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FARMPRECISE: A DIGITAL TOOL FOR EMPOWERING WOMEN FARMERS



In this Good practice note, Vidyadbar Konde and Ajay Shelke discuss the social transformation that women farmers experience when exposed to a digital tool- FarmPrecise.

CONTEXT

Women constitute a substantial proportion of the agricultural workforce; yet they quite often face significant barriers to accessing information, resources and technology that could improve their farming practices and enhance productivity and farm income. This good practice note examine the challenges that women farmers face, as well as how innovative digital solutions can empower them, promote gender equality in agriculture and support sustainable agricultural practices.



The hurdles that women farmers encounter limit their ability to fully participate in agriculture and benefit from the economic opportunities it provides. One of the most significant challenges they encounter is a lack of access to technology and information (Box 1).

Box 1: Obstacles women farmers face

Limited access to information, knowledge and markets, as well as social and cultural norms limit women's access to education and technology. In many rural areas, they often have limited access to mobile phones, computers and the internet. They may also lack the knowledge and skills required to effectively use these tools. As a result, they frequently have limited access to critical information such as the weather, market prices and sustainable agricultural practices which could assist them in making informed decisions and taking timely action required on their farms. Another issue is the lack of gender-sensitive policies and programs that address their unique needs and constraints. Many agricultural extension services and training programs

are, for example, geared towards men and may be inaccessible or irrelevant to women farmers. Women farmers also face discrimination when applying for credit or other financial services (as in general they have no asset in their name, including the land they cultivate), limiting their ability to invest in their farms or purchase inputs like fertilizer or seeds.

DIGITAL SOLUTIONS TO SUPPORT WOMEN FARMERS

There has been a growing recognition in recent years of the potential of technologies to empower women farmers and promote gender equality in agriculture. Many of the barriers that women farmers face, such as a lack of information and resources, can be overcome with innovative technology solutions. FarmPrecise, an interactive mobile application that generates dynamic, customized weather-based, crop-specific advisories and also includes weather forecasts, market prices and a community forum, is an example of a technology solution that is helping empower women farmers. The App uses real-time information based on data and analytics to help farmers make informed decisions about their farming practices.

HOW FARMPRECISE WORKS?

With the support of Qualcomm Wireless Reach programme, Watershed Organisation Trust (WOTR) developed a mobile application called FarmPrecise to address the challenges faced by farmers related to climate change and increasing weather uncertainty, rising costs of agricultural inputs, low and declining productivity, market volatility, low returns and environment degradation due to excessive water and high-cost chemical inputs usage. It provides farmers a weather-based, dynamic decision support system customized to their specific crops and farm resources across key agricultural operations.

The App has the following features:

- Weather-based dynamic advisories - considers observed/forecast weather conditions, crop phenology and soil status to generate farm-level crop management advisories;
- It is interactive - the farmer inputs specific data, identifies the problem and co-evolves solutions that can be shared;
- Solutions that are nature-lite, increase productivity, reduce losses and lower costs;
- Market price information; and
- Upgrades to the knowledge and skill set of farmers.

FarmPrecise uses gender-inclusive language and has a design that is gender inclusive. For instance, in the onboarding process for users, apart from options of male and female, there is an option for users not to disclose their gender. However, any gender can use the information in the App, which is provided in regional languages and could be scaled up with any states of India. The agro-advisories in the App are also available in audio format. Wherever possible, the App has also provided multimedia content with appropriate photographs and videos.

Feedback from women who used the App revealed that the use of weather forecasts, community forum to post their issues, agromet advisories, market prices, etc., supported their decision-making ability in the society. Few feedbacks are here below.

“I rely on FarmPrecise for the five-day weather forecast and it has proven to be an invaluable tool for me. Based on the forecast, I decided to harvest my Black gram. My brother-in-law, on the other hand, ignored the forecast and ended up losing his entire crop. I had advised him to harvest his crop as well, but he did not heed my advice”

(Gavlan Satish Vanave, Anandwadi, Bhoom, Osmanabad)

“I used the FarmPrecise app to get market information which helped me to bargain with the traders in the market for better price. I also use FarmPrecise for the weather forecast information to timely harvest her soybean crop”

(Seema Khandade, Pasodi village, Jafrabad block, Jalna district)

FarmPrecise’s content has been collated by our domain team from research conducted by various Indian Council of Agricultural Research (ICAR) institutions, including state agriculture universities. We also source information from India Meteorological Department (IMD). WOTR has a formal MoU with these institutions for knowledge and data support. Besides this, our agriculture experts respond to queries/ issues raised by farmers on the Krishi Manch (Community Forum) and provide them timely advice with regard to pests/diseases, fertilizer and irrigation management. Also, algorithms have been developed that generate advisories based on crop, sowing date, weather conditions (observed and forecast), soil type, soil moisture status etc.



FarmPrecise Demonstration to women farmers- Pimpalner, Dhule Dist.

OUTREACH OF FARMPRECISE

Women farmers are engaged through WOTR's ongoing projects in different parts of Maharashtra. The engagement happens through women Self Help Groups (SHGs), with support from field staff (cluster-level promoters and Mahila Pravartaks). The Mahila Pravartaks, who are from the same areas, are raising women's awareness of FarmPrecise, its features and training them on how to use it. Women without access to smartphones are installing the App on smartphones belonging to the husband or other family member. Trainings have been conducted both online and offline and cluster-level workshops have been organized exclusively on FarmPrecise. A closed WhatsApp group has been created for women to share updates and support. The App has reached over 70,000+ farmers, of which more than 5000 users are women.

BEYOND SHARING INFORMATION

Simply providing information is inadequate. Women farmers also have to be able to interpret and apply the information provided to their specific farming contexts. FarmPrecise includes interactive forums and other resources to assist farmers in learning how to use the information and implement scientific practices. In addition, it facilitates real-time communication between farmers and extension workers through Krishi Manch, allowing farmers to receive feedback and assistance from experts. This is very important, especially for rural women farmers who may not have regular access to extension services.

FarmPrecise leverages the power of technology to provide women farmers with the skills and resources for promoting sustainable farming practices and improving their livelihoods. For instance, the App provides scientific information that promotes environment friendly practices, such as how to make Dashparni Ark, a biological pesticide to control pest or prepare Amrit Paani (*Amritpani is a natural and organic fertilizer made from cow dung, cow urine, and jaggery, which provides essential nutrients to plants and improves soil health in a cost-effective and environmentally friendly way.*) etc. This could be communicated through the App by the means of videos (in the regional language). FarmPrecise provides women farmers a platform not only to express or post their issues but also provide information to improve their agriculture i.e., improve productivity and reduce input costs.

Participation through photo competitions on crop pests and diseases

In addition to its innovative features, FarmPrecise hosts seasonal (*Kharif* and *Rabi*) pest and disease photo competitions to assist farmers in identifying and managing common crop pests and diseases. Farmers, including women farmers, are encouraged to take photos of pests or diseases in their fields and submit them through the App, which are reviewed by our scientists. Farmers can use the App to identify and manage pests and diseases. In addition, based on the photos sent, the App notifies other farmers of pest or disease occurrences in the areas along with advisories on preventive and control measures. These advisories are embedded in the App, but could also be provided with customized App notifications through WhatsApp.

The photo competition fosters a sense of community initiative and shared learning among women farmers by providing them a platform to share information and learn from one another. It also allows women farmers to demonstrate their knowledge and skills, which helps to break social and cultural barriers that may prevent them from participating in agricultural decision-making processes.



Pest monitoring

Field workshops

FarmPrecise's field workshops are another way of interacting with women farmers. These interactions are conducted in two ways. Women farmers participate in existing workshops organized by project teams on various issues and are provided an orientation on FarmPrecise's features, exposed to experiences of users and document it. We also conduct exclusive one-day workshops for FarmPrecise users at the end of the agriculture seasons. This enables farmers to learn about new agricultural practices and technologies, as well as receive training on how to use FarmPrecise. These workshops are gender-sensitive, with an emphasis on engaging women farmers and addressing their unique needs and constraints.

The workshops provide opportunities for women farmers to acquire new skills and knowledge. It also enables women farmers to connect with other fellow farmers, forming valuable relationships that can contribute to their success in agriculture. By offering a platform for learning and community development, FarmPrecise supports sustainable farming practices and advocates gender equality in the agriculture sector.



Use of FarmPrecise App

Our experience has shown that providing training to women farmers increases their interest in using the App, which is why we focus on encouraging more women to use FarmPrecise and become ambassadors/advocates for the App. Our approach aligns with SDG 5 - Gender Equality, as we strive to empower women farmers with access to technology and knowledge, enabling them to contribute to sustainable agriculture and achieve greater economic independence.

CONCLUSION

Women farmers often encounter significant obstacles when seeking information, resources and technology to enhance their farming practices and productivity. However, innovative technological solutions like the FarmPrecise mobile application can empower them and foster gender equality in agriculture. By providing real-time information and on-field training support, the App can help women farmers overcome the barriers that limit their participation in agricultural decision-making processes.

Such gender-sensitive technological solutions can ensure that women farmers receive tools and resources tailored to their needs and constraints. Advancing gender equality in agriculture can create a more inclusive and equitable sector that benefits all stakeholders, particularly women farmers. As we pursue new agricultural technology solutions, it is crucial to prioritize the needs and perspectives of women

farmers. Working collaboratively to promote gender equality in agriculture can contribute to building a more sustainable and prosperous future for all.

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