**STUDY ON ADOPTION OF ICTs BY MICRO, SMALL AND MEDIUM-SIZE ENTERPRISES (MSMEs) IN UGANDA.**

## EXECUTIVE SUMMARY

### 1. Context and Background

This report is the draft final output of the study on Adoption of Information and Communication Technologies (ICTs) by Micro, Small and Medium-scale Enterprises (MSMEs) in Uganda. The overall objective of the study was to establish the extent of ICTs adoption, including those associated with the 4th Industrial Revolution (4IR), by MSMEs in Uganda. The report provides accurate and detailed information, which is not only a necessity for informed regulatory and public policy decision-making regarding ICT adoption by MSMEs but also essential in facilitating design of impactful initiatives geared towards improving access and usage of ICTs by business enterprises.

### 2. Methodology

The methodological design was cross-sectional and used both quantitative and qualitative methods of data collection. Quantitative data were collected from a representative sample of 2,123 MSMEs, comprising 1,242 micro enterprises (58.5%); 767 small enterprises (36.1%); 112 medium enterprises (5.3%) and 2 large (0.1%) enterprises drawn from across all the 12 sub-regions of Uganda.

Qualitative data was generated from the sector opinion leaders, policymakers, and development/implementing partners, including Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), Uganda Communications Commission (UCC) and Ministry of ICT and National Guidance (MoICT & NG), through Key Informant Interviews (KII), and Focus Group Discussions (FDGs). Extensive document review supplemented primary sources.

The quantitative methods (the survey) were used mainly to gather data from the key stakeholders such as ICT4Agric innovators, consumers of ICT4Agric innovations (farmers), academia and private sector players. The survey questionnaires were digitalized, and data was collected using an open data kit (ODK) to improve quality and clarity. The data was then processed and analyzed using EXCEL and INFO DATA packages.

### 3. Summary of study findings

| Objective | Study findings |
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| 1. Evaluating the level of access and usage of ICTs, including those associated with the 4IR (such as AI, Block Chain Technology, robotics, etc.) by MSMEs in Uganda. | ○ Apparently, many MSMEs did not appreciate ICT as they mostly owned simple technologies such as [cheap] telephones, computers, and other simple office equipment.<br>○ More than 90% of the enterprises sampled provided less than UGX 1 million in their budgets for ICT.<br>○ Ownership and usage of advanced technologies was extremely low; only 0.4% said their enterprise used interconnected devices or systems that could be monitored or remotely controlled via internet. Only 0.8% owned 3D printing equipment while only 0.2% of the respondents said they used industrial robots. |

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| | ○ Lack of financing (17.1%) and high cost (16.4%) were highlighted as the major barriers to adoption of advanced technologies.<br>○ Nonetheless, access to internet by the enterprises was reasonable (29.4%) and 39.6% had plans to start using internet by January 2020. However, only 2.5% of the enterprises provided their employees with internet-enabled portable devices.<br>○ On devices, most (26%) used mobile broadband. 6% used wireless access points, 3.3% used cable modems and 1.3% used fiber optic network.<br>○ Service providers were: MTN (53.6%), Airtel (31%), UTL (1.6%) and several others.<br>○ The major barriers to using internet as highlighted by the enterprises were high subscription and integration costs (29.9%) and low speed (13.6%). 69.7% of the internet users rated their internet speed as "moderate".<br>○ Use of web and home page services, e-commerce and electronic invoicing were very limited at 5%, less than 5% and 3.2% respectively.<br>○ The main challenge to online transactions, according to the sampled enterprises, was security (21.5%). The others were: logistics (13.2%), legal issues (11.6%) and payment forms (10.7%).<br>○ Awareness of cloud computing was very low with only 3.2% demonstrating awareness. And they mostly used it for e-mailing (38.4%) and office software such as word processing and spreadsheets (25.4%).<br>○ High cost of buying cloud computing services (24.4%), problems accessing data or software (19.9%), and insufficient knowledge of cloud computing (13.5%) were cited as the main barriers to using cloud computing. |
| 2. Establishing factors promoting and those limiting ICT (including those associated with the 4IR (such as AI, blockchain technology, robotics, etc) adoption and integration in MSMEs in the country. | Adoption of ICT is a global trend and, therefore, all progressive MSMEs keeping abreast with global developments are integrating ICT in their operations.<br>There are many companies dealing in [supplying and installing] ICT equipment, implying that those MSMEs wishing to acquire them can easily get what they want locally.<br>However, there are many constraints:<br>The high cost of ICT equipment and services - computers and related equipment are among the most expensive commodities one can buy, and this has kept many potential users, especially small and upcoming enterprises, away.<br>Secondly, the cost of ICT services is extremely high, software is very expensive and ICT personnel are among the most expensive to employ.<br>Power supply - many MSMEs are located in rural and remote areas where there is hardly any [hydro] power supply. Where it is available, the supply is unreliable and the tariffs very high. |
| 3. Investigating the existence of initiatives, which | ○ Uganda has since the 1990s adopted the SME model as a means of stimulating economic growth and industrialization. Through this initiative, government is able to regulate |

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| are supporting the use of ICTs, including those associated with the 4IR (such as AI, blockchain technology, robotics, etc.) by MSMEs. | operations of MSMEs, including support to access ICT in appreciation of their role in national development.<br>o The Federation of MSMEs was established in 2017 as an umbrella association (Company Limited by guarantee) for Small and Medium Enterprises in Uganda. It works with the public and private sectors to ensure a conducive and fair environment for running small and medium size businesses in Uganda with the aim of unlocking their potential to ensure that they contribute to employment creation, innovation, and economic growth through the following:<br>a. Lobbying for SMEs on different issues<br>b. Providing opportunities for networking<br>c. Provision of business advisory services<br>d. Carrying out training of SMEs operators<br>o Financing of MSMEs**:** This has been done through establishment of the Uganda Micro Finance Support Centre (MSC) in 2001. The MCS is a government-owned company premised on this mandate:<br>a. To extend affordable micro-credit funds to qualifying Ugandans with a focus on agriculture and the active poor.<br>b. Offer business development services to build capacity in enterprise and financial management. |
| 4. Investigating the relationship between level of investment in ICTs (including those associated with the 4IR (such as AI, blockchain technology, robotics, etc.) and the business growth within MSMEs in Uganda. | MSMEs have not prioritized acquisition of ICT as a high-preference investment area. Very few indicated that their enterprise had ICT projects positioned as funded priorities in their enterprise's financial budget. |
| 5. Investigating how MSMEs are using ICTs, including those associated with the 4IR (such as AI, blockchain technology, robotics, etc.) and how they can leverage the 4IR to enhance their performance in doing business in Uganda. | o Most MSMEs are not harnessing the full potential of ICT. The little they are using in business is for simple operations such as typing letters, invoices, etc.<br>o Relatively higher usage is with regard to telephone for various consultations, including making orders and requisitions for supplies.<br>o Since COVID-19 lockdown, a few MSMEs seem to have been excited by video conferencing and "zoom" meetings. |

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| 6. Investigating the existence of ICT internal policies in MSMEs in Uganda. | ○ Very few MSMEs (4.3%) indicated that they have internal ICT policies aimed at promoting use of ICT. The targeted areas included: Reduction of paper usage, substituting travel with telephone, web or video conferencing and reduction of energy consumption.<br>○ 7.2% of the MSMEs had policies associated with security risk management. |
| 7. Proposing appropriate policy and regulatory initiatives that can be used to facilitate adoption of ICTs by MSMEs in Uganda. | ○ There is need for increased electricity distribution in terms of geographical coverage, tariff, and reliability of supply.<br>○ MSMEs must take deliberate action to prioritize investment in ICT. Presently, very few MSMEs have ICT as a funded priority in their budgets.<br>○ MSMEs must realize that world over, ICT is the driver of development. They must gear up to embrace ICT in order to keep abreast with development globally. |