

5th **AFRICA**
AGRICULTURAL
EXTENSION WEEK
Uganda 2021



PROCEEDINGS OF THE 5TH AFRICA-WIDE AGRICULTURAL EXTENSION WEEK

HELD FROM 14TH – 20TH NOVEMBER 2021
MUNYONYO COMMONWEALTH RESORT, KAMPALA, UGANDA

AFAAS 2022



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Executive Summary

The Africa-wide Agricultural Extension Week (AAEW) is an international event and flagship information and knowledge event where innovations, successes, lessons and failures are deliberated and solutions sought. The 5th AAEW 2021, was held from 14- 20 November 2021 as hybrid event, with the physical sessions at Munyonyo Commonwealth Resort, Kampala Uganda. This event brought together 365 physical and over 630 virtual participants from over 17 African Countries and globally to deliberate on strategic issues in Agricultural Extension and Advisory Services (AEAS) in Africa. The AAEW facilitates processes for improving the use of knowledge, technologies and innovations by agricultural value chain actors to achieve their individual and national development goals. The 2021 edition /event was hosted by the Ministry of Agriculture Animal Industry and Fisheries (MAAIF) of the Republic of Uganda, in partnership with the African Forum for Agricultural Advisory Services (AFAAS) and the Uganda Forum for Agricultural Advisory Services (UFAAS), supported by national and other partners.

The theme of the 5th AAEW 2021 was ***“Effective Agricultural Extension Systems for Sustainable Agri-preneurship in Africa”***. This theme was contextualized under the Uganda Third National Development Plan and informed by the international Agricultural Research and Development paradigms. The theme was discussed under five well-articulated and inter-related sub themes namely; (i) Innovative AEAS approaches for resilient and practical actions; (ii) Towards professionalisation of Agricultural Extension and Advisory Services (AEAS) systems in Africa: Where are we? (iii) Agro-industrialisation in the context of trade regimes: Implications for AEAS; (iv) Harnessing agripreneurship opportunities for youth and women; (v) AEAS resilience to

pandemics and emergencies: Lessons across Africa. The purpose of the 5th AAEW 2021 was to re-think and re-shape AEAS for inclusive and resilient agri-food systems in Africa. The objectives of this meeting were to: (i). Raise awareness and develop knowledge and skills in relation to the different sub-themes; (ii) Facilitate networking and foster collaboration and partnerships across the different stakeholder’s groups and actors; (iii) Provide a platform for discussion/dialogue on key policy debates and development outcomes, and (iv) Deliberate on concrete actions and a road map for the future of AEAS in Africa

The key participants in the AAEW were drawn from representation of AEAS actors from the public sector (Ministries, Departments and Agencies), farmer based organisations, farmers, fishermen/folks, non-governmental organisations (NGOs) as well as institutions and programmes actively involved in agricultural and rural development; private sectors (e.g. telecommunications companies, agro-processors, financial institutions, the media, insurance companies, commercial farmers etc.) were also given space to exhibit their innovations. The Ministries of Agriculture, Extension Department form part of AFAAS General Assembly, and are critical for policy influence in their respective countries, while equally central for the growth of AFAAS network

The 5th AAEW 2021 was graced by high level dignitaries from Uganda and other countries, most notably Nigeria represented by the Permanent Secretary, Federal Ministry of Agriculture & Rural Development. In their addresses to the participants, the key issues affecting agricultural growth in Africa and role of extension were emphasized.

In his opening address, the Rt. Hon. Deputy

Prime Minister of the Republic of Uganda, General Moses Ali articulated the Government position in support to agricultural development. He emphasized that, agricultural extension plays a crucial role in boosting agricultural productivity, increasing food security, improving rural livelihoods, and promoting agriculture as an engine of pro-poor economic growth. Extension provides a critical support service for rural producers, the small-scale farmers who are meeting the new challenges confronting agriculture such as; the rise of supermarkets and the growing importance of standards, labels, and food safety; growth in non-farm rural employment and agribusiness; constraints imposed by HIV/AIDS and other health challenges that affect rural livelihoods; and the deterioration of the natural resource base and climate change.

He recognized the need to invest in Agricultural Research and Extension and Advisory Services along the agricultural value chains to meaningfully create jobs for the fast-growing populations of youth and women. "We are in the era of a knowledge driven Agriculture Revolution, we need to get this by the horn and move forward, and yes, we have to get there", he underscored.

In his closing remarks, the State- Minister for Agriculture Hon. Kyakulaga Fred Bwino re-affirmed Government's commitment and pledged continued collaboration and support in all ways possible to ensure efficiency and effectiveness of extension service delivery in order to achieve the government vision and mission. "I implore all Governments in Africa to champion and take extension seriously in all fronts".

The 5th AAEW 2021 saw AFAAS sign three collaborative MoUs with; Sasakawa Africa Association (SAA), African Agricultural Technology Foundation (AATF), and Farm Radio International (FRI). These strategic

MoUs were aimed at fostering efforts of AFAAS and its partners to; i) address the challenges, seize opportunities and solutions to revamp extension services in Africa as well as contribute to a prosperous Africa based on inclusive growth and sustainable development, ii) carry out complementary research, innovation, institutional development and capacity building for Africa's smallholder farmers, iii) provide a framework for continued collaboration between the parties to improve the quality of life of millions of farming households in Sub Saharan Africa through agricultural e-extension and advisory services.

The Extension week was overall a success, however, some areas of improvement are suggested ; i) improved time management, ii) improved communication, iii) more attention to the online audience, iv) room availability for parallel session, v) improved publicity for the event, vi) improved ushering, vii) improvement in the livestreaming services, viii) planning for e-exhibitions, ix) automatic interpretation, x) participation of farmers, and, xi) participation of frontline extension workers.

During the 5th AAEW 2021 a Declaration was made and endorsed by the AGM. The Declaration calls upon all key AEAS stakeholders including government extension professionals, farmers' organizations, regional and global bodies, the private sector, civil society, development partners, and agricultural sector financiers and investors to take sets of actions that facilitate effective agricultural extension systems for sustainable agripreneurship in Africa. Key continental actions in the declaration were categorized per theme as:

Innovative approaches for resilient and practical actions by all AEAS actors to; i) promote digitalization, knowledge sharing platforms and innovative approaches like; farmer field school, nucleus farmer, farmer-to-farmer, village agent model, village-based

advisor, among others; ii) institutionalise youth and gender inclusiveness in AEAS programs and activities; iii) recognise and incentivise AEAS actors to effectively participate in the agriculture value-chain and rebrand AEAS; iv) integrate nutrition into AEAS to contribute to the eradication of hunger, food insecurity and malnutrition in Africa.

Professionalization of AEAS systems in Africa participants called for: i) governments to work with AFAAS in developing extension policies and professionalisation frameworks across the continent; ii) academia to refocus curricula for agriculture programs for enhancement of soft, self-reliance and practical skills as well as integration and institutionalization of innovative approaches; iii) governments to recognise established post-school professional bodies to support registration and accreditation of AEAS providers; iv) development partners to support collaborative development of a professionalization framework across Africa shared and implemented by the AFAAS network.

Implications for AEAS in Agro-industrialization and trade regimes, stakeholder emphasized to: i) promote linkage and access to wider regional and global markets of agricultural produce, ii)

provide support for scaling up mechanization across the agricultural value chain in order to assure quality and safety standards at national and regional levels, iii) promote and support Village Based Agricultural Agents as the last and first mile market support or facilitating business facilitators.

Harnessing Agripreneurship opportunities for youth and women, most notably were; i) support through mentorship, motivation, internships and scholarships to youth and women in to appreciate profitability of their business, ii) promote mindset and behavioural change for youths and adults towards viewing agriculture as a holistic value-chain system that facilitates development, iii) improve youths' decision-making, access to, and control of land resources at an early stage to motivate them and understand the processes and benefits that accrue from agriculture.

AEAS resilience to pandemics and emergencies, participants underscored: i) encouraging and promoting the use of blended approaches in training and extension for quick response, and ii) governments, development partners, civil society and private sector actors to build capacity for AEAS actors and farmers as well as providing.

List of Acronyms

AAEW	Africa-wide Agricultural Extension Week
AfCFTA	Africa Continent Free Trade Area
AATF	Africa Agricultural Transformation Fund
AEAS	Agricultural and Extension Advisory Services
AFAAS	African Forum for Agricultural Advisory Services
AGRA	Alliance for a Green Revolution in Africa
AMCOW	African Ministers Consortium on Water
ANBO	Alliance of Nile Basin Organizations
AR4D	Agricultural Research for Development
AUC	African Union Commission
CFs	Country Fora
CGIAR	Consultative Group on International Agricultural Research
COVID-19	Corona Virus Disease - 2019
DeSIRA	Development Smart Innovation through Research in Agriculture
E-COMMERCE	Electronic Commerce
ED	Executive Director
E-EXTENSION	Electronic Extension
E-Voucher	Electronic Voucher
FAO	Food and Agriculture Organization
FARA	Forum for Agricultural Research in Africa
FRI	Farm Radio International
FO	Farmer Organizations
GA	General Assembly
GDP	Gross Domestic Product
ICIPE	International Center on Insect Physiology
ICTS	Information and Communication Technologies
IFPRI	International Food Policy Research Institute
JICA	Japan International Cooperation Agency
KCCA	Kampala Capital City Authority
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MoSTI	Ministry of Science, Technology and Innovation
MOU	Memorandum of Understanding
NaCRRI	National Crops Resources Research Institute

NaLIRRI	National Livestock Resources Research Institute
NARO	National Agricultural Research Organisation
NARS	National Agricultural Research System
NBI	Nile Basin Initiative
NDP	National Development Plan
NFLC	National Farmers Leadership Centre
NGOS	Non-Governmental Organisations
NOC	National Organising Committee
PPP	Public Private Partnerships
SAA	Sasakawa Africa Association
SDG	Sustainable Development Goals
UFAAS	Uganda Forum for Agricultural Advisory Services
UIRI	Uganda Industrial Research Institute
WEMA	Water Efficient Maize for Africa
ZAABTA	Zirobwe Agaliawamu Agri-business Training Association

1.0 Introduction

The Africa-wide Agricultural Extension Week (AAEW) is an important fixture in Agricultural Research for Development (AR4D) discourse that provides a platform for the various stakeholders in AR4D to deliberate on strategic issues and developments in the area of Agricultural Extension and Advisory Services (AEAS) as well as in isolating complimentary support services from associated sectors and sub-sectors such as water, livestock, environment, education and many others. The 5th AAEW was held from 14th – 20th November at Speke Resort Munyonyo Kampala, and brought together about 1000 participants (online and physical) from across Africa and the globe. The event that was organized by the African Forum for Agricultural Advisory Services (AFAAS) was hosted by the Ministry of Agriculture Animal Industry and Fisheries (MAAIF) of the Republic of Uganda, in partnership with the Uganda Forum for Agricultural Advisory Services (UFAAS). Its purpose was to facilitate processes for improving the use of knowledge, technologies and innovations by agricultural value chain actors to achieve their individual and national development goals. Beyond thematic debates, the AAEW was a unique avenue for sharing experiences and learning amongst professionals from different backgrounds, strengthening interactions with policy-makers and investors and developing fruitful partnerships. The 5th AAEW was also meant to provide a platform for deliberating on new developments, emerging needs in capacity development and defining strategic direction in agricultural extension and advisory services for the coming years.

Prior to the 5th AAEW, AFAAS has organized and held four successful AAEWs as follows: i) first was held in Gaborone, Botswana in August 2013 on the theme “Value Chain Approach in Agricultural Development: Coping with new

demands for Agricultural Advisory Services”; ii).second took place in Addis Ababa, Ethiopia in October 2015 on the theme “Reinvigorating Extension Services for Market-led Agriculture within the Context of the Malabo Declaration”; iii) third was held in Durban South Africa October/November 2017 on the theme “Scaling up climate smart agriculture: integrating youth, women, and the digital revolution”; iv). fourth was held in Abidjan Cote d’Ivoire in 2019 in November 2019 on the theme “Private Sector and Agricultural Advisory Services Synergies for Sustainable Agricultural Development in Africa”. Additionally, prior to the above four convenings, AFAAS held three symposia in 2004 and 2006 in Kampala Uganda and 2011 in Accra, Ghana

1.1. Background to the 5th AAEW 2021

Agriculture in Africa is predominantly subsistence in nature dominated by smallholders, low levels of productivity across all agricultural value chains affecting food security and incomes from agriculture. The extension and advisory services meant to address these challenges among the smallholder farmers are not adequately accessible and professionally recognized. Further issues include uncertain land tenure systems, difficulty in obtaining credit or other financial products, lack of capital for fertilisers and seed, poor access to market information and high transaction costs in accessing markets. The sector is dominated by women actors at the lower levels of the value chain, highly dependent on rudimentary and traditional technologies, which affects overall productivity, social inclusion and equity. All these challenges are compounded by continent wide emergencies like climate change, locusts, and the COVID 19 pandemic further making extension services difficult to deliver. World over, attention has shifted to



the use of digital systems and ICTs to increase productivity and efficiency across the entire agricultural value chain and supporting systems.

Africa's urban population is expanding leading to exponential increase in food demand and changes in the type of food preferred. Specifically, the demand for processed agricultural products and ready-prepared foods continues to increase among urban consumers. Some of the emerging food preferences are met through imports, and Africa is gradually turning into a net food importer. Its foreign trade is heavily relying on exporting raw and primary processed agricultural produce. This offers African countries an opportunity to accelerate agricultural transformation through building agripreneurship skills among small holder farmers particularly youth and women in agriculture, while at the same time building agro-industrialization infrastructure or enhanced competitive participation in the global markets. This would raise smallholders' incomes and create new jobs through higher-value enterprises such as horticulture, livestock and aquaculture products, which typically require higher levels of management skills and coordination with input and output markets as well as through linkages with agro-food and tourism. Expanding employment through downstream activities in value chains, and specifically through local agro-industrialisation, will be essential for reducing poverty and meeting growing demand for semi-processed and processed foods and feed. This calls for innovative high tech extension systems that can address the challenges identified and also facilitate actors to harness the new opportunities in agripreneurship, and agro-industrialization while ensuring sustainable environments for the last mile. Despite the importance of agro-industrialisation, progress in most African countries has been minimal,

and to a large extent non-inclusive due to various challenges.

In Uganda, the strategic goal of the current National Development Plan (NDPIII) is to Increase Average Household Incomes and Improve the Quality of Life of Ugandans. NDPIII aims to pursue achievement of this goal under the overall theme of Sustainable Industrialisation for inclusive growth, employment and wealth creation. Uganda is majorly an agricultural country and agro-industrialisation takes centre stage in the growth and development of its industrial sector for wealth creation and inclusive growth, through increased economic integration and productivity in the agriculture sector. It requires growth of agro-processing and agribusiness; institutional, organisational and technological innovations at both farm and firm levels.

1.2. The Focus of the 5th AAEW 2021

Globally, Agricultural Extension and Advisory Services build the capacity of all actors along the different value chains unleashing their potential to contribute to the achievement of global, regional and national goals. There is a growing awareness in the development community of the challenges and opportunities in AEAS to meet the needs of resource poor people in a rapidly changing world. As a result, more people-centered and demand driven approaches are needed within functional systems. It is also critical to consider the various constraints to AEAS delivery in promoting agricultural transformation in Africa, such as: low coverage, limited technical capacity and resourcing of extension providers, low coverage and capacity in ICTs, and insufficient budget allocation. Other constraints include weak institutions, such as, research-extension-farmer linkages, farmer organizations, policy implementation among others.

The theme of the 5th AAEW 2021 was *“Effective Agricultural Extension Systems for Sustainable Agri-preneurship in Africa”*. This theme was contextualized in 5 sub-themes namely; i) Innovative AEAS approaches for resilient and practical actions, ii) Towards professionalization of AEAS systems in Africa: Where are we?, iii) Agro-industrialization in the context of trade regimes: Implications for AEAS, iv) Harnessing Agripreneurship opportunities for youth and women, v) AEAS resilience to pandemics and emergencies: Lessons across Africa.

The global context of the 5th AAEW 2021 was grounded on several initiatives at different levels to address the key challenges in the broad development agenda. These included; adoption of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs), the 2015 Addis Ababa Action Agenda on Financing for Development, the African Union Commission’s 2063 Agenda: The Africa We Want, and the Paris Agreement on climate change in 2015, which all give new impetus to resolving the challenges and to seize opportunities. These initiatives recognize that the world is more interdependent than ever and that Africa and developing countries remain the weakest link in global economic development. The coherent implementation of all these agreements is now needed to foster structural changes, boost growth, create jobs and achieve inclusiveness and poverty eradication in Africa and other developing countries around the globe. The 2030 Agenda recognizes the role of industry as a pathway and enabler for sustainable development, in particular SDG 9, with its call to “Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation” through inclusive and sustainable industrialization” has strong ramifications for most of the SDGs.

The context of the AAEW 2021 was also

grounded on the growing efforts at national, regional levels to embrace agro-industrialization. Agripreneurship at national levels is anticipated to create backward and forward linkages which would ultimately buttress the challenges of unemployment in Africa. It was also informed by the current discourse in agri-food systems. Noting that agriculture remains the primary employer for 60% of adult workers in Sub-Saharan Africa, many economists regard it as the sector with the most potential for poverty reduction and development. However, the agricultural sector in Africa also suffers from a huge investment gap in infrastructure, supportive policies as well as unstructured planning for growth and quality delivery of programmes. Additionally, there have been devastating challenges including effects of climate change and the current COVID-19 pandemic.

Within the Africa and the European partnership context, examples of programmes to address the challenges is the “Development Smart Innovation through Research in Agriculture (DeSIRA)”, an EU initiative aimed at deploying science and innovation to achieve an inclusive, sustainable and climate-relevant transformation of agriculture and related food systems in partner countries. A move towards a robust and sustainable agro-industrialisation must embrace agricultural extension and advisory services and factors such as ICT / digitalisation, the youth question, COVID-19 and its influence on the food systems, and the role of private sector as a force to steer the desired progress.

1.3. Objectives, Expected Outputs and Outcomes

1.3.1 Purpose and objectives:

The purpose of the AAEW was to re-think and re-shape AEAS for inclusive and resilient agri-food systems in Africa. The objectives of this meeting were to: (i) raise awareness and

develop knowledge and skills in relation to the different sub-themes, ii) facilitate networking and foster collaboration and partnerships across the different stakeholder's groups and actors, iii) Provide a platform for discussion/dialogue on key policy debates and development outcomes, and iv) deliberate on concrete actions and a road map for the future of AEAS in Africa.

1.3.2. Outputs

The Organising committee had set key outputs with a focus to; i) a declaration consisting of a concise synthesis of the recommendations of the meeting to be widely disseminated targeting policy-makers and other relevant actors, ii) side event reports developed by conveners, iii) communities of practice and networks around selected areas formed/ or strengthened, iv) policy briefs on each of the sub-themes, v) profiles of innovations published online, vi) videos of keynote presentations shared online , and vii) a book of proceedings of the event disseminated.

1.3.3 Expected Outcomes:

In addition, some outputs were anticipated, including, but not limited to; i) innovative approaches to facilitate resilient and effective AEAS in Africa, adapted and applied, ii) mechanisms and structures for professionalisation of AEAS actors and systems, fostered, iii) AEAS role and position in agro-industrialisation and trade in African countries enhanced, iv) EAS models for harnessing agripreneurship opportunities for

youth and women analysed and implemented, and v) Enhanced AEAS resilience to respond to the shocks of pandemics and emergencies across Africa.

1.4. Participants and Partners.

The key participants in the 5th AAEW 2021 were drawn from representation of AEAS actors from public (Ministries, Departments and Agencies), farmer based organisations, farmers, fishermen/folks, non-governmental organisations(NGOs)as well as institutions and programmes actively involved in agricultural and rural development; private sectors (e.g. telecommunications companies, agro-processors, financial institutions, the media, insurance companies, commercial farmers etc.) were also given space to exhibit their innovations. The Ministries of Agriculture, Extension Department form part of AFAAS General Assembly, and are critical for policy influence in their respective countries, while equally central for the growth of AFAAS network.

The organization of the AAEW was spearheaded by AFAAS and technically supported by the National Organising Committee (NOC) appointed by the Permanent Secretary of the Ugandan Ministry of Agriculture, Animal Industry and Fisheries, and the Regional Organising Committee (ROC) constituted at continental level. These were responsible for the organization and implementation of the 5th AAEW.



1.5 Highlights of the Activities

1.5.1 Programme

The programme involved strategic meetings (AFAAS General Assembly, AFAAS Board meetings, consultative meetings with partners), technical sessions, side events, exhibitions, field excursions and a cultural gala corresponding to the sub-themes. These provide a huge opportunity for networking and forming collaborations.

1.5.2 Side events

Partners and members of the agricultural extension fraternity organized, (co-) chaired and (co-) sponsored side events related to the theme of the event; *“Effective Agricultural Extension Systems for Sustainable Agripreneurship in Africa”*. The side events took place on day two from Monday 15th November, 2021. The side events organized within the sidelines of the official sessions of the Conference provided an opportunity for actors to share and learn from one another as well as agree on a way forward at the end of the conference, on issues pertinent to agriculture extension.

Side Event 1; Fostering Sustainable Land Management good practices knowledge generation and sharing with farmers and extension services by **WOCAT**

Side Event 2; Partnerships for delivering Agricultural Technologies and Innovations to small holder farmers in Africa: lessons from AATFs WEMA and PASTTA Projects by Africa Agricultural Technology Foundation (AATF)

Side Event 3; Positioning/farmer Field School approach as a model for providing agricultural extension in communities by ESAFF-Uganda.

Side Event 4; Village Based Advisor (VBA) Approach: Pathways to institutionalization and sustainability by AGRA

Side Event 5; Launching of AFAAS’ guidelines for operationalization of thought leadership and foresight in Agricultural Extension and Advisory services. AEAS policy influencing. Training and launch of AFAAS ROMEL system and AEAS data capture AFAAS

Side Event 6; Consultative Meeting on the Development of Continental Strategies for Improving Private sector engagement in agricultural research

Ranging from different discussions, extension has evolved and there is need to improve on the way we implement extension if we want to achieve better results. In order to provide a smooth coordination and co-organization of the event, the side events were guided by the following pertinent questions

1. What actions should be prioritized in order to increase AEAS resilience to climate shocks?
2. What action can deliver a professional AEAS system in Africa?
3. How can AEAS best drive the Agro-industrialisation agenda in Africa?
4. What are the 'best-bet' agripreneurship opportunities for youth and women in Africa?

5. How has AEAS evolved in the face of pandemics and emergencies in Africa?

These questions were directed to and/or answered while sharing experiences during the side events by among others:

- i. Academia (Training, Innovation, Service provision)
- ii. Government (Policy direction, Quality Assurance, Service provision)
- iii. Development Partners (Funding, Service provision)
- iv. Civil Society actors (Service Provision, Advocacy, Funding)
- v. Private Sector actors (Investment, Innovation,)

1.5.3 Technical sessions



Fig. 2: Section of participants attending the plenary session

Technical sessions were organized in two forms; i) the plenary which involved all participants discussing topical issues under the main theme and in context of the different sub-themes; ii) parallel sessions dedicated to issues specific to each sub-theme. Over 35 technical sessions were held in form of paper, poster and case story presentations, shift and share sessions and a panel discussion.

1.5.4 AFAAS General Assembly (GA) and Board Meetings



Fig.3: AFAAS Board members attending the 1st session of the 8th General Assembly

The 8th AFAAS GA was held over 2 sessions, on 15th and 19th November 2021, after the opening and closure (respectively) of the 5th Africa-wide Agricultural Extension Week 2021. The mode for the conduct of the General Assembly's business was open plenary session in an open, transparent and participatory approach, and for the first time, attendance of the GA was blended physical and virtual participation. Similarly, AFAAS held its board meetings in 2 sessions. Proceedings have been shared with GA members.

1.5.5 Exhibitions, Excursions and Cultural Gala (Award Ceremony)

Participants showcased their activities, programmes, products, services and innovations through exhibitions. The Guest of Honor and other high-level dignitaries toured the exhibition stalls after the exhibitions. Exhibitors were selected based on the relevance of their technologies, innovations, management practices, products and services to the theme of the AAEW. On the 18th November 2021, participants received exposure at six field sites namely; i) **National Farmers Leadership Centre (NFLC)** in Kampiringisa - a training Centre under the Ministry of Agriculture, Animal Industry and Fisheries meant to transform farmer leaders,

civic and political leaders and other categories of leaders, through mind-set change, and advanced agricultural technology transfer. ii) **Kampala Capital City Authority (KCCA)** urban farming demonstration in Kyanja - to showcase and demonstrate innovations in urban farming with the aim of engaging communities to intensify and expand their participation in urban agriculture as a source of income and food security, iii) **National Livestock Resources Research Institute (NaLIRRI)** in Nakyesasa - a public agricultural research institute responsible for research and related services in Livestock health, nutrition, breeding, socio-economics, marketing, and apiculture under the National Agricultural Research Organization (NARO), iv) **National Crop Resources Research Institute (NaCCRI)** at Namulonge - one of the six National Agricultural Research Institute (NARIS) under the National Agricultural Research Organization (NARO), v) **Zirobwe Agaliawamu Agribusiness Training Association (ZAABTA)** in Luwero - a higher level Farmers Organization (FO), and vi) **Uganda Industrial Research Institute (UIRI)** - a government parastatal organization under the auspices of the Ministry of Science, Technology and Innovation (MoSTI).



Fig.4: Extension week participants visit the Embryology platform at National Livestock Research Institute.

At the end of the excursions, participants were treated to a cultural gala during which outstanding actors were awarded for their contribution towards AEAS.



Fig.5: One of the participants being awarded during the cultural gala and dinner

1.5.6 Collaborations and partnerships

On 16th November 2021, AFAAS signed three collaborative Memoranda of Understanding (MoUs) with; Sasakawa Africa Association (SAA), African Agricultural Technology Foundation (AATF), and Farm Radio International (FRI). These strategic MoUs

were aimed at fostering efforts of AFAAS and its partners to; i) address the challenges, seize opportunities and solutions to revamp extension services in Africa as well as contribute to a prosperous Africa based on inclusive growth and sustainable development, ii) carry out complementary research,

innovation, institutional development and capacity building for Africa's smallholder farmers, and iii) provide a framework for continued collaboration between the parties to improve the quality of life of millions of farming households in Sub Saharan Africa through agricultural e-extension and advisory services.

The signing of the agreements was witnessed by the AFAAS board vice chairman Dr. Paul Fatch, Sasakawa President and AFAAS patron Prof. Ruth K. Oniang'o, the Senior Adviser Strategy and Growth at Global Office Farm Radio International Dr. Rex Chapota and the extension week participants.



Fig.6: (L-R); Mr. Max Olupot Director of Programmes AFAAS, Mr. Rex Chapota Senior Adviser Strategy and Growth at Global Office at Farm Radio International, Professor Ruth K Oniang'o Sasakawa President, Dr. Silim Nahdy Executive Director AFAAS, Mr. Paul Fatch AFAAS Board Chair and Dr. Kanangire, Executive Director AATF

2.0 Opening Remarks

The AAEW 2021 was blessed with high level dignitaries. In their addresses to the participants, the key issues affecting agricultural growth in Africa and role of extension were emphasized.



2.1 Key Note Address

Dr. Agnes Kalibata represented by the Vice President of AGRA delivered a keynote address on 'the effective agricultural extension systems for sustainable agripreneurship in Africa'.

2.2 Goodwill Messages

Participants received messages of goodwill from the President of the Sasakawa Africa Association and AFAAS Patron Prof. Ruth K. Oniang'ó who, in her speech indicated the relevance of Agricultural Extension and

encouraged collaboration for greater impact to improve rural livelihoods. Prof. Ruth emphasized the importance of disseminating knowledge to the farmers if we are to achieve food security. "There is no way we are going to talk about food security if we cannot reach the farmers with the knowledge".

Ms. Agie Konde representing AGRA underscored the importance of AEAS as being key towards achieving sustainable farmer livelihoods



Fig. 7: Eng. Sylvester Anthony Matemu, the Executive Director of the Nile Basin Initiative delivering his goodwill message

Eng. Sylvester Anthony Matem, the Executive Director of the Nile Basin Initiative reflected on the various continental commitments towards improving management and access to water resources for poverty alleviation, socio-economic development and regional cooperation. He further called for the urgent need for collaboration and synergy between partners and actors and re-affirmed the commitment of NBI to increase their efforts to improve coordination and collaboration in water related activity planning and implementation among various stakeholders to strengthen our roles for Sustainable Water Use and Management.

In her goodwill message, HE. Amb. Josefa Leonel Correia Sacko Commissioner for Rural Economy and Agriculture of the African Union Commission reiterated the role of extension staff as key players in the development process and are key to achieving the Malabo goals 2025. She also stated that the extension system in Africa faced numerous systemic challenges, numbers, and inadequate funding which in turn limit effectiveness in promoting small holders' farmers productivity. Amb. Sacko applauded AFAAS for advocating for extension on the African Continent and informed delegates that talks were underway to renew AFAAS's MoU with the African Union to enable it continue with the work of mobilizing effective partnerships for advancing agriculture extension and advisory in Africa.

2.3 Official Opening Remarks

The Permanent Secretary for Uganda's Ministry of Agriculture, Animal Industry and Fisheries, Maj. Gen. David Kasura Kyomukama highlighted the importance of AEAS as the heart and soul of the agricultural sector and the development pathways of countries could not be achieved without developing this sector.



Fig.8: Hon. Frank Kagyigyi Tumwebaze, Minister MAAIF

On his part, the Ugandan Minister of Agriculture, Animal Industry and Fisheries (MAAIF), Hon. Frank Kagyigyi Tumwebaze lauded agricultural extension as a key aspect in providing an enabling environment in attaining the overall vision and mission as the agriculture sector. The vision and mission of the sector implies the need for a well harmonized and multi-stakeholder approach to effectively address the issue of agricultural extension all through the value chain. Hon. Frank pointed out that Uganda is now implementing the third National Development Plan (NDP III) with the strategic goal to Increase average household incomes and improve the quality of life of Ugandans. NDPIII aims to pursue achievement of this goal under the overall theme of Sustainable Agro-Industrialisation for inclusive growth, employment and wealth creation. Given that Uganda is majorly an agricultural country and agro-industrialisation takes center stage in the growth and development of its industrial sector. This therefore requires growth of agro-processing and agribusiness; institutional, organizational and technological innovations at both farm and firm levels. These activities are being implemented at the lowest level – the Parish – in what we termed the Parish Development Model (PDM) approach.

The Hon. Minister challenged AEAS providers to redefine and reflect on the extension approaches through appropriately defining what extension entails. He emphasized the need for considering technical expertise (with

a mix of traditional and technical innovations) to come up with policy options that advise government on how to implement an extension system that serves its people. The Minister also strongly noted the need to bring to life the component of communication and advocacy as part of the mainstream of AEAS. He urged AEAS actors to re-package agriculture as an attractive venture to target the youth through for example rebranding content on social media channels such as 'YouTube', 'TikTok' to make it smart and 'cool' (*an adage used mostly by the youth to refer to something nice*). This would help attract the youth to join agricultural value chains. He called upon all participants and dignitaries present to make a move towards a robust and responsive agricultural extension and advisory services for effective farmer education, and hold hands and support the strengthening of agricultural extension service delivery their respective countries.

The 5th AAEW 2021 was officially opened by the guest of honor, Uganda's 2nd Deputy Prime Minister, the Rt. Hon. General Moses Ali. He noted that "effective agricultural extension systems ought to have initiatives that are aimed at addressing the disproportionality in service delivery especially to the youth and women whose livelihoods are most affected during severe shocks". He called upon African countries to rapidly and heavily invest in agro-industry and promote export of processed products such as coffee and textiles as opposed to coffee seeds and lint. This would create all the jobs for the fast growing populations of youth and women. He underpinned the role that AEAS critically plays in boosting productivity, food and income security and linking smallholder farmers to supermarket value chains as consumers heighten demand for quality standards. Hon. Gen. Ali rallied stakeholder support and efforts focused on transforming agricultural sectors in Africa as an engine for economic and food security

stability. He further challenged delegates to come up with a communique that will capture critical issues and will be shared for member countries to take action accordingly.

2.4 Technical Panel Discussion

The panel discussion provided an in-depth analysis on the theme and sub-themes in context of the key note address, high level speeches and statements from the guest of honor. The panel session was moderated by Dr. Richard Miiro of Makerere University, and featured Dr. Kristin Davis a Senior Research Fellow at IFPRI, Dr. Carl Larsen of GFRAS, Dr. Joseph Oryokot of World Bank Uganda, Dr. Florence Nakayiwa of RUFORUM, and Dr. Paul Fatch of AFAAS. The panellists also emphasized partnerships to create a stronger voice to advocate for agricultural extension and engage the next generation of farmers now for continuity

Plenary:

Dr. Fred Muhanguzi from Ministry of Agriculture, Animal Industry and Fisheries MAAIF updated on the status of Agro-industrialization in Uganda. He stressed the need to support the development of advanced productive alliances that strengthen the Public-Private Partnership model of Agro-industrialization.

Dr. Harold Roy-Macauley, the Africa Rice Director General and CGIAR Regional Director, East and Southern Africa shared about the ONECGIAR reforms, the progress of work in the region, and opportunities of working together.

This was complemented by Bank of Uganda who highlighted opportunities available for Uganda farmers under the Agricultural Credit Facility and emphasized the need for partnerships.

2.5 Setting the Scene

In order to contextualize the main technical sessions of the AAEW, an overview of the AAEW was provided by Mr. Max Olupot; followed by the AFAAS strategic orientation and Ms. Beatrice Luzobe, CEO UFAAS, who shared experiences from country fora on extension systems and their contribution to National Agricultural

Investment Plans (NAIPs). Linkages were made to the general Agricultural research and development paradigms in the continent. This provided participants for clear understanding of African Union vision 2063 and CAADP Malabo renewed aspirations and commitments for Africa's agricultural growth.



3.0 Parallel Sessions and Key Issues Discussed Per Sub-theme

There were five parallel sessions conducted and these sessions involved the presentation of research papers, posters, and case stories from different partner organizations based on the Extension week Sub-themes. During the sessions, interesting insights transpired with respect to; professionalism, sustainability of projects, cost-profit extension models, value chain models, technologies, and approaches – e-voucher systems. Professionalism was considered key and should be defined into; i) Technical capacities, and ii) Functional capacities. Members advocated for member countries to have Extension policies in place which must be legislated with regulations and an implementation plan to be followed.

3.1. Sub-Theme 1. Innovative AEAS approaches for resilient and practical actions

This sub-theme focused on innovative AEAS models that are enabling farmers achieve their livelihood goals (income, food, nutrition) inclusively (gender responsive) while fostering resilience to climate change, emerging crises and shocks.

Population growth, rapid urbanisation, and dietary changes are placing tremendous pressure on food systems, particularly in developing countries. Based on current income, population and consumption trends, the Food and Agriculture Organization of the United Nations (FAO) estimates that, by 2050, 50% more food will be needed to satisfy the extra demand compared to 2013 (Alexandratos and Bruinsma, 2012). The challenges posed by rapid growth in food demand are intensified by the effects of climate change on agricultural systems. Leveraging on technologies can contribute significantly to livelihoods within the agricultural sector with effective AEAS systems in place.

A number of innovative approaches have been introduced to enable agri-food systems actors to adapt and mitigate the effects and impacts of climate change as well emerging catastrophes. Promotion of such approaches requires innovative extension approaches. Multiple innovative AEAS models including digital extension, village agent models, market oriented agriculture among others, that innovatively enable agri-food systems to meet the income, food, nutrition and climate smart farming objectives while building social and natural resilience of systems, are being experimented and some scaled out across Africa. Such innovations have moved beyond proof of concept and piloting, and are increasingly becoming routine practice.

Parallel Session 1A:

The session was chaired by Dr. Louis Marie Kakdeu and from Cameroon.

Names of presenters; Deogratius Opolot – Uganda, Nozaka Jiro – JICA Uganda, Simon Alibu – Uganda, Juliet Kiiza Kabasiita – Uganda, FCA – Madagascar, Elizabeth Asiimwe – UFAAS Uganda

Issues discussed:

The key issues highlighted included:

- i) Incorporating ICT tools in the Farmer Field school approach;
- ii) The gender integration;
- iii) Communication and experience sharing;
- iv) Incentive for the trainer of trainers; and
- v) Assessment of farmer organizations' performances;

Key lessons:

Key lessons discussed in this presentation included:

- i) Incorporating back-up ICT tools in the farmer field school approach, like an app that can help capture records from the farmers;
- ii) Emphasis on gender integration in all approaches;
- iii) Experience sharing is important to learn from each other (the E-Voucher system in Uganda is similar to the GES in Nigeria);
- iv) Beyond the social incentives of recognition and financial support, extension agent incentives can be in form of seeds, fertilizers, etc. This will help them put theory into practice ;
- v) Pay attention to the sustainability of a solution;
- vi) Ensure a better connection of the farmers with their needs and identify service providers for traceability purposes;
- vii) Tools are being developed to assess the level of performance of the rural farmers' organisations;
- viii) The farmer exchange visit model works.

Call to Actions and Key recommendations forwarded:

The key actions and recommendation arising from the decisions were:

- i) develop technology and new seed varieties adapted to different environments;
- ii) deliver appropriate technology to farmers timely and faster; and
- iii) improve market access;

Parallel Sessions 1B

This session also targeted dissemination of approaches and related information in line with sub-theme 1 of the AAEW. The session was chaired by Dr. Baitsi Podisi and rapporteured by Mr. Emmanuel Dele and Mr. Aubed Zulu.

Issues Discussed:

- i) Cost effective methodology to measure profitability of extension.
- ii) Acceptable livestock stocking rate by farmers and use of digital weather information.
- iii) Methodology of use of ICT tools by all stakeholders in reaching the Farmers.
- iv) Deliberate gender integration in all innovative approaches/method

Key lessons:

- i) Collaborative methodological approach of the use of ICT for all stakeholders in reaching the target farmers to avoid confusing them.
- ii) Need to capacitate farmers to reach out to others professionally
- iii) There is a relationship between scarcity of food in drought areas and stocking rates, research need to influence policy and reaching out to farmers with well-informed messages
- iv) Extension need to be considered as an important input in production just as the use of improved varieties and fertilizers.
- v) Need to quantify extension and make sure its function is considered as a production cost and need to privatize extension such that those who benefit must pay.
- vi) Digital solutions need to be well developed and well-coordinated to avoid confusing farmers with contradicting information. All stakeholders must therefore collaborate to provide uniform information on digital platforms
- vii) The importance of information given to farmers influences its adoption as in the case of climate and weather digital tools adoption by livestock farmers
- viii) The adaptive digital solutions are the ones to be adopted with overwhelming communities strengthened by farmer needs.

- ix) Consultation with relevant stakeholders by promoters of innovative advisory farmer to farmer (F2F) operating procedure/ system approach to fashion out a standard.
- x) Village model to extension supports farmers' livelihood
- xi) Farmers make decisions on what to produce and do value addition
- xii) Cost sharing with strategic partners may bring sustainability
- xiii) African states and governments have to embrace mindset change models to empower the farmers

3.2. Sub-Theme 2: Towards professionalisation of AEAS systems in Africa: Where are we?

Professionalism at both systems and individual levels among providers and clients of AEAS along the agricultural value chain is critical for sustainable agripreneurship. According to Shelvy et al. (2014), professionalism in the workplace is a specific style of behaviour that influences the level of service delivery. In some professions (such as medicine, engineering, law and accounting etc.), there are clear systems and regulatory frameworks for members to be recognised as professionals. However, in agriculture the AEAS providers have only recently begun aspiring to professionalise the discipline. The benefit of professionalised practices is evident for both practitioners and beneficiaries/clients. Some fundamental requirements need to be in place in order to professionalise AEAS.

This sub theme focused on; experiences and extent of operationalisation, institutionalisation, enforcements, and support to professionalisation across Africa, different professionalisation models adopted and their challenges; technical issues on standards, guidelines, ethics, regulation, processes, systems and structures; capacity development efforts towards professionalism

of AEAS actors and systems; and appropriate governance and institutional arrangements for effective actor coordination under pluralistic extension systems including research-extension-farmer linkages.

Parallel Sessions 2

The session was chaired by Dr. Jeff Mutimba, AFAAS and rapporteured by Mr. Gabriel Owusu and Mr. Godfrey Ife Onagwa

Name of Presenters: Prof Agwu Ekwe Agwu, Angella Namyenya and Nestor Ngoambe

Issues discussed:

- i) The need for reform in the AEAS curricula in Higher Education Institutions
- ii) Management and accountability (monitoring and evaluation) of AEAS activities through digital apps for sustainability and impact at the farmer level
- iii) Need to strengthen agricultural knowledge and skills for extension delivery

Key issues arising from the discussion

- i) There should be collaborative framework for extension advisory in the continent
- ii) The youth should be included and considered in the reform of the extension curricula
- iii) The various actors should have defined roles in the revised curricula and it must be systematic
- iv) Issues of capacity building and registration of the various actors and their competencies
- v) Curricula reform must take cognizance of human behavior in the agricultural business environment

Call to Actions and Key recommendations to different actors:

- i) Clearly define the actors and beneficiaries we are targeting AFAAS should have a systematic evaluation process of AEAS activities
- ii) For extension to be effective farmer based organizations should be strengthened and they also need to be professional
- iii) AFAAS should lead and have a collaborative framework for member countries to adapt

3.3. Sub-Theme 3: Agro-industrialisation in the context of trade regimes: Implications for AEAS

The increased demand for agro-processed products due to rapid urbanisation offers opportunity for industrialisation in Africa, yet the continent continues to grow into a net food importer with an annual import bill estimated at \$80 billion. Agro-processing in most African countries has remained low, at about 3-4% share of total GDP. The continent's exports are dominated by raw agricultural materials.

The Africa Continent Free Trade Area (AfCFTA) has a potential to unite more than 1.2 billion people in a \$2.5 trillion economic bloc to offer a market for agro-processed products. Intra-African trade in food and agricultural products is estimated to increase by 20-30%. This would provide increased employment, sustained growth and livelihoods for the most vulnerable agricultural value chain beneficiaries, especially women and youth.

However, the above aspirations will not be automatically realised given the long-standing disconnect between agricultural production and market requirements. Therefore, in order for the stated opportunities to be harnessed, it is critical to technically enhance the capacity of actors across the value chain to produce the required quality and quantity as per market

requirements. The AEAS has a critical role to play in addressing these challenges and tapping into the opportunities.

This sub-theme therefore focused on: understanding the link between AEAS, agro-industrialisation and negotiated trade regimes (bilateral and multi-lateral) on the continent; and exploring the catalytic actions to be undertaken to foster appreciation of AEAS's critical function to enable African countries, small holder farmers, small and medium enterprises exploit the market opportunities under the various trade regimes and the agro-industrialisation agenda.

Existing Android Applications

1. REMUGOL.
 - a. A web-based platform that links rice value chain actors and facilitates access to the market. It combines digitally-enabled value chain integrator and e-marketplace services to collect, process, and disseminate data on local rice value chain actors. The information is disseminated via its website but also by SMS, e-mails and newsletters according to the needs of each actor.
 - b. <https://www.remugol.com/>
2. Mastercard Farmer Network (MFN)
 - a. MFN is a digital marketplace designed to link smallholder farmers to reliable markets & buyers to sustainable sources of quality produce. It ensures fair prices for both the farmers and the buyers.

Video: <https://vimeo.com/560944471>

3.4. Sub-Theme 4: Harnessing agripreneurship opportunities for youth and women

Africa, with the youngest population globally and 50% of the agricultural labour force provided by women, continues to grapple with unemployment and/or underemployment.

Efforts by governments to create new employment opportunities for the youth and women through agripreneurship are hampered by inadequate extension services amidst the complex socio-cultural categories of class, ethnicity and gender. These complexes result in inequitable delivery of AEAS. An effective agricultural extension system should have initiatives that are aimed at counteracting the disproportionate service delivery especially to the women and youth whose livelihoods are worst hit in times of severe shocks.

This theme therefore focused on: AEAS approaches that integrate the disadvantaged groups of society in profitable agribusinesses; experiences and lessons on proven mechanisms used to harness heterogeneity within the social groups; and innovative agribusiness models for youth and women participation along agricultural value chains.

Existing approaches

- i) Community Seed Banks for Women and Youth Agripreneurship. Community Seed banks (CSBs) are locally established institutions to conserve and share seeds of crop varieties adapted to prevailing climate conditions and biotic stresses.
- ii) Improved ambient storage. Farmers store potato for food for later consumption by the household or as seed for the next cropping season.
- iii) Promotion of Orange-fleshed sweet potato (OFSP) for food security and nutrition in fragile environments. Orange-fleshed sweet potato (OFSP) is a food security crop and a low-cost source of Vitamin A. OFSP varieties are high yielding, drought tolerant and early maturing. It is handy for communities frequently affected by dry spells and floods.
- iv) Business opportunities for youth and women vine multiplication. Encourages

and supports youth and women in vine multiplication. Since most of them do not have enough land, we demonstrate to them that if they adopt rapid vine multiplication, they can earn over 5 million annually just from 0.25 acres.

- v) Youth Empowerment
 - a. Step 1: Youth engagement in Agribusiness through mechanized technologies
 - b. Step 2: Maximizing opportunities to minimize postharvest losses
 - c. Step 3: Youth equipped with knowledge and skills to process silage

3.5. Sub-Theme 5: AEAS resilience to pandemics and emergencies: Lessons across Africa

The COVID-19 pandemic and several emergencies have caused immeasurable disruptions in the agriculture sector especially, the provision of AEAS. These disruptions are more evident in the context of distorted food production, disrupted food supply system and change in household consumption (demand). Indeed, the economic and social impact of these pandemics and emergencies on food security in Africa cannot be over emphasised. In Africa, the locust invasion, the COVID-19 pandemic, floods and droughts, the surge in mycotoxins in agricultural produce and many more calamities, have negatively affected food production, distribution and consumption. The strict mitigation measures and quarantines against pandemics and emergencies hinder the availability of effective AEAS. This theme therefore focused on how to build resilient and responsive AEAS systems; policies and structures that support AEAS actors amidst pandemics and emergencies.

4.0 Conference Closing Sessions

Following a series of activities throughout the week, 19th November was the official closing of the 5th AAEW 2021.

4.1 Conference Evaluation

Majority of the participants (83%) indicated that they joined the events in mode they had planned to attend. The majority of the participants (97%) agreed that the event achieved its objectives, and their expectations of the extension week were met.

The logistical setup of the event including; the advertisement of the event, the online registration system, the payment system, Clarity of and the logistical information mainly scored between excellent and very good, but with need for improvement on the payment and the provision of logistical information.

The facilities including; the sound system, the breakout rooms, the refreshments and meals, the exhibition space and field sites were scored between excellent to good, though some participants felt that refreshments and meals, exhibition space and field sites were needed some improvement.

The general organization was rated as excellent to very good, but with need for improvement in areas of document access, time management, refreshments and the conference table appearance.

The opening and closing ceremonies were rated excellent to very good in aspects including; facilitation, time management, observation of protocol, relevance of the statements to the AAEW themes and the general organization, however, the closing ceremony needed improvement in terms of general organization and participation.

The General Assembly was rated excellent and very good in all aspects including its facilitation, Decision making, representativeness,

inclusiveness in participation, adequacy of the agenda, deliberation atmosphere and on following the AFAAS constitutional provisions. Improvement was required in areas of time management and inclusiveness of participation.

The plenary sessions and the parallel sessions were generally rated excellent to very good in aspects of; Facilitation, Time management, Inclusive participation, Relevance of the outcomes, Depth of discussions, Preparedness of the presenters, Choice of the presenters, Deliberation atmosphere, Practical relevance of content to the farmers, Appropriateness of content to Agricultural extension workers. In contrast, for the side events, poster presentations, exhibitions and field visits, there was expressed need for improvement in all these aspects. Participation in the parallel sessions was fairly balanced ranging between 69 -53%, whereas, participation in the side events was somewhat unbalance, ranging between 30-7%. There was need to improve the enrolment of participants for the different side events.

The event was rated either as an excellent or very good source of knowledge by the majority of the participants. Some of the themes were exceptionally new knowledge to the participants especially; Farmer to Farmer extension approaches (60%); Farmer Field Schools approaches (50%), the market systems approach (50%) and the Farmer Agent models (50%). The Visit and train and the single spine approaches were not scored as new knowledge to the participants.

New knowledge was gained during the extension week.

The participants mainly learnt three (3) new approaches to professionalization; Lobbying and advocacy for Agricultural Extension and



Advisory Service (53%), Ethical standards for AEAS (56%), and AEAS guidelines, Strategies and policies (43%). The participants score the East African Community Common Markets (53%) and the African Continental Free Trade Market (AfCTA) as the new trade regimes that learnt during the extension week.

In conclusion, the AAEW was a success, but with few areas of improvement including; i) Time management; ii) Communication; iii) more attention to the online audience, iv) room availability for parallel session, v) publicity for the event, vi) improved ushering, vii) improvement in the livestreaming services, viii) e-exhibitions, ix) interpretation, x) participation of farmers, and xi) participation of frontline extension workers.

Proposed themes for the 6th AAEW by participants: i) Agribusiness; ii) Africa development after COVID-19; iii) Technology assignment with agriculture; iv) AEAS for resilience and sustained childhood improvement; v) Promoting extension services for markets working for farmers; vi)

Innovative systems for agribusiness through focused targeted extension systems; vii) Agricultural marketing for sustainability; viii) Strengthening Public Extension Services; ix) Towards inclusive, integrated and effective agricultural policies; ix) Mindset change for extension workers and farmers for sustainable agriculture; x) How technology can be the medium for delivering extensions; xi) Promoting Climate smart practices for extension actors and farmers; xii) Using online based transmission tools to deliver extension; xiii) Agricultural Extension for resilient and Food and Nutrition secured Africa; xiv) The role of the media in Agricultural Extension and Advisory Services; xv) Investing in AEAS for rural transformation; xvi) Market-led approaches to Agricultural extension; xvii) Harnessing Agricultural extension and advisory services along the enterprise value chain; xvii) The Blue Economy and Extension Services; xix) Digitization of AEAS service delivery & platforms for effective coverage of end users; xix) Extension as a driver for agriculture transformation; and xx) AEAS Approaches



4.2 Closing Remarks from the Guest of Honor



Fig.9: Arrival of the Guest of Honor, Maj. (Rtd) Fred Bwino Kyakulaga, the State Minister for Agriculture.

Prior to the Hon Ministers address, Mr. Max Olupot provided key highlights of the week, with focus to: productive and educative technical sessions, Side events organized by various stakeholders, field trips, exhibitions, awards gala. Mr. Deus Muhwezi the Director Extension Services – MAAIF thanked the Participants, organizers for a very successful AAEW 2021. He then requested the Hon Minister to address the participants and close the event.

The 5th AAEW 2021 was officially closed by Uganda’s State Minister for Agriculture, Maj. (Rtd) Fred Bwino Kyakulaga. In his closing remarks, he reflected on how the event week was productive with marked; interactive learning, networking and building new alliances. He re-affirmed Government’s commitment to supporting the strengthening of agricultural extension and advisory services delivery. He also thanked AFAAS leadership for choosing Uganda to host this important event and that the Ministry of Agriculture Animal Industry and Fisheries (MAAIF) took it as a privilege and rare opportunity to showcase our diversity as a country and particularly as a Ministry.



The Minister appreciated all participants, presenters and exhibitors for the wonderful innovative ideas presented/showcased and the modality (hybrid) of the conference is a reminder that we are in a new era where modern technology can transform our lives.

The Hon Minister further noted that extension and advisory services are pivotal for transforming agri-food systems, reduce poverty, increase access to healthy and diverse diets for everyone, develop new digital-led jobs for young people and women, help to rebalance gender inequalities, and build sustainable, resilient livelihoods. With Africa’s rising food insecurity, concrete actions are urgently needed, to reverse the trends and work towards meeting the commitments under the Malabo Declaration and the Sustainable Development Goals. “Extension and research are engines in changing this narrative”.

He re-echoed earlier calls by the Hon. Minister Frank Tumwesigye on the need to rebrand agricultural extension so as to attract the youth into agriculture and called for repackaging of messages in a way that agriculture is seen as a sector where wealth can be generated to drive social transformation rather than the dirty-for-the old people sector as often depicted.

He implored all the delegates to agree that we should include all the partners: government, private sector, international organizations,

financial institutions, academia and civil societies to work together as one big team in delivering effective agricultural extension services.

He called for a move towards a robust and sustainable agro-industrialisation to embrace agricultural extension and advisory services but also factor-in ingredients such as ICT / digitalization, the youth and women, as well as the private sector as a force to steer the desired progress. This is possible through sustainable and strategic partnerships.

He also re-affirmed Government's commitment and pledged continued collaboration and support in all ways possible to ensure efficiency and effectiveness of extension service delivery in order to achieve the government vision and mission. I implore all Governments in Africa to champion and take extension seriously in all fronts.

He finally appreciated the efforts of the organizers, distinguished delegates and all partners who supported and participated in this noble event.



Fig.10: AFAAS Country Fora Delegates in a photo moment with the MAAIF officials and other partner.

4.3 Declaration

The 5th Africa wide Agricultural Extension Week Declaration was presented by the AFAAS Board Chair (in English and French) to the participants who attended the 5th Africa Wide Agricultural Extension Week, 14th to 20th November 2021 for validation and thereafter to AFAAS General Assembly for endorsement. The declaration calls upon all key AEAS stakeholders including government extension professionals, farmers organizations, regional and global bodies, the private sector, civil society, development partners, and agricultural sector financiers and investors to take sets of action per the themes to facilitate effective agricultural extension systems for sustainable Agripreneurship in Africa.

The 5th Africa wide Agricultural Extension Week Declaration read as follows:

WE, the more than 365 physical and over 630 virtual representatives from African ministries of agriculture; agricultural extension and advisory systems (including public, private and civil society organizations); farmers and their organizations; academia; national, regional and international agricultural research institutions; the private sector; bilateral and multilateral development partner organizations; financial institutions and the media; from over 17 countries met in Kampala, Uganda from 14th to 20th November 2021 to deliberate at the Fifth Africa-wide Agricultural Extension Week (5th AAEW 2021) on the theme “Effective Agricultural Extension Systems for Sustainable Agripreneurship in Africa”;

APPRECIATIVE of the Government and People of the Republic of Uganda for graciously hosting the AAEW 2021, which was jointly organized by the African Forum for Agricultural Advisory Services (AFAAS), the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), and the Uganda Forum for Agricultural Advisory Services (UFAAS).

RECALLING our commitment at AAEW 2019 in Abidjan, Cote d'Ivoire, to re dedicate ourselves to the development of Africa's agricultural extension and advisory services to effectively and efficiently play its roles in exploring options for synergizing private sector participation in AEAS for sustainable development in African Continent.

COGNIZANT of the Malabo declaration recommitment on Comprehensive Agriculture Development Programme and the African Union Commission Agenda 2023, the AUC re-affirmed its commitment to work with AFAAS as a continental institution in providing leadership in AEAS on the continent.

ACKNOWLEDGING the need for collaboration, AFAAS has concretized MoUs during AAEW

with: African Agricultural Technology Foundation (AATF), Farm Radio International (FRI), Sasakawa Africa Association (SAA) and ongoing discussion with others within and outside Africa.

AWARE of the low level of technology, innovation and knowledge dissemination to last-mile, the One-CGIAR agreed to work with AFAAS and its network as a technology and innovation, dissemination partner African Continent

With this in mind, we hereby call upon all key AEAS stakeholders including government extension professionals, farmers organizations, regional and global bodies, the private sector, civil society, development partners, and agricultural sector financiers and investors to take the following actions to facilitate effective agricultural extension systems for sustainable agripreneurship in Africa:

As regards, Innovative approaches for resilient and practical actions by all AEAS actors to;

- i) promote digitalization, knowledge sharing platforms and innovative approaches like; farmer field school, nucleus farmer, farmer-to-farmer, village agent model, village-based advisors, among others;
- ii) Institutionalise youth and gender inclusiveness in AEAS programs and activities;
- iii) recognise and incentivise AEAS actors to effectively participate in the agriculture value-chain and rebrand AEAS;
- iv) integrate nutrition into AEAS to contribute to the eradication of hunger, food insecurity and malnutrition in Africa.

In terms of Professionalization of AEAS systems in Africa participants called for:

- i) governments to work with AFAAS in developing extension policies and professionalisation frameworks across the continent;
- ii) Academia to refocus curricula for agriculture programs

for enhancement of soft, self-reliance and practical skills as well as integration and institutionalization of innovative approaches; iii) governments to recognise established post-school professional bodies to support registration and accreditation of AEAS providers; iv) development Partners to support collaborative development of a professionalization framework across Africa shared and implemented by the AFAAS network.

With Implications for AEAS in Agro-industrialization and trade regimes, stakeholder emphasized to: i) promote linkage and access to wider regional and global markets of agricultural produce; ii) provide support for scaling up mechanization across the agricultural value chain in order to assure quality and safety standards at national and regional levels; iii) promote and support Village Based Agricultural Agents as the last and first mile market support or facilitating business facilitators.

On harnessing Agripreneurship opportunities for youth and women; most notably were: i) support through mentorship, motivation, internships and scholarships to youth and

women in to appreciate profitability of their business; ii) promote mindset and behavioural change for youths and adults towards viewing agriculture as a holistic value-chain system that facilitates development; iii) improve youths' decision-making, access to, and control of land resources at an early stage to motivate them and understand the processes and benefits that accrue from agriculture.

Noting the issues around AEAS resilience to pandemics and emergencies, participants underscored: i) encouraging and promoting the use of blended approaches in training and extension for quick response, and ii) governments, development partners, civil society and private sector actors to build capacity for AEAS actors and farmers as well as providing.

This Declaration was presented to the participants who attended the 5th Africa-wide Agricultural Extension Week, 14th to 20th November 2021 for validation and thereafter to AFAAS General Assembly for endorsement.

Endorsed by AFAAS General Assembly. Dated 19th November 2021 at Munyonyo Speke Resort, Kampala, Uganda.

4.4 Recommendations and Call to Action

Call to Actions and Key recommendations to different actors:

1. Academia

- i) Impact Assessments of new technologies that have been developed
- ii) The required interdisciplinary professions should undergo mandatory extension courses
- iii) There is the need to include availability of facilities in the review of UG AEAS training curricula
- iv) Curricula should be developed to impart knowledge, practical skills, ability to communicate knowledge/ information, understanding of human behavioural change
- v) Pay more attention on the soft skills (functional capacity), as technical competency can be easily obtained without education. The curricula should clearly differentiate between technical capacities (skills) and functional capacities (partnership, professionalism, communication, value chain actors, knowledge of human behavior, etc)
- vi) There is the need to study the real target of change, that is, the farmer; the curriculum should not underestimate the farmer

2. Governments

- i) Develop, amend and/or operationalize Policy and Legal frameworks to guide professionalization
- ii) Review Primary School Curriculum on diets
- iii) Update and Upgrading of extension service providers
- iv) Include Primary schools in scaling up and as early agents of change
- v) Promote collaboration and partnerships of extension agents
- vi) Building and upgrading of rural road infrastructure especially feeder roads and bridges
- vii) Microfinance engagements to reduce risk and uncertainties of markets.
- viii) Support Strengthening of AEAS Country Fora
- ix) Develop a harmonised and standardised curriculum of E-Extension
- x) Professionalism should be defined in two categories; Technical and financial. AFAAS should play a major role for member countries to have an Extension policy
- xi) Government to key into Digital solutions with financial and regulatory support for sustainability
- xii) The Need for e-registration of AEAS actors, disaggregated into public, private, NGOs, etc
- xiii) Curricula should also have a component of post-school professionalization

3. Development Partners

- i) Support Scaling up initiatives and uptake of new technologies through Extension Agents to increase impact
- ii) Support development of Digital platforms
- iii) Consolidation of digital applications to reduce and avoid duplication
- iv) Establish clear Theories of Change (ToC)

- v) Scaling up mechanization
- vi) Promote and support sharing of experiences
- vii) Partners should follow country systems which must be derived from the guiding policy
- viii) There have been so much theoretical support and progress in extension practices, ICTs and professionalization issues. Development partners need to focus more on action and less on theories.
- ix) Collaborative development of a professionalization framework across Africa, which should be shared on the AFAAS network.

4. Civil Society Actors

- i) Improve and promote upscaling of nutrition programs and to incorporate the new technologies
- ii) Promote involvement of youth and women in the early stages of life especially through primary schools
- iii) Support review of local schools curriculum in Agriculture and Nutrition
- iv) Advocacy from scaling up of CSR activities by local business enterprises
- v) Scaling up education and control of post-harvest losses

5. Private Society Actors

- i) Embrace control of post-harvest losses as a business enterprise
- ii) Increase penetration of digital services and expand digital services beyond financial transactions only
- iii) Increase easy access to affordable financial products
- iv) Increase inclusivity of women & Youth in their products. Support ideas and initiatives from youth and women that make minimum business for future scalability and scale up profitability of their business through special business incentives.
- v) Increase easy access to capital finance
- vi) Provide Support for scaling up mechanization of agricultural production
- vii) Promote and support Village Based Agricultural Agents as last and first mile market support or facilitating business agents.
- viii) Need to promote digital solution in a collaborative way and that best meet farmer needs through research so that farmers are reached with informed decision in the last mile
- ix) There is need to train farmers involved in farmer to farmer approach to effectively reach out others in communities
- x) There is need for translating information in local languages to reach out to the local people in a practical way
- xi) Farmers need to be trained in costing extension as an input.

ANNEXES

5th AFRICA-WIDE AGRICULTURAL EXTENSION WEEK 2021 (BOOK OF ABSTRACTS)

Theme:

Innovative AEAS approaches for resilient and practical actions

The achievements of e-voucher system in delivery of Quality Agricultural inputs in Uganda
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Abstract

This paper presents the achievements of the e-voucher system, a digital platform for provision of agricultural input subsidies in Uganda. It presents the characteristics of the e-voucher program, describes the status of the program implementation and draws challenges, lessons and recommendations from this experience for future programs. The e-voucher was designed to reduce costs, streamline input distribution systems, improve establishment of agro-input markets to better serve the smallholder farmers, increase control and transparency and offer greater control over farmer targeting and minimize corruption associated with input matching grant schemes. The e-voucher also targeted to improve security of farmers' and government contributions, provide real time data and analytics as well as the capacity to distribute funds quickly. Further, the system was designed to improve monitoring and evaluation of subsidy utilization and impacts on users. Implemented in 57 districts distributed into 12 clusters, beneficiaries are receiving improved inputs with packages distributed for Maize, Beans, Rice, Coffee and Cassava crops. By August 2021, 437,314 farmers (97% of the target) 42% of whom are women had received subsidized inputs through the e-voucher program. As result of application

and utilization of agricultural inputs on approximately 220,785 acres, production and productivity of maize, beans, rice, cassava and coffee increased by between 69% to 233% (69% for beans, 86% for cassava, 95% for maize, 139% for Robusta coffee and 233% for rice). Enrolment of beneficiaries, redemption and utilization of inputs have been challenging. To enhance the functionality of this system massive awareness and education campaigns are required, strengthening of farmer groups and Area Commodity Cooperative Enterprises through improved farmer tracking maximizes membership to e-voucher beneficiaries. Additionally, agro-input dealers need to be closer to the beneficiaries as well as financial institutions to ensure access to microcredit and to facilitate redemption of vouchers. Building fraud proof database management and administration capacities is critical in ensuring proper management of the digital system. Policies are needed to limit distribution of free inputs to farmers will hasten the adoption of e-voucher. In conclusion use of e-voucher as a mechanism for access to quality agricultural inputs has potential of revolutionizing agricultural production and productivity if the bottlenecks associated with the system and right policies for the system to efficiently operate are put in place.

Strengthening Research and Extension linkages: Experiences from the Rice Promotion in Uganda

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Abstract:

In 2001, the Government of Uganda (GOU) undertook agricultural extension reform and established the National Agricultural Advisory Services (NAADS) that advocated for demand-driven, decentralized, client-led and private sector-serviced extension system. This was a departure from the traditional public agricultural extension system which was centralized, supply-driven and top-down. After more than a decade of implementation, the NAADS program was found not effective, and in 2014, the GOU introduced a new reform that is expected to be a more inclusive, better coordinated and decentralized Single Spine Agricultural Extension Service Delivery System. This led to the establishment of Directorate of Agricultural Extension Services (DAES) within Ministry of Agriculture, Animal Industry and Fisheries (MAAIF). Along these policy changes, Promotion of Rice Development Project phase 1 (PRiDe), a technical cooperation project of Japan International Cooperation Agency has been implemented in collaboration with NARO, NAADS and MAAIF from November 2011 to March 2019. The main activities of PRiDe were research supports in rice and extension of rice farming in rice potential districts. After the extension reforms in 2014, the project emphasizes strong linkages between research, extension and farmers. This

included joint research-extension planning, training materials and monitoring of farmers. Following its evaluation, the PRiDe project trained more than 52,000 farmers, increased the rice area by 19,000 ha and increased rice production by about 51,000 MT, annually. Additionally, a training unit at the National Crops Resources Research Institute (NaCRRRI) was established. This training unit remains the hub of research and extension linkage at the national level. All information and skills related to rice is collected and delivered to Zonal Agricultural Research and Development Institutes (ZARDIs) and extension through the training unit. Conversely, issues identified by extension and findings from ZARDIs are collected and collated at the NaCRRRI training unit where consolidation of the national rice research needs, information and technology is conducted. The 2nd phase of the PRiDe project (PRiDe II) that started in April 2019 is building on the gains from 1st phase and has put in place a strong framework of research-extension linkage within the institutional context of ZARDIs and the decentralized agricultural extension services. The ZARDIs were used as regional platform to promote extension activities with involvement of local government extension. The interaction with extension enabled researchers to understand the challenges faced by farmers.

Challenges identified in farmers' fields were first examined and addressed by the extension staff and farmers advised accordingly. Where the challenge required research input, it was recommended to the researcher and considered as a research priority in the ZARDI. The results from research would go back to the farmers through the training and extension process. This is the cycle PRiDe has followed in building the research and extension linkage. Based on the achievements

and experiences above, MAAIF has proposed institutionalization and scale-out of this framework to other strategic commodities through the establishment of an inclusive National Agricultural Innovations and Skills Enhancement (NAISE) Center. The NAISE envisioned to build capacity of research, extension and farmers for sustainable and progressive advancement of innovations in the agricultural sector.



MUSOMESA Field Schools (MFS): A New Tool for Delivering Technologies to Farmers and Increasing Productivity

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Abstract

Agricultural extension is under constant pressure to respond to ever-growing challenges of, and to show impact in, food production. By 2017, the ratio of extension workers to farmers in Uganda was 1:5000 as opposed to the global benchmark of 1:500. Hence, only a few farmers can directly reach an extension worker for professional guidance and assistance. Moreover, a weak linkage between agricultural research and extension means that knowledge generated by research does not effectively reach its intended beneficiaries. These weaknesses bear heavily on productivity and keep farmers trapped in a vicious cycle of poverty. The farmer field school (FFS) approach, which fosters practical learning, is a promising tool for delivering technologies that increase productivity to farmers. This paper presents a new extension model called the Musomesa Field Schools (MFS), which is a hybrid of the FFS and builds upon weaknesses of the FFS. Whereas the focus of the FFS is to train farmers, the MFS trains farmer trainers who then function as extension workers. The PRiDe II Project implemented the MFS through three key steps; 1) individuals were selected from among farmers and trained through experimentation, learning and practice at a rice mother demonstration garden. These individuals graduated as farmer trainers called MUSOMESA's. 2) The MUSOMESA's

were then supported to establish baby demonstration sites in their communities, train more farmers, and spread the new rice cultivation techniques. 3) The mother demonstration gardens were then maintained in the subsequent seasons to train a new set MUSOMESA's, and the cycle repeated. Within two years, more than 51 mother demonstration gardens were established in more than 18 districts of Uganda and used to train up to 640 MUSOMESA's and 2,838 farmers. Within this period, there has been a spillover of the recommended technologies within the target communities. The direct beneficiaries of the MUSOMESA Field School training managed to increase the lowland rice yields from 2.5 to 4.1 t ha⁻¹ and upland rice yields from 1.5 to 2.3 t ha⁻¹. The MUSOMESA Field School Model has also supported the building of solid networks of farmer-community. This study has shown that the MUSOMESA Field School Model is an effective tool for quickly and widely delivering rice technologies to farmers and increasing rice productivity. Therefore, the model may be adapted and replicated to other crop commodities and locations not covered by this study.

Farmer perception on the e-voucher management system (EVMS) as mechanisms for delivery of Quality Agro-inputs in Uganda

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Abstract

The e-voucher system is a digital platform-based solution for the distribution of farm inputs that instantly sends out electronic coupons (or vouchers) by SMS to the mobile terminals of a database of farmers notifying them of subsidies granted to them. In Uganda, the system is implemented by the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) with support from the World Bank/IDA under the Agriculture Cluster Development Project (ACDP) for provision of improved agricultural inputs to a target of 450,000 beneficiaries since 2018 in 57 Districts. By the end of 2019, a total of 53,709 beneficiaries had benefited from project by accessing inputs under the e-voucher. While farmers benefited from e-voucher by enrolling, ordering and redeeming inputs, no study had attempted to assess the perception of beneficiaries on the e-voucher system as mechanism for provision of inputs in comparison to related programs providing associated services. The data for the study was collected from five pilot clusters. A multistage sampling procedure was employed to get a representative sample of 1752 respondents representing each of the 5 clusters. To assess farmers perceptions of e-voucher beneficiaries, a three-point Likert

scale was used. Descriptive statistics including means, percentages and statistical inferences were used to assess the perceptions of beneficiaries on e-voucher. Overall, 57% of beneficiaries agreed that enrolment process into e-voucher ensured efficiency, reliability, timeliness, and lessened corruption in access to quality inputs. About 43% of the respondents agreed that e-voucher system was better than other competing programs projects in providing quality inputs. About 62% of the e-voucher beneficiaries received extension services to support their participation in the scheme. In conclusion accessing agricultural inputs under the e-voucher is better as it ensures efficiency, traceability, interaction with agro-input dealers, ownership of inputs, choice of selection of inputs, less political bias, less corruption. E-voucher is better than other competing programs in provision of improved inputs. The e-voucher system should be scaled out as a mechanism for provision of quality inputs.

Factors influencing utilization of municipal solid waste compost among urban farmers in western Uganda

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Abstract

Management of solid waste compost is one of the most serious environmental problems confronting urban governments in developing countries due to excessive urban population, impoverished collection rates and the consumption pattern. Composting has been touted as the most economical alternative for reducing municipal solid waste (MSW) volumes while releasing vital nutrients for the soils. With the aims to address the mounting solid waste management problems, reduce greenhouse gas emissions from landfills and use the generated compost as a soil conditioner for crop production, the Uganda National Environment Management Authority (NEMA) with support from the World Bank initiated a municipal solid waste composting project in 2005 under the Clean Development Mechanism (CDM) in nine municipalities. A study was conducted to determine the extension approaches that were used to promote MSW compost, the level of utilization of Municipal Solid Waste (MSW) compost among urban farmers and the factors that influenced use or nonuse. Data was collected using a cross-sectional survey from 359 and 361 randomly selected farmers in Mbarara and Fort Portal municipalities respectively. Key informant interviews were conducted to complement the survey results. Results showed that the main extension methods used were individual and

farmer group trainings, use of model farmers, radio outreach Programmes and farm visits. The main challenge reported by extension agents in promoting use of MSW compost was lack of scientific information regarding the quality, application methods and effect of the MSW compost on soil properties and crop yield. Although 60% of farmers in Mbarara and 68% of farmers in Fort Portal municipalities were aware of MSW compost produced by the municipalities, only 1.7% of the farmers in Fort Portal and 2.2% in Mbarara municipality utilized MSW compost. Annual farm income, access to soil conditioner, experience with the use of fertilizers, membership to a farmers' group and how much farmers are willing to pay for the MSW compost were the factors that significantly influenced farmers' decision to use MSW compost. The low level of uptake calls on the operators of the compost plants (municipalities) to find creative ways and methods of disseminating information about MSW compost albeit based on participatory processes that incorporate farmers preferences and concerns. To guarantee quality and to improve the adoption of compost generated at the CDM plants, the promotion of MSW Compost should be complimented with research on the quality of the material, the cost-benefit analysis and with guidelines on rates of application.

Itinéraire de mise œuvre d'une approche innovatrice de conseil agricole : cas de l'approche paysan-à-paysan au Cameroun

(Itinerary for the implementation of an innovative agricultural advisory approach: case of the farmer-to-farmer approach in Cameroon)

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Résumé

Les bénéfices des services de vulgarisation et de conseil agricoles sur les revenus des agriculteurs ont été prouvés. Seulement, dans plusieurs pays en développement à l'instar du Cameroun, ces services principalement fournis par le gouvernement sont insuffisamment octroyés. Afin d'atteindre durablement leurs objectifs, certaines organisations ont développé d'autres méthodes de conseil agricole en vue d'améliorer le processus de professionnalisation, mettant l'accent sur l'accompagnement axé sur la demande. La formation des paysans par les paysans est un exemple de ces méthodes. Cette approche est utilisée dans plusieurs pays en Afrique subsaharienne. Quoique ancienne au Cameroun, elle n'a pas encore un guide de mise en œuvre. Par conséquent, sa réplique et mise à l'échelle restent difficiles. Le présent guide présente les étapes de la mise en œuvre de la méthode de formation des paysans par les paysans. Il décrit également les principales activités des acteurs majeurs de l'offre. L'information a été recueillie auprès de vingt-cinq organisations utilisant l'approche et cent soixante paysans formateurs au Cameroun.

Entre autres étapes à suivre dans la mise œuvre, le guide décrit la préparation, la formation du personnel, la sélection et la formation des paysans formateurs, le suivi et le retrait. Les principales activités des paysans formateurs y sont aussi exposées, incluant la sensibilisation, la formation et la collecte des données. Ces activités se déroulent à plusieurs endroits et couvrent divers sujets. Au-delà de clarifier davantage ces aspects et présenter certains facteurs incitatifs utilisés par les organisations, le document présente les défis et suggère des pistes pour améliorer l'approche.

Les acteurs ont déclaré que la formation des paysans par les paysans pourrait être un outil complémentaire et efficace pour améliorer les services de vulgarisation et de conseil notamment dans le secteur agropastoral. A cet effet, les décideurs et les bailleurs de fonds devraient s'y appuyer pour améliorer durablement les conditions de vie des populations.

Stocking rate of extensive land reform livestock farmers during 2018/2019 drought; Bloemfontein grassland biome case study

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Abstract

Stocking rates must be considered as one of the most important determinants of ecological sustainability, sustainable livestock production, and economic returns for extensive livestock farming enterprises. Tenacious over-stocking is a major contributor to veld degradation. Nonetheless, to ensure sustainability of extensive livestock businesses and profitability, farmers must be in control of equating the animal forage requirements to seasonal forage production cycles and natural periods of forage scarcities. The results of not equating large stock unit (LSU) numbers to forage availability are detrimental to natural veld. Overstocking leads to detrimental removal of leaf area and thus retards the ability of plants to regrow. The study was done to determine the average stocking rate among land reform beneficiary farmers specializing in livestock production, in order to establish differences between calving percentage, fodder availability and mortality rate of sampled farmers, and to compare forage scarcities of Land Reform farms with their neighboring farms. Twenty-nine land reform extensive livestock farmers, representing 30.8% of the total land-reform farmers in Bloemfontein, were randomly sampled. LSU's were calculated using metabolic body weights. Multi-methodological research approach was

employed, namely qualitative and quantitative. Analysis of variance (ANOVA) was used to compare the mean values and mean differences between stocking rate and mortalities as well as between calving percentage and fodder availability. The rainfall data was summarized as study area rainfall differences for a period of ten years. The average stocking rate was 5.9 ha/LSU in comparison with the Departmental grazing capacity norm of 6 ha/LSU for rangeland in good condition. However, 31% of the sampled farms were found to be severely overstocked and the mortality rate on these farms, in relation to grazing capacity of 6 ha/LSU, was significantly higher ($P < 0.05$) than the mortalities on the other remaining farms. Natural available fodder was found to be heterogeneous, with 37.9% of the respondents observing their available fodder as worse than that of their neighbors. The total mortality of 176.77 LSUs was recorded. The findings will assist the local extension personnel to prevent future rangeland condition degradation, and to increase land reform farmers' productivity. The study concluded that training is paramount to farmers' development and further recommends methods to do so.

Agricultural Extension, Costs and Return of Agricultural Extension

Michael Jenrich

Abstract

Agricultural extension is the attempt to promote and back adoption of new technologies, practices, research findings, relevant knowledge and related practices to farmers. The aim is to promote practice uptake, to improve agricultural systems, productivity, efficiency, profits and sustainability. Despite heavy investment into extension, specifically in the small holder sector small holder productivity remains low, in many contexts. With productivity well below potential and viability levels, the importance and justification for investments into extension can be and is questioned. Therefore, the aim of extension to increase and stabilize productivity and consequently viability and profitability of all actors along the value chain, is questioned as well.

Currently public and private sector use a number of different extension models to promote their respective messages. Evidence from parallel set demos and better farmers indicate that the uptake of the extension messages contributed to increased productivity and returns. Increasing efficiency and viability does depend on higher productivity, based on better farming

practices and knowledge provided through extension. Thus, neutral and economic decision on roll-out, continued investments into extension services and modification of extension would depend on its financial viability (return on investment). For private (but also public) sector to continue investing and expanding their respective investments into extension services will depend on the return on investment and the ability of profit - loss verification. At the moment, there are no existing and utilized ways to quantify the application, uptake and resulting impact of extension. Due to this, the value of extension cannot be quantified in terms of productive and monetary gains, or its return per farmer or per area. With no operational or feasible models to calculate the monetary impact and return of extension, costs profit becomes speculative. A model to calculate cost profit model based on the view, that the provision of extension services is presented as an input in any farming enterprise and comparing it with achieved returns is presented.

Digital Marketplace for farm inputs sourcing, last-mile delivery, e-Extension services and produce market linkages

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Theme ii. Towards professionalization of AEAS systems in Africa: Where are we?

Effectiveness of Extension Workers' Motivation of Rural Dwellers for Agri-preneur Activities in Edo State, Nigeria

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Abstract

Effective agricultural extension and advisory services (AEAS) requires motivation of professionals and rural dwellers to engage in agripreneur activities (AAs) that enhance farmers' business outlook so as to improve their living standard. However, rural dwellers could not be said to have fully utilized the opportunities afforded them through AEAS. This could be attributed to poor motivation from the extension system. The study was conducted to assess the effectiveness of extension workers' motivation of rural dwellers for agripreneur activities. Specifically, the characteristics of extension workers and their agripreneur activities, rural dwellers' motivation by extension workers, their perceived effectiveness and the challenges to effective motivation of rural dwellers for agripreneur activities were collected. A population study of the 93 agricultural extension personnel in the Edo State Agricultural Development Programme (ESADP) across three zones was undertaken. Data were collected through the use of structured questionnaire administered to the extension workers. Data collected were analyzed using descriptive and inferential statistical tools. Results show that extension agents implemented various agripreneur activities to varying degrees including extension methods, entrepreneurial development of livestock, arable and tree crops production,

fisheries and agroforestry activities, needs assessment, group mobilization, formation and risk mitigation and adaptation. Results revealed that the significantly used motivation measures by extension workers meeting various needs ($\bar{x} \geq 2.5$) (socio- psychological needs), recognition of good performance ($\bar{x} = 3.33$), supervision of activities ($\bar{x} = 3.07$), opportunity to advance ($\bar{x} = 2.88$) and provision of working refreshment ($\bar{x} = 2.87$). Provision of information ($\bar{x} = 3.36$) and resources to work with ($\bar{x} = 3.31$), were perceived to be the most effective forms of motivation. The challenges faced by extension workers in motivating rural dwellers included inadequate socio-psychological skills and low technical skills in some agriculture subsectors ($\bar{x} \geq 2.5$). There were significant relationships between the socioeconomic characteristics of extension agents: age ($r = 0.216$; $p = 0.019$), working experience ($r = 0.176$; $p = 0.046$) and monthly salary ($r = 0.222$; $p = 0.016$) and their perceived effectiveness in motivating rural dwellers for AAs. The study concludes that the older, more experienced and higher salary earners motivated rural dwellers for AAs the more. However, social and technical skills were still needed. Continuous training on social and technical skills in AAs and adequate measures to retain experienced extension workers could ensure professionalism and effectively motivate rural dwellers for sustainable agricultural development in Edo State.

“E-Diary”: A New Digital Tool to Facilitate Supervision and Management of Public Agricultural Extension Services

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Abstract

Agricultural extension is one of the main drivers of agricultural production and productivity. However, in many developing countries, it is a challenge to establish a well-managed and accountable agricultural extension system. This is especially for the public systems which are not only characterized by hierarchical, supply-driven and top-down management approaches, but also deploy large numbers of extension agents who work in geographically dispersed, remote areas and with large numbers of beneficiaries (farmers and other value chain actors), thereby making supervision difficult. Lack of resources and robust follow up mechanisms contribute to the long-standing problems of moonlighting, shirking and absenteeism among extension staff. Digital tools hold great promise for improving the supervision, management and accountability of agricultural extension services. A study was conducted to assess the potential of using digital tools in strengthening the management and accountability of public agricultural extension services. Individual face-to-face interviews and focus group discussions were used to collect data, which

was analyzed using the content analysis. The results showed that digital tools such as the E-diary, when coupled with incentive structures, can strengthen the management and accountability of agricultural extension. Due to its features (GPS, activity photo and a beneficiary verification mechanism), the E-diary enhanced extension agents to report in real-time and permit supervisors to remotely follow-up the activities of the extension agents in real-time. The E-diary eliminated the travel costs and time associated with the conventional system of physically supervising large numbers of field agents working in remote, widely dispersed geographic areas. Despite its unique potential, incentives must accompany extension agents use of the E-diary, while inaccessibility to electricity curtails its use. Their lack of an inbuilt mechanism for the beneficiaries to automatically verify the reported activities and rate the quality of services received. While the use of the e-dairy should be scaled out, power banks or solar chargers would be needed to ensure utility. Designing for beneficiary verification and rating of the quality of services received is needed.

Professionalization of AEAS actors through the New Extensionist Learning Kit (NELK): Case study of Cameroon

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Abstract

During the years 1960 and 1985, public authorities in Cameroon used to have five-year plans of development. Development stakeholders were called to follow instructions given by the government. The economic crisis faced in the 90s brought out new kinds of relationships between the State and small holder farmers. In fact, through the Structural Adjustment Program, the State withdrew itself from extension services. Therefore, other private actors, nongovernmental and professional organizations progressively started to play the functions used to be done by the State to ensure those services. In the process, many agricultural extension approaches have been deployed. Agricultural extension objectives have evolved, from production to the farmer production project analysis. With the difficulties faced by agricultural and rural services, the biggest challenge is no more just to popularize innovations but to give advices on how to improve the productivity. Cameroon Forum for Agricultural Advisory Services (CAMFAAS) followed the vision of the African Forum for Agricultural Advisory Services (AFAAS)

and the Global Forum for Rural Advisory Services (GFRAS) to improve the efficiency of Agricultural Extension and Advisory Services (AEAS) and Rural Advisory Services (RAS) to better serve rural producers as they fight of hunger and poverty. Since 2018 three training workshops on the New Extension Learning Kit (NELK) have been organized by CAMFAAS. Each training workshop lasted five days and covered 15 modules. The delivery involved a lecture, questions and answers, and participatory activities facilitated by a staff from GFRAS and had up to 50 self-funded participants. Supporting documents for training and terms of reference for the working groups were provided and participants received certificates of participation. In 2020, a private company requested for a similar training 50 rural advisers. In total, 150 Extensionists have been trained over three years. CAMFAAS has been able to offer professional training at a cost for 50 participants over 5 days, making it efficient and cost effective.

Country forum as a tool to contribute in professionalizing advisory services: Experience from Cameroon Forum for Agricultural advisory services (CAMFAAS) under the context of COVID-19.

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Abstract

The role of agricultural extension and advisory services has been widely acknowledged especially as a tool to improve professionalization of agricultural sector. In Cameroon, the government in its national development strategy highlighted the role of advisory agencies in the development of the rural sector. However, with the COVID-19 pandemic, the provision of extension and advisory services has drastically decreased and few strategies that maintain the professionalization of extension while addressing the situation have been developed. This situation has incited CAMFAAS to promote its vision of professionalization of agricultural extension and advisory services. A presentation of this experience is the focus of this paper. Using experience capitalization illustrations of the professionalization process of agricultural advisory services are presented. Initially, networking with organizations from the public sector and from private sectors local and International NGOs was started, leading to formation of forum with board members. Five technical working groups were created, and together with World Agroforestry Centre (for organization) and Ministry of Agriculture and Rural Development (for patronage), a GRAS annual meeting was held. Two trainings on the new extensionist kits targeting over one hundred participants were conducted. A web

site and communication platforms were also created. To manage the COVID-19 challenges strengthening of technical working groups particularly the climate smart agriculture one was formed. A zoom training took place, promotion of public private partnership; training on snail farming, mobilizing new forum members, support to youth organizations. There was also promotion of the relevance of professional AEAS among private Universities students and staff, International Research organizations, a number of local NGOs and public sector ministries. These efforts led to Government inviting CAMFAAS to contribute and integrate professional extension into the national development strategy. Experience from CAMFAAS shows that a country Forum can play a key role in promoting professionalization of extension and advisory services even under challenging contexts. Despite the challenges of initiating multi-actor partnerships, focal persons and collaborators need to persevere in involving other actors in collective activities as part of the learning process. There is need to deepen networking among actors in order to professionalize extension and advisory services and network. Country fora need to take advantage of the continental, global and donor support to make their efforts to professionalization of advisory services a success. Finally, the private sector must be involved.

Theme iii. Agro-industrialisation in the context of trade regimes: Implications for AEAS

Promotion of Soya bean (GLYCIMEMAX) improved variety (TGX), value addition and marketing in Ethiopia

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Abstract

Ethiopia's annual soybean production was around 120,000 mt which should increase by 5000 mt in response to the growing local demand. The main soya bean production areas are in western part of Ethiopia. About 95% of Ethiopia's soya bean export is to India, China, Vietnam, Canada and Pakistan. Soybean is a multipurpose crop with increasing demand based on its usefulness as a feed, food & fuel crop. The crop is an alternative to addressing malnutrition among communities as it comprises 36% protein, 20% oil, 30% carbohydrates, dietary fibre, minerals, and vitamins. Despite these, soybean production remains very low in Ethiopia. With increased soybean adoption and yield Ethiopia will become soybean demand-driven society rather than supply-driven, given that soybean demand is proliferating. Growing demand for soybeans offers a significant opportunity for smallholder farmers (SHFs) to increase their incomes and nutrition. SHFs however face challenges to realize full potentials of soybean crop across the value chain. In line with this, a project was started to increase production

from 1800 kg/ha to 2500 kg/ha, add value on soybean while reducing post-harvest losses. Using an action research and mixed methods approach involving experiments comparing new varieties with local varieties as well as conventional and new practices, 120 farmers were engaged. Results show that following the promotion, 20% of targeted farmers produced an average of 1750 mt per hectare while 80% produced an average of 2350 mt per hectare. After introduction and use of pics bag, storage loss reduced by 6% leading to contractual business linkages between farmers and a food processing entity - BICA factory. In conclusion, the action research process of promoting a highly performing variety, accompanied with extension support led to increased productivity. Reducing post-harvest losses and linking with a viable market due to quality of the produce have also been possible.

Uganda Agri business Alliance Agro-industrialization: The role of Agricultural extension and advisory services

Edward Katende Uganda Agribusiness Alliance

Strengthening Provision of Extension Services to Boost Agro- Industrialization for the Cocoa Sector in Uganda

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Abstract

This paper presents the status of Agro-industrialization efforts for the cocoa sector in Uganda and the rationale to boost its promotion for industrial growth, employment opportunities, and improved rural livelihoods. Uganda is ranked the 12th of the global cocoa production. Cocoa production has expanded from 6 traditional production districts to 26 Districts and given the high value attached to cocoa beans. Over 70,000 small-scale farmers dominate Cocoa production with 90% operating an average of 1-2 acres of cocoa plantations with an annual yield of between 350 and 540 kgs/acre.

Cocoa exports have moved from 16,094 MTs in 2009/10 to 35,513 MTs 2019/2020. There are 29 Cocoa farmer organizations and/or cooperatives, 40 local cocoa trading companies and exporting companies. Despite the growing domestic and regional market for cocoa products the annual cocoa production of 35,000MTs is way below Uganda's annual global demand of 250,000MTs. 99% of the cocoa is unprocessed.

The private sector leads in providing extension and advisory services while the Ministry of Agriculture Animal Industry and Fishers

together with the National Coffee Research Institute are reaching cocoa farmers with timely and reliable advice and training on production and marketing practices. Over 66 billion Ugandan shillings have been invested by the private sector players into cocoa promotion activities in the last 10 years in extension and advisory services involving 29 Cocoa farmer organizations, 40 local cocoa trading companies and exporting companies. These mobilize farmers, provide seedlings, postharvest handling equipment and practices and support ongoing varietal improvement. To harness the industrialization potential in the cocoa sector, access to quality extension and advisory services is key and should target moving from the current production of 35,000MTs to 150,000MTs. This will further promote additional 5000 rural employment opportunities through cottage industries, extension and advisory services and other Cocoa value addition and promotional opportunities within the next 10th year.



Impact of dehulling of plantain PIF plants (*Musa paradisiaca*) on physiological properties and transportation cost

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Abstract

Plantain is an important food crop in Cameroon. It plays an essential role in the daily diet of populations and is the third most important staple food after rice and cassava. Economically, plantain represents a source of income diversification for smallholder farmers. Cameroon's production was estimated to be more than 2,500,639 tons in 2017, for a cultivation area of about 300,000 km², spread over five Regions. For more than a decade in Cameroon, the development of this sector has been based on the multiplication and production of seeds using the PIF method. However, there are very frequently considerable losses due not only to shock during handling, but also to very high transport costs between the specialized seedling production sites and the plantation localities. The objective of this study was to evaluate the impact of dehulling PIF plants in the nursery on the cost of transportation and the effects of handling on the physiological characteristics of plants in field. In this study, 2,500 seedlings produced by the PIF

method in two MINADER certified nurseries in Yaoundé were used to test the effectiveness of the method. Results showed that, for 1200 dehulled seedlings (density of one hectare of plantain in pure culture) the expenditure related to the transport comes to 5000 FCFA instead of 50000 FCFA (USD 1 = FCFA 556.50) in the case of a hiring of vehicle for an ordinary transport of seedlings in bags on a distance of 60 Km that is to say a reduction of 95% on the cost of the transport. The recovery of seedlings in the field was very rapid after planting with a recovery rate of about 96% in both sites. It should be noted that the handling of the dehulled seedlings is easier and less painful in the field when using this technique. From the above results, it is possible to conclude that with reservation that the dehulling of plantain PIF plants has been proven and it would be beneficial to popularize this technique.

Agro industrialization implications for Agricultural extension and advisory services in Uganda

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Abstract

Agriculture sector is undeniably vital for Africa's growing industrialization through generating raw inputs needed to fuel the small and growing industrial sector dominated by agro-based manufacturing enterprises. Many African Governments have shifted their attention to supporting the agricultural sector through agro-industrialization. At the continental level, many African countries ratified to the Africa Continent Free Trade Area (AfCFTA) which has the potential to unite more than 1.2 billion people in a \$2.5 trillion economic bloc to offer a market for agro-processed products. Intra-African trade in food and agricultural products is estimated to increase by 20-30%. Despite the importance of agro-industrialization, progress in most African countries and Uganda has been minimal, and to a large extent non-inclusive due to various challenges like insufficient supply of raw-materials due to low production as the major constraint to the performance of Agro-industries to produce at full capacity. Whereas the contribution of agro-processing to total manufacturing has increased from 20.7% to 39.3%, most of the agro-processing industries are operating below installed capacity, coffee operating at 40%, Fish at less than 30%, Tea at 60% and Beef at less than 20% among others. Within the face of agro-industrialization, demand for processed agricultural products and ready-prepared foods continue to increase due to urbanization. The nature and increasing demand for agro-processed products offer opportunities for industrialization in Africa. However, the disconnect between agricultural production and the agro-industries is

highly due to the poor performance of the Agricultural extension and advisory services which has struggled for many years. Using primary, secondary data and qualitative data, interviews were carried out with stakeholders in the agricultural sector to understand the on-ground situation. The Agriculture Extension and Advisory Services (AEAS) have a critical role to play in addressing these challenges and tapping into the opportunities. Developing industrialization in the continent also requires strengthening of extension service institutions as it is modest especially in the EAC region. A major concern is that the few existing extension service institutions lack the required size, the necessary resources and the requisite technical capability to address the issues impacting on production and Agro-industrialization in Uganda. As a result, some functions are not fulfilled adequately the most prominent being research, development and design, standardization and conformity to standards. The issue of productivity, competitiveness, provision of industry extension services and technical consultancy especially for small and medium enterprises has not been fully addressed, partly due to weak public and private sector support organization. Institution building should therefore be given priority as it constitutes an important strategic and tactical tool for ensuring a sustainable industrialization process and the extension and advisory services should be allocated more funding and monitored closely so that farmers benefit from this initiative to enhance their production and hence better performance of Agro-industrialization.

Second Look at Subsistence Agricultural Economy: Contextualizing Agro-Industrialization in Existing Trade Regimes and Implications for AEAS

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Abstract

The paradoxes and misconstruction of subsistence production levels of living, agriculture, economy, and peasantry have led to policy and operational problems and missed opportunities within existing trade regimes that lead to agro industrialization. To address this, an innovation systems approach can play a role in evolving subsistence agricultural economy to agro industrialization. Using a blended arrangement of the modern and indigenous innovation system a case is presented of a 20-year-old Industrial Biotechnology Innovation Platform. In this, the role of AEAS in leveraging the activities carried out through societally determined patterns of economic organization for agro industrialization is demonstrated. As a result, best practices including: technology innovation clinics, facilitated and integrated internships, mentoring and coaching, research, product and process development, and business development services have emerged. The importance of tacit (sometimes held as secrets) and codified knowledge and technology to the success of the system is

highlighted. The idea of building the domestic market under the Buy Uganda Build Uganda in which quality management systems should be build first before heading for the external market is presented. The AEAS should focus on continuous research, product and process development to develop new and extended markets for agricultural produce. Three product of increasing science content, technological complexity and intensity to earn more wealth are recommended including: Lactic acid, polylactic acid and bioplastics from cassava, Xanthan gum also from cassava and related products, enzymes as process aids, in textiles, and for medical application. These exemplify industrial development that link agriculture to chemical industry, health, food and nutrition security and other heavy industries. South Africa, Germany and Britain exhibit sectors that engage small manufacturing units that make high value products. There example needs to be emulated as well as the role of AEAS is the process including avoid the demand for highly skilled management that is currently either none existent or unaffordable.

Theme: iv. Harnessing agripreneurship opportunities for youth and women
Implementation and dissemination of Agripreneurship among Youth of Sudan

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Abstract

Youth unemployment is a global problem especially in African continent; therefore, it has become an important political agenda for the majority of African countries. The high rates of unemployment and poverty among African youth have made negative consequences for the development of Africa such as the migration of young people to the developed world or the oil-rich Arab Gulf countries. The majority of African countries have made progress in youth policies. These policies were used to increase employment opportunities for youth because they increase the chances that a young person with the right skills will find work by increasing the demand for his or her labor. The agriculture sector has considerable potential future to provide gainful employment opportunities to a large number of young people if it is supported with increased investment and conducive legal and policy frameworks. The first step to introduce youth to agriculture is to establish policies that will provide youth with the tools they need to empower them as agricultural entrepreneurs, as well as an environment conducive to seeing agriculture as a suitable place for them. Sudan was one of the first African countries to have the approval of the African

Development Bank to implement the Youth Empowerment Programme in the agricultural entrepreneurship sector since 2016. The study sought to investigate the impact of the implementation and dissemination of Agripreneurship among the youth of Sudan. The study was based on secondary data, the results, and discussion were based on qualitative data putting the primary focus on the case of Sudan. The results showed an increase in income of graduates, some of whom developed ideas for pioneering projects, the programme provides a number of regular jobs and seasonal jobs for unskilled labor, and graduation of the graduates from the cycle of unemployment and disposal of psychological and social effects. Also, the programme was faced many obstacles. From this study, we can conclude that the majority of projects implemented by Sudanese youth in various states of the country increased the income of graduates and inspired them to engage in agribusiness work. Thus, the study recommends that the graduate's employment programme should continue for more agricultural entrepreneurship among the youth in Sudan.

Harnessing Agripreneurship amongst the youth through digital extension services

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Abstract

Many youths regard agriculture as an activity for the older generation; a chore where there are no economic opportunities as young people. After all, many of them grew up farming and would rather leave the rural areas at the slightest opportunity; hence rural-urban migration. Yet activities like vegetable farming (Agripreneurship) can offer real alternative employment/income to the youth. Harnessing Agripreneurship amongst the youth requires innovative/modern approaches that make agriculture and allied extension services more attractive. East-West Seed Knowledge Transfer (EWS-KT) is an organization that provides extension services in the vegetable sector and one of its observations is that use of digital media (Facebook, WhatsApp groups, YouTube, <https://twitter.com/eastwestseed/status/1438793553455443970?s=20>, <https://growhow.eastwestseed.com/> etc) in extension attracts the youth. While use of digital media is not a substitute for conventional extension with “boots on the ground” (something EWS-KT Transfer is doing very well in the vegetable sectors in Nigeria, Tanzania and Uganda and in Asia), it is certainly an additional arsenal and an attractant to the youths. This is even more important in this era of COVID-19 and EWS-KT has expanded its use. In the year 2020, EWS-KT piloted a web-based app Funzi in Nigeria – to share knowledge on seedling production to farmers in Nigeria. The project was designed by

EWS-KT, Wageningen University and Research (WUR) and Funzi. EWS-KT and WUR prepared the content; Funzi adapted it to the media and learning style (learning via mobile phone; text, images, image only, quizzes and certificate). The course was translated into Hausa by EWS-KT. The main targeted audience was Hausa learners in and around the area where KT works in Kaduna and Kano states. The English course quickly reached 1,500 learners in other parts of Nigeria. On the Funzi platform, English and Hausa courses were available for 5,300 learners, 69% of whom were youths with secondary or tertiary education, internet access with 66% of them owning smartphones. 4,700 learners successfully completed the course. The learners liked the course and the platform are ready to access more courses even at a fee. The participants expressed learning on quality of seeds, open bed seedling production, but less on container seedling production. Use of digital media has potential to expand knowledge transfer in agriculture to reach millions of farmers and specially to harness Agripreneurship amongst the youths. There is real potential to expand mobile learning programs like Funzi in Africa. Such technology allows knowledge/information to be in the farmer’s/youth’s hands.

Passion as a Key Driver to Youth Agripreneurship

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Abstract

Sub-Saharan Africa is reported to concurrently have the highest population growth rate and poverty levels in the world, impelling the hotly contested, undetermined demographic dividend debate on Sub-Saharan Africa. Most developing countries heavily depend on agriculture, with at least twice as effective in reducing poverty compared with other sectors of the economy. Empirical evidence also suggests that entrepreneurship is an effective catalyst for poverty reduction and economic development. This implies that developing countries can benefit from a thoughtful strategy that engages both the youth and agriculture. The poor attitude of the youth towards agriculture is one of the outstanding challenges of engaging youth in agribusiness and some studies have shown that even when youth receive agricultural training, they seek employment in non-agricultural sectors. Much as entrepreneurship can inform agribusiness practice, there has been a disjoint between the two disciplines. For example, the role of entrepreneurial passion well acknowledged in influencing entrepreneurial behavioral attitude and business success has not been applied in the agricultural sector. The purpose of the study was to explore how entrepreneurial passion enhances entrepreneurial farming among the youth in a developing country context. The study used a case study approach to capture voices and insights from youth agripreneurs in Uganda. Basing on in-depth interviews the study explores how entrepreneurial passion enhances entrepreneurial farming among the youth in a developing country context. Data was analyzed using Gioia's qualitative analytical techniques to induce aggregate dimensions

of entrepreneurial farming. Furthermore, thematic and synthesized coherence analytical techniques were applied to develop and test the emerging hypotheses. The study reveals that entrepreneurial passion is a key driver of youth Agripreneurship. Entrepreneurial farming is perceived as venture creation, commercialization and diversification. Entrepreneurial passion, which is exhibited in form of positive emotions towards Agri-venturing and role identity with a profit motive in agriculture directly influences behavioral attitude in form of persistence, financial discipline, innovativeness and alertness. Behavioral attitude in turn influences further training as well as family support, which eventually translate into entrepreneurial farming. Perceived passion also fosters family support in form of land, labor, finances and marketing and participation in training Programmes where the youth acquire skills, become part of vital networks, access role models and identify new opportunities. The study suggests that entrepreneurial passion can be enhanced through exposure to different events, activities and actors that create the positive emotions about agriculture. The study addresses a critical area in youth Agripreneurship especially the topic of "mind set change". It suggests that targeting youth with entrepreneurial passion for Agri-venturing will foster entrepreneurial farming. This has implications for effective agricultural development programming and overall harnessing of the demographic dividend in Africa's agriculture sector. The study also extends the entrepreneurial passion debate to the less explored agricultural sector.



Evaluation of the potential contribution of soybean cheese production to the improvement of women's livelihoods in Southern Benin

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Abstract

Women engaged in processing of soybean into cheese in Southern Benin are not yet taking advantage of the potential of this activity. This study aims to show how the production of soybean cheese that meets the market needs can improve the livelihoods of women engaged in processing. A survey was conducted among 192 processors of soybean cheese and 492 consumers selected randomly in the districts of Abomey-Calavi, Cotonou and Porto-Novo (Southern Benin). Data were collected through structured interviews with questionnaires. The typology of the production units was developed by using a Factorial Analysis of Mixed Data combined with a Hierarchical Classification on Principal Components. The operating accounts of the various clusters of production units were established to assess the financial profitability of processing soybean into cheese. The experimental choices method was used to estimate the willingness to pay (WTP) of potential consumers for soybean cheese. The analyzes revealed three clusters of soybean cheese production units. All the clusters were profitable with an added value between FCFA 181 and 315 (USD 1 = FCFA 556.50) per kg of soybean cheese sold. The capital remuneration rate (TRC) of the clusters varied between 21.6 and 41.66%. Consumers were willing to pay a significantly higher price for the attributes of soybean cheese: "raw" (FCFA

44) and "pre-seasoned" (FCFA 20), "tender texture" (FCFA 24) and "soft texture" (FCFA 23). They also agreed to pay more for a product with a shelf life ranging from one week (FCFA 8) to one month (FCFA 34). Investments in the production of soybean cheese that meets the market needs are expected to improve the TRC in the different clusters of soybean cheese production units. The study highlighted the need to support women who are producing soybean cheese. This support includes training on proven production techniques of soybean cheese. Supporting collective action among processors, raising awareness of benefits in terms of considering market needs, and setting up an innovation platform to identify upgrading needs are important policy issues. The leader in the implementation of these various actions is the primary responsibility of the government and its departments in their strategies for poverty alleviation, the pro-poor growth, and women empowerment. Non-Governmental Organizations, Agricultural Extension and Advisory Services (AEAS), and other facilitators of agricultural development could also contribute. Although this study was conducted in Southern Benin, the subject dealt with is of practical interest to all policy makers in Sub-Saharan Africa, given the similarities in food systems and concerns on market access for disadvantaged groups such as women.

Engaging Youth in Agribusiness Through Private Sector Extension and Advisory Services: Lessons from Rwanda and Uganda

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Abstract

In Sub-Saharan Africa there is a burgeoning youth population raising concerns for their employability. An opportunity exists with the rapid growth of private sector led commercial agriculture and its potential for providing effective extension and advisory services (EAS) in an economically sustainable basis. Engaging youth in EAS, both as providers and recipients, can help address the employment challenge. However, a knowledge gap on how the private sector EAS engages youth exists. A research was conducted using a case study approach using mainly interviews. Up to 60 key informants from 40 private companies and organizations in Uganda and Rwanda partnering with the private sector, development projects, government agencies, NGOs and policymakers were interviewed. Results showed that in both countries, government policies reinforced with multi-sectoral and multi-partner strategies paved way for promoting youth engagement in private sector EAS. Across the two countries, four types of youth-in-EAS initiatives led by private companies were identified: hosting interns, hiring youth as extension staff, engaging youth as input and output marketeers or customers, and training extension staff or farmers under contract arrangements. Bundling of services using ICTs including online video extension reinforced some efforts. Five types of youth-

in-private sector EAS initiatives under a public-private partnership, called "heterogenous, private youth-in-EAS" interventions emerged. These included training and coaching youths to become private entrepreneurs, providing credit and other services to young entrepreneurs, organizing internships locally and overseas, recruiting paraprofessionals who become private service providers and awarding youth inclusion grants to private companies. Conditions for targeting the youth varied from one intervention strategy to the other, and so did the youth segments including gender categories successfully reached. Internship programs primarily benefit university-educated youth, farming interventions benefit youth with access to land and markets, and youth programs disproportionately helped young men compared to young women. Lack of interest, low motivation, low capacities, poor mindsets, lack of capital, lack of soft skills in handling the youth and overloaded programs challenged private sector AES for the youth. Private sector AES for and by the youth is using multiple and iterative strategies, with success depending on the level of government patronage/support, level of bridging social, education, gender, access to productive resources such as land and having viable markets. The promising initiatives and forms of youth agency developed by private sector AES unique and common to both countries and lessons for AES globally are shared.

Theme: v. AEAS resilience to pandemics and emergencies: Lessons across Africa

Delivery of Agricultural Extension Curriculum during COVID 19 pandemic: E-learning platforms in SAA partner Universities in Ethiopia & Mali.

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Abstract

Many educational institutions including universities and colleges are initiating distance or e-learning Programmes to continue classroom work during the ongoing Covid 19 pandemic. Sasakawa Africa Association (SAA) conducted a rapid appraisal in 2020 to explore the influences of COVID-19 on teaching learning process. Results indicated that the closure immediately affected completion of lectures, tutorial sessions and action researches. Lecturers indicated to have access to poor, though affordable and broadband internet connectivity. Access and reliability of internet by students is poor. Study suggests the need for paradigm shift in university curricula content mode of delivery from the traditional face-to-face classroom-based teaching learning process to that of multiple media uses. SAA Management then decided to provide ICT equipment and technical supports with partner Universities to institutionalize use of online multi-media in educational program delivery, as the future is uncertain. The pilot project that started in June 2020 was implemented in Barhir Dar University in Ethiopia and Segou University in Mali. This paper examines views of lecturers and students on the e-learning platform as a way of curriculum delivery in 2 universities during COVID 19 pandemic; the knowledge and skills acquired from the various TOTs organized for lecturers; the needed ICT equipment tools for online platform; importance of the e-learning

platforms and its sustainability as well as the challenges faced by lecturers and students in the use of the online platform. The present study involves all the faculty lecturers from the two Universities that are participating in the e-learning delivery mode (82) in total and the 253 students that have participated in online training at the two Universities. The results were analyzed using descriptive statistics such as frequency counts, mean and Spearman Rho ranking. The results showed that lecturers and student (100%) perceived the e-learning delivery mode as the complementary to the face-to-face mode and makes for blended learning which is needed to cope with uncertainties. It reveals that lecturers have acquired skills in online platform management (mean 3.45); video production for online delivery (3.52= mean); training on webinar applications (zoom, google meet, WhatsApp and Moodle) (3.41= mean); Digitalization of modules (3,35= mean); video production (3,21= mean); photography (3,00=mean). Technical modules were developed to accompany the TOTs. Instability of internet, power failure, attitude of lecturers, cost of smart phones for students were challenges. Agricultural Extension curriculum delivery has to follow the online delivery trend & the blended form. Strengthening higher learning institution collaboration with international NGOs to cope-up risks in teaching learning during vulnerability conditions is important.

Fencing lands to Enhanced Climate change Resilience, promoting biodiversity regeneration and Improved Livelihoods of climate change in Makueni County.

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Abstract

Kenya is a food insecure country, weather patterns are drastically changing and people are losing livelihoods and earnings when their lands dry, water for domestic supply lacks and livestock die further frustrating livelihoods of the poor. This paper briefly discusses Fencing of lands as prerequisite to biodiversity protection and faster water retention mechanism, through tree planting, enhancing CO₂ sequestration as trees, shrubs and

vegetation's find suitable environment to grow. Baringo and Makueni County are characterized by unsustainable agriculture, environmental degradation resulting from soil erosion, high poverty levels and food insecurity due to unpredictable dry spells and climate change. The present paper illustrates that Fencing of lands improves agricultural land management practices, biodiversity growth increased soil carbon sequestration.



The effects of the COVID-19 Lock down on Agricultural Extension and Advisory Services (AEAS) activities in Uganda

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Abstract

Since the COVID 19 outbreak, the government of Uganda placed a lockdown on movements to limit the spread of the virus that causes the disease. The government highlighted the agricultural sector as one of the key drivers of the economy and encouraged farming to continue as long as Standard Operating Procedures were observed. There was need to find out how Agricultural Extension and Advisory services (AEAS) were going to operate in such conditions. The Uganda Forum for Agricultural Advisory Services (UFAAS) conducted an electronic survey involving 104 respondents mainly men to identify the key farmers' and AEAS actor needs during the lock down, how AEAS actors were reaching their clients, what AEAS actors and their clients are doing more of than before and identify

the challenges, needs, opportunities, and ways forward for extension service provision in the early days of COVID 19. The quick online and social media-based survey established that up to 90% of the respondents continued providing AEAS service using more of phone calling, social media communication with their clients. Results revealed a lot of learning between farmers and actors on how to engage with ICT driven AEAS. Challenges of increased expenses on calling and data time, difficulties in reaching clients, capacity, resources and lack of government transport permits were also reported. Coping mechanisms to these constraints have largely been electronic based. More lessons on the AEAS actors operated within that time are shared including their implications for practice in difficult times within and beyond Uganda.

Climate Change Adaptation Measures among Male and Female Rice Farmers in South-East, Nigeria: Implications on communication

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Abstract

Appropriate communication is critical factors affecting understanding the problem of climate change, bridging the science action gap, raising awareness, influencing behavioral change on the menace and encouraging greater uptake of innovations that assist farmers cope with climate variability. Thus, the study assessed the behavioral responses to climate change adaptation measures among male and female rice farmers in South-East, Nigeria: Implications on communication. Specifically, the study examined sources of information on climate change coping strategies in the study area, assessed farmers' behavioral responses to adaptation measures to climate change and examined constraints to communication of adaptation measures of climate change to rice farmers. Multistage sampling procedure was employed in the selection of 360 respondents from three out of the five States in Southeast Nigeria. Structured questionnaire was used to obtain relevant data for the study which was analyzed using simple descriptive statistics such as frequency counts, percentages, means etc as well as ANOVA and OLS regression model. Results revealed that fellow farmers (= 2.2), radio (= 2.1), neighbors (= 2.1) and extension agents (ADP) (= 2.0), were major sources of information on climate change coping strategies. Major responses exhibited by the male farmers towards the use

of listed adaptation measures were change of cropping time (= 3.4) seek for information on expected method of farming based on observed changes (= 3.0) and consulting fellow farmers for advice (= 2.6). While the female rice farmers in addition to these responses also reverting to indigenous methods or self-help methods (= 2.5) to combat climate change menace. ANOVA confirm that there is significant difference (6.68*** for males and 3.07*** for females) in behavioural responses to adaptation measures among states studied. OLS regression estimates show that inadequate information on adaptation measures, lack of technical competency to implement recommendations and inadequate diversity of communication channels were major constraints to communication of adaptation strategies to farmers. The study calls for public private synergy in provision of intensive capacity training and gender-based farmers' education in the use of diverse information and communication technologies (ICTs) and proper implementation of climate change information and recommendations. This will enhance creation of awareness on climate smart agriculture, increased access to timely and efficient information using diverse communication channels as potent tools for stimulating positive behavioural responses to climate change adaptation among rice farmers.

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