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**Submissions from entities in the United Nations system and elsewhere on
their efforts in 2015 to implement the outcome of the WSIS**

Submission by

The Food and Agriculture Organization of the United Nations (FAO)

This submission was prepared as an input to the report of the UN Secretary-General on "Progress made in the implementation of and follow-up to the outcomes of the World Summit on the Information Society at the regional and international levels" (to the 18th session of the CSTD), in response to the request by the Economic and Social Council, in its resolution 2006/46, to the UN Secretary-General to inform the Commission on Science and Technology for Development on the implementation of the outcomes of the WSIS as part of his annual reporting to the Commission.

DISCLAIMER: The views presented here are the contributors' and do not necessarily reflect the views and position of the United Nations or the United Nations Conference on Trade and Development.

Action Line C7. ICT Applications : e-agriculture – 2015 Year Report

Part 1: Executive summary

Following the World Summit on the Information Society (WSIS) held in Geneva (2003) and Tunis (2005), the Food and Agriculture Organization of the United Nations (FAO) was assigned responsibility for facilitation of the e-agriculture Action Line. The **e-Agriculture Community of Practice (CoP)**, an online space to facilitate and exchange knowledge and experiences of projects using Information and Communication Technologies (ICTs) for agriculture and rural development was launched in 2007 and has since grown to 13 000 members and about 40 000 followers through social media channels. In 2015 the Community continued the documentation of cases studies and good practices, gathered resources and hosted an interactive forum. The CoP and FAO also actively engage in face to face activities and played an active role in WSIS follow-up and WSIS Stocktaking in 2015.

In May 2015 e-Agriculture and FAO participated in the **WSIS Forum 2015**, taking part of the facilitating a session on the future of e-Agriculture, organizing an e-Agriculture partners meeting and participating in the UNGIS and Action-Line facilitators meetings. FAO mapped how ICTs in agriculture and rural development could be linked to each Sustainable development goals.

In preparation of the discussions on e-Agriculture, a survey was organized among the members and followers of the CoP to assess the community and collect inputs from the members and followers on how the community should evolve in the future. Survey data reveal the usefulness of the CoP and its importance in the domain of agriculture and rural development. The survey confirmed that a lot of people were interested to engage more and that there was a demand for more activities and interactivity.

In April 2015, FAO, the International Telecommunications Union (ITU) and Technical Centre for Agricultural and Rural Cooperation (CTA) organized an **online forum** on the topic “**Towards national e-agriculture strategies**”: After the forum the conclusions were published in a **policy brief**. ITU and FAO also organized **two regional workshops** on the development of a national e-agriculture strategy guide, one in Bangkok in March 2015 and one in Budapest in June 2015. The e-agriculture strategy guide and its executive summary will be published by the end of this year. FAO and ITU also worked on the **implementation of the strategy development in Bhutan and Sri Lanka** and the national e-agriculture strategies for those countries are now in their final stages. The following **events around the world** were organized during the past year, with a strong focus on the use of ICTs in agriculture and rural development.

- **Global Forum for Innovation in Agriculture (GFIA)(Abu Dhabi, March 2015)**¹: GFIA 2015 hosted 6,000 participants to show the world how game-changing technologies can feed the world’s rapidly growing population. FAO was represented to the regional office for North Africa and Near East.
- **ICT4Ag Conference (USA, June 2015)**² : This 1-day conference brought together 150 leaders and decision makers from the international development community and the private sector

¹ <http://www.innovationsinagriculture.com/>

² <http://ictforag.org/>

to examine how new innovations can empower smallholder farmers through the use of ICTs. The conference was organized by Abt Associates, DAI and FHI360.

- **Global Forum for Rural Advisory Services (GFRAS) Annual Meeting (Kyrgyzstan, September 2015)**³: This year GFRAS Annual Meeting focussed on “Global Good Practices in Rural Advisory Services”. E-Agriculture participated in the meeting and presented the CoP during the parallel workshop “Using ICTs in Rural Advisory Services: Challenges and ways forward”.
- **AgriFuture Days 2015 (China, September 2015)**⁴: The AgriFuture Days 2015 provided a platform to exchange techniques, ideas and concepts. During the event there was a workshop on “Enabling Innovation for Informing farmers” and “ICTs supporting Innovative Advisory Services”.
- **International Center for Tropical Agriculture (CIAT) Internal Consultation on ICTs for development (Colombia, October 2015)**⁵: the 10 Year Review Report on e-agriculture presentation served for setting the scene.
- **ITU Telecom World 2015 (Hungry, October 2015)**⁶: ITU Telecom World is an international platform for influential figures from government and industry to connect with start-ups and digital entrepreneurs in the ICT sector, to explore partnership solutions, investment opportunities, shared ideas and best practices. FAO Regional Office for Europe and Central Asia participated in this event.
- **International Conference on ICT for Development (Turkey, October 2015)**⁷: The conference was co-organized by the Turkic Council and United Nations Development Programme Regional Bureau for Europe and the CIS (UNDP-RBEC). FAO was invited to present the 10 year report on e-agriculture and participate in project ideas for the region.
- **Global Forum for Innovations in Agriculture, Africa Edition (South Africa, November 2015)**⁸: GFIA Africa is organized in association with CTA for specific sessions on ICTs.
- **E-Agriculture Conference (Bangladesh, December 2015)**⁹: The 2nd International e-Ag Conference will focus on the sharing of e-agricultural innovations and opportunities for their application in South Asia and elsewhere. The conference is organized by USAID, DAM, mPower and Care in collaboration with CRS and BIID.

During the year 2015, a new **e-learning page**¹⁰ was added on the platform, bringing together a wide range of freely available e-learning courses on food security, agriculture and rural development. During the WSIS review process, online learning was identified as an important capacity development tool. Open online courses and their combination with scientific and educational content enable an increased flow of new information and learning to farmers and people living in rural areas.

The following **publications**, supported by FAO were published or will be published by the end of 2015.

- **FAO, 2015, 10 Year Review Report: Implementation of the World Summit on the Information Society (WSIS) Action Line C7. ICT Applications: e-agriculture**¹¹
- **CFS, 2015, Developing the knowledge, skills and talents of youth to further food Security and nutrition, Rome, Italy**¹²

³ <http://www.g-fras.org/en/events/gfras-events/annual-meeting-kyrgyzstan-2015.html>

⁴ <http://www.nercita.org.cn/icia2015/index-english.asp>

⁵ <http://ciatblogs.cgiar.org/knowledgemanagement/insights-ict4d-conference/>

⁶ <http://telecomworld.itu.int/>

⁷ <http://www.turkkon.org/tr-TR/AnaSayfa>

⁸ <http://www.gfiaafrica.com/Home>

⁹ <http://e-agconference.net/>

¹⁰ <http://www.e-agriculture.org/e-learning>

¹¹ www.fao.org/3/a-i4605e.pdf

¹² http://www.fao.org/fileadmin/templates/cfs/Docs1415/Events/youth/CFS42_Youth_Talent_Background_EN.pdf

- **FAO, 2015, Success Stories on Information and Communication Technologies for Agriculture and Rural Development, Bangkok, Thailand¹³**
- **FAO, 2015, Policy Brief Towards National e-Agriculture Strategies, Rome, Italy¹⁴**
- FAO and ITU, 2015, E-agriculture Strategy Guide (December 2015)
- FAO and ITU, 2015, E-agriculture Strategy Guide – Executive Summary (December 2015)
- FAO, 2015, Gender and the use of ICTs for agriculture and rural development (December 2015)

Part 2: Analytical overview of trends and experiences in implementation

Throughout the activities of the stakeholders the **following trends** can be noted for 2015:

- **Use of Drones:** Drones are able to gather large amounts of information cheaply and efficiently by virtue of their aerial perspective. Those data are crucial for precision agriculture, using advanced tools and technologies to observe and measure conditions in the field and then respond appropriately to optimize returns and preserve resources. Drones can for example, help farmers and smallholder farmers to reduce plant diseases, improve water management, analyse fertility trends over time, optimize irrigation and capture data on climate change.
- **Sensing technologies:** A radical price decrease in new remote sensing technologies, including cheap soil, air, water and plant sensors will enable precise in-farm data and guide input delivery even on small farms.
- **3D Virtual Reality:** Visualization can help agriculturalists to explore, through simulation, the impact of their decisions.
- **Digital financial services,** including mobile money, micro-finance and micro-insurance will allow farmers and their organization to offset risk, reduce transaction cost and increase credit.
- **Open data:** Vast amounts of valuable data that exist, need to be made available and transparent. They can significantly contribute to food security in the future, which can be made possible through initiatives such as the Global Open Data for Agriculture and Nutrition (GODAN) initiative¹⁵.
- **Big data:** Cloud computing that will enable farmers and other agricultural actors to process massive amounts of data (“big” data) through sophisticated software tools.
- **Internet of Things:** The Internet of Things will enable networking and sharing of data between “things”, such as farm machinery and equipment, which can be applied to innovations like variable ‘fertigation’ to provide enough water and nutrients to a single plant or plot of land.

For the **overall review of WSIS**, FAO started consulting the e-Agriculture Community of Practice by organizing an online forum in collaboration with Grameen Foundation in December 2013 entitled “e-agriculture, looking back and moving forward”¹⁶. The outcomes of the forum were summarized in a policy brief on the topic¹⁷. Based on the content and discussions gathered through the CoP, the stocktaking exercise FAO undertook in 2013 and 2014 and the discussions and inputs from many partner organizations, FAO compiled the e-agriculture 10 Year Review Report¹⁸. In May 2015, FAO presented the report at the WSIS Forum. The report enables to look back, reflect on what was done,

¹³ <http://www.fao.org/publications/card/fr/c/a891e31d-af59-461b-8f33-be75158f7b73/>

¹⁴ <http://www.e-agriculture.org/content/policy-brief-towards-national-e-agriculture-strategies>

¹⁵ <http://www.godan.info/>

¹⁶ <http://www.e-agriculture.org/forums/forum-archive/e-agriculture-looking-back-and-moving-forward>

¹⁷ <http://www.fao.org/3/a-aq229e.pdf>

¹⁸ <http://www.fao.org/documents/card/fr/c/725cf40d-78f6-42fa-ac88-8399e5ea3289/>

learn lessons, identify challenges and upcoming trends and plan the use of ICTs in future work in more effective, sustainable and innovative ways.

In the 10 Year Review Report the following **challenges and remated recommendations** have been identified, that still hinder an optimized use of ICTs in agriculture and rural development: 1) content, 2) capacity development, 3) gender and diversity, 4) access and participation, 5) partnerships, 6) technologies, 7) economic, social and environmental sustainability. The seven challenges and related recommendations are explained in the report on page 37 to 41: www.fao.org/3/a-i4605e.pdf

Part 3: Innovative policies, programmes and projects and future actions or initiatives

a) Innovative policies, programmes and projects

➤ Towards national e-agriculture strategies

Even though in many countries there are no specific ICTs for agriculture strategies, e-agriculture strategy initiatives have been or are being put in place in a few countries such as Bolivia, Côte d'Ivoire, Ghana, Mali and Rwanda. Moreover, in most ICT policies developed with the support of organizations such as UNECA, IICD, ITU and UNDP, there are provisions on sectoral strategies for agriculture. However, approaches differ in different regions and countries. As described above, FAO and ITU are providing significant efforts to promote e-agriculture strategies and to provide technical assistance to countries in developing their own strategy. Many FAO interventions make use of ICTs that can be scaled up. They have been showcased in the 10 year review report.

b) Future actions or initiatives

➤ National e-agriculture strategies

FAO and ITU will continue their collaboration working on the dissemination of the E-Agriculture Strategy Guide and its implementation in countries. In continuation of the technical assistance to member countries in developing their e-agriculture strategy, in 2016-2017 the Philippines, Fiji and Vanuatu will be supported. Bhutan and Sri Lanka will be supported in developing a few priority services already identified under their e-agriculture strategy.

➤ Upscaling

While there are many valuable initiatives on the use of ICTs for agriculture, the sustainability of pilot initiatives is an issue. Too often after the pilot phase, projects cease because of many financial, human or other constraints. Scaling up should be integrated in the formulation and the implementation of initiatives. Costs of ICTs need to be reduced, and the use of ICTs needs to be made financially sustainable, a goal in which public-private partnerships will play an important role.

➤ E-Agriculture Community of Practice

E-Agriculture provides the basis for the global community to monitor development and validation of models and methodologies, and to package and disseminate them once tested. The e-Agriculture Community must continue to play a role in collecting and disseminating good practices on the use of ICTs in agriculture and rural development and in examining emerging trends, the evolving role of ICTs and the challenges faced in reaching scaled, sustainable information service models.