

# STRENGTHENING WOMEN IN WHEAT FARMING IN INDIA: Old challenges, new realities, new opportunities



Training on mechanized threshing. Photo: CSISA.

In parts of rural India, particularly those experiencing male outmigration, norms are shifting to accommodate open recognition of women as farmers and managers of wheat and as adopters of associated technologies including zero tillers, combine harvesters, and improved varieties of wheat. These change processes are uneven. They vary across and within regions, and manifest themselves in different and subtle ways.<sup>1</sup> Caste plays a significant role in the degree to which women and men are targeted, and are able to engage, in new technologies and practices. In some locations, middle-income upper caste,<sup>2</sup> and other backward class (OBC),<sup>3</sup> women and their families are seizing the benefits of new technologies and practices. However,

in many locations scheduled castes (SC) and scheduled tribes (ST) women and their families – despite having some land and a strong desire to participate – continue to languish in poverty, ignored by the rural advisory services (RAS) and village heads due to their low caste and socioeconomic status. There are important exceptions. Some communities are overcoming gender and caste barriers, allowing poor men and women to invest in technologies and change their lives. Transformational support factors include progressive village heads, shopkeepers selling inputs, agricultural cooperatives, and sometimes large farmers willing to share their learning. In a few locations, thriving off-farm economic

opportunities allow middle-income and low-income people to invest in time-saving innovations and have time left over to diversify their incomes and improve their economic status.

This resource provides guidance for scientists, researchers, and RAS in wheat-based systems on how to better target women in all communities and how to improve inclusion for everyone. To do this it builds on 12 case studies conducted across India's wheat belt under the CGIAR Research Program on WHEAT as part of GENNOVATE, a large-scale collaborative research initiative focusing on how gender norms influence, and are influenced by, local agricultural innovation processes.<sup>4</sup>

<sup>1</sup> There is considerable heterogeneity in the upper castes, the OBCs, the SCs, and the STs with various sub-castes within each group; however, further caste disaggregation was not within the purview of this research.

<sup>2</sup> As researchers, we recognize the difficulties in following terminology which is widely used, but which implies superiority and inferiority—upper, lower, backward, etc. However, we follow these widely accepted classifications to help ensure clarity among all readers about the people under discussion.

<sup>3</sup> OBCs can be Hindu, Christian, and Muslim.

<sup>4</sup> GENNOVATE, or “Enabling Gender Equality in Agricultural and Environmental Innovation,” is a qualitative, comparative, and collaborative research initiative on gender norms, agency, and agricultural innovation involving 137 case studies across 26 countries and drawing on the voices and lived experiences of over 7,500 rural women, men, and youth of different socioeconomic levels. For more information, including on methodology and sampling, see Badstue, Petesch, Williams and Umantseva with Moctezuma (2017), the GENNOVATE website: <https://gender.cgiar.org/themes/gennovate/>, and Petesch *et al.* (2018).

The study villages, in the states of Bihar, Haryana, Madhya Pradesh, Punjab, and Uttar Pradesh, were selected purposively for maximum diversity in terms of economic dynamism and high/low gender gaps in terms of assets and capacities (see Figure 1). Criteria for the latter included assessing statistical and other data on women's leadership, their mobility, educational levels, access to and control over productive assets, and their ability to market and to benefit from sales of agricultural produce. A range of research tools was applied, and in all cases respondents met in sex-disaggregated groups

with facilitators of the same gender. Respondents were divided into low- and middle-income groups. SC and ST dominated the former, and in our analysis we include only SC and ST with some land. OBCs and upper-caste groups dominated the middle-income groups. The facilitators were trained in class, caste, and gender sensitivity to ensure that everyone felt free to speak.

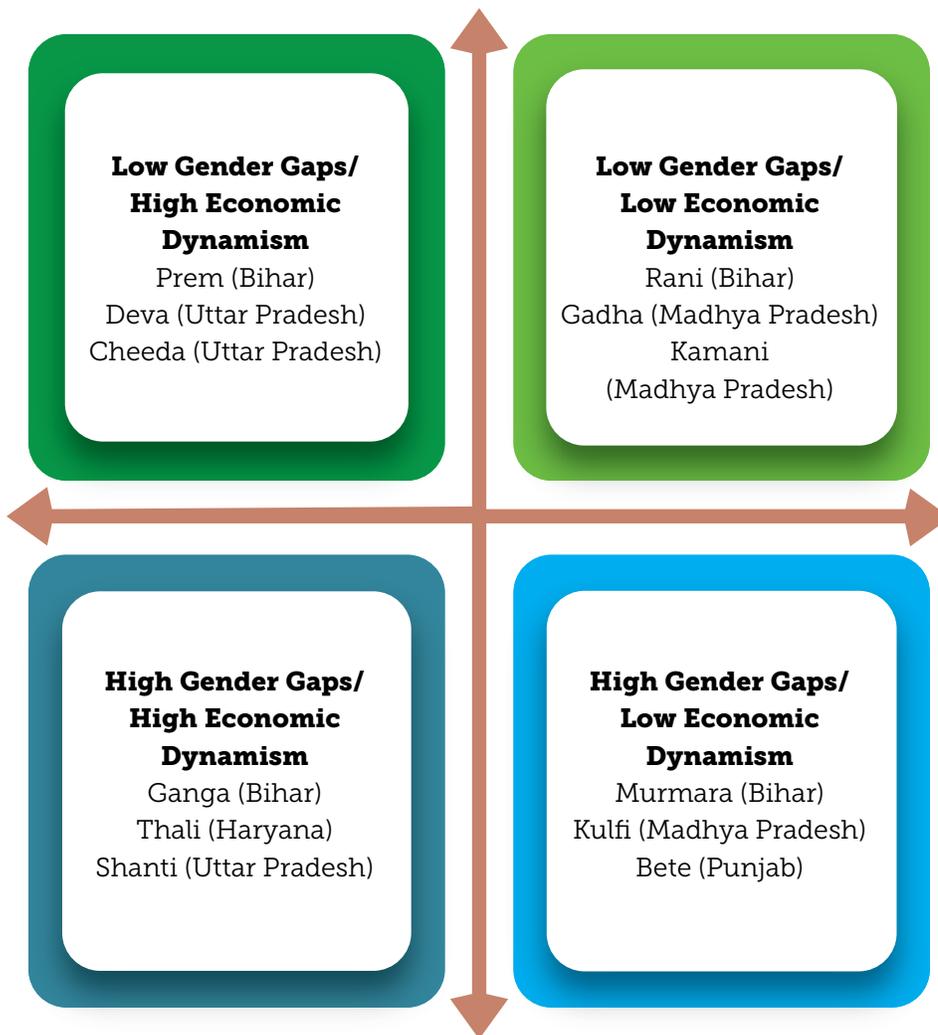
The most pertinent findings for the aims of this resource are provided here. Pseudonyms have been developed for every study site and individual cited.

## Learnings from GENNOVATE

### In some low gender gap communities, middle-income women are becoming important wheat farmers and decision-makers

**Prem** in Bihar, together with **Deva** and **Cheeda** in Uttar Pradesh, are classified as high economic dynamism and low gender gap communities. In Prem, Muslims form 40 percent of the population and Hindus 60 percent. Deva is numerically dominated by upper-caste Chandel Thakurs, Brahmmins/Bhumihars. Yadavs (OBCs) and SCs are in the minority. In Cheeda there are several castes, with the upper-caste Kurmi (30 percent) and Baniya (30 percent) dominating. Of the remainder, 20 percent are SC, 19 percent are OBC, and 1 percent are Muslim. In all three communities, the size of landholding, and respective share by caste or religious affiliation, varies. However, while OBCs are distributed across income bands with many in the middle-income categories, SC are almost always very poor with either tiny land parcels or landless, and they tend to have lower human capital as well. However, government efforts to promote enrollment in school is having a clear effect on young women, including in SC, who are encouraging their mothers to speak their mind on family matters. Although some SC farm their own land, all SC are reliant for the bulk of their livelihood on being hired as agricultural laborers or on off-farm work.

Prem is unusual in the data set in that women move around freely, and freely associate with each other, including in agricultural dissemination meetings, regardless of caste. In other communities, influential and wealthy OBC and upper castes may mingle, though more commonly OBC castes



**Figure 1. Case study selection: Economic dynamism and gender gap.**

mix with each other, and SCs and STs also tend to be limited to their own caste categories. In Prem, the primary reason for women's strong participation in wheat is male outmigration: 50 percent of working-age men across all castes and income bands are absent over the long- and short-term, and a few men are working locally in nonfarm sectors. This has contributed to women from all castes and economic levels working on farms, renting machinery, and taking everyday decisions on farm management. Middle-class women (in terms of economic status) phone their husbands to discuss the sale of key assets but are otherwise responsible for managerial decisions. Typical comments by women included "there is not much difference in the way a man works and the way a woman works." Many men commented, "Women should be allowed to go out and work because this will increase family incomes and benefit the family" and that "50 percent of the women in our village do farming themselves or hire labor to do it." The village head is pivotal in recognizing and working with the consequences of broad-based economic change. He welcomes women to village meetings and provides them with chairs; this latter act is very important to the women's sense of self-esteem. He recognizes that women manage their own responsibilities for household and care, as well as conduct men's work on the farm: "Women are doing a good job of it." In Prem, the adoption of agricultural technologies including zero tillers, combine harvesters, and improved wheat varieties is rapid and widespread.

In Deva and Cheeda, the education of women and widespread recognition of women's ability to contribute to economic wellbeing is pivotal. Men, regardless of caste status, are fully supportive of women's work in agriculture and specifically that women are free to earn money. In many communities in the provinces visited, women earning money and engaging in market relations can be a source of shame. In Cheeda, indeed, women are selling produce from their kitchen gardens. In Deva, upper-caste

women are working directly on their family farms and using mechanized equipment. The wealthiest families own large machines and rent them to middle-income farmers. Although middle-income OBC and poor SC women, according to cultural norms, "are not allowed by men to use machines" themselves, in reality some do. More commonly middle-income OBC women supervise hired male labor working with zero tillers, combines, and threshers. Their husbands commented that "women take risks depending upon how much land and money they have," that "women innovators have the same characteristics as male innovators," and that "women are the farmers here and use machines for cultivation." Women agreed: "Women can easily employ labor on their land and get the work done by zero tiller while their husbands are away." One woman added,

*"We women should be machine friendly since they are made for our benefit. Farmers should not shy away from machines. They have enabled me to spend more time at home with my family and I get time to put my feet up."*

Women also grow vegetables for home consumption and sale, which they sell directly.

Cheeda is a little different. All women in the middle-income band (OBCs and upper caste) work either on their

own farms or as hired laborers. No women work directly with machinery, but all of them express support of mechanization. Use of the zero tiller in particular has led to an explosion of weeds; many women derive an income from weeding. In some cases women and men hired labor accepted food and cash as compensation.

## **In high gender gap communities, women, regardless of caste and economic status, are never targeted but want to understand and support wheat-based innovations**

**Ganga** in Bihar is dominated by OBCs (Yadavs) and upper castes, with some SC. **Thali** is comprised of many castes. The upper castes are Rohr and Brahmin Pandit. The OBCs are Kurmi, Badhi, and Kumhaar, and the SCs are Valmiki and Jeemar. Sikhs and Hindus live peacefully together. In **Kulfi**, upper-caste Brahmins form 25 percent of the population. Scheduled Tribes form 15 percent, and the remainder are SC and OBC.

Caste strongly dictates occupations and access to opportunities in Ganga. OBCs are located in all economic categories. OBCs who have attained middle-income and high-income status have generally benefited from family members being engaged in off-farm work, and most Yadavs rear livestock and engage in crop agriculture, including wheat. Only women from the poorest OBC families work as hired agricultural laborers. Some OBC women in the middle-income band work on the family farm, but never for money as this is considered socially unacceptable. SC are either landless or have tiny land parcels. Only SC and some poor OBC women work for money, as agricultural hands and increasingly in off-farm work where pay is higher. This preference is



A woman farmer in a zero-till wheat plot, Vaishali district of Bihar, India.  
Photo: Madhulika Singh/CIMMYT.

forcing wealthier farmers to manage labor shortages by employing hired labor for sowing and harvesting, and the lack of labor is promoting the adoption of zero tillers. SC women and men with land are completely ignored by the agricultural extension services and landowners. Their only sources of information are “learning by doing” through their employment as hired agricultural laborers and by procuring advice from shopkeepers providing inputs.

In Thali, only landless SC women work in farming as hired hands. They obtain employment all year round. This is because all farmers have tube wells which facilitates cultivation throughout the year. SC women are engaged in all agricultural tasks except land preparation. Upper-caste women are completely excluded by RAS and their own husbands from dissemination and training meetings about wheat innovations. Even so, these women express a strong desire to be informed and to understand what is happening.

In Kulfi, caste distinctions are strictly observed. Most land is held by just two landlords, some of which they rent out under sharecropping arrangements. Sixty percent of the population sharecrop land of one to two acres, whereby the landowner and sharecropper pay 50 percent each for inputs and receive 50 percent of the harvest each. This allows sharecroppers willing to take a risk to benefit from new wheat technologies. Only upper-class men are targeted, however, by the RAS for training, and only they purchase machinery. Poorer men farmers are not included in any information dissemination, leaving women working on their small family fields to take advice from the inadequate understanding of their husbands, from their own work as hired laborers, and from shopkeepers providing inputs. The landless population is very high. Numerous poor women from the ST, OBC, and SC work as hired agricultural hands.

Taken together, the findings show that women in Ganga, Thali, and Kulfi, regardless of caste status, have

no chance to learn about and discuss wheat technologies. Upper-caste and high-income men argued that “if there is anything women need to know they can always ask their husbands” and that “women are the pride of our families and they cannot go hobnobbing outside.” Middle-income and low-income women who worked in the fields agreed that “extension agents never approach us.” Middle-income OBC men in Ganga, whose wives work in the fields, explained that “women are not exposed and never get as many opportunities as men and therefore they cannot be blamed for not being innovative.” A woman said simply, “We cannot innovate or adopt an innovation if we are not aware of it.” Some women explained, though, that even if they were to be invited to meetings, they would have to stay under veils and remain silent, which would not help them.

A number of OBC middle-income women who had previously worked in the fields expressed relief that mechanization is pushing them back into the household. Some middle-income women now invest in small businesses they can manage from home. Others expressed that they now feel relaxed because “we can complete our household chores at a more leisurely pace.” Several women respondents indicated quietly supporting their husbands to innovate in wheat by selling their jewelry for investment, and offering “suggestions.” Women also stressed they assisted their husbands to search out other forms of investment.

The labor-saving effects of mechanization bring important benefits to middle-income women in terms of saving time, the ability to withdraw from fieldwork and engage in other businesses, and the improvement in social status. At the same time, women across the sample want to be informed about wheat innovations either because they work directly in the field, or want to participate in discussions around investments.

## Women role models contribute to changing perceptions of what women can achieve in low and high gap communities

In high gender gap communities, women-headed households are rare. However, in some cases scheduled caste women-headed households have become renowned innovators in wheat. This is possible only when they are supported by village leaders, agricultural research centers, farmer organisations, and the RAS; otherwise they would have no means of accessing improved technologies. One woman, Aadhya, who lives in Bete and no longer works in her fields herself, explained, *“Nowadays I supervise work on my farm and I’m not hard pressed for time anymore. I can pack in all my day’s work easily and still find time to sit and chat with my children.”* Another woman head of household, Meena, also from Bete, explained,

*“I am a woman managing 5.5 acres of land and growing my own wheat. I am not afraid of using machinery.”*

She stressed that “there should be training sessions where women can be educated about the benefits of machinery.”

Thali is unique, though, due to the presence of international research organizations trying to provide some support through the RAS to upper-caste women. Currently, such assistance reaches a tiny number of women. In

general, bigger organizations seem to find it easier to work with large farmers and with men, meaning that small farmers are inadvertently ignored. However, in the case of Bete, farmers find it much easier to approach the local, strongly community-based farmers’ association. Women as well as men are able to obtain support.

In low gender gap communities like Prem, some women in male-headed households have become role models. For example, Jyoti, a formerly poor SC woman without formal education, is now recognized in her own and surrounding communities as a successful and wealthy wheat innovator. She began when her husband out-migrated after ceding control over the land to her. Together with her children, she worked hard and began to visit a demonstration farm run by an international research organization. She explained, *“It is necessary to attend meetings four to five times to understand the entire process. And we need practical training for a few days on our own land.”* A SC man from Prem remarked that role models like Jyoti made it clear to everyone that women are capable of doing anything, from growing wheat to selling it at the marketplace. A few similar experiences were recounted in other low gender gap communities.

Although GENNOVATE did not identify many women like Jyoti, Aadhya, and

Meena, it is clear that the women innovators can be successful and command considerable respect. To succeed, however, they need overt support from village leaders and the RAS. This helps to create an environment conducive to generating respect among the wider community. As such, support to role models can have transformative potential.

## Poor women and men want to participate in wheat innovation processes in all communities

Across low and high gender gap communities, men in low-income scheduled caste and OBC households increasingly recognize women as co-farmers rather than as family labor under their command. Low-income men agreed everywhere that a good woman farmer *“is able to take over all farming responsibilities in the absence of her husband”* and *“should know the right time for each activity and do everything on time.”*

Motivated by observing the successful use of technology by richer farmers, some poor households are becoming involved in sharecropping arrangements (in one community land is leased), renting machinery, and purchasing improved wheat seeds.



GENNOVATE fieldwork: Women’s focus group discussion in India. Photo: Anuprita Shukla/ CIMMYT.



Improved storage of wheat grains. Photo: CSISA.

## Inclusive institutional mechanisms make a huge difference

In only one community, Bete in Punjab, which is classified as high economic dynamism and high gender gap, some SC were becoming wealthier through innovating in wheat. This was also the only community where farmers were leasing land rather than sharecropping. Leasing clearly facilitates wealth accumulation and willingness to invest. All farmers have a tube well and all grow wheat. SC alongside upper-caste farmers are improving productivity, and many SC, including women, are obtaining higher wages by working off-farm in a local factory. The Bete Agricultural Cooperative (BAC, a pseudonym) is pivotal in this transformative effect.

No farmers, regardless of their income level, purchase machinery. The BAC rents out machinery to everyone requesting it at a fixed, reasonable rate. Small farmers come together to pay rental fees. BAC also provides extension services and credit. Women who — due to caste dictates — rarely work in the field assert they obtain credit on fair terms from BAC. BAC conducts regular meetings to which all farmers, regardless of caste or gender, are invited. In reality more women than men attend, but all are expressly welcome. The village head additionally helps everyone, regardless of caste or income status, with agricultural advice.

Indeed, village heads are decisive in every community for women's inclusion or exclusion in agricultural learning networks. In all 12 communities, village heads have mechanized their agricultural operations and rented out their machinery, and are thus key information brokers as well as opinion formers. However, in most communities village heads do not include any women, nor lower caste or tribal men and women, in learning events. Poor men (with small plots who want to innovate) said, "Research organizations — invited by village heads — only help big farmers and not

When they succeed poor women feel "able to relax" because they now have time for household and leisure. More time with children is particularly valued. Poor women in households that have managed to innovate with wheat successfully report that their households are much better off and that they have more respect and say in the community and household due to their success.

However, would-be innovative poor households face considerable challenges. The biggest one is lack of support by the RAS (apart from international research organizations) in every community studied (bar occasional support to women role models). Poor women and men in most communities repeatedly noted, due to their caste or tribal status, that they are not invited to meetings or training events. Even if they do attend, they are rarely invited to sit and may be at the back and unable to hear (the exceptions are Prem, Deva, and Bete). Some low-income men and women attempt to learn about new technologies during their work as hired agricultural laborers on the farms of middle- and high-income farmers, but this learning window is closing in almost all study locations due to the labor-saving effects of mechanization.

Poor women and men are increasingly losing paid work as agricultural hands. Zero tillers, harvesters, and threshers replace typical women's work in sowing, harvesting, and threshing; the same applies to the work of poor male hired labor in land preparation and other tasks. Women are, however, more unlikely than their husbands to obtain other forms of paid casual work due to gendered mobility constraints, their responsibilities for household and care work, and biases in labor markets. The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), a government program, offers 100 days of manual unskilled work almost everywhere. It is the only form of work where women and men earn the same wage and is thus attractive to women. However, work is often irregular. In a few locations experiencing high economic dynamism coupled with the development of industries that favor female labor, such as garment factories, the loss of casual work in agriculture has proven to be an opportunity. In other cases, however, this loss of income is a catastrophe. A lifeline could be cast to some low-income communities by helping them innovate on their small plots, but innovative models, and will, are often lacking.

*small ones,*” and *“poor people don’t get information. People who come from outside to discuss new things do not call poor people to meetings.”* Conversely, the transformational effects of progressive village heads in Prem, Deva, and Bete are clear in promoting economic dynamism, innovation, and inclusion. They are helping their communities adapt to new realities and challenges, and openly supporting women as wheat farmers and managers.

In some communities, **large farmers** are a useful source of information for low-income farmers. One poor man explained, *“We often go to bigger farmers for help and information,”* and this comment was repeated by women and men. Furthermore, large farmers in low gender gap communities have a strong financial incentive to rent machinery to women and train them in its use.

In every community, **shopkeepers** selling inputs emerged as a critical source of information for lower caste and tribal men and women, and for middle-income women. The role of shopkeepers as an institutional mechanism for disseminating information needs further exploration.

## Suggestions for moving forward

- Encourage, nurture, and support existing positive examples and change processes. Sensitively work with village heads, RAS, and other information brokers to replicate and disseminate lessons learned. It is important not to go in with a blueprint or checklist of actions for your partners to perform but rather to find out about what people are doing already and to strengthen positive behaviors, processes, and tendencies.
- Support village heads and other change-makers to lead change processes, rather than attempt to lead yourself. Community-led change is likely to be much more successful than change which appears to be imposed by outsiders.

- Train private-sector actors, including shopkeepers selling inputs (and the companies behind those inputs), on how to train small farmers and women on the effective use of inputs and other technologies. Include them in gender training to help them see women as a market and to train their outreach staff accordingly. At the same time, care must be taken that target groups do not undertake unacceptable risks through their investments which could endanger their livelihoods.
- The RAS need support to catch up with the consequences of the huge economic and social convulsions affecting every part of India. The RAS need to develop procedures (including accountability and incentive mechanisms) and train local extension officers, like the KRISHI MITRAS, in how to target and support lower-caste farmers, and women of all castes and tribal identities, in wheat innovations.
- Women-only organizations and meetings should be considered as they can help women articulate gender issues in a safe space and allow them to practice expressing their demands before participating in larger meetings.
- Women facilitators are needed to work with women. It may be possible to employ women (and men) extension staff from marginalized castes and tribes.
- Disseminate information on new technologies and practices in appropriate formats, such as through mobile phones, audio, and videos.

## Working with women in high gender gap communities

- **Middle-income and upper-caste women in wheat farming households.** Support upper-caste and middle-income women of various castes who do not work in the field to participate in agricultural decision-making, for example by

strengthening their knowledge of various wheat technologies and in agricultural budgeting. They can then provide effective input into discussions about how to best invest, offer evidence on profit and loss through their bookkeeping, and generally engage more effectively in understanding and strengthening the family’s livelihood portfolios. This is all the more important given women’s responsibility in most communities for managing household budgets.

- **Middle-income women working in the fields.** Develop outreach programs to reach women as well as men with information on new wheat technologies. Support women’s and men’s access to affordable credit. Provide single sex training with women trainers so that men will permit their wives and daughters to attend.

## Working with women in low gender gap communities

- **Middle-income and poor women.** In some low gender gap communities wheat is no longer a “man’s crop,” entirely under his control and management with women working as laborers under his direction. Due to much wider social change processes, including those which promote male out-migration or local work in off-farm occupations, women are becoming significant or sole decision-makers in wheat. Women of all castes, religions, and tribal affiliation need to be specifically targeted for technical training events and meetings. Depending on the cultural context, women may prefer to be trained with other women or to meet in mixed gender groups. Follow local norms that show respect and organize the logistics of training events and meetings around women’s other responsibilities, such as cooking and childcare. Provide chaperones if culturally necessary for women to attend training events, and consider childcare requirements.

- Encourage village heads to include women in wheat technology dissemination meetings in women-only meetings to enable women to freely interact with the RAS. Sow the idea of inclusion through initiating and facilitating discussion processes on women's roles and responsibilities in wheat. When the idea catches fire, work together to find the best locally acceptable way to include women and enable them to participate actively.
- Work with private-sector actors, such as shopkeepers, to create opportunities for women, from which these private actors will also benefit. Ensure they are well trained in the relevant technologies and can offer responsible advice.

## Support women role models

- In all communities, support women role models with training and advice and ensure their visibility is high. The actual way support is offered will need to be tailored to the community and will differ between low and high gender gap communities, and other location-specific factors.

## Design specific activities to target and train poor women and men in innovation processes

- Poor women and men are struggling to be included in wheat innovation processes. Make sure that they are considered in research and project planning. Talk to them about their objectives and their needs and develop support packages. There is considerable research and development practice to draw upon regarding ways to include poor people in economically productive

programming. Research partners and rural advisory services need to enact governmental commitments to the Sustainable Development Goals and Leaving No One Behind.

- The study findings show that more research is needed, for example a study on the intersectionalities between caste and gender and the implications for technology adoption.

## Suggestions for further reading

- Badstue, L., Petesch, P., Williams, G., & Umantseva, A., with Daniela Moctezuma. (2017). Gender and innovation processes in wheat-based systems. GENNOVATE report to the CGIAR Research Program on Wheat. GENNOVATE research paper. Mexico, D.F.: CIMMYT.
- Farnworth, C. R., Bharati, P., Jafry, T., Badstue, L., & Yadav, A. (Submitted). From working in the fields to taking control: Women wheat farmers in India (submitted).
- Krishna, Vijesh V., Aravalath, Lagesh M., & Vikraman, Surjit. (2018). Caste-based social segregation and access to public extension services in India. Paper presented at the International Association of Agricultural Economists (IAAE) Triennial Conference, July 28-Aug 2, Vancouver, Canada.
- Petesht, P., Badstue, L., Camfield, L., Feldman, S., Prain, G., & Kantor, P. (2018). Qualitative, comparative and collaborative research at large scale: the GENNOVATE field methodology, *Journal of Gender, Agriculture and Food Security* (Forthcoming).

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To learn more visit:

<http://gender.cgiar.org/themes/gennovate/>

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