



# FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative



## Ripoti Mbegu Isiyu Bora (Rimi)

Empowering Tanzania's Farmers to Report Low Quality or Fake Seed to the Regulator



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This is a start of a journey where farmers have access to TOSCI to give feedback on seed quality issues, which, hopefully, will lead to enlightened and empowered farmers.

**Cover page photo credit:** Tanzania Official Seed Certification Service

### DISCLAIMER

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**Feed the Future Consortium Partners** in the Feed the Future Global Supporting Seed Systems for Development activity:



*When farmers in most of Africa discover that the seed they bought and planted is not what they expected, they have far too long been largely powerless. “Ripoti Mbegu Isiyo Bora” - RIMI (Stop Bad Seed in Swahili) is a farmer empowerment tool which allows Tanzanian farmers to register complaints about fake and poor-quality assured seed with the country's regulatory body, Tanzania Official Seed Certification Institute (TOSCI). This tool was piloted in 2023 during the long rainy season in four regions of Tanzania: Ruvuma, Manyara, Songwe, and Mbeya.*

## INTRODUCTION

Tanzania is an agricultural country that relies heavily on the success of its agricultural sector for economic growth and food security. It is estimated that agriculture employs around 66% of the population and accounts for about 30% of Tanzania's GDP.

The right to food is recognized and protected in the Constitution of Tanzania. Specifically, Article 14 of the Constitution guarantees the right to food as part of the broader right to life.

*“Every person has the inherent right to life, and no person shall be deprived of his life intentionally save in execution of the sentence of a court in respect of a criminal offense of which he has been convicted.”*

Tanzania has made progress toward achieving food sufficiency, but challenges persist. The country has vast agricultural potential, with fertile land, diverse agro-climatic zones, and a wide range of crops and livestock. However, several factors affect Tanzania's food sufficiency, including rapid population growth, climate change, limited access to inputs and resources, post-harvest losses, and market inefficiencies.

Achieving food sufficiency in Tanzania can be greatly facilitated by using high-quality, assured seed<sup>1</sup>. High-quality, assured seed, or quality certified seed, plays a crucial role in increasing agricultural productivity, crop yields, and overall food production.

## BACKGROUND

Tanzanian farmers depend on seed certified by the Tanzania Official Seed Certification Institute (TOSCI), a governmental institution within the Ministry of Agriculture established under the Seeds Act No. 18 of 2003. TOSCI is responsible for certification and control of quality agricultural seeds produced or imported into the country for sale. However, despite stringent certification protocols, Tanzanian farmers still risk purchasing low quality or counterfeit seed. At any point along the value chain – from seed production to certification to storage to distribution – seed quality can deteriorate. For example, if stored improperly after certification (at either the seed company warehouse or at an agro-dealer shop), the seed will lose viability. Coupled with the possible presence of counterfeit seed in the market – usually, grain that is colored and packaged to look like seed – farmers can risk their potential harvest while believing that they are buying good quality certified seed.

In the past, when Tanzanian farmers were disappointed by the purchase of sub-standard or counterfeit seed, they had little effective recourse. While they were encouraged to return to the agro-dealer with the original packaging, there was no systematic way for farmers to raise the alarm about low quality or counterfeit seed in the market.

To address these challenges, TOSCI proposes to increase post-harvest seed inspection at the time of planting, and also increase inspection visits to seed dealers. These steps will be of particular importance as the government plans to implement a seed subsidy in the upcoming planting season, as subsidies sometimes attract rogue traders.

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<sup>1</sup> Quality assured seed refers to seeds that have been tested and proven to meet specific quality standards, ensuring higher germination rates, disease resistance, and improved crop yield. By using certified seed, farmers can enhance their agricultural productivity and overall profitability.

## IMPLEMENTATION

Two approaches were taken to address the aforementioned challenges, including: (i) creating farmer awareness on importance of using high-quality assured seed and (ii) implementing a farmer empowerment tool named Ripoti Mbegu Isiyu Bora (RIMI - Swahili for “Stop Bad Seed”), which allows Tanzanian farmers to register complaints about fake and poor-quality seed with the country's regulatory body, TOSCI.

### Creating Farmer Awareness on Use of Quality Certified Seed

TOSCI officials created farmer awareness on the importance of using certified seed in Tanzania to be assured of good yields, which they did through interviews on two national television stations (AZAM TV and TBC TV) and three regional radio stations (KEY FM, FM Manyara, and Bomba FM).

During the interviews, TOSCI staff discussed the following:

1. ***The concept of certified seed:*** TOSCI explained what certified seed is and how it differs from traditional or farm-saved seed. TOSCI highlighted that certified seed is produced under controlled conditions, following specific international quality standards and procedures, thereby ensuring its purity, germination rate, and genetic quality.
2. ***The benefits:*** TOSCI staff highlighted the advantages of using certified seed and further went on to discuss how it can lead to improved crop yields, better disease tolerance, higher market value, and enhanced profitability. The TOSCI team explained that improved crop varieties for which certified seed sold are specifically developed and selected to perform well under local agro-climatic conditions.
3. ***Quality assurance:*** TOSCI discussed the rigorous quality control measures that certified seed undergoes, including seed testing, inspections, and certification by authorized institutions. They explained to farmers how the certification process ensures that farmers receive seed with known qualities, reducing the risk of low germination, contamination, or poor performance.
4. ***Misconceptions:*** TOSCI addressed common misconceptions or concerns that farmers may have about certified seed, such as higher costs or limited availability. Staff explained that while certified seed may have a higher upfront cost, the benefits in terms of improved yields and quality outweigh the initial investment. They also discussed the availability of certified seed through established seed companies, agricultural input suppliers, and government programs.
5. ***Highlighted support services:*** TOSCI staff told farmers about the availability of support services, such as those by agricultural extension officers, who can provide guidance on selecting the right certified seed varieties, proper agronomic practices, and management techniques to maximize the benefits of using certified seed. They also highlighted the new RIMI farmer empowerment tool, which allows Tanzanian farmers to register complaints about fake and poor-quality seed with TOSCI.





**Figure 1. TOSCI representatives discuss certified seed benefits on radio and television**

## RIMI Implementation

### Operationalization of RIMI

An SMS-based farmer feedback mechanism (RIMI) was piloted in response to challenges associated with poor-quality seed. RIMI uses a shortcode “15009” for farmers to communicate their associated seed issues with TOSCI. The shortcode is mapped to Airtel, Tigo, and Vodacom and connected to a data management system managed by Echo Mobile. The system uses a survey-based methodology to collect information from farmers on their experience with low quality seed. The system is activated when a farmer sends the keyword “TOSCI” to the shortcode. A series of questions are then sent back to the farmer to answer. The RIMI system utilizes the following steps to gather, analyze, and respond to data:

1. Farmers send the keyword “TOSCI” to 15009 to activate the system.
2. The Echo Mobile web application platform sends back the following survey questions for the farmers to answer: (i) type of seed issue they experienced; (ii) crop that had an issue; (iii) variety that had an issue; (iv) location of their “shamba” (farm) including the region, and v) gender of the farmer<sup>2</sup>.
3. Farmers’ responses are collected and stored in the Echo Mobile platform database.
4. TOSCI staff can log into the backend of the Echo Mobile system and quickly look at basic analyses generated by the platform to understand what is happening. To obtain a more detailed

<sup>2</sup> Note that the farmer only receives the next question after answering the previous question.

analysis, TOSCI staff download the data in MS Excel and manually analyze the data to identify patterns.

5. TOSCI sample a few farmers in a region or district whenever patterns associated with low-quality seed are identified and call them to gather more information.
6. When practical, TOSCI also visits sampled farmers to inspect their farms.

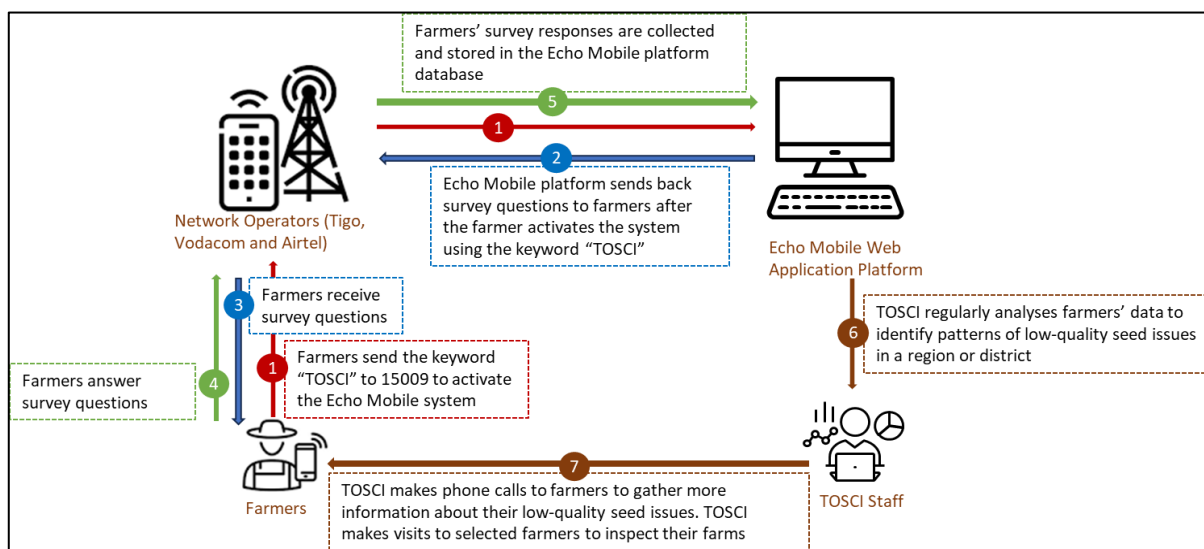


Figure 2. Step-by-step infographic of how RIMI works

### Promoting the shortcode

During the first phase implementing RIMI in 2021, three regions had been selected by TOSCI to align with the planting season, which also constitute large agricultural areas. These regions were maintained as they had a large number of farmers, the crop season aligned with the timing of RIMI, and there is a diversity of crops planted in the regions. Radio stations were selected due to popularity and the large number of listenership commanded by these stations. The airing timing was selected after an analysis of the optimal time to target farmers – which is early in the morning or late in the evening. In addition, the service provider added two complementary interviews on national TV stations – Azam TV and TBC.

The advertisements included a role play including both men and women voiced, and radio spots to further explain the purpose of RIMI and how

### Box 1. Radio script

#### Male Voice 1

Hello Mary, I can see you're weeding today! Your maize looks worse than mine yet we planted at the same time! Your maize is weak and seems to be suffering from poor germination.

#### Female Voice 1

I know, this looks terrible. I don't know what happened.

#### Male voice 1

Mary, you may have bought seed, but of poor quality. You need to report to TOSCI.

#### Female Voice 1

What is TOSCI?

#### Male Voice 1

TOSCI is the official seed certification institute in Tanzania. They have a free SMS based system known as **RIPOTI MBEGU ISIYO BORA** where farmers can complain about poor quality seeds by SMSing the word TOSCI to 15009 and follow instructions. It is free.

#### Female Voice 1

Let me send it now!

#### Voice Over (MALE)

Dear farmers, have you been suffering from buying low-quality seeds?

Ripoti Mbegu Isiyu Bora is a free SMS based service where farmers can complain about poor quality seeds by SMSing the word TOSCI to 15009.

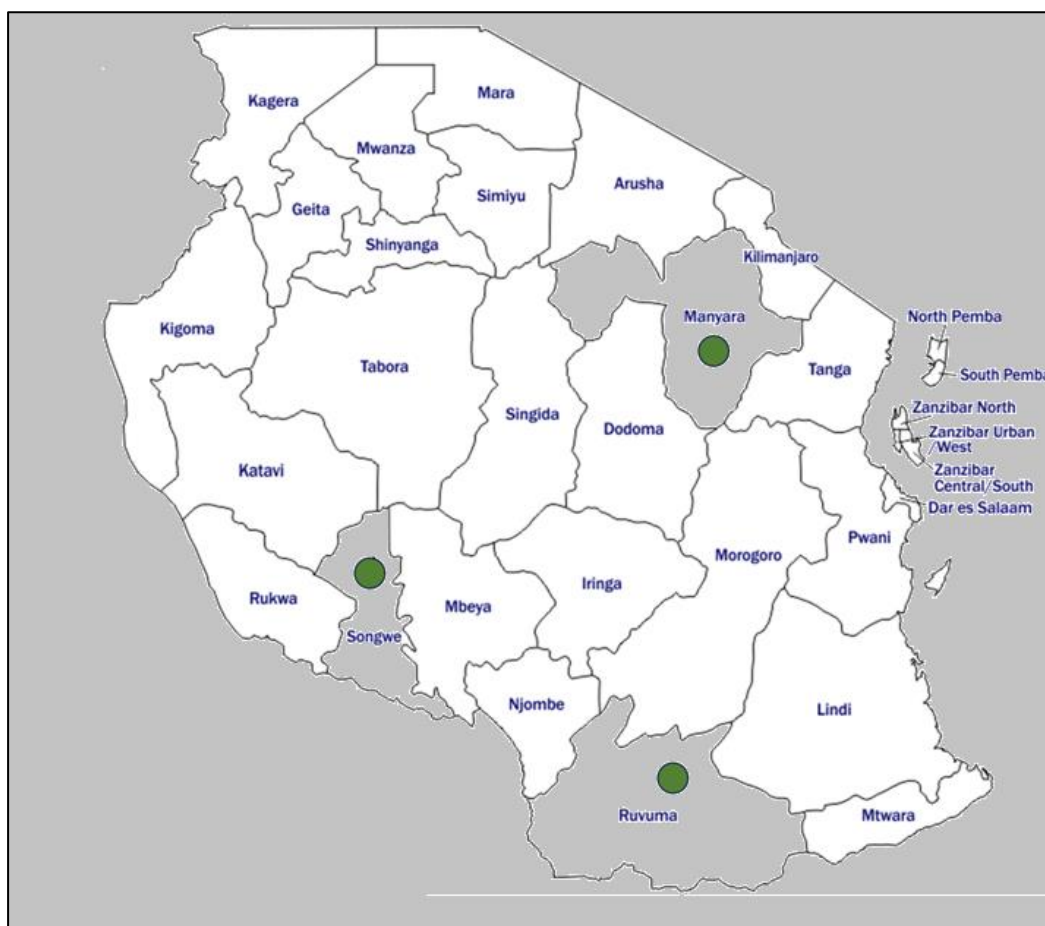
SMS the word TOSCI to 15009. Ripoti Mbegu Isiyu Bora.

to use it were aired throughout the day.

Through the use of local regional radio stations (Ruvuma's KEY FM, Manyara's FM Manyara and Songwe's/Mbeya's Bomba FM), RIMI promotions were carried out in the regions of Ruvuma, Manyara, Songwe, and Mbeya. The promotion emphasized the simplicity and convenience of using the shortcode to report seed quality issues. The promotion was carried out by:

1. Identifying peak listening hours for farmers, such as early morning or late afternoon, to maximize audience reach.
2. Utilizing Swahili, the national language, for broadcasting to ensure widespread comprehension and engagement.
3. Developing informative and entertaining radio spots, presenter mentions and dramatized advertisements depicting farmers who have benefited from using certified seed.

The promotions were carried out over a period of three weeks in each region as shown in **Table 1. Summary of shortcode promotion regions, radio stations, and periodicity.**



**Figure 3. Regions covered by RIMI in Tanzania**

**Table 1. Summary of shortcode promotion regions, radio stations, and periodicity**

Region	Regional radio station used	# of aired ads per day	# of weeks aired	Total # of ads aired
Ruvuma	KEY FM	12	3	252
Manyara	Manyara FM	9	3	189
Mbeya/Songwe	Bomba FM	10	3	210



## Using RIMI data to improve seed quality

TOSCI pulls data from the system after the radio campaign has ended and farmers having stopped sending their complaints. TOSCI then:

- Assigns officers or experts to investigate farmer complaints. They evaluate the seed quality concern, verify the claim, and take appropriate action. This involves conducting field visits, collecting samples for laboratory analysis, and engaging with both the complainants and seed suppliers.
- Keeps farmers informed about the progress of their complaints and provide regular updates on the status of investigations and actions taken. If the complaint is resolved satisfactorily, TOSCI provides feedback to the farmer and ensures necessary corrective measures are implemented.
- Regularly analyzes the data collected from the complaints to identify patterns, recurring issues, and trends related to seed quality. TOSCI uses this information to map out areas and seed suppliers that require enhanced checks, improve seed quality control measures, and inform policy enhancements, if needed.
- Monitors the effectiveness of the shortcode system and makes necessary improvements based on feedback and evaluation. TOSCI seeks input from farmers and stakeholders to refine the process and ensure it remains responsive to their needs.

## KEY FINDINGS

### 1. Farmers' system usage

The system received 1,734 complaints from farmers as of August 9, 2023, of which, 1,376 were complaints about poor quality seed, as shown in **Table 2. Analysis of RIMI system usage by farmers** below. By end of the campaign period on July 24, 2023, 1,678 messages had been received, with an additional 56 complaints received after the radio campaigns had ended. Thirty-two percent of the farmers who used the system completed all the questions. As long as the message platform is accessible, farmers will keep complaining about the challenges they encounter, long after the campaign on local radio has ended.

From the 49% of RIMI users who indicated their gender, 78% were male while 22% were female. Ruvuma had the highest number of female participants at 33%, while Songwe had the lowest number of female users at 12%. Manyara, Mbeya, and other regions had 25%, 23%, and 17% respectively. Men had the highest complaints on poor germination and disease or pests at 76% compared to women, while 46% of women had complaints on wrong variety – the highest of female complaints for a particular issue.

**Table 2. Analysis of RIMI system usage by farmers<sup>3</sup>**

<b>Total number of farmers that voiced concern about poor quality seed</b>	<b>1,376</b>
Percentage of farmers that voiced concern about poor quality seed from Ruvuma	7%
Percentage of farmers that voiced concern about poor quality seed from Manyara	27%

<sup>3</sup> Note that, typically, text message survey platforms have high dropout rates after the second question. In order to address this issue, the most important questions are posed first, so that sufficient pertinent information is collected, even if most of the respondents drop off before finishing the survey.

Percentage of farmers that voiced concern about poor quality seed from Songwe	8%
Percentage of farmers that voiced concern about poor quality seed from Mbeya	22%
Percentage of farmers that voiced concern about poor quality seed from other regions	36%

## 2. Complaints on poor quality issues by region

Farmers were asked to select all issues that affected their crop. The issues were grouped in three categories: poor germination, disease or pest, and wrong variety. Poor germination and disease or pests accounted for 48% and 46% of the complaints, respectively. The highest complaints about poor germination come from combined regions outside of the four pilot regions (Ruvuma, Manyara, Songwe, and Mbeya). Songwe had the most complaints on disease and pests, while both Ruvuma and Songwe had the most complaints on issues of wrong variety.

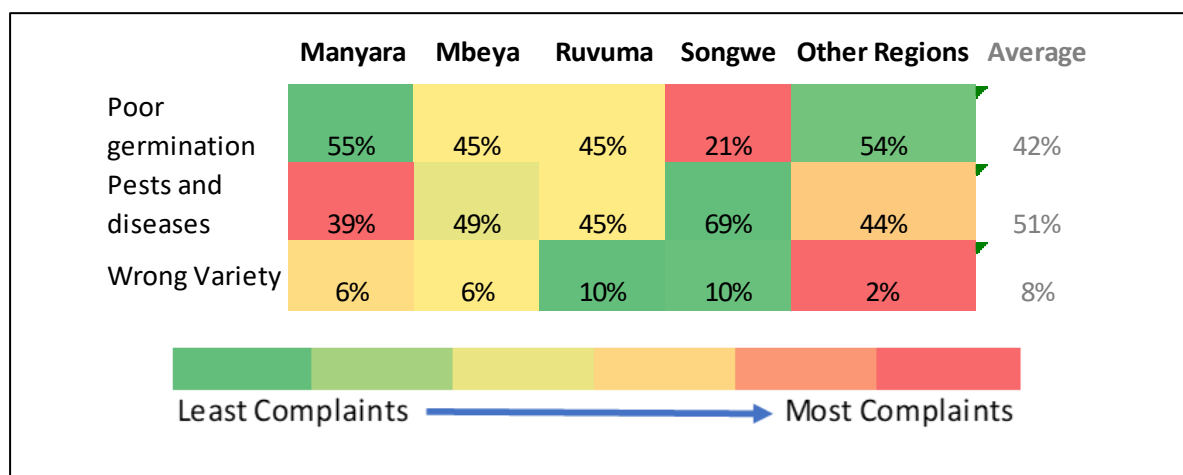


Figure 4. Percentage of farmer complaints on poor-quality issues by region

## 3. Poor quality complaints by crop and region

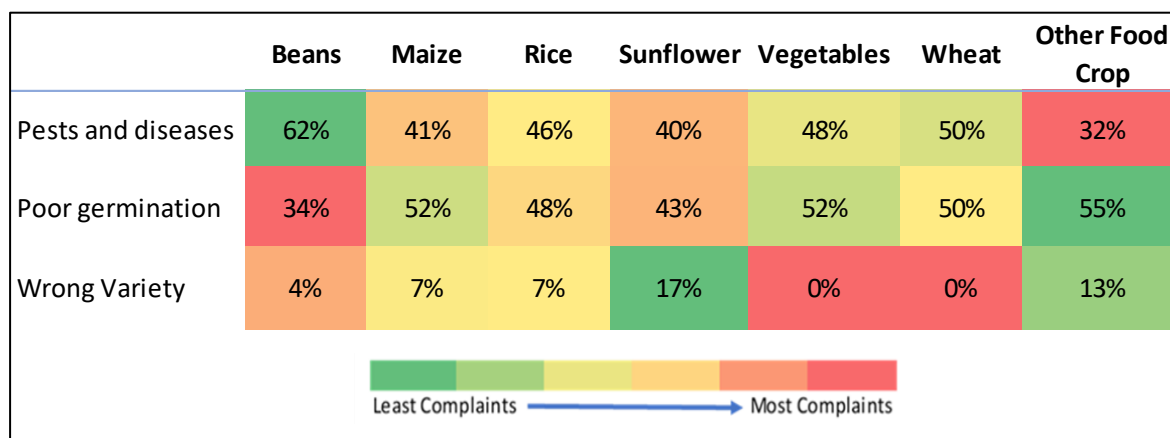
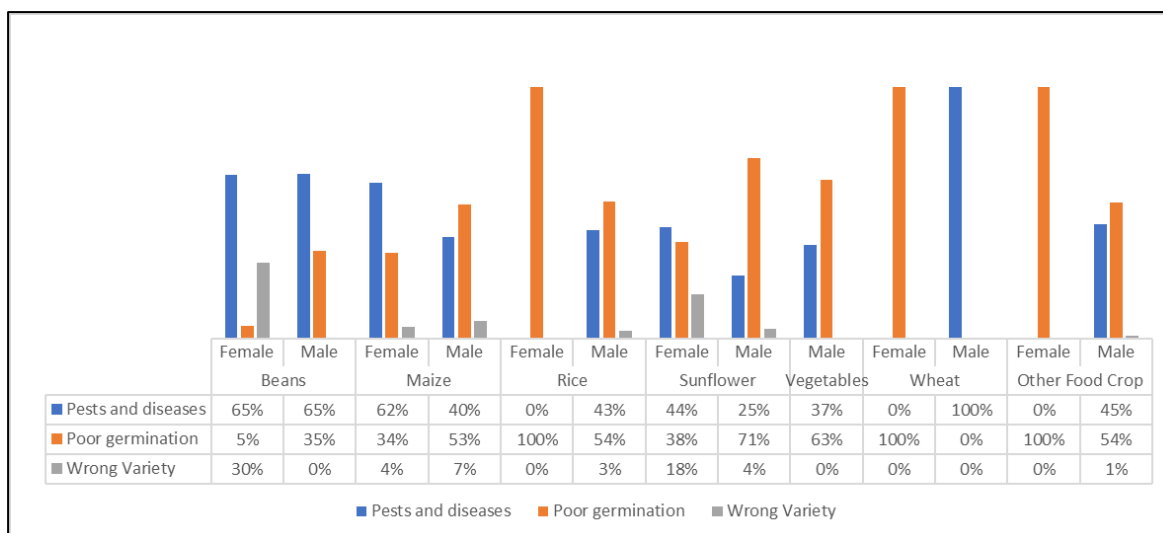


Figure 5. Percentage of farmer complaints on poor-quality issues by crop

Compared to other crops, complaints about poor germination for vegetables, wheat, and maize seed accounted for more than 50% of all complaints. Disease or pests in beans and wheat had the most issues associated with poor quality segregated by crop and gender.



**Figure 6. Percentage of farmer complaints on poor-quality issues by crop, region and gender**

Only male farmers expressed concerns regarding problems with poor germination of vegetable and wheat, and with disease and pest on rice. On the other hand, only female farmers reported having problems regarding poor germination with wheat and with receiving the wrong variety of both rice and beans. Roughly 14% of female farmers complained about wrong varieties for sunflower as compared to 4% of male farmers.

	Beans	Maize	Rice	Sunflower	Vegetables	Wheat	Other Food Crop
<b>Pests and diseases</b>	<b>65%</b>	<b>47%</b>	<b>27%</b>	<b>35%</b>	<b>48%</b>	<b>50%</b>	<b>38%</b>
Manyara	5%	16%	2%	11%			
Mbeya	33%	10%		11%	15%		
Ruvuma	6%	2%		13%			
Songwe	13%	5%	11%		15%	0%	
Other Regions	8%	14%	14%		18%	50%	38%
<b>Poor germination</b>	<b>28%</b>	<b>47%</b>	<b>71%</b>	<b>53%</b>	<b>52%</b>	<b>50%</b>	<b>61%</b>
Manyara	7%	22%		13%	18%		
Mbeya	6%	8%	32%	19%			11%
Ruvuma	8%	1%					10%
Songwe		1%					6%
Other Regions	7%	15%	39%	21%	34%	50%	34%
<b>Wrong Variety</b>	<b>7%</b>	<b>6%</b>	<b>2%</b>	<b>12%</b>	<b>0%</b>	<b>0%</b>	<b>1%</b>
Manyara		2%	2%				
Mbeya	7%			10%			
Ruvuma		1%					
Songwe		1%					
Other Regions		2%		2%			1%

**Figure 7. Percentage complaints by crop and region**

From the above figure, TOSCI can zero in on the greatest challenges facing a particular crop by region and contact concerned farmers to determine underlying issues. For example, if farmers confirm that affected seed was purchased from one shop, it could be the variety stemming from the seed producer or the seed distributor. TOSCI will investigate the following challenges as synthesized from previously collected data:

1. 33% of bean farmers in Mbeya complained about pests and diseases;
2. 22% of maize farmers in Manyara complained about poor germination;
3. 32% of rice farmers in Mbeya complained about poor germination;

4. 19% of sunflower farmers in Mbeya complained about poor germination;
5. 7% of bean farmers and 10% of sunflower farmers in Mbeya complained about wrong variety; and
6. vegetables, which had relatively fewer complaints, had 18% farmers in Manyara complaining about poor germination; additionally, 15% of farmers both in Mbeya and Songwe also complained that their vegetables had pests and diseases.

## CONCLUSION

Implementing RIMI for farmers to report issues regarding poor quality seeds can be an effective strategy to address the problem of low seed quality or fake seed and, by extension, improve crop yields. By establishing a direct communication channel between farmers and TOSCI, this approach allows for timely reporting, monitoring, and resolution of seed quality issues experienced by farmers. The piloting of RIMI confirmed its several advantages, including:

1. **Rapid Reporting:** Farmers can quickly report cases of poor-quality/fake seed using RIMI. This enables them to notify TOSCI promptly, ensuring that action can be taken in a timely manner.
2. **Efficient Monitoring:** RIMI enables systematic tracking and monitoring of reported cases. It allows TOSCI to gather data on the frequency, location, and nature of seed quality issues, which can be analyzed to identify patterns, trends, and potential underlying causes.
3. **Accountability:** By providing a platform for farmers to report seed quality issues, RIMI promotes transparency and accountability. It holds seed suppliers and other stakeholders responsible for addressing reported concerns and taking appropriate corrective measures.
4. **Targeted Interventions:** When RIMI is well-implemented, TOSCI can identify specific regions or suppliers consistently associated with poor quality seeds. This information can guide targeted interventions such as increased inspections, farmer awareness campaigns, or policy changes to address the root causes of the problem.
5. **Knowledge Sharing:** RIMI can also serve as a platform for disseminating information and best practices to farmers. TOSCI can use this channel to share knowledge on seed selection, storage, handling techniques, and other relevant topics, helping farmers improve their practices and mitigate potential seed quality issues.

The success of RIMI relies on effective implementation, public awareness, and prompt action by TOSCI. Regular monitoring, analysis of reported cases, and timely feedback to farmers are crucial for building trust and ensuring the RIMI's effectiveness in addressing poor quality seed issues. Continuous evaluation and improvement of RIMI on feedback from both farmers and authorities can further enhance its impact in the long term.

As a next step, TOSCI is reviewing the data to establish where consistent patterns of complaints occurred. TOSCI has the full list of farmers who used the system, including telephone numbers, and will sample farmers in the most-affected areas and interview them either by phone or by paying them a visit. TOSCI will then establish where the problem arose (i.e., at farmer level, at agro-dealer level, or at seed company level) and take measures to correct the situation in future.

Initial findings from TOSCI interviews with affected farmers show that many of the farmers purchased seed in remote areas that are not visited frequently by TOSCI seed inspectors. Some of the farmers also admitted to having purchased seed from unregistered seed dealers, therefore increasing the risk of purchasing fake or low-quality seed. To address these challenges, TOSCI proposes to increase post-harvest seed inspection at the time of planting, and also increase inspection visits to seed dealers.

Agri Experience will continue supporting TOSCI through coaching and further data analysis as required so that TOSCI effectively addresses the issues raised by farmers through RIMI. For example, Agri Experience has discussed with TOSCI an approach to carry out additional farmer interviews. Complaints with a percentage of 15% or higher on the same crop issue in the same region points to a widespread issue that requires further investigation.

## RECOMMENDATIONS

1. It is necessary to implement RIMI for at least three consecutive seasons in order to gather longitudinal data that will help analyze its effects and highlight any lessons that can be learned. A more thorough knowledge of the initiative's effects can be gained through longitudinal studies, which examine changes and trends over time.
2. Initial findings from TOSCI interviews with affected farmers show that many of the farmers purchased seed in remote areas which are not visited frequently by TOSCI seed inspectors. Some of the farmers also admitted to having purchased seed from unregistered seed dealers, therefore increasing the risk of purchasing fake or low-quality seed. The issue clearly came out from the data analysis, where 48% of complaints were about poor germination, and 46% of complaints were about diseases and pests. However, as TOSCI continues to contact more farmers, new findings may emerge.
3. More complaints came from the other regions within Tanzania, as compared to the three regions. It will be useful to expand RIMI coverage to more regions of the country.
4. To determine the impact of the RIMI campaign, TOSCI must conduct a post-survey analysis. This will enable us to determine how many farmers knew about RIMI and had issues with poor quality seed; how many farmers knew about RIMI but did not have issues with poor quality; how many farmers were not aware of RIMI but had issues with poor quality; and how many farmers were not aware of RIMI and did not have issues with poor quality.
5. TOSCI should promote RIMI on various social media platforms. The majority of young people use social media to learn about current events and political issues, making it a useful platform for raising awareness about RIMI among youth.