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# FAO REGIONAL CONFERENCE FOR AFRICA

## Thirty-first Session

**Victoria Falls, Zimbabwe, 23-27 March 2020**

**Innovation and Digitalization to Achieve SDGs**

### Executive Summary

The agri-food sector in Africa must be inclusive and embrace innovation and technology if it is to truly transform agriculture and play a significant role in achieving the Sustainable Development Goals (SDGs) and the Malabo targets. Agricultural transformation must aim at taking full advantage of the growth in demand for value-added nutritious food and agricultural commodities in the continent. This will require making a strong business case to invest further in strengthening agri-food value chains that contribute to supply of nutritious food for domestic and regional markets.

The paper recognizes the need to contextualize properly the features of sustainable food systems, taking into account their key drivers. Some of the key drivers include population growth, rural urban migration, increasing incomes and rising demand for processed food products, in addition to rising food demand in general. Major goals for the Africa region, as set out in actions such as the Malabo Declaration and the entry into force in May 2019 of the African Continental Free Trade Area (AfCFTA) agreement, are key political instruments that will expand markets and foster investments in food value chains. The drivers and political will offer opportunities for innovative approaches towards the development of sustainable and inclusive food value chains.

The paper recognizes that digital technologies, information communication technology (ICT) and innovative investments in the food systems can have positive impact on rural development and poverty reduction for the achievement of the SDGs. Integrating digital solutions in food systems in particular offers opportunities to reduce information asymmetries and link smallholder farmers to smart agricultural solutions. This is in line with the Hand-in-Hand Initiative, which is an evidence-based, country-led and country-owned initiative of the Food and Agriculture Organization of the United Nations (FAO) to accelerate agricultural transformation and sustainable rural development to eradicate poverty (SDG 1) and end hunger and all forms of malnutrition (SDG2).

FAO is prioritizing its support to Members to strengthen their capacities to adopt innovative agricultural practices with emphasis on delivery through strategic partnerships and multistakeholder platforms.

### Matters to be brought to the attention of the Regional Conference

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The Regional Conference may wish to:

- Acknowledge the need for sustainable development of agricultural value chains through collaboration across disciplines and sectors, and within and between countries to address the emerging challenges and opportunities in food systems;
- Request FAO to support governments and other relevant stakeholders in strengthening capacities for innovation in all its dimensions, including promoting adoption of new institutions, policies, practices, and technologies to support agriculture and food systems transformation, as well as innovative financing and risk sharing mechanisms;
- Request that FAO continue strengthening capacities in the design and implementation of inclusive food policies, strategies and regulations for job creation and income generation;
- Request that FAO continue to support strengthening of strategic partnerships and platforms, and establishing systems to enhance trade and regional integration;
- In line with the principles of United Nations Development System (UNDS) repositioning, encourage FAO to further increase inter-agency collaboration in supporting sustainable food system development that will facilitate trade and market access.

Cognizant of the particular importance of digitalization for transformation of food systems, the Regional Conference is invited to:

- ✓ Provide advice on cohesive actions by FAO to support Members in developing a digital agriculture (e-agriculture) strategy for their respective sustainable development objectives;
- ✓ Provide guidance on policy-level interventions to tap into private sector investment and innovations in digital agriculture in order to extend the benefits of digital technologies to small and family farmers through a win-win public-private-people partnership approach;
- ✓ Recommend actions for creating data standards and operation procedures for data collection, verification, synchronization and sharing for the agriculture sector in order to help member countries integrate isolated digital agriculture systems and develop cross-sectoral digital solutions, achieve better return on investment in digital agriculture and develop a digital agriculture index or scoreboard.
- ✓ Recommend actions for creating regional Digital Agriculture and Innovation Hubs for a sustainable and competitive digital ecosystem that will create an enabling environment for local agri-tech start-ups to penetrate the market and provide cost efficient and local needs solutions, and support the increase of digital literacy, innovation capabilities, agricultural entrepreneurial skills and adoption of digital products and services for agriculture and food;
- ✓ Acknowledge the important externalities of sharing knowledge and technology between countries with improved ICT infrastructure and skills and with countries with lesser-developed ICT infrastructure and skills, in line with FAO's Hand-in-Hand Initiative;
- ✓ Consider the potential benefits and challenges arising from the establishment of an International Digital Council for Food and Agriculture, at FAO, and assess its relevance for development of digital solutions for Africa. Acknowledge the work of the e-Agriculture Community of Practice, and its continuing support to facilitate the discussion on the adoption and use of ICTs and digital innovations in agriculture, forestry, fisheries, natural resource management and rural development in the region.

## I. Introduction

1. The 2030 Agenda for Sustainable Development and the Malabo Declaration both aim for transformational change of agriculture and food systems. Population growth is a key driver of agricultural and food system transformation. As it has often been reiterated, the population of Africa is expected to double by 2050, most of which will be assimilated by cities.<sup>1</sup>
2. The role and importance of youth looms large. Almost 60 percent of Africans are under the age of 25. Undoubtedly, finding decent jobs for the increasing number of young people in Africa is an important task, and failing to do so will result in further challenges such as migration flows and social instability.<sup>2</sup> Under these circumstances, FAO highlights the need for improved and more innovative and inclusive approaches to ensure that food systems transformation play an important role in addressing this critical challenge.<sup>3</sup>
3. Population growth is associated with increasing urbanization and rising household income in many cities. In the past 30 years, the volume of foodstuff flowing from rural to urban areas in Africa has increased by 800 percent and will continue to rise.<sup>4</sup> Growing urbanization generates not only increased demand but also a shift in consumer preferences towards readily available, processed food and other higher value foods such as meat, dairy and fresh vegetables. These changing dynamics are stimulating growth, multiplying the number of off-farm agricultural enterprises across rural areas and towns, and providing economic opportunities inclusive of women and young people.<sup>5</sup>
4. While actions are already being taken to improve food systems, the lack of shared vision constrains coordinated investments needed to catalyse food system transformation. It also creates challenges for policy-makers confronted with increasingly stark and urgent trade-offs between different policy options. These choices are difficult owing to the complexity of food systems where the interactions, interdependencies and trade-offs play out in different ways in countries with very different agro-ecological conditions and institutional capacities.
5. Additionally, African countries are presented with an important trade opportunity, which has the potential to further underpin economic growth. The AfCFTA, which entered into force on 30 May 2019, translates into a market of more than 1.2 billion people and comprises one of the world's largest free trade areas.<sup>6</sup> However, increased regional integration also translates into more stringent market access requirements, which can result in the exclusion of vulnerable actors such as smallholder producers.
6. Africa needs to capitalize on its economic potential, and on the talent and drive of its large pool of unemployed young women and men, to establish and grow sustainable and inclusive food systems that will create jobs and increase incomes. What young people, especially aspiring young entrepreneurs, need are improved skills and education for access to finance, trade and markets, mentorship and links to professional networks, and access to digital technology for agricultural transformation.

## II. Sustainability of the Food Systems and Key Considerations

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<sup>1</sup> United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019: Highlights (ST/ESA/SER.A/423).

<sup>2</sup> FAO (2017). Promoting the role of small food enterprises in the transformation of rural communities. Workshop report. Rome.

<sup>3</sup> COAG/2018/4/Rev1.

<sup>4</sup> Reardon T., Zilberman D. (2018) Climate Smart Food Supply Chains in Developing Countries in an Era of Rapid Dual Change in Agrifood Systems and the Climate. In: Lipper L., McCarthy N., Zilberman D., Asfaw S., Branca G. (eds) Climate Smart Agriculture. Natural Resource Management and Policy, vol 52. Springer, Cham

<sup>5</sup> FAO (2017). The State of Food and Agriculture: Leveraging Food Systems for Inclusive Rural Transformation. Rome.

<sup>6</sup> IMF (2019). Is the African Continental Free Trade Area a Game Changer for the Continent? In: Regional Economic Outlook Sub-Saharan Africa.

7. Food systems are considered sustainable if they provide food security and nutrition in a way that does not compromise the economic, social and environmental foundation of future generations.<sup>7</sup> As food systems include an entire range of actors and interlinked activities (i.e. production, aggregation, processing, distribution, consumption) taking place under broader local, national and international structures, single interventions in focused sectors can only achieve limited sustainability impact. Thus, efforts to improve food systems outcomes need to be inclusive of a wide range of stakeholders operating at the local, national and international level.
8. Private enterprises, including multinationals and small and medium enterprises (SMEs) have a great potential for influencing food systems and value chains. It is essential to work with them and influence them so that they can be conducive to the achievement of the creation of employment and income generating opportunities for women and youth. The challenge, as such, is to ensure that private sector investment promotes inclusive and sustainable food systems while being innovative and commercially viable at the same time.
9. It is imperative that engagement with non-traditional partners is strengthened. One such important category of actors comprises the informal sector, which governments and international agencies<sup>8</sup> have struggled to work with, even though it accounts for more than 80 percent of total employment in Africa.<sup>9</sup> Undoubtedly, a sector this large will have great implications for the environment, especially in rural areas where most of food production takes place.<sup>10</sup> It is also the informal trade that accounts for a greater share of disadvantaged groups such as women and youth. In Africa, almost 70 percent of women's employment is informal.<sup>11</sup>

### **III. Action for Generating Employment for Young Women and Men in the Agri-Food Sector**

10. FAO is committed to assist Members in supporting young women and men to leverage opportunities, particularly stemming from the rural sector, along the whole food value chain, from production and aggregation to processing and marketing. In this context, interventions are vital to increase access to land and other factors of production to enable women and young producers and agriculture entrepreneurship (commonly called "agripreneurship") to thrive. Gender equality and economic growth are closely related.<sup>12</sup> As such, policies and programmes must address this central aspect to help tackle gender stereotypes, close gender gaps in agri-food systems, and strengthen young women's and men's ability to reach their full potential.
11. To maximize the likelihood of success, interventions should systematically include comprehensive poverty and vulnerability diagnostics, including gender analyses, leading to inclusive and adaptive youth-oriented gender-sensitive interventions. The scope of analysis requires a multisectoral and multistakeholder approach. Tools to orient this type of analysis exist and are available from FAO, designed to support the application of the Committee on World Food Security Principles for

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<sup>7</sup> HLPE (2014). Food losses and waste in the context of sustainable food systems. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security. Report No.8. Rome.

<sup>8</sup> IIED (2016). Informality and Inclusive Green Growth. London.

<sup>9</sup> ILO (2018). Women and men in the informal economy: a statistical picture (third edition) / International Labour Office – Geneva.

<sup>10</sup> IIED (2015). The Rural Informal Economy. London.

<sup>11</sup> ILO (2018). Women and men in the informal economy: a statistical picture (third edition) / International Labour Office – Geneva.

<sup>12</sup> WB Gender strategy 2016-2023 <http://documents.worldbank.org/curated/en/820851467992505410/pdf/102114-REVISED-PUBLIC-WBG-Gender-Strategy.pdf>

Responsible Investment in Agriculture and Food Systems, with emphasis on engaging and empowering youth.

12. FAO also developed an Integrated Country Approach for youth employment through agribusiness development, which focuses on strengthening the capacities of national institutions responsible for agriculture and labour, as well as on inclusive policy dialogue and evidence-based decision-making. In Africa, the approach has been implemented so far in four sub-Saharan African countries (Malawi, Senegal, Uganda and the United Republic of Tanzania) and was launched in 2019 in Kenya and Rwanda.
13. Family business units are often started and run by female entrepreneurs. These units should be recognized as poles of growth whereby households employ youth from within their kin. These family business units would need support similar to the services provided by public and private partnerships and incubators or agri-business assistance start-up mechanisms. The support needed is mostly to assist women (as there is a gap in access to training and services for women) in the field of certification, becoming formal enterprises, access to finance and technical support to purchase equipment and access to packing materials. The youth employed in the family business units are better placed to assist with financial and ICT literacy of the enterprises.

#### **IV. Technology and Digital Innovations for Accelerating the Modernization of Sustainable Food Systems**

14. Technology and digital innovations offer an important mechanism to incentivize youth to be involved in agri-food systems. The adoption and integration of ICTs across the globe has reduced information asymmetries and transaction costs, improved service delivery, generated new income streams and helped conserve resources. ICTs have the potential to transform youth's perception of the broad agricultural sector into a positive and fruitful source of job opportunities.
15. Leveraging digital technologies for innovation in agriculture and food systems is therefore critical. Digitalization provides huge opportunities for integrating producers in a digitally driven agri-food system and improving productivity, reducing the time and cost of operations, contributing to quality and safety of food products, hence facilitating conditions for leapfrogging. Access to the most recent, high-quality and relevant scientific knowledge, information and research data facilitates innovative solutions, and this needs to be supported through institutional, national and international policies and openness of data.
16. For example, FAO seeks to create a "Digital Innovation Ecosystem", which will bring together United Nations experts, young entrepreneurs, public sectors, researchers and civil societies to find innovative joint solutions that address the global challenges in the food and agriculture sector. Activities that fall within this ecosystem include opportunities to engage young innovators to develop innovative digital services, development of mobile and web applications, and use of artificial intelligence, blockchain and algorithms.
17. FAO is assisting countries (in cooperation with International Telecommunications Union, or ITU) to develop their national digital agriculture strategy to incorporate digital solutions into their national agriculture and food sector development strategies. Currently, FAO is helping various countries, including Benin and the Niger, in developing their national digital agriculture strategy to achieve the transformation of the agriculture sector.
18. Several "smart" solutions were piloted by FAO in Rwanda and Senegal in 2017-2018 and are ready to be replicated this year in other countries such as the United Republic of Tanzania, including: 1) The "Cure and Feed Your Livestock" application, which provides real-time information on animal

diseases control and animal feeding strategies; 2) The “Weather and Crop Calendar” application, which combines information on weather forecasts, crop calendars and alert systems; 3) The “Agri-Market Place” application to connect producers, traders and consumers to facilitate trade and access to inputs; and 4) The “E-Nutrifood” application that provides information on consumption of nutritious foods.

19. FAO is working with the United Nations Educational, Scientific and Cultural Organization (UNESCO), the World Health Organization (WHO) and ITU to support the “Smart Villages” project of the “Niger 2.0” strategy. The Programme is based on a strong and clear political commitment from the Government of the Republic of the Niger and the National Agency for the Information Society to improve the quality of life of the population through the use of ICT solutions and applications to build rural digital development in the country.
20. An application monitoring Fall Armyworm in Africa and providing early warning, response, and risk assessment called FAMEWS was piloted by FAO in Madagascar and Zambia and it is ready to be replicated in other sub-Saharan African countries.
21. Currently FAO is actively exploring the use of blockchain smart contracts for the cocoa supply value chain in Ghana, and has been working on a development feasibility study and Proof of Concept proposal for the cocoa value chain and mobilization of resources for the initiative. FAO recently launched a Community of Practice of blockchain inside FAO.
22. In addition, FAO is partnering with Wageningen University for the next call on Horizon 2020, in particular for “ICT-58-2020: International partnership building between European and African innovation hubs”. The aim of the proposal is connecting the dots to unleash the innovation potential for digital transformation of the African agri-food sector.

## **V. Small and Medium Enterprises as Drivers of Sustainable Food Systems**

23. Developments in food systems have yielded many positive results over the past three decades in the region, in particular for SMEs engaged in the food sector in the region. The surge in domestic demand for fresh and processed food including in urban areas is providing opportunities for small rural food companies to contribute to more inclusive rural transformation.
24. Rural small and medium agroenterprises (SMAEs) are ‘close-to-home’ buyers for poor farmers, providing important market bridges between local producers and rising urban consumer demand. These agri-entrepreneurs are familiar with local tastes and dietary habits and can offer a variety of affordable and nutritional foodstuffs locally. They can also offer jobs to young people, allowing them to remain close to the rural family network, instead of emigrating or moving to overcrowded cities. When located in rural communities, SMAEs also create demand for investment in modern utilities such as energy, water and infrastructure.
25. Despite the pivotal role of SMAEs, it is generally well recognized that small enterprises face far greater constraints than larger firms. For instance, they pay a proportionally higher cost for a poor business environment compared to large firms. While larger firms are better equipped to absorb costs associated with regulatory compliance, if not well designed these regulations can turn into a burden for smaller firms.
26. Research shows that an absence of reliable streams of affordable and flexible finance impede the development and spread of technological and marketing innovations required by food enterprises to supply the market with safe and nutritious food. World Bank enterprise surveys cite access to finance as the top constraint facing SMAEs in the food and beverage sector in emerging economies. This access can be particularly problematic for informal agribusiness start-ups, often by youth and

women, lacking adequate collateral, documentation, etc. Innovative actions are thus required to improve. The public sector can work towards ensuring cross-sectoral dialogue and creating a strong business-enabling environment through fiscal, legal and national policies and strategies that do not crowd out SMAEs. Meanwhile, international actors can promote/strengthen platforms for sharing experiences, best practices, policy and technical advice, especially on innovations such as e-agriculture and blockchain technologies that can build trust among actors in the food system.<sup>13</sup>

27. Innovative approaches are increasingly being used and among these, blended finance appears to be one of the most effective, where public funds are used to catalyse investment by the private sector seeking commercial risk-adjusted-returns, to bring these types of capital together to address financing gaps. For youth-led SMAEs in particular, most commence operations with “own funds” or money from friends or family. Locked out of bank financing, many SMAEs die or do not grow unless affordable finance is made available.
28. FAO has a longstanding history of working with agri-food enterprises in the areas of food technologies, food safety, and finance and enterprise development across its field programme on agriculture value chains. Examples of more recent FAO initiatives which embrace the complexity of food systems development with regard to SMAE development includes, with support from the Government of Japan, the development of a framework for analysing the policy needs of SMAEs through a food systems lens, with findings revealing insights related to employment, nutrition, finance, logistics, procurement from small farmers and food safety. FAO piloted this approach in the rice sector for Kenya, Senegal and the United Republic of Tanzania.
29. FAO’s work of supporting agriculture entrepreneurship has also culminated in a publication on Agripreneurship across Africa, which aims at promoting agripreneurship as a career path, particularly for women and youth. The publication also serves as an educational tool and a knowledge product in business schools and entrepreneurship incubator programmes for case-based learning, while also providing policy recommendations on the enabling environment for agripreneurship.<sup>14</sup> FAO has also developed the Farm Business Schools (FBS) initiative, which was first piloted in Malawi to promote business- and market-orientation in agriculture. FBS is a curriculum-based experiential learning approach designed for advisory services providers and rural producers to facilitate a shift towards farming as a profitable business.
30. FAO’s collaboration with Cornell University’s Making Markets Matter in the Africa region has also led to small agribusinesses engaged in FAO’s field programme receiving executive coaching. In collaboration with University College Dublin’s Smurfit Business School, FAO has also piloted executive coaching that facilitates dialogue on sustainable food systems development for African Leaders in the private and public sectors within the context of the National Agriculture Investment Plans (NAIPS) under the Africa-led Comprehensive Africa Agriculture Development Programme (CAADP) initiative.

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<sup>13</sup> Morrison, J., Bianchi, E., Bowyer, C., Vos, R. and L. Wellesley. 2018, forthcoming. Redirecting investment for a global food system that is sustainable and promotes healthy diets. Brief prepared for the T20 Taskforce on Food Security and Sustainable Agriculture.

<sup>14</sup> <http://www.fao.org/3/ca4671en/CA4671EN.pdf>

## **VI. Action for Leveraging Innovative Private Sector Finance (AgrInvest and the Accelerator for Agriculture and Agroindustry Development and Innovation [3ADI])**

31. The 2030 Agenda addressed sustainable food and agriculture, people's livelihoods and the management of natural resources in a holistic perspective to revitalize the rural landscape, deliver inclusive growth to countries and drive positive change. Given that actors in the agriculture sector face significantly more challenges to their operations and growth potential than in other sectors, the issue of finance looms large amongst these obstacles. FAO works to promote access to finance for target beneficiaries to improve rural livelihoods and agriculture sector value chain development through putting in place appropriate incentive structures, strengthening stakeholder capacities and promoting de-risking (or more effective risk management) of agricultural value chains to unlock finance for the under-served and financially excluded sectors and groups.
32. Private sector investment along agriculture value chains is motivated by expected returns relative to perceived risk and uncertainty. The high risks of doing business in the agriculture sector in Africa often deter the private sector from investing alone. These risks include low returns on investment, limited access to productive inputs, high transaction costs and production risk associated with dealing with numerous small-scale producers. A key determinant of private sector investment in agribusiness in this context is therefore the availability of adequate and well-tailored financial services, which allow the private sector to manage and cope with risks.
33. Furthermore, FAO has in the last biennium launched two programmes to attract investment into the agriculture sector that contributes to sustainable food systems development. AgrInvest fosters investments aligned to the SDGs that contribute to economic growth, generate employment in rural economies – in particular for women and youth, improve livelihoods, promote gender equality and reduce poverty. In the countries where AgrInvest is being implemented, FAO and partners contribute to fostering private investments in food and agriculture, leveraging on its convening power, global networks, knowledge on investment in agriculture and its normative work. Examples of this normative work include Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT), the Organisation for Economic Co-operation and Development (OECD)-FAO Guidance for Responsible Agricultural Supply Chains, Responsible Agricultural Investment, the Code of Conduct for Responsible Fisheries, and Guiding Principles for Developing Food Value Chains.
34. AgrInvest will strengthen platforms composed of private and public value chain players, while also building trust among parties and finding policy responses that unlock investments in the food sector through blended finance instruments. The programme also facilitates trade arrangements among value chain stakeholders, promoting business practices that are economically, socially and environmentally sustainable. AgrInvest has been launched in a number of countries with the support of the European Union and the Government of the Republic of Italy, with pilots under design in Angola, Burkina Faso, Ethiopia, Eswatini, Guinea, Kenya, the Niger, Uganda and Zimbabwe.
35. The 3ADI+ Programme, spearheaded by FAO and the United Nations Industrial Development Organization (UNIDO) reinforces the AgrInvest Programme by combining capacities of local, national, regional and global actors on food value chain analysis, technical assistance, facilitating linkages, policy dialogue, and investment promotion.



## VII. Environmental Sustainability along Food Value Chains

36. Using Sustainable Food Value Chain Development (SFVCD) approaches to reduce poverty presents both great opportunities and daunting challenges. SFVCD requires a systems approach to identifying root problems, innovative thinking to find effective solutions and broad-based participatory partnerships to implement programmes that have an impact at scale. In practice, however, a misunderstanding of its fundamental nature can easily result in value chain projects having limited or non-sustainable impact.
37. A paradigm shift in practices is required to ensure a sufficient supply of safe food while at the same time considering climate change and minimizing environmental impacts. As food production systems transform to adapt to changing conditions, there is a need to consider impacts on food safety and to evaluate optimal ways to address potential risks. As a contribution to global efforts towards climate change mitigation and adaptation, led by the United Nations Framework Convention on Climate Change (UNFCCC), and based on the Organization's longstanding work in addressing climate change challenges related to the agriculture sectors, FAO developed a corporate strategy on climate change to better channel its work in this area. This strategy contributes to the achievement of the SDGs, specifically to the targets under SDG 13.
38. FAO has also produced tools to assess the impact of agricultural activities on the environment. This includes the Ex-Ante Carbon-balance Tool (EX-ACT). The EX-ACT<sup>15</sup> was jointly developed by three FAO divisions and aims to provide *ex-ante* estimations of the impact of development programmes, projects and policies in the agriculture, forestry and other land use sector on greenhouse gas emissions and carbon-balance.

## VIII. Key Messages

39. The international development community emphasizes the importance of addressing challenges and tapping into opportunities created by the recent developments in food systems. Two of the key drivers that will affect food systems is population growth and climate change. As it has often been reiterated, the population of sub-Saharan Africa is expected to double by 2050, most of which will be assimilated by cities. This will raise food demand and offer opportunities for increased investments in agri-food value chains.
40. Africa must capitalize on the potential, talent and drive of its large pool of unemployed young women and men to drive agricultural transformation. Strengthening youth technical training will enhance their participation in sustainable food systems that will contribute to increasing rural incomes and creating stable jobs. Adaptive and innovative interventions designed with adequate in-depth socio-economic analysis is recommended for sustainable food systems transformation. This will ensure that agri-food systems play a central role in eliminating poverty and achieving the SDGs and Malabo targets.
41. Food systems are considered sustainable if they are inclusive and provide food security and nutrition in a way that does not compromise the economic, social and environmental foundation of future generations. Food systems include an entire range of actors and interlinked activities taking place under broader local, national and international structures. Thus, efforts to improve food systems outcomes need to be inclusive of a wide range of multisectoral stakeholders operating at the local, national and international level. This includes strong private and public sector partnerships across

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<sup>15</sup> [http://www.fao.org/fileadmin/templates/ex\\_act/pdf/Technical\\_guidelines/EX-ACT\\_User\\_Manual\\_Final\\_Draft\\_v01.pdf](http://www.fao.org/fileadmin/templates/ex_act/pdf/Technical_guidelines/EX-ACT_User_Manual_Final_Draft_v01.pdf)

agri-food value chains. In addition, research and innovation, and finding novel ways to sustainable food value chains is critical and must be supported at all levels.

42. Technology and digital innovations, coupled with a reduction in the digital divide, offer an important mechanism to incentivize youth involvement in agri-food systems. The adoption and integration of ICTs across the globe has reduced information and transaction costs, improved service delivery, generated new income streams and helped conserve resources. Youth have a comparative advantage in these aspects. Innovative means of improved technologies and access to finance can promote inclusive investment in the food value chains and address the major constraints in the food systems such as food loss and waste and food safety.
43. Digital technologies have a potential to address information asymmetries for inclusive and efficient food systems. Digital technologies and innovative approaches to agriculture will make small-scale producers more competitive, especially in low-income countries that are lagging behind in development. This will be possible if the International “Digital Council” for Food and Agriculture that will provide structured and strategic policy recommendations on digitalization of food and agriculture, organizes efforts to share best practices, and promote interaction among countries and other stakeholders.
44. Given that actors in the agriculture sector face significantly more challenges to their operations and growth potential than in other sectors, the issue of finance looms large amongst these obstacles and should be given close attention by particularly promoting appropriate and innovative incentive structures, strengthening stakeholder capacities and promoting de-risking (or more effective risk management) of agricultural value chains to unlock finance for the under-served and financially excluded sectors and groups.