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POLICY BRIEF

Gender-responsive digital extension in Tunisia during the COVID-19 pandemic

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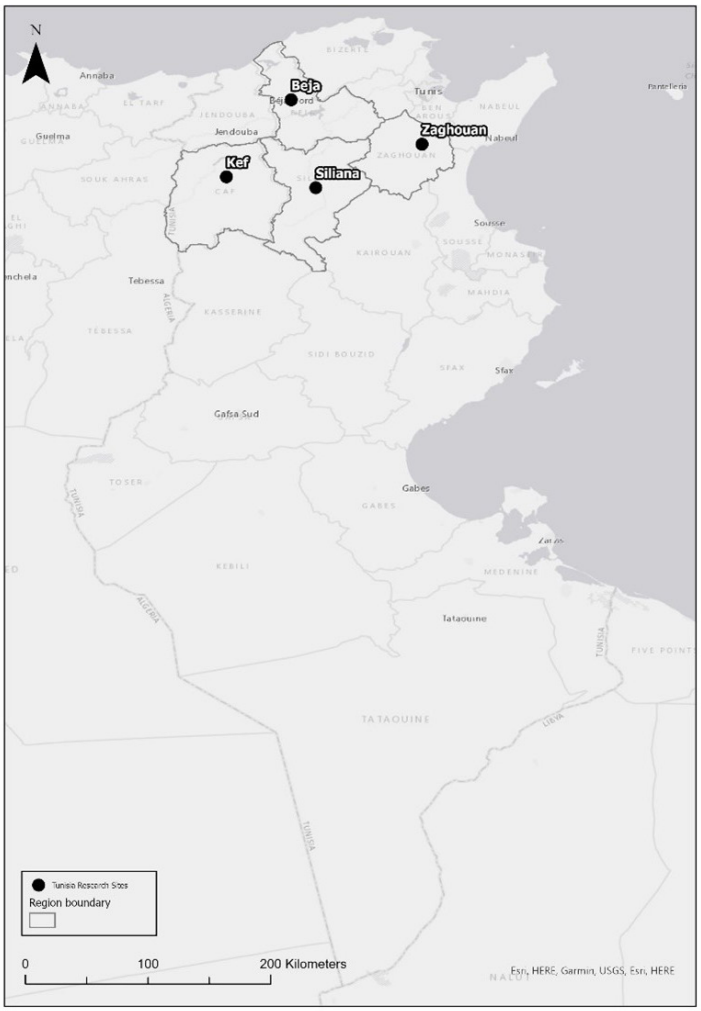
Summary overview

Providing farmers with essential agricultural information and training in the era of COVID-19 has been a challenge that has prompted a renewed interest in digital extension services. There is a distinct gender gap, however, between men's and women's access to, use of, and ability to benefit from information and communication technologies (ICTs), which is compounded by women's historical marginalization from traditional extension programs. These issues present a challenge to the inclusive delivery of digital extension services. To remedy this problem, we implement gender-inclusive language and deliver phones to 150 women farmers in 4 regions in women Tunisia.

We assess the impact of these gender-responsive digital extension efforts in Tunisia during the COVID-19 pandemic and accompanying isolation measures. Digital extension services were delivered to a total of **624 farmers (363 Men and 261 Women)** using different approaches in the regions of Beja, Kef, Zaghouan and Siliana in Tunisia (Figure 1). The survey sample included individual men (N=40) and women (N=41) who were prompted to share the extension information with their spouses, as well as men (N=41) who were not prompted to share. A final group of 40 husband and wife pairs (N=80) both received the same extension information. A gender-responsive approach was implemented, providing select women with mobile phones and delivering the extension information using gender-sensitive language in all messages sent to farmers. To improve the accessibility of the information, radio communications were delivered in addition to SMS messages. After 8 months of digital extension, the effectiveness of the intervention was assessed by survey.

We found that phone ownership greatly benefitted women farmers, facilitating their access to digital extension services, social networks, and important agricultural services. Women's access to digital extension also improved their confidence and participation in agricultural decision-making. For men and women, we find that gender-responsive digital extension has a positive impact on agricultural learning and adoption, though adoption was highest among husband and wife pairs. These findings indicate the importance of using a gender-responsive approach that targets women and non-household heads. Despite the positive impact of the intervention, men and women reported facing significant barriers to adoption, many of which reflect social, economic, and environmental constraints that must be addressed through policy interventions that accompany extension services. Our findings also reveal several areas where digital extension can be improved to further benefit farmers. Government agencies, non-governmental organizations (NGOs), and international agricultural and development organizations should consider adopting gender-responsive digital extension as an effective means of delivering agricultural information to men and women farmers, both during and subsequent to the COVID-19 pandemic.

Figure 1. Research Sites of Beja, Kef, Zaghouan and Siliana in Tunisia



Key findings

We find that **women's phone ownership**, many of which did not own a phone prior to the project, is beneficial in facilitating work by allowing women to **connect with important agricultural services, such as feed suppliers and veterinarians**. This represents a wealth of information and services that may otherwise be difficult for women to access in this context, where they shoulder heavy domestic workloads that limit their mobility outside of the home (Handapangoda & Kumara, 2013). Women also reported that the access to digital extension services provided through this intervention was an important benefit of phone ownership, as it provided **essential agricultural information**. For example, women reportedly benefitted by receiving extension information about livestock breeding, as well as animal vaccination, medicine and diseases.

Phone ownership was also important for women's **social connectivity**, particularly in reducing isolation and connecting women with their family, friends and relatives during the COVID-19 pandemic. Expanding and **strengthening women's social and support networks** through improved mobile phone access can mitigate mitigates women's loneliness and stress, as well as improve their access to agricultural information through informal networks (Alvi et al., 2021; Handapangoda & Kumara, 2013; Spielman et al., 2021). Our findings point to mobile phone ownership as a means of improving social connectivity, which is important for women's well-being and for their farming.

In terms of the impact of digital extension, our findings show that **learning was gendered**, with **women** reporting greater learning relating to **livestock management** in areas such as animal nutrition. Broadly, this reflects the traditional gendered division of labour in this context, where women are often responsible for feeding and milking livestock (Latreille, 2008). However, **women's learning in areas such as grazing indicate that women's interests extend beyond traditional gendered roles, as does men's interest in learning about apiculture** (Latreille, 2008). These findings build upon previous evidence from Tunisia emphasizing the important role that women hold in livestock rearing and grazing, despite assumption otherwise that pervade in policy and practice (Najjar & Baruah, 2021). **These findings demonstrate how gender inclusive extension can challenge traditional gender roles in farming and lead to increased learning in potentially new areas for women and men**.

The findings also show that women adopt more practices as a result of digital extension, despite facing many of the same barriers to adoption as men, including financial constraints, fear, and inadequate access to water. **Women reporting facing additional barriers such as time poverty, lack of training, and poor access to land**. These finding indicate women's willingness to adopt new techniques and practices, despite having been often excluded from agricultural extension services in the past. Moreover, **women's access to digital extension made a positive impact on women's involvement agricultural decision-making, improving their confidence and participation**. These findings support growing evidence of the effectiveness of gender-responsive digital extension (Lecoutere et al., 2020; Mittal, 2016).

Our findings indicate that providing digital extension information to husband and wife pairs is more effective than providing extension services to only men or women. Husband and wife pairs were more likely to share information with others, as well as adopt new agricultural practices and techniques. These findings suggest that a gender-responsive approach to extension may have a greater material impact on agricultural decision-making within the household. These results emphasize the need **to move away from the continued practice of solely targeting men and/or heads of household for agricultural extension** (Diaz & Najjar, 2019; Lecoutere et al., 2020; Ragasa et al., 2013).

We also find that when comparing the utility of the SMS service to the radio programming, it is evident that **digital SMS extension was far more effective in increasing men's and women's knowledge and adoption**. Radio extension services are often included in digital extension programs due to their great potential for inclusivity (Ragasa, 2014). While women in this study did benefit more from the radio extension than men, overall, few participants reported any interest in and/or benefits from radio extension as compared to SMS. This suggests that different methods of digital extension, such as audio or video messages, may be a more engaging and effective way of ensuring accessibility, particularly for the illiterate. **Additionally, participants suggested that more participative or interactive elements would improve their engagement in radio programs**.

In future digital extension, **providing farmers' with links to internet resources or providing the contact information of important agricultural services can further enhance farmer's learning and adoption by providing them with access to a greater variety of detailed and reputable information and services**. Participants also reported an interest in extension services that more broadly address the challenging conditions that they, as farmers, are experiencing, **particularly with respect to the affordability of inputs and climate change**. These interests reflect a broader evolution of extension services towards addressing large-scale social, economic, and environmental problems that impact farmers (Spielman et al., 2021). This may be a fertile area for the improvement of future digital extension programs.

Policy insights

It is crucial that women have **equitable access to agricultural information to improve their farming capability and strengthen their participation in agricultural decision-making**. In addition to **providing women with physical access to mobile phones**, financial support and educational initiatives offered via cooperatives and other local organizations will improve women's ability to use and benefit from digital extension and ICTs more broadly.

Practitioners and policy-makers should adopt **gender-responsive digital extension as an effective means of delivering agricultural information to men and women farmers during COVID-19**, given its positive impact on men's, and in particular women's learning and adoption. Targeting **men and women living in the same household also leads to increased adoption**, emphasizing the importance of including women and non-household heads. Digital extension services should make agricultural information equally available to men and women, **regardless of whether certain agricultural tasks have traditionally** been considered either men's or women's work.

The effectiveness of radio extension as a means of **ensuring inclusivity should be revised to include more participative or interactive elements that increase engagement and learning**. Audio or video messages may also present a more effective method of delivering inclusive digital extension. With respect to SMS extension, integrating messages with links to internet resources and agricultural services will further enhance farmer's learning and adoption by providing them with access to a greater variety of detailed and reputable information.

Digital extension services should include **participative discussions of the structural constraints** and conditions that farmers are experiencing in a given context, and **orient their services** and recommendations accordingly. Importantly, digital extension must be accompanied by commensurate **social and economic policy interventions that seek to support farmers in facing structural constraints that impact their ability to adopt new practices and ensure sustainable agricultural livelihoods. Women** in particular, **face many barriers to adoption**, which must be addressed in order to narrow the gender gap between farmers.

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