

Participatory Approaches to Identify and Test Gender-Responsive Seed Information Pathways



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Seed Equal



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Executive summary

This technical report comprises the results of a formative, exploratory study conducted to understand farmers' preferences about which seed information pathways are most effective to provide them information on quality seeds of improved varieties. It is a part of a larger project aimed to identify and test out gender-responsive seed information and delivery pathways. While this particular exploratory study focused predominantly on seed information pathways, it is planned that future studies within this project shall consider the interlinkages between seed information and delivery pathways. The study incorporates an intersectional gender and social inclusion lens to understand farmers' preferences for seed information pathways. It also adopts a participatory approach to seek farmers' assessment of communication products designed to provide information on seeds of new varieties and aims to incorporate this feedback in improving the effectiveness of the products.

In partnership with the Centre for Sustainable Agriculture (CSA), focus group discussions (FGDs) were conducted with two groups of farmers – a mixed sex group and an all-women's group – belonging to farmer producer companies (FPCs) being supported by the CSA for seed production business in two districts of Telanagana, the Rajanna Sircilla and the Karimnagar districts. The CSA was requested to select a brochure and a video from their collection of communication products that were used for the testing process. The FGDs were conducted by two members of the IRRI team with the support of two members of the CSA.

It was found that farmers use a range of digital and non-digital pathways to access seed-related information with a slightly greater dependence on non-digital pathways. Men farmers appear to have slightly more digital access than women. It was found that while literacy does influence farmers' information preferences, farmers who are unlettered still see value in brochures and other written material provided they have appropriate pictorial representations of important characteristics of the new variety. All farmers expect detailed information about crop varieties including duration, seasons, package of practices, market linkages and so on to be mentioned in communication products in order to help them make informed decisions.

The study found that gender plays an important role in influencing seed information choices among farmers although an intersectional analysis is equally critical to capture the diverse needs

and expectations of women farmers. Furthermore, the study also revealed that women farmers are often equally interested in the marketing and business aspects of seed production as men.

Introduction

Developing communication pathways that are best suited to provide women and smallholder farmers accurate, timely and appropriate information about quality seeds of improved varieties is critical to improving their technical and business competency, promoting their nutrition and economic security and creating a decentralized farmer-led seed system that leverages the agency of women farmers. Agriculture communication and extension systems often tend to be designed around the needs of men farmers, which increases “information asymmetry” (Ansari et al 2014:1455). The male-centrism of agriculture communication and extension often results in the neglect of the unique needs and challenges of women farmers. Women’s limited mobility, their disproportionate caregiving responsibilities, their digital exclusion and their tendency to rely on informal seed exchange networks for seed access often restrict their participation in agri extension programmes and limit their access to information on formal seed sector developments. This, in turn, compromises women’s agricultural productivity and efficiency (Ansari et al 2014) and makes them more vulnerable to the detrimental effects of climate change. Hence, gender-responsive information pathways that are informed by the intersectional expectations and challenges of diverse groups of women and that are customized in accordance with contextual specificity contribute to building resilient and diversified seed systems. In other words, gender-responsive communication is a vital ingredient of agricultural resilience (Daigle and Heiss 2019).

In order to make agricultural communication truly gender-responsive, replacing a top-down, expert-driven approach with a participatory approach is vital (Tufté and Mefalopulos 2009). Participatory communication approaches value women as partner collaborators rather than passive recipients of information and solicit their insights and knowledge about designing effective communication that is customized to meet their unique requirements. Through continuous dialogue with women and marginalized farmers, new insights could be obtained about their expectations and challenges about seed information pathways and an accompanying flexible programme design could allow these insights to be synthesized into practical strategies to promote information equity. Besides these direct inputs into the development of gender-responsive information pathways, participatory engagement creates a supportive environment for open conversation, which could reveal the underlying beliefs, values, norms, constraints and other factors that influence the participants’ responses. Consequently, these sharings enable a deeper and more nuanced gender and social analysis of farmers’ information preferences.

The present study is a part of a broader project that aims to leverage participatory approaches to developing gender-responsive seed information and delivery pathways that are informed by intersectionality and that carry the potential to provide a wide range of women farmers access to reliable and timely information about quality seeds. As a part of this project, a formative, exploratory study comprising Focus Group Discussions (FGDs) was conducted with two groups of farmers in the state of Telangana, India, in partnership with the Centre for Sustainable Agriculture (CSA). The CSA was requested to select a brochure and a video from their repertoire of communication products that were used to provide farmers with information on seeds of improved crop varieties. These selected communication products were shared with the farmers

for their feedback on their effectiveness. This was accompanied by a discussion with the farmers on their choice of seed information pathways. The results of this formative study are presented in this technical report. The scope of the study has deliberately been kept limited to allow for focused analysis on a narrow range of products that could, in turn, inform further studies conducted as a part of this project.

Some of the key results of the study were that farmers tend to rely on a blend of digital and non-digital pathways to obtain seed-related information with a slightly stronger leaning towards non-digital pathways. They especially tend to value recommendations from trusted input dealers and development sector representatives even to validate the information that they received from communication products. Men appear to have a slightly stronger digital presence than women with greater access to farmer WhatsApp groups. Intragroup differences among women vary greatly depending on the women's mobility, access to public places, digital access and business relations with seed companies, which warrants an intersectional analysis. It was also found that farmers who do not have assured buy-back and who rely on a range of markets for the seeds they produce tend to be open to more diverse communication channels than farmers who have this assured buy-back from seed companies. This fact appears to be true for farmers of different genders. The farmers all emphasized the need for detailed information on varietal characteristics and performance as well as market linkages and compensatory facilities if any. While literacy did influence the farmers' responses, it did not wholly eliminate the relevance of written material for unlettered farmers.

Overall, the study provided specific insights into how the brochures and videos could be enhanced for greater effectiveness and also revealed ways in which gender, literacy and other social markers affect farmers' information preferences. It is envisioned that further such FGDs shall be conducted as a part of the broader project and the communication products tested out shall be revised according to farmers' feedback and re-tested through a reflexive process and an overall framework to design and assess gender-responsive seed information pathways shall be developed.

Literature Review

The dissemination of timely and relevant agricultural information plays a pivotal role in enhancing the productivity and sustenance of rural farmers. Adhiguru (2009) observes that over 60 percent of farming households in India are deprived of appropriate agricultural information. Farmers deprived of timely and relevant information often face reduced crop yield and agricultural productivity as well as compromised bargaining power (Obidike, 2011 and Magesa, 2014). This deprivation can further perpetuate poverty and hinder socio-economic growth within rural communities. The challenges in developing countries, as pointed out by Mashroofa (2014), Aina (1990), and Ameru (2018), become more severe due to several interconnected issues which include insufficient communication networks, low levels of education, and limited access to information. These barriers worsen the existing disparities, making it difficult for many farmers to take advantage of technological advancements in the agriculture sector.

Moreover, gender-specific influences, as elucidated by Doss (2000) and Sumane (2017), significantly impact the access and utilization of agricultural knowledge among women farmers. These influences encapsulate multifaceted challenges that women face including restricted

access to formal agricultural communication channels and extension services managed by the government and the private sector due to cultural norms that limit their mobility or participation in community gatherings where agricultural information is shared. Additionally, unequal access to land and financial resources hamper women's ability to invest in modern agricultural inputs and technologies, compromising their technical and business competency. Pathak (2022) underscores the need to use a bundle of communication channels including print media, farmer-to-farmer knowledge sharing and the internet to ensure that agricultural information reaches all farmers, thus empowering agricultural communities. Bundling of a variety of communication channels is essential for the inclusion of women farmers in agricultural communication systems since they often rely on both formal and informal networks (Daigle and Heiss 2019) or lean more towards informal communication systems (Ansari and Sunetha 2014). Hence, using a diverse range of communication channels increases the prospects of reaching out to women farmers.

Patrika (2007) notes that print media proves to be an effective mode of communication due to its capacity to allow readers more time to contemplate, assimilate, and retain information, while also serving as durable records for future reference. The importance of print in times of growing emphasis on the digital was an important guiding principle for the present study where testing out both digital and non-digital pathways with farmers was found to be essential. Not losing sight of the importance of print media in agriculture communication is also essential given that women farmers are more vulnerable to exclusion from digital spaces and might benefit more from access to non-digital pathways.

Print media, like brochures, have emerged as a significant source of agricultural information for farmers, with pamphlets being identified as the most commonly utilized format (Farooq, 2007; Pathak, 2022). However, the efficacy of brochures is contingent upon their readability and relevance to the specific target audience (Morris, 2013). These research findings elucidate the potential efficacy of brochures as a mode of agricultural communication. Nonetheless, they also emphasize the critical importance of meticulous design and careful content selection to maximize their effectiveness. The readability, accessibility, and relevance of information within brochures play important roles in ensuring their usefulness and impact within agricultural communication strategies. Therefore, a nuanced approach to designing and curating brochure content is imperative to effectively serve the informational needs of the farming community.

Several studies have explored the use of videos as a communication channel for disseminating agricultural information to farmers. Afroz (2014) found that videos can be effective in reaching and educating farmers, highlighting the need for localized content. Oladele (2008) found that videos can significantly increase farmers' knowledge, with their use as a supplement to traditional extension methods. Ongachi (2017) and Khan (2010) both suggested that a combination of video and other methods, such as Farmer Field Schools, may be most effective.

Numerous empirical studies have extensively investigated the multifaceted determinants influencing the adoption of agricultural information among farmers. Ali (2012) underscores the

pivotal role of sociodemographic factors such as education, income, social category, age, education level, and farm size in shaping farmers' proclivity towards embracing agricultural information. The present study attempts to capture the ways in which farmers' diverse social locations, particularly gender, affect their information preferences.

Methodology

A qualitative research design that entailed Focus Group Discussions (FGDs) was adopted for the study. An FGD can be described as "an interactive discussion...led by a trained moderator and focussing on a specific set of issues" (Hennik, 2014:1). FGDs are particularly suited for exploratory and formative studies on subjects for which there is little empirical evidence, which makes the method apt for the present study. Hennik (2014) further observes that the fundamental aim of an FGD is not to arrive at a consensus but to gather a range of insights on an issue. FGDs are a time-efficient way to gather this diversity of insights as a single FGD can gather upto 70 percent of the same amount of information as in-depth interviews with the same number of participants (Fern 1982).

The FGD was selected for the flexibility that it offers in capturing the participants' diverse preferences about seed information pathways and their recommendations for how the communication tools currently being used for the purpose of information dissemination on seeds could be adapted for greater effectiveness. Furthermore, the FGD method allowed for the understanding of the beliefs and norms that underlay the participants' perceptions of various information pathways and communication products (Mwaijande et al 2009). This characteristic of the FGD was particularly important owing to the primary objective of this study, which was to understand the gendered perceptions of information pathways, or in other words, the different preferences and attitudes of women and men about seed information pathways. Differences in mobility, literacy rates, access to resources, decision-making hierarchies within agricultural systems and other gendered structural differences influence men's and women's preferences for information pathways in varying ways. These deeper insights are as necessary to the study of gender-responsive information and communication systems as the direct responses of the participants.

Bitsch (2004) observes that despite the prominence of FGDs in agriculture extension programmes and research, there is greater scope to employ the method in the domain of stakeholder needs assessments. This study is a step towards leveraging the analytical scope of the FGD to gather insights about farmers' current information-seeking behaviours regarding quality seeds of improved varieties as well as to enable farmers to actively participate in a critical assessment of communication products being used for this purpose.

The Centre for Sustainable Agriculture (CSA) was requested to select the field sites for the study as well as select the farmers to participate in the FGDs. They were also requested to select a brochure and a video from among the communication products that they had developed for the purpose of spreading information about quality seeds of improved varieties to farmers. A set of discussion questions was prepared by the IRRI team based on the communication products, which are included as annexures at the end of this document. One of the facilitators from IRRI

conducted the FGD with the support of two CSA staff and a second facilitator documented the responses of the farmers. This allowed for nuanced recordings of the farmers' responses.

Sampling Technique and Sample Size

Two FGDs were conducted, one in the Vilasagar village of the Rajana Sircilla district and a second in the Thummanapalli village of the Karimnagar district of Telangana. The CSA assisted in the formation of these groups, which comprised representatives of FPCs that are supported by the CSA. Farmers in both FGDs were primarily engaged in paddy seed production and, hence, the communication products selected by them also focused on seeds of various paddy varieties.

The first FGD in Vilasagar was conducted with a mixed group of six men and six women farmers and the second one in Thummanapalli was exclusively with fifteen women farmers. The rationale for this formation of groups was to create scope for a comparative analysis between farmers' responses in a mixed group setting and their responses in an all-women's setting. Moreover, women farmers sometimes tend to be reticent in mixed sex settings, which necessitates the creation of a safe and conducive environment for them to speak through an all-women's setting.

The locations of the two FGDs were also different. The mixed FGD was conducted in a Rythu Vedika or a meeting space for farmers in the village while the all-women's FGD was conducted in the home of one of the members of the FPC of which the participants were members. Both venues were selected by the participants of the FGD, which was the first step in recognizing their agency and creating a safe space for the discussions.

Description of the study area

Paddy is the major crop in both the Rajanna Sircilla and the Karimnagar districts of Telangana where the current study was conducted. Hence, a brochure on seeds of a paddy variety was selected for discussion with the farmers. Besides paddy, cotton, maize and vegetables are commonly grown in these districts. Hence, a video depicting cotton varieties was selected for analysis. An important distinction between the two districts that was revealed through the study was that the farmers of Rajanna Sircilla relied on diverse markets to sell their seeds while the predominance of seed companies in Karimnagar (Sadvi et al 2017) resulted in several paddy seed producers receiving assured buy-back from seed companies as well as compensation in case of any losses they suffer during the seed production process. This was an important distinction between the two groups of farmers interviewed for the study because their choice of information pathways was influenced by the nature of their agri-input and market linkages besides gender, literacy, digital accessibility and other social variables.

Limitations

The number of participants in each of the FGDs is more than the typical number of participants of 6 – 8. As several farmers were interested in participating in the study, it was not considered appropriate to ask them to leave especially since this was a formative stage of the study and the support of these farmers might be necessary at later stages of the study. The large number of

farmers implied that some farmers in both groups did not participate much. Nevertheless, efforts were made by the facilitators of the FGD to encourage participation from the silent members and some responses were elicited from them. As the rest of the study progresses, the number of participants in each FGD shall be limited to 6 – 8 to ensure higher quality of participation and deeper insights.

While the number of participants in the FGDs is higher than the average participation size of an FGD, the findings of the FGD cannot be generalized owing to the limited sites and sample of the study. However, the responses of the farmers can be tested out with various other farmer groups to verify their validity.

Findings

Preferred channels of communication to receive information about new varieties

Mixed Group

The men farmers mentioned that they received information about new varieties mainly from input dealers and partially through agricultural extension workers and neighbouring farmers. They also mentioned farmer WhatsApp groups as an important avenue to receive updates on seeds of new crop varieties and specifically mentioned digital brochures accompanied by audio messages to be shared through these groups. The farmers claimed that seed production trainings conducted by development sector and government organisations as well as FPC meetings were suitable avenues to distribute brochures or pamphlets on seeds of improved varieties. They identified YouTube as a platform they use to get information on seeds of new varieties but claimed that they did not base their varietal choices on YouTube videos.

The women farmers in this group did not mention any specific channels through which they received information on seeds of new varieties and said that their husbands usually selected the varieties that they cultivated.

Both the men and women farmers recommended that posters on seeds of improved varieties be displayed in public places to spread awareness among farmers. They mentioned schools, bus stops, hotels, tea stalls and the rythu vedika offices as preferred locations for these posters. An important gendered difference that emerged within this group was that women mentioned that they were most likely to view these posters in the daytime at bus stops and schools while the men said that they would have more free time to peruse the posters in the evenings, especially while they spent time at hotels and tea stalls.

All the farmers in this group claimed that the most effective strategy to facilitate varietal uptake was field demonstrations as this method gave them real time insights about how the variety would perform in their fields.

When asked about their use of Annadata(a daily education-based television program featuring season and region-specific practical farming tips and technologies), for information on new seeds, they responded that while they are familiar with this television channel that provides updates on agriculture innovations, new packages of practices and new crop varieties they don't specifically seek information on varieties that they cultivate. Instead, they rely on known personnel for this information.

All-Women's Group

The farmers mentioned that they received all their seed-related information from input dealers from their villages associated with seed companies. Upon probing, they revealed that they do not directly interact with these dealers but rely on their husbands for the same. They mentioned that some seed companies hire staff to drive around the village in autos, distributing pamphlets on new crop varieties. The farmers said that they would never trust this information and would rely only on information from input dealers who were residents of their own villages. One of the women mentioned that her son learnt about black rice through YouTube and recommended it for cultivation, which they adopted. But YouTube in general was not mentioned as a preferred communication channel. This group of farmers also emphasized the importance of field demonstrations in influencing their varietal choices and claimed that it was the most popular method adopted by seed companies to convince them about the varietal performance.

The women were divided in their preferences for the locations at which they felt information on seeds of new crop varieties could be distributed. Around five women responded that they do not go out into public places much and that distributing pamphlets or displaying posters in public places such as panchayat offices is not of any value to them. This group of women further mentioned that if awareness sessions on new seeds were to be conducted in public places they would not attend and would prefer the deep interiors of a house of a trusted person in the village. However, another group of about three women claimed that they would like for posters and pamphlets to be distributed publicly as they do go out with their husbands and other relatives and can learn about these developments in the seed sector in this manner. They also claimed that attending awareness sessions on new crop varieties in panchayat offices or halls in the village was not a barrier for them. These differences in the findings reveal the importance of not homogenizing women's preferences of seed information pathways and recognizing the variations in their agency in terms of mobility and accessing public places.

An interesting discussion emerged within the all-women's group of farmers that provided a glimpse into the ways in which social norms influence women's willingness to share their knowledge and their participation in FGDs. One of the CSA staff mentioned to the women that it is generally men who possess varietal information in a household, and not women. A number of women immediately replied that they are aware of the varieties their families are cultivating but they do not speak openly in public on any subject, especially in front of men. Some women stated the name of the variety they cultivate. One of the women also mentioned how her husband purchased seeds of a specific variety and she advised him to return the seeds as she was dissatisfied with that variety. Her husband heeded her advice.

Perspectives on Brochures

Mixed Group

All the farmers mentioned that the brochure immediately made clear that it was about a new crop variety and the image suggested that the crop was of a high-yielding variety. They appreciated the fact that there was a picture of a farmer in his field as it helped them empathize with the crop variety and assured them that it represented a farmer's authentic experiences with the variety. The brochure also had images of dishes that could be prepared with the variety. The women farmers mentioned that these images appealed to them and would positively influence their decision to buy the seeds of that variety while the men farmers said that those images were not of relevance to them.

Over half of the farmers could not read or write and the group collectively emphasized the need for appropriate visuals in the brochures to communicate relevant information about the new variety. The farmers who could read claimed that they liked that the yield was mentioned as well as information on the pest- and disease-resilience of the variety. The farmers who could not read enquired whether this information was included in the brochure and highlighted it as important.

Instead of merely mentioning whether the variety was suitable for kharif or rabi they also wanted the specific months to be mentioned as well as the exact duration of the crops. Some men and women farmers mentioned that they would like the specific package of practices to be mentioned. Some men farmers mentioned that they would like to know more specifically the regions where the variety could be grown including the village names, the nutritional and health benefits of the variety and market information, buy-back facilities if any and compensation facilities if any.

Despite their difficulties reading, all the farmers said that they found brochures as a means of communication useful as they could take the brochures home and get them read by literate household members.

The men farmers reported that while the brochure was a useful tool to help grow their awareness about a new crop variety, they would seek more guidance from a trusted person with greater expertise to actually purchase the seeds of that variety. The women farmers said that they would pass on the brochure to their husbands who would then jointly or in partnership with the women decide whether to adopt the new variety or not.

All-Women's Group

One of the farmers mentioned that the first aspect of the brochure that caught her attention was that the colour of the grain in the brochure was different from the usual colour of grain in her fields and that this caused her to be suspicious of the variety. Some women claimed that information about marketing prospects, buy-back facilities and specific packages of practices for the variety if any should have been mentioned. The women did not generally find the pictures of dishes in the brochure to be useful as they felt that it was more relevant to grain producers rather than seed producers.

The women in this group were divided in their perceptions about the brochures. Some of them mentioned that they generally did not find any value in the brochures as the seed companies would instruct them on which varieties to cultivate and offered them guaranteed buy-back facilities and also compensate them for any possible losses. But these women gradually

mentioned that they would be open to exploring other varieties with good financial prospects. A few other farmers claimed that they were open to exploring all kinds of varieties and they found brochures very useful for this purpose.

More farmers in this group were literate than farmers in the mixed group. Nevertheless, they all mentioned that suitable visual representations were very important to communicate varietal characteristics to them.

Perspectives on Videos

The farmers in both groups had very similar responses to the video. They found the visual representation of the crops very useful and liked that images of farmers in their actual fields were shown as this made the information seem authentic and reliable. Besides farmers, they said that they would also like representations of scientists or other agriculture specialists whom they perceived as trustworthy. However, the farmers found the sound quality of the video to be very poor and could not hear the information properly. They mentioned that the video depicted cotton varieties while they were predominantly paddy seed cultivators. Hence, the information was not of direct relevance to them. Some of the men farmers in the first group and a few farmers in the second group suggested that information on market value and distinguishing characteristics of the variety in comparison to other crop varieties would have been helpful.

Many farmers in both groups claimed that videos were a more inclusive and accessible communication channel for farmers who were not literate. However, they pointed out that the context of distribution was very important. If the videos were only shown at seed production trainings or gram panchayat or FPC meetings then the farmers would soon forget about them. In that case, brochures would be more useful as farmers could take them home and keep it with them for future reference. But if the videos could be shared through WhatsApp then farmers would be able to rewatch these videos at their own leisure and this might positively influence their decision regarding adopting the new variety.

Analysis

The blend of digital and non-digital information pathways

The study suggested that farmers use a blend of digital and non-digital information pathways to obtain information on seeds with a leaning towards non-digital, informal pathways such as information from input dealers, representatives from development sector organizations and agriculture extension officers as well as from field demonstrations and FPC meetings. Farmers tend to rely on validation from a trusted person who they perceive as an expert even when information is obtained through a brochure or a video.

While YouTube was mentioned as a platform to get information on new varieties, relatively few farmers use it and they claimed that it did not have a strong bearing on their varietal choices. Only the men farmers reported being members of farmer WhatsApp groups.

Expectations about visuals and information in communication products

Visual depictions in all communication products should be clear and it appears to be indispensable to have an image of actual farmers with their crops to create a sense of authenticity and persuade the farmers to adopt the variety. Visual representations of seasons,

packages of practices and other technical information need to be clear to support farmers who cannot read.

Farmers prefer as much information as possible to be communicated through a single product including market linkages, buy back and compensation provisions, cultivation requirements and context-specific cultivation information.

The context is as important as the medium and the message

Farmers differ in their access to public places, mobility and digital inclusion, especially on social media platforms. These factors imply that it is not only the communication products themselves that matter but also the contexts within which they are disseminated. For instance, some of the men farmers were members of farmer WhatsApp groups but none of the women farmers spoke about being members of these groups. Similarly, some women farmers claimed that they would not be able to attend public meetings or access information in public places owing to restrictions on their mobility. However, several women and men farmers expressed a strong preference for sharing information on new varieties in public places. Therefore, gender, literacy levels and access to social media influence farmers' choices of information pathways and necessitate that a range of communication pathways and contextual specificities be taken into account when developing gender-responsive and inclusive communication systems.

A nuanced analysis of the impact of literacy on information choices

While a number of farmers were not lettered, most of them expressed a preference for brochures as they felt that this was an artifact that they could keep with them for future reference and they could have a literate person in their household read it for them. This suggests that written material is still relevant even for populations who might not be able to access the written word themselves. Nevertheless, ensuring appropriate pictorial representations of finer crop characteristics and supplementing printed communication products with videos and other digital communication tools are critical to ensure inclusivity and quality.

The heterogeneity of gender

The study foregrounds the need for a disaggregated and context-sensitive approach to the study of gender and cautions against the homogenization of women as a social group. Women farmers' preferences for various information pathways were informed by their literacy, mobility, status within the household and their business relationships with seed companies. Even within the all-women farmers' group, there were variations in the degree of mobility and access to public places that the participants had, which influenced their choice of information pathways.

The diversity in women's responses to communication products is illustrated in their differing responses to the pictures of dishes in the brochures. Arguably, the inclusion of these pictures could be perceived as a strategy to persuade women farmers to explore the crop variety as food preparation is often associated with women. However, women varied in their perceptions of these dishes with some stating that they could connect better with the crop variety and others claiming that it had nothing to do with seed production. Hence, what could be perceived as a gender responsive strategy for one group of women might not be perceived as such by another group.

While a common finding across studies on the gendered dimensions of agricultural decision-making is that men generally dominate commercial and marketing aspects of

agriculture, this study revealed that market linkages also emerge as primary concerns of some women farmers. Hence, there is a need for the gendered dimensions of seed information pathways to be investigated and established empirically without relying on stereotypical binary assumptions of how gender influences seed choice behavior.

Conclusion

The study reveals that farmers rely on a blend of digital and non-digital information to obtain information about seeds of new varieties with a slightly greater emphasis on non-digital pathways. This was especially true for women farmers who seemed to have relatively less digital access than men although farmers of all genders made some mention of the utility of some digital information pathways. Farmers expected high quality visuals in all communication products and high quality sound in videos. They emphasized the need for detailed information on the seeds in all communication products including package of practices, suitable seasons for cultivation and marketing prospects. Even farmers who were not literate perceived value in brochures as they said that they could have their household members who were literate read them and they could keep them for future reference. But they emphasized the need for good visuals in order to make the brochures appealing to farmers who could not access the written information themselves.

The men and women converged on many expectations regarding the communication products and there were many intragroup differences among the women depending on their mobility, status within the household and linkages with seed companies. Thus, there is a need for a nuanced understanding of gendered preferences that is premised on intersectionality.

This formative study shall be used to inform the rest of the project on identifying and testing out gender-responsive seed information pathways. Further FGDs using various communication products shall be conducted and the feedback shall be used to improve these products. The study shall also be expanded from a focus on information pathways to include delivery pathways as well. The learnings from this study shall be used to enhance the effectiveness of future FGDs including limiting the sample size and collecting detailed demographic information about the participants including their caste, age and landholding size. This information shall enable deeper social analysis of the influence that diverse social locations have on farmers' information preferences.

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Annexure 1

Questions for Communication Products by CSA (Brochures)

Questions for FGD with farmers on brochures

1. Can you tell us what was the first thing you noticed about the brochure? (Mukhyam ga meeku i brochure lo em kanpichindi)
2. What is some of the information on this new variety that you understood from the brochure? (i brochure chaduvu tarvata meeku i panta gurinchi em ardhama ayundi)
3. Do you think this brochure is a good tool to provide information about improved varieties to farmers in your village? Please give reasons for your answers. (Meeru ee brochure ni grāmaṁloni vyavasāyulaku meruguparicayam ivvaḍānikī oka mañci sādhanam anukuntara? Mī samādhānālu kārāṇālu ivvaḍi.)
4. Do you think women farmers can get to know about new varieties through this brochure? Why or why not? (Aadvalu ki kota vittanalu gurinchi samacharam ivvatam kosam ee brochure oka manchi sadhanama? enduku?)
5. Do you think farmers will buy seeds of these new varieties by reading this brochure? Why or why not? (ee brochure chadadam dvara raitulu, kotta vittanalu konukuntaru ani meeku anipistunda? Enduku, vivralu evvandi.)
6. What more information would farmers need in order to purchase these seeds of improved varieties? E kotta vittanlu konkotam raitulu ki inka e samacharam avasaram undi?
7. Where do you think these brochures can be distributed in the village to make them most accessible by and available to farmers? (pallilo andariki ee vittanalu gurinchi chappadaninki, ee brochures ni ekkada vitarinchali?)
8. What difficulties would farmers have in understanding the information in the brochure? (Brochure samācārānni artham cēsukōvaḍānlō raitulaku elāṇṭi ibbandulu eduravutāyi)
9. What are some ways the brochure can be improved to make it most useful for farmers to get information about new varieties? (Kotta rakāla gurinchi samācārānni pondaḍānikī raitulaku atyanta upayōgakaraṅgā uṇḍēlā brochure meruguparacagala konni mārgālu ēmiṭi)
10. Do you think that the inclusion of recipes and nutritional benefits of these seed varieties would influence your choice of seed variety? (Yes/No) Can you give reasons? (Ī vittanalnunchi chese vaṇṭakālu mariyu pōṣaka prayōjanālanu ee brochure lo unte mī vittanalanī entika kosam idi prabhāvam padundi ani mīru anukunṭunnārā?)

Questions for FGD with farmers on videos

1. Do you understand the information presented in the video regarding the seeds of improved varieties? (Yes/No). If yes, could you tell us some of the characteristics of the new varieties that are

mentioned? (kotta vitanalu gurinchi ee videolu icchina samacharam meeku artam avtunda? Meeku aa videoli icchina kotta vitanulu gurinchi edaina konni visheshatalu chappagallara?)

2. Is the language and cultural context of the video appropriate for the village? (Ee videollu vastunna bhāṣa mariyu sāṁskṛtika sandarbham grāmāniki taginattunda?)
3. Are there any words in the video that are confusing or not clear to you? If yes, which ones? (video lu vastunda eedaina padalu athava vakyalu meeku artham kakunda unda? Dangurinchi chappandi)
4. Was there anything specific about the video that you liked? If yes, what was that? (video lo vastunnadi eedaina meeku pratyekanga nacchinda? Dangurinchi chappandi)
5. Was there anything specific about the video that you did not like? If yes, what was that? (video lo vastunnadi eedaina meeku pratyekanga nacchaleda? Dangurinchi chappandi).
6. Do you think videos in general are a good way to spread information about improved varieties of seeds to farmers, especially women farmers? (Yes/No). If yes, why? (kotta vitanalu gurinchi meeru teluskovalanukunte, videos mukantaram chapte meeku anakoolam avtunda? Pratyekanga adavalaki idi anakoolam avtunda?)
7. Are there any specific meetings that take place in your village where you think these videos can be shown? If yes, what are they? (mee pallilo edaina meetings lo ee videos choopichhagallama? Ekkada ani chappagallara?)
8. Do you think farmers will be interested in buying seeds of improved varieties by watching these videos? Why or why not? Mee pallilo unnna raitulu ee video chhosin tarvata nanyamian vitanalu konnukosam mundukostara? Danukgurinchi chappandi.
9. What more information would farmers need in order to purchase these seeds of improved varieties? (mee raituluki vitanalu konukodam kosam inka adikanga vicharalu eedaina kavala?)
10. After watching the video, do you feel motivated to take any specific actions such as contacting agricultural authorities or visiting a local seed distribution center/input dealer? (ee video choosin taravata meeku eedaina swataha protsaham jariginda -meeku deengurinchi teluskodam kosam KVK scientist, agriculture department AOs kaani, local input dealers daggaraki velladam jariginda?)
11. What are some of the limitations of this video in terms of providing information on new varieties of seeds to farmers? How do you think these difficulties could be resolved? (ee videolu edaina parimalu(nunyatalu) unnayi anipicchinda? Unte dannu ela pariganichacchu?)
12. What are your thoughts on the content's quality, clarity, and relevance in the video? (Vīdīyōlō unna vishayalu, spaṣṭata mariyu meeku taginnatu unda?)
13. Do you think videos are better than brochures in conveying the new seed varieties information to the farmers? (raituluki vitanalu gurinchi teluskodam kosam brochures kinna videos anakoolam (mela) avtunda?)

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