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Girls on a mission. Photo: CIMMYT.

FEMINIST SCIENCE AND EPISTEMOLOGIES:

Key issues central to GENNOVATE's research program

Introduction

This methodological brief offers a window onto GENNOVATE's innovative collaborative research initiative to promote gender equality in agricultural and natural resource management. GENNOVATE ('Enabling gender equality in agricultural and environmental innovation') has focused on the study of gendered norms, agency, and innovation as means to understand and address women's and men's access to, and use and development of, new technologies and agricultural practices. By innovation we include changes in agricultural production, resource management, institutional practices such as those in extension services, entrepreneurial activities, informal learning and exchange, and collective action. GENNOVATE's challenge in moving toward greater gender equality has been to develop a research strategy that reimagines research about women in agriculture from the bottom-up. Doing so offers new ways to understand and respond to the ongoing gender inequalities that characterize relations in agricultural production, resource access, services, and distribution, and to signal their importance for understanding consumption, nutrition, wellbeing, food security, and other aspects of social change. Central to the discussion that follows is how feminist debates about key methodological and epistemic issues — i.e., issues pertaining to the production of knowledge — have contributed to the GENNOVATE research program. This brief note addresses four central questions:

- Why is it important to distinguish among epistemology, methodology, and methods?
- What is feminist epistemology? What can researchers of gender, agriculture, and innovation learn from engaging the contributions of feminist epistemology?
- What is feminist methodology? What contribution can (and does) feminist methodology make to understanding gender relations in agriculture?
- How has GENNOVATE integrated lessons from feminist methods and feminist epistemics about gender relations, agricultural change, and innovation?

Distinguishing feminist epistemology, methodology, and methods

What is feminist research? Feminist researchers employ a variety of methods, including interdisciplinary approaches, that seek to support changes in gender relations. But regardless of approach or strategy, **feminist inquiry seeks to enhance gender equality and recognize women as subjects whose experiences may differ from generalizations made on the basis of data collected from or about men.** Feminist inquiry, in short, privileges women's and other subjugated people's perspectives, including the specificities of their involvement in agricultural and natural resource management, so as to enhance their productive capacities, reduce rural poverty, and equalize resource access and experiences of wellbeing. This means that in contrast to more institutionalized approaches to research, whose interests are left implicit or are presumed to be neutral or unbiased even as this research acts to maintain the status quo, feminist researchers make their goals explicit — to forefront the knowledges of previously denied voices and to contribute to increasing equality among people.

To fully appreciate the contributions of feminist analyses to GENNOVATE's research, it is important to distinguish between epistemology, methodology, and method, as these concepts are often ignored or used interchangeably (box 1).

A second important distinction is that among feminist research, gender-aware, and gender-sensitive research. These research traditions may be used interchangeably, but, significantly, gender-aware and gender-sensitive research primarily concern research that is aware of or sensitive to possible differences between women and men but do not offer or address the epistemological issues that constitute a feminist critique of research practice. As suggested below, such a critique includes challenging binary oppositions, thinking relationally, assuming that knowledge is always partial, and that knowledge production is an interested rather than a neutral activity. Further, feminist research focuses on securing gender equality by addressing issues that highlight social inequality in order to transform gender relations.

Box 1: The distinctions between epistemology, methodology, and methods

Epistemology refers broadly to theories of knowledge and the assumptions researchers make, most often without explicit recognition or consideration, about what constitutes knowledge, who can know, the object of study, and, importantly, the relationship among these ways of knowing. The latter pivots around the distinction among epistemology, methodology, and methods and is often framed in terms of the contrasts between positive science and its emphasis on causality and truth claims versus constructivist and reflexive inquiry and its focus on partial knowledges and multiple truths.

Methodology is best understood as a research strategy through which knowledge is produced. Methodology consists of the design or approach employed by researchers in order to understand a specific set of issues, identify particular problems, or explore ongoing practices, processes, and relations. Said differently, methodology entails the researcher's assumptions and choices about the kinds of data that can best answer the research question at hand. These choices are often associated with two traditions in the social sciences, quantitative and deductive analyses on the one hand, and qualitative, usually inductive analyses, on the other. Researchers who employ quantitative analysis focus on theory testing that entails identifying and explaining causal relationships between variables including, for example, gender differences in nutritional status or male and female participation in the agricultural labor force.



Women's group leader Kalpon addresses men and women in the community. Bangladesh. Photo: CIMMYT/Sam Storr.

Feminist epistemologies in agricultural research

The most important feminist contribution to research in agriculture is the move away from research questions that presume that only men are farmers or agricultural managers and decision-makers, as well as away from conclusions based on male only samples but which, nonetheless, claim universal or generalizable applicability. Prior to feminist research about agricultural production, most of what we knew about these practices had been generalized from evidence collected from male producers. To the limited extent that agricultural research focused on gender, it largely examined the differential gendered effects of changes in agriculture or agricultural technologies and policies on women and men. While drawing attention to a number of key associations such as women's limited access to resources or services, this research had failed to challenge the commonly held understanding of gender as a binary variable, female vs male, femininity vs masculinity. Nor did it challenge the dominant positivist research paradigm by signaling the partiality of all knowledge claims, particularly those that omit the meanings that women and other subjugated groups give to such changes and opportunities for innovation.

Identifying women as independent actors with their own histories and experiences in agricultural production, change, and innovation is therefore a key starting point for undertaking feminist or gender-aware research. Notably, feminist researchers stress the point that women and men are not homogeneous groups. Rather, women and men include diverse constituencies whose identities and identifications are based on a host of characteristics and experiences, including, but not limited to, economic status, religious or ethnic affiliation, sexuality, or marital status. Such multiple aspects of people's experiences, acting together, shape their choices, capacities, and opportunity structures. Such complex identities and identifications signal, for example, the intersection of various property and labor forms and relations that draw attention to social differentiation among populations and the contributions of intersectional analyses. The intersection of labor relations is especially evident among household and small farm producers who depend on family and community labor. These intersecting labor relations reveal the limitations of analyses that fail to address the dynamic relationship between productive and reproductive labor, where the latter includes household and care work, and sometimes household gardens or post-harvest agricultural activities that are usually considered women's work. The simple lesson from feminist research is that we learn of the critical importance of women's labor and the significance of gender norms when we include women as subjects of study.

In contrast to quantitative researchers who test hypotheses derived from theory, qualitative social scientists proceed inductively seeking understanding and meanings from the points of view of those they study. In applied settings, a research methodology provides a template to build toward an explanation and provide justification for appropriate action or intervention.

Research methods, in contrast, refer to particular techniques or instruments used to gather and analyze data and may include experimental designs or surveys distributed in person or via information, communication technologies such as telephone or mail, and the use of existing data sets, including censuses and national and global surveys collected by others and available for secondary analysis. Premised on the separation and hierarchical relationship between the researcher and those they study, large samples, usually selected randomly, provide the grounds for claims of objectivity, validity, and generalizability. Said differently, researchers are assumed to be knowledge producers and those they study are their objects of inquiry; a relationship that is premised on inequality and hierarchy and crucial in support of claims of objectivity and validity.

Typically, qualitative research includes participant or direct observation, long-term ethnographic encounters, open-ended interviews, and case studies that include long-term and repeated visits to sites of investigation. Qualitative methods also include oral history, narrative analyses, visual studies, and life histories, as well as focus groups, each suited to answer particular kinds of questions. These methods involve building trust between researchers and those they study in ways that challenge the hierarchical relationship between researchers and their subjects. In some cases, in fact, this form of engagement may result in collaboration and the co-production of data as well as analysis. Emphasizing a focus on identifying mechanisms of social change, feminist inquiry highlights the complex relationships between normativity (social norms), institutional and structural context, and behavioral outcomes revealed in everyday social relations. Rather than claims seeking generalizability, then, feminist qualitative researchers emphasize the contingent or historical specificity of their findings, even as their findings may aid in identifying patterns or practices that are common across different research sites.

From a feminist perspective, those engaged in agricultural and natural resource research, including breeders, agronomists, other biological scientists, and economists, can gain considerably from being gender sensitive because they would be able to begin to understand the difference between what are significant questions for women and men farmers. Such acknowledgement may be especially

consequential as researchers make decisions about research priorities and key issues for study, as well as in their expectations about research outcomes and recommendations. Thus, regardless of the field of research, method employed, or research question asked, a feminist or gender-aware framework contributes significantly to how research questions are posed, how data are collected, and from whom.

A feminist approach also considers how samples or research sites are identified, how data are analyzed, and how results are elaborated and used. GENNOVATE has offered insight into precisely these issues, selecting samples of women and men from different socioeconomic and generational groups so that their shared, as well as different experiences, can be documented, analyzed, and deployed in strategies for intervention. These diverse experiences can also help to explain possible differences in the reception and adoption of new agricultural strategies and practices, suggesting, in the case of women, how, for example, household labor obligations or restrictive social norms may affect their interest in and ability to engage new agricultural practices. Addressing their distinctive experiences and patterns of engagement recognizes women and youth, for example, as agents and producers of knowledge, where patterns that exist among and within these groups can help to explain both differences in their access to resources and responses to and, importantly, demands for change.

It is important to emphasize that many presume that the gender-sensitive researcher is only interested in examining the experiences of women. However, this is a problematic assumption, since it assumes that gender is a binary variable, rather than a relational concept in which understanding the experiences or phenomena affecting women or men requires studying the relationships between them. A significant contribution of feminist epistemology consists of a critique of binary thinking—not only when posed as women vs men, but also between production and reproduction, or cultural and structural relations—and its consequences for understanding



GENNOVATE fieldwork men's focus group discussion in Bangladesh. Photo: Anuprita Shukla.

household and agricultural production, distribution, and consumption processes. Methodologically, this requires cognizance of relationality and the interdependence of these practices. This means that in adopting a relational view, feminist researchers seeking to explain productive capacities or value addition would challenge the view that production is solely an in-field activity with homestead activities, presumed to be carried out by women, inconsequential for explaining the production process. Gender-sensitive researchers would explore precisely those areas often ignored by agricultural scientists to understand how these and other aspects of the production process, including such activities as seed selection and crop processing, are critical contributions to explaining how agricultural opportunities, capacities, and value addition unfold.

Finally, gender-sensitive relational research is attentive to the connections among production, distribution, consumption, and nutrition as researchers ask questions, develop and select methodologies that are best suited to answering these questions, and determine who are people best able to respond to the questions they ask. In practice, this might entail attention to the relationship between homestead and reproductive tasks and in-field activities as these likely reveal the changing demands on women and men, including the availability of their labor or time or resources to attend extension fora. Further, a gender-aware perspective can raise new questions for researchers to consider, especially when they take seriously learning from their interlocutors through qualitative, inductive research or, said differently, when they recognize subjugated knowledges as critical sources of information and learning.

In our effort to understand why women, for example, make particular production and labor decisions or decide to make claims about resources from which they were previously excluded, it is important to examine the support and sanctions they face when they alter their everyday practices or expectations. Said this way, gender norms are understood as embedded in the construction of people's everyday lives, whether they are expectations or sanctions placed upon men if they "allow" their wives to work or on women who are sanctioned for demanding equal access to resources. Gender norms also open opportunities through support for new behaviors in communities that once restricted them. Similarly, changes to gender norms also are evident, for example, as women increasingly earn money and contribute to household income. This development has inaugurated changes not only in the value of their work but also in the support that women in some communities now garner as innovators in trade relations and contributors to household sustainability.

Also significant in feminist research and mirrored in the GENNOVATE project is attention not only to the effects of normative changes and expectations on women but, also, how women's changing behavior shapes new normative regimes and expectations among community members that often provide an example for future generations. A gender-sensitive focus, in other words, reveals how social contexts not only shape behavior but are also constituted and constructed by their inhabitants.

Feminist methodologies and methods in agricultural research: The GENNOVATE example

As noted earlier, methodology refers to a research strategy, design, or approach that builds upon the set of research assumptions that shape the interests of the researcher or their institution or organization. Methodological choices build on the researcher's assumptions about the kinds of data that are best able to answer their questions, as well as on a host of other factors, such as the researcher's access to a study population, their skill set, the availability of an adequate budget and other technical resources, opportunities for collaboration, and institutional support. GENNOVATE has pioneered a research agenda focused on gendered norms, agency, and innovation with a view to enhancing gender equality.

It has also fostered a creative approach to agricultural research through its appreciation for the different CGIAR centers' histories of engagement with farming communities, the opportunity to provide resources for ongoing collaborative discussions, and its recognition of the value of synergizing what can be learned from both qualitative and quantitative data, including when conducting comparative analyses across a relatively large number of case studies.

Important is GENNOVATE's commitment to training researchers involved in the project that has fostered an interdisciplinary, feminist approach to gender-sensitive research that includes understanding gender norms, agency, and innovation in relation to a broad appreciation for the complexity of the agricultural sector. This complexity includes not only field production and resource management but also extension services, and trade and exchange relations. GENNOVATE's methodology builds on the history of access and collaboration between research institutions and farm communities.



Direct seeding maize with push row planter and mini tiller in Nepal. Photo: CIMMYT/P. Lowe.

When possible and appropriate, GENNOVATE researchers utilize existing as well as develops new sources of evidence about the sample communities, and sustains ongoing exchanges among researchers working in different contexts, including face-to-face and virtual interactions, that enable discussions about data collection and management issues as well as analyses of comparative findings across sites. This approach has also entailed building an infrastructure to collect and share data across sites to enable the identification of similar and divergent patterns across research locations.

The triangulation of methods was an important strategic decision by GENNOVATE researchers who recognized that while broad trends and outcomes are often best revealed by quantitative data, such evidence offers only a partial appreciation for the complex production environment of rural communities. Thus, the project combined thematic analysis from quantitative or numerical evidence — generated from pre-coded questions in focus groups and interviews and from systematic content analysis and data coding of the narrative responses — with in-depth contextual analysis of the data that built on the experiences of the study subjects. The researchers iterated between the comparative and contextual evidence to reveal the social processes — the meanings and everyday decisions that people make in response to local conditions — that lead to the identification of broader trends and outcomes.

For example, applying Participatory Rural Appraisal (PRA) methods, an approach often used to access the knowledges of rural people in the planning and management of research, enabled study subjects to assess, rate, and explain the conditions and trends that shaped their lives, opportunities, and decisions, as well as those of other members of their community. This also fostered a process of shared learning and the co-production of knowledge among study participants and researchers. And significantly, in highlighting the social relations and processes that support and enhance, or constrain and inhibit, capacities for innovation and change,

this feminist research methodology revealed the critical role of local norms in shaping the agentic capacity of people in the study communities.

Said differently, GENNOVATE's research strategy recognized that quantitative and qualitative data collection generates different kinds of evidence and are not competitive routes to truth claims. In fact, feminist methodologies generally challenge claims of a single truth and argue, instead, for multiple perspectives. Thus, in addition to acknowledging the value of diverse research methodologies, feminist researchers also emphasize the critical need to uncover and acknowledge subjugated knowledges that have typically gone unrecognized or been devalued by agricultural researchers.

This recognition and a focus on gender relations led GENNOVATE researchers to comprise focus groups that were attentive to differences in gender but also in age, for example, collecting evidence from both young women and men aged 16-24, as well as from women and men in poor and more established households. Through focus group discussions and interviews, GENNOVATE researchers also sought to understand people's "senses of economic mobility" or their experiences of economic improvement or decline among members of their community in their own words. Such diverse voices enabled researchers to draw attention to the experience of change that women and men, often differently within and across groups, experienced over the past decade of their lives, as well as the critical contribution offered by deploying diverse methods within a broad feminist methodological strategy.

Significantly, GENNOVATE has made critical contributions to understanding gender relationally, particularly in its attention to social norms and social context as constitutive of ongoing agricultural practices. GENNOVATE recognizes, for example, that normative expectations and structures of production may differ by place, context, and time, as well as constituency. As feminist scholars, GENNOVATE researchers have revealed the agency of different social actors by examining how the choices farmers make are shaped, not only by whether a person is a woman or a man, but also by how the social climate of everyday life and access to resources, extension services, and innovation influence what people actually are able to do, and how they decide on what actions to take or forego, including their decisions to innovate.



GENNOVATE fieldwork individual interview in Mexico. Photo: CIMMYT/Sam Storr.

Summary

What we learn from this discussion is that feminist approaches to agricultural research, such as that offered by GENNOVATE, offer opportunities to think and conduct research in new ways that are not limited to a single discipline or methodological approach. Whether one is a biological, physical, or social scientist, or a researcher who deploys quantitative or qualitative research methods, feminist inquiry challenges the conduct of “science as usual.” Feminist inquiry, for example, casts a skeptical eye upon generalized claims drawn from a sample comprised of a single, presumed-to-be-homogenous male group. Feminist researchers also argue that such findings represent only a partial perspective. They insist, instead, on the inclusion of a range of subjects with varied, contradictory, and contingent knowledges in order to highlight the diversity of experiences among different constituencies.

Such an approach will guide every decision the researcher makes — from how they construct a methodological approach, how and from whom they ask questions and generate research priorities, to the policy recommendations they offer based on their findings. Implicit in feminist researchers’ insistence on the importance of listening to the voices of their interlocutors is recognition that researchers can learn from those they study. This inductive, “bottom up” approach to knowledge production and theorizing stands in sharp contrast to research approaches that privilege outsiders’ knowledge as researchers test hypotheses derived from theory.

Significantly, we also learn that gender is not a synonym for women but refers, instead, to a set of interdependent relations that help to structure people’s social world. The richness of such findings also reveals why it is problematic to simply think about gender as a dichotomous or binary variable, rather than as a complex set of relationships through which people constitute everyday life. And by extension, a gender-aware approach brings a healthy skepticism to bear on other equally problematic binary distinctions, such as that which is often drawn between productive and reproductive or, as sometimes assumed, unproductive labor. Particularly evident in research on household food and small-scale farm production systems, this distinction is blurry, at best, and serves to obscure the significant contributions of women’s labor to the lives of those under study.

Finally, in challenging the conduct of “science as usual,” feminist researchers reject the value-free approach of positivist research. Instead, they seek to conduct research that enhances opportunities for gender equality. GENNOVATE has followed feminist methodologists’ lead by engaging in research that is concerned with values, morality, and the improvement of society. In their approach, GENNOVATE researchers emphasize the importance of considering both the structural relations that offer arenas for change, as well as the normative environment that likewise helps to reshape opportunities for improving the lives of individuals, households, and communities. GENNOVATE’s emphasis on norms and agency makes this important point, which also has relevance to agricultural research for development more broadly.

Suggestions for further reading

1. Badstue, L., Petesch, P., Feldman, S., Prain, G., Elias, M., and P. Kantor (2018) Qualitative, comparative and collaborative research at large scale: an introduction to GENNOVATE. *Journal of Gender, Agriculture and Food Security*.
2. Feldman, S. and Welsh, R. (1995). Feminist knowledge claims, local knowledge, and gender divisions of agricultural labor: constructing a successor science. *Rural Sociology*. 60 (1): 23-43.
3. Petesch, P., Badstue, L., Camfield L., Feldman, S., Prain, G., and Kantor, P. (2018) Qualitative, comparative and collaborative research at large scale: the GENNOVATE field methodology. *Journal of Gender, Agriculture and Food Security*.

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Contact:

Lone Badstue

International Maize and Wheat Improvement Center (CIMMYT)

email: l.badstue@cgiar.org

