experimentation

Scaling up

Mainstreaming

# Key requirements for an sustainable e-agriculture initiative

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- Enabling environment
- Scalable Infrastructure
- Supportive Leadership
- Adequate Resources – *human & financial*
- Effective linkages

*It is highly recommended to have a national e-agriculture strategy for the country*



# E-agriculture Strategy Guide



- Developing the National e-agriculture strategy -



Food and Agriculture  
Organization of the  
United Nations

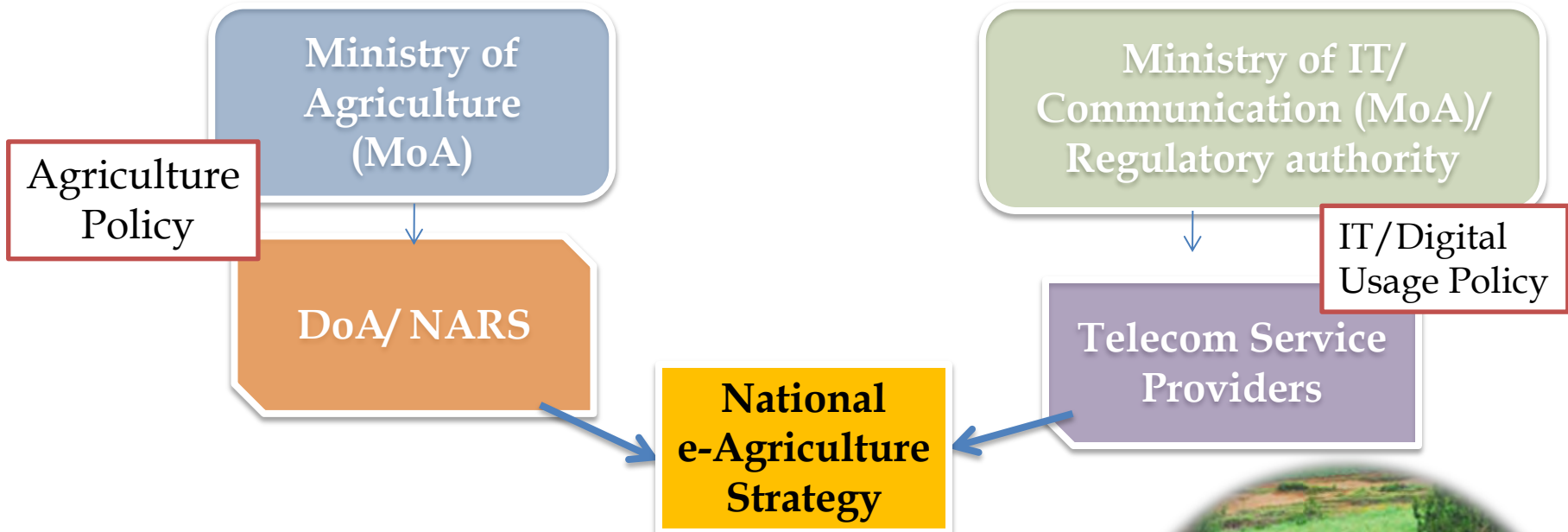


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# Why do we need an e-Agriculture Strategy

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An **e-agriculture strategy** helps identify, design, implement sustainable e-agriculture initiatives and services



Pre Production

Land Acquisition	Investment	Farm Inputs	Social Safety Nets
Access to Credits	Access to Credits	Access to Seeds, Fertilizers	Government Policies
Social safety nets	Transaction facilities	Farm Machinery	Insurance Subsidy
Land authority information & approvals	Insurance facilities	Labour, Workforce	Disaster Risk Mitigation
Advisory services	Investing Partners	Natural resources	Advisory services
	Risk Management	Access to Data (Traceability)	
	Advisory services	Advisory services	



Production stage

Farm inputs	Monitoring & Analysis	Capacity Development	ICT facilitated Services
Access to Fertilizers, Pesticides	Monitoring and Information Gathering	Knowledge Transfer and Information services	ICT facilitated Services
Farm Machinery	Access to Data & Analysis	Advisory services	ICT driven Services
Labour & Workforce	Disaster Risk Mitigation		
Natural resources	Knowledge, Advisory and Information services		
Advisory services			



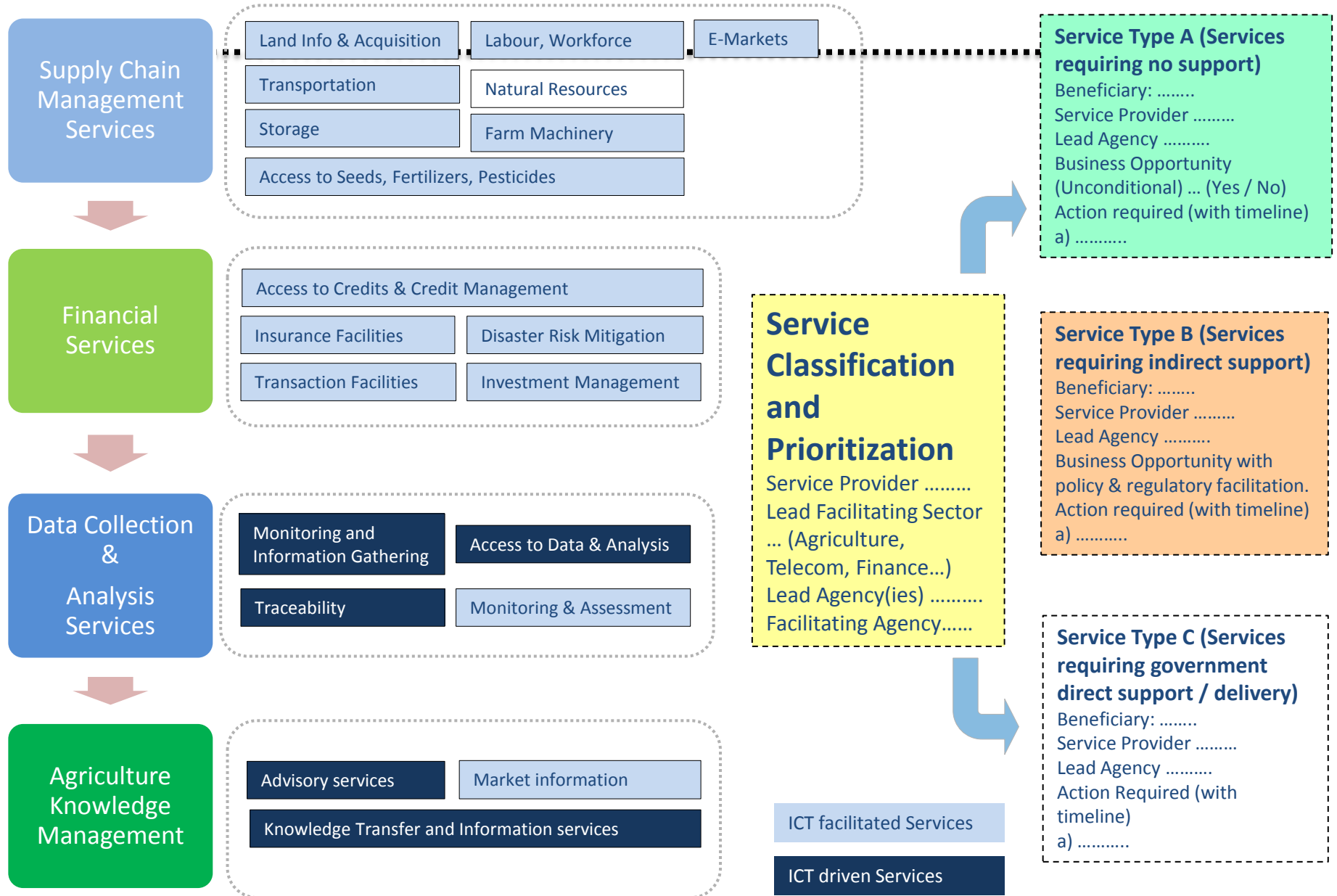
Post Production

Access to Markets	Sales and Financing	Livelihood Development	Disaster Management
Transportation	Credit Management	Investment Management	Disaster Risk Management
Storage	Transaction Facilities	Risk Management	Monitoring & Assessment
Pricing information	Insurance facilities	Advisory services	Subsidy Transaction Facilities
Good Agriculture Practices	Knowledge, Advisory and Information services		Advisory services
Advisory services	Traceability		
E-Markets			





# Ag sector cluster – demand driven approach



# What is in the e-Ag Strategy Guide

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- A Framework *What to do?*
- Methodology *How to do?*
- Monitoring & Evaluation *Tracking/Improvements*

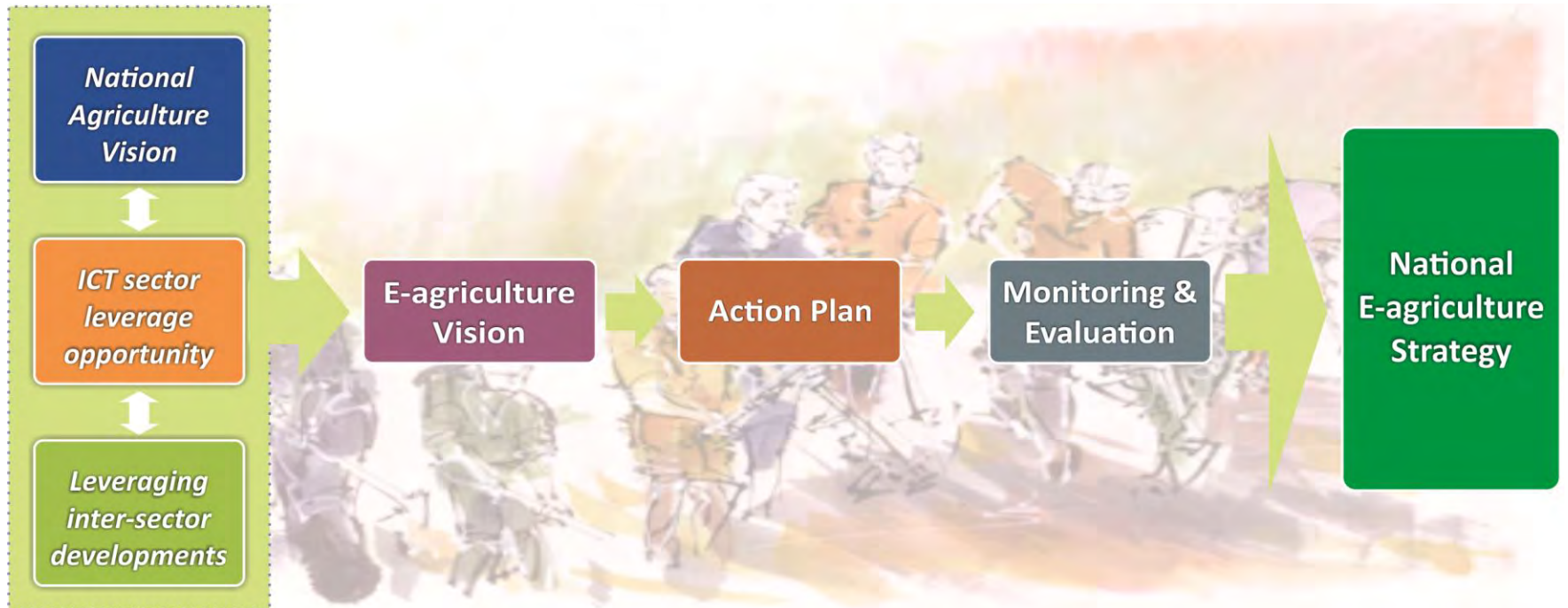
*Also contains*

- Toolkit
- Templates
- Guides
- Case studies & Examples



# Approach to Develop a National e-Agriculture Strategy

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**The final outcome is a  
National e-Agriculture Strategy**

# Pathways to developing a national e-agriculture vision and strategic recommendations

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*Technical assistance to countries in developing their*  
**National e-Agriculture Strategy**

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- *Pilot* Bhutan and Sri Lanka
- *Next phase* – the Philippines and PNG, *Interest* from Fiji



# Agriculture in Information Society

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*An integrated and strategic approach to e-Agriculture in order to maximizes the role of ICT in meeting agricultural goals and challenges*





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