COMMISSION ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (CSTD)

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Submissions from entities in the United Nations system and elsewhere on their efforts in 2017 to implement the outcome of the WSIS

Submission by

Food and Agriculture Organization of the United Nations

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 21st 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.

Food and Agriculture Organization of the United Nations

The Director-General

CIO-DG/18/6

09. I. 2018

Dear Mr Kituyi,

I have the pleasure to refer to your letter of 2 November 2017 requesting contributions to the Secretary-General's annual report on the implementation of the outcomes of the World Summit on the Information Society (WSIS).

The Food and Agriculture Organization of the United Nations (FAO) has been active in implementing activities related to the development and management of e-agriculture and digital innovation topics and I am pleased to note that the Organization has made much progress. In this regard, please find attached FAO's report on these activities, which provides details of what has been undertaken in this area and what is intended to be done.

I hope you find this report useful.

Yours sincerely,

José Graziano da Silva

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Follow-up to the World Summit on the Information Society (WSIS) and review of the Commission on Science and Technology for Development

Report on activities undertaken by the Food and Agriculture Organization of the United Nations (FAO) in facilitation, implementation and coordination of WSIS targets, recommendations and commitments.

Executive Summary

Applying innovative ways to use Information and Communication Technologies (ICTs) in the rural domain with a primary focus on agriculture will boost rural development and increase resilience of livelihoods, mainly smallholders and family farmers. Improving access to valuable information and knowledge can support agricultural stakeholders to make informed decisions and use the resources available in the most productive and sustainable way. In a sector that is becoming increasingly knowledge-intensive, having access to timely information, in the right format and through the right channels, makes a crucial difference in the livelihoods of people involved in agriculture and related fields.

FAO is committed to reducing poverty, ending hunger and fighting malnutrition. FAO and ITU can make a valid contribution to achieving this mandate by developing digital services to reach farmers, pastoralists, fishers and collectors, and in doing so, will ultimately change lives in the field. The organization is not alone in using ICTs to achieve the SDGs. Governments, UN agencies, civil society and private stakeholders are key partners, as they hold local information about agriculture, food security, nutrition, climate, existing policies and funding initiatives.

In 2017, FAO has amplified its focus on the WSIS action plan. National and local governments are being invited to contribute resources to this effort. Regulatory policies and national plans to promote access to the Internet and increase the penetration of digital networks in rural areas will also contribute relevant inputs to the initiatives. ICT companies, software, telecom and device manufacturers are strategic partners by increasing the broadband internet coverage and deploying digital solutions.

Brief description of innovative policies and future actions

Under the WSIS mandate, FAO is developing and deploying new ways of packaging and delivering knowledge through an FAO Digital Services Portfolio to combat hunger and all forms of malnutrition, reduce poverty, promote food security, increase incomes, improve resilience, and mitigate the effects of climate change. These proposed innovative solutions seek to maximize economic, social and environmental impact by finding scalable and sustainable models, process and networks that bring existing or new agricultural products, services and practices into social and economic use, connecting promising ideas and impacting investment funders. The organization has created a special unit to work on Digital Innovation and Development area committed to create an ecosystem related to digital entrepreneurship funding and acceleration.

In September, FAO Director General and the ITU Secretary General have signed a Collaborative Arrangement whereby both organizations agreed in promoting and facilitating the development of e-Agriculture policies, strategies and plans, as well as ICT innovation and ICT standards in the agricultural sector. One important goal of this agreement is the implementation of the National e-Agriculture Strategy for countries interested in the use of ICTs in order to improve food security and reduce poverty, ending hunger. Soon, FAO will add a new component to boost our common work with ITU in Asia improving the agricultural strategy dimension to reach food safety and security topics.

WSIS Forum 2017

As in all other years, FAO has participated of the WSIS Forum 2017, which has took place in Geneva, in June, having more than 2 500 attendees focused on Information and Knowledge Societies for SDGs, where FAO and ITU organized joint sessions.

Guarding the WSIS Action Line 7 – e-Agriculture, the organization had representatives at the High Level Track as well as organized two sessions.

The session "E-agriculture: Democratizing Digital Innovation in Agriculture" consisted of a mix of experts from UN agencies, Academia, Private sector and the Non-Governmental Organizations community involved in agriculture. The panelists shared their experiences in implementing different projects, programs and initiatives dealing with e-Agriculture applications. Each speaker made a presentation of approximately 15 minutes, covering their project or initiative and within that, addressing the capacity building issues.

The session "Capacity Building: Building capacity to leverage e-Agriculture applications" FAO, ITU and invitees was conducted in the form of a panel discussion. It attracted around 22 participants. In the opening remarks the moderator stated that Action Line C4 has been discussing the impact of capacity building on the use of ICT applications in different sectors of the economy. This year the focus is on Agriculture under the theme "Transcending from Infrastructure to applications and services: Building capacity to leverage e-Agriculture applications and services.

For the next edition, FAO and ITU will organize a global competition where young students will develop and prototype digital solutions to support the tackling of food insecurity and hunger around the world. Named #HackAgainstHunger!, the event will be preceded by two regional hackathons in African and Caribbean countries.

e-Agriculture Community of Practice activities

In 2007, FAO and founding partners launched the e-Agriculture Community of Practice (CoP) – as an online platform to facilitate the exchange of knowledge and good practices in the use and application of ICTs in agriculture and rural development. 2017 marks the 10th anniversary of the existence of the e-Agriculture platform with now over 13 000 registered members from 170 countries and more than 45 000 followers

on Twitter. Statistics show a continuously increasing interest for the topic with more than 300 000 page views per year. In 2017, the e-Agriculture is preparing to move to the FAO Domain, which will see a new website in 2018.

By fostering collaboration in the Community of Practice, the e-Agriculture allows for the sharing of knowledge, sharing of digital solutions, developing capacities of agricultural communities and advocating for ICTs to empower rural communities. The e-Agriculture CoP achieves goals by facilitating the following activities; collection and publication of ICT for agriculture related news; holding periodic online forum (e-forum) discussions on ICTs and digital innovative solutions; carrying out Capacity development activities through webinars, short paced learning activities and collecting good and promising practices on the use of ICTs for agriculture.

In 2017, the e-Agriculture continued to be a platform of choice for the 13 000 registered members who include information and communication specialists, researchers, farmers, students, policy makers, business people, development practitioners, and others are now part of this online community coming from the broader agriculture and rural development.

News and Newsletters

The e-Agriculture team continued to publish news related to ICTs for agriculture. Additionally, the e-Agriculture Newsletters have been published monthly since March 2017 with each monthly newsletter focusing on a chosen theme and included also news from partners.

Capacity development activities

The e-Agriculture team in-conjunction with various partners carried out a number of capacity development activities. These were in the form of webinars and the in-augural e-Agriculture learning activity on drones – a self-paced online learning offered via the e-Agriculture platform.

There were 17 webinars organized which saw more than 500 participants and more than 1,640 late viewed these webinars online. While for the e-Agriculture learning activity on drones, more than 720 participants registered. The learning activity saw (i) WhatsApp discussion group was started which had more than 130 active participants from 48 countries; (ii) 7 live sessions as webinars or talks; (iii) 5 recorded presentations and 10 days of content.

Forum discussions

The e-Agriculture team in conjunction with partners held two forum discussions which were highly subscribed and with huge participation. Both forums raised advocacy of ICTs aspects in their respective subjects. These two forums were:

(i) The Role of ICTs in Sustainable Crop Production Intensification (SCPI) of horticulture crop based system (mainly fruits, vegetables, roots and tubers). This forum was organized with FAO's Rural and Urban Crop and Mechanization Systems Team (AGPML) in March 2017 and saw 81 discussion posts from more

than 30 countries. The conclusions and recommendations have since been published as a 'policy brief/summary of discussion'.

(ii) e-Forum on ICTs and Open Data in Agriculture and Nutrition, was organized by e-Agriculture Team in conjunction with GODAN, CTA and the World Bank and registered 100 posts. This forum discussion was graced by a number of subject matter experts and case studies from different organizations.

Good Practices

In June 2017 the e-Agriculture team in conjunction with partners, made a call for good and promising practices on the use of ICTs in agriculture. The call aimed to collect lessons learned and recommendations in ICTs in agriculture that can be flagged and implemented by interested users. The selected good and promised practices will be published and shared with broader community.

The call saw 22 submissions, which were reviewed with partners and resulted in about 15 good practices selected; the top 3 are set to be presented as a webinar. Due to the overwhelming interest, another call was opened for good practices on the use of ICTs in agriculture in the region of Europe and Central Asia, which is still on-going.

Regional activities

In the Asia-Pacific context, a brief summary of trends and experiences per area of work is given below:

Sustainable ICT for agriculture related technical assistance

The FAO-ITU E-Agriculture Strategy Framework is used to assist countries to identify, design and develop sustainable ICT solutions/services to overcome challenges faced in agriculture and accelerate progress towards some key agricultural goals. Two important publications in this context are:

- The E-agriculture Strategy Guide http://www.fao.org/3/a-i5564e.pdf
- The brochure for the E-agriculture Strategy http://www.fao.org/3/a-i5448e.pdf

The FAO-ITU technical assistance programme for countries to develop their national e-agriculture strategy and identify, develop and sustain ICT for agriculture services has been implemented in six countries in the Asia-Pacific region (Afghanistan, Bhutan, Fiji, Papua New Guinea, the Philippines and Sri Lanka). The Lao People's Democratic Republic and Myanmar have used this strategy to develop their ICT Masterplan for the Ministry of Agriculture (Lao People's Democratic Republic) and are in the process of refining their E-extension modernization for Myanmar.

The guide is being translated into Russian by the FAO Regional Office for Europe and Central Asia (REU).

Knowledge Sharing

A number of publications on aspects of e-agriculture has been brought out and are being disseminated to stakeholders. These include:

- *E-agriculture in Action*
  - Publishers: Food and Agriculture Organization of the United Nations (FAO) and the International Telecommunication Union (ITU)
  - URL: http://www.fao.org/3/a-i6972e.pdf

- *E-agriculture in Action: Blockchain for Agriculture*
  - Publishers: Food and Agriculture Organization of the United Nations (FAO) and the International Telecommunication Union (ITU)
  - URL: In print, to be published by April 2018

- *E-agriculture in Action: Drones for Agriculture*
  - Publishers: Food and Agriculture Organization of the United Nations (FAO) and the International Telecommunication Union (ITU)
  - URL: In print, to be published by Dec 2017

- *Use Of Mobile Phones By The Rural Poor - Gender perspectives from selected Asian countries*
  - Publisher: Food and Agriculture Organization of the United Nations (FAO)
  - URL: http://www.fao.org/3/a-i5477e.pdf

Capacity Development

FAO together with ITU, the Ministry of Digital Economy and Society (MDES), Thailand had trained more than 100 girls/young women in the use of ICTs for agriculture under the AgriTech using ICTs skill development programme. The other partners in this activity were Microsoft and Cisco. The same collaboration on capacity development for girls and women will be continued in 2018.

In the Europe and Central Asia context, several activities related to e-Agriculture have been implemented.

Events

- May 2017- Brussels, Belgium – FAO REU representative delivered a presentation "National e-agriculture strategy as a tool towards bridging the digital divide in rural Europe and Central Asia", during the European conference AGRICULTURE 4.0: Feeding the next generation, organized by EC project KATANA together with the agriculture research, education and extension umbrella organization AGROLINK, Belgium. The aim of Agriculture 4.0, Feeding the next generation, was to explore recent developments and future prospects in digitisation of agriculture and to discuss socio-economic impacts as well as the impact on agricultural research and Food 2030 through bringing key actors together.
- May 2017 – Utrecht, Netherlands – FAO REU representative attended the Global Forum for Innovations in Agriculture on 9 and 10 May in order to identify innovations, use of digital

technologies to be showcased at FAO regional events. Identify private sectors partners for future collaboration on digital technologies in the region.

- July 2017- Montpellier, France- EFITA Conference – FAO REU representative participated in EFITA WCCA – European conference dedicated to the future use of ICT in the agri-food sector, bio-resource and biomass sector, with Word Congress on Computers in Agriculture. She presented the e-agriculture national strategy and the VERCON conceptual model as entry point.
- October 2017 – Yerevan, Armenia – FAO REU representative attended the 5th meeting of the EU Eastern Partnership Panel on Agriculture and Rural Development which focuses on Agricultural research and innovation. Sophie made a keynote speech entitled "Harmonized approach to e-agriculture: moving from a project approach to a strategy approach" on first day of the meeting which address how to stimulate agricultural research, innovation and knowledge exchange with farmers in agriculture: which policy approaches and instruments?
- October 2017- Lisbon, Portugal- Agri innovation summit – FAO REU representative attended the Agri Innovation Summit. The European Commission co-organized by Portugal and DG AGRI and the EIP-AGRI Service Point. This two-day event gathered the main innovation players in Europe and took place in Oeiras, Lisbon, Portugal from 11-12 October 2017 (www.aislisbon2017.com/).The AIS20017 as an opportunity for EIP Operational Groups (OGs) to meet and exchange with OGs from other European countries as well with European-wide multi-actor research and innovation projects (involving also farmers organizations) active in fields related to agriculture. In parallel, the AIS2017 wanted to be a platform for helping the farmers, foresters and rural businesses improve their uptake of digital technologies, to better address the challenges of digital transformation in agriculture and the rural economies.
- November 2017 – Novi Sad, Serbia - FAO REU representatives organized the FAO regional forum on e-agriculture in Central and South East Europe entitled "Precise and integrated response for sustainable farming". This forum was opened by a presentation made by keynote speech by Sophie Treinen on the e-agriculture strategy and followed by a policy dialogue with Western Balkans countries facilitated by Nevena Alexandrova. The next two days enabled private sector, small holder farmers, academia and policy makers to exchange on the potential of ICTs for agriculture in the region.
- November 2017- Digitization Day – FAO REU representatives participated in Horizon 2020 Societal Challenge 2 Week organized by the European Commission. Sessions on : Digitising agriculture and value chains; Improving data management from farm to fork; Digital solutions to meet future agriculture challenges; Digital innovation hubs and platforms: what potential for farming, value chains and society?; Digitising food research, processing and consumption.

Publications

- FAO REU wrote the module 4 "Extending the benefits – gender equitable, ICT-enabled agriculture Development" of the World Bank Sourcebook on ICT in Agriculture (Updated Edition): Connecting Smallholders to Knowledge, Networks, and Institutions. This work was possible as the e-agriculture team has been preparing a publication on gender and ICTs which will be finalized at the end of the year and entitled "Mainstreaming gender in the use of information and communication technologies (ICTs) for agriculture and rural development". Publication in July 2017 - https://openknowledge.worldbank.org/bitstream/handle/10986/27526/9781464810022.pdf?sequence=2&isAllowed=y

- Publication in Russian on national e-agriculture strategy guide - Many countries in Europe and Central Asia are considering to embark on development of a national e-agriculture strategy to leverage their agricultural and rural development goals with the help of information and communication technologies. The Russian edition of the guide widens the FAO knowledge to the Russian speaking audience through adapted examples.
- Publication on Status of implementation of e-agriculture strategies in Europe and Central Asia- This paper is intended to assist policy-makers and stakeholders of e-agriculture in transition economies to map the policy and technological environment in their countries by providing an analytical review of relevant policies and indicators by country, sub-regions and at regional level; would show case e-agriculture initiatives in Central and Eastern Europe and Central Asia and provide with recommendations on formulation of e-agriculture strategies.