CURRICULUM VITAE – PROF. SIZA DONALD TUMBO

1 PERSONAL INFORMATION

1.1 Personal Particulars

- Name: SIZA DONALD TUMBO
- Nationality: TANZANIAN
- Mobile Phone Number: +255-755-32-6752

1.2 Academic Qualifications

- Primary Education, Nyakabungo P/S, Mwanza City, Mwanza: 1972 – 1972
- Primary Education, Buigiri P/S, Chamwino, Dodoma: 1973 – 1978
- Ordinary Level Certificate Singe, Arusha: 1980 - 1983
- Advanced Level Certificate Kibaha, Pwani: 1984- 1986
- B.Sc. Agric. Engineering SUA, Morogoro: 1987 – 1991
- Cert. Junior Bankers Course, Morogoro, Tanzania: April – May, 1992
- M.Sc. Engineering UDSM, Dar: 1993- 1996
- Cert. in Automation of Agricultural Machinery, Obihiro, Japan: Jul – Oct,1997
- Ph.D. Agric. Engineering Pennsylvania State University, USA: 1998 – 2001

1.3 Awards

- Award for Excellent Academic Performance: **Best Overall Student in Fourth Years in Agricultural Engineering**, Sokoine University of Agriculture, Academic Year 1990. Prize Worth TSh. 450/= donated by Tanzania Motors Services Company (TMSC).
- Award for Excellent Academic Performance: **Best Overall Student in Fourth Year B.Sc. (Agricultural Engineering)** Highest Cumulative GPA, Sokoine University of Agriculture, Academic Year 1990. Prize Worth TSh. 1,000/= donated by INCAR/FIAT.
- Award for Excellent Academic Performance: **Best Final Year Student in B.Sc.** (Agricultural Engineering), Sokoine University of Agriculture, Academic Year 1990. Prize Worth TSh. 1,500/= donated by Minister for Science, Technology and Higher Education.
- **Honour Society of Agriculture** (Gamma Sigma Delta) Penn State University Chapter: November 2, 1999

1.4 Membership in Professional Organisations

- American Society of Agricultural and Biological Engineers (**ASAE/ASABE**): September 23, 1999

2 WORK EXPERIENCE

2.1 Employment Record/Professional Engagement

- Bank Trainee, Sept 1991- May 1992, National Bank of Commerce
- Tutorial Assistant, Information & Electronic Technologies, June 1992- June 1994, SUA
- Assistant Lecturer, Information & Electronic Technologies, July 1994- June 1997, SUA
- Lecturer, Information & Electronic Technologies, July 1997- June 2002, SUA
- Senior Lecturer, Information & Electronic Technologies, July 2002 – To date, SUA
- Associate Professor, Information & Electronic Technologies, July 2008 to June 2012.
- Professor, Information & Electronic Technologies, July 2012 to date.

2.2 Professional Engagement

- Post-doctoral Associate, Precision Farming, Sept 2000 – June 2001, University of Florida
- Post-doctoral Associate, Water Systems Innovations, Jan 2004 – Dec 2005, SSI Project, Tanzania
- Visiting Scientist, Precision Farming, 1st Jan 2006 – 31st Mar 2006, University of Florida, USA

2.3 Leadership Positions

- Director, Computer Centre, Sokoine University of Agriculture: July 2006 – June, 2009
- Director General, Centre for Agricultural Mechanization and Rural Technologies (CAMARTEC), Ministry of Industry and Trade: March, 2016 – June, 2018
- Deputy Permanent Secretary, Ministry of Agriculture: July, 2018 – July, 2022
- Regional Administrative Secretary, Shinyanga Region: August, 2022 to date.

3 TEACHING AND SUPERVISION

3.1 Courses

3.1.1 AE 101 Introduction to Agricultural Engineering
3.1.2 AE 102 Introduction to Engineering
3.1.3 AE 211 Strength of Materials
3.1.4 INF 211 Introduction to Computer Simulation and Modelling
3.1.5 AE 214 Introduction to Electronics
3.1.6 AE 301 Farm Power and Mechanisation
3.1.7 AE 310 Instrumentation and Measurements
3.1.8 FT 313 Plant and Equipment Layout
3.1.9 AE 316 Introduction to microcomputer systems
3.1.10 AE 328 Computer Networking and Communication

3.1.11 AE 370 Rural Structures and Services I (Structural Analysis and Design)
3.1.12 AE 402 Farm Structures
3.1.13 AE 470 Rural Structures and Services II (Rural Structure Construction)
3.1.14 AE 600 Instrumentation and Measurement in Agricultural Engineering

3.2 PhD Students Supervision and Co-supervision

3.2.1 Jacob Kaingo. Modelling spatial variability of soil hydraulic properties in an agricultural watershed in Tanzania
3.2.2 Yustos Yusta. Modelling of solar-wind backed anaerobic digestion system for production of clean energies in rural areas
3.2.3 Msongaleli, B. Assessment of the impacts of climate variability and change on rainfed sorghum productivity in Central Tanzania
3.2.4 Mourice, S. K. Estimating Ceres-Maize model cultivar coefficients and soil parameters for simulating spatial maize potential yield in Morogoro and Mvomero Districts
3.2.5 Singa, D. D. Development of Decision Support System for Bean Crop Irrigation in Drought prone Ukwe Area, Malawi
3.2.6 Habtamu Admassu (Late). Developing agronomic management options for adaptation to climate variability and change under semi-arid conditions of Ethiopia. Ethiopian. 2008/11.
3.2.7 Ayubu Churi: Development of a decision support system for adaptation to climate change in semi-arid areas of Tanzania for improved crop productivity. Tanzanian. 2008/11.
3.2.8 Z. Mkoga (Late). Title: Decision Aid for Conservation Farming. Nationality: Tanzanian. Joint supervision. 2005/09.
3.2.9 O. B. Mzirai. Title: Development of a Macro-catchment Rainwater Harvesting Model. Nationality: Tanzanian. Joint supervision. 2003/06.
3.2.10 J. Cour. Title: Development of Rufiji Basin Decision Aid (RUBDA). Nationality: French. Local supervision, registered at University of East Anglia. 2005/07.
3.2.11 Elin Enfors. Title: Building resilience and intensifying farming: Investigating the potential of small-scale water system innovations in semi-arid agro-ecosystems, Tanzania. Nationality: Dutch. Local supervision. Registered at UNESCO-IHE. 2004/07.

3.3 Teaching Compendia

3.3.1 Makungu, P.J., Baanda, S.A., Tumbo, S.D. and B. Kayombo. 1995. Instrumentation: Student Manual and Reference Book. MSc Water and Land Management Programme. Sokoine University of Agriculture, Morogoro, Tanzania, 65 pp.
3.3.2 Makungu, P.J., Tumbo, S.D., Baanda, S.A. and B. Kayombo. 1996. Instrumentation: Student Manual and Reference Book -Revised Edition. MSc Water and Land Management Programme. Sokoine University of Agriculture, Morogoro, Tanzania, 114 pp.
3.3.3 Makungu, P.J. and S.D. Tumbo. 1996. Computer Systems. MSc Water and Land Management Programme. Sokoine University of Agriculture, Morogoro, Tanzania, 72 pp.
3.3.4 Tumbo, S.D. and A. Lukindo. 1996. Structural Design: Rural Structures and Services I. Sokoine University of Agriculture, Morogoro, Tanzania, 70 pp.
3.3.5 Tumbo, S.D. and B.A. Salim. 1996. Rural Electrification: Rural Structures and Services II. Sokoine University of Agriculture, Morogoro, Tanzania, 76 pp.

4 RESEARCH ENGAGEMENT

4.1 Precision Farming and Remote Sensing

4.1.1 Investigation and Development of a Mobile System for Rapid Sensing of Chlorophyll Status (proxy indicator for Nitrogen Status) in Corn. January, 1998 – September, 2000. PhD Dissertation Research, Pennsylvania State University, **USA**.

4.1.2 Advancement of Canopy Sensing and Spatial Yield Mapping Technologies in Citrus Farming. September, 2000 to June, 2001. Use of Sensing and Actuation Technologies such as Laser Sensors, Ultrasonic Sensors and Differential GPS. Citrus Research and Education Centre (CREC), University of Florida. Lake Alfred, Florida, **USA**.

4.1.3 Evaluation of a variable rate controller for aldicarb application around buffer zones in citrus groves. January, 2006 to March, 2006. Citrus Research and Education Centre (CREC), University of Florida. Lake Alfred, Florida, **USA**.

4.1.4 Integrated Automation of Specialty Crops: Retrofit of the Orchard Sprayer for use with Autonomous Tractor. Funded by USDA. Working on this research as part of my sabbatical leave from July 2009 to June 2010, University of Florida, **USA**.

4.1.5 Spurring a Transformation for Agriculture through Remote Sensing (STARS). Duration 2014 – 16. USD 251,447. Funded by Bill and Melinda Gates Foundation. Implemented in East Africa, West Africa, and Bangladesh. SUA working with University of Maryland.

4.2 Computer Modelling and Simulation in Agriculture and Water Resources

4.2.1 Smallholder System Innovations: Joint grant proposal development between January and March 2002. Implementation since January 2004 to present. Project title: Development of a GIS-based methodology for adoption of water system innovations. Project partners: **Sokoine University of Agriculture, Tanzania; Stockholm University, Sweden; University of Natal, South Africa; International Water Management Institute and Institute of Hydrology and Environment (IHE-UNESCO), Netherlands**. (Research and extension) (Jan, 2004 – Dec, 2007).

4.2.2 PARCHED-THIRST (PT) Model: Upgrading and Promotion of PT model. Upgrading involved creating a new user interface, removal of bugs and program modularisation. PT model is agro-hydrological model for simulation of rainwater harvesting and crop growth for maize and rice in semi-arid areas. (Research and extension) (Jan, 2002 - Sept, 2005).

4.2.3 Raising Irrigation Productivity and Releasing Water for Inter-sectoral Needs (RIPARWIN). This is a joint project between **University of East Anglia, Sokoine University of Agriculture, and International Water Management Institute**. Involved in the development of an irrigation impact model for simulation of dry and wet year scenarios based on net and gross irrigation demands over time. (Apr, 2002 – Mar, 2006).

4.2.4 AgWater Solutions Project. This was a project funded by Bill and Melinda Gates Foundation and spearheaded **by IWMI, FAO, SEI, IFPRI, IDE and CH2MHILL**. Local partners in Tanzania include Sokoine University of Agriculture, University of Dar-es-Salaam and Ministry of Agriculture, Food Security and Cooperatives. It is a 3-year project (2009-2012).

4.2.5 Water harvesting technologies revisited: Potentials for innovations, improvements, and upscaling in sub-Saharan Africa (WHaTeR). Funded by EU under FP7. Consortium budget Euro 2,462,000; SUA 159,328. 3 European Organizations, 5 African.

4.2.6 Innovating Strategies to safeguard Food Security using Technology and Knowledge Transfer: A people centred approach (Trans-SEC). 2013-2018. Funded by Federal Ministry of Education and Research (BMBF) and Federal Ministry for Economic Cooperation and Development (BMZ), **Germany**.

4.3 Climate Change

4.3.1 Managing risk, reducing vulnerability, and enhancing agricultural productivity under changing climate. This was a four-year project started April 2007 and funded by DFID through IDRC and being implemented in **Tanzania, Kenya, Ethiopia, and Sudan**. I was a member of the research team in Tanzania. 2007/2011.

4.3.2 Impact assessment and livelihood vulnerability and macro-economic modeling studies. This project was funded under the CCIAM (Climate Change Impacts, Adaptation and Mitigation) programme. This is a 3-year project (November 2010 to October 2013).

4.3.3 Enhancing Climate Change Adaptation in Agriculture and Water resources (ECAW) in the Great Horn of Africa. The project is implemented by four institutions; Sokoine University of Agriculture (**Tanzania**), Agricultural Research Corporation (**Sudan**), Ethiopia Institute of Agricultural Research (**Ethiopia**) and Kenya Agricultural Research Institute (**Kenya**) and is funded by IDRC-Canada. Project duration is 3 years (October 2011 to September 2014).

4.3.4 Assessing the impacts of climate variability and change on agricultural systems in **Eastern Africa** while enhancing the region's capacity to undertake integrated assessment of vulnerabilities to future changes in climate as an activity under "The Agricultural Modelling Intercomparison and Improvement Project (AgMIP) in Sub-Saharan Africa and South Asia". This is a two-year project (April 2012- March 2014).

4.3.5 Adapting **East African** smallholder systems to climate change and variability through a stakeholder driven, multi-modelling integrated assessment approach (AgMIP-2). 2015 - 2017. Source of funds: Columbia University and NASA/GISS, in partnership with DFID.

4.4 Information and Communication Technologies

4.4.1 The Role of Mobile Phones towards Improving Coverage of Agricultural Extension Services: A Case Study of Banana and Maize Value Chains. This project is funded under the EPINAV (Enhancing Pro-poor Innovation in Natural Resources and Agricultural Value Chains) programme at Sokoine University of Agriculture. Project duration is 4 years (2011 – 2014).

5 OUTREACH

5.1.1 **January 1996 – June 1997:** Involved in the promotion of animal traction in Gairo Ward, in Kilosa District, Morogoro, Tanzania. We trained farmers on the use of ox-drawn weeders. This promotion and training led to the adoption and use of ox-drawn weeders in Msingisi and surrounding villages.

- Appropriate Technologies in Rural Areas: This extension activity involved with promotion of oil press machines for production of sunflower oil from sunflower seeds in the Morogoro Rural District from 1992 to 1994. Jun., 1992 – Sept., 1993: Involved in extension and promotion of oil-press machines for production of sunflower seeds in the Morogoro Rural District, Tanzania.
- Animal Traction The promotion of animal traction was carried out from 1992 to 1996 mainly in Gairo Ward. Farmers were trained to use animal drawn weeders. This promotion

and training, lead to adoption and use of animal drawn weeders in Msingisi and surrounding villages in Gairo Ward.

5.1.2 **September 2012 – November 2014:** Task force member in the development of Agriculture Climate Resilience Action Plan for the Ministry of Agriculture, Food Security and Cooperatives under the Enhancing Climate Change in Agriculture and Water Resources in the Great Horn of Africa (ECAW) Research Project. Technical and financial support to the Environment Management Unit.

5.1.3 **2011 – 2015:** Technical and financial support for upgrading spate and *ndiva* irrigation canals in Makanya and Bangalala villages in Same District under the project Water Harvesting Technologies Revisited: Potentials for Innovations, Improvements and Upscaling in Sub-Saharan Africa (WHaTeR). The aim was to minimize canals leakage and seepage losses.

6 CONSULTANCIES

6.1.1 Rapid Appraisal of Policies and Institutional Frameworks for Agricultural Water Management in Tanzania. IMAWESA. May – September, 2006.

6.1.2 Resource Person - Training on the Development of Decision Support Tools in Soil, Nutrient and Water Management. Nairobi. ASARECA. May 2007.

6.1.3 Resource Person – Short courses on Soil-Plant-Water Relationships for Efficient Water Use for Professional Skills Improvement in Land and Water Management. SADC Land & Water Management Applied Research and Training Programme. April/May 2008.

6.1.4 Economics of Climate Change for Agriculture Sector in Tanzania Adaptation Options and their Costs. SEI/DFID. December, 2010. http://economics-of-cc-intanzania.org/reportsandpublications.html.

6.1.5 Investments in Agricultural Water Management with greatest potential to improve incomes and food security. International Water Management Institute, Accra, Ghana. December, 2010 to March, 2011.

6.1.6 Costing and planning of agriculture's adaptation to climate change. International Institute for Environment and Development. Jan – April, 2011.

6.1.7 Climate change and agriculture action plan cost estimates and targeting strategy. World Bank, Tanzania. November 2013 - February 2014.

6.1.8 Assessment of Tanzania's Agricultural Production, Climate Change, Agricultural Trade and Food Security. Kenya Institute for Public Policy Research and Analysis (KIPPRA), Kenya. August to December, 2014.

6.1.9 Cost-Benefit Analysis (CBA) on Water Use Efficiency and Water Storage Technologies in Tanzania. Ministry of Agriculture, Food Security and Cooperatives (MAFC), Tanzania. December 2014 to March, 2015.

6.1.10 Innovation Laboratory for Small Scale Irrigation (ILSSI): Tanzania. Client – International Water Management Institute. 2014-2018.

7 @ CAMARTEC (2016 – 2018)

7.1.1 Advancement, Manufacturing, Testing and Marketing of three (3) CFT's (**CAMARTEC Farm Tractor**). After joining CAMARTEC in 2016, it was discovered that the production of CFT tractors had halted several years prior, leading to the sale of only one tractor. Consequently, in 2016,

the manufacturing of tractors was resumed, resulting in the successful production and sale of three additional tractors.

7.1.2 Involved in the Design, Development, Improvement and Deployment of 150 **Draught Powered Cotton Seed Planters** to Cotton Farmers, Meatu in Simiyu Region for BIORE Tanzania Ltd. The challenge addressed was mainly the design of the seed metering system.

7.1.3 Involved in the initial Design and Development of a **Planter for CAMARTEC Farm Tractor (CFT)**. The challenge addressed was mainly the design of the seed metering system.

7.1.4 Lead the Construction of **Institutional Biogas Plants**, some constructed plants include those at Karanga Prison in Moshi District, Visitation Secondary School, Siha District, Emboreti Secondary School, Simanjiro District, and Personal Instutional Biogas Chato District.

7.1.5 Lead the Tanzania Domestic Biogas Programme (TDBP) in the Construction of more than 500 **Domestic Biogas Plants** through the Support of the Africa Biogas Partnership Programme (ABPP).

7.1.6 Lead the **Testing of three URSUS tractor models**, 5314-4WD, 5312-2WD and 3512-2WD, at Mkalama District in Singida Region and Bassotu in Hanang District, Manyara Region.

7.1.7 Managed the Design and Manufacturing of a **Biogas Burner** for the Construction of Small and Large Biogas Plants for Domestic and Community Use.

7.1.8 Lead the Preparation and Development of **Test Regulations for Agricultural Machinery and Tools** in the Country in Collaboration with Various Stakeholders.

7.1.9 Lead the Initial Adaptation, Design, Manufacturing and Testing of **Bean Thresher**. There are huge demands of bean threshers in Arusha and Manyara. For example, in Simanjiro Districts farmers have farm sizes as huge as 1000 acres to 2000 acres.

7.1.10 Involved in the Initial Adaptation, Design, Manufacturing and Testing of a **Sorghum Thresher**. There are huge demands of bean threshers in Manyara especially for farmers contracted to supply sorghum to Breweries factories in the Country.

8 @MINISTRY OF AGRICULTURE (2018 – 2022)

8.1.1 Lead the Adoption and Advancement of **Mobile-Kilimo (M-Kilimo)** a platform that enable farmers to access extension services and agriculture market information through their mobile phones. The system has been launched in 2020 and by 2022 it had a total of 7,000 extension officers and 5 million farmers registered and using the system.

8.1.2 Lead the Development of the **Agricultural Information Dashboard** that provides timely, actionable, and science-driven agricultural information and statistics in a visual and easy to analyse format. The system can manage data originating from a variety of national and external sources. Regardless of the origin and structure of the data, the system can display the data through a dashboard that generate charts, tables and maps that display relevant agricultural information.

8.1.3 Lead the Design and Development of **Crop Stock Dynamics**, the system that tracks the quantity and movement of agricultural produce in the country. The system monitors agriculture stock as it moves from farmers, to warehouses, markets up to final consumers or processors, from one council to another council.

8.1.4 Lead the Design and Implementation of the **Kilimo Call Centre**. The Call Centre is based on the TTCL and its partner core digital system. The Centre has eight service stations, which means eight calls concurrently from farmers.

8.1.5 Launched the Initial Process of **Integrating M-Kilimo with Other MoA Digital Information Systems** (Farmer Registration System, Crop Stock Dynamics, Pest Stock Management System, Seed Dealers Management System, Agricultural Routine Data System, Agricultural Trade Management Information System, Stakeholder Database).

9 SCIENTIFIC PUBLICATIONS

9.1	**Computers and Electronics in Agriculture**	**Year**
9.1.1	UAV-based multispectral vegetation indices for assessing the interactive effects of water and nitrogen in irrigated horticultural crops production under tropical sub-humid conditions: A case of African eggplant Paul Reuben Mwinuka, Sixbert K. Mourice, Winfred B.Mbungu, Boniphace P. Mbilinyi, Siza D. Tumbo, Petra Schmitter Agricultural Water Management 266, 107516	2022
9.1.2	Parameterization of a Semidistributed Hydrological Model by Using a Combination of Ground and Satellite-Derived Data during the Calibration Process: A Case Study in the Wami River Basin F Jarrin, P Guillevic, J Jeong, W Mbungu, S Tumbo, C Nakalambe, Yihun Taddele Dile 100th American Meteorological Society Annual Meeting	2020
9.1.3	Earth Observations and Land Surface Models to Support Agricultural Water Resources Management (Centennial) Pierre Guillevic, Jean-Claude Roger, I Becker-Reshef, A Coffin, Andrew French, Jerry Hatfield, M Humber, Jaehak Jeong, Fernando Jarrin, Chris Justice, Winfred Mbungu, C Nakalembe, Charles Sanchez, Siza Tumbo, Eric Vermote, Augustin Vintzileos, Michelle Cryder100th American Meteorological Society Annual Meeting	2020
9.1.4	Farmers' access and use of mobile phones for improving the coverage of agricultural extension service: A case of Kilosa district, Tanzania BS Kiberiti, CA Sanga, M Mussa, SD Tumbo, MRS Mlozi, R Haug Environmental and Agricultural Informatics: Concepts, Methodologies, Tools, and Applications	2020
9.1.5	Integrated assessment of climate change impacts and adaptation in agriculture: the case study of the Wami river sub-basin, Tanzania Siza D Tumbo, Khamaldin D Mutabazi, Sixbert K Mourice, Barnabas M Msongaleli, Frank J Wambura, Omari B Mzirai, Ibrahim L Kadigi, Frederick C Kahimba, Peter Mlonganile, Hashim K Ngongolo, Chuki Sangalugembe, Karuturi PC Rao, Roberto O Valdivia Climate Variability and Change in Africa, 115-136	2020
9.1.6	Earth observations and models to support agricultural water resources management Pierre C Guillevic, Jean-Claude Roger, Inbal Becker-Reshef, Maria Beget, Alisa Coffin, Michelle Cryder, Carlos Marcelo Di Bella, Belen Franch, Andrew N French, Pierre-Louis Frison, Matthew Hansen, Jerry Hatfield, Michael Laurence Humber, Roberto C Izaurralde, Jaehak Jeong, Fernando Jarrín, Christopher Owen Justice, Winfred Mbungu, Catherine Nakalembe, Charles Anthony Sanchez, Siza Tumbo, Eric Vermote, Augustin Vintzileos AGU Fall Meeting Abstracts 2019, H31F-06	2019

9.1.7	Modelling rainfed pearl millet yield sensitivity to abiotic stresses in semi-arid central Tanzania, Eastern Africa Festo Richard Silungwe, Frieder Graef, Sonoko Dorothea Bellingrath-Kimura, Emmanuel A Chilagane, Siza Donald Tumbo, Fredrick Cassian Kahimba, Marcos Alberto Lana Sustainability 11 (16), 4330	2019
9.1.8	Unmanned aerial vehicle-based remote sensing in monitoring smallholder, heterogeneous crop fields in Tanzania IB Yonah, SK Mourice, SD Tumbo, BP Mbilinyi, J Dempewolf International Journal of Remote Sensing 39 (15-16), 5453-5471	2018
9.1.9	Eco-hydrological modeling using field-based and Earth Observations to assess water use efficiency and support agricultural water resources management Jean-Claude Roger, Pierre C Guillevic, Inbal Becker-Reshef, Varaprasad Bandaru, Alisa Coffin, Andrew N French, Jerry Hatfield, Michael Laurence Humber, Sergii Skakun, Belen Franch, Matthew Hansen, Brian F Thomas, Eric Vermote, Christopher Owen Justice, Roberto C Izaurralde, Jan Dempewolf, Catherine Nakalembe, Christelle Cryder, Charles Anthony Sanchez, Jaehak Jeong, Carlos Marcelo Di Bella, Maria Beget, Siza Tumbo, Bruno Meyer, Clement Adjorlolo, Pierre-Louis Frison AGU Fall Meeting Abstracts 2018, H43G-2538	2018
9.1.10	Crop upgrading strategies and modelling for rainfed cereals in a semi-arid climate—A review FR Silungwe, F Graef, SD Bellingrath-Kimura, SD Tumbo, FC Kahimba, ... Water 10 (4), 356	2018
9.1.11	Exploring information seeking behavior of farmers in information related to climate change adaptation through ICT (CHAI) SD Tumbo, N Mwalukasa, KG Fue, MRS Mlozi, R Haug, C Sanga International Review of Research in Open and Distributed Learning 19 (3)	2018
9.1.12	Prediction of soil moisture-holding capacity with support vector machines in dry subhumid tropics J Kaingo, SD Tumbo, NI Kihupi, BP Mbilinyi Applied and Environmental Soil Science 2018	2018
9.1.13	ECAWsoft: A web based climate and weather data visualization for big data analysis KG Fue, CA Sanga, SD Tumbo Global Journal of Computer Science and Technology	2017
9.1.14	Electronic Field Data Collection in Support of Satellite-Based Food Security Monitoring in Tanzania Catherine Lilian Nakalembe, Jan Dempewolf, Christina Jade Justice, Inbal Becker-Reshef, Siza Tumbo, Sixbert Maurice, Boniface Mbilinyi, Kadigi Ibrahim, Stanslaus Materu AGU Fall Meeting Abstracts 2016, PA11B-1960	2016
9.1.15	Crowdsourcing platform 'Ushaurikilimo' enabling questions answering between farmers, extension agents and researchers CA Sanga, J Phillipo, MR Mlozi, R Haug, SD Tumbo International Journal of Instructional Technology and Distance Learning 10 …	2016
9.1.16	Unlocking the potential of the mobile phones by university undergraduate students: A case of Sokoine University of Agriculture. MRS Mlozi, M Mussa, KM Mapunda, VJ Kalungwizi, WJ Mwakapina, ... International Journal of Computing & ICT Research 10 (1)	2016

9.1.17	Web and Mobile Phone Based Rabies Surveillance System for Humans and Animals in Kilosa District, Tanzania MJ Kipanyula, AM Geofrey, KG Fue, MRS Mlozi, SD Tumbo, R Haug, ... International Journal of Information Communication Technologies and Human …	2016
9.1.18	Mobile learning bridging the gap in agricultural extension service delivery: Experiences from Sokoine University of Agriculture, Tanzania C Sanga, M Mlozi, R Haug, S Tumbo International Journal of Education and Development using ICT 12 (3)	2016
9.1.19	Farmers' Access and Use of Mobile Phones for Improving the Coverage of Agricultural Extension Service: A Case of Kilosa District, Tanzania C Sanga, PMRS Mlozi, S Tumbo, R Haug IGI Global	2016
9.1.20	Farmers' access and use of mobile phones for improving the coverage of agricultural extension service: A case of Kilosa District, Tanzania BS Kiberiti, CA Sanga, M Mussa, SD Tumbo, MRS Mlozi, R Haug International Journal of ICT Research in Africa and the Middle East …	2016
9.1.21	Experimenting open agricultural extension service in Tanzania: A case of Kilosa Open Data Initiative (KODI) CA Sanga, JP Masamaki, KG Fue, MR Mlozi, SD Tumbo Journal of Scientific and Engineering Research	2016
9.1.22	Analyzing usage of crowdsourcing platform 'Ushaurikilimo' by pastoral and agro-pastoral communities in Tanzania K Fue, A Geoffrey, MRS Mlozi, S Tumbo, R Haug, C Sanga International Journal of Instructional Technology and Distance Learning	2016
9.1.23	Land cover transition in northern Tanzania I Ouedraogo, J Barron, SD Tumbo, FC Kahimba Land Degradation & Development 27 (3), 682-692	2016
9.1.24	Uncertainty of runoff projections under changing climate in Wami River sub-basin FJ Wambura, PM Ndomba, V Kongo, SD Tumbo Journal of Hydrology: Regional Studies 4, 333-348	2015
9.1.25	AgriSense-STARS: Advancing Methods of Agricultural Monitoring for Food Security in Smallholder Regions-the Case for Tanzania J Dempewolf, I Becker-Reshef, CL Nakalembe, S Tumbo, S Maurice, ... AGU Fall Meeting Abstracts 2015, B44A-01	2015
9.1.26	Multi-temporal UAV based data for mapping crop type and structure in smallholder dominated Tanzanian agricultural landscape JR Nagol, C Chung, J Dempewolf, S Maurice, W Mbungu, S Tumbo AGU Fall Meeting Abstracts 2015, B41D-0470	2015
9.1.27	Characterization of Sounds in Maize Produced by Internally Feeding Insects: Investigations to Develop Inexpensive Devices for Detection of Prostephanus truncatus (Coleoptera: Bostrichidae) and Sitophilus zeamais (Coleoptera: Curculionidae) in Small-Scale Storage Facilities in Sub-Saharan Africa DO Kiobia, Siza D Tumbo, Juliana Cantillo, BB Rohde, PK Mallikarjunan, RW Mankin Florida Entomologist 98 (2), 405-409	2015
9.1.28	Development, Calibration and Validation of a Macro-Catchment Rain Water Harvesting Model: Overcoming Limited Hydrological Data in Semi-Arid Areas of Tanzania OB Mzirai, SD Tumbo Journal of Global Ecology and Environment, 56-68	2015

9.1.29	Modeling potential rain-fed maize productivity and yield gaps in the Wami River sub-basin, Tanzania SK Mourice, SD Tumbo, A Nyambilila, CL Rweyemamu Acta Agriculturae Scandinavica, Section B—Soil & Plant Science 65 (2), 132-140	2015
9.1.30	Using climate and crop simulation models for assessing climate change impacts on agronomic practices and productivity WB Mbungu, HF Mahoo, SD Tumbo, FC Kahimba, FB Rwehumbiza, ... Sustainable intensification to advance food security and enhance climate resilience in Africa	2015
9.1.31	Experts' assignment algorithm for Cloud-based Agro-advisory Service Information System (CASIS) using weighted sum model: piloting CASIS KG Fue, S Tumbo, C Sanga UbuntuNet Alliance	2015
9.1.32	A solar-powered, Wi-Fi re-programmable precision irrigation controller K Fue, J Schueller, A Schumann, S Tumbo Proceedings of the 2nd Pan African International Conference on Science …	2014
9.1.33	On the Development of the Mobile based Agricultural Extension System in Tanzania: A Technological Perspective. C Sanga, M Mussa, S Tumbo, MRS Mlozi, L Muhiche, R Haug International Journal of Computing & ICT Research 8 (1)	2014
9.1.34	System design and ICT adoption in agricultural extension services delivery in Tanzania CA Sanga, SD Tumbo, MRS Mlozi Technology development and platform enhancements for successful global e-government design	2014
9.1.35	Maize cultivar specific parameters for decision support system for agrotechnology transfer (DSSAT) application in Tanzania SK Mourice, CL Rweyemamu, SD Tumbo, N Amuri Scientific Research Publishing	2014
9.1.36	Accuracy of Giovanni and Marksim software packages for generating daily rainfall data in selected bimodal climatic areas in Tanzania FC Kahimba, SD Tumbo, E Mpeta, IB Yonah, W Timiza, W Mbungu Tanzania Journal of Agricultural Sciences 13 (1)	2014
9.1.37	A decision support system for enhancing crop productivity of smallholder farmers in semi-arid agriculture AJ Churi, MRS Mlozi, H Mahoo, SD Tumbo, R Casmir International Journal of Information 3 (8)	2013
9.1.38	On Search for Strategies to Increase the Coverage of Agricultural Extension Service: Web-based Farmers' Advisory Information System. Camlius Sanga, MRS Mlozi, S Tumbo, M Mussa, MCR Sheto, GH Mwamkinga, R Haug International Journal of Computing & ICT Research 7 (1)	2013
9.1.39	Application of self-organizing maps technique in downscaling GCMs climate change projections for Same, Tanzania SD Tumbo, E Mpeta, M Tadross, FC Kahimba, BP Mbillinyi, HF Mahoo Physics and Chemistry of the Earth, Parts A/B/C 35 (13-14), 608-617	2010
9.1.40	Evaluation of a variable rate controller for aldicarb application around buffer zones in citrus groves SD Tumbo, M Salyani, WM Miller, R Sweeb, S Buchanon	2007

Computers and electronics in agriculture 56 (2), 147-160

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Signature_____ Date: **February 15, 2023**