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Synopsis: Assessing Agricultural Extension Agent Digital Readiness in Rwanda

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Overview

The fourth Strategic Plan for Agriculture Transformation (PSTA IV) of the Government of Rwanda emphasizes extension and advisory services (EAS) as a priority area (MINAGRI 2018). In support of PSTA IV, the Ministry of Agriculture and Animal Resources (MINAGRI) began enhancing extension and advisory services by introducing a Customized Agriculture Extension System (CAES) (MINAGRI 2020). The CAES calls for ICT-supported extension services, stating that "ICT can revolutionize agriculture in Rwanda" (MINAGRI 2020: 34). Despite an enabling policy environment and Rwanda's embracing of the ICT revolution, extension services have not taken advantage of the potential of ICTs (MINAGRI 2020). This paper looks at capacities of agricultural extension staff and the readiness of Rwandan public and private extension staff to use ICTs in their work—to be digitally equipped.

A phone survey of 500 agricultural extension agents (EAs) was conducted in February and March 2021 across all districts of Rwanda among EAs in the public, private, and nonprofit sectors in Rwanda. We examine their demographics, education, and work backgrounds. To assess the 'digital readiness' of EAs, we assess the impacts of various factors on an EA's digital experience and their attitudes toward digital modernization. Key findings include:

- Most farmer promoters (FP) and farmer field school facilitators (FFSF) do not have access to significant digital assets and do not use digital tools in their personal or work lives.
- The other public sector and private sector extension agents (EAs) are better positioned to provide digital training, given that our survey results indicate that their digital experience is more extensive than FPs and FFSFs.
- Female EAs are less likely than male EAs to be ready to use digital tools in their work.
- Trainings, whether technical or functional, increases the likelihood of an EA being ready to integrate digital tools into their work.

[1] This research summarizes results from Davis, Kristin; Rosenbach, Grace; Spielman, David.J; Makhija, Simrin, Mwangi, Lucy; 2024. Assessing agricultural extension agent digital readiness in Rwanda SSP working paper 12 Washington, DC: International Food Policy Research Institute.

Results and Recommendations

The study findings indicate that access to digital tools and applications, and the use of these resources for extension work varied across employment groups (Figures 1a and 1b). These figures show high levels of digital accessibility and usage by EAs in the public and private (both private and NGOs) sectors, but extremely low levels for farmer promoters (FP) and farmer field school facilitators (FFSF). More than three-fourths of the EAs in the public and private sectors have access to a smartphone and data plan, however less than one-fourth of FPs and FFSFs do. Similarly, more than three-fourths of EAs in the public and private sectors use SMS, WhatsApp, and Google regularly for their extension work, while less than one-fourth of FPs or FFSFs use these or any other digital tools.

Figure 1: Extension agent access to digital asst and use of digital tools, 2021

Figure 1a: Access to digital assets, by employment group

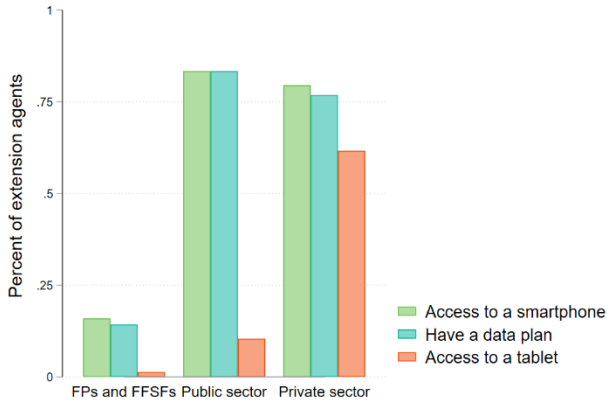

Figure 1b: Digital tools utilized for extension work, by employment group

Source: Authors' calculations using the IFPRI Rwanda Agricultural Extension Agents Phone Survey, 2021.
Note: FPs refers to farmer promoters, and FFSFs refers to farmer field school facilitators.

We find notable differences between the public and private sector EAs in terms of age, gender, educational background, workload, and digital assets. For example, we find that many factors are associated with an EA being ready to digitize, including age, gender, sector, education, digital asset access, and number of trainings received. Women are less likely to be digitally ready compared to men.

These findings indicate a few policy recommendations. First, we find that the vast majority of FPs and FFSFs do not have access to any digital assets and do not use any digital tools in their personal or work lives. Though not surprising given the community-level role that FPs and FFSFs play, these results suggest that if the extension system seeks to digitally equip FPs and FFSFs as well as the other public and private sector EAs, additional focus will need to be placed on providing community-level workers with the digital assets (e.g. smart phones), tools, and knowledge to succeed in their work. The other public sector and private sector EAs are well positioned to provide digital training, given that our survey results indicate that their digital experience is much more extensive. However, the survey suggests that the confidence of EAs to teach others about digital tools varies and is not consistently strong across groups. Therefore, a "train-the-trainer" learning approach might be useful for the other public and private sector EAs so that they are well equipped to provide trainings on digital tools to the FPs and FFSFs. Leveraging the underutilized TVET institutions in the country – very few EAs in either the public

or private sector had received TVET training, according to our survey – may be one mechanism to approach this.

A second recommendation is based on our finding that women are less likely to be ready to digitize compared to men. This could be due to a variety of factors, including control of assets within a household. However, this challenge could be overcome with comprehensive digitalization trainings for all EAs. Lecoutere and colleagues (2019) find that often the challenge stems from information asymmetry between men and women in a household, and that simply including women in trainings regarding extension and digitalization can help to overcome this gender gap. Similarly, the results show that having any trainings, both technical and functional, increase an EA's likelihood of being ready to integrate digital tools, and so continuing to keep EAs engaged and informed on the best agricultural extension practices in general can also promote digital readiness.

These findings suggest that increasing the availability of digital tools among EAs and continuing to provide technical, functional, and now digital trainings, will help to facilitate the integration of new digital tools into their extension work. To effectively implement the Customized Agricultural Extension System this will be absolutely necessary.

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