



# Gender and Innovation Processes in Wheat-Based Systems

**GENNOVATE Report  
to the CGIAR Research  
Program on Wheat**



**GENNOVATE**  
ENABLING GENDER EQUALITY  
IN AGRICULTURAL AND  
ENVIRONMENTAL INNOVATION



RESEARCH  
PROGRAM ON  
Wheat



WHEAT (<http://wheat.org>) is a [CGIAR Research Program](#) launched in 2012 and led by the International Maize and Wheat Improvement Center ([CIMMYT](#)). Coupling advanced science with field-level research and extension in lower- and middle-income countries, WHEAT works to raise wheat productivity, production and affordable availability for 2.5 billion resource-poor consumers who depend on the crop as a staple food. Partners include the Australian Centre for International Agricultural Research ([ACIAR](#)), the British Biotechnology and Biological Sciences Research Council ([BBSRC](#)), the International Center for Agricultural Research in the Dry Areas ([ICARDA](#)), the Indian Council of Agricultural Research ([ICAR](#)), and a community of more than 200 public and private organizations worldwide, among them national governments, companies, international centers, regional and local agencies and farmers. Funding for WHEAT comes from [CGIAR](#) and generous donors including national governments, foundations, development banks and other public and private agencies.

©2017 CGIAR Research Program on Wheat (WHEAT). All rights reserved. The designations employed in the presentation of materials in this publication do not imply the expression of any opinion whatsoever on the part of WHEAT or its contributory organizations concerning the legal status of any country, territory, city, or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries. The opinions expressed are those of the author(s), and are not necessarily those of WHEAT or our partners. WHEAT encourages fair use of this material. Proper citation is requested.

**Correct citation:** 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.

ISBN: 978-607-8263-64-6

AGROVOC descriptors: Agriculture; Gender; Wheats; Innovation

AGRIS category codes: A50 Agricultural Research; E10 Agricultural Economics and Policies

Dewey decimal classification: 338.1082 BAD

## Contents

List of acronyms.....	i
List of figures .....	i
List of tables.....	ii
List of boxes.....	iii
Acknowledgements .....	iv
Preface.....	v
EXECUTIVE SUMMARY.....	vi
1. WHEAT-SYSTEMS INNOVATIONS WITH A GENDER PERSPECTIVE .....	1
1.1. Introduction .....	1
1.2. Research methodology.....	2
2.OPPORTUNITY STRUCTURES FOR INCLUSIVE INNOVATION .....	5
2.1. Empowering mindsets.....	7
2.1.1. Agency and changing norms of deference .....	9
2.2. Improving Wellbeing .....	13
2.2.1. Case study: Badero’s changing culture of inequality .....	14
2.2.2. Gender norms and poverty escapes.....	17
2.3. The freedom and power of tipping points.....	19
3. MEN’S AND WOMEN’S EXPERIENCES WITH AGRICULTURAL INNOVATIONS.....	23
3.1. What agricultural innovations rate highly on the ground?.....	23
3.1.1. Factors that men and women appreciate in relation to improved wheat varieties .....	25
3.1.2. Challenges in relation to improved wheat.....	28
3.1.3. Differences in the way that men and women speak about their innovation experiences .....	30
3.2. What local resources and factors enable or hinder innovation?.....	32
3.3. Capacities to connect and learn .....	34
4. THE GENDERED CONTEXT OF AGRICULTURAL INNOVATION .....	37
4.1. Local expectations for farming roles .....	38
4.2. The bind of gender norms .....	40
4.2.1. The highly gendered environment governing marital roles .....	40
4.2.2. The idea of the man as the economic provider.....	42
4.2.3. The intersection of gender with social class, poverty and caste.....	43
4.2.4. Slowly evolving gender relations .....	47

4.3. The uneven and shifting terrains of women’s economic agency.....	50
4.3.1. Marital decision-making on “women’s” resources.....	50
4.3.2 Gender norms and economic enterprise.....	53
4.4. Youth perspectives on empowerment, gender norms, and agriculture.....	57
4.4.1. Agency and dependence .....	58
4.4.2 Aspirations.....	60
4.4.3 Gender constraints to educational access.....	62
4.4.4. Childbearing decisions.....	63
4.4.5 Physical mobility.....	63
4.4.6 Young people’s farming roles.....	65
5. CONCLUSION .....	67
5.1. Implications and opportunities for wheat R4D.....	70
6. Annexes .....	a
Annex A. Overview of GENNOVATE key study questions, conceptual framework, sampling, data collection, and analysis protocols.....	a
Annex B: The WHEAT sample .....	h
Annex C. Overview of WHEAT case studies.....	p
Annex D. Researchers and institutions involved in case studies .....	x
Annex E. Definitions of codes referenced in tables and figures .....	y
Annex F. References.....	z

## List of acronyms

AR4D	Agricultural Research for Development
AREU	Afghanistan Research and Evaluation Unit
BUIEMS	Balochistan University of Information Technology, Engineering and Management Sciences
CA	Conservation Agriculture
CGIAR	Consultative Group for International Agricultural Research
CRP	CGIAR Research Program
FGD	Focus Group Discussion
FHH	Female Headed Households
GCU	Glasgow Caledonian University
GDP	Gross Domestic Product
GENNOVATE	Enabling Gender Equality in Agricultural and Environmental Innovation
GII	Gender Inequality Index
HDI	Human Development Index
ICARDA	International Center for Agricultural Research in the Dry Areas
MHH	Male Headed Households
NRM	Natural Resource Management
PI	Principal Investigator
PRA	Participatory Rural Appraisal
R&D	Research and Development
R4D	Research for Development
SDPI	Sustainable Development and Policy Institute
UNDP	United Nations Development Programme
WHO	World Health Organization

## List of figures

Figure 1. GENNOVATE case-study countries (UN-established borders) under CRP WHEAT .....	3
Figure 2. Level of agency for own gender, now and ten years ago .....	8
Figure 3. Ratings on Ladder of Power and Freedom by country .....	9
Figure 4. Ratings on Ladder of Power and Freedom, tipping point cases versus rest.....	9
Figure 5. What shapes agency? .....	10
Figure 6. Perceptions of local poverty trends in tipping point versus non-tipping point communities.....	14
Figure 7. Dimensions associated with moving out of poverty.....	17
Figure 8. Most prevalent innovations rated top two by men.....	24
Figure 9. Most prevalent innovations rated top two by women.....	25
Figure 10. Most prevalent themes associated with favorable observations about improved wheat technologies.....	26

Figure 11. Three most prevalent themes associated with unfavorable observations related to improved wheat .....	29
Figure 12. Most frequently mentioned factors perceived to support innovation .....	32
Figure 13. Most frequently mentioned dimensions perceived to hinder innovation.....	34
Figure 14. How easy or difficult will it be for Aisha to purchase a plot of land without her husband’s support?.....	51
Figure 15. Top three barriers for men entrepreneurs .....	54
Figure 16. Top three barriers for women entrepreneurs .....	55
Figure 17. Most prevalent coding associated with youth aspirations for education and their future.....	61
Figure A. 1. GENNOVATE conceptual framework.....	b
Figure A. 2. Regional distribution of cases by sampling framework.....	d
Figure B. 1. GDP per capita change, 2005 to 2015 .....	h
Figure B. 2. Proportion of population living below the poverty line .....	i
Figure B. 3. Trend in local work opportunities for own gender.....	l
Figure B. 4. The extent to which local women have been hit or beaten in their households over the past year versus 10 years ago.....	l

## List of tables

Table 1. Overview of data collection activities .....	4
Table 2. Ladder of Life, Poor women's focus group, Badero .....	15
Table 3. Median ratings on poverty reduction and empowerment .....	20
Table 4. Community characteristics, tipping point versus other cases .....	21
Table 5. Proportion of Focus Groups (FGDs) identifying improved wheat as one of the top-two innovations for their own sex .....	24
Table 6. Learning from extension .....	35
Table 7. The good man and woman farmer, poor men’s focus group, Thool, Nepal.....	39
Table 8. A good wife and a good husband, poor women’s focus group, Chala, Ethiopia.....	41
Table 9. Perceptions of middle-class focus groups on local climate for their own gender to run an agricultural business (Share of 43 focus groups, %) .....	53
Table 10. Do parents show same commitment to educating their daughters as their sons?.....	62
Table 11. Most common reasons why boys and girls end their education .....	63
Table 12. Out of every 10 women in the community, how many can move about freely on their own in the public spaces of the community? .....	64
Table 13. Level of ease/difficulty for a young woman or man to grow and sell a crop on her/his own ....	65
Table A. 1. GENNOVATE countries, target crops and systems, and CRPs.....	c
Table A. 2. Overview of GENNOVATE data collection instruments .....	e
Table B. 1. Human Development Index (HDI) for the eight study countries .....	i
Table B. 2. Governance indicators (2015) for eight study countries .....	j
Table B. 3. Gender Inequality Index for eight study countries .....	j
Table B. 4. Country distribution of WHEAT cases by sampling framework.....	k

## List of boxes

Box 1. Key study concepts: Innovation, agency, and gender norms .....	2
Box 2. Ladder exercises to assess empowerment and poverty dynamics .....	6
Box 3. Soaring agency in Cheeda, Uttar Pradesh .....	12
Box 4. Women innovators in Ethiopia .....	31
Box 5. Gendered barriers to innovation: examples from women’s middle class focus groups .....	33
Box 6. A widow’s success in wheat cultivation with support from extension agents .....	36
Box 7. A poor woman connecting to innovation through local networks .....	37
Box 8. Pressure on men to fulfill normative expectations around provider roles.....	42
Box 9. Intersection of gender and social class in a wheat-farming village of Nareed, Pakistan.....	45
Box 10. Poor women working as farm laborers.....	46
Box 11. Abebe’s experience with “Community Conversations” .....	49
Box 12. Women’s economic agency in Shanti, India .....	55

## Acknowledgements

GENNOVATE builds on multi-level research collaboration by a large number of people across the world, and we thank everyone, who helped make this initiative come through.

This report was prepared by Lone Badstue, Patti Petesch, George Williams and Anya Umantseva with inputs from Daniela Moctezuma. We wish to thank all the collaborators, the local field team members for their excellent work (details in annex D). We thank Diana Lopez for leadership in the process of coding and management of all the data from the 43 WHEAT community case-studies which underpin this report, and for her invaluable support in setting up for the analysis phase. Similarly, we extend our tremendous appreciation to the data coding team for the WHEAT case-studies: Andrea Bruni, Edgar Dominguez, David Lara, Daniela Moctezuma, Anaid Ortiz, Nora Soto and George Williams.

This report benefited from Shelley Feldman's critical feedback and guidance to the wider GENNOVATE team. Wenda Bauchspies, Margreet van der Burg and Victor Kommerell gave valuable feedback at different phases of the report drafting, and additional contributions to the analysis were provided by the wider team of GENNOVATE researchers during their October 2016 workshop.

Financial support for GENNOVATE's methodology design, training of principal investigators (PIs) and field teams, data collection, and data coding were provided by the 11 CGIAR Research Programs engaged in the study, World Bank, CGIAR Gender and Agriculture Research Network, Government of Mexico, and the German Federal Ministry for Economic Cooperation and Development. We would also like to express our gratitude to the Bill & Melinda Gates Foundation for the grant that made it possible for the broad group of GENNOVATE researchers to jointly move into the analysis phase. We thank CRP WHEAT and CIMMYT and ICARDA managers and staff who have provided support to the wider GENNOVATE initiative. Special thanks go to Akhter Ali, whose invaluable support was instrumental for the organization and implementation of the Pakistan fieldwork; to Chona Echavez whose hard work, leadership and fearless commitment were critical for making the case-studies in Afghanistan possible; to Dina Najjar who skillfully managed the case-studies in Morocco and Uzbekistan; to Mahlet Hailemariam for the excellent leadership in the data collection in Ethiopia and Cathy Farnworth for her good and thoughtful support in the latter. Our gratitude also goes to Tahseen Jafry, Kanchan Lama, Yadav Ashok Kumar, Siddiqur Rahman, Syed Khair, Huma Khan and Anuprita Shukla for their deep insights, leadership and diligence with many of the case-studies in South Asia.

We also wish to express our deep gratitude to the women and men across the 43 villages from eight countries who shared their perspectives and experiences and their time.

GENNOVATE's design, scope and collaboration emerged in no small measure due to the significant contributions of Paula Kantor. In May of 2015, Paula lost her life in a terrorist attack in Afghanistan while setting up fieldwork. We dearly miss her leadership and spirit. And it is to Paula, and her passion and keen intellect, that we dedicate GENNOVATE's efforts to shine a light on the rural women and men who are challenging and changing the social rules that no longer make sense and disadvantage them.



## Preface

Wheat provides 20 percent of the calories and protein people consume globally, and an estimated 80 million farmers in the developing world rely on wheat for their livelihoods. Wheat research for development (R4D) has made an enormous difference for millions of poor wheat farmers and consumers, improving food security, household incomes and livelihoods. Demand for wheat by 2050 is predicted to increase by 70 percent from today's levels due to population growth and dietary changes. This puts pressure on agricultural research and development to further enhance productivity of wheat-based systems, and significantly expand the uptake of improved wheat technologies. A key challenge in this concerns the need to harness the ability of many more rural men as well as women to innovate in their local livelihoods. To address this, an understanding of the linkages between gender norms, agency and innovation is required.

This report offers a panorama of the gender dimensions of local agricultural innovation processes in the context of wheat-based farming systems and livelihoods. Drawn from GENNOVATE's larger sample, the analysis is based on 43 village case studies from eight countries set in diverse wheat regions of the Global South, and which were commissioned by the WHEAT CRP. The findings are primarily targeted to WHEAT research managers, scientists and research teams, although we hope others may find the report useful.

GENNOVATE, or *Enabling Gender Equality in Agricultural and Environmental Innovation*, is a qualitative comparative research initiative of 11 CGIAR Research Programs (CRPs). Together the GENNOVATE research team is advancing a two-track strategy of contributing authoritative qualitative research and catalyzing gender-transformative change in international agricultural research for development (AR4D). Across the GENNOVATE initiative researchers are working, both independently and together, on additional in-depth analyses. Please be on the lookout for this work to follow in journal papers, books, briefing notes and other outreach.

We hope you enjoy the report,



Lone Badstue

Chair, GENNOVATE Executive Committee

CIMMYT Strategic Leader for Gender Research

## EXECUTIVE SUMMARY

For more than half a century, wheat research for development has delivered highly valuable technologies. Some of these have had very large impacts, significantly improving productivity, food security and incomes. However, for other possibly equally good technologies, the impacts have been more limited.

Most of the innovations developed by the CGIAR and partners have been, and continue to be, driven by a focus on resolving important technical problems, such as low-yielding and susceptible varieties; widespread crop pests and diseases; debilitating abiotic stresses; and the productivity problems of poor quality seed. However, it is becoming increasingly clear that without appropriate incorporation of gender and other social considerations in agricultural research and development (AR&D), otherwise technically superior innovations can be limited in their impact and in some cases may even lead to further exacerbation of social inequalities (Cornwall & Edwards, 2010; Okali, 2011, 2012; Kumar & Quisumbing, 2010).

Deep-seated gender norms contribute to important inequalities in the ability of women, men and youth to learn about, try out, adapt, and benefit from new agricultural and natural resource management (NRM) technologies and practices. Such norms often limit women's access to and control over productive resources (Quisumbing and Pandolfelli, 2010), which in turn further constrain their capacities to access new technologies and practices (Ragasa, 2012). Yet, how and why women in some contexts can effectively access and benefit from new technologies but not in others, remains poorly understood. This lack of understanding of the relationship between local contextual characteristics, including the normative environment for gender and wider social inclusion, and uptake of agricultural technologies, constrains the capacity of agricultural research for development (AR4D) to design and scale out innovations that enable adult and young women and men in poor communities to engage and benefit.

This report illuminates how gender norms and agency work together to shape access to, adoption of, and benefits from agricultural innovation at the local level. The findings are based on the perspectives and experiences of approximately 2,500 women and men who live and work in 43 villages of Afghanistan, Bangladesh, Ethiopia, India, Morocco, Nepal, Pakistan, and Uzbekistan, where wheat is a key crop.

### GENNOVATE

The research presented here is part of GENNOVATE; a qualitative comparative research initiative examining how gender norms and agency shape, and in turn are shaped by, local innovation processes in agriculture and NRM. The initiative, which reaches across 137 community case-studies in 26 countries in the global south, represents an unprecedented research collaboration bringing together gender researchers from 11 CGIAR Research Programs (CRPs).

In GENNOVATE, agricultural innovation is conceived broadly as a social process, and the report explores experiences with improved wheat varieties and other innovations identified by study participants as the most important for the women and men of their villages. The analysis of their testimonies is framed by the concepts of gender norms and agency:

- **Gender norms** encompass the many societal rules governing men’s and women’s daily behaviors and roles in their households and communities.
- **Agency** refers to the capacity to act and pursue goals individually or together with others; and the study rests on the understanding that, for an agricultural innovation to be effective, men and women on the ground must exercise agency and actively engage in learning about, testing, or adapting a new technology or practice to their needs and local conditions.

The GENNOVATE methodology features advances in multi-site qualitative comparative research designs. Between mid-2014 and mid-2016, field teams received in-depth training and collected data with a standardized package of instruments which included in each case study: six sex-specific focus groups, eight semi-structured interviews, and a detailed community profile. The fieldwork engaged equal numbers of women and men from different socio-economic and age groups. The data generated allow for contextually grounded analysis, comparison, and identification of patterns across the varied contexts and population groups studied.

The key driver behind GENNOVATE is the notion that focused CRP specific evidence about how gender norms influence local level development dynamics, including agricultural technology uptake processes, is relevant and useful for wheat research for development (R4D) decision-makers in relation to theories of change and specific intervention strategies, as well as targeting and priority setting. Indeed, the purpose of this research report is exactly to inform CRP WHEAT on the linkages between gender norms, agency and innovation in wheat-based livelihoods, and to highlight opportunities for enhancing adoption through the integration of gender transformative approaches.

This report presents initial findings from the CRP WHEAT GENNOVATE sample, and is but one element of a broader set of strategic evidence-based research-, knowledge- and communications- products. Across the GENNOVATE initiative researchers are working, both independently and together, on additional in-depth analyses to follow in journal papers, briefing notes and other outreach.

The funding for the methodology development, Data collection and –coding was kindly provided by the various CRPs as well as Government of Germany, CGIAR Gender & Agricultural Research Network, Government of Mexico and the World Bank; and critical support for the initial analysis phase 2016-2017 is generously provided by the Bill and Melinda Gates Foundation.

## Key findings from the WHEAT GENNOVATE sample

Across the 43 WHEAT study contexts, gender norms underpin gender power relations and continue to privilege men's agency, authority, and resource control. Yet, these norms are evolving in many places, and, in the set of research villages where the normative environment encourages both women's and men's agency and participation in agricultural innovation, the evidence points to more rapid and inclusive rural development.

Overall, men and women from the WHEAT sample observe **growing agency and well-being and declining poverty** in their villages. Eighty-eight percent of women's focus groups and 84 percent of men's report increases in agency from 10 years ago. Poor women's and men's focus groups on average report that poverty has declined 25 and 27 percent, respectively, from 10 years ago.

A set of **six positive outliers**—or tipping point communities— were identified where we observe evidence of normative shifts towards more equitable gender relations, which contribute to fostering an enabling environment for more inclusive agricultural innovation. **In these six communities both men and women report significantly higher empowerment and poverty reduction levels than in the 37 other research communities.** Greater acceptance of women's freedom of action, economic independence and civic participation appear to be a key element in this. These findings **confirm that equality of opportunity enables innovation and economic development** (World Bank 2011).

Relative to other innovations mentioned, **improved wheat varieties emerge by a large margin as the most favored by both men and women study participants** across the 43 study communities. In 64 percent of the men's focus groups and 33 percent of the women's, improved wheat varieties was rated as one of the top-two innovations. These findings testify to the relevance of wheat R4D, and to the interest of men *as well as* women farmers. At the same time, however, there are **differences between men's and women's responses, which give reason for further analysis**, including the fact that men's groups rate improved wheat as a top-two innovation twice as frequently as women's groups. Similarly, in 17 percent of the women's focus groups **no agricultural innovation in the past five years is identified as being of importance to local women**, and in 57 percent of all the case studies there is no overlap between the top-two rated innovations by men's and women's focus groups. **The data indicate that these differences have much to do with the gendered contexts these rural men and women live and work within, as well as with how agricultural R&D interventions are designed and delivered.**

While financial constraints affect both men and women, **gender-related restrictions**, such as limited physical mobility, reproductive work burden, and strict gender norms, **stand out as the second most frequently mentioned constraint for women's capacity to innovate.** Similarly, women's opportunities to learn about and engage with new things in agriculture, e.g. through agricultural extension, is significantly limited by restrictions on their physical mobility and social interactions. Nevertheless, even in the contexts where gender norms are the strictest, some women succeed in learning about and adopting innovations, e.g. through local community-based networks instead of extension programs.

In order **to take up new things in agriculture, farmers must exercise agency** and engage actively in learning about, testing, or adapting the new technology or practice to their needs and local conditions. However, **agency is highly gendered**, and in most of the rural contexts in the WHEAT GENNOVATE sample, it remains **more common and acceptable for a man than a woman to display agentic behaviors**, including taking the initiative to become knowledgeable about and try out a new variety or soil management practice, and subsequently to reap the benefits thereof.

Though there are numerous variations in the local context of the case-studies, throughout the WHEAT sample findings point to **strong normative associations of men with the productive sphere and economic provision and equally strong normative associations of women with the reproductive sphere**. This binary normative discourse represents stereotyped ideals, which for most poor people are difficult, if not impossible, to live up to in real life. Rather, gender norms are constantly challenged and everyday practice often requires subtle and skillful negotiation or ‘bending’ of such norms.

Across the case studies, the data shows that women’s contribution to family livelihood and farming, including wheat production, is important, especially for poor families. Yet the **strong normative discourse** associating men with the productive and economic sphere, and women with the reproductive realm, **obscures women’s contributions to farming, and reduces their capacity to gain recognition as farmers**, and potential agents of change in agricultural transformation. At the same time it perpetuates the idea of the man as the sole/main economic provider, thus **sustaining the challenges for local men** to yield any economic space to women.

**Women heading their own households sometimes face fewer restrictions on their social interactions** and physical mobility than women in male-headed households, and as such may be better positioned than other women for engaging in agricultural innovation opportunities. Similarly, in some contexts it is normatively accepted that women from poor households work in agriculture, and often they are keenly interested in learning and improving their livelihood opportunities. Like **men, who openly support women’s productive and economic initiatives**, these types of women can hold **potential as positive role models and change agents if provided with the appropriate support**.

The **general findings related to gender norms and innovation in most case studies also apply to young people**, with young women particularly constrained by gender restrictions and social pressure to fulfill reproductive and subordinate roles. While their individual circumstances differ, influencing the opportunities and livelihood constraints they face, young men and women remain deeply embedded in, and dependent on, networks of family and social relations, and most young study participants aspire for livelihoods outside agriculture.

## Opportunities for wheat R4D

- **Equality of opportunity a strategic interest for wheat R4D:** As the tipping point communities illustrate, greater equality of opportunity between men and women creates room for more people to innovate in their local livelihoods, including wheat agriculture. This, in turn, is strongly associated with greater poverty declines. Promoting and contributing to gender equity and social inclusion is therefore both an objective in itself, but also a strategic means to enhance the impact of wheat R4D.
- **Institutional dimension in targeting:** The tipping point communities provide a more favorable institutional environment for a wheat R&D intervention to be successful, compared to the other 37 study communities. In addition to agroecological dimensions, market access, and demographics, it is relevant to add a local institutional dimension to wheat R4D targeting approaches. Further investigation of positive outliers, such as the tipping point communities in this sample, and research into the potential role of an institutional dimension in R4D targeting, would contribute to this end.
- **Invest in institutional innovation in wheat agri-food systems:** Interventions that seek normative conformity are unlikely to succeed in creating social change. Rather, in restrictive and highly gender unequal environments they may instead risk sustaining or even exacerbating existing inequalities. More promising strategies would include enabling institutional innovation as part of technical interventions. Relevant approaches to consider include:
  - **Learning from men and women innovators:** Further analysis on the trajectories and experiences of local men and women innovators could contribute to a) the study of agricultural innovation processes; b) building the evidence base on factors that help and hinder capacity to innovate in agriculture; and, c) a better understanding of early adopters (and dis-adopters) and provide valuable feedback to the research and technology development process.
  - **Supporting female-household heads to open space for other women:** A strategy of supporting and working with women from female-headed households may help open space for other women by setting examples and providing a minimum critical mass of women.
  - **Proactively cultivating positive role models for inclusive change:** Proactively cultivating positive role models for inclusive change as part of specific downstream R4D interventions could help create opening for more women to take part in and benefit from local innovation processes. Furthermore, the concepts of positive deviants and role models would seem to be relevant in relation to research on and testing of inclusive scaling out strategies.
  - **Working with and build capacity of progressive opinion leaders:** Building the capacity of local rural leaders for inclusive agricultural change could complement and enhance the development of mechanisms for institutional innovation in wheat agri-food systems.

- **Developing and testing agricultural extension arrangements that cater to women as well as men:** A key challenge to address regards how to open space for agricultural learning and information diffusion services which are also able to reach and support women farmers. This could be done as part of research on scaling out, as stand-alone or as part of larger wheat research projects.
- **Developing and testing arrangements for local level women providers of improved wheat seed and related varietal information:** In addition to facilitating rural women's access to information about improved varieties and seed samples, this would also address the challenges related to low varietal replacement rates.
- **Technology development with end user perspective:** Yield and profitability and labor saving are key dimensions to address in technology development, but these mean different things to different end users. Careful consideration of the social and economic differences between men and women end users, and their different reasons for expressing interest in yield and profitability or labor saving is critical for ensuring that new technologies are relevant for, and benefit, a broader group of end users.
- **Strengthening evidence base on labor:** More and better data is needed on *who* does *what* in wheat-based livelihoods. This would provide key information for wheat R4D priority setting and targeting, including in relation to technology development and diffusion.
- **Enabling participation of young people in local innovation processes:** Young people often have few resources and can therefore in some respects be compared to resource constrained adults. Rather than treating young people as a separate, detached category and design youth specific interventions, programs targeting resource poor farmers may also benefit young people and poor women by making special efforts to include young women and men, as well as poor women. A special opportunity for agricultural R4D in relation to youth, concerns leveraging the potential of schools for engaging children and young people in agricultural innovation through training and education on agriculture.

# 1. WHEAT-SYSTEMS INNOVATIONS WITH A GENDER PERSPECTIVE

## 1.1. Introduction

Norman Borlaug was awarded the Nobel Peace Prize for his wheat research and his great personal engagement to ensure that the research outputs would be useful for and reach millions of poor farmers. Wheat R4D has continued to deliver highly valuable technologies, some of which have had very large impact; but other possibly equally good technologies have had a much more limited impact. This difference in outcomes and impact raises the question of what is the process of wheat technology adoption from the farmers' perspective, and what differences exist between wheat farmers which may influence the adoption process.

The scale of adoption and impact of wheat R4D has been researched, however, the actual adoption process at the local level, and the factors limiting or facilitating it, has received much less attention. This limits our ability to identify approaches that could further expand the impact of international wheat R4D.

From the farmer's perspective adopting a new improved wheat variety or agricultural practice constitute an innovation, and local innovation processes is the focus of this study. The word "farmer" may bring to mind a middle aged man, however, farmers are both women and men, old and young, and well off and poor. Different factors like these can influence individuals' innovation capacity and motivation in diverse ways, and while this study primarily is concerned with gender factors it also considers how these intersect with wider social heterogeneity of farmers in relation to innovation. We hope this research can stimulate wheat researchers to further consider how their work can be incorporated into even more farmers' livelihoods via inclusive innovation processes, as well as how the decisions regarding wheat technology development, and promotion, may affect who will adopt them, and who will benefit.

The research presented here is part of GENNOVATE; a qualitative comparative research initiative examining how gender norms and agency shape, and in turn are shaped by, local innovation processes in agriculture and NRM. The initiative, which reaches across 137 community case-studies in 26 countries in the global south, represents an unprecedented research collaboration bringing together gender researchers from 11 CGIAR Research Programs (CRPs).

This report is based on the perspectives and experiences of approximately 2,500 women and men who live and work in 43 villages of Afghanistan, Bangladesh, Ethiopia, India, Morocco, Nepal, Pakistan, and Uzbekistan, where wheat is a key crop.

The remainder of this section briefly outlines the research methodology applied, including key concepts and data collection procedures. In section 2 we use study participants' perceived agency for men and women as an indicator for empowerment and look at trends in this dimension, as well as in perceived



poverty reduction, across the study communities in the wheat data set. A set of six positive outliers, or “tipping point communities,” are identified and compared to the other 37 study communities. In section 3 we turn to local men and women farmers’ experiences with agricultural innovations, including factors that are seen as enabling or hindering local innovation. In section 4 we focus on the gendered context of agricultural innovation, including the dimensions of local farming and marital roles; the intersection of gender with social class, poverty and caste; economic enterprise, as well as young people’s perspectives. Through examples of how local gender stereotypes and other social norms affect men’s and women’s room for maneuver, and how these social rules are continuously challenged and negotiated, we illustrate how practice, including in agriculture, is often different from what is considered the norm. Section 5 offers concluding reflections and comments on implications for wheat R4D.

## 1.2. Research methodology

GENNOVATE explores the gender dimensions of agricultural innovation processes. The research design was guided by the following study questions:

- How do gender norms and agency advance or impede innovation capacity and technology adoption in agriculture and natural resource management across different contexts and social structures?
- How do new agricultural technologies affect gender norms and agency across different contexts? Under what conditions can technologies do harm?
- How are gender norms and women’s and men’s agency changing, and under what conditions do these changes catalyze innovation and adoption, and lead to desired development outcomes? What contextual factors influence this relationship?

The comparative analysis in this report employs the concepts of agency and gender norms, and important regularities in their interactions, to enhance understanding of innovation processes on the ground. Box 1 defines the key study concepts, and annex A elaborates in greater detail the research objectives and protocols.

### **Box 1. Key study concepts: Innovation, agency, and gender norms**

Innovation in this study is defined expansively to encompass agricultural technologies, natural resource management practices, learning opportunities, relationships, and institutions which are new for the study communities sampled. These innovations may be locally devised or externally introduced. Our understanding of innovations and innovation systems is informed by Berdegue’s (2005, p. 3) definition of innovation as “social constructs, and as such, they reflect and result from the interplay of different actors, often with conflicting interests and objectives, and certainly with different degrees of economic, social, and political power.”

Agency is “the ability to define one’s goals and act upon them” (Kabeer, 1999, p. 438), either independently or jointly with others. GENNOVATE’s conceptual framing positions the process of exercising agency as mainly embedded in, and conditioned by, local formal and informal institutions. It recognizes that increased agency, or empowerment, of disadvantaged groups can transform constraining institutions and their rules.

Gender norms refer to gender dimensions of social norms, or the societal expectations of how men and women ought to behave in their everyday affairs. Social norms also “structure social interactions in ways that allow social actors to gain the benefits of joint activity. And they determine in significant ways the distribution of the benefits of social life.” (Knight & Ensminger, 1998, p. 105)

As Ridgeway (2009, p. 145) further explains, “Gender is a primary cultural frame for coordinating behavior and organizing social relations.” Despite technological and institutional change in a society, gender-framing persists in shaping social life. For instance, stereotypical beliefs about men’s greater authority and competence compared to women are often “reinscribed into new organizational procedures and rules that actors develop through their social relations in that setting” (p. 152).

The GENNOVATE cases target agri-food systems or intervention domains of relevance to the CRPs involved, and they are meant to help inform present and future agricultural research for development in these areas. This report draws on the subset of 43 village-level case studies from eight countries (see Figure 1 below) which were sponsored by the WHEAT CRP.

**Figure 1. GENNOVATE case-study countries (UN-established borders) under CRP WHEAT**



GENNOVATE’s qualitative methodology prioritizes learning systematically from people’s own perceptions and lived experiences with agriculture and the management of natural resources. In gender-specific focus groups and semi-structured individual interviews, the study engages equal numbers of women and men in reflecting on questions such as:

- What are the most important new agricultural practices and technologies for the men of the village? And for the women?
- What qualities make a woman a good farmer? And a man a good farmer?
- Do young people in this village follow local customs of women doing certain agricultural activities and men others? Why or why not?
- Are there differences in the characteristics of a woman who is innovative compared to a man who is innovative?

WHEAT field teams conducted a total of 258 focus groups and 344 individual interviews and 43 community profiles with a standardized package of six different data collection instruments applied in each research community. Table 1 presents an overview of the population groups reached and data collected in the study countries; and the principal investigators and teams are identified in annex D.

**Table 1. Overview of data collection activities**

Study country	# case studies	# Community profiles	# Focus groups						# Semi-structured individual interviews			
			Poor		Middle class		Youth		Innovation pathways		Life stories	
			Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
		<i>Key informant interview with min. 1 woman and 1 man</i>										
Afghanistan	4	4	4	4	4	4	4	4	8	8	8	8
Bangladesh	6	6	6	6	6	6	6	6	12	12	12	12
Ethiopia	4	4	4	4	4	4	4	4	8	8	8	8
India	12	12	12	12	12	12	12	12	24	24	24	24
Morocco	3	3	3	3	3	3	3	3	6	6	6	6
Nepal	3	3	3	3	3	3	3	3	6	6	6	6
Pakistan	7	7	7	7	7	7	7	7	14	14	14	14
Uzbekistan	4	4	4	4	4	4	4	4	8	8	8	8
<b>Total</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>43</b>	<b>86</b>	<b>86</b>	<b>86</b>	<b>86</b>

The instruments feature semi-structured questions as well as selected pre-coded questions. Some topics and questions, such as those related to new farming practices, are repeated in different instruments, while others appear only once, such as those for youth about education.

The data were gathered in standardized formats, cleaned and systematically coded. The data analysis approach integrates two procedures: in-depth analysis of the key study questions in individual case studies; and variable-oriented comparative analysis on particular topics across the different cases and population groups sampled. Together, the two analytic strategies allow broad patterns to be detected without losing their grounding in local contexts and realities. For further details on the research methodology and sampling, in annex A we provide an overview of the GENNOVATE key study questions, conceptual framework, data collection instruments and key protocols which guided the study's sampling, data collection, and analysis.

The individual case studies were purposively selected to enable exploration of innovation processes across diverse regions. Maximum diversity sampling procedures introduce strong differences in the sample to increase generalizability (Miles, Huberman, & Saldaña, 2014) on the basis that “any common patterns that emerge from great variation are of particular interest and value in capturing the core experiences and central, shared aspects or impacts of a program” (Patton, 1990, p. 172). As discussed in annex A, the GENNOVATE sampling procedures call for cases that differ significantly in economic

dynamism and gender gaps in assets and capacities within the study countries; and annex B highlights this diversity in the WHEAT sample. Annex B also reviews the macro context for the WHEAT case studies and provides a brief overview of the literature on gender in wheat-based agriculture.

It must be stressed, that GENNOVATE is not an evaluation of performance or development outcomes associated with any particular technology or practice. Rather than focus on specific innovations or interventions, GENNOVATE examines the gender dimensions of innovation processes in a broad sense. The majority of the data collection elicits local people's views of and experiences with the range of new technologies and practices to have come into their communities or been devised locally in recent years. While improved wheat varieties, agronomy, including CA-related technologies and mechanization, feature prominently in the testimonies from this sample with *no prompting at all* from the field teams, what becomes evident is the great variability both within and across the 43 case studies in the types of farmers who are accessing and benefiting from these highly regarded advances.

GENNOVATE stands apart from most applied large-scale social research which operates principally with decontextualized data. In this regard, the study represents a major cross-CRP effort to strengthen understanding of significant local-level patterning in the social processes that enable and constrain agricultural innovation.

## 2. OPPORTUNITY STRUCTURES FOR INCLUSIVE INNOVATION

*“Men and women work together [to move their household out of poverty] but household work is always a woman’s responsibility. That can never change.”*  
(Poor women’s focus group, Thali, India)

In focus group discussions and individual interviews, the men and women who participated in the GENNOVATE case studies under CRP WHEAT overwhelmingly observe a sense of growing agency in their lives, which we use as an indicator for empowerment. Study participants in large numbers also report improved wellbeing and declining poverty in their villages. We open with these encouraging findings from our dataset because they provide valuable insights into the local conditions which enable more inclusive and rapid agricultural innovation processes on the ground.

Key in this section, we identify six of the 43 research villages in our sample as positive outliers, or **tipping point cases**. In these communities, various local gender norms have shifted sufficiently to be encouraging of women's as well as men's capacities for agricultural innovation. Compared to the other 37 research communities, this is associated with significantly greater empowerment and significantly more poverty reduction, according to local perceptions. The six tipping contexts span Bangladesh, Ethiopia, India, Nepal and Uzbekistan (with two cases). As positive outliers, the six cases are valuable for illustrating the micro processes beneath consistent findings on the contribution of gender equality to national economic development (World Bank, 2011).

Again and again, the findings in this study make evident the tight interactions between gender norms and agency, and how these interactions, in turn, greatly condition local experiences with agricultural innovation and other development opportunities. Where gender norms are more highly differentiated for men's and women's roles in their households and villages, this constrains women's agency and capacities to innovate in their many rural livelihoods. In some communities, women's diverse economic activities may not even be registering as important contributions to household income in people's mindsets. To take just one example, in Nareed<sup>1</sup>, Pakistan, a poor man explains:

In this community women help their husbands in domestic activities such as the storing of seed and grain, serving food for all of the family, washing clothes, stall feeding of animals, dung making for fuel, savings, and so forth, and outdoor economic activities such as sowing, transplanting, picking, harvesting, weeding and collection of crop harvest, lucern/green fodder cutting for animals etc.

By framing women's productive contributions as domestic work, cherished local norms for men's economic provider roles and women's household roles can be upheld. At the same time, such framing reduces women's capacities to gain recognition as well as the economic independence and resource control, which enable their meaningful participation in innovation processes. The agentic behaviors that give rise to innovation are associated with masculine traits. In most study contexts beyond this Pakistan village, it is now becoming more acceptable for women to assume provider roles, although independent decisions over the work they can do, the assets they can control, the places they can go, and the social relations they can cultivate may still be limited by local dictates which restrict women's voice and freedom of action. In the tipping point contexts, nevertheless, these norms are becoming less restrictive, and men and women in the study relate important benefits from this.

To explore these processes, the analysis below brings together findings from two different ladder exercises which are conducted with the focus groups: the **Ladder of Power and Freedom** explores questions of agency and empowerment (with middle-class and youth focus groups); and the **Ladder of Life** delves into understandings of wellbeing and poverty trends (with poor focus groups). The two data collection exercises are explained in Box 2.

## **Box 2. Ladder exercises to assess empowerment and poverty dynamics<sup>2</sup>**

The middle class and youth focus groups open with the **Ladder of Power and Freedom** activity. Rather than use technical terminology such as agency or empowerment, we ask study participants to reflect on the "power and freedom" of their own gender in the specific community. Focus group members consider the extent to which the majority of the men in their community (if a men's focus group or "majority of local women" if a women's focus group) have the capacity to make their own decisions about important affairs in their life, such as "where they will work, or about starting or ending a relationship with the opposite sex". The facilitator then shows a five-step

---

<sup>1</sup> All names of study participants and villages are pseudonyms.

<sup>2</sup> The ladder activities draw from previous methodology guides (Narayan & Petesch, 2005; Turk, Petesch and Muñoz Boudet, 2010).

Ladder of Power and Freedom on a flipchart and explains that women (if a women's focus group) who are on step one have almost no power and freedom to make these types of major life decisions. Women on step five enjoy great power and freedom to make most all major life decisions. Each participant is then asked to write privately on a small slip of paper the number of the step they believe the majority of their own gender to be positioned on in their village *today*. These slips are collected and the responses posted anonymously next to the relevant step on the flipchart. After describing the pattern of responses, facilitators invite respondents to discuss the ratings.

For the middle class focus groups a further step is added. Individual focus group members are asked to do the same exercise but for the situation in the village *ten years ago* and this second set of ratings is added to the flipchart. They then discuss the reasons for the trends observed. A summary statistic (Change in agency = Mean step now – Mean step 10 years ago) is generated for comparing perceptions of change on the ladder among the focus groups. A positive rating indicates perceptions of rising agency, which we use as an indicator for empowerment.

With focus groups of poor women and men, the **Ladder of Life** activity explores perceptions of wellbeing and experiences with moving in and out of poverty. The activity opens by asking the focus group to reflect on the characteristics of the “best off” households in their village. Next they consider the “worst off” households. Additional ladder steps are added in between as needed by the focus group to capture different levels of wellbeing, and their corresponding traits (defined by the respondents themselves). The facilitator captures the key traits for each step of the ladder on the flipchart. Most ladders are three or four steps, although a few have more steps.

On completion of the ladder, participants identify the step at which people are no longer considered poor—their community poverty line. Next, they distribute 20 seeds to represent the percentage of households on each step. This exercise is repeated to indicate the distribution ten years ago. Following this, the respondents are guided into a discussion about the assets and capacities of people on each step, and experiences of women and men in moving up, getting stuck, or falling down the ladder. The numerical findings provide the basis for generating a summary statistic [Moving Out of Poverty = (Share of poor 10 years ago – share poor now) ÷ (share poor 10 years ago)] for comparing perceptions of local poverty dynamics across the focus groups and case studies. While it is not possible to compare the ladders directly because they differ, it is possible to compare views about change on the Ladders of Life.

## 2.1. Empowering mindsets

When assessing changes to their level of power and freedom over the past decade, 88 percent of the women's focus groups and 84 percent of men's register a sense of empowerment. Study participants' testimonies about their empowerment reflect the influence of normative expectations for gender roles and relations at household and community levels, as well as how these norms are changing in their villages. In the tipping point contexts where both the local women and men perceive significant empowerment, normative change in relation to gender is surprisingly evident.

Among the four focus groups in each of the 43 case studies which conducted the Ladder of Power and Freedom exercise, the middle-class men's group, at a median of step 3.5, perceives the greatest level of power and freedom (Figure 2). The middle class women's focus groups, by comparison, report a more

modest step 2.8 for their current level, but observe on balance that they have climbed up a full step from ten years ago. Young men place themselves at step three. At just above step 2.5, young women observe the most limited power and freedom in their lives. We explore youth agency separately as part of a fuller discussion of the youth data in section 4.

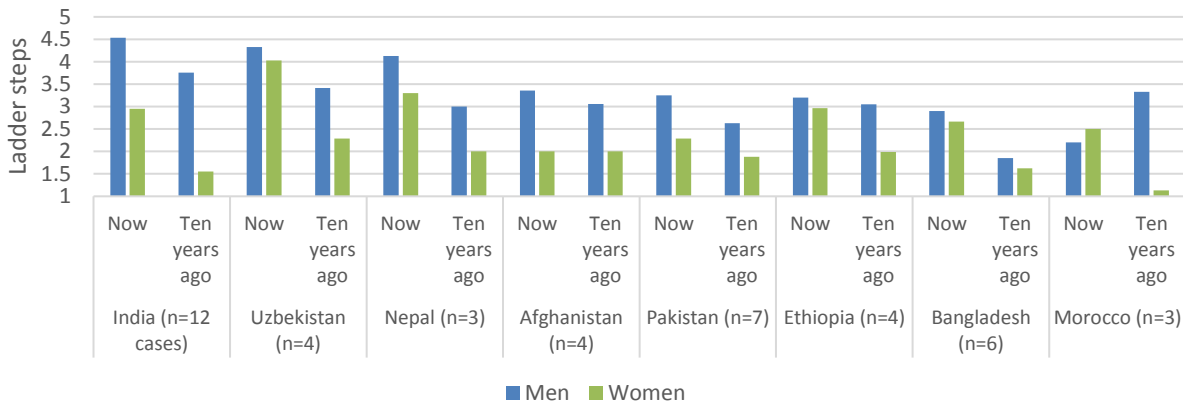
**Figure 2. Level of agency for own gender, now and ten years ago (median ratings by individual focus group members on five-step Ladder of Power and Freedom, 172 middle-class and youth focus groups)**



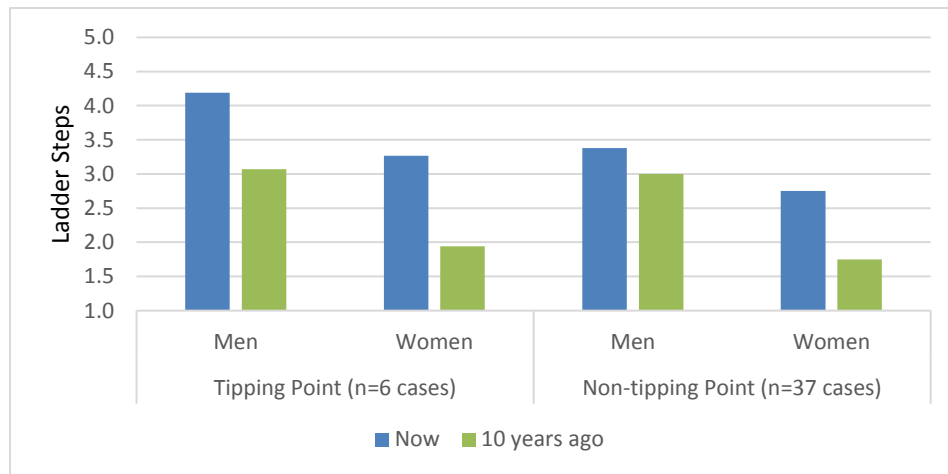
When comparing all the Ladder of Power & Freedom ratings by the eight country contexts (Figure 3), men from India, Uzbekistan and Nepal stand tallest, rating themselves on balance at or above step four in the current period. Women of Uzbekistan stand out for the greatest movement up their Ladders of Power and Freedom over the last decade (followed by women in India and Morocco). Among the women’s ladders, Uzbekistan’s is also the highest, at slightly above step four. Disempowerment is reported by men in two of the three Morocco case studies conducted, and stands in contrast to women’s perception of substantial empowerment there, albeit at the lower rungs of the ladder. At step two, women of Afghanistan consider themselves least empowered of all, followed by women in Pakistan. Overall in our sample, the men and women of Uzbekistan, India and Nepal observe the greatest empowerment.

Figure 4 compares current and past levels of agency in the tipping point and non-tipping point contexts. Men in the tipping point contexts climbed more than a full step to reach above step four, which is more than twice the upward movement of the non-tipping point men. Women in the tipping points crossed above step three and also report greater movement up their ladders compared to women in the other 37 cases. Next we probe into focus group testimonies about their perceived agency, which shed valuable light on these patterns.

**Figure 3. Ratings on Ladder of Power and Freedom by country (median ratings by individual focus group members, 86 middle class focus groups)**



**Figure 4. Ratings on Ladder of Power and Freedom, tipping point cases versus rest (median ratings by individual focus group members, 86 middle class focus groups)**



### 2.1.1. Agency and changing norms of deference

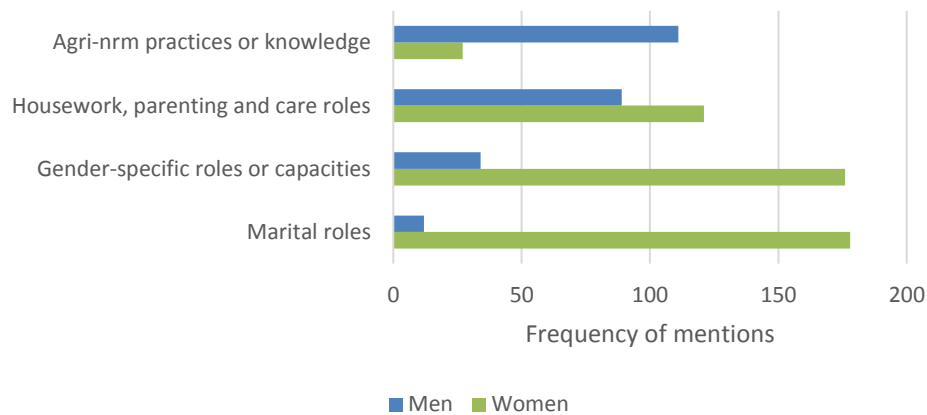
The particular gender norms which are attached to an individual's status in the household greatly influence study participants' explanations for the ratings they provide. For instance, as women move through their life stages of leaving their parents' care and becoming young wives and mothers, and over time, mothers of older children, their sense of power and freedom grows. Men's agency is also associated with their gender-ascribed household position, which rises as they gain status as household heads and successful providers. In addition to these highly normative dimensions of agency, the testimonies make clear that the norms governing household relations are becoming more cooperative. Many men and women talk openly of how they are now more educated, benefitting from information about the wider world, and withdrawing from norms which require strict deference within the family.



Figure 5 presents the most prevalent themes that emerged in our coded dataset from focus group discussions about their ratings on the Ladder of Power and Freedom (see annex E for code definitions). The bottom bar in the figure presents the numerous times a text passage in the field notes touches on the topic of “marital roles” in all of the 43 women’s focus group discussions about their ladder. By comparison, men barely mention their wives when reflecting on their empowerment, but are much more likely to discuss their agricultural initiatives (the top bar in Figure 4), which underpin their key provider role.

Again, the women in this sample mostly rate themselves below step three at present, and by way of explaining their modest standing, they stress dictates which require their deference to husbands. “In villages, we obey our husbands. Whatever he says,” declares a woman from Borian, Bangladesh, a village where women mostly position themselves on step one. Such testimonies about local gender norms for how women ought to behave are also coded to “gender-specific roles and capacities.” In Thali, India, where women largely report step three, a woman shares another refrain heard often in this study, “Our husbands listen to us but they take their own decision.” Similarly, a woman from the middle class focus group of Chala, Ethiopia, where women have climbed a bit higher, declares, “I am now more assertive. I will tell him when things go wrong, whether he listens or not.”

**Figure 5. What shapes agency? (86 middle class focus groups)**



Ladder steps	Women			Total	Men			Total
	Limited agency-steps 1 or 2	Moderate agency-step 3	Strong agency-steps 4 or 5		Limited agency-steps 1 or 2	Moderate agency-step 3	Strong agency-steps 4 or 5	
<b>Codes</b>								
<b>Marital roles</b>	85	60	33	<b>178</b>	2	4	6	<b>12</b>
<b>Gender-specific roles or capacities</b>	<b>112</b>	<b>47</b>	<b>17</b>	<b>176</b>	2	9	23	<b>34</b>
<b>Housework, parenting and care roles</b>	56	51	14	<b>121</b>	11	28	50	<b>89</b>
<b>Agri-nrm practices or knowledge</b>	10	13	4	<b>27</b>	36	54	21	<b>111</b>

Study participants reflect often on their own circumstances when explaining their power and freedom ratings for the wider community. For instance, depending on their marital status and household composition, women may also mention constraints on their agency due to requirements to submit to fathers, mothers, brothers, fathers- and mothers-in-law, or older sons. By way of explaining a level of agency just above step two, a woman from Naidura of Pakistan shares, “After my father passed away, my elder brother became the deciding authority.” Widows living independently with young sons or only daughters, by contrast, frequently position themselves on steps four and five simply because, they say, there is no one else to take decisions. In addition to decision making capacities, women may also explain their modest ratings in relation to restrictions on their freedom due to seclusion practices or housework and care burdens. These concerns speak to the societal rules which are a focus of this study (and coded to “gender-specific roles or capacities”). The table below Figure 5 shows that when women climb their Ladders of Power & Freedom, these restrictive dictates ease in importance in their testimonies (see highlight) and may signal normative change for gender relations (more on this in the tipping points section).

While the men in this sample rarely mention their wives when considering their empowerment, they do speak often of changing norms of deference to their parents and other elders, and this is providing them with more opportunities for exercising independence and authority. “I think we are at step four,” relates a 37-year-old married farmer of Duranhai in Pakistan:

It’s due to the increased awareness with every passing day. In the past the cultural pressures were very strong. We had great respect for our elders. Though we have not lost the respect for our elders but now we decide whatever is in our family’s best interest. Our elders are also aware and understand the needs of the times.

The men’s focus groups across the study also frequently assess their agency in relation to their farming livelihoods and adoption of modern practices. In the poor village of Matipur, Bangladesh men position themselves at a mean of just below step three, and say, they have “limited access to modern agricultural facilities, knowledge and information or to nearby people or institutions.” But in Borian, Bangladesh men say they are just a bit over step three, and observe declining hunger in their village over the last decade because “previously we didn’t have machineries for irrigating” or “hybrid seeds for increasing production.”

Although less frequently, women too talk of their farming roles: “For example,” relates a woman from Madpur, Bangladesh, where women have climbed to nearly step three, “now we see in our village that a woman can discuss with her husband about how many crops they will produce.” In the tipping point cases, where results from the women’s Ladder of Power & Freedom indicate strong empowerment, gender norms are changing and providing many local women with more scope for exercising authority in their homes and innovating in their rural livelihoods (Box 3).

### Box 3. Soaring agency in Cheeda, Uttar Pradesh

Cheeda is one of the six tipping cases in this dataset. With 2,500 inhabitants, Cheeda lies in the Maharajganj district of Uttar Pradesh, India. Cheeda's farmers cultivate wheat, paddy and various pulses and vegetables, and most enjoy irrigation access and rely heavily on mechanization, including the zero tiller, rotavator, cultivator and combine. Improved varieties have been widely adopted and are highly popular. Many farming households also rear livestock, including cows, buffaloes and goats. The village benefits from an active weekly market, and both women and men can find brickmaking jobs at a local factory. About half of the village households have men who migrate temporarily for jobs. And over the past decade, villagers report roughly 20 percent poverty declines.

Women in Cheeda's middle class focus group place themselves at step 3.4, which is substantial relative to our wider sample of women's focus groups; and the men estimate they are on step 4.5, which is nearly at the top of the ladder. Both report significant climbs up their ladders from steps 1.7 and 3.25, respectively. Cheeda is a context where normative change for women's roles is highly visible on some domains, while other longstanding gender norms are retaining a tight hold. For instance, a large majority of local women enjoy freedom to move about the public spaces of the village independently and to conduct petty trades; and the local women are widely recognized as active and skilled farmers who themselves hire labor when needed. Especially noteworthy, a member of the middle class men's focus group proudly reports some local women even to be using machines on their farms. Among the restrictive norms that constrain women's power and freedom in Cheeda are dictates that require women to eat last in their families, a lack of inheritance rights, limited control of child-bearing decisions, and ongoing domestic abuse in the village.

A key factor propelling important change in women's agricultural roles is no doubt men's heavy labor migration. Still, the local women's physical mobility and farm management are relatively uncommon in the other case studies, even in contexts with substantial migration.

By way of explaining their nearly two-step climb up the ladder over the past decade, the women speak of how they are more educated and knowledgeable of their rights, and more assertive in their households. They speak of women stepping into decision-making roles out of necessity due to their men's temporary migration, "When there are no men in the house then their wives can take certain decisions." Perhaps more significant, they observe that norms of strict deference in their households are now relaxing and, for instance, in-laws "don't try to control their daughters-in-law. Earlier this control was very rigid."

The men of Cheeda similarly report feeling empowered by greater knowledge, and refer to learning from outsiders and now being "capable of taking rational decisions" of their own. Earlier there was a "tendency to discuss and consult all of the family members;" and "[s]ometimes we would agree to something simply out of respect for our elders." "Now farmers are all very active and aware and therefore don't feel the need to consult people," reaffirms another in the focus group. They further report that "even young men have become assertive" and "have love marriages now." Yet, another qualifies the views of his peers: "My father takes all decisions but he consults me and considers my opinion." The young men in their focus group place themselves on step 3, and similarly insist "we have to consult our parents in every decision we take." Yet, among these young men it is seen as a matter of convincing, persuading, and gaining permission, for instance, if they want to start business or marry a girl they love, and "then it will not be a problem."

Right across this dataset well beyond Cheeda, gender norms and position in the household influence perceptions of power and freedom. In the tipping point cases, such as Cheeda, nevertheless—where results from *both* women and men’s focus groups indicate strong empowerment and poverty declines—there is evidence of normative shifts which are supporting more equitable gender relations. Household relations are becoming less hierarchical for both women and men, young people speak more often of reaching for bright futures, and, as we turn to next, women’s as well as men’s important economic roles are widely recognized and valued.

## 2.2. Improving Wellbeing

*“Women don’t shy from work. We are willing to do any labor work to earn money and support our families,”*  
*(Poor women’s focus group, Gadha, India)*

Each of the focus groups with poor villagers engage in building their own “Ladder of Life” to explore local experiences with moving up and out of poverty (Box 2). Across the 43 case studies, study participants report a median of 40 percent (women’s focus groups) to 45 percent (men’s focus groups) of local households as currently poor, or situated below their community poverty lines on the ladder. Compared to a decade ago, this amounts to perceptions of overall declines in poverty on the order of 25 to 27 percent (women’s and men’s focus groups, respectively) among the research villages.

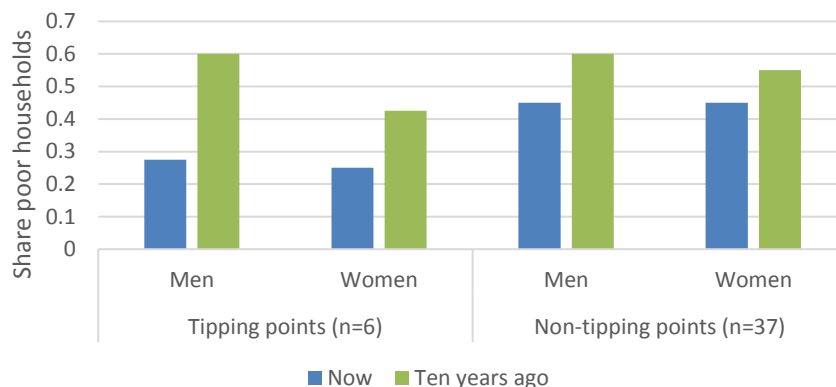
Men’s and women’s focus groups concur that poverty is falling in 77 percent of the study villages and flat in two percent. In nine of the research villages, men and women disagree on their local poverty trends, with men more likely to say poverty is falling and women rising (in six of these nine cases). The eight Uzbekistan focus groups observe on the order of 60 percent poverty declines, the largest when comparing on a country basis. At the other extreme, all three of the men’s focus groups and one of the women’s in the Morocco sample perceive poverty to be rising significantly.<sup>3</sup> These trends echo those for empowerment discussed above.

Furthermore, when we compare the tipping point cases with the rest of our sample, it is evident that men and women observe significantly higher levels of poverty reduction in the tipping point contexts (Figure 6). In our research villages like Cheeda, where women and men *alike* perceive significant empowerment for their gender, and are withdrawing from normative expectations which restrict women’s freedom of action, this is also associated with much more rapid poverty reduction than elsewhere in the sample. Study participants’ reflections about the poverty dynamics of their communities are exquisitely rich and revealing of how strongly gender norms condition these processes as well.

---

<sup>3</sup> It should be noted that in these cases there are strong indications of influence by macro –level forces; e.g. political shifts and change in land tenure in Uzbekistan.

**Figure 6. Perceptions of local poverty trends in tipping point versus non-tipping point communities (median share of poor households reported by 86 focus groups)**



### 2.2.1. Case study: Badero’s changing culture of inequality

*“You have to believe in yourself to even try something ...”  
(Poor women’s focus group, Badero, Ethiopia)*

Approximately 4,000 reside in the agricultural village Badero, which is located in the Amhara region of Ethiopia. Badero’s farmers have cultivated barley, pea and fava beans for generations, and recently started growing wheat, lentil, garlic, onions and other vegetables. Five years ago, four male and one female extension agent with expertise in agriculture, irrigation, natural resource management, and veterinary care began to provide local farmers of both sexes with information and training, for instance, on mechanization, new wheat varieties, fertilizers, and improved practices for managing their different soils and terrains. The villagers who participated in the study credit these services with greatly improving their lives. The poor men’s and women’s focus groups perceive declines in village poverty of 20 and 30 percent, respectively, from a decade ago. Men estimate poverty currently affects 65 percent of their village and women put this at 50 percent. Women’s as well as men’s important contributions to this poverty reduction have been accompanied by changes to many social rules influencing especially local women’s lives.

Table 2 presents the Ladder of Life constructed by the poor women’s focus group of Badero. As across the villages in this study, landholdings are a key marker of status on the ladder. The women detail how men and women of step four and five both engage in income earning, with men (ideally) in a job with a salary and women managing diverse agricultural activities. And while stressed in their discourse about the different wellbeing groups on their ladder steps, assets and income alone do not make for conceptions of wellbeing. The quality of household relations factor as well. Households at the top step,

step five, have “peaceful” houses and their “children are happy;” and “this is because both the husband and the wife work and are engaged in productive activities.” A local key informant estimates that nearly a third of the women in this kebele (the country’s lowest level of government) hold small plots of land independently, and reports that it is customary for men to provide seed, fertilizer, and labor and share production equally.

**Table 2. Ladder of Life, Poor women's focus group, Badero**

<b>Step 5</b>	<p>“These people have 3-4ha land holdings, 30-40 cattle, have better house, compare to others their wife and kids look good and are dressed well. Feed the family throughout the year, own grinding mill/shop, they lend money, Have horse for their own transportation.”</p> <p>“Even if they do own small land of their own, they hire/rent and to plow or share farm others land. They are very active in income generation and they respect whatever they have and also would not be selective about works, they even get involved in something that brings decent salary.”</p> <p>“Their house is peaceful and the children are happy, this is because both the husband and the wife work and are engage in productive activities than in drinking or spreading rumors.”</p>
<b>Step 4</b>	<p>“Here these people have 2-3 hectares of land holding, rent others land to gain more income, have 2-3 oxen and cows, his wife have chicken, have some money in the bank, elected as community leader and lends money for others.”</p> <p>“These people can also be government hired people who have monthly income and the wife is a farmer. She takes care of the land and the house while they work on their job, they are better educated as compared to other community members, they are listened to because of their position and they send their children to school preferably in town. They may have additional house in town. They are well known because they are serving the community in the offices.”</p>
<b>Step 3</b>	<p>“These people have 1 hectare or less land holdings, share farmers, work as a daily laborer, have one ox”</p> <p>“Divorced or widowed women who have small land and hire laborer or give the land for shared farming are also here.”</p> <p>“There are also women who have land, give it out for rent or shared farming and depend on other men who may be married to get more income. They may sell “areke” from their house as income generating scheme. “</p> <p>“The women own chickens, children go to school, feed the family most of the year except the time of food shortage and own all traditional farm equipment.”</p>
<b>COMMUNITY POVERTY LINE</b>	
<b>Step 2</b>	<p>“They have no landholding. They do not handle their family properly. Children can go to school but unhealthy. They work as daily laborers hired on other’s farms.”</p> <p>“They are unhappy and think that they are escaping their misery by drinking. They are not trust worthy to give responsibility. So even if they are hired, they may soon get fired. “</p> <p>“Those who have no cattle or even chickens. These people live from hand to mouth.”</p>
<b>Step 1</b>	<p>“Have no farm land, may be handicapped, beggars, who depend on handouts from others, they may go around people’s houses to collect food etc.”</p> <p>“These persons are not respected and not mixed up with others”</p> <p>“They are unable to work because of different reasons including laziness”</p> <p>“They are also unhappy, and have no hope, they think the rich are bad people who have some kind of magic when they reach where they are”</p> <p>“They have no house or if they do, the house is very dilapidated and their wife is so miserable and looks destitute and hungry all the time, the children are not happy and may be straying all over the village rather than going to school.”</p> <p>“Because of the policy to keep children in school, their children would be enrolled to school, but are always hungry and find it hard to focus. They would not continue their education because they lack support and the family has no means to support them.”</p>

As we move down to step three of the women's ladder, household compositions change. The focus group zeroes in on the village's divorced and widowed women, who, to support their families, engage in share-cropping, tending small livestock, and petty trading. About a quarter of Badero's households are headed by women, and it is significant that this focus group nevertheless positions them out of poverty although some may engage in transactional sex or experience seasonal food shortages. The women relate how "These people [who climbed up to step three] are working hard and changed their own life and their family's life." By contrast, for poor households on steps one and two, the women detail household struggles with landlessness, inability to hang on to daily wage jobs, poor housing, alcohol use, family strife, unhappiness, hopelessness, suffering, persistent hunger, and children lacking support to complete their education.

Although the men's ladder of Badero mainly focuses on the various assets which distinguish a household's status on the ladder, they explain that those on the top ladder step enjoy the capacity to make comments that "are acceptable by many." But those on the bottom step "are not that much listened to." Such bottom-step men who struggle to exercise authority and to provide are clearly breaking norms for their gender, although it is in the women's narratives where we learn more readily of how this is stressful for them and their families.

In Badero, there are fewer gender differences in initiatives employed to climb the ladder than is the case in most of the research communities. Members of both focus groups describe how both local women and men of their village have moved out of poverty through participating in credit and savings groups, renting or share-cropping land, taking daily wage farm jobs, attending agricultural trainings, and diversifying their income generating with activities like sheep fattening. Men report that women, much like themselves, also help their households get ahead by saving in the bank and hiring workers if they have plots. Both the men's and women's group emphasize the importance of carefully planning, saving and utilizing resources independently and together with their partner. One man even cautions that "those households where the man tries to be a dictator and never listens to his wife, [that] is always bringing down the household."

Still, important gender differences in mobility experiences remain. Local men are much more heavily involved than women in profitable commercial wheat production with the new seed technologies and about a quarter of the village men migrate temporarily, for instance, taking construction jobs in the off season. The local women also use improved wheat seeds, but explain that their crops are mostly for provisioning their households rather than market sales. Instead, to get ahead, women are more likely to be growing vegetables, tending small livestock, and managing diverse petty trades, including brewing and selling a popular local drink (*areke*).

It is also notable that a member of the men's focus group stresses that "attitude also matters," for moving on the ladder, as do seeking advice and learning from others; and those with "pessimistic ideas and who think working as a laborer is low, they will not climb up." In particular, the men who move up from bottom steps "will not spend their money on women," explain the women's group; or "drink away their hard work," according to the men. Such vices are considered common reasons for trapping men on

bottom steps or sending their households into poverty across the case studies. Meanwhile, the men of Badero caution that women, too, sometimes bring their households down the ladder, especially those who live with abusive or unfaithful men, which causes them to “stop caring for the house.” Yet, echoing the women’s step three with many female-headed households, the men explain that even if women endure divorce or widowhood, she may suffer for a few years, but “then gradually will climb up.”

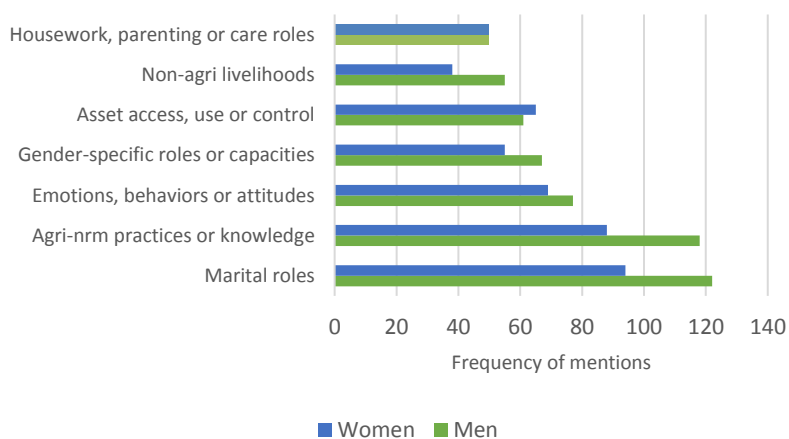
Although a great deal of poverty continues to grip Badero, the focus groups nevertheless detail numerous initiatives that both men and women can undertake, and they maintain that getting ahead is possible with hard work, a good attitude, and saving for the future. If we shift over to the Badero focus group with middle class women, and their explanations for climbing from step 1.55 to step 2.73, they specifically mention how it is only recently that women began attending meetings and trainings, and they have gained “knowledge and power to participate on major issues in our life and home.” Where norms shift sufficiently to encourage rather than stifle women’s agency, and men, too, are observing good change in their own lives, our data makes evident that this “synchronized” empowerment can sometimes transform the local level institutional climate and fuel more rapid and inclusive development.

### 2.2.2. Gender norms and poverty escapes

*“Some women work as agricultural laborers to support their husbands.”  
(Poor men’s focus group, Prem, India)*

Figure 7 presents findings from the coded data in response to questions on initiatives that i) men, ii) women, and iii) couples of their village have taken to move their households out of poverty. While the coding frequencies suggest few gender differences in initiatives to get ahead, the testimonies reveal otherwise.

**Figure 7. Dimensions associated with moving out of poverty (86 poor focus groups)**





The leading coding to “marital roles” is in part a consequence of direct questions about how couples support one another. Nevertheless, we have plenty of testimonies about how women and men cooperate in their households to escape poverty before any specific prompting on this. Couples with harmonious and trusting relationships and who are supportive of and actively helping one another’s initiatives are widely seen to have clear advantages in processes of moving their households up and out of poverty. Nevertheless, such household cooperation need not necessarily imply that norms are shifting in ways that give women more power and freedom in their lives.

Borian, Bangladesh is a context where both the poor focus groups observe significant poverty reduction, but women’s and men’s opportunities to take initiative and contribute to this remain highly differentiated. When asked how couples support one another to get ahead, a member of Borian’s poor men’s focus group explains in quite frank terms the critical but disproportionate labor burdens shouldered by the local women in the mobility processes of their village:

Some support the efforts of their spouse, some don’t. Usually a woman tries hard to support her husband. If a wife does not help, it will be impossible for the family to get ahead.... A wife helps her husband by doing many small works besides household activities such as taking the cattle to field, planting trees, growing some vegetables around the house . . . In a relationship, the wife performs 75 percent of all the responsibilities. Husbands only help them in doing some household works.

In the Borian’s women’s group, they mention helping their households to move up and over the poverty line by “doing overtime” with activities such as tree planting and tending livestock. They also relate that perhaps one in ten of the village women help their husbands in the field. In addition, they save money little by little by serving lentil and potato instead of “beef or mutton” and by eating twice instead three times a day. Sometimes households in their village fall down the ladder, for instance, when men leave with 100 taka’s worth of products to sell in the market, but “come back with 60 taka. Then what do we do? We have to accept it.” They say “wives have to work at home,” and “we do not go to the market.”

If we move over to Madpur, also in Bangladesh, a village about 120 km from Dhaka, sharp poverty declines of more than 40 percent are reported by both poor focus groups and processes of normative relaxation are more evident than in Borian. Yet, surprisingly, in Madpur, middle class men observe a slight disempowerment which is keeping them down on step two of their Ladder of Power and Freedom. They do not have much good to say about the changes in their village, although they certainly acknowledge positive developments such as falling hunger and more educated children. The men’s frustrations in this case study illuminate well why men’s sense of empowerment—which is tightly linked to how trends in their local economy are affecting their provider roles—matters importantly to processes of normative relaxation and wider institutional change.

In their focus group, middle class men of Madpur relate how their lives have improved materially but remain a great struggle: “nowadays the people of the community do not respect the farmers because most of these farmers are illiterate and insolvent.” Due to the rising costs of agricultural inputs and farm

labor, they “always struggle to live with their limited income” and cannot “support their children’s education. . . up to the highest level.” The tone of the narratives from the middle class men, in fact, contrasts strikingly with Madpur’s other focus groups. Poor men there speak of how many local farmers have moved their households out of poverty with irrigation and crop diversification, and by using “new seeds” and “other technologies.” The poor men further report that women are contributing significantly to falling poverty, by “working hard the whole day and rearing cows, goats and chickens at home.”

Yet, in communities where numerous poor or middle-class men are discouraged by their local livelihoods, this appears to constrain women’s initiatives to shift the different gender norms which restrict their economic independence, such as men’s control over their earnings and savings. While women in Madpur report supporting men in the fields and tending livestock; running tiny grocery shops; taking farming, tailoring and NGO jobs, and; saving meager amounts day-by-day, they explain in the poor women’s focus group that: “The wife gives all her savings to her husband for implementing the family plans. This is very helpful for her husband.” Likewise, in this village, though women are the ones who can access loans, poor men are careful to explain that this money “is used by their husbands or family members.” More encouraging, poor women in their focus group relate how they now command higher wages for their farm labor, and “Women are enjoying a kind of equality in participation. So they are coming forward and working.” But for middle class men (who may be hiring farm labor and concerned about their rising costs), these trends are more problematic.

Across the communities in this sample, focus groups with great regularity attest to the importance of strong household cooperation and of both women’s and men’s economic contributions to movements up the ladder. Yet, as the gatekeepers, men’s agency appears to be vital for women to be able to carve out the space they need for withdrawing from and changing the highly restrictive normative expectations that raise barriers to their agricultural innovation.

### 2.3. The freedom and power of tipping points

*“I got credit from Agrobank and studied how to buy my own tractor,”  
(Poor women’s focus group, Kamola, Uzbekistan)*

Like Cheeda of India, and Badero of Ethiopia, we have four other research villages in the WHEAT sample where the trend data from the ladder exercises is consistently and significantly favorable and where recent changes in the normative environment for gender are more encouraging of women’s agricultural innovation when compared to the other research villages. More specifically, in the six tipping point contexts, the 24 middle class and poor focus groups that assessed change over the last ten years on their ladders report that: i) both the local men and women climbed up *a minimum of one full step* on their

Ladder of Power and Freedom, and ii) *one-fifth or more* of their once-poor households moved from below to above their community poverty line.<sup>4</sup>

In other words, all of the poor and middle class focus groups in each of the tipping points observe major progress up their respective ladders compared to a decade ago, whether considering trends in agency or poverty. This upward movement clearly sets these cases apart (Table 3).

Furthermore, when we compare youth ratings on power and freedom for the current period (we do not ask them to reflect back a decade), we also observe that, at step 3.13, young women in the tipping point contexts on average rate themselves the highest among the youth.

**Table 3. Median ratings on poverty reduction and empowerment (or agency, for youth), 258 focus groups**

Source	<i>Movements up the Ladder of Life - Household movements out of poverty</i>		<i>Movement up Ladder of Power and Freedom - Empowerment of own gender</i>		<i>Current status on 5-step Ladder of Power and Freedom for own gender</i>	
	Poor Men	Poor Women	Middle Class Men	Middle class Women	Young Men	Young Women
<b>6 tipping point villages</b>	53%	35%	1.13 step	1.22 step	3	3.13
<b>37 other study villages</b>	24%	25%	.60 step	1.00 step	3	2.43

Favorable trends are observed in the 37 other study villages, but with less consistency. In these cases, one or more of the poor or middle class focus groups observe limited progress on their ladder, or in some cases falling down. The much higher levels of poverty reduction and perceived empowerment observed by men in the tipping point contexts relative to the other men in the sample are noteworthy. Where many local men are perceiving their local circumstances to be providing them with good opportunities, the data indicates that this makes it easier for women, too, to exercise agency and not only withdraw from normative expectations (e.g. perhaps by quietly taking up or enlarging their petty trading activities from their homesteads) but to actually *change* some of their local gender norms (e.g. many local women have become sellers in their local market and they are respected in their households and among other villagers for this).

Table 4 presents other comparative data from the research communities, much of which signals women’s greater freedom of action and economic independence in the tipping point contexts. Compared to the other research communities, women in the six villages like Badero and Cheeda enjoy

---

<sup>4</sup> Three focus groups generated a median ladder rating of .90, which was rounded up to a full step; one focus group observed 19 percent poverty reduction, which was rounded up one percentage point. Most focus groups easily exceeded the minimum thresholds, as indicated in the results in table 3.

greater physical mobility as well as a greater presence in their local commercial and labor markets. Among the villages with irrigation, women in the tipping points also have somewhat more access to this vital service. The share of girls and boys in secondary schools is somewhat higher in tipping points, as is women’s political and civic participation. The tipping point contexts also feature more numerous active civic groups, and the narrative data details women’s engagement in these networks, especially credit and savings groups as well as their local producer groups. In all but one of the tipping point contexts, women participate actively in their local agricultural extension opportunities. It is interesting that study participants mostly observe declining social harmony in their villages, although more so beyond the tipping point contexts.

**Table 4. Community characteristics, tipping point versus other cases**

SOURCE	PRECODED QUESTION	6 Tipping Point Cases	37 Other Cases
Median rating or share			
<b>KEY INFORMANT</b>	<b>DEMOGRAPHIC CHARACTERISTICS</b>		
	Share of female headed households in community	4%	3%
	Rating of households with men who migrate temporarily (1=almost none, 2=1/4, 3=1/2, 4=3/4, 5=almost all)	2 (or about 25%)	2 (or about 25%)
	Rating of households with men who migrate permanently	1 (or almost none)	1 (or almost none)
<b>KEY INFORMANT</b>	<b>INFRASTRUCTURE AND ECONOMIC CHARACTERISTICS</b>		
	Share of communities with:		
	Irrigation	83%	87%
	Health clinic	<b>33%</b>	<b>60%</b>
	Electricity for most villagers	66%	70%
	Fewer than ¼ of school-age girls in secondary school	<b>17%</b>	<b>30%</b>
	Fewer than ¼ of school-age boys in secondary school	<b>0%</b>	<b>24%</b>
	Share of communities with upper secondary school	50%	57%
	Share of men with irrigation (where present)	<b>75%</b>	<b>97%</b>
	Share women with irrigation (where present)	<b>30%</b>	<b>20%</b>
	Rating of women sellers in local market (1=almost none, 2=1/4, 3=1/2, 4=3/4, 5=almost all)	3 (or about half)	1 (or almost none)
	Share of village women who take jobs as agri workers	<b>30%</b>	<b>18%</b>
<b>POOR MEN</b>	Share of communities with rising local <b>job opportunities for men</b>	100%	95%
<b>POOR WOMEN</b>	Share of communities with rising local <b>job opportunities for women</b>	66%	57%
	Share of communities where <b>common to work for pay</b> for:		
	Single young women	83%	38%
	Married young women	66%	57%
	Married older women	83%	66%
	Widows	100%	87%
<b>YOUNG WOMEN</b>	<b>PHYSICAL MOBILITY</b>		
	Out of every 10 local women, # can move freely in public (Individual FGD member ratings)	<b>7.01</b>	<b>4.44</b>
<b>YOUNG MEN</b>	Out of every 10 local women, # can move freely in public (Individual FGD member ratings)	6.45	5.00

<b>POOR WOMEN</b>	<b>DOMESTIC VIOLENCE</b> Extent women hit or beaten over past year (individual FGD member ratings 1=almost never; 2=occasional 3=regularly 4=Frequently)		
	In current period	2.55	2.29
	A decade ago	3.19	2.90
<b>POOR MEN</b>	In current period	2.00	1.94
	A decade ago	2.58	2.16
<b>POLITICAL AND CIVIC PARTICIPATION</b>			
<b>KEY INFORMANT</b>	Share <b>female council members</b>	30%	25%
	Share <b>women attending community meetings</b>	15%	10%
	Share <b>women active discussants</b> in meetings	3%	2%
	Share of communities with following <b>local groups</b> characterized by regular to high level of activities:		
	Credit groups	<b>83%</b>	<b>51%</b>
	Economic groups (farming, fishing crafts)	<b>50%</b>	<b>32%</b>
	Health groups	<b>66%</b>	<b>19%</b>
	Education groups	<b>66%</b>	<b>49%</b>
	Youth or sports group	<b>66%</b>	<b>38%</b>
<b>POOR WOMEN</b>	<b>Social harmony</b> in village (Indiv. FGD member ratings 1=most villagers v. suspicious to 6=v helpful)		
	In current period	4.31	3.9
	A decade ago	4.6	4.75
<b>POOR MEN</b>	In current period	4.43	3.56
	A decade ago	4.85	5.00

In short, greater gender equality is unfolding in the tipping points, and testimonies provide evidence of how this enhances the functioning of households and other local level institutions. It is significant that these mutually reinforcing processes are more likely to take off and be evident where both women and men are finding and benefiting from their local agricultural opportunities.

Yet, even under the most auspicious of circumstances, it is important to recognize that normative change remains a fluid, uneven, and sometimes stressful process. In Badero of Ethiopia, the poor men's focus group indicates that working mothers are well regarded in their village, but the poor women's group is more mixed on this question. While one member of the poor women's group relates that working mothers are lucky to have the trust and support of their husbands, another counters that her friends may become jealous and directly question the husband about her fidelity because she has chosen to work. Or, a middle class woman of Badero, who explains that she has to consult her husband if she elects to sell farm produce in bulk; yet, unlike in previous times, "I can block his decision if need be, but I will never do that for the sake of exercising my power."

Similarly in Kamola, Uzbekistan, another tipping point, the poor men's focus group speaks of how widowed women moved their households out of poverty from the lowest rung of the ladder by getting help from their community leader and relatives in order to grow vegetables for market sales, and then using the proceeds the next year to expand production and invest in poultry and sheep, for instance to

sell eggs during religious holidays. The poor men caution, however, that the widows' climbing will be slow "without men next to them."

Men's and women's sense of agency is highly relational and gendered. In the tipping point contexts where both women and men observe significant empowerment and poverty reduction, men's and women's roles and behaviors are becoming less gender differentiated. But important differences remain.

### 3. MEN'S AND WOMEN'S EXPERIENCES WITH AGRICULTURAL INNOVATIONS

To better understand how gender norms and agency work together to shape agricultural innovation processes, in this section we explore perceptions of and experiences with new agricultural technologies and practices in the study villages. We begin with evidence of the study participants' generally favorable assessments of improved wheat varieties and then unpack commonalities and differences in men's and women's experiences with the innovation processes underway in their communities. From there we explore testimonies about the factors that are seen by women and men to enable and constrain their capacities to innovate; and, finally, with a focus on the role of extension services, we present highly gendered findings on local opportunities to learn about and engage with new things in agriculture.

#### 3.1. What agricultural innovations rate highly on the ground?

Facilitators asked focus groups: "Thinking back over the past five years or so, what new cropping or livestock practices, ways of managing local natural resources, or organizing agricultural activities have people here tried out or experimented with?" This question is strategically placed early in the focus group discussion to precede any discussion of particular agricultural technologies, practices or networks. Facilitators were trained to break down the question and encourage rich discussion on all of the new activities or networks identified by study participants, whether devised and introduced locally or externally, and whether through formal or informal channels. While the focus group participants reflect on the various agricultural and NRM "innovations," the facilitator lists each one mentioned on a flip chart for all to see and then elicits views on the two most important for the men of the community, if a men's focus group, or for the women of the community if a women's focus group.

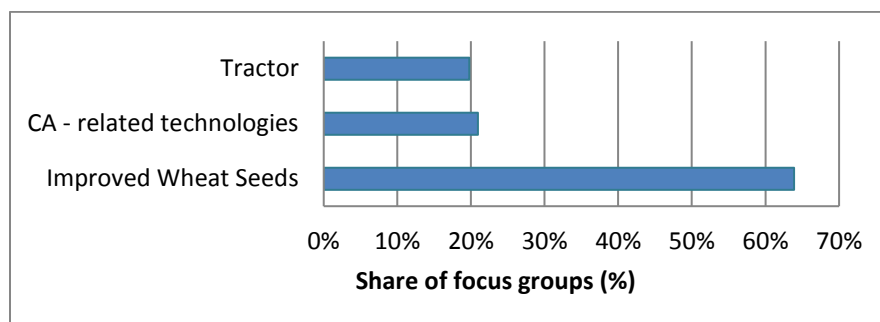
Study participants identify diverse innovations. Nevertheless, across the sample, and among the top-rated innovations, improved wheat seeds emerge by a large margin as the most favored, relative to other innovations mentioned. Across the 43 WHEAT case studies, 63.9 percent of the men's focus groups rate improved wheat varieties as one of the top-two innovations for men, while 32.6 percent of the women's focus groups rate this as a top two innovation for women (Table 5).

**Table 5. Proportion of Focus Groups (FGDs) identifying improved wheat as one of the top-two innovations for their own sex (86 focus groups)**

	Women FGDs rating improved wheat as top-two for Women	Men FGDs rating improved wheat as top-two for Men
Poor focus groups	32.6 %	55.8 %
Middle class focus groups	32.6 %	72.1 %
<b>Both poor and middle class</b>	<b>32.6%</b>	<b>63.9%</b>

For men, the top-two ratings for improved wheat are followed by Conservation Agriculture related technologies (CA)<sup>5</sup> and use of tractors (Figure 8). More specifically, CA-related technologies rate highly in 18.6 percent of poor men’s focus groups and 23.3 percent of middle class men’s focus groups. Tractor use follows slightly, at 20.9 percent of poor men’s focus groups and 18.6 percent of middle class men’s groups, making this the third most important innovation for men.

**Figure 8. Most prevalent innovations rated top two by men (86 poor and middle-class focus groups)**



Threshers receive top-two ratings by 11.9 percent of poor women and 23.8 percent of middle-class women’s focus groups (Figure 9). It is noticeable that the proportion of the poor women’s focus groups is only half that of middle class women’s focus groups and likely reflects the greater difficulty of poor women to access threshers.<sup>6</sup> The third most frequently given answer by women’s focus groups is “no important innovations for women” (16.7 percent), meaning that in these focus groups participants did not identify any new things in agriculture that they perceived to have made a difference for women in their community in recent years. Such responses provide a clear signal of diverse barriers facing the local

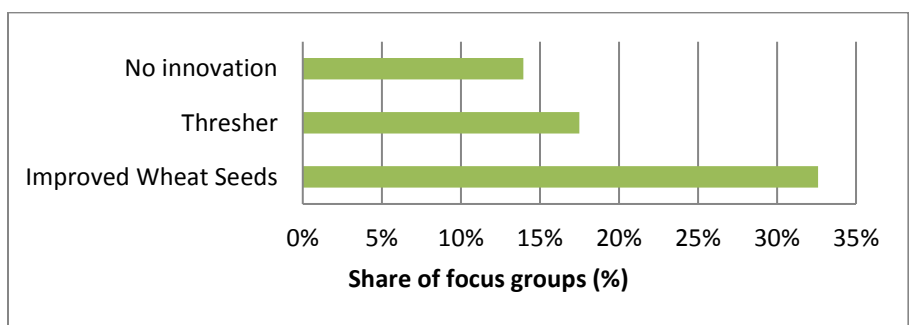
<sup>5</sup> Conservation Agriculture (CA) commonly refers to the combination of three core principles which interact to enhance agricultural productivity and reduce soil degradation: i) zero-tillage (or minimum or no mechanical soil disturbance), ii) crop residue management (or soil cover from a growing crop or a dead mulch of crop residues), and iii) diversified crop rotations (Giller et al. 2009). However, in this report, when CA or CA related technologies are mentioned it does not necessarily refer to the combination of all three aforementioned principles, but may merely refer to one (or several) technologies/practices that may be related to any one of the three principles. In this category, the most commonly mentioned by study participants include: zero- or reduced tillage, zero tillers and direct seeders, crop rotations, crop residue management.

<sup>6</sup> While labor saving technologies can greatly reduce drudgery, in certain contexts they can also represent trade-offs for some groups, for example in the form of labor displacement.

women in these cases. In Thali of India, for instance, the poor women’s focus group talks of how the local men are benefitting greatly from the “happy seeder” and “combine”; and yet they could not name a single innovation as important for the local women because, they say, “Women do not work with machines.”

Furthermore, when we compare the top-rated innovations by men’s focus groups with the women’s groups from the same community, we find no overlap in 58.1 percent of cases.

**Figure 9. Most prevalent innovations rated top two by women (86 poor and middle-class focus groups)**



It is often assumed that women are not involved in wheat farming, and thus have little to contribute to these processes. Although the proportion of women’s focus groups picking improved wheat as a top two innovation is about half that of the men’s, 32.6 percent is far from trivial. The findings suggest that women do indeed perceive important benefits from improved wheat varieties in the current period, and their engagement could provide relevant contributions to the technology development process.

### 3.1.1. Factors that men and women appreciate in relation to improved wheat varieties

Figure 10 presents the three most prevalent categories of topics (see annex E for definitions) that emerged in the focus group testimonies with favorable observations about improved wheat varieties. The three themes include: 1) external agri-partners; 2) yield and profitability and 3) community-based agri-networks. The coded data, moreover, makes it possible to focus on those favorable testimonies that pertain to the same gender of the focus group. In other words, when participants in the women’s focus group speak about why they regard wheat highly for the women of their village, these three factors emerge most often. The same is the case for the men’s groups.

Yet, what is perhaps most glaring in Figure 10 is that women simply had much less to say than men on the matter of the benefits they perceive from the seed technology. For many women across this sample, as explored further below, it appears to be out of reach for them to access opportunities such as agricultural extension, large crop sales, or even the various agricultural information outlets that are available right in their villages. We nevertheless present insightful cases of women interviewed for the



study who are breaking through the many barriers in their way and successfully innovating with improved wheat seeds.

**Figure 10. Most prevalent themes associated with favorable observations about improved wheat technologies (172 poor and middle class focus groups)**



Broadly, both men and women stress these three dimensions in their reflections on the significant benefits that they are deriving from improved wheat technologies:

- 1) *External partners* (e.g. public, private and civic services) are appreciated by both men and women as important sources of information and technical advice, and, at times, of subsidies or free samples of improved seeds. In general, men report easy access and important benefits from public and NGO extension services; and in fewer cases, seed companies are also seen to provide valuable information. This man from a community in Haryana, India, comments on the role of external partners in his farming activities: “Climate smart seeds like HD 2967 and HD 2851 are a blessing for us” (poor men’s focus group, Thali, India). While women relatively rarely interact with or benefit directly from external partners in this sample, as discussed further below, they nevertheless express appreciation for the work of extension agents and other partners because they contribute to their family’s agri-production in general.
- 2) For both men and women study participants a vital positive outcome of using improved wheat varieties is increased *yield and profit*, and they often relate how they use their increased earnings to purchase land and livestock, improve housing conditions and educate children. The participants mention higher yields in comparison with the local varieties, stronger resistance to diseases and climate conditions as well as good quality of flour and bread. Furthermore respondents talk about new agronomic practices and other factors which, in combination with improved varieties use, contribute to the increased wheat harvest: fertilizers and new irrigation technologies, new planting techniques such as row planting and bed planting as well as trainings on how to cultivate new varieties.

- 3) Across focus groups and individual interviews it is apparent that *local agri networks*, both formal and informal, often played a vital role for the women and men in our sample who engaged successfully with their local innovation processes. Before deciding whether to use improved seeds, for instance, a 49-year-old divorced woman from Gobado, Ethiopia explains, “We usually try to get as much information as possible from different farmers who are our neighbors, and then we decide.” Similarly, a 50-year-old farmer from Khanur, Pakistan warns that “farmers don’t take risks” until “we observe the good production of a seed by ourselves, then we try. We adopt it in the next season.” In addition to learning of opportunities from neighbors, relatives and other community members, these local networks may include cooperatives and savings clubs, self-help groups, farming groups, community leaders, etc. For both poor women and men, as explored more below, these local bonds especially emerge as important where agricultural extension is not available or cannot be accessed. And for many women, neighbors and relatives may be their only source of information.

When reflecting on their experiences with improved seeds, women and men across the study also frequently discuss how the need for labor has now declined.<sup>7</sup> Many farmers report reduced work burden because of the increased access to mechanization (tractors, threshers) and use of herbicides, which has accompanied the promotion of improved varieties. For example, according to a member of the poor men’s focus group from Dampur, Bangladesh:

At present, labor intensity or necessity has been reduced because local farmers are cultivating different types of crops and using improved seeds and new technologies in crop farming, which requires less labor than 10 years ago. For example, weeding required a lot of manpower before but now ‘Round Up’ weed killer chemical can burn all of the weeds from the land. And the new technologies, such as strip tillage, bed planter and zero tillage, are reducing labor.

Indeed, throughout the data, respondents describe how men’s work load has now eased with machinery, mainly tractors, strip-tillage, seed drills and harvesters and threshers, which help to reduce work by hand in soil preparation, sowing and harvesting.

The data also makes evident that women, too, benefit greatly from the labor savings that can accompany new technologies. One of the most striking examples of the reduction in work burdens is in Afghanistan where both women and men in all four study communities speak very favorably about how improved wheat varieties have reduced women’s work burden in relation to wheat cleaning,<sup>8</sup> a task that

---

<sup>7</sup> The notable exception to this finding is that middle class men relatively rarely speak of work burden concerns. This is likely because they are more accustomed than the other social groups to commanding family labor or hiring labor when facing a need, as discussed further in section 4.

<sup>8</sup> The reduced work burden in relation to wheat cleaning is likely to be linked to a combination of factors, which can include the following: 1) Local varieties can be tall, difficult to thresh, disease susceptible, can have low yield and farmer seed stocks of local varieties can be a mix of several types, including weed seeds; 2) Tall varieties are prone to lodging, and are therefore likely to pick up dirt when harvested; 3) For varieties that are difficult to thresh, the threshing process tend to produce high amounts of chaff, which in turn increases the need for additional cleaning; 4) Prevalence of smuts and bunts requires special cleaning measures; 5) When the harvest is small, threshing is often manual with wooden rollers and animals, which means that presence of stones, wood pieces and animal excreta complicates grain cleaning; 6) Inappropriate seed management, land preparation

can otherwise be very time consuming. As this 18-year-old young woman from the youth focus group in Panali, Afghanistan comments: “Improved seeds can provide clean wheat and it doesn’t need to be cleaned. Before, we were washing wheat grains and we exposed it to the sun until it dried. Machineries have [also] eased women’s tasks.” Likewise, women from other study countries explain how, for instance, reapers and harvesters have eased women’s work burden during the harvesting period. “The wheat reaper and harvester have lessened women’s work in terms of time and energy. It is costly but it is rented from other areas when needed,” explains a member of the poor women’s focus group in Balostan, Pakistan.

Similarly, in study communities in India, Nepal and Afghanistan where women are responsible for, or participate in, irrigation of plots, study participants speak favorably of how new technologies have eased their burden associated with irrigating crops, e.g. “These activities are traditionally performed by women. Before the “Honda” machine was introduced, women took two-to-three hours or more to water their fields; this now takes only an hour, to the immense relief of women who can now use this extra time for other work and children,” relates a member of the poor women’s focus group from Murmura, India.

### 3.1.2. Challenges in relation to improved wheat

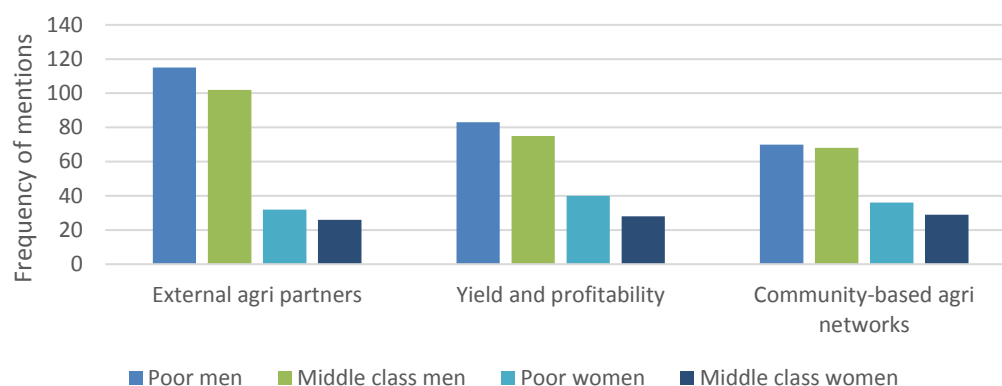
As highlighted in Figure 11, the narratives of men’s and women’s *unfavorable* observations associated with improved seed mirror the same three categories of topics as for favorable; however, the unfavorable coding amounts to less than half the frequencies when compared to the favorable coding. Focus groups of both genders stress, albeit women much less so, concerns with ineffective or inaccessible external providers and with varied challenges with improved wheat seeds. In fact, most of the coding that signals struggles with local networks in our data, do not relate directly to community-based relations or groups, but rather make reference to having to rely on these local ties due to challenges with external partners.<sup>9</sup>

---

and weed management practices mean that the harvest can contain large proportion of weed and other crop seeds. In contrast, improved varieties typically yield more, do not lodge, are genetically pure, easy to thresh and disease resistant. A good harvest often makes farmers opt for mechanical threshing, where possible. All this results in cleaner grain and less drudgery. (*We thank Dr. Rajiv Sharma for his valuable support in summarizing these inter-related factors*).

<sup>9</sup> This finding reflects limitations with coding of complex multi-topic narrative passages, but reinforces the strong importance that many study participants attached to availing of extension opportunities.

**Figure 11. Three most prevalent themes associated with unfavorable observations related to improved wheat (172 poor and middle class focus groups)**



Men across focus groups especially testify to frustrations with improved wheat due to unsupportive agents and their lack of information on pests and diseases, seed distributions, and soil management practices for their local conditions. Some report lack of any extension services present in their villages. Other testimonies describe challenges with low quality seeds and inputs, seed distributions in the wrong season or in insufficient supply, irregularities with subsidies, and program requirements such as landownership, which limit participation.<sup>10</sup> In Panali of Afghanistan, the poor men’s focus group declares that everyone in their village “understood the importance of improved wheat seeds” but “Not everyone in our community received the seeds.” The poor men’s focus group in Madpur, Bangladesh relates that poor farmers in their village “have no or very limited access to improved wheat seeds and new agricultural practices, because they don’t [have] large cultivable land. Government and non-government programs including CIMMYT do not target these people as potential early adopter of new seeds or technologies. As a result, they adopt CIMMYT sponsoring practices late.” However, they say the better off farmers “use most of the new improved seeds and adopt new technologies as early as possible.”

As explored more below, women especially highlight difficulties for them to access external partners because of their gender. In Chala, Ethiopia, the middle class focus group reports that only men who head their households may participate in extension, but “if it is about technology and [a woman who heads her household] has a male child, he goes. They often do not pass the information fully. It is difficult to get that information.”

Concerns with poor yields and profitability from improved wheat varieties are also common in the data. Both men and women across the focus groups and individual interviews report obstacles such as high costs of seeds and inputs (e.g. fertilizer, hired labor, time), shortage of water, lack of knowledge about new varieties and their cultivation, competitive markets that squeeze profits, as well as climate change. In Tehsul of Afghanistan, where men report more limited poverty reduction (nine percent) compared to the rest of the research communities, a farmer from the poor men’s focus group relates:

<sup>10</sup> Responses like these vary greatly from one community to another, even within the same study country, depending on the level of NGOs, private and governmental institutions participation in the areas.

We have a problem with usage of new or improved seeds; we have to use more fertilizers and DAP in the farms where we cultivate improved seeds. Unfortunately, the cost for the crops increases and we can't sell our produce at a rate that gives us good profit. Improved seeds give better produce, but the cost of planting increases also.

In Murmura of India, a member of the middle class women's focus group shares, "Using good seeds is very important." Yet, she similarly explains that people in her village are poor and "have to decide whether we should buy better seeds, better fertilizer or pesticides since doing it all with our limited wherewithal is not possible."

Moreover, while the preponderance of observations among study participants point to significant labor savings from adoption of improved wheat, machines, and other new farming practices, some focus groups with poor women and men nevertheless detail struggles with adapting to these changes. In Ganga of India, a poor woman laments, "Now sowing is also done with the help of machines. Whatever work there was is also vanishing." Or, a 50-year-old woman of Badero, Ethiopia, who is separated from her husband, explains that households like hers, which are "without male labor and oxen," continue to struggle to address labor shortages:

As a consequence [of limited family labor], they are late to plant or [they have to] give their land for shared farming. In addition, they are challenged with the lower amount of crop gained from sharing the crop, which often is unable to cover need that lasts throughout the year. When this happens they have to buy food from the market. This in turn, will have impact on their financial resource thereby impacting again their ability to properly do the next round of farming.

Indeed, throughout this sample, we find women without men in their households who, in order to provide for their families, are striving to innovate with new agricultural practices. Also, for women across the study communities more generally, whether running their own households or attached to others, they simply have much less to say good or bad about their experiences with improved wheat because their direct experiences are far more limited than the men's. More on this next.

### 3.1.3. Differences in the way that men and women speak about their innovation experiences

A dive beneath the surface into the rich underlying narrative data reveals important gender differences in study participants' experiences with the agricultural innovation processes underway in their villages. To illustrate, In the community of Badero, Ethiopia, the poor men's focus group rates improved wheat varieties as one of the top-two most important innovation for men, because of their high yields: "we also choose improved [wheat] seed variety because it gives a big amount of yield and what remains will also be feed for the cattle." In the same community, the poor women's focus group also rate improved wheat as a top two for the women, however, from the slightly different perspective of the role of improved varieties in relation to improved household food security: "Improved [wheat] seeds because

we mostly use wheat for household consumption and currently, except for the change in variety from time to time, the production has increased and feeds the household well.” Even in Thool of Nepal, where gender norms are generally less restrictive relative to other cases in our sample, a woman details in her interview how she likes a particular wheat variety because, “It has big grains and makes good chapatti.” As examined further in section 4, such findings course through the dataset and illustrate the strong influence of gender-differentiated roles and norms on men’s and women’s perceptions of the benefits from improved wheat and other agricultural advances.

Moreover, the very way women describe their experiences varies greatly by country. In Afghanistan and Pakistan, women almost never speak directly about themselves. Instead they mostly use the form “we” whether referring to themselves, the family, the husband and children, and even to farmers in general in the community. In addition, when making reference to the importance of improved yield, several women in Pakistan point out that they themselves do not work in the fields, but know about this through their husbands or other family members. It is unclear to what extent these are normative modes of speaking for women, reinforced by the focus group or interview situation in these particular contexts, but it contributes to the difficulties of discerning women’s actual wheat farming activities. The exception to this is the post-harvest seed and grain management, which is very clearly and normatively defined in the data as women’s responsibilities in both Afghanistan and Pakistan.

In contrast, rather than referring to their husbands or to people in the community in general, women in Ethiopia, Nepal and Bangladesh speak directly of their own experiences with and benefits of improved wheat, including deriving significant yields and profits as well as enhancing the food security and wellbeing of their families (Box 4).

Men in our sample rarely refer to women as actual participants in wheat cultivation. For example, in Ethiopia most of the time men may only mention their wives in passing, e.g. as agreeing when he suggested trying a new wheat variety. Similarly, in Afghanistan men only speak of women engaged in wheat in the context of seed cleaning; or in Pakistan, when speaking about yield, men mention that it is important for women because it is important for the whole family. Again, we return in section 4 to the normative pressures which strongly discourage women’s involvement in farming in wheat-based systems.

#### **Box 4. Women innovators in Ethiopia**

Tarik, a 40-year-old married woman from Gobado, Ethiopia, speaks very favorably about her experience using improved wheat varieties “8030, ‘Tsehai’ and ‘Digolo’,” as well as fertilizer and new management techniques such as drainage. “I started to grow the new variety and the result was more than what I anticipated,” relates Tarik. After being impressed by the yield she saw on her relative’s field, Tarik purchased and cultivated the improved seeds on the  $\frac{3}{4}$  hectare of land she owns plus additional rental land. With time, as Tarik became successful with cultivating wheat, she was able to open a shop and purchase an apartment in a nearby town. Tarik is also an influential figure in her village and heads the Office of Women, Children and Youth in her kebele on voluntarily basis. Although Tarik is married, she usually takes all the decisions related to farming herself because the nature of

her husband's work requires him to reside in a nearby town most of the time; he is not involved in his wife's farming, but supports her initiatives.

Layla, a 50-year-old landless divorced mother of seven from Gobado has been trying out different sources of income to feed her family (brewing alcohol, working at mill, cultivating vegetables, selling milk). Eventually Layla received 1 ¼ Ha of land from the government (under a land distribution program for landless people) and concentrated on farming. Of her wheat cultivation experiences, Layla shares, "I saw others doing it, but the agriculture extension agents came to my land and also showed us how to do it. I have tried several kinds of improved seeds and fertilizer. Currently I am using 'Tsehai' variety." Layla also relates how her crop "grew beautifully" after she applied compost, tilled and planted "the moment I thought the rain was coming." Layla, similar to Tarik, is active in her community, and founded a weavers association and is an elected member of her kebele's council.

### 3.2. What local resources and factors enable or hinder innovation?

In this part we provide an overview of men's and women's perceptions of the principal factors that support and hinder their efforts to engage with new things in agriculture. In the focus groups with middle-class men and women, participants are asked to think about their community and name specific factors that enable men and women to learn about, and try out—or possibly create themselves—something novel that could make their livelihoods more productive, or improve the wellbeing of their families. The supporting factors mentioned by participants are listed for all to see, and the group is then asked to identify the two most important for the women of the community (if a women's group) or for the men of the community (if a men's group). The exercise is then repeated for factors that hinder local men and women from learning about and trying out new things in agriculture or NRM.

Figure 12 below shows key factors perceived to support innovation by shares of middle class men's and women's focus groups across all eight countries. As with the earlier testimonies on improved wheat, men and women alike consider external partners to play a vital role in their local innovation processes in the form of providing information, training, credits, subsidies or other. In the next section we explore more closely gender differences in access to extension and other learning opportunities.

For women the second most important factor that enables local innovation is their access to financial resources, and for men, access to fertile land. As men are landholders by tradition in much of this sample, such patterns echo important gender differences in the assets that can be mobilized and controlled to support innovation.

**Figure 12. Most frequently mentioned factors perceived to support innovation (middle class women focus groups and 43 middle class men focus groups).**

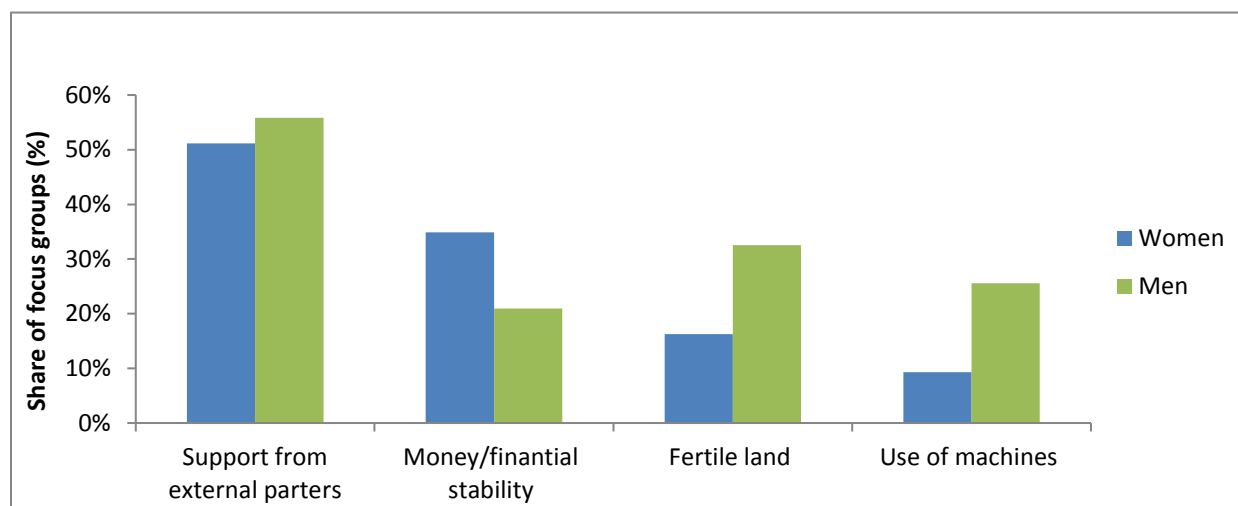


Figure 13 presents general patterns on key factors *hindering* innovation. Lack of financial resources is the most frequently mentioned constraint for both women and men. For men, climatic and natural resources conditions feature as the second most important constraint on local innovation processes. However, it is the second most frequently mentioned factor for women that really stands out: in a third of the women’s middle-class focus groups, gender-related restrictions associated with limited physical mobility, reproductive work burden, and other gender norms are ranked among the top-two constraints for engaging in agricultural innovation processes.

Box 5 offers a few examples of how women from different contexts articulate these barriers. It should be noted that aspects of this kind are not mentioned a single time in any of the middle-class men’s focus groups.

**Box 5. Gendered barriers to innovation: examples from women’s middle class focus groups**

“If she is not free or does not have freedom, she can’t innovate. There should be security for women, and their financial situation should be good. Whatever is important for men, that is important for women, too” (Tehsul, Afghanistan).

“Women cannot work independently in the fields due to the criticism of village people. So this is the biggest obstacle for them” (Bakpur, Bangladesh).

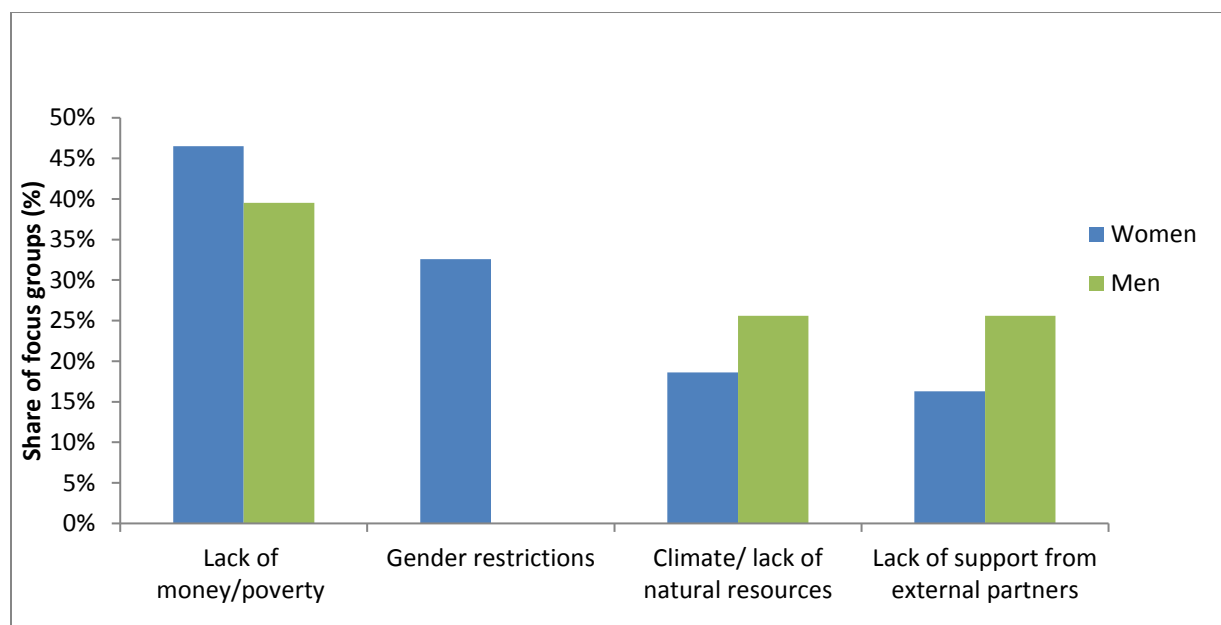
“Women also have a desire to learn. We do so many different activities in the field, right from sowing to harvesting; and we do it ourselves since we don’t have the money to hire labor. Therefore, if we learn, then we can produce more. But our society’s rules don’t allow us to go to the block or even participate in community meetings where men are given information and knowledge” (Murmura, India).

“Permission from their man is the man hurdle for women” (Ismashal, Pakistan).



“Old stereotypes hinder local people from innovations. For example, most people don’t consider a woman as a successful businesswoman. They think that she could be only a housekeeper and garden worker” (Nodira, Uzbekistan).

**Figure 13. Most frequently mentioned dimensions perceived to hinder innovation (43 middle class women focus groups and 43 middle class men focus groups)**



### 3.3. Capacities to connect and learn

Across the 43 research villages, women report difficulties accessing extension services and trying out promising new agricultural technologies or practices. Yet, even in cases where gender norms remain heavily restrictive, some women nevertheless find means to innovate and contribute to the wellbeing of their households and villages. Again and again, the data indicate that it is often the women without husbands who find greater scope to access and apply agricultural learning opportunities, whether these opportunities arise from external partners and programs or due to their own local connections.

Subsequent to the exercise about factors that support or hinder innovation, both men and women middle-class focus groups are asked specifically if the local women learn from agricultural extension agents, and study participants are prompted to explain their responses. This is then followed by questions of whether men also learn from agricultural extension agents. These testimonies are summarized in Table 6 below, with the “mixed” responses indicating differences of opinion in the focus groups or affirmative responses which are then qualified by particular circumstances (e.g. “only if a widow”).

**Table 6. Learning from extension**

<i>RESPONSES</i>	<b>Women’s focus group responses</b> (% of 43 focus groups)		<b>Men’s focus group responses</b> (% of 43 focus groups)	
	<i>Women learn from extension agents</i>	<i>Men learn from extension agents</i>	<i>Women learn from extension agents</i>	<i>Men learn from extension agents</i>
YES	21%	98%	30%	81%
NO	58%	2%	47%	7%
MIXED	21%	0%	23%	12%
TOTAL %	100	100	100	100

According to women’s focus groups, in a clear majority of cases women do not learn from agricultural extension agents, while men do in just about every research village. The men’s testimonies reveal similar, albeit weaker, gender differences on this question. The reasons given for why women do not learn from extension agents or why many or most local women encounter difficulties (the mixed responses) include strict norms that limit women’s physical mobility and interactions with the opposite sex; dominant ideas of women’s and men’s roles (including field agriculture not being an appropriate task for women), and; household work burdens. In sharp contrast, the situations in which men do not learn from extension agents (seven percent according to the men’s focus group responses) are generally linked to socio-economic factors, such as poverty or landlessness. Also, some external partners and local networks require participants in their programs to own or lease land or to make payments towards pooled savings schemes, seeds, machines, or other needs.

A systematic review of the narrative data from the focus groups that underpins the broad pattern shown in Table 3 reveals how the degree of restrictions or challenges faced by women across the different study countries can be likened to a spectrum with the communities in Afghanistan and Pakistan at one end with very restrictive situation for women, and Nepal and Uzbekistan at the other end with more moderate restrictions, and Bangladesh, India, Morocco and Ethiopia somewhere across the middle of the spectrum.

The narrative data analysis also reveals many variations, including “exceptions” to the local societal rules, even in very restrictive environments. For example, in many research villages, both men and women’s focus groups report that it is not socially accepted for women to learn from agricultural agents, because they cannot interact with other men. However, there are ample testimonies that such dictates can be overcome by women who head their households (see Box 6), and, for all types of women, by the presence of women extension agents. For instance, in the middle class men’s group of Tehsul, Afghanistan, a participant explains that women who do not have a male head of family can learn from

agriculture agents: “There are some conditions under which women directly learn agricultural activities from the authorities or agents, such as a woman who has established a nursery in the village, or a woman who doesn’t have a male head of family.” Similarly, in Matipur, Bangladesh, a member of the middle-class women’s focus group explains, “There is some exception when the husband dies, then a woman can attend such trainings. Or, this statement from a participant in the middle-class women’s focus group from Khanur, Pakistan highlights the possibility that women would participate in extension if only led by a woman: “There are no female agents and women are not allowed to learn from male agents.”

#### **Box 6. A widow's success in wheat cultivation with support from extension agents**

Farhan is a 38-year-old widow, mother of three and farmer of Borian, in Mymensingh division, Bangladesh. Despite residing in a village where women’s underage marriage and child bearing are common and where few women move about the village unaccompanied, sell goods at a market or have access to agricultural extension agents, Farhan has become a successful wheat farmer. In the process, she has greatly enhanced her own and her family’s wellbeing: “I really prospered by cultivating wheat. I enjoy cultivating wheat because it gives me better production in less time, which leads me to larger profits.”

Farhan started cultivating with only 800 square meters of land, but eventually her earnings enabled her to buy more land, educate the children, and gain respect from fellow villagers. In her first season with improved seeds, Farhan relates how she earned 8600 taka from harvesting 362 kilograms. “After this I became inspired and wanted to cultivate in bigger fields. Then I bought 12 katha,” reports Farhan. “I also have cows, chickens, and pigeons, which give good earnings, too. And with all these I am doing fine,” she further explains. Farhan attributes a strong role in her success to a CIMMYT program in her village, which provided her with seeds, fertilizer and pesticides. She also benefited greatly from participation in a development project carried out by World Vision that made her more confident and taught her to take her own decisions.

In Gobado, Ethiopia, a man in the middle class focus group states simply and firmly that “If she doesn’t have a husband she will learn, but if she has a husband at home she will never learn.” Meanwhile, the women of Gobado present a more hopeful picture of their opportunities to gain information from neighbors as well as extension agents; however, echoing so many other focus groups in our study, these women also speak directly to the significant barriers in the way of married women:

[Women] learn from agriculture extension agents and also from neighbors. The extension agents always invite both men and women to the meetings; especially single women attend meetings. If she is married she may not attend, because the husband will say, “Both of us should not be wasting time in one place. You remain behind and finish your work in the house.”

In contexts where extension services may be absent or inaccessible to poor women and men, our data often shows how local formal and informal networks fill this gap. Box 7 presents that case of Lakshmi from a highly patriarchal rural area of Bihar in India. Although married and impoverished, she forges a successful pathway in field agriculture despite local circumstances that prevent her from interacting with the village’s extension agents. It is clear from the data from Ganga that the village head has played a key role by helping many poor women and men to access information, and by providing loans and

access to machines. Most focus group participants refer to their village head as the most accessible resource for help and information. As one woman remarks, “Only the village head teaches us. Since I am a widow, so only the village head teaches me.” Such findings again highlight that it is often easier for women without husbands to withdraw from social rules that limit their freedom of movement and interactions in the public sphere. Moreover, in Ganga, local networks and especially the existence of progressive local leaders are important for understanding broader access to agricultural learning and innovation opportunities.

### **Box 7. A poor woman connecting to innovation through local networks**

Lakshmi is a 45-years-old married woman with three children from Ganga, a village in the Indian state of Bihar, with strong patriarchal traditions and values, and where agriculture, in turn, is highly gendered. Men do all kinds of agriculture work and are expected to be the family breadwinners, while women are strongly associated with the reproductive sphere of household chores and care-giving. Women’s agricultural field activities typically focus on weeding and harvesting.

Lakshmi used to work for wage on other farmers’ fields, but was struggling financially. Faced with her husband’s alcoholism and the family’s continued decline into poverty, she was determined to change things. Leveraging support through her informal networks in the village, Lakshmi managed to gather information and connect to and learn from other innovating farmers, through whom she eventually also borrowed money and accessed a rotavator, improved wheat seeds, fertilizer and water for irrigation.

Today Lakshmi is a successful farmer. On her path, Lakshmi challenged many local gender norms and stereotypes. Yet, her innovation experience not only improved her family’s wellbeing, but has also helped her forge greater say in her household and greater independence, as she relates: “Yes, there have been lots of changes now. We are eating well and living well.” She adds, “The most important change has been that I take all the important decisions in the family. Yes, I command more respect now. See, this is the irony of poverty—we get respect and people interact with us only when we have money.”

In sum, normative expectations that surround women’s access to agricultural learning and innovation opportunities are clearly anchored to whether a man is present or not to run the household and serve as the provider. These findings illustrate the strongly relational nature of the concept of gender, and suggest that to a large extent the restrictions on women’s mobility and social interaction are as much related to gender norms for men, and the normative context of masculinity. We will return to this in section 4.

## **4. THE GENDERED CONTEXT OF AGRICULTURAL INNOVATION**

Section 4 examines the complex and dynamic world of gender norms, which ascribe authority and breadwinner roles to men and domestic roles to women. We draw on the data to highlight how these “binary” expectations, which set the terms for how men and women are ideally expected to behave and interact, can so often be different from actual practice. We also show how these norms vary for

different types of men and women due to myriad other status differences that intersect with gender, such as marital status, household position, land ownership, caste, position in life cycle and so forth. Indeed, our data reveal combinations of gendered differences and expectations that vary exquisitely from one individual, household and community to the next, making these norms deeply challenging to assess and compare. Moreover, as shown in previous sections, this murky and churning world of gender norms strongly affect men's agency as well as women's, with important consequences for whether either gender may be encouraged or discouraged by their local innovation processes. It is, in fact, these elastic qualities of gender norms which enable them to have strong relevance and force across so many different domains of social life. At the same time, this fluidity provides scope for individuals to creatively withdraw from and sometimes change the norms that constrain their initiatives.

#### 4.1. Local expectations for farming roles

To better understand how normative frameworks shape agricultural roles, we asked the poor women's and men's focus groups to reflect on the qualities of a man, and separately, of a woman, who would be considered a "good farmer" in their village. Rather than probe on specific crops or tasks, we let the study participants bring their own notions of these roles to the fore. The resulting narratives are highly contextual; nevertheless, certain key patterns can be identified.

At a very broad level, both good women and men farmers are portrayed as having strong agricultural know-how. Where the good farmer narratives differ more reliably by gender is that most focus groups also include responsibilities of a "good wife and mother" in their descriptions of the good woman farmer. In comparison, reproductive roles are rarely referenced in relation to "good men farmers." Moreover, "good women farmers" are regularly referred to as *supporting* their husband in *his* farming activities, rather than as farmers in their own right—a perspective whose gender implications we spend some time exploring.

To better understand these dynamics, we begin with Thool, Nepal, a community of about 1300 villagers where women and men are actively engaged in agricultural innovations, including the adoption of improved wheat and maize varieties.

Table 7, from the poor men's focus group, presents a typical flipchart generated from the discussions about the qualities of a "good" man and woman farmer. In many respects, people's perceptions of the good farmer in Thool mirror those of men and women across WHEAT study countries. Most importantly, good men and women farmers should both have agricultural knowledge and the capacity to carry out a variety of farming activities. Interestingly, even in Thool, where gender norms are among the WHEAT study's least restrictive, narratives about the type and degree of agricultural knowledge and capacity differ by gender. According to men in Thool, good men farmers adopt new technologies and tools and are knowledgeable about fertilizers, diseases, and planting times; while good women farmers plant the field, carry out timely weeding, and nurture crops (Table 7). Unlike the men, moreover, the good woman farmer carries out household responsibilities typically associated with wives and mothers, such as

cooking, cleaning, and childcare. As a 60-year-old man farmer from the men’s focus group describes, “Female farmers work three times more than male farmers. They cook food, send children to the schools, and also work in the field.”

**Table 7. The good man and woman farmer, poor men’s focus group, Thool, Nepal**

<b>A man who is a good farmer</b>	<b>A woman who is a good farmer</b>
<ul style="list-style-type: none"> <li>• Do agricultural work properly.</li> <li>• Introduce new techniques</li> <li>• Use different improved tools/equipment</li> <li>• Have knowledge of using fertilizer in a proper way.</li> <li>• Apply new technology in a modern way.</li> <li>• Do agriculture in a new way.</li> <li>• Advise, suggest and teach about new agricultural practices to everyone.</li> <li>• Have knowledge about diseases and the way to cure them.</li> <li>• Cropping in a right time.</li> <li>• A good farmer should be educated. "If the person is illiterate what is the use of taking trainings?"</li> </ul>	<ul style="list-style-type: none"> <li>• If there is no coordination between male and female in agriculture, the product will not be good. So both male and female should have similar qualities as said to good male farmer.</li> <li>• Timely weeding</li> <li>• Sales of the product after harvesting.</li> <li>• During the cropping time provide food to the workers.</li> <li>• Plant the field and do weeding</li> <li>• Nurturing of and caring for the crops.</li> <li>• Female farmers work three times more than male farmers. They cook food, send children to the schools and also work in the field.</li> <li>• Females first prepare food, then go to the field, and in the afternoon again prepare day snacks and in the evening prepare evening meals. These wives even get beaten by their husbands if their husbands are drunkards.</li> </ul>

The need to combine farm work with household chores and caring responsibilities weigh heavily on rural women in all the study countries. In contrast, there is hardly any expectation that good men farmers assist with household activities. This 52-year-old mother of nine from Panali, Afghanistan sums it up well: “In the afternoon, we are washing the clothes, again slicing tomatoes and things like that. In the morning, we are doing house chores, and in the afternoon we work in our field. We are busy all day; we don’t have free time. When there is an event or a party, sometimes we can go and sometimes we can’t because we are busy with our duties.” Or as a poor woman from Chala, Ethiopia describes, “If she is married, she should be able to work together equally with her husband and in the house.” A woman from Kulfi, India’s poor women’s focus group similarly indicates that good woman farmers “do all the work at home and they go out to work on their land.”

Across study countries, women’s agricultural work is also often described as helping or supporting their husband in his agricultural activities. In Solh, Morocco a good woman farmer “helps husband”; in Naidura, Pakistan she “assists her husband in the field”; and in Akkela, Ethiopia she “works in the field beside her husband in bringing seed, weeding, threshing, etc.” The fact that both men and women frequently describe the good woman farmer as performing a *supportive role* rather than as a farmer in her own right highlights the questions of what counts as farming, and who is a farmer.

In addition, such supporting roles are often flexibly defined, which in turn, allow gender- and other social norms to be upheld. For example, when characterizing the good woman farmer in Deva, India,

one woman says “she should help her husband on their land.” We then learn from men in Deva, however, that such “support” includes that she has “a good understanding of seeds and fertilizers” and “sowing, weeding, irrigating, and applying fertilizers.” Or, as another man farmer from the same community aptly puts it, “she must be able to do all the agricultural work that a good man farmer can.” Similarly, a man from Nareed, Pakistan explains that good women farmers “do the farm activities such as crop sowing/transplanting, harvesting, collection of harvested crop, helping husband with thresher, and take care of animals.” As these responses illustrate, women’s *supporting* roles often require significant agricultural skill and capacity as well as considerable labor input. This brings into question the extent to which such roles are indeed merely supportive (in the sense of being minor or secondary), and highlights the need for reconsidering and deepening the evidence on labor in wheat-based livelihoods by moving beyond immediate framings of gender roles in order to document and give visibility to the strong knowledge and contributions of women in wheat-based systems.

## 4.2. The bind of gender norms

In this section, we explore and compare gender roles in the household and economic spheres. We move mainly from case studies with more restrictive normative climates for men’s and women’s roles to contexts where testimonies point to signs of more fluid norms. The section culminates in a case where testimonies indicate that a community-level gender intervention contributed significantly to local normative changes that fostered more equitable household decision-making as well as greater participation of women and men in local innovation processes.

### 4.2.1. The highly gendered environment governing marital roles

Poor women’s and men’s focus groups are asked to describe what characterizes a good husband and a good wife. Overall, the data confirm the very traditional gender roles still governing married and family life in most study countries, with strong normative association of good husbands with the productive sphere and economic provision, and equally strong normative association of good wives with the reproductive sphere.

Table 8, from the poor women’s focus group of Chala, Ethiopia, presents a typical flipchart generated from the conversations about the traits of a good wife and husband, and reflects the strong gender climate around marital roles common to many of the communities in the WHEAT case studies.

Participants in all study countries characterize good husbands as hardworking men whose principal duty is to support their family economically. According to poor women in Panali, Afghanistan, “He works for the whole day to earn some money in order to bring it home. A man should work outside and a woman should work at home.” Poor men in Prem, India say a good husband “should earn money for his family.” And in Nodira, Pakistan, a woman explains that “first, the husband has to be a good earner, to raise money for the family.”

As husbands, men should treat their wives with love and respect, and avoid domestic violence and alcohol abuse. As fathers, men should care for their children and provide for them financially. Another important aspect is the good husband’s ability to reduce household conflict and foster a positive home atmosphere. As a poor woman from Balostan, Pakistan puts it, a good husband is “decent . . . takes care of younger and elders at home, doesn’t degrade; everyone at home [is] happy with his behavior.”

**Table 8. A good wife and a good husband, poor women’s focus group, Chala, Ethiopia**

<b>A good husband</b>	<b>A good wife</b>
<ul style="list-style-type: none"> <li>● The one who works outside the house.</li> <li>● Well-mannered and the person who can bring home bread.</li> <li>● The one who can administer the house properly, and does not drink.</li> <li>● Who can farm his land and produce or is fruitful in his work, and gives peace to the house.</li> <li>● The one who can work with his wife and support her in her work.</li> <li>● The one who consults his wife.</li> <li>● Who never hits/beats his wife.</li> <li>● The one who supports his children and is there for them when they need him.</li> </ul>	<ul style="list-style-type: none"> <li>● Hard worker, who supports her husband in the farming and brews “areke” and brings income to the house.</li> <li>● Who respects and listens to her husband.</li> <li>● Cooks good food.</li> <li>● A good wife is the one who obeys her husband fully.</li> <li>● When he comes from outside, she warms water and washes his feet.</li> <li>● When he comes from outside, she shows him respect and love; she never asks where he was, or what he brought.</li> <li>● A good wife never rests. She is always busy with household chores, cleans, prepares fuel from dung and brings water; takes care of the children, the animals, and the household. She cleans, washes, brews Areke and Tella; she goes to the market to sell and buy; and she is well mannered and respectful of her husband. She is good at saving and cooks good food for him.</li> </ul>

Meanwhile, descriptions of the good wife focus on her housework, parenting, and care responsibilities. In Master Goli, Bangladesh a good wife “will take care of all the works within the house as that is her main responsibility”; in Thool, Nepal she “sends children to school and takes care of them”; and in Kamola, Uzbekistan she is a “good cook.” Moreover, similar to the notion of a good woman farmer also mastering housework and care responsibilities, a good wife is often expected to balance her domestic work with farming activities. In Badero, Ethiopia, for example, men characterize a good wife as “assist[ing] her husband at his farm,” “feeding the cattle, sheep, and chickens” and “attending to the vegetable garden.” A 36-year-old married mother of three from Thool, Nepal observes that a good wife “does household activities, cooks food for husband and children, looks after livestock, [and] does agricultural activities.”

Good wives are also called to be loving, respectful, and faithful to their husbands. Unlike men, married women often hold little decision-making capacity. She is expected to play the role of a dutiful housewife, with “good” behavior often judged—by men and women alike—as unquestionable obedience to her husband and attentiveness to his needs. Across the study, we find testimonies affirming the submissive behavior frequently ascribed to good wives. Respondents from the poor women’s focus group of Panali, Afghanistan indicate that a good wife exhibits “good behavior at home” and “respects her husband.”



According to a poor woman in Bete, India, she “should not fight with her husband; she must not reply back even if her husband reprimands her for something.” In Khanur, Pakistan a poor man explains that “whatever her husband demands, she should do accordingly and should never fool or cheat him.”

#### 4.2.2. The idea of the man as the economic provider

*Men always need to act like a man. He must support the family, make money, be prepared to make critical decisions, create conditions for a better life for all family members. —Poor men’s focus group, Nodira, Uzbekistan*

As outlined above, with limited exception, men throughout the WHEAT case studies are cast, both by men themselves and by women, as the economic providers of their families. And men who are good providers are respected and looked up to. However, the heavy social and economic pressure that these strong normative expectations put on men can be challenging, sometimes leading to severe stress and feelings of disempowerment. To illustrate this dynamic and how it can affect a person’s self-confidence, in Box 8 we examine the case of Arif from Madpur, Bangladesh, a community with very traditional gender norms around men’s provider roles.

#### **Box 8. Pressure on men to fulfill normative expectations around provider roles**

Located 127 km from the capital city of Dhaka, Madpur is a Muslim community of about 4000 inhabitants. The main agricultural products include rice, jute, lentils, and wheat. Men are typically responsible for cultivating, fertilizing, and irrigating crops. They also buy and sell crops and take most decisions regarding crop production, selling, and subsistence use. Women play important roles in processing and preserving the harvest. A good wife is expected to carry out all household work and help her husband in the field. In comparison, men rarely perform domestic chores and are expected to work hard and bear the costs of the household.

Arif, a 40-year-old married farmer with two young daughters, who is struggling to fulfill his economic provider role, has lived in Madpur for the past 10 years. He met his Malaysian wife in the early 1990s, while working in Malaysia as a poultry farmer. In 2002, they returned to Bangladesh and Arif began selling gold ornaments to help him save money to start a poultry farm business. He successfully launched his business in 2005 with 300 chickens. With the help of his wife, who holds a diploma in agricultural studies, Arif gradually grew his poultry farm into a lucrative business. In 2012, however, he lost most of his savings after a friend to whom he had lent \$300,000 taka (approximately \$3,800 USD) fled the country. A year later, his poultry business took another major hit when 1000 chickens suddenly fell ill and died. Today, Arif finds himself in a precarious economic situation, unable to meet everyday expenses or to support his wife and children financially. “I am not at all satisfied with my family income now,” he says. “I cannot feed my family well. I cannot provide my daughters with proper education. I have to buy cloth for my daughter but cannot buy for me.” Although Arif consults his wife on important economic and domestic matters, as the household head he makes the final decisions. “I manage all the financial things in my family,” he explains. “I also decide about the daily expenses.”

Not being able to live up to his provider role has taken a severe emotional toll on Arif, causing him to lose the respect of his closest family members. “I am not at all confident right now,” he says. “I do not have any strength psychologically. I am always scared. I feel unrest inside me. I do not want to be insulted because of my debts.” Like other men in the WHEAT study (see Section 2.1 Empowering mindsets), Arif directly associates his decision-making

capacity with his status as a household head and successful provider. “My earnings are not increasing,” he says, explaining why his rating on the Ladder of Power and Freedom has fallen from three (moderate) to one (low) during the last 10 years. “So now I lost my ability to take decisions.”

In Madpur’s middle-class focus group, too, men report decreasing empowerment levels caused by economic instability in their agricultural livelihoods. “We earn our income from land cultivation or selling our own labor,” one focus group member says. “The prices of agricultural inputs are high, so the net income is inadequate. . . . Farmers gained positively in the past but the high costs reduce the farmers’ profit. This has an impact on our decision-making power and freedom.”

The difficulty in living up to expectations has left Arif frustrated and with low self-esteem. As the example suggests, understanding how gender norms affect men’s agency is important to understanding local innovation processes and the consequences when men are discouraged by limited economic opportunities or market shifts and shocks that disadvantage their livelihoods and challenge their key provider and decision-making roles. As shown in section 2, both men’s and women’s agency is also highly relational, and men who may be insecure in their own roles will often perceive processes or behaviors associated with women’s agency as challenges to their authority positions that require strict sanctioning. For example, in contexts where norms around farming roles and physical mobility are more restrictive, the idea of women leaving the house alone to perform activities generally associated with men could make men uncomfortable (or even upset), generating scrutiny and criticism within the broader community. Not surprisingly, this potential for social stigmatization can affect the way people describe and discuss women’s and men’s roles. As we will discuss next, normative discourse and social practice are often out of sync, and this can be a source of stress on gender relations.

#### 4.2.3. The intersection of gender with social class, poverty and caste

Despite the more static and restrictive picture painted thus far of the normative climate surrounding farming and marital roles and related behaviors, social life – including farming - remains dynamic and contextually embedded. Like the good farmer, normative statements about the good wife and husband largely represent stereotyped ideals, which for most people are difficult, if not impossible, to fully live up to in real life. In most cases, gender stereotypes do not reflect everyday practice, which often requires negotiation or ‘bending’ of social norms. This is the focus of the remainder of this section.

Despite great diversity in the local context of the case-studies, it is possible to identify patterns in dominating gender stereotypes. While articulated and playing out differently across contexts, similar underlying core themes emerge. Most importantly, this includes a strong normative association of men and husbands with the productive sphere, including economic provision and decision-making, and equally strong normative association of women and wives with the reproductive sphere. Yet, contrary to this seemingly clear-cut model, when digging beneath the surface a much more varied picture of real-life practice in most of the case-studies takes form.

For many of the study communities, it is noted that local gender norms, to different degrees, restrict

women's physical mobility and discourage their movement and work outside of the family home. This in turn tends to restrict their involvement in, especially field-based, agricultural activities. Often, this is explained by referring to farm work as "inappropriate for women," and when asked about agricultural work, both men and women will often downplay women's involvement. The following explanation by a 23-year-old woman from Panali, Afghanistan provides an excellent illustration of the strict norms attached to farming roles well beyond this case:

In this community, only men work on the plots whether they belong to them or to their wives. They do consult with each other as to what to cultivate, but men do the work all the time. Even if they need labor, their own wives don't work on the land because they are not allowed; but women from other areas are working on their lands as laborers and they are paid with daily wages. As long as the husband is alive, he is the one responsible for everything. If he dies, or if he is not around, then his brother or oldest son would be responsible for everything.

Interestingly, as this statement reveals, women actually do work in the fields; the question is which women and where they are from. Once again, the relational aspect of gender becomes evident. For this community, norms governing daily wage farm work vary for women residing inside and outside the village, as well as for husbands and wives. For a similar example of such norms but from a quite distinct context, consider this exclamation by a participant in a poor men's focus group in Solh, Morocco: "Husbands don't allow their wives to work for another male farmer or supervisor. I prefer starving rather than my wife work[ing] for other people!"

Across the case studies, the data shows that women's contribution to farming, including wheat production, is important, especially for poor families. Some women's farming activities are confined to the farm yard or homestead, including for example post-harvest processing and management, live-stock management and vegetable gardening. Other women also participate in field based activities at peak times when extra labor is needed, for example around planting and harvesting. Yet other women work in the field alongside their husbands on a regular basis throughout the cropping cycle, whether on their own or rented land. Finally, many poor women, including single mothers, widows and women whose husbands' income is not enough to feed the family, work for others as farm laborers.

The data is rich with examples where social class, caste or poverty factors interact with dominating gender norms in the particular context, eventually raising or lowering the tolerance of what is considered socially acceptable in the specific situation or for the specific people involved. As the testimonies above tell us, perceptions around farming roles – particularly those for women – are highly variable and subject to distinct interpretations, even by men and women from the same communities. At times this complexity can seem confusing or even contradictory. For instance, in Pakistan study participants typically frame their good men farmers as engaged in field-based activities such as plowing, applying fertilizers, seeking information about and adopting new agricultural practices (e.g. improved seeds and machinery), increasing production and planting, irrigating and harvesting crops. Meanwhile, normative descriptions of a good woman farmer's agricultural activities align with the ideal of taking place at the home: her primary tasks include cleaning and preserving the grain, taking care of livestock

and – less frequently – sowing and harvesting. As a woman from Balostan, Pakistan explains, “we do not plow the crops. We only collect vegetables sometimes or bring grass for our domestic animals if needed. But normally this is also done by young children (boys). Yes we make collection (ambaar) of wheat at one place (only the old women).” However, this picture is blurred by seemingly contradicting reports from other study participants in the community. In the poor women’s focus group, some participants state that women do not participate in farming at all: “we women do not do this work. Our men do not think it is good for us,” while other participants contradict this, e.g. “By the way I do all the same work as men. I bring grass for domestic animals (maal) and also help in the wheat harvesting.”

Box 9 illustrates how gender norms can often differ for women of different social standings in a village. In this case from Pakistan, for instance, land ownership and tenancy serve as key axes of social group difference and normative expectations.

### **Box 9. Intersection of gender and social class in a wheat-farming village of Nareed, Pakistan**

Zahib is a 45-year-old mother of six. In her community of Balostan, social structure is closely related to land tenure. The main groups in the village are landlords on the one hand, and, on the other, tenants or sharecroppers who rent land in return for 50 percent of the harvest. The tenant farmers are a diverse group, ranging from poor farmers with meager earnings from daily wage jobs to well off farmers with a large labor force within their family. Throughout the poor women’s focus group discussion, the women emphasize the strong differences between the lives of women-tenants and the wives of landowners. While it is culturally unacceptable for landowners’ wives to work in the fields, women-tenants work alongside their husbands in all stages of cultivation: clearing the fields, sowing crops, harvesting, separating wheat, rice and maize seeds from husk, as well as spraying pesticides even if a woman is pregnant or has just given birth. Women-tenants are not judged by the villagers for working in the fields as the practice is considered normal; although, when considering other norms in this village, their active role in tenant farming does not imply they enjoy much independence. Hardly any woman, regardless of social or economic standing, is able to move freely in the village by herself or rent land and start sharecropping without a man.

As the daughter of a poor landless farmer, Zahib started working in the fields when she was a young child. She married a landless man who rented a plot, and continued working in the field with her husband after marriage. Having worked in agriculture her whole life, Zahib is very knowledgeable, including about new practices used in her village. In addition to new ploughs and drills, fertilizers and pesticides, Zahib and her husband use improved wheat varieties, which, she explains, now provide the family with food all year round.

Despite a close association of women with the reproductive sphere and harsh normative disapproval of women earning income or working outside the home in many study communities, the case studies include numerous reports of poor women doing field work together with their husbands, as well as working for hire for other farmers. Examples include: “People are poor here; the women have to help their husband’s in the farming. Our own women also help us in the fields and they do farming along with us” (poor men’s focus group, Katam, Afghanistan); “Girls from poor families are involved in sowing and harvesting; but now machines also do a lot of human work (young men’s focus group, Bete, India). “There are some women who work for men [farmers] and [they] provide breakfast and lunch for them;

even give them 200 or 300 rupees as well” (woman’s individual interview, Panali, Afghanistan); “Yes, women are working on farming lands and some on other people’s land for wages or in kind of grains” (poor men’s group in Ismashal, Pakistan); “Women mostly work as farm labor” (young women’s group, Kulfi, Madhya Pradesh, India).

### **Box 10. Poor women working as farm laborers – examples from Bihar and Uttar Pradesh**

Prisha<sup>11</sup>, 35, is married and has two children. She lives in Ganga, a village in Bihar, India, with high economic dynamism and high gender gaps. Prisha describes life after marriage as extremely poor, although her husband was working. Encouraged by her in-laws, she started working as a wheat-cutter and later also found a job in construction. She recalls that some people in the community criticized her for working outside the home, but since she started working the family’s economic situation improved. They now have sufficient food and no longer ask others for money. According to local key informants, women in Prisha’s village provide close to 40 percent of the labor in wheat production, in particular weeding and harvesting, as well as fertilizer application when zero tillers are not used. Moreover, approximately 25 percent of women in the community, mainly from low castes, work as agricultural laborers.

A widow with three young children, Bakul, 32, lives in the Indian state of Uttar Pradesh, in a village called Shanti. Shanti’s 3,700 inhabitants abide by a deeply entrenched caste system. Born into a middle-class and upper-caste family, Bakul was married off as a teenager to a man from a poorer economic background, who died tragically from typhoid in 2011. Currently, Bakul and her children live with her brother-in-law, his wife and their three daughters in a joint household. Facing financial hardship, Bakul began working as a farm laborer two years after getting married, doing mostly sowing and harvesting. Never having worked before, she learned by watching others. “My family was very supportive of my work,” she says. “My husband, his younger brother and my in-laws appreciated the fact that I had agreed to work though I came from a financially stable family. My friends were happy that I had decided to help my family by working, and they helped me learn my work.” Bakul identifies her decision to work as a farm laborer as the turning point of her life path. Not only has farm labor helped her to support her children, increased her economic independence and strengthened her decision-making power, it has also given her a strong sense of purpose. “The fact that I am able to earn and make a living has made me a confident woman,” Bakul says.

To be sure, Bakul’s still encounters many restrictions as a single working mom. As the household head, her brother-in-law makes most important domestic and economic decisions, like her husband prior to his death. Likewise, her physical mobility outside of work and her ability to sell in the market remain constrained. And like other women in Shanti, Bakul must balance reproductive and productive activities; she cannot simply withdraw from the household now that she is working. Despite such challenges, Bakul nevertheless reports her experiences to be very empowering: “I know that I can at least earn enough to feed my family and this gives me strength. I think my work brought a lot of meaning to my life. Till then I had led a very sheltered life. My work gave me exposure, and I learnt a lot of new things.”

The various examples from Box 9 and Box 10 illustrate what could be termed “a certain elasticity” in local expectations of what is appropriate behavior for a woman or a man, depending on the specific circumstances. Differently put, a lower degree of alignment with local gender ideals or stereotypes may

---

<sup>11</sup> Names of all informants have been changed throughout the report for confidentiality reasons

be socially accepted in certain groups or for certain categories of men or women, e.g. the very poor, widows, scheduled caste.

The examples also remind us, that real-life is not straight forward, but strongly influenced by the various dimensions of the specific context. As such, the choices people make, whether in response to unexpected opportunities or challenges, or when facing adversity, often imply compromises and opportunities on other fronts. For instance, in Bakul's case she had to adjust to a different economic situation than the one she grew up in, although this meant doing low status labor and a serious loss of prestige. Yet, as she describes, taking charge of her own life and her children has made her a confident woman with strong self-esteem, as well as an active participant in her local economy.

#### 4.2.4. Slowly evolving gender relations

We can see in the data quite diverse macro as well as more micro forces which are propelling normative relaxation and change on the ground. Some of the forces that study participants mention as driving these changes include men's growing labor migration, improved educational opportunities, growing awareness of gender rights, and, less often discussed, development interventions with gender targets. The pace of these changes, moreover, remains slow and highly uneven in our sample.

While far from the rule, there are clear indications across study countries—including in more restrictive environments—that men are slowly taking part in responsibilities more typically associated with women. For instance, a 35-year-old farmer and driver from Lehsat, Afghanistan explains that “a good husband should have good behavior and should be polite. He should help his wife in house works because they live together. He should fulfill all the needs of his wife and give her rights to her.” Another man from Borian, Bangladesh says that “it is not possible for the wife to do all the household activities alone. So husband-wife should share the workload. So, a good husband must share the responsibilities of his wife when needed.” And according to a 33-year-old man farmer in Chanda, Pakistan, a good husband “should help her (his wife) in household chores.”

Despite these encouraging testimonies, one should be careful when assessing the actual extent of normative change occurring. Restrictive norms around economic agency, marital roles and household tasks remain deeply entrenched in the social fabric and everyday practice in most of the villages under study. Even in the three Nepal communities – where gender norms overall appear to be less restrictive than for example in Afghanistan, Bangladesh and Pakistan—and where increasingly women suggest that good husbands should take part in cooking, household chores and childcare—men respondents largely overlook household responsibilities in their reflections on “the good husband”. Similarly, although in several of the Uzbek case-studies we see noticeable signs of increased participation of women in economic activities, testimonies by study participants still suggest that actual normative change remains slow, as this comment made in the middle-class women's FGDs in Nodira illustrates: “Old stereotypes hinder local people from innovations. For example most people don't consider woman as successful businesswoman. They think that she could be only house keeper and garden worker”; or like this

comment from the poor men's focus group in Nodira, Uzbekistan: "[A] man always needs to act like a man. He must support the family, make money, be prepared to make critical decisions, create conditions for a better life for all family members." Just like local gender norms often influence the way people discuss women's farming and economic contributions; it would seem fair to assume that openly speaking about assisting with household chores, child care or sharing economic and decision making responsibilities with one's wife might still be perceived as risky and socially uncomfortable for men in a number of the study communities.

However, in some communities there are clear signs of change in the power relations and normative frameworks related to gender. One factor which plays a role in a number of the case studies is increasing out migration, especially by men. Women's agricultural responsibilities are prone to shift when men migrate for work or are absent for other reasons. The change may include both increased work burden as well as increase decision-making power. For instance, in Pakadi, a community in Southern Nepal with a population around 7,200 people, and high male out-migration, local key informants estimate that more than half of the women in the village own or manage land and head their households, and about 80 percent do farm work. These changes are not perceived uniformly by the villagers. On the one hand, young women appreciate that their decision-making capacities have grown with the labor emigration of their husbands, e.g. "women are able to make own decision due to unavailability of husband [as he is] abroad for foreign employment." On the other hand, these same young women acknowledge important tradeoffs: "Now women are compelled to come out of the house because the husband goes abroad for work and all of the responsibilities fall on women's shoulders."

Local norms are also shifting due to changes in markets and services in the study villages. The case of Gobado, Ethiopia provides a particularly compelling example of the rapid normative changes that can sometimes accompany interventions with gender objectives. With a population of 10,800, Gobado is situated in the north central part of the country. Although many gender norms, such as those which limit women's control of major assets, remain restrictive, men and women in Gobado report notable shifts from men controlling household decisions to processes of joint decision making with family members. Compared to a decade ago, women also speak of their greater participation in community life and learning opportunities (e.g. in trainings and local governance), increased access to credit, and men's first steps toward greater assistance with household chores. Many respondents attribute these changes to the "Community Conversations" intervention, which included training on harmful traditional practices, HIV/AIDS and gender equality. The Community Conversations program was also complemented by local government initiatives to strengthen awareness of and compliance with women's rights, for instance, to own property and acquire credit. A woman key informant reports that community members learned a great deal from the program: "We had a chance to clearly identify the bad from the good and decided together to change the way we lived and to discard those practices that are dragging us down. It was a good thing, but [the intervention] was discontinued around four or five years ago." Along with these normative changes, men from Gobado report 54 percent poverty reduction and women 24 percent over the past decade. Many testimonies from Gobado, including Abebe's in Box 11, suggest that "Community Conversations" contributed importantly to more collaborative gender relations, empowerment, and poverty reduction in many of the village households.

### **Box 11. Abebe's experience with "Community Conversations"**

Abebe is a 38-year-old married father of two. Abebe reports that he has climbed up from step two to three on the Ladder of Power and Freedom, explaining that trainings in the village have made him more knowledgeable and strengthened his capacity to make better decisions. In particular, Abebe recounts how involving his wife in household decision-making has improved their food security and overall quality of life: "Yes, previously I used to make all the decisions by myself. At that time we were poor, and even if we had crop, we were almost starving because I used to feel it was only mine. And therefore, I would even sell it while knowing there is nothing in the house." "However, later, through Community Conversations," confides Abebe, "I learned that this is inappropriate and also one of the reasons we are poor. So I changed that. And therefore, now I am involving my wife in everything. My wife has become my companion and this has improved our lives." Abebe also reports that Community Conversations helped him to understand the importance of letting his wife participate in trainings, learn and improve her skills, and this is now helping them work together to move their family forwards and out of poverty.

Abebe describes himself as an optimistic person with lots of energy and hope for change. He attributes his enthusiasm largely to the trainings which transformed his relationship with his wife and with the community. He also credits improved wheat varieties with helping him to become a more successful farmer. Now Abebe no longer worries about household food shortages, and he can send the children to school, and buy cattle.

Though the positive effects of the intervention are quite striking in the testimonies from Gobado, not all have been supportive. When the conversation turned to men's decision making power, some men in focus groups and interviews express frustration over losing authority and the ability to make important decisions without consulting with their wives. Likewise, in the young men's focus group, some say they resent being asked by their fathers to help in cooking, cleaning and collecting firewood, as these are tasks normally for women and girls.

The experience of Abebe and of others sharing views, illuminates how a different way of thinking of and operationalizing the relationship between men and women can change family farming dynamics, as well as household income, food security and overall quality of life. Such processes suggest new ways of conceiving and influencing rural development processes, including in relation to wheat-based farming and livelihoods. The Community Conversations approach aligns with recent thinking in innovation systems research, which considers key elements of more inclusive innovation processes to include changing mindsets as well as the interplay of different actors and relationships involved (e.g., Berdegue 2005; Boogaard et al., 2013). As such, these findings also fit well with the way agricultural innovation is defined in the GENNOVATE research design, as including not only new agricultural technologies and practices, but also new ways of organizing agricultural activities and processes. Across the WHEAT case-studies, Gobado is the only case where this type of intervention has been implemented; and considering the promising results this is clearly an approach which merits further research.



### 4.3. The uneven and shifting terrains of women’s economic agency

Above, we have outlined how in most contexts men continue to dominate economic and household decision-making. While certainly true, this does not mean that women are without financial responsibility or influence. In Ethiopia and Uzbekistan “good wives” are often described as entrepreneurial. Men and women community members from Chala, Ethiopia, for instance, explain that a good wife brings income to the house by selling goods at the market. Similarly, a woman in Ilkhom, Uzbekistan describes a good wife as “enterprising and inquisitive.” Elsewhere in the study, men and women stress the good wife’s important role in managing household finances: “a good wife is the one who arranges her home expenditures to the extent that her husband can afford,” declares a member of the poor men’s focus group in Panali, Afghanistan. According to a participant in the poor women’s focus group of Matipur, Bangladesh, “To be a good wife, a woman needs to be cautious about the expenses and income of the family. It is much needed for the improvement of the family. If the wife is not like that, the family cannot improve even though the husband earns a lot.” Despite these economic responsibilities, however, our data indicate that in many contexts women’s control of household budgets as well as their own earnings and assets is often limited.

#### 4.3.1. Marital decision-making on “women’s” resources

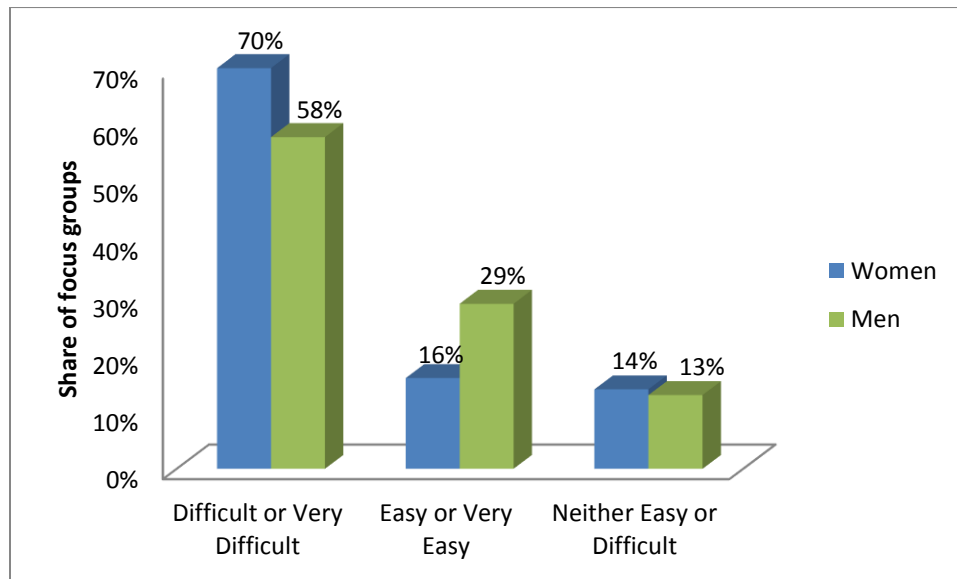
*“It is a male dominated society and women can cry and fight but they cannot defy their husbands.”  
“Being a man he can do whatever he wants.”—Middle class women’s focus group, Kulfi, India*

Capacities to mobilize land, finance, and other assets are fundamental for agricultural innovation, and gender disparities in ownership, control, and use of household assets are well documented in the literature (e.g., World Bank & ONE, 2014, Quisumbing, 2011; Doss, 2014). For GENNOVATE, we wanted to understand more about the norms which impinge on the resources that a woman could potentially acquire or accumulate independently, in order to invest in her own agriculture-related projects. To explore these questions, we developed a vignette about a “typical” couple who lives in the village and the decisions “they” are facing about the “wife’s” inheritance. Here we examine the discourse that surrounds the inheritance findings. Overall, focus groups of both genders testify to a discouraging environment for women’s economic independence. That being said, the norms around inheritance are not always clear-cut. For example, although men typically exert authority over inheritance, there is also some evidence of women negotiating inheritance control.

With their typical local couple at the forefront of their minds, facilitators ask middle-class focus group participants to each rate (anonymously on small slips of paper), how easy or difficult it would be for the wife, let’s call her Aisha, to use a recent inheritance from her family to purchase a plot of land near the homestead in order to expand her vegetable garden. Her husband, who we will call Ali, however, wishes to use her inheritance to buy a motorbike. Across all WHEAT study countries, 64 percent of women and men respondents indicate that it would be difficult or very difficult for the wife to purchase her plot in the face of her husband’s resistance. Figure 14 compares these ratings by gender, with women’s focus

group members finding it on average more difficult for Aisha to control her inheritance than men respondents.

**Figure 14. How easy or difficult will it be for Aisha to purchase a plot of land without her husband's support? (86 middle-class focus groups)**



We consistently find across the cases that women struggle to control their inheritance, whereas men experience little difficulty. Still, scattered testimonies are laced throughout the data that challenge men's dominance over inheritance. And even when focus groups ultimately concede that the husband would prevail in commanding inheritance, participants often engage in heated discussions.

In Ethiopia, results vary significantly by community and gender. For example, women in Akkela all agree that it would be very difficult for Aisha because, as one 42-year old woman farmer comments, "Women in this culture cannot decide." In contrast, men of Akkela vote that it would be easy or very easy for women to go ahead without their husband's support. Yet, the men's discussion of their ratings indicates that it may not be as easy for Aisha as their ratings suggest:

- It is her money and she can do whatever she likes with it. And it is very easy for her to go ahead.
- How can we say "very" easy? Even if it is her money, they are husband and wife and there is no such thing as his or hers in such relationship. Whatever she has is his as well and whatever he owns also equally belongs to her. It could be easy for her to do what she wants after reasoning and convincing him.

Similarly, in Gobado, Ethiopia, women find it to be difficult and men easier for women to control their inheritance. According to a divorced 35-year-old woman farmer from Gobado, it will be hard

Because there will never be any peace in the house. Whatever she has or he has is their common property. There is no single owner here. They both have to agree and when they buy such a thing, they will be asked to put both their signatures. . . . So it is difficult to buy without his consent. However, she can convince him even though it may not be easy.

In Uzbekistan as many as 83 percent of the middle-class men's and women's votes indicate that it would be difficult or very difficult for Aisha to purchase land without her husband's support. Overwhelmingly, Uzbek men and women describe husbands as the primary decision-makers. As a woman from Kamola explains, "She cannot buy the plot without her husband's permission because he is a man and the head of the family." Likewise, a woman from Ilkhom says that an "Uzbek woman needs her husband's permission and support in all activities, even in small business. She must inform him and get his agreement." A man from the same community elaborates further: "In our tradition the husband should be consulted and sought for approval, and if the wife makes her own decision such behavior might damage marital relations deeply. It is like an insult for the husband." Elsewhere in Uzbekistan, men also suggest that marital relations could suffer if women take economic decisions independently.

The strong exception to these patterns is in Nepal, where 82 percent of women say it would be easy for Aisha to purchase the plot. As a 53-year-old woman farmer from Thool, Nepal explains, "The property belongs to [her]. So it would be easier for her to make decision." However, as the following interaction indicates, views are divided in the men's middle-class focus group:

- If the husband says something, the wife should agree; otherwise there will be a quarrel between them.
- It is her money so she can buy it easily.
- Why do husbands need to interfere [with] his wife's money as it is adding up his own family's property?

Overall, just 6 percent of Nepalese men interviewed rate that it would be easy for a woman to purchase land without her husband's consent.

When we reverse the scenario and give the husband the inheritance, few participants feel a need to explain why it would be easy for him to buy the motorbike in the face of his wife's resistance. For example, the 53-year old woman farmer from Thool, Nepal states that "he is a man and property belongs to him. Obviously it would be very easy for him." Some even observe that a husband wouldn't bother to consult a wife about his inheritance. As two women from Gadha, India explain, "They [the men] will do whatever they want and not bother with what we have to say"; and "they are not much bothered with logic and what will help us more; they will do whatever suits them." A woman from Ilkhom, Uzbekistan remarks, "It will be easy because [the husband], as most Uzbek men, doesn't need to inform his wife about his plans. He can inform her about his purchase after."

And yet, just as we saw in the narratives about women negotiating inheritance control, there is also evidence indicating that men do not necessarily *always* hold a monopoly over inheritance decisions. In

Gobado, Ethiopia, for instance, all women say it would be difficult for the husband to purchase the motorbike without his wife’s support. One 47-year-old woman farmer attributes her rating to evolving gender norms: “It could have been extremely easy for him in the past. He could buy it just like he was buying bread. However, currently she has equal rights. She can return the cycle as much as he can make her return the land.” By comparison, men in Gobado are split on the matter, with five saying it would be easy or very easy, and the rest spread across the remaining options.

Meanwhile, in the four Uzbekistan cases—which all strongly agree that women cannot control their inheritance without their husband’s support—community members are somewhat torn as to whether the husband can (or should) purchase the motorbike with his inheritance. In Kamola, women explain that such decisions should be taken jointly: “They [men] cannot do whatever they want. They should make the compromises to reach an agreement together.” Men from all four villages say they have the freedom to purchase the motorbike, but that they are better off talking with their wives and buying something that fills a family need. “Ali has more freedom,” a man from Kamola comments, “yet it is a family decision to a large extent. Better to spend or even invest for the future.” Similarly, according to a man from Nariman, the husband “has more freedom in decision-making, and if he had a teenage dream of purchasing a motorbike, then he can buy it. However, it is better and more productive to consult with [his wife] for the best way to use this money.”

#### 4.3.2 Gender norms and economic enterprise

Several of the GENNOVATE data collection instruments explore the local climate for exercising economic agency. In the middle-class men’s and women’s focus groups the facilitator asks participants if their community and its surrounding area is a good place for a woman (if a women’s group) or a man (if a men’s group) to run an agriculture-related business or sell farm produce. The resulting pattern of responses is remarkably gendered (see Table 9).

The majority of women’s focus groups (58.1 percent) do not perceive their community as a good place for a woman to do agricultural business, with participants in more than half the cases explaining that the main reason is society’s or husband’s disapproval. The majority of men’s focus groups, by contrast, consider their community to be a good place for a man to run an agricultural business (58.1 percent).

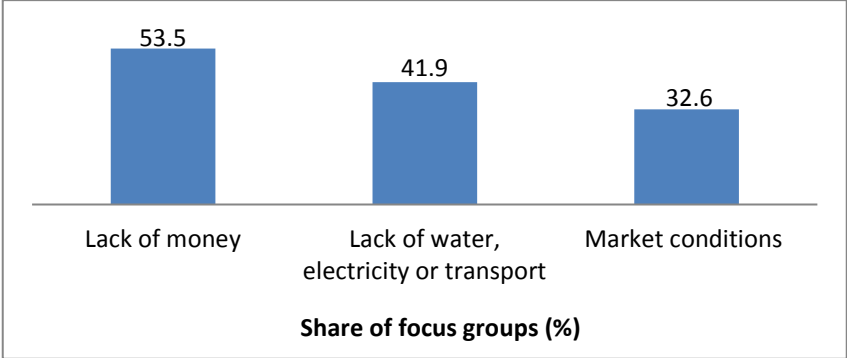
**Table 9. Perceptions of middle-class focus groups on local climate for their own gender to run an agricultural business (Share of 43 focus groups, %)**

Women’s focus groups		Men’s focus groups	
Good place for business for women	25.6	Good place for business for men	58.1
Not a good place for business for women	58.1	Not a good place for business for men	27.9
Mixed	16.3	Mixed	14.0

In the cases from Afghanistan, Pakistan, Bangladesh, and Morocco most women indicate that they cannot do business because of disapproval from husbands or society. In Ethiopia and India women do not specifically mention gender restrictions as barriers for them to do business. Nevertheless, more women than men in these countries say that their area is not a good place for business, and they explain this either by lack of resources or by poor market conditions. Interestingly, in the very same communities in these countries, men often do *not* identify market conditions or lack of resources as barriers to business, instead describing the opportunities as favorable. These gender differences in perceptions of the local business climate may mean that even in places where women can formally do business, they still find these opportunities to be difficult due the larger barriers that they face in access to resources and markets. Nepal is the only country in the sample where women consistently describe their communities as good places to open a business.

When asked to list the biggest barriers for a woman (if a women’s focus group) or a man (if a men’s focus group) to start a business in their area the responses were again highly gendered. For the middle-class men the top three barriers include: lack of money, lack of electricity/water/transport, and poor market conditions (Figure 15).

**Figure 15. Top three barriers for men entrepreneurs (middle-class men’s focus groups)**

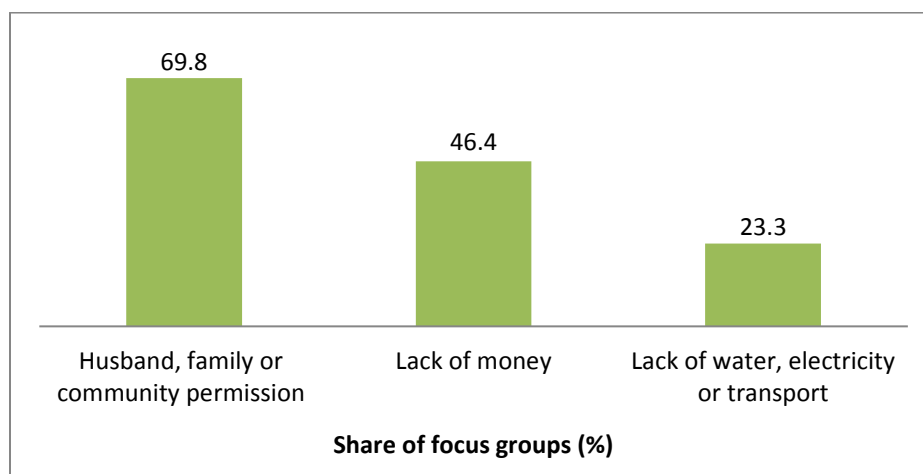


Meanwhile, for the middle-class women the single most important barrier relates to challenges with regards to the permission and acceptance of their husbands, families, or of the general community (Figure 16). In the narrative data underlying these numbers women explain that it is impossible or difficult for women to start a business because their husband, their family or people in the community in general would not allow it or would talk badly and “spread rumors.”

The second and third top barriers discussed by women for entering into business echo the men’s: lack of money and lack of services, such as electricity, water, and access to transport.

After exploring men’s and women’s economic agency, the linkage to freedom of mobility levels become evident. Nevertheless, women’s economic agency is often restricted not only by limited physical mobility, but also by strong prejudice and disapproval of women doing commercial activities.

**Figure 16. Top three barriers for women entrepreneurs (middle-class women’s focus groups)**



And yet, in the face of such strong social, gender and economic barriers to entrepreneurship, women throughout our WHEAT study countries continue to find creative ways to earn money and support their households financially. In Box 12 we return to Shanti, India, a community with high levels of gender and caste inequalities, including mobility restrictions, but where women nevertheless exercise strong economic agency.

### **Box 12. Women’s economic agency in Shanti, India**

Approximately 70 percent of the population in Shanti depends on agriculture as their primary source of livelihood, with wheat, paddy, and maize the primary crops. Men are much more likely than women to learn about, access, and use agricultural machinery, such as the zero tiller and combine. Women’s activities in agriculture traditionally focus on manual sowing, weeding, and harvesting. Mechanization has significantly reduced critical paid-work opportunities for poor and low-caste women, while middle-income women from higher castes have welcomed labor-saving technologies that allow them to retreat from the field and spend more time at home or on other economic activities. Women’s engagement with income-generating activities is traditionally associated with low status and is generally considered inappropriate except for the very poorest. Though still rare, a few better-off women are working to change this. Indeed, this is the case for both Pari and Saanvi.

Pari is a 35-year-old married woman with two young children who lives with her in-laws in a joint family unit. Like women in similar situations from Shanti, i.e., young, recently married, and relatively well-off, Pari is expected to abide by certain societal standards. Her primary place is in the home as a dutiful wife, mother, and daughter-in-law. Women’s physical mobility in Shanti is highly restricted, as is working outside the home. For example, when presented with the hypothetical scenario of a woman selling vegetables in the market, focus group participants regardless of age and gender describe it as unthinkable. Shanti society does not take kindly to women who work because, according to one man from the poor men’s focus group, “A woman has to maintain her dignity and preserve it.” Community members often reprimand women who go to work leaving their children behind at home. As one participant from the women’s middle-class focus group explains, many women are quite comfortable with this societal arrangement: “There is no reason for us to work when there are men at home.” Pari, however, is an

exception to the rule. Despite strong pressure, particularly from her in-laws, to dedicate herself entirely to the household, Pari went against social convention and set up her own business: a home beauty salon. “I have studied well and am a double graduate,” she relates. “I did not want all my efforts to go to waste and wanted to do some work. In my village women are considered the pride of the home and supposed to stay indoors. But I wanted to work. . . . I was not happy doing the mundane household work and wanted to do some work and earn money.” As a result, Pari has gained some economic independence, as well as the respect and support of her husband. Her in-laws, though, remain unsupportive: “My family is not happy about the fact that I am working. I have gone against them and started my business. So obviously it will take some time for them to accept a working daughter-in-law.”

Saanvi, 26-year-old married mother of one, was so inspired by Pari—a neighbor of hers—that she decided to open her own hair salon. Saanvi’s in-laws also strongly opposed her working, however, Saanvi and her husband do not live with his parents. “My in-laws were very unhappy with my decision to work,” she explains. “They tried to reason with us and told us that society will ostracize us, etc. But now that we have lived separately we could take our own decision. And we did, and I started to work.” For Saanvi, earning an income has improved her relationship with her husband and enhanced her decision-making capacity. “Earlier I did not have much say in household matters,” she says. “But now my husband consults me on every issue and we take joint decision on most matters. I also help take care of the financial needs of my family.” Like Pari, Saanvi is expected to balance her household and economic activities: “There is a lot of demand on my time. I cook and clean at home, send my child to school and take care of his needs. I also take tuitions at home, and then I also work as a beautician. So I am always on my toes.” But for both of these strong women, the financial independence, confidence, and other psychological benefits gained from working outweigh the costs.

Women’s entrepreneurship, such as Pari’s and Saanvi’s detailed in Box 12, need to be situated within the village’s broader socioeconomic context. Both are middle-class, upper-caste, and educated women whose primary motivations to work were driven not by financial necessity, but by interest and personal initiative and ambitions to apply their skills in a productive and profitable way. Though their decisions to work break with community gender norms, their chosen career paths—as hair stylists—largely reflect their social, economic, and caste status, and remain within a sphere closely associated with women. As alluded to above, the introduction of machinery to Shanti has reduced women’s drudgery, permitting some middle-class women to redirect their income-generating activities by engaging in occupations that are considered better and less inappropriate for women, such as tailors, tutors, and beauticians. For women like Pari and Saanvi, farming is not a desirable occupation. “I have not done anything related to agriculture,” Pari admits. “The men in the family do farming. Women in our village rarely work [in farming] unless there is pressing financial emergency.” However, this is precisely the situation of the many poor and low-caste families whose women regularly work as farm labor, and who have seen many of their agricultural jobs disappear, replaced by more efficient machines. Ironically, it is poor men and women in Shanti that most often defy gender restrictions on women’s movement and economic agency due to the simple fact that they need to put food on the table. Effectively, this also means that these poor farm labor women are not able to live up to “maintaining and preserving their dignity” as the gentleman from the poor men’s group termed it above.

Also from Shanti, Bakul’s story highlights the distinct challenges confronting local poor women. In stark contrast to Pari and Saanvi, both of whom obtained financial backing from their husbands and attended year-long trainings to become beauticians, Bakul entered the farming profession penniless without ever

receiving any instruction. But unlike her middle-class counterparts, no one in Bakul's social circle or extended family discouraged her from working. "My family was very supportive of my work," she explains. "My husband, his younger brother and my in-laws appreciated the fact that I had agreed to work though I came from a financially stable family. My friends were happy that I had decided to help my family by working, and they helped me learn my work." Similar to most poor women in Shanti, Bakul never had the chance to interact with extension agents and learned instead by watching others. But if given the opportunity to gain new knowledge and learn from agricultural extension officers, she is precisely the type of woman who could flourish as a change agent for poor women and men farmers. Though under unique economic, social, and cultural circumstances, Pari and Saanvi are also stretching the boundaries of acceptable economic roles for women. Despite strong pressure to conform to local norms and customs, both have become entrepreneurs in their own right. Stories like theirs and Bakul's challenge the stereotype that men hold all economic and decision-making power and remind us that gender roles are in constant flux.

The degree of normative restrictiveness and the associated risk of social stigma for those who break the norms vary across communities and for different social groups within them. The pressure to conform to local norms and customs can be hard, and it can take great courage and resolve—agency— to swim against the current and challenge the social parameters for what is appropriate or not for men and women. This agency is vital for innovation and offers a great opportunity for interventions designed to facilitate more inclusive agricultural opportunities.

#### 4.4. Youth perspectives on empowerment, gender norms, and agriculture

In this section we turn to the youth dataset to learn about their sense of agency and aspirations and the normative dictates framing their perceptions of local agricultural opportunities. Most young people in this study observe limited agency in their lives. In important respects, young people often perceive their farming and other opportunities as highly dependent on the elders in the family in terms of authority and financial support. For young men, such dependence can serve as a barrier to innovation. Young women, meanwhile, feel even more constrained due to diverse gender restrictions, including the pressure to marry and have children.

While sharing their aspirations, young men and women clearly lean towards employment opportunities outside of agriculture; that being said, the findings still suggest significant interest in farming from young men and women in particular study communities, and in these contexts, young people offer a variety of suggestions for making agriculture more gender-sensitive and attractive for youth.



#### 4.4.1. Agency and dependence

*“We are born men. We have to decide, it is expected of us. . . . However, since we are youths, there are things we are not making decisions on, like if the father is around he will make every decision in the house.”*

*—Young man, Chala, Ethiopia*

*“How far a girl will study, who she will marry, even when she will take children, these are all decisions made by her spouse as well as her parents. Her in-laws have a say in it, too.”*

*— Young woman, Borian, Bangladesh*

The median ratings on the five-step Ladder of Power and Freedom are 3.00 for young men’s focus groups and 2.55 for young women’s (Box 2 describes the rating activity). The most common theme in young men’s and women’s testimonies about their ratings pertains to parental authority. Across study countries, we find examples of young men—particularly those still studying and/or living at home—discussing their subordinate status in relation to their parents and how this constrains their power and freedom to make decisions around matters such as farming and education. Even young men rating their agency as moderate or high still often highlight the importance of consulting and garnering support from their parents and elders. For most young men, agency is closely tied to their life cycle position; once they become *men* with jobs, families to support, and houses to lead, their decision-making capacity usually increases. In comparison, young women’s agency is more static. This is true because a young woman’s limited agency stems not only from her youthfulness, but also from the heavily ingrained social norms that encourage male authority and female submissiveness and which limit, in more restrictive contexts, a young woman’s physical mobility, access to educational opportunities, and say in marriage and childbearing decisions.

To explore these dynamics, let’s first turn to young men’s sense of agency in Borian, Bangladesh, where the majority of study participants rate the young men of their village on step three, or a moderate level agency. Discussing his rating, one young man comments, “Here the freedom of work exists. Freedom of doing agricultural activities is also evident. Other than these, father is the decision-maker. Seventy percent of the inhabitants of the village cast their vote according to the will of their parents.” Another participant from Borian explains that a young man can only decide who he will marry if he is employed; otherwise, he must consult his parents. In Nariman, Uzbekistan—one of our tipping point communities—most young men also put themselves on step three of the ladder because they remain financially dependent on their parents. “We are too young and dependent on parents,” declares one young man. “We do not make [our] own money.” Two other respondents from Nariman agree. “We have no experience in dealing with real life,” one says. Another adds, “We have to consult with parents for the next 10 years at least on the steps to take in our life.” The one vote on step five for high agency comes from a young man who has gained his financial independence: “I already make my own money from carpenter work, and my parents like providing me with freedom to act in my life.”

Similarly, in Badero, Ethiopia (also a tipping point), young men attribute their moderate decision-making power to “maturity, lack of ability, and lack of capital.” As one 16-year-old student observes, “We are dependent on our families; we are not self-sufficient yet. So our families make most of the decisions for us.” However, according to a 20-year-old farmer, this inability to make decisions is only temporary:

“Freedom and decision-making come step by step. I may not have wealth now. But when I have my own property and wealth, I can make decisions myself.”

While the above narratives offer little insight into how a young man’s agency (or lack thereof) affects his ability to make farming decisions, we find scattered evidence elsewhere suggesting a link between dependency on parents/elders and one’s capacity to innovate. As a young man from Chala, Ethiopia describes, “For me the power to decide is less because if I want to start to work as farmer since the plot is owned by my parents I couldn’t decide on it unless I got their permission to do so.” On a similar note, a young man from Murmura, India states, “We do all the different types of agricultural activities but still we don’t take any decision since our parents are more experienced than us.” For better or worse, such dependence often breeds a culture of deference in which young people’s ideas for agricultural change are not always well received, as illustrated by this testimony from a 24-year-old male student in Rawatgaon, Nepal: “I must transform the traditional farming system to advance the system. I must bring a total transformation in agriculture. But when I passed the JTA course in 2068 B.S. (2011 AD) and came back home, I couldn’t do anything because I didn’t have a favorable environment. Our elders will not listen to us. We do not have irrigation. No irrigation then nothing can be done in agriculture.”

For young women in many of the study communities, the passage into adulthood and family formation does not signal empowerment, but typically quite the opposite. In the restrictive environment of Borian, Bangladesh, young women place most girls from their village on step two, low agency, because parents take all decisions over their lives. Interestingly, a young woman’s agency in Borian tends to decrease with marriage because her spouse and in-laws join her parents in taking decisions for her: “And the girls who got married, they need their spouse’s permission as well as their parent’s opinion regarding anything they want to do. Her decision alone has no value at all.” Another young woman of Borian further details her limited freedoms, explaining that she can only go to the doctor by herself if “she gets really sick and is in need of immediate medical attention.” In all other circumstances, she must be accompanied by her husband or in-laws.

Besides dependence on parents and other elders, girls in Borian explain that their agency is low because they get married too early and have no opportunities to pursue education. Women in Borian typically marry between ages 14 to 16: “Parents force them to get married at a very young age and so they have to leave their studies,” says one young woman. Another reflects that in addition to stripping women of their education and decision-making power, early marriage deprives girls of the opportunity to form their own opinions, decisions, and dreams, let alone act upon them: “You need to reach a certain age to have cleverness, sense of right and wrong; like that you need to reach a certain age before you can start dreaming. In our village we don’t get to reach that age [because] we get married off before that.”

In contrast, young women from most of the six tipping point communities speak favorably about their decision-making capacity on the Ladder of Power and Freedom. Overall, the medium rating for young women from the tipping points is 3.13, compared to just 2.43 in the other 37 communities (see Table 3). In the tipping point of Cheeda, India, young women put themselves well above step three (3.38), one of the highest of the young women’s ratings among the 43 WHEAT communities. Young women from

Cheeda link their perceived level of power and freedom with their parents support for their education, a change that is considered crucial by focus group participants: “Education has brought about a revolutionary change—we are wiser and more capable.” Another in the group concurs: “When our parents decide[d] to send us to school, they decided to empower us.” Furthermore, the young women say that their parents take their daughters’ opinions into account and encourage them to speak up for themselves.

In the two other tipping point communities of Nariman, Uzbekistan and Badero, Ethiopia, young women are positioned on step three because they are too young to take major life decisions independently from their parents. However, since gender norms in Nariman and Badero are more relaxed than, for instance, in Borian, parents do not force their daughters to get married early and don’t impede their education. A respondent from Nariman explains, “We have freedom to go to colleges, to go out with friends, but we should notify in advance our parents.” In Nariman girls even mention that they tend to pursue higher education more often than boys because boys want to start making money as soon as possible, while girls prefer to obtain a profession. In contrast to Borian, young women in Nariman and Badero do not name gender norms among the main reasons why they end their education; instead they talk about lack of interest, low grades, poverty, and bad company (see section “gender constraints to educational access” below for broader findings).

In Badero young girls express resistance to old and deeply patriarchal values. “It is very important mainly for girls to protect themselves from harmful traditional practices and early marriage,” explains one participant. Another talks about how her mother encourages her to be more independent: “My mother told me ‘if you are not educated you are dependent on your husband and you cannot make your own decisions and this will eventually bring major dispute in the marriage.’” Adia, a 23-year-old unmarried woman from Badero, declares that she will pursue her goals despite her parents’ poor financial situation: “My family couldn’t support me financially to continue my education, but I have a plan to work in the daytime and study at night.”

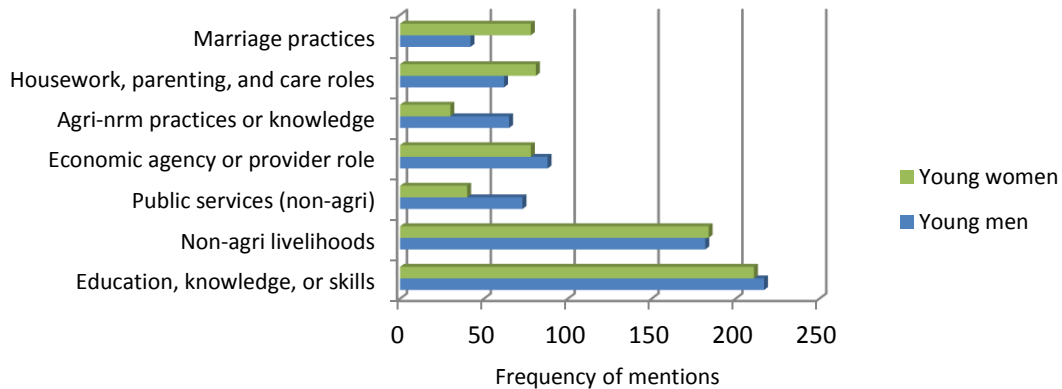
Examples from these tipping point communities demonstrate how, in contexts where gender norms are becoming more equal, parents can more easily support and empower both their daughters and sons to pursue their dreams. Also, the children may be inspired by their parents’ initiatives to transform the norms that constrain.

#### 4.4.2 Aspirations

Figure 17 presents the most prevalent themes from the young men’s and women’s focus groups narratives about their aspirations and what they hope to do with their lives when finishing their education. The two most desired options among youth include acquiring education, knowledge, or skills, and engaging in non-agricultural livelihoods. Practically in every single community young men and women voice their dreams of becoming teachers or doctors or nurses, the most sought after professions

among the study participants. Other popular careers for young people are tailors, lawyers, engineers, athletes, and bankers, as well as any governmental job or private business.

**Figure 17. Most prevalent coding associated with youth aspirations for education and their future (86 youth focus groups)**



Note. All codes with >50 mentions

Less numerous are testimonies of young people stating that they hope to work in the agricultural sector. In India, for example, most young men discuss agricultural practices as something they would like to leave behind. As a young man from Cheeda, India describes, “[Agriculture] is very demanding and there are no returns.” Instead, young Indian men more often mention options such as migration (Prem, India), trying out professions such as police work (Gadha, India), or doing “something which is intellectually challenging rather than physically demanding like agriculture” (Kulfi, India). Occasionally, young men see education as vital to improving their agricultural skills and knowledge and pursuing more profitable farming activities. As a young man from Dampur, Bangladesh comments, “I think education is needed for livelihood, and even it is required for better agricultural farming now. One can move or take decision more confidently if they are educated. Life is not easy without education. It is not possible to get a respectable job in job market without an education or running a business.”

For young women, aspirations related to agriculture are even less common than those of young men. Nevertheless, there are examples across the eight study countries of young women expressing positive attitudes towards farming. For instance, several young women in Uzbekistan show strong determination to engage in agriculture. One young woman from Ilkhom, Uzbekistan expresses that she would like to “be a specialist in this field, to improve the life condition. We have another option to be farmers and grow wheat and cotton. Our successful women farmers have very good harvests and can help their families with additional income. They open new job outlets for other people of the community. They become role models for us.”

#### 4.4.3 Gender constraints to educational access

As described above, both young women and men attach great importance to education. However, the data clearly reveal that girls remain disadvantaged when it comes to educational opportunities. Indeed, when asked whether parents show the same commitment to educating boys and girls, 42.9 percent of youth focus groups answered that parents prefer to invest in education for boys because, while sons are expected to take care of parents in their old age, girls more often get married and move away (Table 10). As a young woman from Prem, India explains, “They think daughters are *paraya dhan* [i.e., someone else’s wealth], as they marry and go to their husband’s home, and so they don’t bother too much about her education.” Other reasons mentioned for investing less in girls’ education relate to safety, e.g., fear of “eve teasing,” rape, pregnancy, or eloping, cultural reasons, and difficulties for girls in finding jobs even when educated.

**Table 10. Do parents show same commitment to educating their daughters as their sons? (Share of 86 youth focus groups)**

The same commitment	Parents prefer to give education to boys	Parents prefer to give education to girls	Mixed opinions*
32.1%	42.9%	4.8%	20.2%

*\*Indicates differences of opinion within the focus groups, most often with some members reporting their parents have the same commitment and others a preference for boys*

Still, a third of the youth focus groups consider that parents show the same commitment to educating their sons and daughters. In Nepal, all youth focus group participants answered that girls and boys enjoy equal rights in terms of education. According to a young man from Thool, Nepal, “Nowadays parent’s mentality is changed. They treat their son and daughter equally. If you see in the school, there are many boys and girls going to school.”

Interestingly, in several of the Indian communities (as well as to a lesser extent in Pakistan and Bangladesh) respondents explain how parents’ efforts to educate their daughters are motivated by their desire to marry them off into good families. As one young man from Kamani, India describes, “Earlier, till two decades back, parents did not send their girls to school but today educating girls is equally important. Today boys also want educated wives.”

The most frequently mentioned reason for both young men and women to end their education is family poverty. Most of the time, however, early marriage remains one of the main obstacles preventing young women from continuing their education. In fact, when asked to consider the two main reasons, early marriage emerges as the second most important factor for young women (Table 11). Besides early marriage, gender constraints identified include safety concerns, absence of separate schools for girls or women-teachers, eve teasing, fear of eloping, pregnancy and gender stereotypes in general. Boys rated the absence of nearby education facilities as the second most significant factor for ending their education.

**Table 11. Most common reasons why boys and girls end their education (86 youth focus groups)**

Most mentioned reasons why boys end their education	Most mentioned reasons why girls end their education
1) Financial reasons/poverty	1) Financial reasons/poverty
2) No school or college in the village/no teachers	2) Early marriage
3) Parents (or youth) do not understand the importance of schooling	3) No school or college in the village/no teachers

#### 4.4.4. Childbearing decisions

Childbearing also affects a woman’s ability to follow her aspirations. Young men’s and women’s focus groups are asked whether women in their communities can decide when and how many children to have. Overall, the responses indicate that women have limited control over childbearing decisions, although the results vary considerably according to the country, community, and sex of the respondents. For example, in Afghanistan all young women’s focus groups respond that they cannot make childbearing decisions, while in the young men’s focus groups, answers are mixed. In contrast, all young men’s focus group respondents in Uzbekistan believe that women can either take the decision by themselves or jointly with their husbands. However, only half of the young women’s FGs in Uzbekistan say that they can take the decision, the other half responded that either the decision doesn’t depend on them either they need to consult the in-laws. In communities where women have little say in their childbearing decisions, husbands or in-laws often exercise strong power or influence, as illustrated by these testimonies from India and Pakistan: “Usually in-laws and relatives start demanding a child of the woman and she has no choice; but this is wrong and she should be allowed to decide,” explains a young man from Bete, India. According to a young man in Naidura, Pakistan, “It’s totally the husband’s wish but everyone from the husband’s side wants to have a child soon after marriage, and in any case if there is no children after the nine months then speculations start as to why there is no child.” Other reasons why women lack control over childbearing decisions include lack of access to contraception and information (mentioned in cases from Bangladesh and Pakistan) and pressure to have male children (mentioned in communities from Nepal, Pakistan, and India).

#### 4.4.5 Physical mobility

In the focus groups with young men and women, the participants are asked to reflect on women’s physical mobility and estimate from 0 to 10 the levels of freedom of mobility in the village, where 0 means that practically no women can move freely on their own, and 10 practically all women can move freely. The results demonstrate how perception varies between young men and women and across different countries. Of the eight study countries, Uzbekistan is where women enjoy the highest levels of freedom of mobility, while mobility is restricted for most local women across the villages visited in Pakistan, Afghanistan, and Bangladesh (see Table 12).

**Table 12. Out of every 10 women in the community, how many can move about freely on their own in the public spaces of the community? (86 youth focus groups)**

Country	How many women in 10 can move freely in the village? (mean ratings by country)	
	Young women's ratings	Young men's ratings
Uzbekistan	8.2	7.5
Morocco	6.6	5.4
Nepal	6.4	5.4
Ethiopia	6.3	6.8
India	4.5	6.4
Bangladesh	4.1	4.2
Afghanistan	3.7	4.0
Pakistan	3.4	5.2

With specific reference to aspects that can affect especially young women's working lives, the young men's and women's focus groups are asked whether a young woman can walk comfortably alone to the local market, and subsequently, whether and how this changes once the woman becomes *married*.

Across all youth focus groups, the majority of respondents estimate that a young single woman *cannot* walk comfortably alone to the local market. The main reasons given are social norms prescribing a young woman to be accompanied by a male relative or older woman lest her reputation is damaged; lack of security; religion; and exposure to harassment or aggression.

For a young *married* woman the picture, in general, is very similar. Many respondents—both young men and women—comment that in most cases her freedom of mobility either stays the same or is further reduced with marriage, due to the disapproval of husband or in-laws. Much is also contingent on the husband, as explained by a 23-year-old married woman from Panali, Afghanistan: "It depends on her husband; if her husband is strict and anxious he will say to her, 'Whatever you need, tell me and I will bring it for you.' But if her husband is good, he will let her go; like my own husband does, telling me to purchase whatever I want. It depends on the husband." Similarly, a young man from Akkela, Ethiopia explains, "Even if she is married she must have a satisfactory reason to go to market and need to have the permission of her husband. She is under his control [and] therefore cannot do whatever she likes without his consent."

#### 4.4.6 Young people’s farming roles

*“Boys are taught to use [farming] machines; they can use all these machines. Girls are not encouraged to learn and progress in their lives; boys are.”*

—Young women’s focus group, Ranipur, India

In addition to exploring aspirations and norms shaping education and physical mobility, young people also reflect on local farming traditions and learning opportunities, and how these differ by gender. Youth focus groups consider whether young people in their villages follow any local customs of women doing certain agricultural activities and men doing others; 74.4 percent of the young men and 48.8 percent of young women respond affirmatively that such gender differences are present. Such inconsistency in women’s and men’s answers reflects that men are much more likely than women to stress their leading role in farming, while attributing a secondary, minor role to women, as gender norms prescribe. Overall, most young people (61.6 percent in total) believe that yes, young men and women perform different agricultural activities mostly due to social and religion restrictions as well as physical differences between women and men. Youth farming roles are similar to those of the good man and woman farmer discussed at the outset of section 4.

#### Ability of young women and men to grow and sell crops on their own

The participants in the young women’s and men’s focus groups are also asked what difficulties a young woman would face if she tried to grow and sell a crop on her own, and separately, what difficulties a young man who tried to grow and sell a crop on his own would face (Table 13).

**Table 13. Level of ease/difficulty for a young woman or man to grow and sell a crop on her/his own (86 youth focus groups)**

Can a young woman grow a crop and sell it on her own?				Can a young man grow a crop and sell it on his own?			
Easy	Mixed	Hard/Impossible	No answer	Easy	Mixed	Hard/Impossible	No answer
11	16	56	3	46	32	3	5

The findings show that taboos are stronger for women selling agricultural products and/or going to the market than for women cultivating crops. Two young women from India and Pakistan agree that “she will not have any difficulty in farming and growing, but she will not be allowed to go to sell for fear of eve teasing” (Ganga, India); “We take care of the land from sowing till harvesting. We cannot go to market. This is not our tradition” (Chanda, Pakistan).

Moreover, there are restrictions on young women selling in bulk; often they can only sell small quantities or sell from home, without leaving the house. In Ethiopia women are allowed to sell only certain products (namely eggs, small livestock, and dairy). A young woman from Akkela, Ethiopia comments on the restrictions, “If it is in bulk, especially, he would sell it. I am not allowed to sell, if I do



without his permission that is the end of me. Sometimes I sell a small amount hiding from him to cover needs or household items.”

As with their observations about agency, young men indicate their subordinate status in their households as the primary impediment. Young men often depend on permission or material support and guidance from an elder in the family. According to a young man from Tehsul, Afghanistan, “There is no problem at all when a man wants to sell his crops, but the man should be the elder of the house. In case the household head is alive, the other men will not be able to sell things without getting approval from the elder of the house.”

### Opportunities for learning

Along with exploring local farming customs, we asked youth whether they perceive young men and women of their village to have the same opportunities to learn about and try out new farming practices or agricultural organizations. Overall, 62 percent of focus groups answered that young women do not have the same opportunities as men because of gendered social norms and limitations, such as restrictions on physical mobility and social interaction with the opposite sex, that prevent women from going to the fields and attending farmer trainings. The exceptions are in Nepal and Uzbekistan, and selected Ethiopian and Indian communities. In Nepal, women enjoy similar or even more opportunities than men for agricultural learning, due to relaxed gender norms and high levels of male migration. “Men and boys prefer to go abroad for foreign employment. Here in village, women and girls are getting more opportunities than men,” explains a young woman from Pakadi, Nepal. Constraints are perhaps strongest in Pakistan, where all 14 youth focus groups report that women do not have the same opportunities as men. As a 23-year-old man from Naidura, Pakistan comments, “No there are no such opportunities because our women are not allowed to go outside home and learn about new practices.”

Across study countries, young men and women offer suggestions for improving women’s access to learning opportunities. Recommendations are aimed mainly at how agricultural learning opportunities can better adapt to local community gender norms. For instance, two young men from Bangladesh discuss introducing female facilitators to trainings and taking women’s age and mobility restrictions into account when selecting training venues. “Women and female youths could have joined such training if ... conducted by female personnel,” says a young man from Master Goli, Bangladesh. A young man from Dampur, Bangladesh advises, “Most training programs or information dissemination mainly target the men and select a venue at public places. As a result, women and adolescent girls cannot attend those programs.”

Other respondents observe how women’s limited access to land and other resources impedes their agricultural learning, even if social norms don’t prohibit them from participating in learning activities. In Shanti, India, where many poor women farmers work for hire, a young man explains that women cannot access new agricultural knowledge and practices because they do not own land: “Women who do engage in farming activities do not have their own land and so they don’t learn new things; they

basically work as farm labor.” Similarly, a young woman from Gobado, Ethiopia describes, “Usually young girls have no land or cannot contract land on her own. She has no money to do that. But many boys are farming either on land they have been given by the family or the land they rented. What a girl can do is something that is within the family’s compound such as vegetable garden.”

Youth also share their thoughts more generally on how to transform current agricultural practices and institutions so that young people—men and women alike—can benefit more from them. Recommendations include: government land grants and trainings to young people (young women’s focus group, Badero, Ethiopia), establishing agricultural services in the village (young women’s focus group, Duranhai, Pakistan and young men’s focus group, Thool, Nepal), making agriculture more profitable (young women’s focus group, Cheeda, India), creating awareness among farmers (young women’s focus group, Ismashal, Pakistan), building “modern farms” (young men’s focus group, Solh Cooperative, Morocco) and “modern agriculture centers for youth” (young women’s focus group, Nodira, Uzbekistan).

## 5. CONCLUSION

Trying out a new wheat variety, agronomic practice, or a new way of organizing farming activities is, from a farmer perspective, an innovation in one’s way of doing agriculture. This can sometimes mean challenging established local views and practices for how things are done, or who should do them. In order to take up new things in agriculture, farmers must engage actively in learning about, testing, or adapting the new technology or practice to best fit their needs and local conditions. Sometimes they must exercise strong agency to pursue their project, when faced with skepticism, critique, ridicule, or even ostracism. As illustrated in previous sections of this research report, agency is highly gendered, and in most of the rural contexts in the WHEAT GENNOVATE sample, it remains more common and acceptable for a man than a woman to display agentic behaviors, including taking the initiative to become knowledgeable about and try out a new variety or soil management practice, and subsequently to reap the benefits thereof.

**Room to expand the reach of wheat R4D further:** Relative to other innovations mentioned, improved wheat varieties emerge by a large margin as the most favored by both men and women study participants across the 43 study communities. While this is a positive finding testifying to the relevance and importance of wheat R4D, there are differences, which merit further examination. For example, why do women’s focus groups rate improved wheat a top-two innovation only half as frequently (32 percent) as the men’s focus groups (61 percent)? What may explain that in 17 percent of the women’s focus groups no agricultural innovation in the past five years is identified as being of importance to women in the community? And similarly, why, in 57 percent of all the case studies, is there no overlap between the top-two rated innovations by men’s and women’s focus groups? We suspect that the answers to these questions have much to do with the gendered contexts these rural men and women live and work within, as well as with how agricultural R&D interventions are designed and delivered.

Men and women study participants alike demonstrate great appreciation of information, technologies, and practices that impact positively on crop yields and profitability. This includes labor-saving advances, although in many contexts this raises a need for better understanding and removing barriers to wider access, particularly among poor women and men. In some contexts, labor and land displacement issues also arise. It is essential to account for important gender differences in end user perspectives and experiences with these dimensions, and understand how these dimensions, under the specific circumstances, inform people's different strategies. Ignoring this puts wheat R&D interventions at risk of contributing to gender disparities, rather than enabling inclusive change towards equality of opportunity and outcomes for men and women in wheat-based livelihoods.

**Extension as key enabler, but mostly accessible for men:** External partners, whether government or NGO, extension or finance-related or other, emerge as key enablers in the form of sources of information, technical advice and training or input supply, and sometimes, of subsidies or free input samples. Though in some cases opinions are mixed regarding the quality of the services of some of these entities, the role they play remains central and is rated as such by men and, less so, by women study participants. Nevertheless, our findings consistently show that women's ability to access and benefit from extension services is very limited. In most cases this is linked to restrictions on women's physical mobility and social interactions, especially for young and married women. However, for those women who, against the odds and, at times, at great social costs, have managed to learn about and access new knowledge or technology and adapt this to their preferences, the results are often highly encouraging. If extension arrangements existed that were able to cater to women farmers, more women, even in normatively restrictive contexts, would be able to learn about and put to use new advances in agriculture, which could make their livelihoods more effective and efficient.

**Restrictive gender norms constraining individual innovation capability:** In a third of the study communities, women's focus groups point to restrictive gender norms as one of the most significant obstacles for women in the community to innovate in their agricultural livelihoods. While other factors are identified as obstacles to innovation by both men and women focus groups—notably limitations with external partners, financial constraints/poverty, and climate and natural resource constraints—the experience of gender norms as a strong limiting factor to individual innovation capability is specific to women.

Men and women study participants from different contexts refer to norms governing household relations becoming more cooperative with rising access to information, education, and awareness of rights. Nevertheless, the findings show that in most wheat study contexts married and family life remains organized along very traditional gender roles with strong normative association of good husbands with the productive sphere and economic provision, and equally strong normative association of good wives with the reproductive sphere. These binary normative associations are reflected again in the local expectations for men's and women's roles in farming. As a productive and economic activity, farming and new technology fit well with the association of men with the productive sphere. In most of the wheat study contexts, women's productive contributions continue to be framed as "helping their husbands," e.g., with field agriculture, or as part of their domestic responsibilities, with threshing and

cleaning wheat or tending to the livestock. This framing makes it possible to maintain the association of women with the reproductive sphere, and hence, to conform to normative expectations. At the same time, it obscures women's contributions to farming, and reduces their capacity to gain recognition as farmers, let alone, as participants and potential agents of change in agricultural innovation and rural transformation. Meanwhile, the binary division of gender roles upholds the idea of the man as the sole/main economic provider, thereby making it even more challenging for men to cede any economic space to women.

**Equality of opportunity enables innovation and economic development:** Our findings confirm the important role of gender equality in economic development (World Bank, 2011). In general, we observe favorable trends across the 43 case studies. However, the six tipping point communities stand out clearly in this data set, with their indications of significantly greater empowerment and poverty reduction according to local perspectives. Relative to the other research communities, in the tipping point contexts:

- Women enjoy greater physical mobility and greater presence in their local commercial and labor markets.
- Where irrigation is present, women enjoy more access to this vital service.
- The share of girls and boys in secondary schools is higher.
- Women's political and civic participation is higher.
- We see higher numbers of active civic groups, including credit and savings groups and local producer groups, and the narrative data detail women's engagement in these networks.
- In all but one of the tipping point contexts, women participate actively in their local agricultural extension opportunities.

In these contexts we observe evidence of normative shifts towards more equitable gender relations, which contribute to fostering an enabling environment for more inclusive agricultural innovation. Greater acceptance of women's freedom of action and economic independence is a key element in this. Compared to the other 37 study communities, in the tipping point contexts, results from *both* women and men's focus groups indicate strong empowerment (**Figure 4**), and significant poverty declines (Figure 6). Household relations are becoming less hierarchical for both women and men, including for young people, and women's as well as men's important economic roles are widely recognized and valued.

The price for defying social expectations for behavior can be high. However, as discussed in previous sections, while gender norms can be restrictive and limit social interaction, they do not determine men's and women's behavior. Rather, gender norms are constantly challenged and negotiated, often in subtle and intricate ways. In addition, normative restrictions are often interpreted differently depending on the context and the people in question. As exemplified in contexts where it is considered inappropriate for women to work outside the home, certain people, such as women from poor families, widows, and

single women heading households, may have more latitude, including because it is acknowledged that they have few alternatives to feed themselves and their families.

Furthermore, our findings indicate that in a number of contexts, relative to women in male-headed households, women heading their own households sometimes face fewer restrictions on their physical mobility and social interactions. As some of our examples also show, although they are often poor, some of these women are keenly interested in learning about and accessing new opportunities to improve their livelihoods. These women, who in many cases will be better positioned than other women for engaging with new opportunities for agricultural innovation, represent an important opportunity for agricultural R&D, as potential role models and vehicles for opening space for other women. Similarly men, who against local traditions openly support their wives and daughters' productive and economic initiatives, can be positive role models and also play important roles in local change processes.

In many cases the men and women who successfully defy the dominating stereotypes and normative expectations are outliers from whom much can be learnt, and whose examples have the potential to open space for others.

**Young men and women:** The general findings related to gender norms and innovation in most case studies also apply to young people. Young women similarly face barriers to physical mobility, access to trainings and other opportunities, and market access. While their individual circumstances differ, influencing the opportunities and livelihood constraints they face, young people, like others, are deeply embedded in networks of family and social relations. Young people have limited experience and rarely own land themselves or other assets. Many young men and women study participants perceive their farming and other life opportunities as highly dependent on their elders. However, most young study participants have more education than their parents had at the same age, and although there are exceptions, most of them wish for livelihoods outside of agriculture.

Further research on gender and social differentiation in wheat-based livelihoods is needed, including on labor and household economics, trajectories and experiences of men and women innovators, and institutional innovations for agricultural change and rural transformation. A better understanding of these issues could help identify avenues for scaling out the benefits of wheat-related innovations to many more, especially women and poor men. In the following section we reflect on a number of ways this could be explored further.

### 5.1. Implications and opportunities for wheat R4D

The report illuminates how improved understanding of gender norms and agency provides insight into underlying social mechanisms which can influence, and be influenced by, agricultural innovation processes. In contexts where gender norms are more fluid and encouraging both women's and men's economic agency, new agricultural technologies and practices can be game-changing and associated with rapid local poverty reduction.

Current theory on innovation draws attention to the normative context that informs everyday practices and recommends approaches that “enhance the survival chances of existing initiatives for change” (Leewis and Aarts 2001, p. 21; Cunningham & Jenal, 2016). With this in mind, we highlight below opportunities for AR4D to identify and strengthen initiatives for greater gender inclusion as a strategic complement to wider wheat research and development efforts.

- **Equality of opportunity a strategic interest for wheat R4D:** As the tipping point communities illustrate, greater equality of opportunity between men and women creates room for more people to innovate in their local livelihoods, including wheat agriculture. This, in turn, is strongly associated with greater poverty declines. Promoting and contributing to gender equity and social inclusion is therefore both an objective in itself, but also a means to enhance the impact of wheat R4D.
- **Institutional dimension in targeting:** Based on our findings with regards to what enables or constrains local men and women farmers to try out and take up new things in agriculture, the tipping point communities provide a more favorable institutional environment for a wheat R&D intervention to be successful, compared to the other 37 study communities. In addition to agroecological dimensions, market access, and demographics, it is relevant to add a local institutional dimension to wheat R4D targeting approaches. Further investigation of positive outliers, such as the tipping point communities in this sample, and research into the potential role of an institutional dimension in R4D targeting, would contribute to this end.
- **Invest in institutional innovation in wheat agri-food systems:** Interventions that seek normative conformity are unlikely to succeed in creating social change. Rather, in restrictive and highly gender unequal environments they may instead risk sustaining or even exacerbating existing inequalities. More promising strategies would include enabling institutional innovation as part of technical interventions. The process and effects of the community conversations intervention in sections 4 is a specific example, which merits further research. Other relevant approaches to consider include initiatives that:
  - **Learn from men and women innovators:** Further analysis on the trajectories and experiences of local men and women innovators holds important potential for the study of agricultural innovation processes. In addition to building the evidence base on factors that help or constrain men and women of diverse social categories to innovate in their agricultural livelihoods, this would help build a better understanding of early adopters (and dis-adopters) and provide valuable feedback to the research and technology development process.
  - **Support female-household heads to open space for other women:** In many contexts married and young single women in particular face restrictions on their ability to access information and participate in trainings or demonstrations. In these cases a strategy of supporting and working with women from female-headed households may help open space for other women by setting examples and providing a minimum critical mass of women.

- **Proactively cultivate positive role models for inclusive change:** Contestation is part and parcel of institutional innovation. When individuals or groups disregard established wisdom or traditions it can disturb the social order and create uncertainty. But it can also set an example, create opening for others to follow, eventually leading to change. Proactively cultivating positive role models for inclusive change as part of specific downstream R4D interventions could help create opening for more women to take part in and benefit from local innovation processes. Furthermore, the concepts of positive deviants and role models would seem to be relevant in relation to research on and testing of inclusive scaling out strategies.
- **Work with and build capacity of progressive opinion leaders:** Different types of leaders can play important roles as local change agents. Building the capacity of local rural leaders for inclusive agricultural change could complement and greatly enhance the development of mechanisms for institutional innovation in wheat agri-food systems.
- **Develop and test agricultural extension arrangements that cater to women as well as men:** In an overall context of increasing rural out migration and feminization of agriculture, a key challenge to address regards how to open space for agricultural learning and information diffusion services which are also able to reach and support women farmers. This could be done as part of research on scaling out, as stand-alone or as part of larger wheat research projects. Related initiatives could include evaluation of current or recent technology diffusion interventions and extension/information services to take stock of and learn from experiences in different contexts.
- **Develop and test arrangements for local level women providers of improved wheat seed and related varietal information:** In addition to facilitating rural women's access to information about improved varieties and seed samples, this would also address the challenges related to low varietal replacement rates.
- **Technology development with end user perspective:** Yield and profitability and labor saving are key dimensions to address in technology development, but these mean different things to different end users. Careful consideration of the social and economic differences between men and women end users, and their different reasons for expressing interest in yield and profitability or labor saving is critical for ensuring that new technologies are relevant for, and benefit, the specific end users.
- **Strengthening evidence base on labor:** It is clear that both men and women make important contributions in wheat farming. However, more and better data is needed on *who* does *what* in wheat-based livelihoods. Not only would a better evidence base serve to review different assumptions underlying R&D interventions and policies, it would also provide key information for wheat R4D priority setting and targeting, including in relation to technology development and diffusion.

- **Enabling participation of young people in local innovation processes:** The medium rating for young women from the tipping point communities on the Ladder of Power and Freedom is 3.13, compared to just 2.43 in the other 37 communities. Related to the point above about targeting, it could be interesting to explore further the potential of female schooling and marriage age as indicators for good local innovation environments.

Furthermore, to the extent that they have limited access to land and other resources, it is likely that programs for resource-constrained farmers may also benefit young men and women. However, as in the case for women more generally, it would be important to reach out to and ensure that both young men *as well as* young women will be able and have the possibility to engage with and benefit from such initiatives.

Finally, where young people and children represent a special opportunity for agricultural R4D is in relation to leveraging the potential of schools for engaging children and young people in agricultural innovation through training and education on agriculture. This could include working with teachers and educational institutions to develop and test tailored curricula integrating theory and practical exercises to expose both boys and girls to different aspects of farming and modern agricultural practices or technologies.



## 6. Annexes

### Annex A. Overview of GENNOVATE key study questions, conceptual framework, sampling, data collection, and analysis protocols

The development of GENNOVATE’s conceptual framework, sampling framework, and field instruments began at an October 2013 research design workshop. The final methodology package reflects extensive reviews of literature and lessons and tools from previous field studies<sup>12</sup>; two rounds of field pilots in February and April 2014 and feedback from experts and study participants on the instruments; ongoing technical advisory support and capacity building for PIs (Principal Investigators); and strong training and supervision for the field teams. In this note we present highlights of the study approach and protocols.<sup>13</sup>

#### Study questions and conceptual framework

GENNOVATE’s design is guided by the following study questions:

- How do gender norms and agency advance or impede innovation capacity and technology adoption in agriculture and natural resource management across different contexts and social structures?
- How do new agricultural technologies affect gender norms and agency across different contexts? Under what conditions can technologies do harm?
- How are gender norms and women’s and men’s agency changing, and under what conditions do these changes catalyze innovation and adoption, and lead to desired development outcomes? What contextual factors influence this relationship?

To address the study questions, GENNOVATE employs a conceptual framework which is informed by selected discourses on agency and structure interactions in feminist literature (e.g., Wharton, 1991; Kabeer, 1999; Ridgeway, 2009). The study questions require exploring interactions between gender norms, agency, and agricultural innovation in specific contexts, or local opportunity structures. The notion of structure refers to the “the rules that shape social actions and the resources that furnish agents with the power that makes it possible (to varying extents) for them to act” (Lane, 2001, p. 297). GENNOVATE pays particular attention to gender norms as an important dimension of the local opportunity structure. Gender norms refer to the socially constituted rules that prescribe men’s and

---

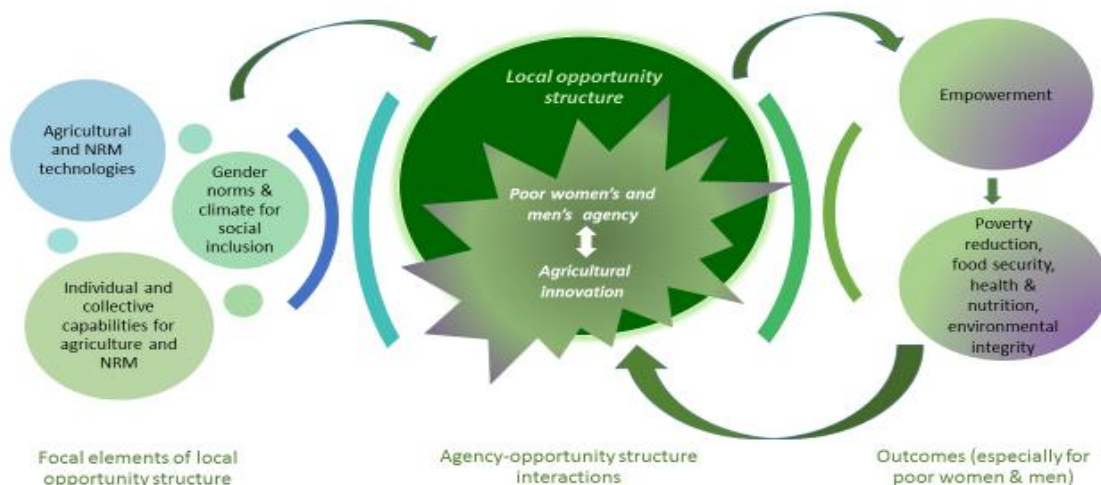
<sup>12</sup> It was, in fact, a presentation of the World Bank’s global qualitative studies which sparked the idea for GENNOVATE. These studies include: *On norms and agency: Conversations about gender equality with women and men in 20 Countries* (Muñoz Boudet, Petesch, & Turk, 2013), *Voices of the poor* (Narayan et al., three volumes: 2000, 2000a, 2002), and *Moving out of poverty* (Narayan et al., four volumes: 2007, 2009, 2009, 2010).

<sup>13</sup> For a fuller discussion of the study rationale, key questions, conceptual framework, and related literature, please see Badstue et al. (forthcoming); and for fuller discussion of the study sampling and data collection methods and experiences, see Petesch et al. (forthcoming).

women’s daily behavior. These norms are upheld across generations by internalized psychological beliefs about men’s higher status and competence and appropriate gender behaviors, and by processes of social interaction and sanctions of one’s “reference group” through social approval and disapproval (e.g., Ridgeway, 2009; Bicchieri, 2006).

Depicted in Figure A. 1, GENNOVATE’s conceptual framework conceives of empowerment and other dimensions of improved wellbeing (the far right of the figure) as products of the interaction between men’s and women’s capacities for agency and innovation (in the center), on the one hand, and on the other, the opportunities for and barriers to innovation in their local opportunity structure (with key dimensions depicted on the left).

**Figure A. 1. GENNOVATE conceptual framework**



Drawing on this conceptual framework, GENNOVATE’s methodology addresses concerns for:

- i. *Contextual* influences on, or the embeddedness of social action and lived experience;
- ii. *Comparative* research strategies which offer cross-site learning and permit cautious generalizations to wider settings while remaining attentive to local specificities; and
- iii. *Collaborative* research processes between the researcher and study participants, and among the study’s large research team, which strengthen the quality, relevance, and reach of the research (also see Badstue et al., forthcoming).

### Sampling

A GENNOVATE case refers to a social group living in a single locality that the inhabitants call their village, community, neighborhood, or hamlet. The cases were selected purposively to introduce variance on two dimensions considered important for understanding gender differences in innovation adoption:

- i. *Economic dynamism*, here understood as the existence and nature of competition over agriculture or NRM resources important for livelihoods in the village; infrastructure development that indicates change in the local economy such as penetration of roads or connectivity; changes in the market orientation of small-holder farmers; changes in the sophistication of processing technologies for key commodities; the relative percentages of buyers and sellers (sex-disaggregated if information is available) in local input and output markets; changes in on- and off-farm employment opportunities; changes in the local diversification of livelihoods or the potential for this diversification.
- ii. *Gender gaps in assets and capacities*, such as the share of girls completing primary school compared to boys; the extent to which women hold important leadership positions (civic and political) in local organizations, and the broadly accepted norms in the village about women’s freedom of movement.

The two axes for stratification are similar to those applied in *On norms and agency* (Muñoz Boudet, Petesch, & Turk, 2013) and reflect an empirical literature finding associations between countries with greater gender equality and higher levels of economic growth (e.g., World Bank, 2011). For substantive as well as practical reasons, the protocols provided PIs with some flexibility in how they stratify their samples along the two dimensions (for further discussion, see Petesch, forthcoming,). Table A. 1 presents the countries, crops, and CGIAR Research Programs spanned by GENNOVATE’s fieldwork. Asia contains the largest number of cases (74), followed by Africa (53) and Latin America (10). The regional concentration in Asia and Africa reflects current research priorities in the CGIAR system.

**Table A. 1. GENNOVATE countries, target crops and systems, and CRPs**

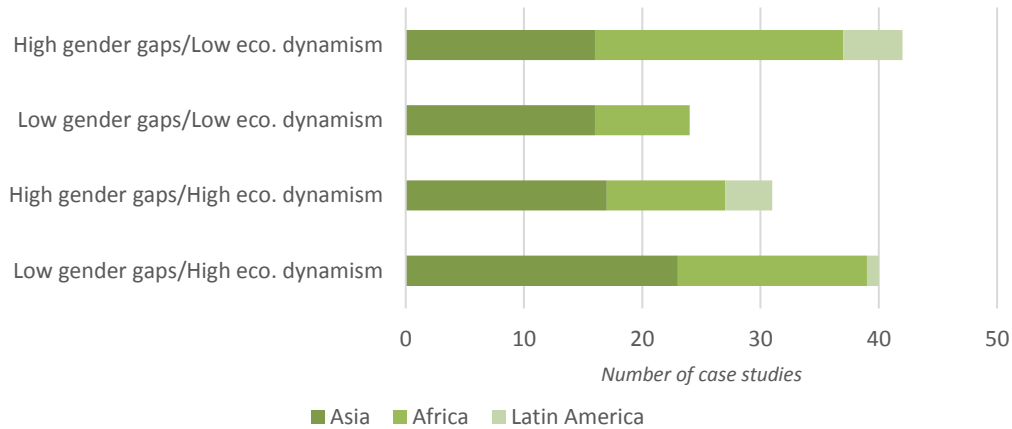
<i>Countries</i>	<i>Target crop &amp; system</i>	<i>CGIAR Research Program (CRP)</i>
<b>Asia:</b> Afghanistan, Bangladesh, India	Banana	Roots, Tubers and Bananas (RTB)
(Andhra Pradesh, Bihar, Haryana,	Cassava	Humidtropics
Madhya Pradesh, Maharashtra,	Chickpeas	Agriculture for Nutrition and Health (A4NH)
Punjab, Rajasthan, Uttar Pradesh),	Groundnuts	Grain Legumes (GL)
Indonesia, Kyrgyz Republic, Nepal,	Maize	MAIZE
Pakistan, Philippines, Uzbekistan,	Mille	Dryland Cereals (DC)
Vietnam	Pigeon pea	GRISP
<b>Africa:</b> Burkina Faso, Burundi,	Potato	WHEAT
Democratic Republic of the Congo,	Rice	Aquatic Agricultural Systems (AAS)
Ethiopia, Kenya, Malawi, Mali,	Sorghum	Forests, Trees and Agroforestry (FTA)
Morocco, Niger, Nigeria, Rwanda,	Sweet potato	Dryland Systems (DS)
Tanzania, Uganda, Zimbabwe	Wheat	
<b>Latin America:</b> Colombia, Mexico	Aquaculture	
	Tree-based systems	
	Humid tropical systems	

The sample includes major food crops such as rice, wheat, maize, cassava, sweet potato, banana, millet, sorghum, and several grain legume crops. In terms of coverage of different agricultural systems, the dryland agro-ecosystems of Africa and Asia are well represented in the study, as are the subtropical and

tropical systems of Asia, which included aquaculture cases. Cases from Indonesia and the Kyrgyz Republic include contexts where tree products and agroforestry systems are important.

Figure A. 2 presents the broad distribution of cases along the dimensions in the sampling framework, indicating a cross-site sample with good coverage of all four sampling contexts in the priority regions.

**Figure A. 2. Regional distribution of cases by sampling framework (137 cases)**



The GENNOVATE cases target agri-food systems or intervention domains of relevance to the CRPs involved, and they are meant to help inform present and future agricultural research for development in these areas. The quality of the fieldwork is greatly enriched by being able to draw on existing relationships with and knowledge of many of the research sites. These relationships, however, may also prompt concerns for bias in the findings due to factors such as an underrepresentation of difficult places, or study participants being courteous, overstating benefits of or downplaying difficulties with interventions, or expecting some kind of benefits. These concerns are not unique to qualitative samples, and researchers involved in the GENNOVATE studies have applied social science techniques of critical self-reflection to reduce bias in interpretations and findings. GENNOVATE’s large comparative dataset, which asks many of the same or similar questions to different population groups within the same community, provides numerous opportunities to cross-check data which may be partial, confusing, or contradictory.

It is also important to keep in mind that GENNOVATE was not designed to assess the performance of or outcomes associated with any particular technology or practice, although study participants do engage in exercises which ask them to identify and assess particular innovations with which they have experience. As demonstrated in the report, the testimonies gathered provide a rich and compelling basis for exploring and comparing qualitatively men’s and women’s innovation experiences and the normative dimensions of these processes.

## Data collection

The methodology package features 15 data collection activities for each research village (Table A. 2). The first of three focus group instruments was conducted separately with poor women and men (activity C), the second with middle-class women and men (activity D), and the third with young women and men (activity E; and six groups in total). The data collection also includes nine *semi-structured interviews* guided by three instruments: i) a community profile to gather background demographic, social, economic, agricultural, and political information about the case (one interview requiring key informants of both genders), ii) innovation pathway interviews with successful adopters of a new technology or practice<sup>14</sup> (two men, two women), and iii) life story interviews (two men, two women).

**Table A. 2. Overview of GENNOVATE data collection instruments**

Tool	Purpose	Respondents
Activity A. Literature review	To situate the case in a wider context by providing general background information about the case study area and relevant findings from recent studies, particularly about the innovations of interest and their gender dimensions.	(Principal investigator)
Activity B. Community profile	To provide social, economic, agricultural, and political background information about the community	· One or two men key informants · One or two women key informants
Activity C. Focus group: Ladder of Life (with poor adults)	Gender norms and household and agricultural roles Labor market trends and gender dimensions Enabling and constraining factors for innovation, and their gender dimensions The culture of inequality in the village, factors shaping socio-economic mobility, poverty trends—and their gender dimensions Intimate partner violence	· One FGD of 8 to 10 adult women, ages 30 to 55 · One FGD of 8 to 10 adult men, ages 30 to 55
Activity D. Focus group: Capacities for innovation (with middle-class adults)	Agency Community trends Enabling and constraining factors for innovation, and their gender dimensions Gender norms surrounding household bargaining over livelihoods and assets The local climate for agriculture and entrepreneurship, and their gender dimensions Social cohesion and social capital	· One FGD of 8 to 10 adult women, ages 25 to 55 · One FGD of 8 to 10 adult men, ages 25 to 55
Activity E. Focus group: Aspirations of youth (with older	Gender norms, practices, and aspirations surrounding education Enabling and constraining factors for innovation, and their gender dimensions Women’s physical mobility and gender norms shaping access to	· One FGD of 8 to 12 women youth, ages 16 to 24 · One FGD of 8 to 12

<sup>14</sup> PIs could frame the selection criteria to focus on successful adopters of either a specific CRP innovation, or of one or more innovations of local significance.

adolescents and young adults )	economic opportunities and household bargaining Family formation norms and practices	men youth, ages 16 to 24
Activity F. Semi-structured interview: Innovation pathways	To explore in-depth the trajectory of individual experiences with new agricultural and NRM practices, and the role of gender norms and capacities for innovation in these processes.	· Two men innovators · Two women innovators
Activity G. Semi-structured interview: Individual Life Stories	To understand the life stories of different men and women in the community who have moved out of poverty, fallen into deeper poverty, or remained trapped in poverty, and how gender norms, assets, and capacities for innovation in agriculture/NRM, and other assets and capacities, shaped these different poverty dynamics.	· Two men · Two women

PIs prepared for fieldwork by conducting a review of literature and secondary data from their research villages and regions; mobilizing and training their field team; and refining, translating, and validating the data collection instruments. Each field instrument contains a standardized semi-structured interview guide to ensure comparability in the data collection and documentation across the research villages. PIs also tailored sections of the interview guides to address innovations and other issues of importance to their CRPs or the specific case.

The data collection tools draw directly from participatory rural appraisal (PRA) techniques and feature many visual activities and probing questions to support and deepen the study participants' own interpretations and analyses of key study topics and to encourage rich discussion among study participants. The trainings to prepare for fieldwork engaged team members in long hours reviewing, discussing, and practicing—question-by-question—the data collection instruments to ensure common understanding and ease with facilitation. The team also reviewed the quality of the translation of each question, making sure that it not only captured the intent of the English version, but that the phrasing used common, everyday terms rather than a more formal translation. Trainings also required a field practice and clearance by the study's expert advisor of the practice documentation of field notes.

**Data analysis**

The analysis strategy combines two procedures: i) inductive case-oriented (or thick description) techniques and ii) deductive variable-oriented (or thematic) techniques (e.g., Miles, Huberman, & Saldaña, 2014). Case-oriented analytic techniques provide the building blocks for GENNOVATE's major findings and conclusions. These approaches require a focus on a single case to explore the interplay of gender norms, agency, and innovation capacities in specific localities, and over time, which can explain these processes in the wider set of cases.

This case-oriented work is complemented with variable-oriented analysis aided by pre-coded questions during data collection (from focus group rating exercises and community profile pre-coded questions) as well as data coding with NVivo using 150 common codes broken into 15 topic areas. This supports systematic triangulation of findings across types of respondents and communities and identification of recurring themes which cut across GENNOVATE's cases and subsamples (for example, the experiences of

poor vs. middle-class women in cases with different levels of economic dynamism). To ensure sound case study management during the data coding and analysis phase, significant investments were made in capacity building of PIs; in supervision and collaboration among the data coders; and in the preparation of detailed protocols, one elaborating data coding procedures and another analysis (or “query”) procedures with the software.

We wish to add here that the senior field team leaders and members contributed in-depth analyses of their MAIZE CRP case studies to this report. Yet, rapid data collection techniques and power differences between researchers and study participants inevitably limit and shape data gathering and interpretation. While it is very important for a study like this to learn from the poorest women and men farmers, they are likely under-represented in the data for diverse reasons. Additionally, study concerns for agency around innovation processes introduce further biases, including a tendency for study participants to discount or remain silent about “trial and errors” and other events and understandings that run counter to their current circumstances, or counter to the types of questions being asked (no matter how open-ended). Moreover, rapid data collection methods cannot replace longer-term field work and the in-depth insights they provide of innovation and other social change processes in specific contexts. Nevertheless, GENNOVATE’s dataset comprises varied semi-structured instruments and sample groups in each case study, and is precisely designed to allow for systematic triangulation and pattern identification while remaining attentive to contextual realities.

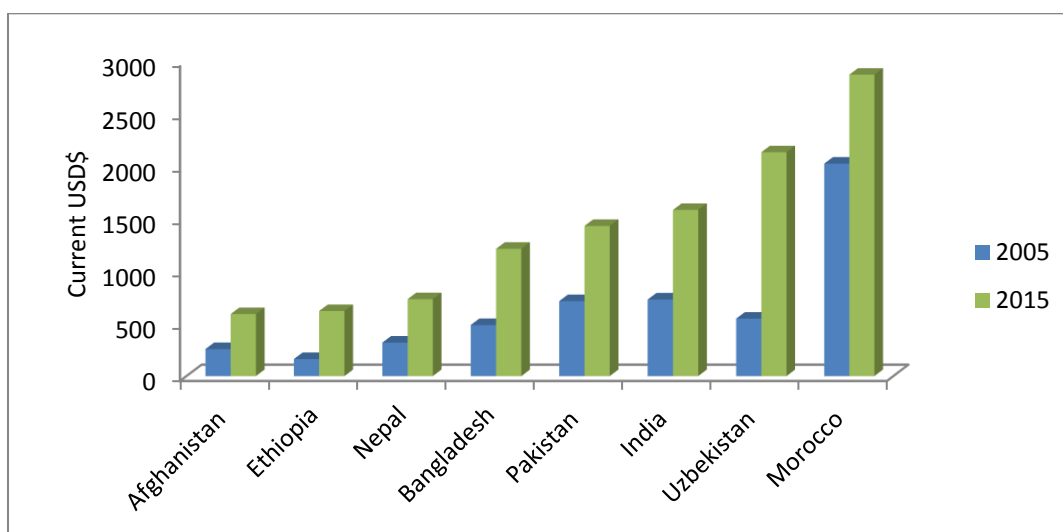
## Annex B: The WHEAT sample

This report draws on the 43 GENNOVATE village-level case studies from wheat-producing regions of eight countries in South and Central Asia, and North and Eastern Africa, namely: Afghanistan, Bangladesh, Ethiopia, India, Morocco, Nepal, Pakistan, and Uzbekistan. This annex provides contextual background information on the WHEAT sample. This includes: a) socio-economic macro-context dimensions of the study countries; b) an overview of the country level distribution of the WHEAT case studies according to the sampling framework; c) general development trends across the WHEAT case study communities including domestic violence against women; and d) a brief literature-based overview of current knowledge on gender in wheat-based agriculture.

### Socio-economic macro-context dimensions

Figure B. 1 compares the study countries' GDP per capita in 2005 and 2015. Afghanistan, Ethiopia, and Nepal are low-income countries with a GDP per capita of \$732 or less in 2015. Bangladesh, Pakistan, and India are considered lower-middle, whereas Uzbekistan and Morocco fall in the upper-middle income category. Figure B. 2 provides an overview of the proportion of population in the study countries living in poverty based on national poverty lines. Table B. 1 compares how the study countries fare on the Human Development Index (HDI) (UNDP 2016), a measure that explores social development indicators such as life expectancy and educational attainment. According to this scale, Uzbekistan has high human development; Bangladesh, India, Morocco, Nepal, and Pakistan have medium human development; and Afghanistan and Ethiopia have low human development.

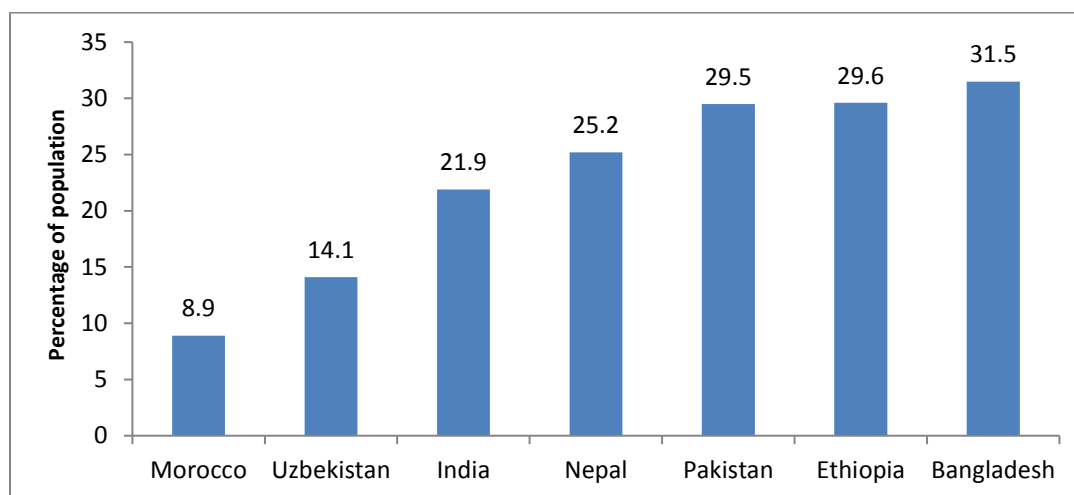
**Figure B. 1. GDP per capita change, 2005 to 2015 (current USD\$)**



Note: World Bank data (2017).



**Figure B. 2. Proportion of population living below the poverty line (calculated at national poverty lines, 2013 or latest available)**



*Note.* World Bank data (2013). Information for Afghanistan was not available.

**Table B. 1. Human Development Index (HDI) for the eight study countries**

<i>Study country</i>	<i>Rank out of 188 countries</i>	<i>2016 HDI</i>
<b>Afghanistan</b>	169	0.479
<b>Bangladesh</b>	139	0.579
<b>Ethiopia</b>	174	0.448
<b>India</b>	131	0.624
<b>Morocco</b>	123	0.647
<b>Nepal</b>	144	0.558
<b>Pakistan</b>	147	0.550
<b>Uzbekistan</b>	105	0.701

*Note.* UNDP data (2016). The Human Development Index (HDI) is a composite index measuring average achievement in three basic dimensions of human development—a long and healthy life, knowledge, and a decent standard of living.

Governance indicators show that all the countries in the WHEAT sample face challenges, albeit to different extents, with the control of corruption, providing rule of law, and ensuring voice and accountability to their citizens (see Table B. 2). While slightly better scores can be found, e.g. on India’s government effectiveness and voice and accountability, the lowest scores are for Pakistan and Afghanistan in relation to political stability and absence of violence/terrorism indicators.

**Table B. 2. Governance indicators (2015) for eight study countries**

	Afghanistan	Bangladesh	Ethiopia	India	Morocco	Nepal	Pakistan	Uzbekistan
<b>Control of Corruption: Estimate</b>	-1.3	-0.9	-0.4	-0.4	-0.2	-0.5	-0.8	-1.2
<b>Government Effectiveness: Estimate</b>	-1.3	-0.7	-0.6	0.1	-0.1	-1.0	-0.7	-0.7
<b>Political Stability and Absence of Violence/Terrorism: Estimate</b>	-2.5	-1.2	-1.5	-0.9	-0.3	-0.9	-2.5	-0.4
<b>Regulatory Quality: Estimate</b>	-1.0	-0.9	-1.0	-0.4	-0.2	-0.8	-0.6	-1.7
<b>Rule of Law: Estimate</b>	-1.6	-0.7	-0.4	-0.1	-0.1	-0.7	-0.8	-1.1
<b>Voice and Accountability: Estimate</b>	-1.2	-0.5	-1.3	0.4	-0.7	-0.4	-0.8	-1.9

*Note.* World Bank data (2015). All scores lie between -2.5 and 0.4 with higher scores corresponding to better outcomes.

To varying degrees, the study countries also face challenges with gender gaps in education, economic participation, and political empowerment (see Table B. 3 below). While Ethiopia compares favorably in female labor force participation, the country nevertheless faces important challenges with high levels of maternal mortality and adolescence birth, and low rates of women’s education (UNDP, 2015). In general, many indicators for the study countries point to a constrained macro environment for inclusive development relative to the wider community of nations.

**Table B. 3. Gender Inequality Index for eight study countries**

<i>Study country</i>	<i>Rank out of 188 countries</i>	<i>2015 Gender Inequality Index</i>
<b>Afghanistan</b>	152	0.69
<b>Bangladesh</b>	111	0.50
<b>Ethiopia</b>	129	0.56
<b>India</b>	130	0.56
<b>Morocco</b>	117	0.53
<b>Nepal</b>	108	0.49
<b>Pakistan</b>	121	0.54
<b>Uzbekistan</b>	n/a	n/a

*Note.* The Gender Inequality Index (GII), from UNDP’s Human Development Reports (2015), measures gender inequalities in three important aspects of human development—reproductive health, empowerment, and economic status.

### **WHEAT case studies according to the sampling framework**

Within the study countries, the case studies were selected purposively to introduce variance on economic dynamism and gender gaps in assets and capacities. Maximum diversity sampling maximizes variation across the sample to increase generalizability (Miles, Huberman, & Saldaña, 2014) on the basis that “any common patterns that emerge from great variation are of particular interest and value in capturing the core experiences and central, shared aspects, or impacts of a program” (Patton, 1990, p.

172). Table B. 4 shows the diversity of contexts captured by the sampling criteria. The numbers range from three cases in Morocco and Nepal to 12 cases in India as indicated in the table.

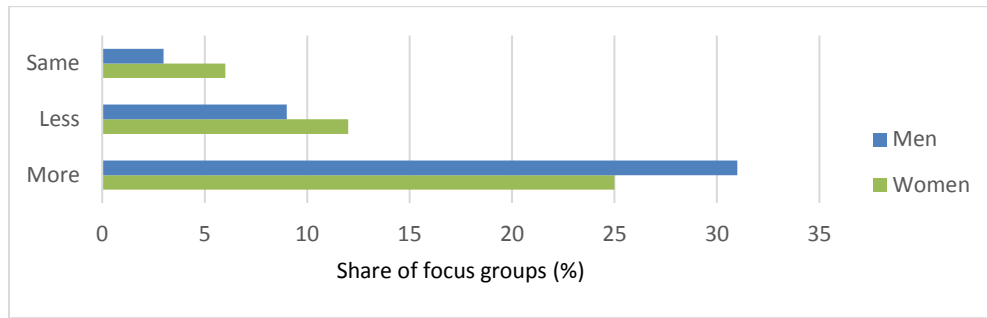
**Table B. 4. Country distribution of WHEAT cases by sampling framework (43 cases)**

	Low gender gaps/ High eco. dynamism	High gender gaps/ High eco. dynamism	Low gender gaps/ Low eco. dynamism	High gender gaps/ Low eco. dynamism	Total # of case studies
Afghanistan	1	1	..	2	4
Bangladesh	2	1	1	2	6
Ethiopia	2	2	..	..	4
India (Bihar, UP, MP, Punjab)	2	4	4	2	12
Morocco	..	3	..	..	3
Nepal	1	1	..	1	3
Pakistan	1	..	..	6	7
Uzbekistan	1	3	..	..	4
<b>TOTAL</b>	10	15	5	13	43

### **Development trends across the WHEAT case studies**

The WHEAT GENNOVATE sample mainly features positive development trends. In general, study participants report poverty reduction, although poverty levels remain very high according to locally defined assessments of wellbeing conditions and trends. The median levels of poverty across these case studies range from 40 to 45 percent, according to the results from an exercise conducted in the poor men’s and women’s focus groups, respectively. The majority (66 percent) of the focus groups with poor women and men testify that work opportunities are greater than a decade ago for their own gender (Figure B. 3). In more than 70 percent of the villages, local key informants estimate that almost all boys and girls attend primary school, while for secondary school this estimate drops to 58 percent of villages for boys and 63 percent for girls. Health clinics are present in only one third of the villages; while electricity is widely available in 58 percent of the communities, and only 26 percent of villages have pipe-born water. About half of the villages are within a half-hour walk of a public bus line.

**Figure B. 3. Trend in local work opportunities for own gender (86 poor focus groups)**



Violence against women is an expression of gender inequality. Moreover, according to the WHO it represents a serious public health problem and a violation of women’s human rights. About one in three women worldwide have suffered physical and/or sexual violence (WHO, 2016). Overall, the case study sample presented here features a slight decrease in gender violence, yet, more than 20 percent of women from these countries experience physical violence. Pakistan is the only country in the sample where poor women and men from all the villages, with the exception of Chanda (where domestic violence has not presented any change), report an increase in violence against women.

**Figure B. 4. The extent to which local women have been hit or beaten in their households over the past year versus 10 years ago (86 poor focus groups)**

1= Almost never (0 women in 10); 2= Occasionally (1 to 2 women in 10); 3 = Regularly (3 women in 10);  
 4 = Frequently (4 or more women in 10)

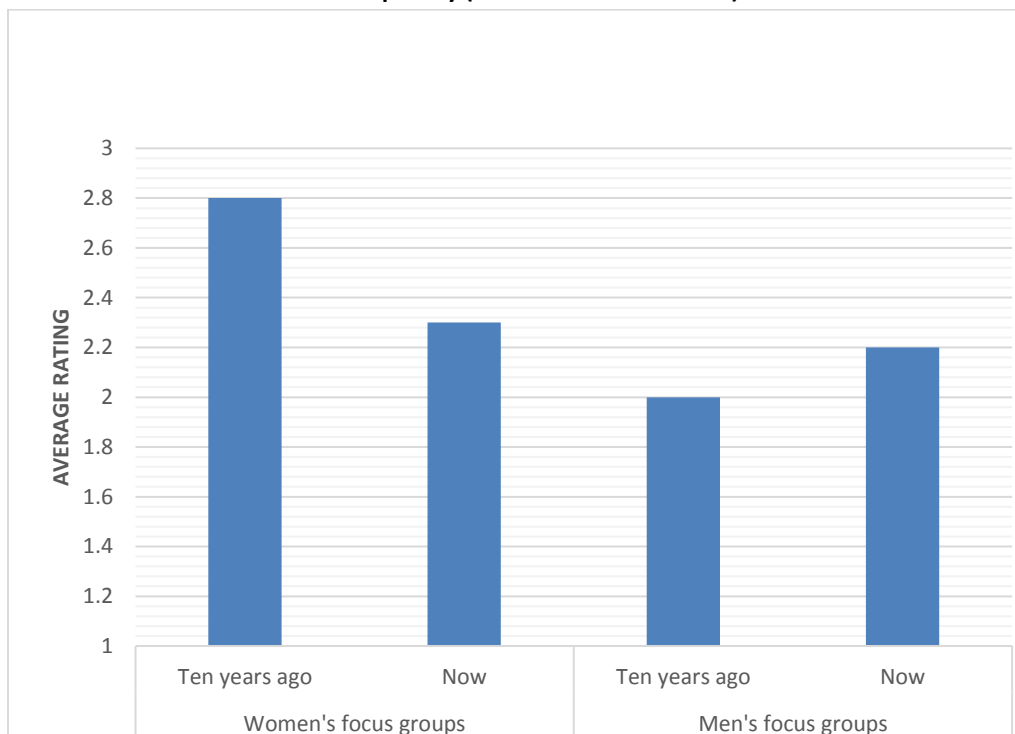


Figure B. 4 above illustrates the average scores given by poor women and men about the existence of physical violence in their villages. People were asked to answer anonymously, to rate from 1 (almost never) to 4 (frequently), how often physical violence occurs in their village now, and 10 years ago. In general, poor men and women rated 2 or greater for the current period, meaning an average estimate that 1 to 2 of every 10 women have suffered beatings and other physical abuse over the past year.

According to respondents, some of the factors that have helped decrease physical violence in their villages include education and improvements in the economy. As a poor woman from Matipur, Bangladesh comments, “Now people are less poor. By education, women are also more aware along with the males. So, beating has decreased.” A 49-year-old poor man from Pakadi, Nepal also attributes the fall in physical violence to education, “It is due to the increase in education.”

### **Current knowledge on gender in wheat-based agriculture**

Though considerable literature exists on gender and agriculture in general, very few studies have explored gender and social equity issues specifically in relation to wheat-based systems and livelihoods, or the gendered outcomes of improved wheat technologies (Klawitter et al., 2009; Jafry et al., 2013). The limited evidence base represents a challenge for policy as well as AR4D interventions. Indeed, referring to the Indo-Gangetic Plains, Erenstein and Thorpe (2011) have highlighted the “apparent homogeneity of vast irrigated plains,” which “masks” significant social diversity. Other authors have also cautioned against simple generalizations based on the limited documentation, pointing out the significant social heterogeneity within and across social groups and regions in wheat-based systems (Jafry et al., 2013; see also Olesen, Le Duc, Pritchett, Moriarty, & Das, 2005). Keeping this in mind, the existing literature nevertheless allows us to identify a number of issues to consider in relation to gender in wheat-based systems.

**The gendered division of labor:** Studies including Ethiopia, Pakistan, Afghanistan, India, and Nepal report that men are more likely to prepare the land and plant the (wheat) crop, whilst harvesting and transport/carrying of headloads is shared between men and women, and weeding and post-harvest processing is either shared or mainly done by women (Tiruneh et al., 2001; Klawitter et al., 2009; Pennels, 2011; Grace, 2004; Thankur, 2001; Taj et al., 2007; Tavva et al., 2013; Thakur et al., 2001). However, as indicated by some authors (e.g., Nelson, 2013; Ashrafi, 2009; Grace, 2004; Olesen et al., 2005), the discourse on the local division of labor, i.e., the categorization according to local norms and ideals, does not always match the actual practice that can be observed with more in-depth or qualitative approaches. This is illustrated by Nelson’s (2013) study from Ethiopia, where men use oxen to plow the fields, and where it is not culturally acceptable for women to plow. Land preparation is therefore considered a man’s activity. However, the study found that women participate in land preparation by following behind the plow with a hand tool, breaking up the clods that were too large to be broken apart by the plow. Another example is spraying, which respondents characterized as the sole responsibility of men. However, through further enquiry it became clear that women fetch the water and bring it to the field for the men to mix with the chemicals. Depending on the product, this may require between 100 and 1000 liters of water per hectare (Nelson, 2013).

Different explanations for the variation in gender roles in wheat-based agriculture have been suggested. Findings from Afghanistan indicate that women's involvement in wheat-production and other cropping activities depends on a number of factors, including economic standing, marital status, labor resources, land ownership, as well as the degree of stigma related to men's and women's involvement in certain activities, and how strongly individuals and households adhere to these (Ashrafi, 2009; Grace, 2004; Munoz et al., 2013; Olesen et al., 2005; Thakur et al., 2001).

Other factors which may influence the division of labor in wheat growing households include increasing male out-migration (Klawitter et al., 2009; Grace, 2004; Jafry et al., 2013), as observed in many parts of the world; as well as the introduction of new agricultural technologies, which sometimes can affect women's labor burden negatively, e.g., increased weeding because of fertilizer use, or increased post-harvest processing because of higher total yields (Satyavathi et al., 2010; Doss, 2001; Beuchelt & Badstue, 2013).

**Technology diffusion and uptake:** As pointed out, among others by Doss (2001), the gender of a farmer can affect adoption of new technologies and crop varieties. For example, in the central highlands of Ethiopia, 30 percent of male-headed households (MHH) adopted improved wheat varieties as compared to only 14 percent of female-headed households (FHH) (Tiruneh et al., 2001). The authors found that in MHHs extension services and farm size had a positive effect on the adoption of improved wheat varieties, whereas radio ownership and farm size increased the odds in favor of adopting improved varieties for FHHs. According to Klawitter et al. (2009), the issue of gender in relation to wheat technology uptake is becoming increasingly important as more FHHs produce wheat, due, largely, to the increase of men's involvement in wage laboring, both in rural areas and through urban migration.

If adoption of new agricultural technologies depends on access to land, labor, or other resources, and if, in a particular context, men tend to have better access to these resources than women, then in that context, the technologies will not benefit men and women equally (Doss & Morris, 2001). It follows that it is important to ensure that the development of improved technologies, and interventions to promote their adoption, takes the needs, preferences, and constraints of both men and women, and other disadvantaged groups, into account (e.g., Doss, 2001; Klawitter et al., 2009; FAO & IFAD, 2009; Meinzen-Dick, 2001; Kingiri, 2010). In some circumstances this may require special measures to avoid exacerbating existing gender disparities. For example, in systems with high dependency on wheat for food security, political stability, and rural incomes, but with very conservative or restrictive gender norms, the introduction of improved wheat varieties and related field technologies would be high priority, but would likely mainly benefit male farmers, thus, potentially further augmenting inequalities between men and women. To mitigate this, complementary approaches would need to be developed, e.g., combining introduction of field technologies with improved post-harvest technologies and/or gender-transformative value-chain development interventions (Beuchelt & Badstue, 2013).

The review of the existing literature also gives rise to methodological considerations. The existing literature is characterized by a strong bias towards male respondents, either because of perceived or real difficulties in gaining access to female respondents, or due to a research approach which merely

distinguishes between male-headed and female-headed households, thus ignoring females in male-headed households (Doss, 2014). Another issue is the predominance of approaches based mainly or entirely on structured, questionnaire surveys and driven by a focus on average values. While this is useful to quantify or estimate the “size” of an issue or a phenomenon, for the study of change processes the outliers and exceptions are often more interesting, and different approaches are likely to be better suited.

## Annex C. Overview of WHEAT case studies

<b>Country</b>	<b>State or province</b>	<b>Community pseudonym</b>	<b>Pop'n</b>	<b>Economic dynamism</b>	<b>Gender Gaps</b>	<b>CRP Focal Innovation(s)*; main crops and agroecological information**</b>	<b>Social characteristics</b>
<b>Afghanistan</b>	Kabul	Panali	610	High	Low	<p><b>CRP Focal Innovations:</b> improved wheat seeds, thresher, tractor (and other key machines for agriculture), and wheat storage</p> <p><b>Main crops:</b> tomato, spinach, alfalfa, pepper, wheat, and eggplants</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> the community does not own any communal resources such as unallocated arable land, forest, pasture, and water bodies or watersheds.</p>	<p><b>Social groups:</b> Majority Tajik, 100% Sunni Muslim</p>
	Nangarhar	Tehsul	1500	High	High	<p><b>CRP Focal Innovations:</b> improved wheat seeds, thresher, and tractor</p> <p><b>Main crops:</b> wheat, rice, and sugarcane</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> the community has water intakes that divert water from the rivers into their farms.</p>	<p><b>Social groups:</b> 55% Pashtun, 40% Afghan Arab, 5% Tajik</p>
	Kabul	Lehsat	1550	Low	High	<p><b>CRP Focal Innovations:</b> adoption of improved seeds variety of wheat, mechanization, and other improved variety of vegetables (tomato, lady finger, cucumber, among others)</p> <p><b>Main crops:</b> tomatoes, onions, grapes and wheat</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> it is a mountainous area, without communal resources, such as unallocated arable land, forest, pasture, and water body.</p>	<p><b>Social groups:</b> Pashtun and Tajik</p>
	Nangarhar	Katam	10000	Low	High	<p><b>CRP Focal Innovations:</b> improved wheat seeds, thresher, and tractor</p> <p><b>Main crops:</b> potato, wheat, corn, rice, and lady's fingers</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> it is mostly composed of agricultural lands and orchards.</p>	<p><b>Social groups:</b> 100% Pashtun</p>
<b>Bangladesh</b>	Mymensingh	Borian	5000	Low	High	<p><b>CRP Focal Innovations:</b> zero tillage (PTOS), improved wheat varieties 26 and 28, and elite—a very famous maize seed variety used by local farmers</p> <p><b>Main crops:</b> rice, jute, wheat, maize, potato bitter gourd, brinjal, balsam apple</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> the soil quality of this Char village is mainly loamy, which is good for</p>	<p><b>Social groups:</b> 92% Muslim and 8% Hindu</p>



						wheat, maize, and vegetable cultivation as well as other seasonal crops.	
	Faridpur	Madpur	4000	High	High	<p><b>CRP Focal Innovations:</b> Wheat improved seeds, strip tillage, reaper machine</p> <p><b>Main crops and livestock:</b> rice, jute, dal, wheat</p> <p><b>Primary crop purpose:</b> commercial and subsistence The village is a Char land (piece of land elevated from under the river), now highland and fertile.</p> <p><b>Other:</b> Geographical location, easy communication with local and main market, and the presence of some jute mills and rice mills made this village economically prosperous.</p>	<p><b>Social groups:</b> 100% Muslim</p>
	Rangpur	Master goli	3000	Low	High	<p><b>CRP Focal Innovations:</b> improved wheat seeds, improved maize seeds, and zero tillage</p> <p><b>Main crops and livestock:</b> rice, maize, jute, tobacco, wheat and many other vegetables (tobacco and maize are most popular)</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> the agricultural lands are fertile and are good to grow maize, tobacco, vegetables, as well as other crops.</p>	<p><b>Social groups:</b> 80% Muslims, 18% Hindus, 1% Jugi</p>
	Dinajpur	Matipur	6000	Low	Low	<p><b>CRP Focal Innovations:</b> strip tillage, bed planter, and improved wheat seeds</p> <p><b>Main crops and livestock:</b> rice, maize, jute, potato, dal, wheat, and vegetables</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> the district has distinct monsoonal, dry, and cold seasons. During the winter, this area is often affected with prolonged cold winds and foggy weather and other insects. Water scarcity turns into drought-like condition that harms crops in the dry season when ground water goes down further.</p>	<p><b>Social groups:</b> 75% Muslims, 20% Santals, 5% Hindu</p>
	Meherpur	Bakpur	3000	High	Low	<p><b>CRP Focal Innovations:</b> seeder machine and improved wheat seeds (Bijoy, Shotabdi, and Prodip)</p> <p><b>Main crops and livestock:</b> rice, wheat, jute, maize, and other vegetables (wheat and Kachu are most popular)</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> the soil quality of this village is suitable for rice, wheat, jute, vegetables, and mango fruits</p>	<p><b>Social groups:</b> 100% Muslim</p>
	Rajshahi	Dampur	4000	High	Low	<p><b>CRP Focal Innovations:</b> bed planter, strip tillage, and improved wheat seeds</p> <p><b>Main crops and livestock:</b> fish, rice, jute, dal, wheat, betel life, and other vegetables (fish and rice are most popular)</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> the high lands, soil, and weather of this village are better for mango and other fruits cultivation.</p>	<p><b>Social groups:</b> 100% Muslim</p>
<b>Ethiopia</b>	Amhara	Gobado	10800	High	Low	<p><b>CRP Focal Innovations:</b> improved wheat varieties, row planting, and water draining</p>	<p><b>Social groups:</b></p>

						techniques (Albaso) with wheat <b>Main crops and livestock:</b> wheat, fava bean, cattle, chicken, and sheep <b>Primary crop purpose:</b> commercial and subsistence <b>Agri conditions:</b> Its altitude is between 1700-2960 meters above sea level. It gets average rainfall of 900-1100mm/year. Weather type is 17% highland, 80% temperate, and 3% low land.	100% Amhara
	Amhara	Badero	4000	High	Low	<b>CRP Focal Innovations:</b> improved wheat varieties, row planting, and water raining method Albaso for wheat <b>Main crops and livestock:</b> barley, fava bean, wheat, and peas <b>Primary crop purpose:</b> commercial and subsistence <b>Agri conditions:</b> it is 4275 ha wide and 45% of the land is mountainous. And from this, 2243 ha are cultivated during the main rainy season and 418 ha are cultivated with irrigation schemes.	<b>Social groups:</b> 100% Amhara
	Oromia, Tiyo	Chala	5652	High	High	<b>CRP Focal Innovations:</b> improved wheat varieties and row planting <b>Main crops and livestock:</b> wheat, barley, peas, beans, oats, sesame, maize, chickpea, potato, carrot, beetroots, garlic, cabbage, and onion. Cows (heifer), oxen, horse, donkey, sheep, and goats are widely found <b>Primary crop purpose:</b> commercial and subsistence <b>Agri conditions:</b> the major weather types are <i>Weina dega</i> or midland and <i>Dega</i> or highland (70%). The soil type is mostly red soil and <i>koticha</i> (verti soil). There is only one river in the <i>kebele</i> .	<b>Social groups:</b> 75% Oromo, 20% Amhara, 5% Gurage, which are Orthodox Christian, Muslim, and Protestant
	Oromia, Tiyo	Akkela	3344	High	High	<b>CRP Focal Innovations:</b> improved wheat varieties and row planting <b>Main crops and livestock:</b> wheat, barley, peas, beans, oats, sesame, maize, chickpea, potato, carrot, beetroots, garlic, cabbage, and onion. Cows (heifer), oxen, horse, donkey, sheep, and goats are widely found <b>Primary crop purpose:</b> commercial and subsistence <b>Agri conditions:</b> the major weather types are <i>Weina dega</i> or midland and <i>Dega</i> or highland. The soil type is mostly red soil and <i>koticha</i> (verti soil).	<b>Social groups:</b> 80% Oromiffa, 20% Amharic, which are Orthodox Christian, Muslim and protestant
India	Haryana	Thali	3500	High	High	<b>CRP Focal Innovations:</b> happy seeder, combine, and weather-resistant wheat seeds like HD 2967 and HD2851 <b>Main crops and livestock:</b> paddy and wheat <b>Primary crop purpose:</b> commercial and subsistence <b>Agri conditions:</b> there are three ponds in the village and most people have a tube well and irrigation is therefore hardly a problem here with 100% of the men using irrigation facilities in farming.	<b>Social groups:</b> 6% Mahila Mandal, 4% Brahma Kumari, 9% Radha Swami, 57% Satpal Maharaj, 28% Dhan Dhan Satguru
	Bihar	Prem	2400	High	Low	<b>CRP Focal Innovations:</b> zero tiller and laser land leveller	<b>Social groups:</b>

						<p><b>Main crops and livestock:</b> wheat, rice, and maize and pulses and vegetables</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> there are unpredictable monsoons and lack of good irrigation facilities.</p>	50% Muslim, 40% Yadav/obc, 10% Harijan
	Uttar Pradesh	Deva	1700	High	Low	<p><b>CRP Focal Innovations:</b> zero tiller, hybrid seeds (especially HD 2967), and combine used in crop harvesting</p> <p><b>Main crops and livestock:</b> wheat, paddy, maize, and sugarcane; cow and buffalo</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> with eight ponds in the village, there is abundant water for irrigation. Besides many farmers also have water pumps for drawing underground water.</p>	<p><b>Social groups:</b> 60% Chandel Thakurs, 20% Thakurs, 20% Yadavs, 20% Brahmins, Bhumihars, Muslims and Schedule caste (Harijans).</p>
	Madhya Pradesh	Gadha	600	Low	Low	<p><b>CRP Focal Innovations:</b> improved wheat seeds, seed driller</p> <p><b>Main crops and livestock:</b> wheat, different varieties of pulses, black gram; cow and ox</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> This village is surrounded by forests.</p>	<p><b>Social groups:</b> 70% Lodi Thakur, 30% Gond</p>
	Bihar	Ganga	2000	High	High	<p><b>CRP Focal Innovations:</b> zero tiller, improved/new wheat varieties, improved maize (OPVs and hybrids)</p> <p><b>Main crops and livestock:</b> wheat, rice, and maize and pulses and vegetables</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> the local river, which was full till the year 2000, was the primary source of irrigation. But since it dried up people are facing huge scarcity of water.</p>	<p><b>Social groups:</b> Jai Garv, Yadavs, Bhumihars</p>
	Madhya Pradesh	Kulfi	1500	Low	High	<p><b>CRP Focal Innovations:</b> improved wheat seeds, irrigation techniques (or machines), zero tillage seed drill</p> <p><b>Main crops and livestock:</b> paddy and wheat</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> the terrain is hilly with red soil.</p>	<p><b>Social groups:</b> 25% Brahmins/Pandits, the rest of population includes scheduled castes and tribes</p>
	Madhya Pradesh	Kamani	636	Low	Low	<p><b>CRP Focal Innovations:</b> zero tillage seed drill</p> <p><b>Main crops and livestock:</b> paddy, wheat, sugarcane, masoor (pulse), chana (pulse variety), urad (pulse), and green peas</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> the topographical limitations and water woes render agriculture barely sustainable, particularly for small farmers.</p>	<p><b>Social groups:</b> Baiga, Gaud, Yadavs, and Patels</p>
	Bihar	Murmura	500	Low	High	<p><b>CRP Focal Innovations:</b> zero tiller and zero tillage; other machines used for irrigation</p>	<p><b>Social groups:</b></p>

						or wheat cultivation <b>Main crops and livestock:</b> wheat, corn, dalhan and dhencha (pulses); cows and buffaloes <b>Primary crop purpose:</b> commercial and subsistence <b>Agri conditions:</b> prone to floods, which happened repeatedly in the period 1987 to 2007.	95% Kurmi
	Punjab	Bete	2800	High	High	<b>CRP Focal Innovations:</b> zero tillage (practice and machines) <b>Main crops and livestock:</b> paddy and wheat; cow and buffalo <b>Primary crop purpose:</b> commercial and subsistence <b>Agri conditions:</b> Semi-arid conditions and the soil is sandy loam to clayey; soil fertility varies from medium to high.	<b>Social groups:</b> 60% Harijans, 25% Jats
	Uttar Pradesh	Cheeda	2500	Low	Low	<b>CRP Focal Innovations:</b> zero tillage and zero tiller, improved wheat seeds, and combine <b>Main crops and livestock:</b> paddy, wheat, vegetables, and pulses; cow, buffalo, and goat <b>Primary crop purpose:</b> commercial and subsistence <b>Agri conditions:</b> climate has not had much impact on agriculture in the past 10 years or so.	<b>Social groups:</b> 30% Kurmis, 30% Baniyas, 20% Chamars, 1% Muslims, 20% other scheduled castes
	Bihar	Ranipur	2000	Low	Low	<b>CRP Focal Innovations:</b> zero tillage and zero tiller <b>Main crops and livestock:</b> wheat and paddy <b>Primary crop purpose:</b> commercial and subsistence <b>Agri conditions:</b> this village is prone to floods, which happened repeatedly in the period 1987 to 2007	<b>Social groups:</b> 50% Harijans, 20% Bhumihars, 20% Rjabhars, 10% Brahmins.
	Uttar Pradesh	Shanti	3700	High	High	<b>CRP Focal Innovations:</b> improved wheat seeds, zero tiller, zero tillage, combine, and cultivator machines <b>Main crops and livestock:</b> wheat, rice, maize, peas, mustard, pulses, and vegetables like radish, sweet yam, etc. <b>Primary crop purpose:</b> commercial and subsistence <b>Agri conditions:</b> the village has about 1150 acres of land of which 700-800 acres are under agricultural production.	<b>Social groups:</b> 45% Rajputs, 36% Yadavs and Rajbhars, 7% Muslims, 10% SC.
<b>Morocco</b>	Saiss	Solh	240	High	High	<b>CRP Focal Innovations:</b> more productive wheat varieties, Conservation Agriculture, legume-wheat crop rotations <b>Main crops and livestock:</b> wheat, chickpeas, and sunflower <b>Primary crop purpose:</b> commercial and subsistence <b>Agri conditions:</b> rainfed agriculture is the most dominant type of farming in this community. Heavy rainfall is reported to often cause big losses in yield, most	<b>Social groups:</b> Arab, Amazigh Ait hammou (ait abdi), Amazigh Ait hammou (ait marzouq), Ait

						notably during the year 2004.	Aissa o Daoued
	Saiss	Ait Amer	2000	High	High	<p><b>CRP Focal Innovations:</b> improved irrigation, improved wheat varieties</p> <p><b>Main crops and livestock:</b> onion, tobacco, potatoes, olive tree, vegetables, and durum wheat; cattle (milk cow), fattening</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> the land in this community is fertile and irrigated.</p>	<p><b>Social groups:</b> 25% Ait Omar, 75% foreigners</p>
	Saiss	Chorafa	450	High	High	<p><b>CRP Focal Innovations:</b> improved wheat varieties and rehabilitation of food legumes system</p> <p><b>Main crops and livestock:</b> onion, potatoes, and fruit trees</p> <p><b>Primary crop purpose:</b> commercial</p> <p><b>Agri conditions:</b> the land in this community is fertile and irrigated.</p>	<p><b>Social groups:</b> Ait otman, Ait boukhlif</p>
<b>Nepal</b>	Myagdi	Thool	1293	High	Low	<p><b>CRP Focal Innovations:</b> new varieties of wheat WK1204, gautam, pasang lama and local breeds are Raato, Bikaase Raato (Thulo Gahun); new varieties of maize introduced in the area named Manakaman and Poshilo and Lumle-2</p> <p><b>Main crops and livestock:</b> wheat, rice, beans, soybean, peas (big and small), spinach, potato, millet, maize, vegetables, and orange</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> since 2007, floods have been a problem. The flood hazards from 2007 to 2011 led to deaths, 82% of population was affected and 70% of houses were destroyed. Landslides have been more frequent and pronounced since 2001 as well.</p>	<p><b>Social groups:</b> 90% Thajali, 10% Dalit</p>
	Jajarkot	Rawatgaon	6476	Low	High	<p><b>CRP Focal Innovations:</b> new varieties of wheat (Annapurna, Bikaase, KW 12 04) and use of chemical fertilizers</p> <p><b>Main crops and livestock:</b> wheat, rice, millet, maize, cauliflower, onions; and lentils; livestock</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> there is water scarcity.</p>	<p><b>Social groups:</b> 70% Bista Chettri, 15% Brahmin, 7% Dalit</p>
	Rupandehi	Pakadi	7248	High	High	<p><b>CRP Focal Innovations:</b> new seed varieties of wheat (WK 1204, Gautam, Bijay, and NL) and use of chemical fertilizers</p> <p><b>Main crops and livestock:</b> wheat, paddy, fish, maize, vegetables, goat raising, poultry farming, milk production, and mushroom farming</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> the farmers usually depend on rain for farming.</p>	<p><b>Social groups:</b> 35% Tharu, 20% Ethnic groups (Ahir, Kurmi, Yadav, Sunar), 15% Brahmin and Newars, 15% Magar and Chettri, 15% Dalits</p>

Pakistan	KPK	Khanur	3000	Low	High	<p><b>CRP Focal Innovations:</b> improved wheat and new farming methods</p> <p><b>Main crops and livestock:</b> wheat, maize, and tomatoes; cattle, buffalos, and goats; poultry</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> agricultural land is very fertile.</p>	<p><b>Social groups:</b> 50% Mareezi, 20% Gujar, 15% Utman khel, 10% Chichyan, 5% Ayaz khel</p>
	KPK	Ismashal	7000	Low	High	<p><b>CRP Focal Innovations:</b> improved wheat, mechanization</p> <p><b>Main crops and livestock:</b> wheat, maize, and rice; cattle, buffalos, and goats, ;poultry</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> the village is close to the river (Indus) belt and supports agriculture.</p>	<p><b>Social groups:</b> 25% Khar, 35% Thathal, 10% Khawar, 5% Qureshi, 5% Rawana, 5% Machi, 5% Kokar, 5% Mahani, 5% Nai</p>
	KPK	Naidura	6000	Low	High	<p><b>CRP Focal Innovations:</b> improved wheat and new farming methods</p> <p><b>Main crops and livestock:</b> wheat, maize, and vegetables; cows, sheep, goats, and poultry</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> all lands are rain-fed, with major dependence on the rains for irrigation.</p>	<p><b>Social groups:</b> 55% Awan, 5%Tanoli, 6% Saidan, 3% Swati, 2% Kashmiri, 2% Sayyad</p>
	KPK	Duranhai	35000	Low	High	<p><b>CRP Focal Innovations:</b> improved wheat and new farming methods</p> <p><b>Main crops and livestock:</b> wheat, maize, vegetables, livestock, and strawberries</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> agricultural land is fertile and well irrigated.</p>	<p><b>Social groups:</b> 10% Malakan, 10% Peeran, 20% Miangan, 25% Badrakhe, 15% Kakar</p>
	Balochistan	Balostan	1700	Low	High	<p><b>CRP Focal Innovations:</b> improved wheat and new farming methods</p> <p><b>Main crops and livestock:</b> almond, apricot, apple, wheat, vegetables (cauliflower, tomato, and salad); livestock and poultry</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> the village is located in the plain agroecological zone.</p>	<p><b>Social groups:</b> 50% Uthmankhail, 9% Loni, 11% Sulemankhail, 5% Merani, 10% Babozai, 5% Kibzai, 10% Shamalzai</p>
	Balochistan	Nareed	1000	High	Low	<p><b>CRP Focal Innovations:</b> improved wheat and new farming methods</p> <p><b>Main crops and livestock:</b> vegetables, chick peas, wheat, paddy, and fish farming</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> the main source of irrigation is canal irrigation water from the Indus.</p>	<p><b>Social groups:</b> 50% Lehri, 12.5% Ambi, 12.5% Machi, 10% Aeri, 5% Abro, 5% Munjo, 5% Sojra</p>

	Sindh	Chanda	4500	Low	High	<p><b>CRP Focal Innovations:</b> improved wheat varieties, cultivating alkali grass in saline land for preparation of soil and reducing salinity for wheat (improved or traditional), and farm yard manure after proper preparation</p> <p><b>Main crops and livestock:</b> wheat, rice cotton, chili; cattle and domestic animals</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> village has swampy and fertile land for the production of wheat and rice. All land in the village is irrigated.</p>	<p><b>Social groups:</b> 99% Chand, 1% Khaseeli</p>
Uzbekistan	Bukhara	Nariman	2685	High	Low	<p><b>CRP Focal Innovations:</b> improved wheat varieties</p> <p><b>Main crops and livestock:</b> livestock, grapes, poultry, cucumber, and tomato</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> the community faces soil salinity problems.</p>	<p><b>Ethnic groups:</b> 60% Uzbek, 5% Russian, 30% Tajik, 5% Tatars, 60% Uzbek, 5%, Russian, 30% Tajik.</p> <p><b>Religions:</b> Muslims</p>
	Samarkand	Kamola	3660	High	High	<p><b>CRP Focal Innovations:</b> improved wheat varieties</p> <p><b>Main crops and livestock:</b> milk and dairy products, apple, pomegranate, potato, carrot, cotton, wheat, onion and cabbage</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> the community faces soil salinity problems.</p>	<p><b>Ethnic groups:</b> 80% Uzbeks, 10% Russians, 5% Tatars, 5% Tadjik</p>
	Andijan	Nodira	17000	High	High	<p><b>CRP Focal Innovations:</b> improved wheat varieties</p> <p><b>Main crops and livestock:</b> potatoes, onions, carrots, cabbage, beans, cotton, wheat, corn, rice; breed animals in farms</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> the community faces soil salinity problems.</p>	<p><b>Ethnic groups:</b> 80% Uzbeks, 10% Russians, 10% Tatars</p>
	Kashkadarya	Ilkhom	7192	High	High	<p><b>CRP Focal Innovations:</b> Conservation Agriculture and improved wheat varieties</p> <p><b>Main crops and livestock:</b> poultry, lemon in greenhouses, melon, watermelon, tomato, cucumber, greens, milk, and dairy</p> <p><b>Primary crop purpose:</b> commercial and subsistence</p> <p><b>Agri conditions:</b> the community faces soil salinity problems.</p>	<p><b>Ethnic groups:</b> 80% Uzbek, 5% Russian, 5% Tatar, 5% Kazakh, 5% Tadjik</p>

\*CRP focal innovations refer to a particular improved technology or practice, or combination of technologies or practices, which were the focus of selected questions that the PIs added to the data collection instruments.

\*\*Information provided is based on reports from local key informants, such as community leaders and teachers, as well as study participants in the research communities.

## Annex D. Researchers and institutions involved in case studies

Country	Principal Investigator	Partner institutions	Research teams
Afghanistan	Lone Badstue	Afghanistan Research and Evaluation Unit (AREU)	Chona R. Echavez, Team Leader; Massih Ayoubi; Jennefer Lyn Bagaporo; Tamana Baraywal; Hashmat Behsodi; Mohammad Mujeeb Behsodi; Kubra Jaffari; Mohammad Asif Nazari; Hamza Noorzai; Leah Wilfreda Pilongo; Ahmad Saboor Razia Safi
Bangladesh	Lone Badstue	Glasgow Caledonian University (GCU)	Tahseen Jafry, Co-PI; Siddiqur Rahman, Team Leader; Razu Ahmed; Pinash Akter; Taslima Atique; Abdul Hannan Biswas; Azharul Islam; Rafiqul Islam Maruf; Anuprita Shukla
Ethiopia	Lone Badstue		Mahlet Hailemariam, Team Leader; Cathy Farnworth, External research support; Metsihet Abraham; Ayele Eshetu; Eliyas Gebreyohannes; Lydia Gizaw; Manbegirot Kebede; Ehitmariam Tadesse; Akal Tamirat; Solome Teshome
India	Lone Badstue	Glasgow Caledonian University (GCU)	Tahseen Jafry, Co-PI; Yadav Ashok Kumar, Team Leader; Alok Avinash; Preeti Bharati; Ajay Kumar Dubey; Prabin Prasad; Bharti Shakya; Anuprita Shukla; Shanta Thapa; Surabhi Tiwari
Morocco	Dina Najjar	ICARDA	Dina Najjar and Sarah Kerton, Team Leaders; Noureddine Bahri; Abderahim Bentaibi ; Hicham El Mhamdi El Aklaoui; Maria Marzouq; Zhour Tanji; Fatima Zahra
Nepal	Lone Badstue	Glasgow Caledonian University (GCU)	Tahseen Jafry, Co-PI; Kanchan Lama, Team Leader; Suman Dhakal; Sushila Nepali; Shova Shakya; Anuprita Shukla; Shykia Sunil; Radha Thapa
Pakistan	Lone Badstue	a) Balochistan Univ. of IT, Engineering and Management Sciences (BUIITEMS) b) Sustainable Development Policy Institute (SDPI) c) Glasgow Caledonian University (GCU)	a) Team leader: Syed Khair; Zarmina Achakzai; Saira Aziz; Abdul Salam Lodhi, Mehwish Qudus; Abdul Rashid b) Team Leader: Huma Khan and team c) Tahseen Jafry, Co-PI; Irshad Ali, Team Leader; Ashfaq Ahmed; Muhammad Naeem Aslam; Muhammad Ramzan Laghari; Tayyaba Razaq; Anuprita Shukla
Uzbekistan	Dina Najjar	ICARDA	Dina Najjar and Sarah Kerton, Team Leaders; Nodira Azizova; Hicham El Mhamdi El Aklaoui; Ilkhom Ibragimov; Amir Kamilov; Hanson Nyantakyi-Frimpong; Kamola Saidnazarova



## Annex E. Definitions of codes referenced in tables and figures

<b>Code</b>	<b>Definition</b>
<b>Agri-nrm practices or knowledge</b>	A general code to capture all references to agricultural and NRM activities, traditional knowledge, or new knowledge related to testing, adopting, or adapting a new agri-nrm practice.
<b>Asset access, use, or control</b>	Roles and capacities related to ownership, control, or use of assets. This includes individual or household finance/budgets/money, land/plots (owned or leased), animals, jewelry, and so forth. Also decisions about sale of, or use of proceeds from, agricultural produce.
<b>Economic agency or provider role</b>	References about being/not being an income earner, working for pay or gaining/losing economic power, influence, or control.
<b>Education, knowledge, or skills</b>	References to education access and attendance; grade levels, learning, and degrees attained or desired; or usefulness. Also to having or gaining new knowledge or skills from other outlets, e.g., training centers, radio, newspapers.
<b>Emotions, behaviors, or attitudes</b>	Descriptions of emotions, behaviors, or attitudes, such as caring, helpful, cooperative, dress, or behave modestly; or assertive, driven, macho, hard working or persevering, immodest. Also descriptions of social relations, such as loving, harmonious, supportive (or the opposite).
<b>Housework, parenting, and care roles</b>	Reports about mothers, fathers, sons, daughters, in-laws as well as mentions of feeding family and other chores.
<b>Gender specific roles, capacities, conducts</b>	A role, capacity, or conduct is discussed in ways that indicate it is either encouraged or appropriate or is discouraged or unacceptable for one sex or other. Or this role, capacity, conduct may be uncertain or qualified, for example, women must get consent to work or attend a meeting, women should not dress inappropriately; or widows can work because no choice. Also mentions that men are sole or main providers and decision makers or would be teased if doing housework or care.
<b>Marital Roles</b>	References to couples, husbands, and wives.
<b>Marriage Practices</b>	Questions about marriage age of men and women in the village as well as how the decisions about who a woman and a man will marry are taken. Also practices with access to or transfers of other assets such as family or homestead plots that may happen when married.
<b>Non-agri livelihoods</b>	All non-agri types of livelihoods/jobs.
<b>Public services non-agri</b>	Formal government services (including lowest levels). Social assistance, roads, bridges, electricity, drinking water, healthcare. Also public safety issues, including those related to animal or crop theft by humans or non-agri property damage by wild animals.

## Annex F. References

- Ashrafi, H. (2009). Gender dimension of agriculture and rural employment special focus on Afghan rural women's access to agriculture and rural development sector. International Fund for Agricultural Development, Rome, Italy.
- Badstue, L., Petesch, P., Feldman, S., Camfield, L., Prain, G., & Kantor, P. (Forthcoming). Qualitative, comparative and collaborative research at large scale: the GENNOVATE conceptual approach. Unpublished manuscript. El Batan, Texcoco, Mexico: CIMMYT.
- Berdegue, J.A. (2005). Pro-poor innovation systems. Rome: IFAD.
- Beuchelt, T. D., & Badstue, L. (2013). Gender, nutrition-and climate-smart food production: Opportunities and trade-offs. *Food Security*, 5(5), 709-721.
- Bicchieri, C. (2006). *The grammar of society: The nature and dynamics of social norms*. New York: Cambridge University Press.
- Boogaard, B.K., Schut, M., Klerkx, L., Leeuwis, C., Duncan, A.J., Cullen, B. (2013). Critical issues for reflection when designing and implementing Research for Development in Innovation platforms. Report for the CGIAR Research Program on Integrated Systems for the Humid Tropics. Knowledge, Technology & Innovation Group (KTI), Wageningen University & Research Centre, the Netherlands.
- Cornwall, A. & Edwards, J. (2010). Introduction: negotiating empowerment, *IDS Bulletin*, 41(2): 1-9.
- Cunningham, S., & Jenal, M. (2016). Rethinking systemic change: economic evolution and institution.
- Doss, C. R. (2001). Designing agricultural technology for African women farmers: Lessons from 25 years of experience. *World Development* 29 (12), 2075-92.
- Doss, C. (2014). Data needs for gender analysis in agriculture. In *Gender in Agriculture* (pp. 55-68). Springer Netherlands.
- Doss, C. R., & Morris, M. L. (2000). How does gender affect the adoption of agricultural innovations? *Agricultural Economics*, 25(1), 27-39.
- Erenstein, O., & Thorpe, W. (2010). Crop–livestock interactions along agro-ecological gradients: a meso-level analysis in the Indo-Gangetic Plains, India. *Environment, Development and Sustainability*, 12(5), 669-689.
- FAO & IFAD. (2009). *Gender in Agriculture Sourcebook*. Washington, DC: World Bank.
- Giller, K.E., Witter, E., Corbeels, M., & Tittonell, P. (2009). Conservation Agriculture and smallholder farming in Africa: The heretics' view. *Field Crops Research*, 114 (1), 23-34.
- Grace, J. (2004). Gender roles in agriculture: case studies of five villages in northern Afghanistan. Afghanistan Research and Evaluation Unit (AREU).
- Jafry, T. (2013) Scoping study on integration of gender and social Equity in R4D on Wheat-based systems in South Asia. Final Technical Report. Glasgow Caledonian University.
- Kabeer, N. (1999). Resources, agency, achievements: Reflections on the measurement of women's empowerment. *Development and Change*, 30, 435-64.
- Kingiri, A. (2010). *Gender and Agricultural Innovation: Revisiting the Debate through an Innovation System Perspective*. NR International.
- Klawitter, M., Henson Cagley, J.; Yorgey, G.; Gugerty, M.K., & Anderson, L. (2009). *Gender cropping series: Wheat in Sub Saharan Africa*, Evans School Policy Analysis and Research, University of Washington.
- Knight, J. and J. Ensminger. (1998). Conflict over changing social norms: Bargaining, ideology, and enforcement. In Brinton, M.C., & Nee, V. (Eds.), *The new institutionalism in sociology* (pp. 105-126). Stanford, CA: Stanford University Press.
- Kumar, N. & Quisumbing, A.R. (2010). Access, adoption, and diffusion, IFPRI discussion papers, 995. International Food Policy Research Institute (IFPRI).

- Lane, D. C. (2001). Rerum cognoscere causes: Part II: Opportunities generated by the agency/structure debate and suggestions for clarifying the social theoretic position of system dynamics. *System Dynamics Review*, 17 (4), 293-309.
- Leeuwis, C., & Aarts, N. (2011). Rethinking communication in innovation processes: creating space for change in complex systems. *The Journal of Agricultural Education and Extension*.
- Meinzen-Dick, R. (2001). Gender Dimensions of community resource. *Communities and the environment: ethnicity, gender, and the state in community-based conservation*, 63.
- Miles, M. B., Huberman, A.M., & Saldaña, J. (2014). *Qualitative data analysis: a methods sourcebook*. Los Angeles, CA: Sage Publications.
- Muñoz Boudet, A.M., Petesch, P., & Turk, C. (2013). *On norms and agency: Conversations about gender equality with women and men in 20 Countries*. Washington, DC: World Bank.
- Narayan D., Pritchett, L., & Kapoor, S. (2009). *Moving out of poverty: Success from the bottom up*, 2. New York and Washington, DC: Palgrave Macmillan and World Bank Group.
- Narayan, D. (Ed.). (2009). *Moving out of poverty: The promise of empowerment and democracy in India*, 3. New York and Washington, DC: Palgrave Macmillan and World Bank Group.
- Narayan, D., & Petesch, P. (2002). *Voices of the poor: From many lands*. New York: Oxford University Press for the World Bank.
- Narayan, D., & Petesch, P. (Eds.). (2007). *Moving Out of poverty: Cross-disciplinary perspectives on mobility*, 1. New York and Washington, DC: Palgrave Macmillan and World Bank Group.
- Narayan, D., & Petesch, P. (2010). *Moving out of poverty: Rising from the ashes of conflict*, 4. New York and Washington, DC: Palgrave Macmillan and World Bank Group.
- Nelson, K.M. (2013). *Analysis of farmer preferences for wheat variety traits in Ethiopia: A gender-responsive study*. MSc thesis. Cornell University.
- Okali, C. (2011). *Achieving transformative change for rural women's empowerment*. Expert paper prepared for the Expert Group Meeting "Enabling rural women's economic empowerment: Institutions, opportunities and participation." UN Women.
- Okali, C. (2012). *Gender analysis: engaging with rural development and agricultural policy processes*. Working Paper 026. Future Agricultures Consortium. Brighton: IDS.
- Olesen, A., Le Duc, C., Pritchett, L. H., Moriarty, L., & Das, M. B. (2005). *Afghanistan: national reconstruction and poverty reduction—the role of women in Afghanistan's future*.
- Patton, M.Q. (1990). *Qualitative evaluation and research methods*. (2nd ed.) Newbury Park, CA: Sage.
- Pennells, L. (2011) *Gender analysis in agriculture punjab – Pakistan*. Field insights PowerPoint presentation. Retrieved from <https://www.google.co.uk/#q=Pennells%2C+L.+2011+Gender+Analysis+in+Agriculture+Punjab+%E2%80%93+Pakistan>.
- Petes, P., Badstue, L., Camfield, L., Feldman, S., Prain, G., & Kantor, P. (Forthcoming). *Qualitative, comparative and collaborative research at large scale: The GENNOVATE field methodology*. Unpublished manuscript. CIMMYT, Mexico.
- Petes, P. (2011). *Women's empowerment arising from violent conflict and recovery: life stories from four middle-income countries*. Washington, DC: USAID.
- Quisumbing, A. R. (2011). *Do men and women accumulate assets in different ways? Evidence from rural Bangladesh*. IFPRI Discussion Paper 01096. Washington, DC: IFPRI.
- Quisumbing, A. R., & Pandolfelli, L. (2010). Promising approaches to address the needs of poor female farmers: Resources, constraints, and interventions. *World Development*, 38(4), 581-592.
- Ragasa, C. (2012, August). *Gender and institutional dimensions of agricultural technology adoption: a review of literature and synthesis of 35 case studies*. In 2012 Conference (pp. 18-24). International Association of Agricultural Economists Foz do Iguacu, Brazil.
- Ridgeway, C. (2009). How gender shapes social relations. *Gender and Society*, 23(2), 145-60.

- Satyavathi, C. T., Bharadwaj, C., & Brahmanand, P. S. (2010). Role of farm women in agriculture: Lessons learned. *Gender, Technology and Development*, 14(3), 441-449.
- Taj, S., Akmal, N., Sharif, M., & Abbas, M. (2007). Gender involvement in rainfed agriculture of Pothwar. *Small*, 16(50), 26.
- Tavva, S., Abdelali-Martini, M., Aw-Hassan, A., Rischkowsky, B., Tibbo, M., & Rizvi, J. (2013). Gender roles in agriculture: The case of Afghanistan. *Indian journal of gender studies*, 20(1), 111-134.
- Thakur, S., Varma, S. K., & Goldey, P. A. (2001). Perceptions of drudgery in agricultural and animal husbandry operations: a gender analysis from Haryana State, India. *Journal of International Development*, 13(8), 1165-1178.
- Tiruneh, A., Tesfaye, T., Mwangi, W., & Verkuijl, H. (2001). Gender differentials in agricultural production and decision-making among smallholders in Ada, Lume, and Gimbichu Woredas of the Central Highlands of Ethiopia. CIMMYT.
- United Nations Development Programme. Human Development Reports. (2015). Human Development Index and its components. Retrieved from <http://hdr.undp.org/en/composite/HDI>.
- United Nations Development Programme. Human Development Reports. (2016). Gender Inequality Index. Retrieved from <http://hdr.undp.org/en/composite/GII>.
- Wharton, A. S. (1991). Structure and agency in feminist theory. *Gender and Society*, 5, (3): 373-389.
- World Bank. (2011). World development report 2012: Gender equality and development. Washington, DC: World Bank.
- World Bank. (2013). Poverty headcount ratio at \$1.90 a day (2011 PPP) (% of population). Retrieved from <http://data.worldbank.org/indicator/SI.POV.DDAY?end=2013&locations=1W&start=1981&view=chart>.
- World Bank. (2015). Worldwide Governance Indicators. Retrieved from <http://databank.worldbank.org/data/reports.aspx?source=Worldwide-Governance-Indicators>.
- World Bank. (2017). GDP per capita (current US\$). Retrieved from <http://data.worldbank.org/indicator/NY.GDP.PCAP.CD>.
- World Health Organization (WHO). (2016). Violence against women: Intimate partner and sexual violence against women. Retrieved from <http://www.who.int/mediacentre/factsheets/fs239/en/>.

**Contact:**

**Lone Badstue**, Chair of GENNOVATE Executive Committee, Gender Specialist, International Maize and Wheat Improvement Center (CIMMYT)  
l.badstue@cgiar.org

GENNOVATE's qualitative comparative methodology and large sample mark a first in the CGIAR, as well as, the collaboration of principal investigators from nearly all CGIAR Research Programs worldwide.

Executive Committee members: Lone Badstue, CIMMYT (Chair); Gordon Prain, International Potato Center (CIP); Amare Tegbaru, International Institute of Tropical Agriculture (IITA); Marlène Elias, Bioversity International; and Paula Kantor (in memoriam). GENNOVATE Expert Advisor, CIMMYT: Patti Petesch.

**To learn more, visit:**

[gender.cgiar.org/collaborative-research/gennovate](http://gender.cgiar.org/collaborative-research/gennovate)



RESEARCH PROGRAM ON  
Agriculture for  
Nutrition  
and Health



RESEARCH PROGRAM ON  
Aquatic  
Agricultural  
Systems



RESEARCH PROGRAM ON  
Dryland Cereals



RESEARCH PROGRAM ON  
Dryland Systems



RESEARCH PROGRAM ON  
Forests, Trees and  
Agroforestry



RESEARCH PROGRAM ON  
RICE  
Global Rice  
Science  
Partnership



RESEARCH PROGRAM ON  
Grain Legumes



RESEARCH PROGRAM ON  
Integrated Systems  
for the Humid  
Tropics



RESEARCH PROGRAM ON  
Maize



RESEARCH PROGRAM ON  
Roots, Tubers  
and Bananas



RESEARCH PROGRAM ON  
Wheat