

# Gender and Social Inclusivity Analysis in the Common Bean Seed System in Burundi

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SeedEqual Supports Delivering Genetic Gains in Farmers' Fields



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## **Abstract**

Increasing agricultural productivity, food security and nutrition require inclusive seed systems that delivers quality seed to farmers. However, seed systems development in sub-Saharan Africa often focuses on needs of the large commercial producers, rather than the needs of the smallholder farmers, especially women. This study assessed gender issues in Burundi's seed common bean seed sector to generate gender-specific indicators that can guide development of inclusive seed systems. The results indicated that despite women allocating more land areas to bean varieties, they had limited array of sources of seed and accessed lower volumes of seed from formal outlets. Increasing access to agricultural extension services and training for women, ensuring that women farmers have access to quality seed varieties, providing access to financial services, such as credit and loans, for women farmers, and increasing access to markets for women farmers could enable Burundi seed systems to become more gender inclusive.

## 1. Introduction

### 1.1 Background

Sub-Saharan Africa is unlikely to eradicate hunger and malnutrition by 2030 because of the escalating proportion of population that is malnourished. FAO reports that about 264.2 million people in sub-Saharan Africa in 2020 are undernourished, representing an increase from 179 million people in 2005 (FAO et al., 2021). One of the factors contributing to escalating food problems in the region is low use of improved varieties that deny African farmers the benefits of modern plant breeding, both to them directly as producers, and ultimately to value chain actors and consumers they serve (Walker & Alwang, 2015). Therefore, there is an immediate need for action to tackle the social, economic, and nutritional issues through accelerated agricultural development.

Seed systems development is widely identified as crucial to increasing agricultural productivity and an important pathway for solving social and economic issues in sub-Saharan Africa. These benefits are often realized through increased crop yields, improved food security, and reduced poverty. However, there are several challenges that must be addressed to realize these benefits. One such challenge is the lack of adequate and timely information on availability of improved varieties capable of closing yield gaps. The lack of information about seed is often skewed, with women farmers having inadequate information and knowledge about availability of improved seed than men.

Women lack information on improved seed hampers technology adoption and progress towards increased productivity, ultimately reducing the benefits that can be realized from use of improved crop varieties. For example, if women farmers do not have the information, they need to make informed decisions about which seed varieties to use, they may select varieties that are not optimal for their location and soil type. This can lead to reduced yields and increased susceptibility to pests and disease, resulting in inequalities in agriculture. In addition, they are compelled to use seed provided by men who are relatively well-informed about traits of available varieties, resulting in production of varieties that may not align with their priorities and preferences.

Women participation in seed systems is greatly hampered by social norms as reported by Adam and Muindi (2019), Siri et al. (2020) and Ranjitha et al. (2021). It is anticipated that modern seed systems should ameliorate the social biases against women participation in formal seed system by enabling them to be change agents (African Biodiversity Network and the Gain Foundation, 2015). However, seed systems development in sub-Saharan Africa often focuses on needs of the large commercial producers, rather than the needs of the smallholder farmers, especially women, who are the main drivers of variety

adoption and agricultural innovations. This is the case of common bean seed system, which despite the bean being recognized as a women crop and having diverse preferences (Mugisha et al., 2019; Nakazi et al., 2017), their participation in bean breeding is low compared to men.

Information needed to support inclusive seed systems development need to be collected to address challenges experienced by men and women farmers in seed systems. Fortunately, there are several initiatives working to improve the availability of timely information on seed systems development from gender lens. For example, the Pan-Africa Bean Research Alliance (PABRA) have adopted gender-responses approaches to increase women access and use improved bean varieties in 31 countries through public-private partnerships with national agricultural research institutions (Buruchara et al., 2011). PABRA's initiatives had resulted in adoption of several seed access models designed to increase women use of improved seed and close gender gaps in seed systems. In addition, SeedEqual and Accelerated Breeding Initiative and Market Intelligence seek initiatives of One Consultative Group on International Agricultural Research (OneCGIAR) is also focusing on increasing demand and supply of seed in a gender-responsive way for inclusive benefits and women empowerment (CGIAR, 2021; Ranjitha et al., 2021).

Attention to gender issues in seed access is becoming prominent due to dearth of publications on the subject matter. This lack of gender-specific information at local, national, and regional levels significantly limits assessment of existing inequalities in the seed sector. In response, PABRA collected seed and gender data from four countries – Burundi, DR Congo, and Rwanda, and Zimbabwe – to generate gender-specific indicators that can guide gender-inclusive seed delivery interventions.

## **1.2 Objectives of the Study**

- i. To collect gender disaggregated seed access data from four countries to generate gender-specific indicators to inform gender-inclusive seed delivery approaches.
- ii. To assess gender issues in the seed sector to guide development of inclusive interventions that engage marginalized groups in seed systems.

## **2 Methodology**

### **2.1 Area of study**

The data were collected in four countries in sub-Saharan Africa. The selection followed the bean corridor approach used by Pan Africa Bean Research Alliance (PABRA). Rwanda was selected from EAREM Bean Corridor, Zimbabwe, and Burundi in SABRN corridor, and DR Congo corridor.

### **2.2 Sampling design**

The four countries were purposively selected because they are intervention countries under the Alliance's bean programme, PABRA bean breeding initiatives that focuses on addressing demand and supply challenges in the seed sector in sub-Saharan Africa. Partners in the four countries sampled farmers who participated the study depending on their geographical location. List of farmers were obtained from local extension officers, entered Excel, and randomly selected using the RAND function. Sample size provided in this draft report is Burundi and Zimbabwe and data collection is on-going in Rwanda and DR Congo. Data collection will commence later in Kenya. 101 farmers in Burundi and 141 in Zimbabwe participated in the survey.

### **2.3 Data collection**

The study collected quantitative data using a semi-structured questionnaire. The first section of the questionnaire collected information on sociodemographic information, second section collected data on farm and farm characteristics and decision making. The next two section capture bean production and marketing data, respectively. The fifth section collected information about varietal suitability, availability, accessibility, and quality of bean seed from the sources. A team of trained enumerators administered the tool.

### **2.4 Data analysis**

Data analysis is on-going. The data is being analysed using descriptive – measures of central tendency (mean) and analysis of proportions (frequencies and percentage). Further analysis will be performed inferentially – test statistics and econometric analysis to draw association between variables/indicators of interest. The results presented in this reported are obtained from Burundi study. Data wrangling of data collected from DR Congo, Rwanda, and Zimbabwe is on-going.

### 3. Results

#### 3.1 Sociodemographic characteristics

Table 1 presents the sociodemographic characteristics of respondents. Men respondents were relatively older (48 years) than women respondents (42 years). Higher proportion of men respondents (95%) indicated that they were household heads compared to 35% of women respondents. Most respondents irrespective of gender had primary level of education and married. However, about 20% of women respondents were widowed, suggesting most of female-headed households are de jure female-headed households. All women respondents had farming as the main occupation compared to 91% of men. Another 9% of men respondents has off-farm employment as the main occupation.

**Table 1.** Sociodemographic characteristics of respondents

Variable	Women	Men
Average age of respondent	42	48
Household head - yes (head)	35	95
Educational level (%)		
No formal education	15	22
Primary level	59	65
Secondary (O)	9	7
Secondary (A)	11	2
Tertiary Certificate	2	0
Diploma	2	2
University	2	2
Marital status (%)		
Never married	4	5
Married	74	95
Separated	2	0
Widowed	20	0
Main occupation (%)		
Farming	100	91
Off-farm employment	0	9

#### 3.2 Land allocation to bean production

The size of land a farmer owns often dictates the kind of farming they will be engaged in as they tend to assign a higher size to the most profitable venture. The average land ownership in the study area among the men respondents was 2.14 acres compared to women who reported an average of 2.40 acres. Most of the land is jointly owned by both the man and woman as agreed by 51% and 46% of the men and women respondents respectively. The total land area under bean production among the men was 0.93 acres while women allocated was 1.5 acres.

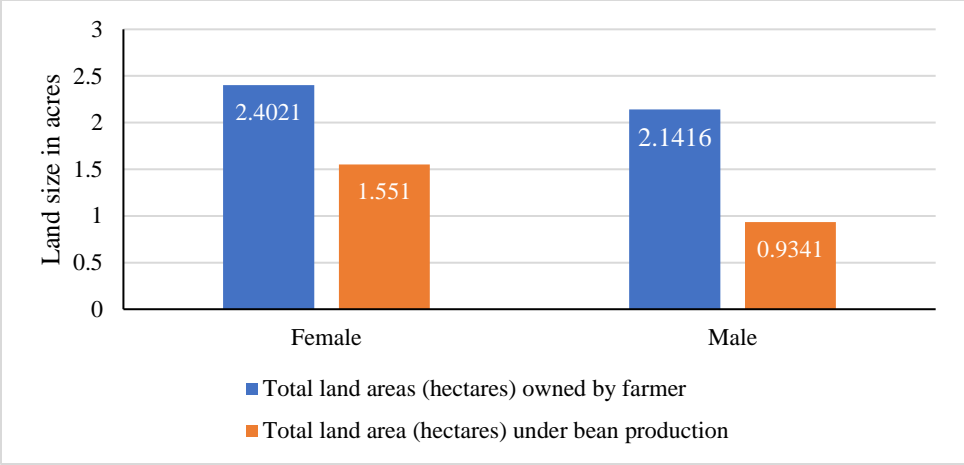


Figure 1. Land owned and allocated to bean production.

**3.3 Seed Access Models and Quantities**

Most farmers in the study revealed that they used their own saved seeds as a source of seed supply, with 73% of men and 57% of women respondents reporting (Table 2). Additionally, 40% of men and 33% of women reported obtaining seeds from local markets. Seed companies were the least reported source, with only 4% of men farmers obtaining seed from the source. Other sources of seed included agro-dealers, farmers groups, and research institutes. The results in Table 2 also reveal that men have multiple sources of seed (7) than women (5).

**Table 2.** Percentages farmers obtaining seed from different sources.

Source	Female (n=46)	Male (n=55)
Own seed	57	73
Local market	33	40
Agro dealer	22	9
Farmer group	17	9
Research institute	17	18
Seed company	0	5
NGO	0	4

The results in Table 3 shows that men farmers obtain larger quantities of seed from formal sources (agro-dealers, research institutes, and seed companies) than women.



**Table 3.** Quantities of seed obtained from different sources in kg.

Female	Women	Men
Own seed	48	48
Farmer group	33	12
Agro dealer	24	34
Local market	17	20
Research institute	14	23
Seed company		52
NGO		80

### 3.4 Recycling of seeds

On average, women recycled their own produced seeds/grains twice compared to men, who recycled them three times.

### 3.5 Mode of seed access

Farmers can obtain seeds from a variety of sources depending on availability, accessibility, and affordability. Most women (61.1%) and men (54.4%) paid for their seeds in cash. Own seed was the next frequent mode of seed access.

Model	Female (%)	Male (%)
Cash	61.1	54.4
Own seed	24.6	27.2
Free	6.9	6.7
Subsidy	5.7	9.2
Credit	1.7	0.5
Pre-financing	0	0.5
Exchange for labor	0	1.5

## 4. Discussions

The results indicate gender inequalities in Burundi's seed systems, indicating that women have limited access to formal seed sources that guarantee quality. Women's access to formal seed outlets is lower than men's access in Burundi. This could be due to several factors, including unequal access to resources and decision-making power, lack of awareness of formal seed outlets, and gender-based norms and values that limit women's economic opportunities. Additionally, women are often excluded from agricultural extension services and other support programs, which can further limit their access to formal seed outlets. As a result, women are more likely to rely on informal seed sources, such as family, friends, and local markets, which may not provide them with the best quality or variety of seeds. Improving women's access to formal seed outlets can have a positive impact on agricultural productivity and food security. The lack

of access to formal sources can impede women's ability to improve their agricultural production. This can lead to lower yields and incomes for women farmers, which can have a negative impact on their livelihoods and the overall economy of their communities.

## **5. Conclusion**

The study assessed gender issues in the seed sector with the aim of developing indicators that provide input for development of inclusive seed systems. The results indicated that despite women allocating more land areas to bean varieties, they had limited array of sources of seed and accessed lower volumes of seed from formal outlets. Therefore, women participation in formal seed systems could be achieved by providing them with access to the same resources and services that men have, such as extension services, training, and credit. This could be done through workshops, seminars, and other forms of outreach. Additionally, supporting women-led seed businesses and networks could help to ensure that women have access to the same quality and quantity of seeds as men. Providing credit to women farmer could help them purchase the necessary inputs for their farms, such as seeds, fertilizer, and other supplies. Furthermore, increasing access to markets for women farmers by providing more information on the latest market trends and prices, as well as offering support and advice to women farmers on how to access these markets. Also, ensure that women farmers have access to quality seed varieties. This could include providing funding for research and development of seed varieties that are tailored to the needs of women farmers.

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