**Work package 1: Gender-based discrimination in service provision: Evidence from maize agro-input dealing in Uganda**

**Background and objectives:**

The existing literature summarizes learnings about gender-based discrimination faced by farmers downstream in food supply chains (Golla et al., 2011; Huyer, 2016; Kilic et al., 2015; Quisumbing and Doss, 2021). For instance, female farmers receiving lower farmgate prices, not having access to specific marketing channels (Kilic et al., 2015; Tanko et al., 2023), having less opportunities for contract farming (Charles and Andrew, 2001; Machio and Meemken, 2023; Mishra et al., 2020), engaging less in cash crop production (Hill and Vigneri, 2014; Manzanera-Ruiz et al., 2016), having limited access to labor (Quisumbing, 2003; Quisumbing and Pandolfelli, 2010), etc. However, evidence of gender-based discrimination in upstream service provision along the supply chain is limited (Elias et al., 2018; Fischer and Qaim, 2012; Meinzen-Dick et al., 2011). The applicant’s recent publications are few of the existing studies that contribute to this literature (De et al., 2024; Van Campenhout and De, 2023), focusing on perceptions about the service providers and not directly on service provision for farmers. This work package is motivated by the learnings from the applicant’s mentioned publications.

Existing studies indicate constrained access to good quality maize seeds and improved varieties for female farmers (Doss, 2001; Makate and Mutenje, 2021). This work package will contribute to this literature by highlighting gender-based discrimination faced by farmers in service provision from agro-input dealers, further emphasizing the importance of reliable service provision and partially explaining why even with improved varieties, yields remain low. Furthermore, the work package will also discuss how such discrimination in upstream service provision can shape farmers’ aspirations and expectations and impact their productivity and yields. Additionally, the existing literature lacks studies on gender homophily in agrifood value chains. Gender homophily can be defined as preference for the same gender, i.e., female (male) input dealers providing service to female (male) farmers mostly and this is not healthy for the growth of the supply chains. This work package will also attempt to add some evidence to this literature.

**Data:**

Pooled data (over time) from the supply chain surveys will be used which includes several potential indicators for service provision (from agro-input dealers) including feasibility to return the seed and obtain a refund in the case of problems with the seed, credit provisions, receipt of training or suggestions on the usage of improved varieties of seeds, provision of home delivery, other after-sales services, options of various payment methods and possibility to buy smaller quantities of seeds among others. The unique dyadic nature of the farmer-dealer links will be exploited (one farmer can receive services from various dealers and one dealer can provide services to various male and female farmers).

**Methods:**

In order to identify discrimination in service provision based on gender of farmers, the following two statistical methods could be suitable: (1) Comparing averages of the services received by female and male farmers using OLS regression on farmer-level averages (because of the dyadic nature) while controlling for farmer-level characteristics with standard errors clustered at the dealer level; (2) Dealer-level fixed effects model to remove all dealer level heterogeneity while controlling for farmer level characteristics with standard errors clustered at the farmer level. A convenient robustness check can be controlling for the services reported by the agro-input dealers themselves. Furthermore, gender homophily could be evaluated by adding an interaction term for the gender of the agro-input dealer. The results from this research could motivate policies for correction of gender-based discrimination in service provision to help form better and equal aspirations and expectations of both female and male farmers.