Gender analysis in farming systems and action research:

A training manual

Gundula Fischer, Simon Wittich and Sabine Fründt

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The Africa Research In Sustainable Intensification for the Next Generation (Africa RISING) program comprises three research-for-development projects supported by the United States Agency for International Development as part of the U.S. government's Feed the Future initiative.

Through action research and development partnerships, Africa RISING will create opportunities for smallholder farm households to move out of hunger and poverty through sustainably intensified farming systems that improve food, nutrition, and income security, particularly for women and children, and conserve or enhance the natural resource base.

The three regional projects are led by the International Institute of Tropical Agriculture (in West Africa and East and Southern Africa) and the International Livestock Research Institute (in the Ethiopian Highlands). The International Food Policy Research Institute leads the program's monitoring, evaluation and impact assessment.

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Note

The authors would like users of this manual to note that the Africa RISING Program made a decision to use the term Systems Research for Agriculture instead of Farming Systems Research. This decision came when this publication was already in press.

Table of contents

List of acronyms

Africa RISING	Africa Research in Sustainable Intensification for the Next Generation
CGIAR	Consultative Group on International Agricultural Research
IITA	International Institute of Tropical Agriculture
ILRI	International Livestock Research Institute
M&E	Monitoring and Evaluation
R4D	Research for Development
SI Assessment Framework	Sustainable Intensification Assessment Framework
USAID	United States Agency for International Development

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Introduction

Over the past decades gender mainstreaming has received increasing attention in agricultural research and development. This is due to growing recognition of the central contributions of both men and women to agriculture, the adverse effects of gender inequalities on agricultural performance (Croppenstedt et al. 2013), and the critical role of gender for sustainable technology adoption (Feldstein 2000:72).

At the research level, gender mainstreaming means taking gender issues into consideration throughout the entire research cycle. It involves the systematic integration of gender analysis in the design and activities of a project or program. It also implies that the investigation of gender is a component of research across interrelated agricultural themes, and thus the common responsibility of various disciplines and teams. In this process, building the gender research capacities of scientists constitutes an important step.

This training manual was developed for Africa RISING (https://africa-rising.net), a USAID funded research-for-development (R4D) program that recognizes gender mainstreaming as key for achieving its overall research and development objectives. The program is based on an integrated action-research and farming-systems approach, and strives for gender transformation. A gender capacity assessment in 2015 identified a pronounced demand among Africa RISING scientists for training in gender analysis (https://cgspace.cgiar.org/handle/10568/72524). As a first step towards addressing this need, an annotated bibliography with selected sources for self-learning was developed (https://cgspace.cgiar.org/handle/10568/77488). Thereafter, the concept and contents of this manual were drafted and subsequently put to the test during four trainings in Tanzania, Malawi, Ghana and Mali in 2017.

Although tailored to a specific program, the manual covers aspects of gender analysis that are relevant to other actors working with similar objectives. More specifically, these are researchers that engage with smallholders and other stakeholders to jointly develop and test agricultural technologies – technologies that not only enhance productivity and profitability and are environmentally sound, but also adapted to the differential needs of women and men farmers and benefit both in an equal manner. This is in line with a broader sustainability concept for agricultural intensification that includes equity (see Musumba et al. 2017).

The focus of this manual is on the evaluation of technologies for agricultural production. This focus is deliberate. Several manuals for gendered value chain analysis already address questions of commercialization and trade. For a less technology-specific and more value-chain-oriented investigation of agricultural gender relations, we refer to Bolwig et al. (2008), Mayoux and Mackie (2008), Mutua, Njuki and Waithanji (2014) and Rubin, Manfre and Barrett (2007). In the light of the above objectives and limitations, the manual will serve as a source book for three general audiences:

- facilitators conducting trainings on gender analysis in agricultural research,
- researchers attending such trainings, and
- all those interested in learning more about concepts and tools for gender analysis.

The manual is organized as follows:

Chapter 1

Chapter 1 introduces the approaches underpinning the training, namely action research, a farming systems approach and gender transformation.

Chapter 2

An outline of the didactic approach and methodology is provided in chapter 2.

Chapter 3

Chapter 3 deals with how to select target groups for training, as well as a suitable venue, and gives a brief overview of the training schedule.

Chapter 4

Chapter 4 constitutes the main body of this manual: it contains the four training units, including detailed step-by-step guidelines for facilitators and learning materials (in annexes). The first unit is an introduction to the training and its underlying approaches. The second unit acquaints participants with basic concepts for investigating gender in agriculture. Tools and principles for gender analysis are center stage in the third unit. Participants learn how to use linkage diagrams, activity profiles, seasonal calendars, and daily activity clocks, as well as a matrix scoring tool to conduct gender-sensitive technology evaluations. Furthermore, they discuss standards for gender-responsive survey research. The fourth and last unit wraps up and evaluates the training, and may also serve as an outlook on how to use the acquired knowledge and skills. Appendices B and C provide template questionnaires through which participants can self-assess their skills and knowledge before and after the training.

Chapter 1

Research approaches underpinning the gender training

This training is based on three interrelated research approaches: *action research, farming systems, and gender transformation*. They provide the conceptual framework for gender analysis in this manual and inform the selection of training contents. In what follows we will introduce the basic features of each approach, its relation to gender, and avenues for integrating all three approaches in research.

1.1 Action research

The term action research describes an approach that links investigation with action. Robert Fisher (2004:2) defines action research as:

> "a process in which a group of people with a shared issue of concern collaboratively, systematically, and deliberately plan, implement, and evaluate actions. Action research combines action and investigation. The investigation informs action and the researchers learn from critical reflection on the action."

Action research was pioneered in psychology, education and organizational studies. In agriculture, it became popular in the 1990s as part of participatory research approaches. These emerged in response to the failure of conventional approaches to deliver technologies and extension advice that were meaningful to farmers and adapted to their specific realities and needs (Neef and Neubert 2004:1). Conventional approaches frequently contained a disciplinary and commodity-oriented focus, were applied at experimental research stations, and embedded in top-down research-extension schemes (Darnhofer et al. 2012:5). Scientists tended to control the research process from the identification of the problem to the development of a solution, which was then communicated to farmers through extension agents. By contrast, action research provides a methodology to adapt studies to the farmers' socio-economic environment, specifically to those aspects most relevant to them (Fisher 2004). Action research bears the potential to stimulate change (including gender transformative change) as it allows scientists, farmers and other stakeholders to actively adjust and transform the study contexts, processes and outcomes. It gives farmers the opportunity to influence and direct the research and development process and to promote and experiment with the adaptation of technologies to their farm environment.

Features of action research

Action research occurs in many different forms. However, some common features can be found. These are:

Participation and collaboration: Participation improves the efficiency of agricultural research interventions (Pretty 1995:1251). Its level and form, however, may vary. Ashby and Lilja (2004) distinguish various participation types in relation to how scientists, farmers and other stakeholders cooperate and engage in decisions and activities throughout the investigation process. Thus, action research promotes collaborative types of participation (see Tab. 1), in which knowledge production and empowerment emerge from the cooperation between researchers and farmers as equal partners (Eksvärd and Rydberg 2010:474-475; Greenwood and Levin 2007:4). An important notion is that problem identification and the design of corresponding solutions are more effective when target beneficiaries are involved. Collaborative participation means that both researchers and farmers are required to take up new roles. While the role of the researcher shifts from that of an expert to a facilitator of learning (Packham and Sriskandarajah 2005:123), farmers become co-researchers involved in research activities and decisions (Greenwood and Levin 2007:3; Fisher 2004:10).

Critical reflection: Action research demands critical reflection at all stages of the research process (Greenwood and Levin 2007:65; Fisher 2004:2). Researchers critically reflect not only on the topic of inquiry, but also on the means and methods to study it, and their own role in the research process (McNiff and Whitehead 2002:24-25). This facilitates learning and requires flexibility in terms of approach. During the course of the study, it enables research teams to identify needs for modification and adjust accordingly.

Table 1: Types of participation in agricultural research

Type	Description	Function
Conventional	Scientists make decisions without farmers' participation.	Functional
Consultative	Scientists make decisions based on an understanding of farmers' opinions, preferences and priorities through consultation (farmers serve as informants without direct involvement in decisions).	Functional
Collaborative	Scientists and farmers share decision-making authority and know about each other's ideas, hypotheses, priorities, and preferences for research through reciprocal communication.	Empowering
Collegial	Farmers make decisions, either as individuals or in a group, in the context of regular consultations with scientists (information from scientists may or may not be taken into account by farmers in their decisions).	Empowering
Farmer experimentation	Farmers make decisions, either as individuals or in a group (with no scientist participation).	Empowering

Adapted from Ashby and Lilja 2004:5

Iterative research: Action research typically takes the form of iterative cycles of planning, design, action, and evaluation (Fig. 1). The transition between two consecutive cycles is fluent. The research foci and composition of research teams may differ for each cycle (Packham and Sriskandarajah 2005:124; Fisher 2004:3).

Transformation: Action research continuously strives to improve the status quo (McNiff and Whitehead 2002:17). Researchers explicitly work towards social justice through the promotion of change that reduces social inequalities in a particular context (including inequalities based on gender).

On-farm research: In agriculture, action research is an on-farm approach that moves research activities from laboratories and research stations to the real-life context of farming. Action research employs various on-farm methods such as demonstration plots and farmer field schools.

Action research and gender

By demanding the inclusion of voices from heterogeneous groups of women and men (age, household type and position, social class, educational background), as well as their involvement in the activities of an intervention, action research challenges and investigates gender and other social imbalances (Greenwood and Levin 2007:164; Maguire 2005:62, 64). Thus, in action research gender can serve as an analytical lens to identify needs and options for gender transformation.

Suggestions for further reading

Fisher, R. (2004): *What is Action Research? An Introduction to Action Research for Community Development.* Sydney: Division of Geography, University of Sydney.

Online: https://cmsdata.iucn.org/downloads/what_is_action_research__apo_2004_.pdf

McNiff, J. and Whitehead, J. (2002[2]): *Action Research: Principles and Practice.* London/ New York: Routledge Falmer.

Online: https://kapanjadibeda.files.wordpress.com/2010/08/action-research-princip-and-practice.pdf

Maguire, P. (2005): Uneven Ground: Feminisms and Action Research. In: Reason, Peter/ Bradbury, Hilary (eds.) (2005): *Handbook of Action Research. The Concise Paperback Edition.* Thousand Oaks: Sage Publications, pp: 60-70.

Online: https://www.researchgate.net/publication/237944996

Packham, R. and Sriskandarajah, N. (2005): Systemic Action Research for Postgraduate Education in Agriculture and Rural Development. In: *Systems Research and Behavioral Science* 22(2), pp: 119-130.

Online: https://www.researchgate.net/publication/229506031

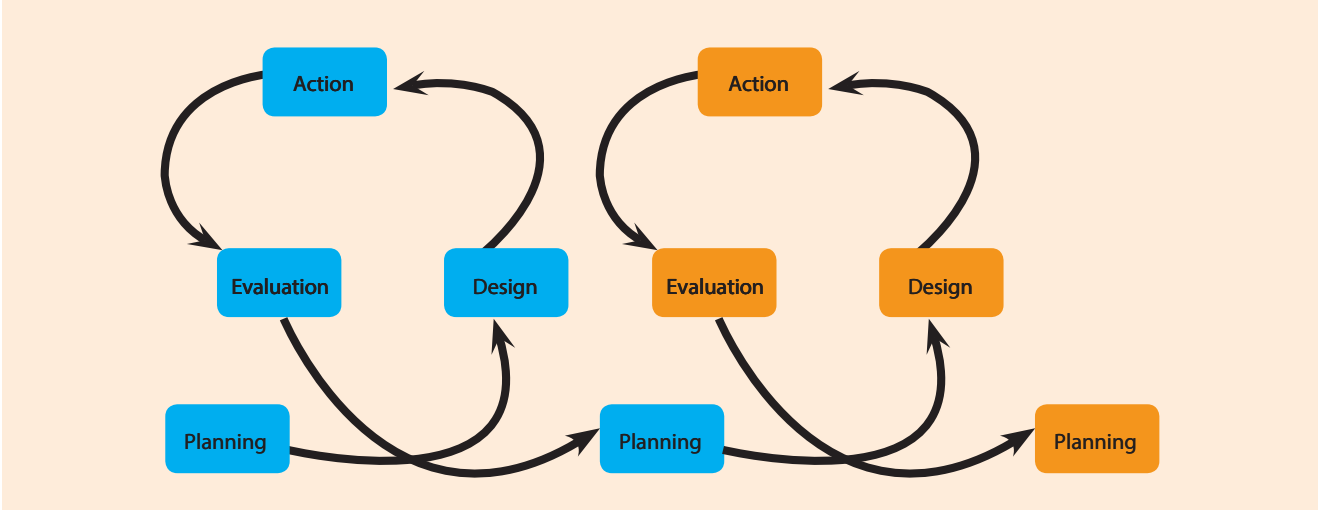


Figure 1: The action research process

1.2 Farming systems approach

The farming systems approach is a research methodology for improved technology generation and adoption (Biggs 1985:5). It looks at farm-level agriculture as a dynamic system of interdependent and interacting elements across multiple on-farm and off-farm activities (Darnhofer et al. 2012:7-8; Fig. 2). Analogous to action research, the emergence of the farming systems approach in agricultural research and development was a reaction to difficulties in tailoring technologies to farmers' conditions and needs (FAO 2005:3).

A farming system can be defined as:

> a population of individual crop and livestock farm systems which are linked through interrelated on-farm and off-farm decisions and actions and operated as well as managed by various members of a household. These various farming systems managers within the household act on the basis of the overall bio-physical, social and socio-economic environment and the common and individual goals, preferences, resource bases, and constraints (Giller 2013:153; Shaner et al. 1982:16, 37).

The primary concern of farming systems research is to understand and analyze the relationships and interactions between various elements that shape the conditions, processes and outcomes of whole farming systems, or a specific component in the system such as an agricultural innovation, technology or practice (Tow et al. 2011:10).

Research based on the farming systems approach is commonly embedded in action research and comprises repeated cycles of research, action, evaluation and extension (Bingen and Gibbon 2012:55; Escobar 2000:17). Accordingly, this is often reflected in the frameworks of related agricultural R4D programs, such as Africa RISING, whose framework provides for sequences of situation analysis (*research*), systems improvement (*action*), scaling (*extension*), and finally monitoring and evaluation (*M&E*) as an integrated and ongoing activity (IITA 2012:13-14).

Features of farming systems research

Action research is the characteristic approach for implementing farming systems research. As a consequence, farming systems research shares major features of action research, such as *participation and collaboration, critical reflection,* and *transformation towards social justice* (see Chapter 2, section 2.1). Apart from this, farming systems research has the following two additional characteristics:

***Holistic perspective*:** Farming systems research is based on a holistic perspective. It recognizes that decisions made in one part of a system may affect conditions in other parts of the system. Consequently, it explores the implications of a research intervention across multiple domains (e.g. economic, environmental, social). This holistic perspective reduces the risk of unintended side effects that result from the interplay of different components and are often neglected in non-systemic approaches (Ison 2008:3). In addition, it helps to develop agricultural innovations that are compatible with the system's resources and social conditions and thereby enhances the likelihood of adoption (Whitfield et al. 2015:61; FAO 2005:3).

***Multidisciplinary teams*:** Farming systems research is a multidisciplinary undertaking (Norman 2002:4). Since farming systems are understood as complex constructs including biophysical, technical, social and other domains, the integration of multidisciplinary teams is required to study and understand the various dimensions of the systems (Darnhofer et al. 2012:15).

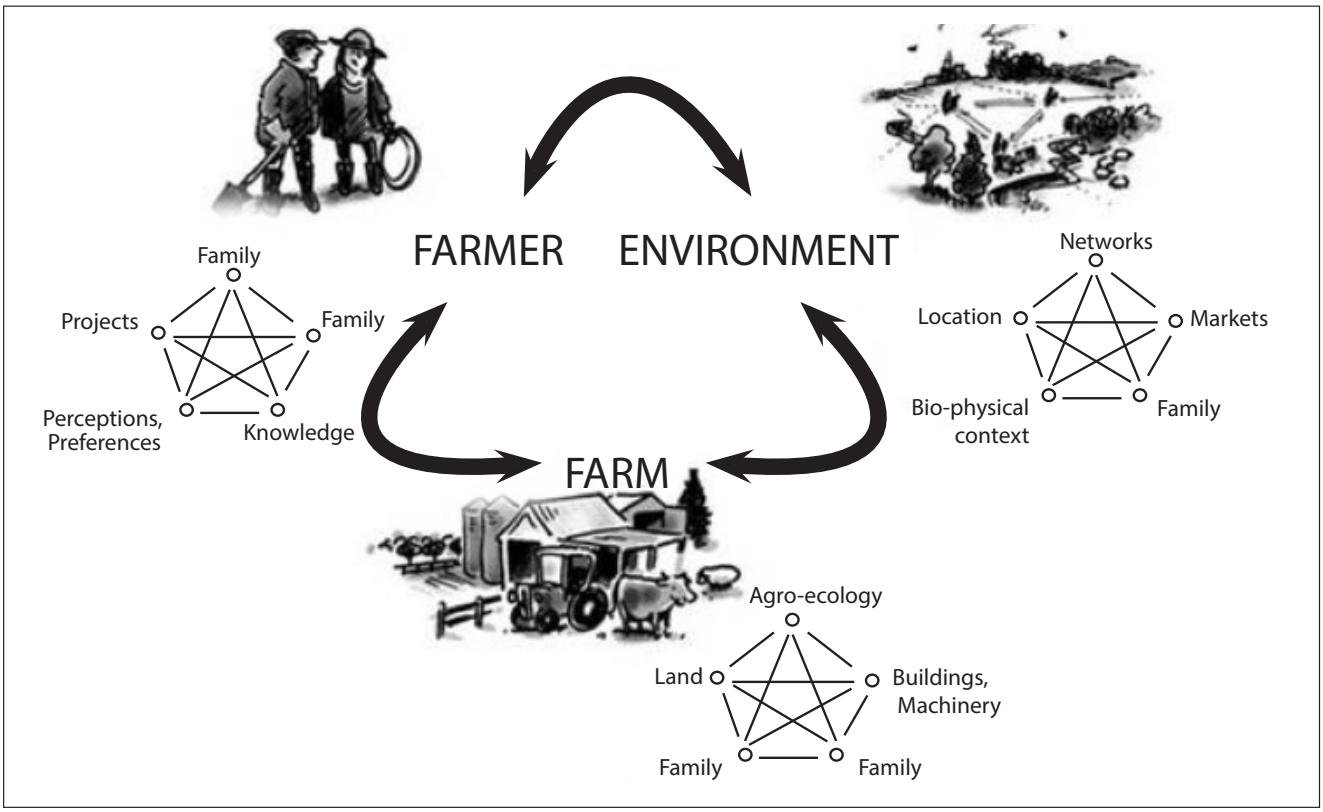


Figure 2: The farming system Darnhofer et al. 2012:6

Farming systems research and gender

Gender and other social aspects play a central role in this approach. Women, men and children all participate in the system's activities, and may be differentially affected by the conditions, dynamics and outcomes of these activities. Gender analysis provides the necessary concepts, methods and tools to study the social domain and its interaction with other domains. In farming systems research, gender analysis is specifically promoted in order to

- Study the interaction between an agricultural innovation and gender relations. It enables scientists to understand and anticipate contextualized constraints and potentials in respect of technology adoption by analyzing the specific preferences, needs, and realities of multiple categories of women and men (FAO 2005:iv; Feldstein 2000:71).
- Identify suitable farmers for participation and collaboration. Members of households or communities that have knowledge of a specific research topic and are critical for technology adoption can be better targeted (Feldstein 2000:72).
- Stimulate progress in the areas of welfare, equity, and empowerment (Feldstein 2000:72). Gender analysis provides the necessary information to work towards social justice as one of the central commitments of the farming systems approach.

Suggestions for further reading

Biggs, S. D. (1985): A Farming Systems Approach: Some Unanswered Questions. In: *Agricultural Administration* 18, pp: 1-12.

Online: http://pdf.usaid.gov/pdf_docs/PNAAT637.pdf

Darnhofer, I., Gibbon, D. and Dedieu, B. (2012): Farming Systems Research: an approach to inquiry. In: Darnhofer, I., Gibbon, D. and Dedieu, B. (eds.) (2012): *Farming Systems Research into the 21st Century: The New Dynamic.* Dordrecht, NL: Springer, pp: 3-31.

Online: https://www.researchgate.net/publication/258375147

Food and Agriculture Organization of the United Nations (FAO) (2005): *Gender and Farming Systems – Lessons from Nicaragua.* Rome: FAO.

Online: ftp://ftp.fao.org/docrep/fao/008/y4936e/y4936e00.pdf

Norman, D. W. (2002): *The farming systems approach. A historical perspective.* Kansas: Kansas City University.

Online: https://www.researchgate.net/publication/251791709

Poats, S. V., Schmink, M. and Spring, A. (eds.) (1988): *Gender issues in farming systems research and extension.* Boulder: Westview Press. (no open access)

Online: A summary is available under http://pdf.usaid.gov/pdf_docs/PNABC452.pdf

1.3 Gender transformative approach

The gender transformative approach strives to strengthen and co-create equitable social systems. In order to achieve this goal, the gender transformative approach

> "goes beyond just considering the symptoms of gender inequality, and addresses the social norms, attitudes, behaviors and social systems that underlie them" (AAS 2012:3).

The gender transformative approach considers the more tangible manifestations of gender inequality as products of interrelated and interacting social, cultural, and political institutions (e.g. norms, relations, policies). The latter need to be understood, challenged, and changed in order to achieve sustained forms of gender equality. Therefore, gender transformative research has two intentions: first, it must analyze and understand the more or less tangible gender issues associated with a certain research problem or context. Second, it aims to actively challenge and transform inequalities. In this regard, understanding the features and causes of gender inequalities is considered a precondition for stimulating change, as opposed to being an end in itself. It is important to note that transformation is conceived of as coming from within communities or households, and not as imposed from outside. Therefore, gender transformative research can only give impulses to stimulate and direct changes.

The gender transformative approach promotes the mainstreaming of critical analysis and change and can be distinguished from other approaches through the Interagency Gender Working Group (IGWG) gender equality continuum adapted below (Fig. 3).

In the below continuum, research and development activities can move from a more exploitative to a more accommodating or transformative approach (or vice versa).

The following features help to distinguish the approaches:

- Exploitative approaches promote gender stereotypes and thus reinforce inequalities. An example would be an intervention that extends invitations for nutrition activities to women only; researchers and extension officers emphasize women's responsibilities and supposedly "superior capacity" in this area. At the same time, training in mechanized technologies is predominantly offered to men, who are seen as having "higher technical abilities".
- Accommodating approaches do not question inequitable gender norms but work around them. Taking the example of a community in which labor-intensive post-harvest activities are assigned to women, a project with an accommodating approach would make efforts to reduce women's drudgery, while at the same time not challenging the culturally constructed gender roles.
- Transformative approaches seek to establish equitable gender relations. Part of this is to build awareness of the fact that gender norms are not "natural" or "given" but man-made and thus transformable. An example would be an intervention that includes husbands, wives and other household members, as well as community leaders, in nutrition activities, thereby underlining the shared responsibility of different actors in this area. Training in mechanized technologies is provided to both men and women, if possible in gender-separate groups. This allows participants to learn in a more relaxed atmosphere and to bring up their gender-specific needs.

Figure 3: The gender equality continuum Adapted from IGWG 2017

Features of gender transformative research

Gender transformative research takes many forms. A growing number of agricultural scholars advocate its integration into action research formats (e.g. Kantor and Apgar 2013:6; AAS 2012:3). In spite of its diverse manifestations, gender transformative research shares a number of common features. These are:

Participation and collaboration: In agriculture, gender transformative research requires the continuous involvement of local stakeholders (in particular farmers) and collaboration in joint research teams (Hillenbrand et al. 2015:17, Kantor and Apgar 2013:4). Gender transformation requires the active support and behavioral change of both men and women. Therefore, both men and women need to be included in research interventions (Okali 2011:7).

***Critical reflection*:** Gender transformative research rests on the assumption that change begins with critical reflection about and critical awareness of gender roles, relations, norms and behaviors (Kantor and Apgar 2013:3).

Intersectionality: Gender transformative research acknowledges that gender interacts with other social identities (e.g. age, class, ethnicity and position in the household) that need to be taken into consideration (Okali 2011:9-10). The analysis of intersectionality (the interaction of these multiple identities) is an integral part of research.

Mixed methods: Gender transformative research often combines quantitative and qualitative research strategies to penetrate more or less tangible spheres of inequality and capture information of various forms, types, and formats (Hillenbrand et al. 2015:6, 19).

Suggestions for further reading

CGIAR Research Program on Aquatic Agricultural Systems (AAS) (2012): *Building Coalitions, Creating Change: An Agenda for Gender Transformative Research in Development.* Penang, Malaysia: AAS (= Workshop Report AAS – 2012 – 31).

Online: http://pubs.iclarm.net/resource_centre/WF_3447.pdf

Farnworth, C., Fones-Sundell, M., Nzioki, A., Shivutse, V., Davis, M. (2013): *Transforming Gender Relations in Agriculture in Sub-Saharan Africa.* Stockholm: Swedish International Agricultural Network Initiative (SIANI).

Online: http://www.fao.org/family-farming/detail/en/c/468893/

Hillenbrand E., Karim N., Mohanraj P. and Wu D. (2015): *Measuring Gender-Transformative Change: A Review of Literature and Promising Practices.* Atlanta, GA: CARE USA (= Working Paper).

Online: www.care.org/sites/default/files/documents/working_paper_aas_gt_change_measurement_fa_lowres.pdf

Morgan M. (2014): *Measuring gender transformative change.* Penang, Malaysia: CGIAR Research Program on Aquatic Agricultural Systems (=Program Brief AAS2014-41).

Online: http://pubs.iclarm.net/resource_centre/AAS-2014-41.pdf

Kantor, P. and Apgar, M. (2013): *Transformative Change in the CGIAR Research Program on Aquatic Agricultural Systems.* Penang, Malaysia: CGIAR Research Program on Aquatic Agricultural Systems.

Online: http://pubs.iclarm.net/resource_centre/AAS-2013-25.pdf

1.4 Integrating action research, farming systems approach and gender transformation

Action research, the farming systems approach and gender transformation share a number of common features that provide entry points for integration (Fig. 4).

However, while integration of these approaches is possible, each approach retains a distinct focus and function (Fig. 5):

Action research provides a *broader methodological framework* for research. It offers basic principles on how to combine action and investigation, and defines the attitudes and roles of the researchers and their engagement with farmers and other stakeholders.

Within this methodological framework, the **farming system approach** sets the *thematic and theoretical focus*. The farm is delineated as the overall research problem that should be investigated from a systems perspective.

The **gender transformative approach** encourages the mainstreaming of *critical analysis and change* into research and action. It requires researchers to routinely consider and investigate gender issues in relation to research questions and to stimulate change towards more equality.

The subsequent chapter details how these three integrated approaches also underpin the didactics and methodology of this training.

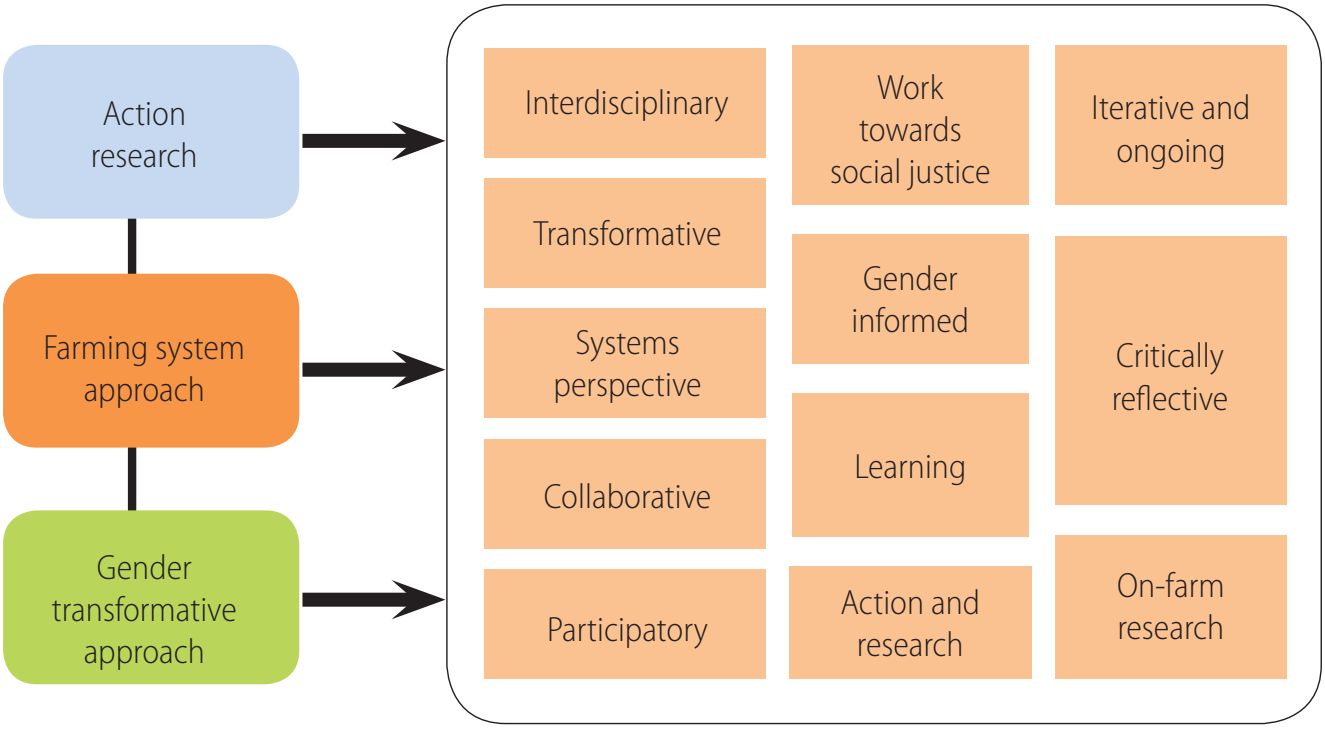


Figure 4: Common features of action research, farming systems approach and gender transformation

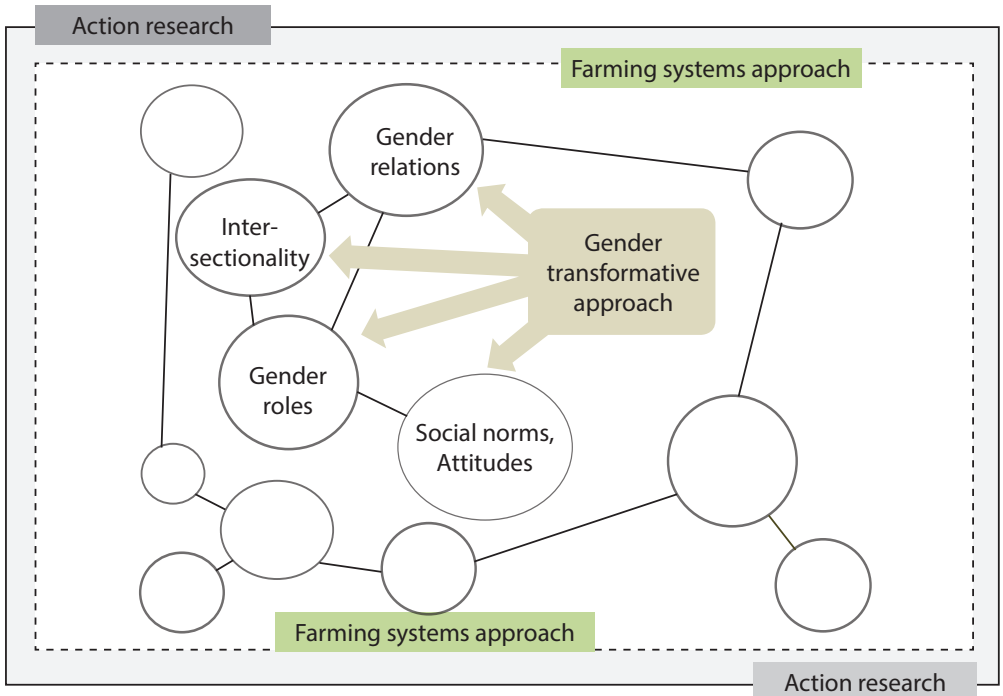


Figure 5: Functions of the research approaches after integration

Chapter 2

Didactic approach and methodology of this gender training

This manual aims at building gender analysis skills in agreement with the tenets of the research approaches introduced in chapter 2 (action research, farming systems approach and gender transformation). Therefore, active involvement of participants, critical reflection on research practices, and inclusion of the facilitators as co-learners in the process are encouraged.

The contents and methods were deliberately chosen following adult education principles (Schirch 2004) and principles of sustainable competence development in the international context (Krewer and Uhlmann 2015: 33-36). These principles support facilitators in creating a conducive learning environment, in which skills and knowledge are retained.

The above adult education principles (Tab. 2) partly overlap with Krewer and Uhlmann's (2015) principles for sustainable competence development in the international context. However, the latter also bring up new aspects. These were adapted for this manual as follows:

Ownership of the learning process and self-organization: Facilitators should create a conducive environment in which the training participants can assume responsibility for their own learning processes. Preconditions are transparency and the provision of information on learning objectives and methods in advance and throughout the whole training. This enables participants "to develop their own lines of inquiry and bring their personal development goals to the learning process" (Krewer and Uhlmann 2015: 33).

Attitude as the core: Mutual respect is required for effective learning processes in contexts where the participants come from diverse backgrounds. An appreciative attitude forms the basis for the development of "new ideas and competences from the diversity of perspectives" (Krewer and Uhlmann 2015: 34).

Experiential learning spaces: Facilitators should establish spaces for experiential learning in which the participants can try out novel processes and perspectives and reflect on them. This principle rejects the notion of "errors" or "mistakes" and redefines them as valuable learning experiences.

Reflection: Reflections on one's own behavior and the effectiveness of learning should be part of the training. These may consist of "a pause to look inward, a comparison of the actual with the desired state, an assessment of the available resources and (...) where necessary, reorientation" (Krewer and Uhlmann 2015: 34). Reflections may be offered on an individual or group basis; they may relate to behavior in research processes, to specific training aspects or the training as a whole.

Table 2: Adult education principles and implications for training

Adult education principle	Implications for training
Adults learn best when they perceive learning as relevant to their needs.	• Provide "real life" situations and emphasize the application of learning to real problems. • Identify learners' needs and what is important to them.
Adults learn by doing and by being actively involved in the learning process.	• Provide activities that require active participation of learners. • Provide activities that involve the learners as whole people: their ideas, attitudes, feelings, and physical being.
Adults have unique learning styles. They learn in different ways, at different rates, and from different experiences.	• Use a variety of training techniques. • Establish an atmosphere of respect and understanding of differences.
Participants bring relevant and important knowledge and experiences to the training	• Provide opportunities for sharing information. • Discuss and analyze participants' experiences. • Use participants as a resource and encourage them to participate and share their experiences.

Schirch 2004: 174

Learning as co-construction: Where participants and facilitators enter into a dialogue and jointly think, experiment and seek solutions the principle of co-construction becomes tangible. Keys "to co-construction are relationship, dialogue, communication and solution-oriented cooperation between participants and facilitators, in which the roles of novices and experts can vary depending on the situation and topic" (Krewer and Uhlmann 2015: 35).

Networking: The training provides opportunities to strengthen and expand already existing networks, or build new ones in which the participants can support each other in integrating and practicing new skills and knowledge.

In order to put these principles into practice, diverse methods have been selected. These include presentations, text work, exercises to develop research tools (tailored to the participants' specific needs), role-play, discussions and reflections (for instance on one's own learning foci), an ongoing "blog" on a particular topic, and other methods. These are used in individual, partner and group settings in order to meet the needs of diverse types of learners.

Suggestions for further reading

Schirch, L. (2004): *Women in Peacebuilding. Resource and Training Manual* (long version). West African Network for Peacebuilding and Conflict Transformation.

Online: not available

Krewer, B. and Uhlmann, A. (2015): *Models for Human Capacity Development. Didactics Concept of the Academy for International Cooperation*. Bonn/Eschborn: German Corporation for International Development (GIZ).

Online: https://www.giz.de/akademie/de/downloads/AIZDidaktikkonzept_E_150217_SCREEN.pdf

Chapter 3

Basics of this gender training

This chapter provides an overview of the target groups, the venue, the learning units, and the associated schedule of the training.

3.1 Target groups

This training focuses on "gender analysis in agriculture" and combines modules on theoretical and practical research aspects of the topic. It was designed for participants from a wide range of projects, programs, and organizations involved in agricultural research for development. In our trainings in Tanzania, Malawi, Ghana and Mali, participants came from the natural and social sciences, were experienced researchers and advanced students, worked for international and national research institutes and universities, or supported research as extension agents.

The diversity of participants can provide rich learning opportunities. However, facilitators should also reflect upon target groups and group composition in advance. The following questions could be important:

1. What specific aims does the organizing institution attach to gender training? What kinds of target groups are therefore needed?
2. How diverse are the participants with regard to gender, age, cultural background, professional specialization, etc.? How could this impact on the group dynamics?
3. What is the participants' motivation for attending the training (personal interest, supervisor's recommendation)? How could this influence their active involvement?
4. Are there hierarchical relations among the participants (supervisor-subordinate) or pronounced conflicts among individuals or their organizations? What effect could these have on the learning environment?
5. Looking at the specific work assignments of the participants, what could be their expectations in relation to the training?

Based on this information, facilitators may decide on specific target groups and group composition, and adapt the training contents accordingly. In our experience, the group should not be larger than 15 participants, to allow for active involvement and discussion.

3.2 Training venue

Facilitators should select and prepare a venue that matches the needs of interactive and participatory training. The venue should provide enough space to work with the entire group and to split up into three to five smaller groups for exercises – either in the same room or in separate small rooms. In our trainings in 2017 we experimented with different set-ups and found the one shown below to be most conducive to learning: a circle of chairs for work in plenary sessions, and four to five single tables in another part of the room for activities in smaller groups (Fig. 6). Walls should be empty so that posters and other materials can be displayed.

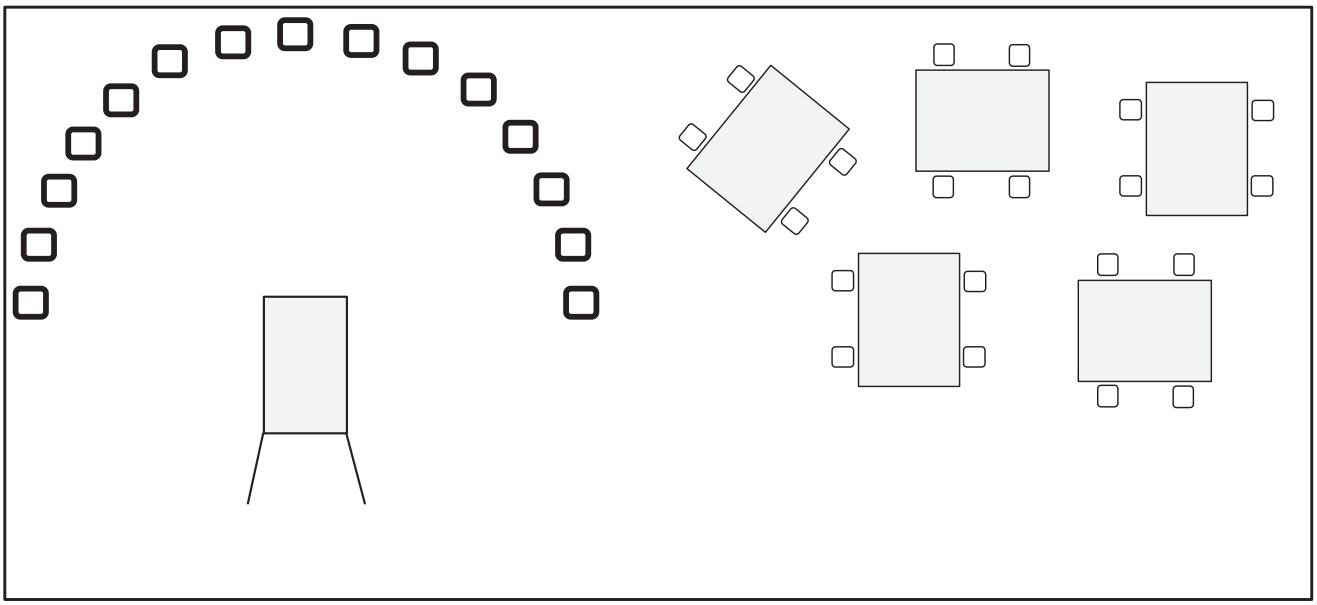
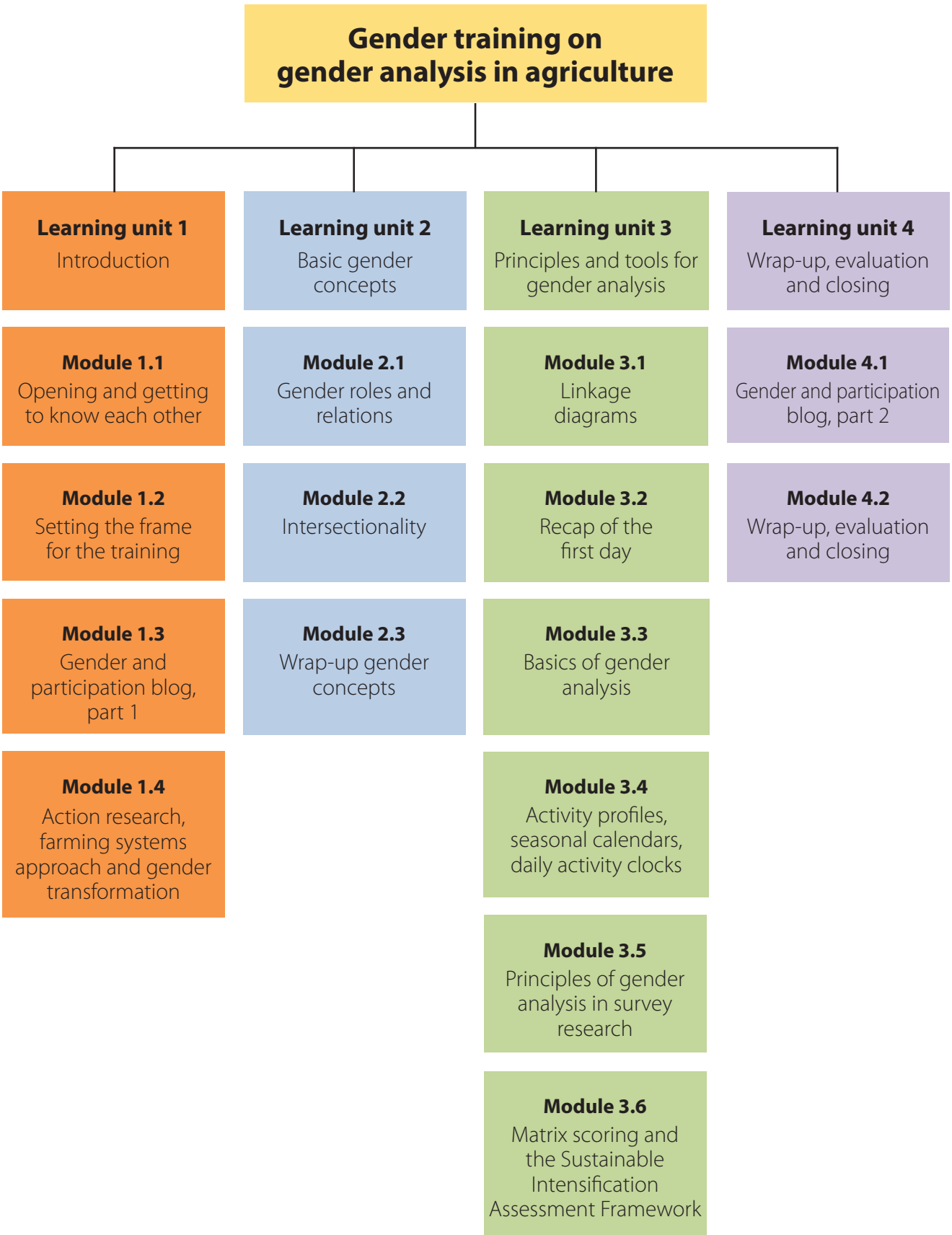


Figure 6: Training venue

3.3 Brief overview of learning units

The gender training is organized in four learning units (each marked by a different color). Each unit consists of several training modules.



3.4 Training schedule

This gender training covers two days. The instructions in chapter 5 indicate the approximate time required for each module. However, facilitators will adapt the schedule below (Tab. 3) to their specific contexts and group needs.

Table 3: Gender training schedule

Day 1	
08:45	Module 1.1: Opening and getting to know each other
09:30	Module 1.2: Setting the frame for the training
10:15	Module 1.3: Gender and participation blog, part 1
10:30	***Coffee break***
11:00	Module 1.4: Action research, farming systems and gender transformation
11:30	Module 2.1: Gender roles and relations
12:30	***Lunch break***
13:30	Module 2.2: Intersectionality
14:45	Module 2.3: Wrap-up gender concepts
15:00	***Coffee break***
15:30	Module 3.1: Linkage diagrams
17:00	End of the first day

Day 2	
8:45	Module 3.2: Recap of the first day
9:30	Module 3.3: Basics of gender analysis
10:00	Module 3.4: Activity profiles, seasonal calendars, daily activity clocks
10:30	***Coffee break***
11:00	Continuation 3.4: Activity profiles, seasonal calendars, daily activity clocks
11:30	Module 3.5: Principles of gender analysis in survey research
12:30	***Lunch break***
13:30	Module 3.6: Matrix scoring and the Sustainable Intensification Assessment Framework
15:00	***Coffee break***
15:30	Module 4.1: Gender and participation blog, part 2
16:00	Module 4.2: Wrap up, evaluation and closing
17:15	End of the training

The following basic equipment is needed:

Basic equipment and stationery

- Chairs and tables (according to group size)
- Projector
- 3 flipchart stands
- 3 flipchart pads
- Marker pens (different colors)
- Index cards (different colors)
- Sticky notes
- Masking tape
- Scissors
- Camera (for photos)

Chapter 4

Learning units: Background information and facilitation

This chapter constitutes the main body of the gender training manual. It contains detailed descriptions of the four learning units. Each unit is subdivided into several modules. A box at the beginning of each module provides facilitators with an overview of the approximate time needed, as well as the learning objectives and topics. It also outlines necessary preparatory steps (including the provision of materials) and methods to be applied. Thereafter, step-by-step instructions guide facilitators through each module. Some modules have additional "Facilitators' notes". These outline variations, explain the flow or purpose of certain steps, or give any other important information. Learning materials are provided in annexes and complete each module. For modules that deal with concepts, principles or tools (in learning units 2 and 3), background information, and suggestions for further reading have been added to support facilitators in their preparations.

Learning unit 1. Introduction

The first learning unit consists of four modules: an opening session, an assessment of previous knowledge and establishment of learning foci, an introduction to an ongoing "blog" on gender and participation, and a presentation of the underlying research approaches (action research, farming systems and gender transformative approaches).

Module 1.1: Opening and getting to know each other

The first module serves to create a favorable environment for learning and interaction throughout the training. Through a participatory exercise, the participants and facilitators get to know each other. From a large set of photo cards with agricultural subjects, each person chooses one that they associate with gender. Subsequently, the training participants introduce themselves to the group and explain why they have selected this photo.

Module 1.2: Setting the frame of the training

The second module sets the overall frame for the training. First, facilitators present the objectives, topics and didactic learning principles of the training and provide an overview of the schedule for the two days. Next, the participants fill in a form to self-assess their skills and knowledge. Finally, they formulate their learning foci, which will be revisited at later stages of the training.

Module 1.3: Gender and participation blog, part 1

In this module, a "blog" is introduced that offers a platform to exchange views on gender and participation in agricultural research and development. The "blog" is open for comments during the whole training period. Its objective is to discuss how projects and programs can involve more members of under-represented social groups (such as female or young farmers) in their activities. The "blog" revolves around three questions: *(1) Reach, Benefit and Empower: Do We Need Quotas and Targets?, (2) "It is Usually the Same People": Who Do We Invite and How?* and *(3) Choosing the Channels, Designing the Message: How Do We Communicate?* For each question short text excerpts and pictures or cartoons (representing different perspectives) are displayed on a poster. Training participants are invited to read and comment by means of sticky notes during breaks. The results of the "blog" are shared at the end of the second day.

Module 1.4: Action research, farming systems approach and gender transformation

This module familiarizes the participants with the three research approaches that underpin the training: action research, farming systems, and gender transformation. The presentation includes features of each approach, its relation to gender, and avenues for integration.

Module 1.1: Opening and getting to know each other

Overview	Opening and getting to know each other
Time	30-45 min
Learning objectives	The participants: • Understand the overall purpose of the training • Develop a connection between gender and their own work
Topics	◎ Welcome ◎ Getting to know each other ◎ Gender in agriculture
Preparation	☞ Print photo cards with subjects from agriculture (Annex 1). ☞ Before participants arrive, arrange a circle of chairs for this introductory session. In the middle of the circle spread out the photo cards on the floor.
Materials	✂ Between 30 and 40 photo cards
Methods	⌘ Selection of photo cards for individual presentation in the plenary
Remarks	Groups of up to 15 participants You may use other photos than those in Annex 1. In this case, we would recommend selecting pictures that show farmers engaged in different agricultural activities. It is easier for participants to establish an association with gender if farmers' activities are shown, rather than just crops or implements.

Steps and guidelines

1. Start the session by inviting the participants to sit in the circle of chairs. Welcome them, introduce yourself, and allow other facilitators to introduce themselves. Explain the overall purpose of this gender training. If there is a partner organization hosting the training, or another institution involved, invite their representatives (if present) to open the training.
2. Explain that the participants need to get to know each other, because they will be working together for the next two days. This will be done using the photo cards spread out on the floor (Annex 1).
3. Ask the participants to stand up and take a look at the photo cards. Give them sufficient time to look at the different subjects. Each participant should pick up one card that they think is related to gender. They are free in their choice and should return to their seats after selection.
4. Start with the presentation of your own card and explain why you have chosen it. Invite the participants to introduce themselves one by one. This should include their names, profession or position, organizational affiliation, the main foci of their work, reasons why they are taking part in the training, and what they are hoping to gain. At the end of a short self-presentation, each participant should explain how they relate the photo they have selected with gender.
5. Ask participants to continue one by one. Thank each of them after she/he has finished the self-introduction.
6. Conclude with appreciative remarks and lead over to the next module.

Facilitator's notes

- Serve as a role model. Be the first one in the round of self-introductions. Don't talk for more than one or two minutes. The participants will (unconsciously) follow your example. If this exercise takes too much time, it becomes exhausting.
- If there are two facilitators, one could start the round of self-introductions and the other one completes it.

Annex 1: Agricultural motifs for picture cards

The photos below are examples. Additional motifs are available in the open databases of Africa RISING, the International Institute of Tropical Agriculture (IITA) and the International Livestock Research Institute (ILRI) under https://www.flickr.com

https://www.flickr.com/photos/iita-media-library/32576773734/

Women selling by the roadside. Photo credit: IITA.

https://www.flickr.com/photos/iita-media-library/10571246643/

A trader sells a bag of maize. Photo credit: IITA.

https://www.flickr.com/photos/iita-media-library/33094957841/

Farmer with infested tomato plant. Photo credit: IITA.

https://www.flickr.com/photos/iita-media-library/25035775974/

A farmer prepares her land for planting. Photo credit: IITA.

https://www.flickr.com/photos/iita-media-library/21996258355/

A woman weeding her maize crop. Photo credit: IITA.

https://www.flickr.com/photos/africa-rising/16358926770/

Children cutting feed for animals. Photo credit: Branislav Cika/Africa RISING.

https://www.flickr.com/photos/iita-media-library/15328740751/

Women peeling cassava roots. Photo credit: IITA.

https://www.flickr.com/photos/africa-rising/33972483926/

Africa RISING farmers field day. Photo credit: Jonathan Odhong'/IITA.

https://www.flickr.com/photos/iita-media-library/10556651863/

Woman winnowing maize. Photo credit: IITA.

https://www.flickr.com/photos/iita-media-library/10324325266/

Harvesting groundnuts. Photo credit: IITA.

https://www.flickr.com/photos/iita-media-library/9517986630/

A farmer makes ridges. Photo credit: IITA.

https://www.flickr.com/photos/iita-media-library/9319587463/

Applying fertilizer. Photo credit: IITA.

https://www.flickr.com/photos/iita-media-library/9309038718/

Spraying a field with herbicide. Photo credit: IITA.

https://www.flickr.com/photos/africa-rising/29751347851/

A farmer harvesting rice. Photo credit: Gloriana Ndibalema/IITA.

https://www.flickr.com/photos/africa-rising/29085574945/

Farmer with avocado fruits. Photo credit: ILRI.

https://www.flickr.com/photos/africa-rising/23699724445/

Couple showing their maize harvest. Photo credit: Mulundu Mwila/ZARI.

Module 1.2: Setting the frame for the training

Overview	Setting the frame for the training
Time	30-45 min
Learning objectives	The participants: • Are able to describe the objectives, topics and didactic principles of the gender training • Have self-assessed their knowledge and skills on gender analysis in agriculture • Have defined their learning foci
Topics	◎ Objectives of the gender training ◎ Contents and topics ◎ Didactic principles ◎ Schedule ◎ Self-assessment of previous knowledge on gender analysis (specifically the training topics) ◎ Individual learning foci
Preparation	☞ Prepare posters for presentation and discussion of objectives, topics, and didactic principles (Annex 2) ☞ Prepare cards to stick on the didactic principles poster (Annex 2 and Chapter 3) ☞ Prepare a poster with instructions for learning foci exercise ☞ Prepare a poster for learning foci evaluation (empty poster with heading "Learning Foci") ☞ Print a copy of the self-assessment questionnaire (before the training) for each participant (Appendix B)
Materials	✂ Posters and cards ✂ Empty cards and pens (for learning foci exercise) ✂ Self-assessment tool
Methods	⌘ Presentation ⌘ Individual assessment ⌘ Group work

Steps and guidelines

1. Explain the purpose of this module, namely the introduction and discussion of the objectives, contents, and didactic principles of the training.
2. Present the objectives of the training (see poster in Annex 2 as an example).
3. Turn to the topics of the gender training (see poster in Annex 2 as an example). Allow time for comments or questions.
4. Introduce the schedule, review it with the participants and get their consent.
5. Briefly outline the didactic principles of the training (Annex 2). Explain that following these principles, participatory methods will be employed that draw on the participants' own experiences and perspectives.
6. Introduce the participants to the next step: the self-assessment of existing individual knowledge of gender analysis in agriculture through a questionnaire. At the beginning of the training, the self-assessment will allow the participants to identify their competences, gaps and needs for learning. At the end of the training, a similar self-assessment questionnaire will allow them to assess their own development, and to evaluate the quality of the training (so that the facilitators and organizers can improve their methods). Distribute the self-assessment forms (Appendix B).
7. After you have collected all questionnaires, ask the participants to form small groups of two or three people. Request them to define their individual learning foci in reference to the guiding questions in Annex 2. The groups should note each member's learning foci on cards. After having completed this task, each group presents their learning foci and sticks the cards on an empty poster with the title "Learning Foci".
8. Thank the participants for sharing their learning foci. Invite comments or questions. Provide positive feedback on learning foci that cannot be covered by this training (e.g. "this is of course an interesting issue"), and – if possible – offer to discuss them during break times, or explain where further information is available. Request participants to keep their learning foci in mind, since they will revisit them in the course of the training.
9. Present the topics for the first day and close the module.

Facilitator's notes

- Facilitator(s) may explain why a module on agricultural research approaches (Module 1.4) is included. These approaches form the broad conceptual framework for how gender analysis will be discussed during the training.
- The presentation of didactic principles serves to introduce the idea of learning spaces for experimentation. This goes hand in hand with the appreciation of "errors" as learning opportunities (see Chapter 3).
- The poster with the learning foci should be kept in a safe place. It will be needed again for the recap of the first day (Module 3.2) and the evaluation at the end of the training (Module 4.2).

Annex 2: Training objectives, topics, didactic principles and learning foci

The posters below are examples from Africa RISING gender trainings. Formulations of objectives and topics were adjusted to the training context and may vary from those used in this manual.

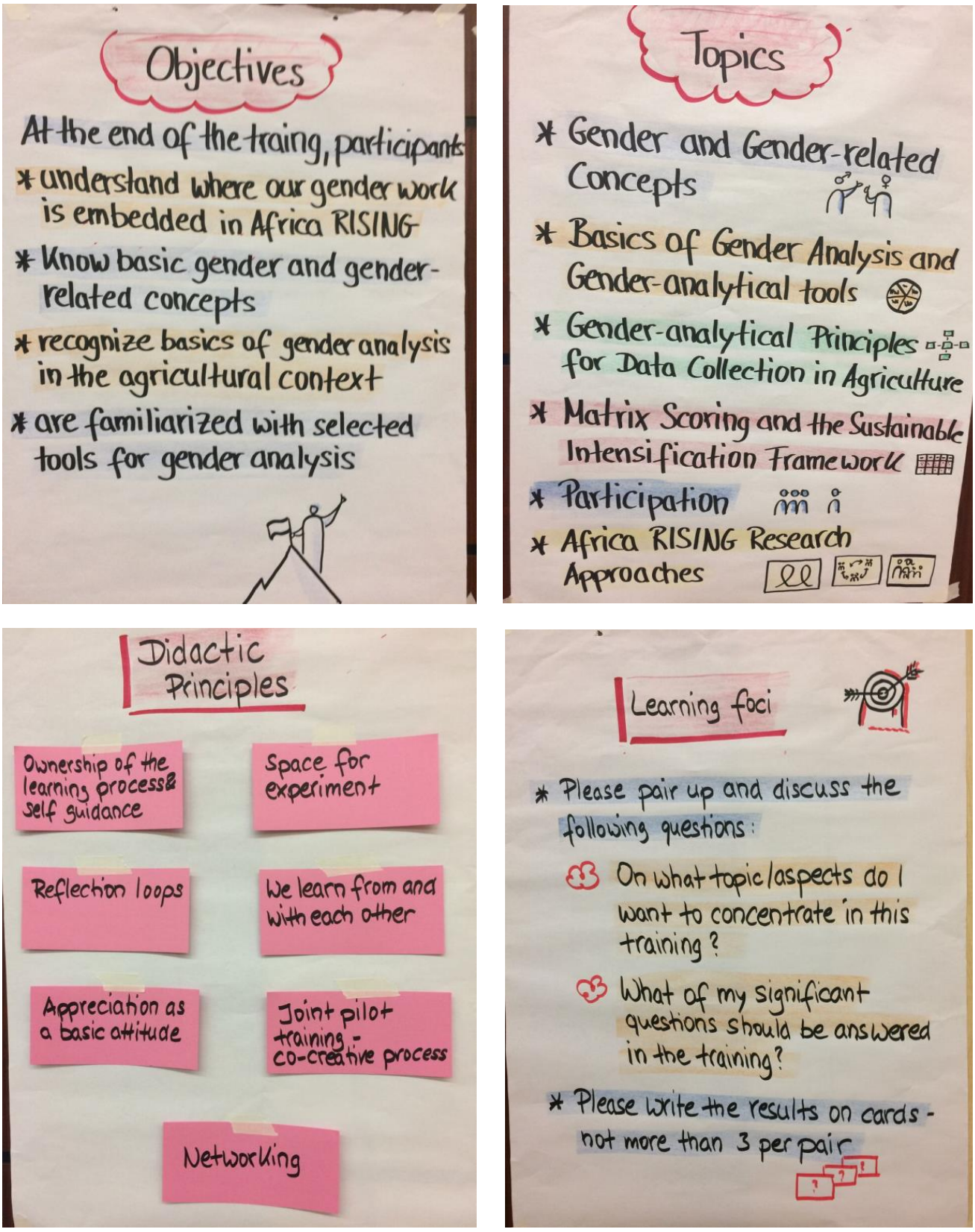


Figure 7: Training objectives, topics, didactic principles and learning foci. Photo credit: Sabine Fründt.

Module 1.3: Gender and participation blog, part 1

Overview	Gender and participation blog, part 1
Time	Ongoing activity
Learning objectives	The participants: • Reflect on questions of gender and participation in agricultural research and development • Relate the topics of the blog to their own knowledge and experience • Recognize the need to act on gender and participation beyond questions of sampling
Topics	◎ Gender and participation
Preparation	☞ Prepare three posters with the information from Annexes 3-5 (scale the captions, text excerpts and images to a suitable size for a flipchart poster before printing) ☞ Prepare a notice saying "Gender and participation blog: Please take sticky notes and comment"
Materials	✂ Posters ✂ Sticky notes (several pads) or cards and masking tape
Methods	⌘ Individual reflection and formulation of comments ⌘ Joint evaluation
Remarks	The blog is an ongoing activity that is introduced at the beginning of the training and evaluated in the afternoon of the second day. During the course of the training (coffee and lunch breaks), the participants are invited to reflect and comment on the questions and material provided.

Steps and guidelines

1. Before the training, prepare three posters with the information from Annexes 3-5. Cut out poster titles, text excerpts and images and glue them on flipchart paper. Choose a wall in the training room that is free and easily accessible for the participants. Put up the posters next to each other on this wall. Below the posters place several pads of sticky notes and pens on a chair or little table. Above the three posters, post a notice saying "Gender and Participation Blog: Please Take Sticky Notes and Comment".

2. At the beginning of this module, request participants to go and stand in front of the posters. Explain that they are invited to engage in a discussion that will take place parallel to the other modules. This discussion is designed as a blog, similar to a blog on the internet. A blog on the internet often consists of texts and pictures that the blogger has chosen. Visitors to the website are invited to comment on the blog and to engage in a discussion.

3. Explain that in this case the facilitators are the bloggers and have prepared the blog on the wall. The participants are invited to act as visitors by writing their comments on sticky notes and placing them next to the text or picture they refer to. They may also comment on someone else's comment. They should then place their sticky note next to the comment they are referring to.

4. As the topic of the blog, the facilitators have chosen gender and participation. When talking about participation in research we often mean two different things:

   First: We talk about participation in the narrow sense of sampling. Here we merely focus on the generation of data.

   Second: We talk about participation in the broader sense as involvement in various research-for-development activities, such as field days, trainings or R4D platforms. Here we do not mean research only, but general involvement in the project or inclusion in communication. In this blog we discuss participation in this broad sense.

5. Briefly introduce training participants to the topics of the three posters (one after the other).

6. Again, invite participants to walk around during coffee and lunch breaks and to look at the blog. Make clear that at a later point of the training the whole group will get back to the blog and jointly read and discuss the comments.

Facilitator's notes

- Before coffee or lunch breaks, remind the participants to look at the blog and leave their comments.

Annex 3: Poster 1

Reach, Benefit and Empower: Do we need quotas and targets?

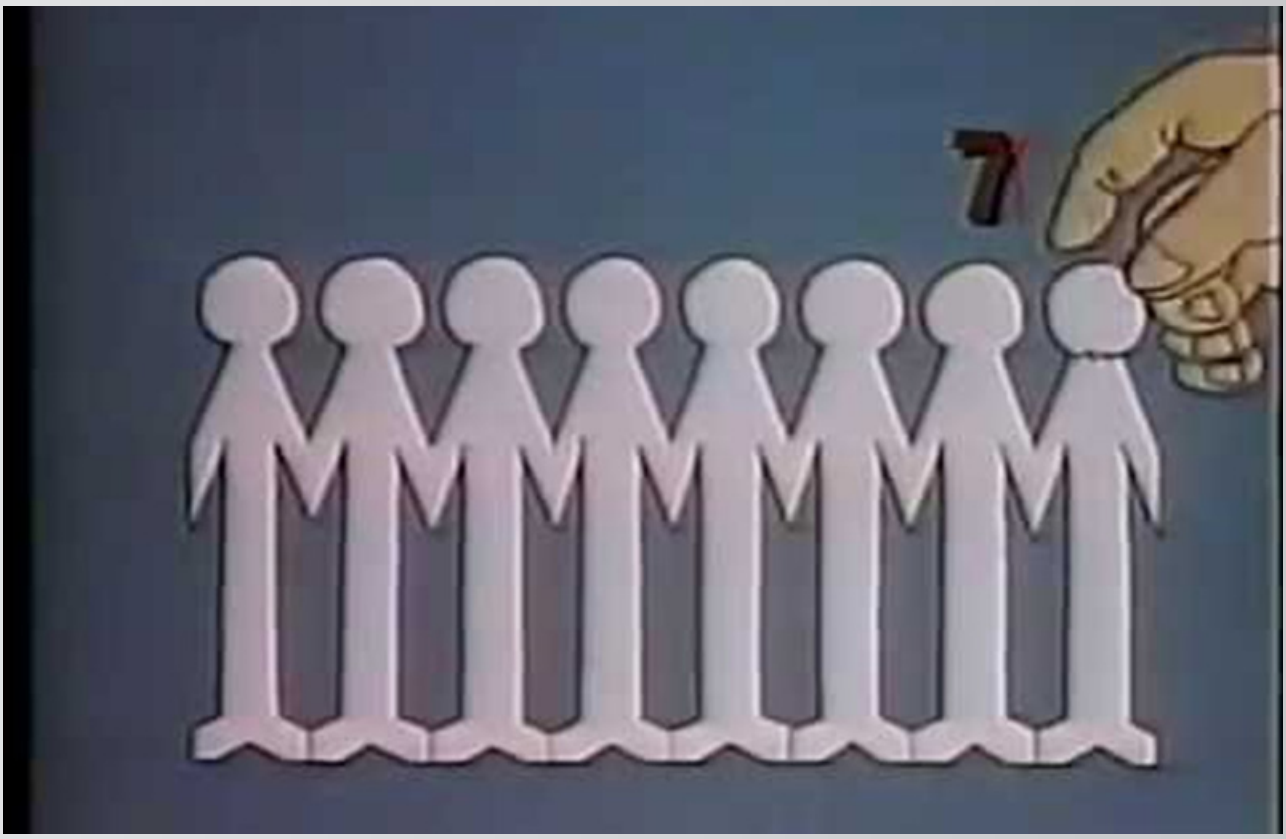
Theis and Meinzen-Dick 2016:n.s.

In our work with agricultural development projects, we identified the need to distinguish between approaches to **reach** women as participants, those that **benefit** women, and, finally, those that **empower** women. These terms refer not only to project objectives, but also to the set of activities the project undertakes (strategies) and the ways it measures its impact (indicators). Simply reaching women does not ensure that they will benefit from a project, and even if women benefit (e.g. from increased income or better nutrition), that does not ensure that they will be empowered (e.g. in control over that income or making choices of foods for their households) (Theis and Meinzen-Dick 2016:n.s.).

Empowerment measures often are boiled down to 'counting heads' – an undeniably important indicator – but this is not the same as "empowerment" in the real world. Many women attend meetings or sit on Councils but never speak; or, if they speak, they are seldom listened to; or, if they speak, they are ridiculed for their presumptuousness or perceived lack of expertise (Seager 2014:19).

A gender action plan includes clear, realistic, and appropriate targets and quotas for women's participation and benefits based on sex-disaggregated baseline data (Asian Development Bank 2013:1).

... projects exclusively focused on benefiting women may fail to consider appropriate roles and benefits for men, and may not be accepted by men (or men and women!) in the household or entire communities (Theis and Meinzen-Dick 2016:n.s.).



Source: https://www.youtube.com/watch?v=tzp0LNGuoBE

Annex 4: Poster 2

"It is usually the same people": Who do we invite and how?

While most communities have existing channels to communicate information, important messages might be left out or distorted along the way and some individuals may still not be reached. Think creatively about how best to share information about the project (...) directly and consistently with as many community members as possible. Religious or school-related groups, "merry-go-rounds" (or savings groups) and burial associations may be good ways to reach women (Kanesathasan 2013:5).

It is usually the same people. (...) You find out that [some] farmers are the same with NGO A, NGO B, and NGO C, the same with Africa RISING (Observations of a district official in Tanzania, 2016).

There are too few programs, which attempt to reach young people, or projects, which seek to integrate the youth into rural development activities (Oakley and Garforth 1985:126).

... youth are less likely to be aware, to try out and to adopt improved technologies (for Malawi, Ragasa and Niu 2017:27).

Source: http://www.dailypioneer.com/columnists/edit/accountability-of-ngos.html

Annex 5: Poster 3

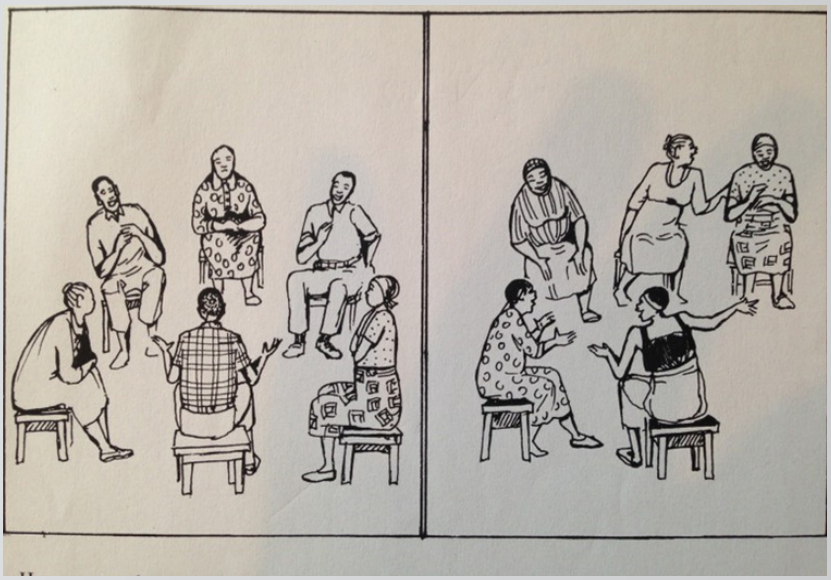
Choosing the channels, designing the message: How do we communicate?

First encounters can make lasting impressions. By having men and women work together to lead community discussions from the outset, the project is already modeling important gender ideals, such as equal participation and mutual respect (Kanesathasan 2013:6).

Women are often subject to various kinds of constraints that prevent them from travelling outside their village for visits, training or events. Speaking in front of mixed groups may be problematic. These constraints must be addressed in order to foster active participation by women and young people. The language of communication must be the everyday language of the community (FAO 2011:65).

Women were more likely to gain information from sources that rely on interactive human contact while males had a broader variety of sources including input dealers, extension officers, radios, mobile phones, and lead farmers. Domestic chores, costs of accessing information as well as restrictive husbands frequently limit women's opportunities for learning (Britwum and Akorsu 2016:ii, for Africa RISING communities in Ghana).

Source: https://www.wsp.org/content/2013-cartoon-calendar



Source: Hope and Timmel 1999:74.

Poster 3

Choosing the Channels, Designing the Message: How Do We Communicate?

Women were more likely to gain information from sources that rely on interactive human contact while males had a broader variety of sources including input dealers, extension officers, radios, mobile phones, and lead farmers. Domestic chores, costs of accessing information as well as restrictive husbands frequently limit women's opportunities for learning (for Africa RISING communities in Ghana, Akua Britwum and Angela Akorsu, Afr… RISING Qualitative Gender Evaluation, 2016).

Women are often subject to various kinds of constraints that prevent them from travelling outside their village for visits, training or events. Speaking in front of mixed groups may be problematic. These constraints must be addressed in order to foster active participation by women and young people. The language of communication must be the everyday language of the community (FAO, 2011).

First encounters can make lasting impressions. By having men and women work together to lead community discussions from the outset, the project is already modeling important gender ideals, such as equal participation and mutual respect (Anjala Kanesathasan, International Center for Research on Women, 2012).

Figure 8: Example of a gender and participation blog - poster 3 with first comments. Photo credit: Sabine Fründt.

Module 1.4: Action research, farming systems approach and gender transformation

Overview	Action research, farming systems approach and gender transformation
Time	30 min
Learning objectives	The participants are able to: • Describe the three research approaches (action research, farming systems approach, gender transformation) • Compare and contrast main features of each approach • Identify common features of the approaches as entry points for integration • Outline the function of each approach after integration
Topics	◎ Action research ◎ Farming systems approach ◎ Gender transformative approach ◎ Common features of the three approaches ◎ Functions after integration
Preparation	☞ Prepare a PowerPoint presentation or posters with main features and a visualization of each approach, common features and functions after integration (Annex 6) ☞ Optionally: Prepare handouts for training participants (Annexes 7-10)
Materials	✂ PowerPoint presentation (or posters) ✂ Optionally: Handouts
Methods	⌘ Presentation
Remarks	During the training, recourse is taken to the three approaches to explain their relation to the gender analysis tools.

Steps and guidelines

1. Introduce the topic of the module. Explain that the three approaches form the broad conceptual framework within which gender analysis will be discussed.
2. Say that you will start with the function of each approach after integration. Then the basic features of each approach will be presented. Thereafter the focus will be on common principles as entry points for integration. Invite the participants to ask questions and share comments during the presentation.
3. Present the visualization of the function of each approach after integration (see Annex 6 and Chapter 2, section 2.4, Fig. 5) and allow time for discussion (if needed).
4. Continue with the basic features of each approach. Present one approach after the other (see Chapter 2, sections 2.1-2.3) and focus on the most important aspects. Optionally, you may ask participants to name the features of each approach before presenting it.
5. After having presented and discussed the last approach, explain that integrating action research, the farming systems approach and gender transformation requires identification of their common features. Ask the participants to reflect for a couple of minutes on common features of the three approaches. This may be done individually or in pairs.
6. After a few minutes, request the participants to share their ideas and note their contributions on a flipchart. Uncover the visualization of common features (see Annex 6 and Chapter 2, section 2.4, Fig. 4) and add from what participants contributed.
7. If handouts were prepared, distribute them (see Annex 7-10) and close the session.

Facilitator's notes

- This module gives an introduction to the conceptual framework in a concise manner. Handouts provide additional information and suggestions for further reading for those interested.

Annex 6: Poster 4

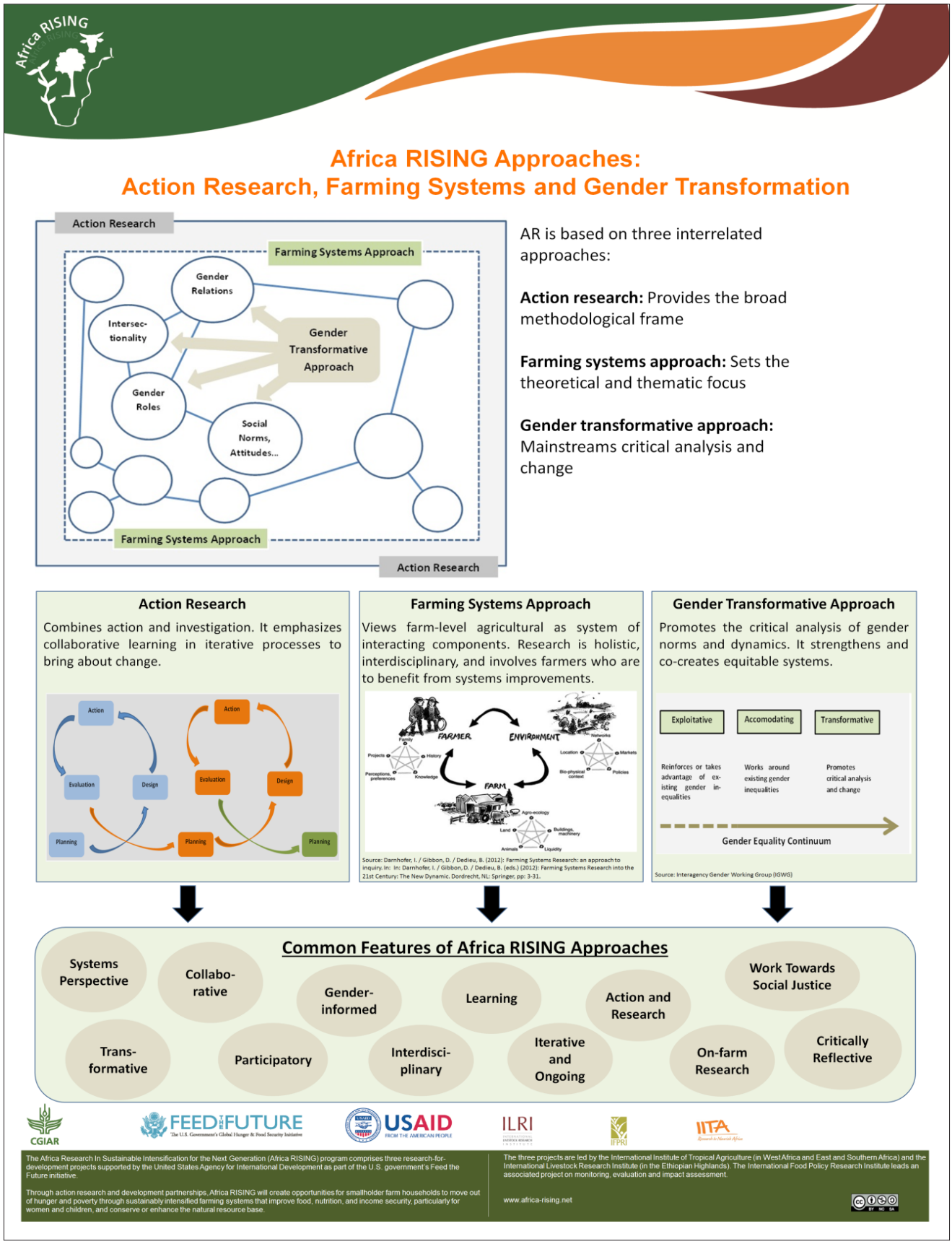


Figure 9: Action research, farming systems approach and gender transformation

Annex 7: Action research handout

What is action research?

Action research links action with investigation and may be defined as:

"*A process in which a group of people with a shared issue of concern collaboratively, systematically, and deliberately plan, implement, and evaluate actions. Action research combines action and investigation. The investigation informs action and the researchers learn from critical reflection on the action" (Fisher 2004:2).*

History of action research in agriculture

In agriculture, action research has received special attention since the 1990s as a response to

- Difficulties of conventional approaches to tailor technologies to farmers' realities and needs.
- A general shift towards participatory, actor-centered and contextual approaches.

Key features of action research

- *Participation:* Action research promotes the involvement of local stakeholders (e.g. farmers, extension officers) during the entire research process.
- *Collaboration:* Action research brings together researchers and local stakeholders who work as equal partners in collaborative research teams and learn from each other.
- *Critical reflection:* Learning emerges from the critical reflection of all involved stakeholders about the subject of inquiry, the methods to study it, and their own role in the research process.
- *Transformation:* Action research is transformative and explicitly strives to improve the status quo.
- *Social justice:* Action research is committed to working towards social justice by stimulating transformational change.
- *On-farm research:* Action research takes place in the environment of the investigated problem and employs various on-farm methods (e.g. demonstration plots).

Potentials of action research

- Action research can be an effective means to adapt research to the farmers' environment by focusing on those concerns that are most relevant to them.
- Action research bears the potential to support gender transformation as it allows participants to actively intervene in the contexts they investigate.

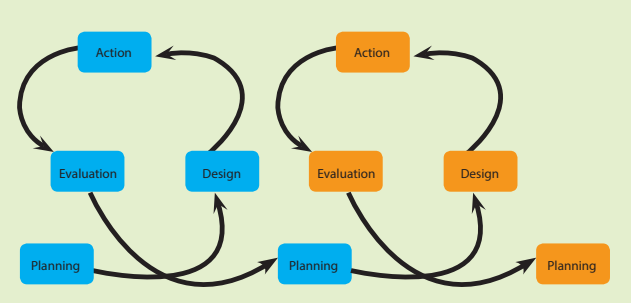
Action research and gender

Action research has strong links with gender

- Since it shares feminism's commitment to social justice.
- Since both action research and feminism demand the inclusion of voices from heterogeneous groups of women and men in research.

The action research process

- Non-linear, ongoing and iterative
- Contains repeated cycles of planning, design, action/ testing, and evaluation. Designations for each phase may vary in the literature.



Phases in the action research process.

Suggestions for further reading

Eksvärd, K. and Rydberg, T. (2010): Integrating Participatory Learning and Action Research and Systems Ecology: A Potential for Sustainable Agriculture Transitions. In: *Systematic Practice and Action Research* 23(6), pp: 467- 486.

Fisher, R. J. (2004): *What is Action Research? An Introduction to Action Research for Community Development.* Sydney: University of Sydney.

McNiff, J. and Whitehead, J. (2002[2]): *Action Research: Principles and Practice.* London/New York: Routledge Falmer.

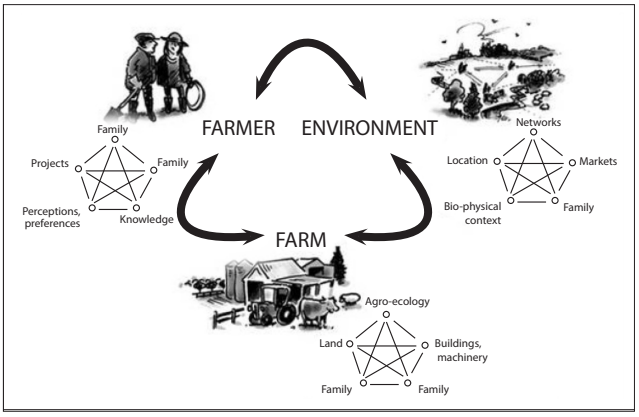
Maguire, P. (2005): Uneven Ground: Feminisms and Action Research. In: Reason, P. and Bradbury, H. (eds.) (2005): *Handbook of Action Research*. Thousand Oaks: Sage Publications, pp: 60-70.

Packham, R. and Sriskandarajah, N. (2005): Systemic Action Research for Postgraduate Education in Agriculture and Rural Development. In: *Systems Research and Behavioral Science* 22(2), pp: 119-130.

Annex 8: Farming systems approach handout

What is the farming systems approach?

- The farming systems approach strives to improve technology generation and adoption.
- The unit of analysis in farming systems research is the farming system, defined as *"a population of different, individual crop and livestock farm systems which are linked through interrelated on-farm and off-farm decisions and actions, and operated, as well as managed, by the different members of a household, on the basis of the overall bio-physical, social and socio-economic environment, and the common as well as individual goals, preferences, resource bases, and constraints of the various farming systems managers within the household"* (Giller 2013; Shaner 1982).



The farming system. Darnhofer et al. 2012:6

History of the farming systems approach

- The farming systems approach emerged in agricultural research in the 1970s due to persistent difficulties in developing technologies that were adjusted to the varying conditions and needs of farmers.

Key features of the farming systems approach

- *Holistic perspective*: Farming systems research studies one aspect (e.g. the production of a specific crop) in the context of other interrelated aspects, activities, and processes within the wider farming system.
- *Participation*: It promotes the involvement of local stakeholders (such as farmers) throughout the entire research process, from the identification of a problem to the development of a solution.
- *Collaboration*: Teams of researchers and local stakeholders work together and learn from each other.
- *Critical reflection*: All stakeholders are involved in critical reflections on the research problem, the research design, and their own role in the research process.
- *Multidisciplinarity*: In order to study the multiple dimensions of farming systems, multidisciplinary teams with members from the natural, technical, economic and social sciences are required.
- *Transformation*: Farming systems research seeks to improve the social, economic and environmental conditions within a targeted farming system.

Potentials of farming systems research

- Farming systems research reduces the risk of undesired side effects that result from the interaction of different variables within the farming system and are often not sufficiently considered in non-systemic research.
- Farming systems research links the development of technologies with the needs and realities of farmers

Farming systems research and gender

Gender analysis is an integral part of farming systems research

- Since gender affects major decisions, processes and operations within the social domain of farming systems.
- Since it supports the consideration of gender-differentiated potentials, constraints and implications for/of technology adoption.
- Since it helps to identify and select relevant stakeholders for participation and collaboration.
- Since it reveals pathways for gender transformation.

The farming systems research process

farming systems research is often integrated into action research methodology. It follows repeated cycles of research, action, evaluation and extension.

Suggestions for further reading

Biggs, S. D. (1985): A Farming Systems Approach: Some Unanswered Questions. In: *Agricultural Administration* 18, pp: 1-12.

Darnhofer, I., Gibbon, D. and Dedieu, B. (2012): Farming Systems Research: An Approach to Inquiry. In: Darnhofer, I., Gibbon, D. and Dedieu, B. (eds.) (2012): *Farming Systems Research into the 21st Century: The New Dynamic*. Dordrecht: Springer, pp: 3-31.

Feldstein, H. S. (2000): Gender Analysis: Making Women Visible and Improving Social Analysis. In: Collinson, M. (ed.) (2000): *A History of Farming Systems Research.* Rome: Food and Agriculture Organization of the United Nations (FAO), pp: 67-75.

Food and Agriculture Organization of the United Nations (FAO) (2005): *Gender and Farming Systems – Lessons from Nicaragua.* Rome: FAO.

Giller, K. E. (2013): Guest Editorial: Can We Define the Term Farming Systems? A Question of Scale. In: *Outlook on Agriculture* 42, pp: 149-153.

Norman, D. W. (2002): *The Farming Systems Approach. A Historical Perspective*. Kansas: KCU.

Shaner, W.W., Philipp, P.F. and Schmehl, W. (1982): *Farming Systems Research and Development. Guidelines for Developing Countries*. Boulder: Westview Press.

Tow, P., Cooper, I., Partridge, I., Birch, C. and Harrington, L. (2011): Principles of a Systems Approach to Agriculture: Some Definitions and Concepts. In: Tow, P., Cooper, I., Partridge, I. and Birch, C. (eds.) (2011): *Rainfed Farming Systems*. Dordrecht: Springer, pp: 3-44.

Annex 9: Gender transformative approach

What is the gender transformative approach?

- The gender transformative approach "goes beyond just considering the [visible] symptoms of gender inequality [e.g. women's lacked access to resources}, and [also] addresses the social norms, attitudes, behaviors and social systems that underlie them" (AAS 2012:3).
- It promotes critical analysis of gender norms, structures and dynamics with the overall purpose of strengthening and co-creating equitable systems.

Key features of gender transformative research

- *Participation:* Gender transformative research requires the active participation of local stakeholders (e.g. farmers, extension officers). They are the key agents of gender transformative change. It also demands the inclusion of heterogeneous groups of men and women at all stages of the research process
- *Collaboration*: In gender transformative research, scientists, farmers and other stakeholders cooperate and learn from each other. Knowledge production and understanding emerges from this interaction.
- *Critical reflection:* Gender transformative change begins with a critical reflection on, and critical awareness of, rigid gender roles, relations, norms and behaviors. This helps to understand, challenge, and eventually transform the underlying systems of gender inequality.
- *Intersectionality:* Gender transformative research emphasizes intersectionality. It acknowledges that gender is embedded in wider sets of interacting social criteria (e.g. age, position in the household) that need to be included in the analysis.
- *Mixed methods:* Gender transformative research often combines quantitative and qualitative methods to investigate both the tangible and non-tangible dimensions of social and gender inequalities.

Potentials of gender transformative research

- Research based on gender transformative approaches has the potential to identify the driving forces of gender inequalities and other social problems in a particular context, and to develop strategies to redress them.
- It tailors steps towards change to be in line with local visions. These emerge from the collaboration and dialogue between researchers and local stakeholders.

The gender transformative research process

- Empirical research based on the gender transformative approach may take different forms.
- Agricultural scholars increasingly call for the integration of gender transformative research and action research.

Suggestions for further reading

CGIAR Research Program on Aquatic Agricultural Systems (AAS) (2012): *Building Coalitions, Creating Change: An Agenda for Gender Transformative Research in Development.* Penang: AAS (Workshop Report AAS – 2012 – 31).

Farnworth, C., Fones-Sundell, M., Nzioki, A., Shivutse, V. and Davis, M. (2013): *Transforming Gender Relations in Agriculture in Sub-Saharan Africa.* Stockholm: Swedish International Agricultural Network Initiative (SIANI).

Hillenbrand E., Karim N., Mohanraj P. and Wu D. (2015): *Measuring Gender-Transformative Change: A Review of Literature and Promising Practices.* Atlanta: CARE USA (Working Paper).

Kantor, P. and Apgar, M. (2013): *Transformative Change in the CGIAR Research Program on Aquatic Agricultural Systems.* Penang: CGIAR Research Program on Aquatic Agricultural Systems (AAS).

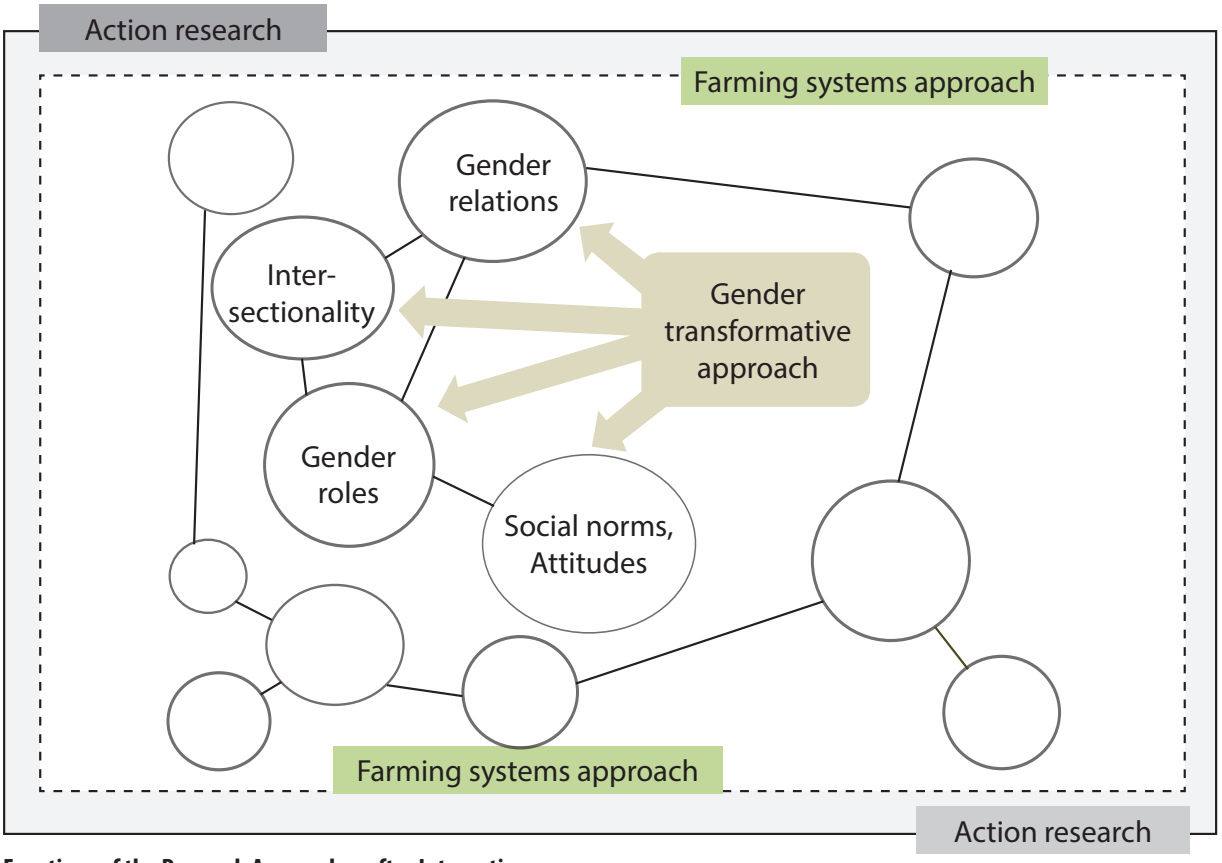
Okali, C. (2011): *Achieving Transformative Change for Rural Women's Empowerment*. Accra: UN Women.

Annex 10: Action research, farming systems and gender transformation handout

Action research: Provides the broad methodological frame

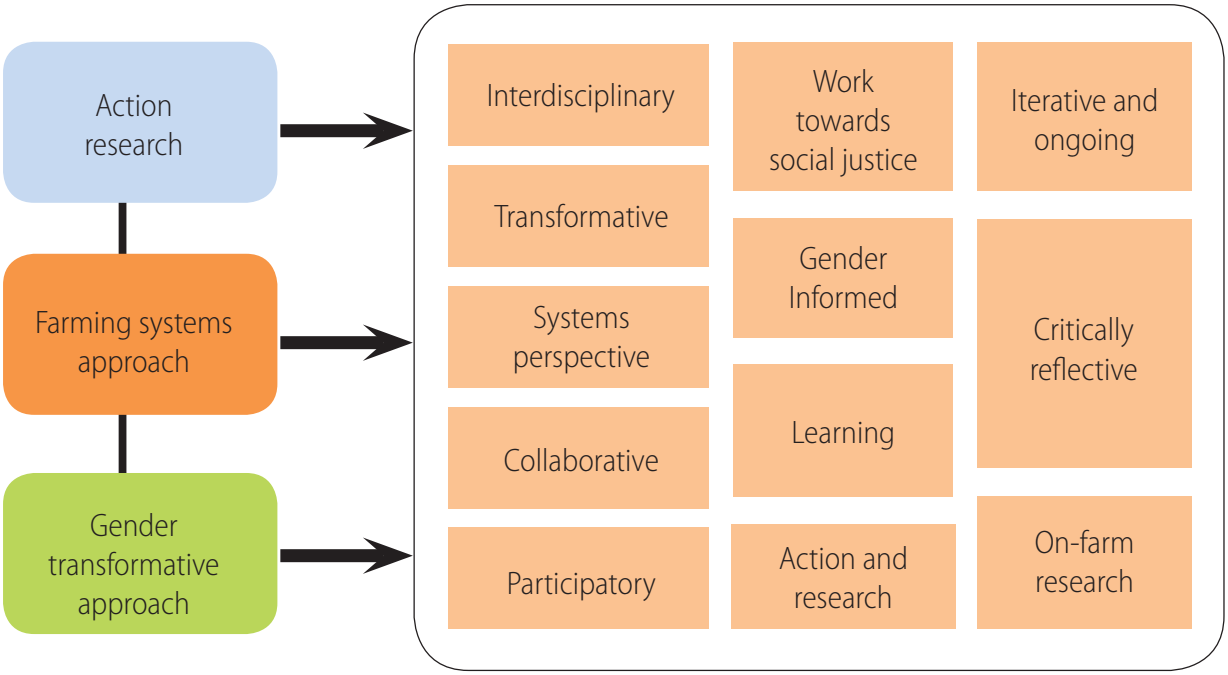
Farming systems approach: Sets the theoretical and thematic focus

Gender transformative approach: Mainstreams critical analysis and change



Functions of the Research Approaches after Integration

Common principles of action research, farming systems approach and gender transformation:



Common features of action research, the farming systems approach and the gender transformative approach

Learning unit 2. Basic gender concepts

The second learning unit comprises two modules on gender concepts that are of particular relevance for gender analysis in agriculture. A third module briefly presents additional information and wraps up.

Module 2.1: Gender roles and relations

This module acquaints the participants with gender roles and gender relations as important concepts of gender analysis. They work in small groups on a case (a real intervention) where the interplay of gender roles and relations led to unexpected results. Based on the findings from this case study, basic features, differences and limitations of gender roles and relations are established in the plenary. The module concludes with examples of how both concepts can be integrated in research.

Module 2.2: Intersectionality

Members of communities and households differ in terms of age, gender, education, household position, and other social criteria. This module introduces the concept of intersectionality (as the interplay of these criteria) and illustrates that gender needs to be studied in relation to other identities. The module begins with an exercise in which participants step into the shoes of farmers. Each is assigned a new identity (age, education, ethnicity, etc.) through which he/she experiences opportunities or constraints in a variety of situations linked to agricultural work. Based on the insights from this exercise, the group discusses the concept of intersectionality and its practical implications for research.

Module 2.3: Wrap-up gender concepts

This module adds information to the gender concepts already discussed. It emphasizes that gender analysis needs to be informed by both gender roles and relations as well as by intersectionality.

Module 2.1: Gender roles and relations

Background information

In their seminal publication on gender analysis frameworks, March et al. (1999) use the distinction between gender roles and gender relations to establish the focus of various approaches, such as the Harvard Analytical Framework and the Social Relations Approach. A gender roles analysis engages with questions such as "Who does what?" and "Who has what?", often linked to the gendered division of labor and distribution of resources. In contrast, a gender relations analysis centers on bargaining power and interests. Both types of analysis are important and complement each other. A mere focus on roles runs the risk of neglecting the fact that relationships between men and women are continuously (re)negotiated and structured through power. The fish-smoking project March et al. (1999: 24) quote as an example for a limited gender roles approach is used in this manual to discuss and illustrate the roles-relations opposition (Annex 11).

The key concepts of sex and gender are outlined in Module 2.3 (Wrap-up Gender Concepts). Stoller (1968: 9) is often credited for first having drawn attention to the point that gender has psychological and cultural connotations and is separate from a person's biological sex. This account, however, is only one voice in a larger and long-running debate on whether human behavior is determined by biological inheritance (nature) or socialization (nurture). In this nature-nurture or nature-culture debate, sex has come to be associated with biology, the body and reproduction, while gender is related to socialization, identity and interaction. One of the important messages of this opposition is that gendered behavior is not "natural" or inborn, but learned and can be transformed. This is one of the important tenets of gender transformative approaches when addressing inequalities. All the same, scholars have also shown that interrelations between biology, socialization and behavior are far more complex than the simple separation of sex and gender makes us believe. Although a training in gender analysis in agriculture does not need to go into these complexities, it is important to note that the embodiment of gender differences (the way social and physical differences interact) and the influence of socialization and experiences on the neural connections in the brain constitute broad and important research areas (for an overview, see Haralambos and Holborn 2013).

Suggestions for further reading

March, C., Smyth, I. and Mukhopadhyay, M. (1999): *A Guide to Gender Analysis Frameworks*. Oxford: Oxfam.

Online: http://wafira.org/onewebmedia/Guide%20to%20Gender%20Analysis%20Frameworks.pdf

Haralambos, M. and Holborn, M. (2013): *Sociology. Themes and Perspectives*. Hammersmiths: Harper Collins.

Online: not available

Facilitation, steps and guidelines

Overview	Gender roles and relations
Time	45-60 min
Learning objectives	The participants are able to: • Distinguish "gender roles" and "gender relations" and explain their potentials and limitations • Recognize the need to investigate both gender roles and relations in their research
Topics	◎ Gender roles ◎ Gender relations ◎ Complementarity of gender roles and relations
Preparation	☞ Print handouts with case study text and evaluation questions (Annex 11) ☞ Prepare a poster with empty matrix for debriefing (Annex 12) ☞ Prepare cards (four different colors) with features of gender roles versus gender relations to stick on matrix (Annex 12, Tab. 4) ☞ Prepare a PowerPoint presentation or handouts with examples of gender roles and relations in agricultural research (Annex 13)
Materials	✂ Poster ✂ Cards in four colors ✂ Handouts ✂ Masking tape or paper glue
Methods	⌘ Group work on features of concepts

Steps and guidelines

1. Explain that the next exercise will introduce two gender concepts that are generally important for gender analysis and specifically for gender in agriculture.

2. In preparation for the group work, provide the following information: You have prepared a short text describing a real development intervention in the 1980s. The intervention was meant to improve the livelihoods of women, but not everything went as planned. The case study is not from agriculture or livestock keeping. It is a vivid example from the context of fishing. The results, however, are transferable to agricultural contexts. Some participants might wonder why they should work on an example that is over 30 years old. The reason is that similar cases in the 1980s led to a rethinking of gender in development and to a reappraisal of the gender concepts to be discussed.

3. Request the participants to form pairs and sit together. Distribute handouts (Annex 11) and ask the participants to read the text and discuss the evaluation questions with their partner.

4. After 15-20 minutes return to a plenary discussion: Go through the evaluation questions and ask the participants to contribute their reflections.

5. Write "gender roles" and "gender relations" on a flipchart. Ask the participants if they can relate these concepts to what is outlined in the text. If yes, how?

6. Explain that in a next step the participants will get to know some features of roles and relations. Show them the empty poster with the matrix for debriefing you have prepared (see Annex 12). Each row has a different color.

   The content of each row has been written on small cards with the respective row's color. Some content relates to gender roles, some to gender relations. Mix the cards and distribute them randomly among the participants. Request them to find the other members of their color group (e.g. for a person with a yellow card, other people with yellow cards). Within their color group they should discuss which cards relate to gender roles, and which cards relate to gender relations. As soon as they have reached a decision, they may stick the cards in the respective boxes on the template (with masking tape or paper glue).

	Gender roles	Gender relations
Focus (blue)	(Blue)	(Blue)
Using a systems analogy (yellow)	(Yellow)	(Yellow)
Example (pink)	(Pink)	(Pink)
Dangers (white)	(White)	(White)

7. When the participants have finished, go through the results with them and explain how roles and relations differ in terms of "Focus", "Using a Systems Analogy", "Example" and "Dangers". Leave room for open questions.

8. Ask the participants how the two concepts could inform gender studies in agricultural research. Show examples (Annex 13). Conclude that in gender analysis, roles and relations are best considered in combination. A focus on only one concept may lead to wrong conclusions and actions (as demonstrated in the example in the text).

Facilitator's notes

- Focus on issues that are related to gender roles and gender relations. Avoid discussions on technical issues (such as details of fish-smoking technology).

Annex 11: A case study on gender roles and relations

Exercise: Read the text and discuss the evaluation questions with your partner.

Evaluation questions:

1) What were the gender objectives of the project? What did the researchers want to achieve for women?
2) What factors did they consider in terms of gender? What was missing?
3) What was the result for women and men? What worked well in terms of their gender objectives? What did not work as planned?

In this fishing community, it is primarily men who catch fish and women who do the processing. Women smoke the fish and market it. The women who have long experience of this activity have cultivated ***kostamente*** relationships with specific fishermen. These relationships are mutually beneficial. The men are assured of regular outlets for their fish, and the women obtain an established supply of fresh fish for their activities. Both women and men invest a great deal of time, energy and resources in establishing and maintaining ***kostamente*** relationships.

A development agency started a project to enhance the productivity of women's activities, based on a detailed analysis of women's income-earning activities. Under this project, women were encouraged to use ***chorkor*** fish-smoking ovens, which were capable of using fuel more efficiently, and producing a higher quality and quantity of smoked fish each day. The decision to introduce these ovens was taken following a gender analysis that established the division of labour in the community.

Despite the good intention of increasing women's income, the project did not succeed in its objectives. The fishermen, perceiving women to be the beneficiaries of outside funds, raised their prices. This undermined the benefits that women gained from their increased productivity, and tended to push up fish prices for the community at large.

The project assumed that all women would take up the ***chorkor*** oven. However, many women continued to use traditional methods, and for them, too, fish prices rose, or they had to use the lower quality frozen fish rejected by the industrial fishing fleet. As more and more women turned to industrial fishing fleets as a source of supply, men started selling their fish directly to the fish processing plant. (Source: UNDP 2013:113)

The case study is available online:

http://www.undp.org/content/dam/undp/library/gender/Institutional%20Development/TLGEN1.6%20UNDP%20GenderAnalysis%20toolkit.pdf

A full version of the case study can be found in: UNIFEM (1988): *Fish Processing*. New York: UNIFEM (Food Cycle Technology Source Book No. 4), pp. 60-62.

Online: http://staging.ilo.org/public/libdoc/igo/1988/268846.pdf

Annex 12: What are gender roles? What are gender relations?

Table 4: Features of gender roles and relations

	Gender roles	Gender relations
Focus	Who does what? Gendered division of labor	How do relationships establish, perpetuate or change the division of labor and allocation of resources?
	Who has access to or control over what? Gendered allocation of resources	Bargaining power, institutions that produce inequalities
Using a systems analogy	You identify and name different components of the system.	You explain the rules that produce cooperation or conflict between the different components of the system.
Example	Men catch fish. Women smoke and sell it.	Women receive fish from men through relationships of mutual advantage.
		When the men saw that women were benefiting from the development intervention, they increased their prices
Dangers	Neglecting change? Cementing an existing order?	Emphasizing compliance with rules and neglecting plurality of rules and deviance?
	Emphasizing separation and difference while there may be cooperation and flexibility?	Turning a blind eye to how inequalities materialize in gender roles?

Adapted from March et al. 1999:23-24

For the debriefing session, facilitators need an empty matrix with two columns (roles, relations) and four rows (focus, using a systems analogy, example, dangers). Each row has its own color. 13 cards with features of roles and relations are prepared in the respective colors (see table 4 and figure 10). The participants have to arrange all cards of one color in a row by assigning them to roles or relations.

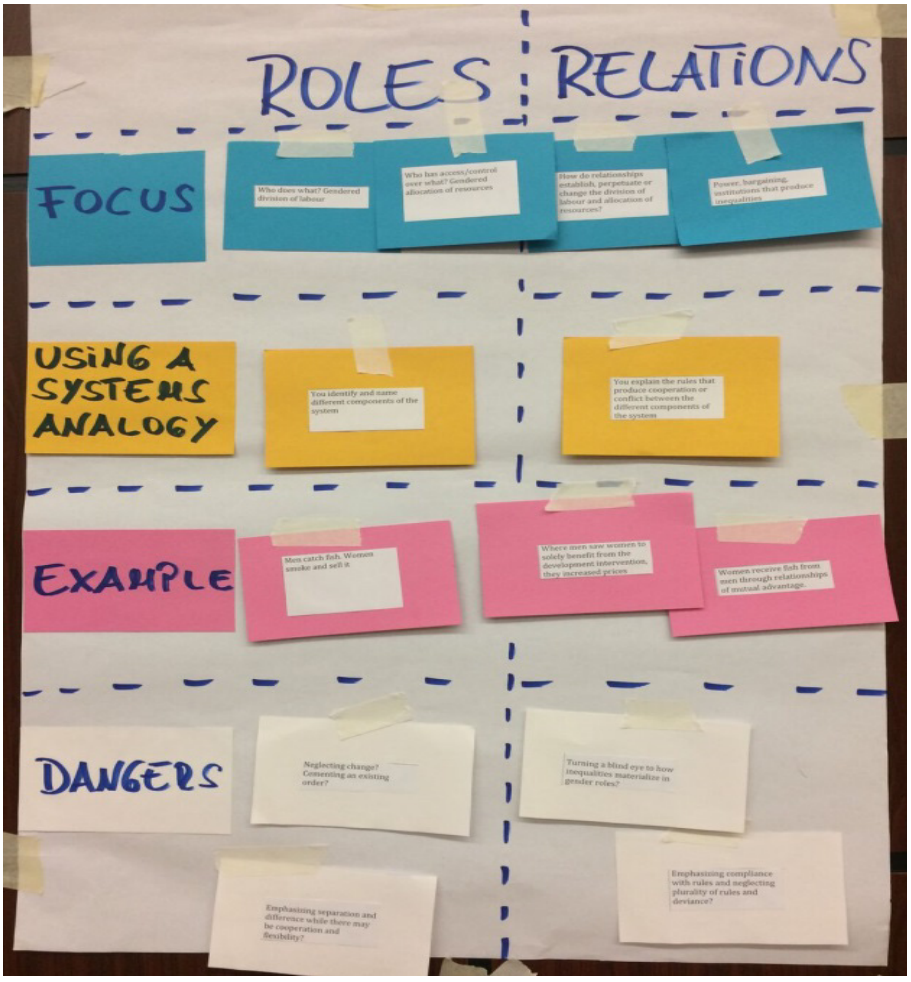


Figure 10: Poster on roles and relations after debriefing session. Photo credit: Sabine Fründt.

Annex 13: How to investigate gender roles and gender relations in agricultural research?

Gender roles

A) Activity profiles

Activity profiles provide information on the involvement of household or community members (women, men, children) in productive and reproductive activities (March et al. 1999:33). They relate to the question "Who does what?" and investigate gender roles. Due to the importance of activity profiles for agricultural research, this manual dedicates a separate training module to them with more information on the tool and its application (see module 3.4).

Table 5: Activity profile

	Men	Male children	Women	Female children
Production activities Agriculture: Activity 1 Activity 2, etc. Income generation (other): Activity 1 Activity 2, etc. Employment: Activity 1 Activity 2, etc.				
Reproduction activities Water collection Fuel collection Food preparation/cooking Health Childcare Other				
Community involvement Weddings Funerals Village meetings Other				

Adapted from Ludgate 2016 and March et al. 1999: 40

B) Access and control profiles

Access and control profiles indicate which resources women and men in a household or community have access to. They also capture who controls the resources, including the benefits that accrue from them (March et al. 1999:34). *Access* refers to the opportunity to make use of a resource (often based on rules and norms). By contrast, *control* relates to the decision-making power over how a resource is used and who may access it. In combination with activity profiles, access and control profiles help researchers to obtain a comprehensive understanding of gender roles.

Table 6: Access and control profile

	Women		Men		Remarks
Resources:	Access	Control	Access	Control	
Land Agricultural equipment Component 1 Component 2, etc. Labor Cash/Credit Extension services, training Cattle Poultry Water Seeds Other					
Benefits: Income from Source 1 Source 2, etc. Other					

Adapted from March et al. 1999:34

C) Integration of questions on gender roles into a questionnaire

This example is taken from an Africa RISING survey on forage chopper machines in Tanzania. It shows how questions about gender roles can be integrated into a questionnaire. The sex of the respondent and other demographic information is collected in the first section of the questionnaire (not presented here).

Table 7: Integration of questions about gender roles into a questionnaire

	Please indicate who in the household provides labor for…	1 = household head 2 = spouse of household head 3 = household head and spouse 4 = household head and non-adult household members 5 = spouse and non-adult household members 6 = non-adult household members 7 = temporary laborer 8 = other (please specify) 9 = unknown/missing
g001	the collection of animal feeds? _____	
g002	the growing of animal feeds on the farm? _____	
g003	the conservation of animal feeds? _____	
g004	the storage of animal feeds? _____	
g005	the processing of livestock feeds? _____	
g006	the processing of poultry feeds? _____	
g007	the selling/trading of animal feeds to other farmers or on markets? _____	
	Please indicate who in the household decides…	
g008	which forages are used to feed the animals in the household?_____	
g009	what methods are used to conserve animal feeds?_____	
g010	how animal feeds are stored?_____	
g011	how animal feeds are processed?_____	
g012	whether animal feeds are used at home or sold? _____	
g013	whether or not to buy a chopper machine?_____	
g014	how the income from livestock is used?_____	
g015	how the income from poultry is used?_____	
	Please indicate who in the household…	
g016	has access to processing machines for animal feeds such as the chopper machine?_____	
g017	actively uses the chopper machine?_____	
g018	has ever received training in how to use the chopper machine?_____	

Suggestions for further reading

Ludgate, N. (2015): Harvard Analytical Framework. Integrating Gender and Nutrition within Agricultural Extension Services (INGENAES).

Online: https://agrilinks.org/library/harvard-analytical-framework

Gender relations

Gender relations are more often than not explored using qualitative methodologies. Naila Kabeer's social relations concept has emerged as one of the important frameworks for such investigations (see Fig. 11 below). Kabeer states, that the causes of gender inequalities are not restricted to the household, but reproduced across at least three other key institutions, namely the state, the community and the market. Since institutions are interrelated, gender issues should be studied both within and among institutions. Changes in one realm will effect changes in others (March et al. 1999:104-105).

A gender-aware institutional analysis would include the following five dimensions of social relationships (March et al. 1999:106-108):

1. Rules: How are things done?
2. People: Who is in? Who is out? Who does what?
3. Resources: What is used? What is produced?
4. Activities: What is done?
5. Power: Who decides? Whose interests are served?

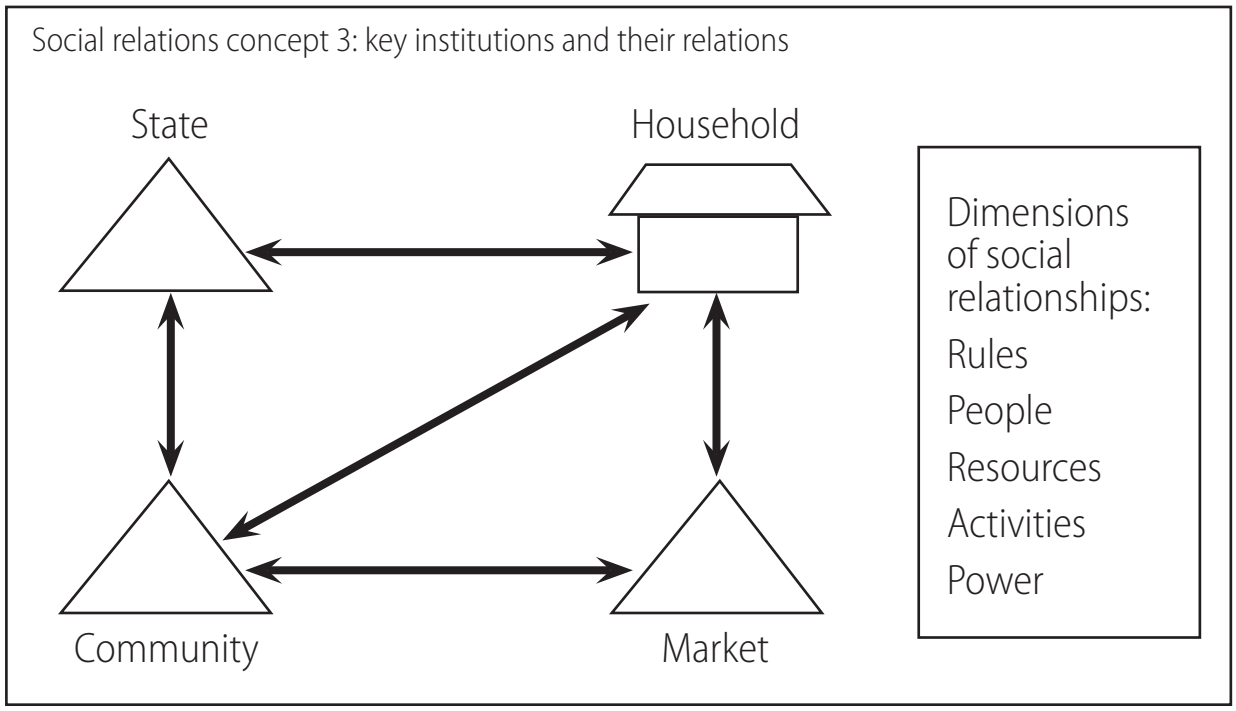


Figure 11: Kabeer's institutional analysis of gender relations March et al. 1999: 108

Module 2.2: Intersectionality

Background information

The concept of intersectionality dismisses the idea that men and women constitute homogeneous groups. It views human beings as holding multiple identities that continuously interact, for instance gender with age and class (Symington 2004: 2). Basic information on intersectionality is summarized in the table below.

Table 8: Definition, key notions and research implications of intersectionality

Aspect	Specification	Examples
Definition	• The term "intersectionality" was coined in the late 1980s when the idea of men versus women as homogeneous groups came increasingly under attack. • It is an approach "for studying, understanding and responding to the ways in which gender intersects with other identities and how these intersections contribute to unique experiences of oppression and privilege" (Symington 2004:1).	
Key notions	• Human beings have multiple identities that interact with each other • Interactions occur within specific social, cultural, economic and political contexts • Social inequalities/behavior cannot be explained on the basis of a single identity such as gender • One or more social identities can superimpose the influence of other social identities • The importance of social identities as stratifying criteria differs across contexts (time and space) and between different aspects • Human beings can experience privileges and oppression at the same time	Gender, age, class Access to productive resources; adoption behaviors Age can offset gender Gender may not always be the most important criterion
Research implications	• Need to unpack the general categories of men and women and analyze diversity within both groups • Need to collect demographic and social information about individuals (both men and women) • Need to examine relevant social identities and their importance for each context and aspect	What are structuring/ stratifying criteria? Age, sex, education, class, household position and type etc.

Hankivsky 2014: 1-5, Symington 2004: 1-2

Suggestions for further reading

Hankivsky, O. (2014): Intersectionality. Institute for Intersectionality and Research and Policy: Simon Fraser University (SFU).

Online: https://www.researchgate.net/profile/Olena_Hankivsky/publication/279293665

Symington, A. (2004): Intersectionality: A Tool for Gender and Economic Justice. Toronto: Association for Women´s Rights in Development (AWID).

Online: https://lgbtq.unc.edu/sites/lgbtq.unc.edu/files/documents/intersectionality_en.pdf

Facilitation, steps and guidelines

Overview	Intersectionality
Time	60 min
Learning objectives	The participants are able to: • Define the concept of "intersectionality" • Explain how the opportunities and constraints of people (in households, communities etc.) are linked to sets of stratifying criteria (sex, age, household position etc.) • Relate the concept of intersectionality to their own work • Understand the practical implications of intersectionality for gender analysis in agricultural research • Recall experiences of having received or having been denied access to opportunities through their association with particular social groups
Topics	◎ Intersectionality
Preparation	☞ Print role descriptions, cut and fold so that each participant receives one role (Annex 14) ☞ Print situations for your facilitation (Annex 14) ☞ Prepare an empty poster with heading "Main Principles of Intersectionality" and cards with principles (Annex 15, Tab. 8) ☞ Prepare a PowerPoint presentation or posters with case study examples (Annex 16 or own examples) ☞ Prepare the room for the role-play (remove chairs, tables, if necessary)
Materials	✂ Handouts (role descriptions) ✂ Posters ✂ Cards ✂ Optionally: PowerPoint presentation
Methods	⌘ Role-play ⌘ Plenary discussion
Remarks	This exercise requires space. All participants should be able to stand side by side while moving up to 10 meters forward. The exercise may create strong emotions.

Steps and guidelines

1. Explain that this module consists of a role-play called "one step forward" and a discussion of the concept of intersectionality based on the experiences from the exercise.
2. Distribute the role descriptions randomly among the participants. Ask them to read their role but **not** to share it with anybody else in the room. Create a quiet atmosphere.
3. Ask the participants to familiarize themselves with their role. Tell them that you will read out some questions, which they should silently answer in their mind. Pause after every question so that the participants have time to imagine their role:
    - Are you a female or male farmer? How old are you? What level of education do you have? Do you have any physical impairment?
    - What type of household do you live in? How many children do you have and how old are they? What is your position in the household? Do you gain income from off-farm activities?
    - What is your relationship to the village chief? How wealthy are you (in your imagination)?
4. After the last question request the participants to line up side by side on an imaginary starting line at a suitable location in the room.
5. Tell the group that you will now read out different situations (most taken from the real context of a research-for-development project, Africa RISING, Annex 14). Each situation will require the participants to either move forward or stay where they are. Sometimes they will move one step forward, sometimes two steps forward, and sometimes they will stay where they are, depending on the situation. Ask them to listen to the situations and move according to the instructions.
6. Read out one situation after the other. Pause after each situation, so that the participants may move, or look back and compare their position with that of their colleagues. If necessary, read out the situations twice.
7. After the last situation, request the participants to stay where they are, but to look around and see where the others are. Select participants from different positions (back, middle and front) and ask them how they felt during the exercise: What was it like to take a step forward? What was it like to remain where you were? After this, ask each participant to explain his or her identity to the group.

8. When the last participant has shared his/her identity, ask the group to slip out of their roles and sit down again. Initiate a discussion on the following questions:
    - Now that you know the identities different participants had in the role-play, what is striking when looking at their end positions?
    - What does the pattern of end positions in the room tell us about gender? What does it tell us about other identities?
    - Which social groups ended up in the front, in the middle, or at the back?
9. Continue with a presentation/discussion of intersectionality (Annex 15, Tab. 8). Use the cards you have prepared with the main principles of intersectionality. Present each card/principle and pin it on the prepared poster with the respective heading.
10. Present the case study examples on female vegetable income (Annex 16) or your own examples. Use the examples to show that focusing on gender alone obscures differences within the group of women (or men). The analytical level of "men" and "women" is often too general to draw meaningful conclusions about the opportunities and constraints of individuals within the respective group. It is necessary to consider additional social identities.
11. Invite further questions or comments. Then close the session.

Facilitator's notes

- If the group is large and you decide to do the exercise outdoors, make sure the environment is quiet enough for the participants to hear you (and their co-players).
- The roles and situations used in this exercise may be adapted to other contexts (depending on the target groups of the training). This can enhance the quality of the experiences gained during the role-play. For many participants, the visual experience of large distances between the end positions is powerful. When adapting the roles and situations, it might be useful to ensure that only a few people can take a step forward in a certain situation. If the end positions are too close to each other, the participants will fail to fully experience the effect of differential opportunities and constraints.

Annex 14: Roles and situations (one step forward exercise)

Roles

Role 1: You are a male farmer aged 48. You have a wife and two children (9 and 12 years old). You are the head of your household, physically strong, and you have been educated at a secondary school. Apart from farming, you gain off-farm income as a teacher in the local school. You are a distant relative of the community chief.

Role 2: You are an elderly male farmer aged 62. You are the head of your household and have a wife and five adult children, two of whom still live at home and help you on the farm. The other three send small remittances that allow you to hire additional labor if needed (off-farm income). Due to your age, you are physically disabled and no longer mobile. You have received a primary education and you are a close relative of the chief.

Role 3: You are a male farmer aged 52. You are the head of your household and have a wife and three children (14, 16 and 17 years old) who help you on the farm. You are physically strong and apply manual methods to cultivate your land with the aid of your domestic labor force. You have no additional income apart from farming. You have been to secondary school. You have no particular connection with the village chief.

Role 4: You are a male farmer aged 55. You are the household head and you have three children above 10 years of age who help you on the farm. You have had a secondary education and you are healthy, without any major handicaps. You know the extension officer quite well and are a distant relative of the village chief. At the moment, you do not have any off-farm income.

Role 5: You are a male farmer aged 28. You are a single man (no wife or children, automatically household head), physically strong, and earn a marginal income as a temporary laborer (not enough to employ temporary labor on your own farm). You have had a primary education. You have no special relationship to the village chief.

Role 6: You are a male farmer aged 70. You are the household head, with a wife and two adult children. You are physically handicapped (due to your age) and have only had a primary education. You engage a lot with the local village extension officer, while the village chief is a distant relative of yours. You receive remittances from your children (not enough to be counted as off-farm income).

Role 7: You are a male farmer aged 35. You are the head of your household and have a wife and one three-year-old child. You have had a primary education. You are physically handicapped after an accident during on-farm work. You make a living by selling surplus produce and have no additional off-farm income. You have never talked to the extension officer and have no particular relationship with the village chief. You are part of the less wealthy class.

Role 8: You are a female farmer aged 51. As a widow, you are the head of your household and have three adult children. You are physically strong and hold a secondary school degree. Your close relation to the village chief ensures access to a fertile piece of land. You gain a decent income from farming.

Role 9: You are a female farmer, 36 years old, and have had a primary education. Together with your husband (who is the household head) you have two children, 10 and 12 years old. You are physically strong. You gain a small income from selling charcoal, which you sometimes use to hire additional labor. You are a distant relative of the village chief.

Role 10: You are a female farmer, 29 years old, and have had a primary education. Together with your husband (who is the household head) you have two children, aged 6 and 8. You cultivate a small piece of land for home consumption, but you mainly depend on the small income you get from temporary on-farm labor (no off-farm income). You have no major physical disadvantages. You have no particular relationship to the village chief.

Role 11: You are an elderly female farmer aged 68. Together with your husband (who is the household head) you have two adult sons. You have attended primary school. You are physically able and you cultivate a small piece of land for home consumption. You receive very small remittances from your sons (not enough to hire labor). You have no relationship to the village chief.

Role 12: You are a female community member aged 32. Your husband works abroad, which makes you the *de facto* head of your household. You have two children below the age of 10 and you have had a secondary education. You were lucky enough to be given a fertile parcel of land due to your close relationship to the village chief. You generate a small income by selling surplus produce and have no significant off-farm revenues. You have never talked to the village extension officer. You are healthy and have no major handicaps.

Role 13: You are a male community member aged 22. You are the only son in your family and have no children, nor are you married (no household headship). You still live in your parents' house and help on the domestic farm. You earn a small income from cattle herding (no significant off-farm income). You have had a secondary education and are physically strong. You have no relationship to the village chief and have never talked to the village extension officers.

Role 14: You are a female farmer aged 48. Together with your husband (who is the household head) you have three children above the age of 10. You have had a secondary education and are not handicapped. You work as a teacher in the local primary school, which provides you with a decent off-farm income. You have no relationship with the village chief.

Role 15: You are an elderly female farmer aged 54. You are the second wife of your husband, who is the household head and the chief of the village (close relationship to the village chief). Together with your husband you have four children (all over the age of 10). You receive off-farm income from your own business and have had a primary education. You are healthy and strong.

Situations

Situation 1: A pest has affected legumes in your community. You have identified the pest in your own fields. The only quick solution is spraying. Spraying equipment and chemicals are available at an affordable price. But to prepare and apply the chemicals you need to read instructions and calculate. If you have had a primary education, stay where you are. If you have had a secondary education, move one step forward.

Situation 2: An agricultural research institute promotes new planting techniques that improve productivity but at the same time require additional labor. If you have an off-farm income big enough to employ temporary labor, move two steps forward. If you have at least three children over 10 years old in your household, move one step forward. These children will help you to do the work. If you have neither off-farm income nor three children over 10 years old, stay where you are.

Situation 3: In order to improve household nutrition and gain extra income, you decide to produce vegetables in the dry season. You have access to a suitable plot but it has no water for irrigation. In your community, men control access to land and to the water sources on it, such as dams, wells and springs. If you are male, move one step forward. If you are female, stay where you are.

Situation 4: Your extension officer is an elderly and very experienced man. He likes to exchange views on agricultural practices with farmers of his own age and mindset. Younger farmers feel shy in his presence and rarely ask questions. If you are under 35, stay where you are. If you are aged between 35 and 50, move one step forward. If you are over 50, move two steps forward.

Situation 5: You could greatly improve your maize production by applying small doses of industrial fertilizer. If you are a male head or a female head, you may control income in your household and purchase fertilizer. Therefore, move one step forward. If you are a woman in a male-headed household, you have no control over income. Therefore, stay where you are.

Situation 6: A field day is planned in a village three kilometers away. You would like to participate. If you are a woman with children under 10, you have to take care of the children and cannot participate. Therefore, please stay where you are. If you have a physical disability, please also stay where you are. In all other cases, please move one step forward.

Situation 7: In your community, agricultural land is allocated through the chief. The most fertile land is often allocated to the chief's closest relatives. If you are closely related to the chief, take two steps forward. If you are distantly related to the chief, take one step forward. If your card does not mention any relation with the chief, stay where you are.

Annex 15: Main principles of intersectionality

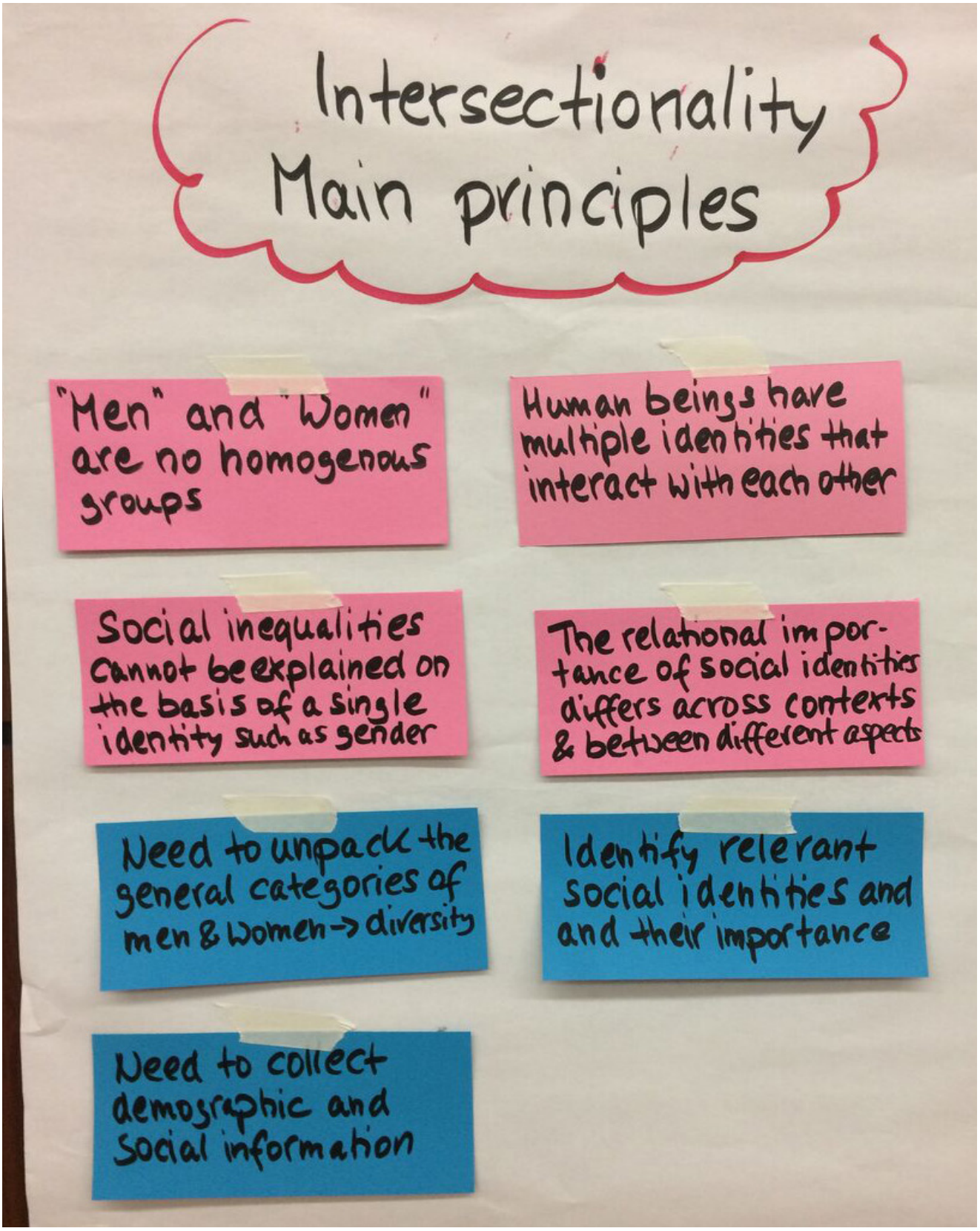


Figure 12: Main principles of intersectionality. Photo credit: Sabine Fründt.

Annex 16: Intersectionality - an example from research

The figures in the bar charts below were taken from a study on intra-household labor, income and expenditure allocation in Africa RISING partner communities in Tanzania. The example shows that aggregated figures for women's income may obscure the realities of women in different household positions. The average income generated by female household heads may vary from that generated by female spouses living in male-headed households. Adopting an intersectional perspective (in this case a combination of gender and household position) may provide better insights into female income generation.

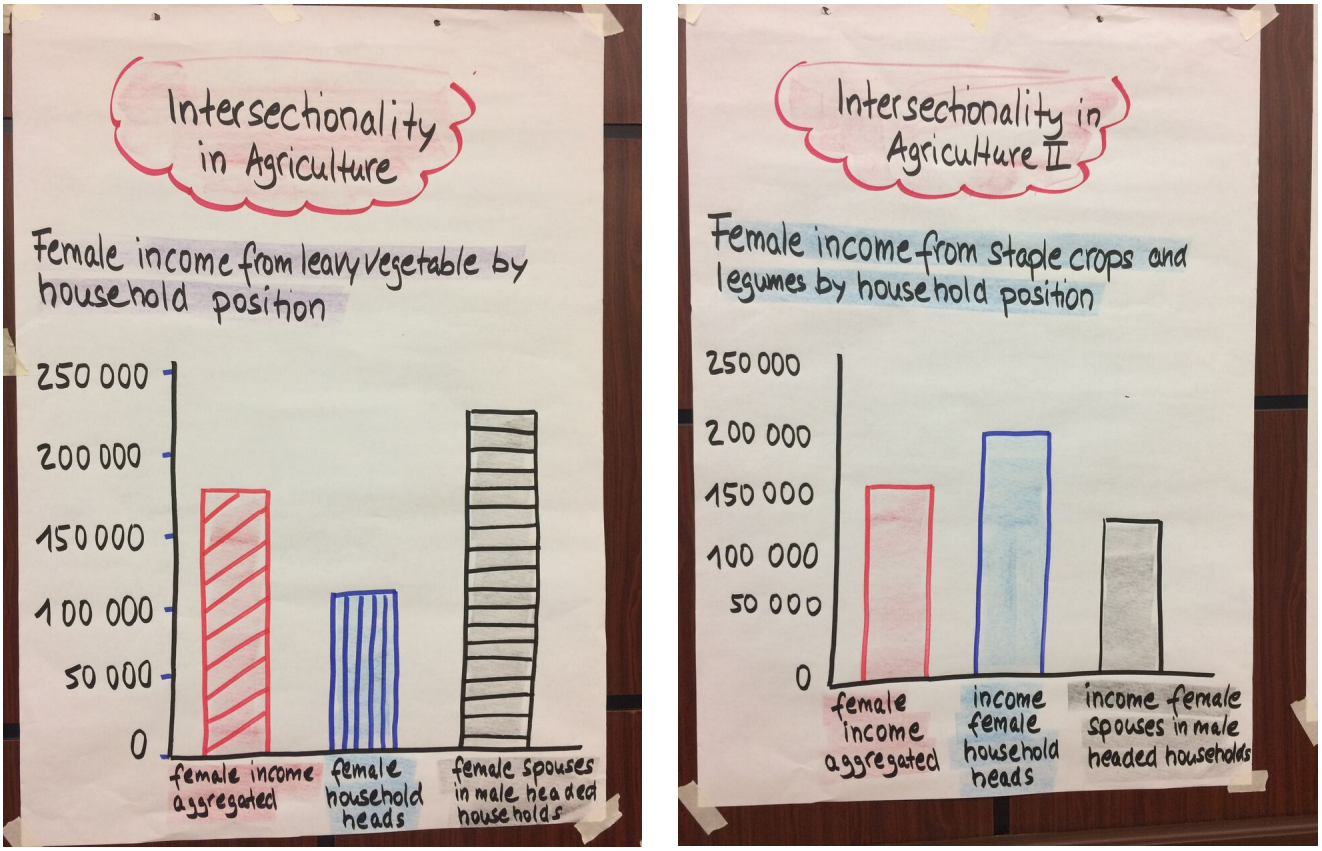


Figure 13: Examples from intersectional research: disaggregated female income per year in Tanzanian shillings. Photo credit: Sabine Fründt.

= Female income aggregated

= Income of female household heads

= Income of female spouses in male-headed households

Module 2.3: Wrap-up gender concepts

Overview	Wrap-up gender concepts
Time	15 min
Learning objectives	The participants: • Are able to distinguish and explain "gender" and "sex" • Understand and recognize the link between gender roles, gender relations, intersectionality and transformative research
Topics	◎ Gender and sex ◎ Gender roles and relations ◎ Intersectionality ◎ Gender transformative approach
Preparation	☞ Prepare a poster or PowerPoint presentation (Annex 17)
Materials	✂ Poster (or PowerPoint presentation)
Methods	⌘ Presentation

Steps and guidelines

1. The previous modules have provided an overview of important research approaches in agriculture, and basic gender concepts. Explain that at this point a brief wrap-up is due, before placing a new focus on gender analysis and tools. Uncover your poster (or start your PowerPoint presentation).

2. Begin with the distinction between "sex" and "gender". The conventional distinction between sex and gender tells us that sex is related to our biology, our body and reproduction. Gender, on the other hand, is seen as being related to our socialization, our identity and our interactions. Point out that this distinction is the outcome of a long-running debate that has been termed the "nature-nurture" debate. It asks whether our behavior is shaped by our body (nature) or by our upbringing (nurture). Say that most scholars would agree that our gendered behavior is learned and can be changed. However, ongoing research shows that the relationship between biology, socialization and social behavior is far more complex than the distinction between sex and gender makes us believe. For the topic of this training – gender in agriculture – these complexities will not be elaborated on in detail.

3. Move on to gender roles and relations. Note that we have just seen that gender is established through interaction and socialization. This means that we can change the way we behave. One of the most visible differences between men and women is their gender roles. We can see differences between men and women in the division of labor, in the allocation of resources, and more. These differences are based on negotiations, rules, and institutions. These institutions – like gender relations – are dynamic. They may work to the advantage of some and the disadvantage of others, or they may promote equity.

4. Continue with intersectionality. Clarify that gender roles and relations do not suffice as basic gender concepts. Since the 1980s, the idea of men and women as homogeneous groups has come under attack. Especially black American scholars and scholars from the Global South have insisted that other social criteria apart from gender contribute to creating inequalities. These include religion, age, ethnicity, race or education. The term intersectionality denotes that gender is considered together with other intersecting criteria.

5. Finally, link up with the transformative approach, which dismisses the idea of social behavior as being inborn and calls for the consideration of all concepts.

Annex 17: Poster wrap-up gender concepts

Wrap-up gender concepts	
Sex and gender	
The conventional distinction	
Sex: Related to biology, body and reproduction	Gender: Related to socialization, identity and interaction
Nature-nurture debate: Is social behavior shaped by nature (sex) or nurture (gender)? Ongoing research: Far more complex interrelationships between biology, socialization and social behavior!	
Gender roles and relations	
Roles as most visible in the division of labor and allocation of resources	Relations as negotiations, norms and institutions
Continuous interaction between roles and relations produces (in)equalities	
Intersectionality	
Inequalities not based on gender alone but on the interplay of several identities	
Gender transformative approach	
Dismisses the idea that social behavior is inborn. Behavior is gendered and may be changed	
Calls for the consideration of roles, relations and intersectionality	

Figure 14: Template – poster wrap-up gender concepts

Learning unit 3. Principles and tools for gender analysis

This learning unit serves to introduce tools and principles for the implementation of gender analysis in agricultural research.

Module 3.1: Linkage diagrams

Linkage diagrams as a tool for gender analysis may be employed in two ways: First, researchers may use them to reflect upon and conceptualize their own work, and to identify entry points for the gender analysis of the specific agricultural technology under investigation. Second, researchers may draw linkage diagrams with farmers to better understand their assessment of the technology, including its association with gender. During the training, participants split up into small groups and produce linkage diagrams for technologies they are working on. After an evaluation of this exercise, they discuss methodological questions related to how the tool can be applied with farmers.

Module 3.2: Recap of the first day

This first module of the second training day provides room to establish learning progress and to identify open questions. It starts with a recap of the previous day. The participants are invited to a gallery walk in which they consider the topics and materials of completed modules displayed on the walls. In pairs they reflect upon what they have learned and discussed on the previous day. Thereafter, participants review how far they have achieved their learning foci and give feedback to the facilitators.

Module 3.3: Basics of gender analysis

Using a wheel of questions (what, why, when, how, and who), this module familiarizes participants with the basics of gender analysis in agriculture.

Module 3.4: Activity profiles, seasonal calendars, daily activity clocks

Important and often neglected aspects of agricultural research for development are gendered labor arrangements. In this module, the participants get acquainted with activity profiles, seasonal calendars, and daily activity clocks, which are standard tools for unpacking the relations between gender and labor. Building on the linkage diagram exercise of the previous day, participants develop activity profiles for the same technologies. Methodological considerations for using the tools during fieldwork complete the module.

Module 3.5: Principles of gender analysis in survey research

For agricultural researchers, surveys are an important tool for investigating the conditions and dynamics of households, communities and institutions (such as markets) in a specific context. The training dedicates a separate module to principles of gender analysis in survey research, with a focus on data production. Four principles are introduced for designing and conducting gender-sensitive surveys. These are sex-disaggregation, the inclusion of gender analysis questions, gender-sensitive sampling, and the establishment of a gender-sensitive research setup.

Module 3.6: Matrix scoring and the SI Assessment Framework

Evaluating the (gender) implications of an agricultural technology is paramount to assessing its sustainability and potential adoption by a large number of farmers. This module presents a tool for participatory technology evaluation with farmers. The tool allows the comparison of a specific technology to conventional practice in five domains (including equity) based on the Sustainable Intensification Assessment Framework. Drawing on the results of previous group work (linkage diagrams, activity profiles), the participants tailor the tool to their particular technology and study context.

Module 3.1: Linkage diagrams

Background information

A linkage diagram is a qualitative and participatory research tool. It visualizes aspects of a specific research topic, such as a new agricultural technology, and their interconnections (see examples in Annex 18). Linkage diagrams can be drawn for different analytical levels, such as a farming system, a broader theme (e.g. maize production), or a specific technology (e.g. improved maize seeds). This training explicitly focuses on the analytical level of technologies in agricultural research.

What are the components of linkage diagrams?

Linkage diagrams comprise aspects from multiple domains (e.g. technical, bio-physical, economic, social) and scales (e.g. local, regional). Besides, a linkage diagram shows the interconnections between certain aspects; these may be causal, dependent or conflicting. When used as a tool for gender analysis, such diagrams will additionally indicate which aspects are associated with gender or other social criteria.

How do linkage diagrams relate to action research, the farming systems approach and gender transformation?

Linkage diagrams relate to the three research approaches that underpin this training. This tool is based on a systems perspective, acknowledging the existence and interplay of various systems components. As a participatory and reflective instrument, it matches the demands of action research. Employed to identify gender-relevant aspects of a technology, it supports critical gender analysis and provides entry points for gender transformative action.

Who should draw a linkage diagram?

Linkage diagrams can be used in two different ways. First, research teams may draw a linkage diagram to conceptualize and plan their work. Second, they can be used with farmers as a participatory gender tool. Both applications are discussed in this training and involve different methodological considerations.

What are the potentials of linkage diagrams for agricultural research?

Linkage diagrams are useful as

- a tool for reflection, conceptualization and planning, when drawn by researchers
- an instrument for researchers and farmers to identify and select relevant aspects and stakeholders for research and collaboration
- a means in action research and farming systems approaches to integrate and compare the multiple perspectives of various stakeholders, when drawn by different groups such as researchers and farmers
- a method in fieldwork to establish, test and validate research hypotheses
- a tool for researchers to identify entry points for gender analysis, either when produced by researchers themselves or developed by farmers.

How can insights from linkage diagrams be integrated in further research?

Linkage diagrams reveal entry points for further research and support scientists in the identification of where gender issues matter for a technology. As soon as this has been done, other instruments are needed to collect further information (e.g. surveys, semi-structured interviews). In this training, we use activity profiles to unpack the association between gender and labor, often identified in linkage diagrams (see module 3.4).

Drawing a linkage diagram with researchers

Researchers who intend to produce a linkage diagram with their team can follow the steps below:

Step 1: Selection of a technology

At the beginning a decision has to be made, as to which technology the linkage diagram will be drawn for. The team should focus on one technology instead of a broader theme. This allows capturing aspects specific to this technology, such as the gendered division of labor. Linkage diagrams drawn for a broader theme tend to contain imprecise information on technologies.

Step 2: Selection of a context

Since aspects associated with a certain technology vary across different locations, a linkage diagram is always context-specific. It is therefore important to be clear about the context for which the linkage diagram is to be drawn. This is especially important for research teams working on the same technology in different contexts.

Step 3: Drawing the linkage diagram

The process starts with writing the name of the selected technology in the middle of a flipchart sheet. The team then jointly reflects upon and discusses all aspects associated with this technology and records them on the sheet. Interconnections between the different aspects are indicated by lines or arrows. The team should take enough time to produce the diagram, as the outcome will form the basis for identifying gender-relevant aspects in the next step.

Step 4: Identifying gender and other social dynamics

After completion of step 3, the researchers discuss which aspects have a clear association with gender. They mark these aspects (for instance with a red cross). Considering intersectionality, the team may also reflect upon and indicate social dynamics based on other criteria, such as age, ethnicity or education.

Figure 15: Africa RISING scientists drawing a linkage diagram. Photo credit: Simon Wittich.

Drawing a linkage diagram with farmers

Linkage diagrams may also be used as a participatory tool for gender analysis with farmers. As such they can promote communication and discussion between farmers, and between researchers and farmers (McCracken et al. 1988: 29).

When employed in fieldwork, the tool consists of two components:

Component 1: Drawing the linkage diagram (with a small group of 3-5 farmers; audio-recorded)

Component 2: Focus group discussion on the diagram (audio-recorded)

It is important to note that the linkage diagram is not an end in itself (Campbell 2002: 25). The subsequent group discussion is important for contextualizing the contents of the diagram. It provides additional information on how certain aspects relate to the studied technology, gender, and other social dynamics.

What to consider when selecting respondents (farmers) for group work?

It is a general challenge in social science research to compose a group of respondents (farmers) in which all may actively engage and share their views. Especially women often find it difficult to express their opinions in front of men. Therefore, the exercise is best conducted in gender-separate groups (although a final joint discussion on the separate diagrams may be useful). In addition, researchers should consider other constellations that could adversely affect the performance of, and dynamics within, groups. Groups with pronounced social differences in terms of age, education or social status tend to prevent some individuals in the group from active participation. Accordingly, participatory diagramming tends to be done in more homogeneous groups (Kesby 2000: 425). In addition, it is important to select farmers who have first-hand experience of using the studied technology. Information gathered from farmers who have merely attended a technical training or heard about the technology may be of limited accuracy.

What to consider when selecting research facilitators?

Gender-separate groups imply that the research facilitators should be of the same sex as the participating farmers (male facilitators for male groups, female facilitators for female groups). Often it is also an advantage to select facilitators who are neither members of the target community nor part of the research team the farmers deal with on a day-to-day basis. Talking to "outsiders" reduces biases that spring from social obligations and hierarchies.

What to consider when choosing a format for the drawing exercise?

Depending on the specific study purpose and the background of the farmers (e.g. their literacy, preferences and needs), the research team may choose between more or less structured formats.

How much facilitation is needed during the drawing exercise?

Some farmer groups may feel comfortable producing a diagram on their own, while others may need the presence of a facilitator. In one of our case studies, a group delegated writing to the facilitator (see Annex 19, Fig. 20). This allowed them to focus on the exercise instead of focusing on the management of literacy skills. If possible, the decision to have more or less facilitation should be taken together with the participating farmers, taking into account their ability and willingness to work independently.

Should I select a more or less structured format?

In less structured formats, farmers proceed analogous to the steps described for researchers above. They note down any aspects they associate with the studied technology, including interrelations and gender relevance. In more structured formats, the research team defines thematic areas related to the technology (e.g. technical, economic, social) (Annex 19). The farmers are then requested to focus on aspects in these areas. A thematic focus can be introduced at the beginning or during the drawing exercise, depending on the study purpose, as well as the farmers' needs and preferences.

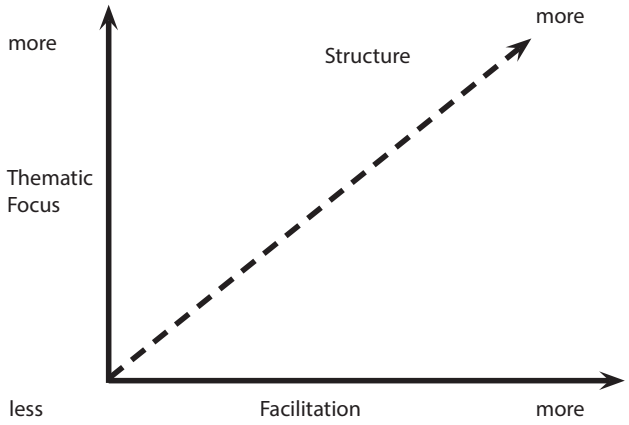


Figure 16: Formats for drawing a linkage diagram

What are the steps for drawing and discussing the diagram?

In principle, drawing a linkage diagram with farmers follows the same steps as those outlined for researchers above. It is advisable to work in the language the farmers are most conversant with and to translate the name of the technology in question (as well as potential thematic areas). Initially, the research facilitators need to familiarize the farmers with the tool. For this purpose, they may prepare a template for another technology known to the farmers, in order to demonstrate the idea of the exercise. After this, the group turns to the technology under investigation and embarks on drawing. It is useful to make a recording of the drawing exercise to capture debates, decisions and ideas at this stage.

As soon as the diagram is completed, the facilitators initiate a focus group discussion on the results. This discussion should also be audio-recorded (it may be useful to take additional field notes). At times it is impossible to discuss all aspects of a diagram within a reasonable time. The research facilitator(s) may therefore focus on key aspects and gender-related questions (e.g. Can you explain how gender is related to this aspect?). Overall, the entire exercise should not take longer than 90 minutes.

Facilitation, steps and guidelines (part 1+2)

Overview	Drawing linkage diagrams with researchers (part 1)
Time	60 min
Learning objectives	The participants are able to: • Name basic features and components of linkage diagrams • Outline links between linkage diagrams and action research, the farming systems approach and gender transformation • Produce a linkage diagram for an agricultural technology and interpret the results • Recognize linkage diagrams as a planning tool for gender analysis
Topics	◎ Linkage diagrams and gender ◎ Linkage diagrams as a planning tool for researchers ◎ Links between linkage diagrams and action research, the farming systems approach and gender transformation
Preparation	☞ Prepare the room for group work (4-5 tables with chairs, flipcharts, and markers of different colors) ☞ Prepare the case study example (Annex 18) or own examples (poster or PowerPoint presentation) ☞ Instructions for group work (Annex 20): Prepare a PowerPoint slide or print handouts ☞ Optionally: Print copies of the handout on linkage diagrams (Annex 22)
Materials	✂ Flipchart paper and marker pens (different colors) ✂ Poster ✂ PowerPoint presentation ✂ Cards ✂ Handouts
Methods	⌘ Presentation of case studies ⌘ Group work ⌘ Plenary discussion
Remarks	Linkage diagrams can be drawn for a whole farming system or part of a system, such as an agricultural technology. This training focuses on linkage diagrams as a tool for the technology level.

Steps and guidelines

1. For gender analysis it is important to identify the link between gender and a research topic such as an agricultural technology. Explain that this module introduces a participatory research tool, linkage diagrams. This tool supports the identification of gender-relevant issues in the context of an agricultural technology.

2. Introduce the structure of the module (two parts): In the first part the group will learn about linkage diagrams as a planning tool for researchers. In the second part the participants will discuss how linkage diagrams can be used in participatory research with farmers.

3. Present the linkage diagram for forage choppers (Annex 18), or another self-chosen example. Familiarize the participants with the basic features of linkage diagrams. You may use the background information given above. Refer to the following questions: What elements does a linkage diagram consist of? How is a linkage diagram developed (sequential drawing process)? When is gender integrated into the diagram and how?

4. After this presentation, ask the participants if they can see links between linkage diagrams and the three research approaches that underpin this training (action research, farming systems approach, gender transformation). You may illustrate the following links:
   - Participatory and critically reflective (action research)
   - Holistic/systems perspective (farming systems approach)
   - Indication and critical analysis of gender-relevant aspects (gender transformative approach)

5. Embark on the drawing exercise: Request the participants to suggest agricultural technologies they would like to work on. Collect four to five suggestions and note them down on cards. Discuss the suggestions and make sure that each participant can work in a team (it is best to use a technology they are fairly well acquainted with). Spread out the cards on the floor, and ask the participants to stand next to the card with their selected technology.

6. Once four to five groups have been formed, ask each group to choose a table for group work. Explain the group work (drawing exercise). Distribute the handouts with instructions and go through each step (Annex 20). Invite questions or comments. Explain that the exercise will be followed by a plenary discussion of experiences and lessons from the drawing exercise.

7. During group work, walk around and respond to questions. After around 20 minutes, request the groups to mark with a cross on their diagram those aspects that have a perceived link with gender. Other social dynamics (age,

ethnicity, etc.) may also be indicated. Close the drawing exercise after approximately 30 minutes.

8. After completion of the exercise, request the groups to put up their diagrams on a designated wall in the room. Invite them to a short gallery walk to see what the others have produced. After a few minutes, ask them to return to the plenary (large circle of chairs).

9. Start the debriefing discussion. Ask the participants about their experiences during the drawing exercise. What went well? What challenges were experienced? Turn to perceptions of the tool: How did they like the tool? What did they particularly like/dislike? Ask about experiences in terms of gender: What can the tool provide in terms of gender?

10. Conclude by pointing out that linkage diagrams support the identification of entry points for gender analysis. However, other methods will be needed to unpack the gender dimensions that have been identified, for instance semi-structured interviews, activity profiles, or a survey. An example of how identified linkages between gender and a technology can be further investigated will be given in Module 3.4.

Facilitator's notes

- In our experience, participants connect better to a "real" diagram on paper than to a photo of it on a PowerPoint slide. Therefore, we put a diagram (example from a case study; alternatively a diagram drawn in a previous training) on a large table and invite participants to stand around it while going through steps 1 to 4 above.
- Participants tend to benefit most from the exercise when they work on a technology they know well. Consider the different research backgrounds of the participants when selecting technologies for the exercise. Make sure the participants can work on a topic from their own or a related field.
- It is recommended to choose specific technologies for the exercise and to relate them to a certain socio-economic and agro-ecological context. Diagrams will differ for different contexts.
- In the debriefing discussion, the focus is on experiences with the tool rather than on the contents of the drawings.

Overview	Drawing linkage diagrams with farmers (part 2)
Time	30 min
Learning objectives	The participants are able to: • Apply the methodology of drawing linkage diagrams with farmers • Identify options for cooperation with social scientists in the application of this tool with farmers
Topics	◎ Linkage diagrams as a tool for gender analysis in fieldwork
Preparation	☞ Prepare posters or a PowerPoint presentation with information on using linkage diagrams with farmers (see background information) ☞ Prepare a template of a linkage diagram with thematic key areas (Annex 19) ☞ Optionally: Presentation of case study material from own fieldwork
Materials	✂ Posters ✂ PowerPoint presentation ✂ Template of a linkage diagram with thematic focus areas ✂ Example case and action pictures from the field (optional)
Methods	⌘ Presentation ⌘ Plenary discussion

Steps and guidelines

1. After having completed the first part, explain that linkage diagrams can also be used for fieldwork with farmers. You may show the linkage diagram drawn by farmers in Annex 18 or examples from your own case studies. Working with farmers requires specific methodological considerations that will be discussed in this second part.
2. When used with farmers, the tool consists of two components, the drawing exercise and a focus group discussion in which the former is embedded (see background information). Outline why it is necessary to combine the two. Emphasize that the group discussion is audio-recorded to ensure that all information provided by the farmers can be analyzed.
3. Ask the participants how they would prepare for using the tool with farmers. Who would they invite? How would they compose the groups? Who would facilitate? Document ideas on a flipchart. Whenever an aspect from the list below is mentioned, take a short break (from brainstorming) and discuss this aspect with the group. If needed, add missing aspects. Make sure that the following aspects are covered (see background information):
    - Application in gender-separate groups with a female facilitator for women and a male facilitator for men, and different venues for the groups
    - Selection of respondents who have sufficient experience in using the technology
    - Selection of a suitable format for drawing (Annex 19)
4. Using linkage diagrams with farmers provides an opportunity for interdisciplinary cooperation. Encourage the participants to contact the gender or social science unit in their organization for support, or for help in finding trained facilitators.
5. Conclude by saying that (as with researchers) using this tool with farmers supports the identification of entry points for gender analysis in relation to a technology. Invite questions and comments. If you have printed handouts (Annex 22), distribute them and close the session.

Annex 18: Examples of linkage diagrams

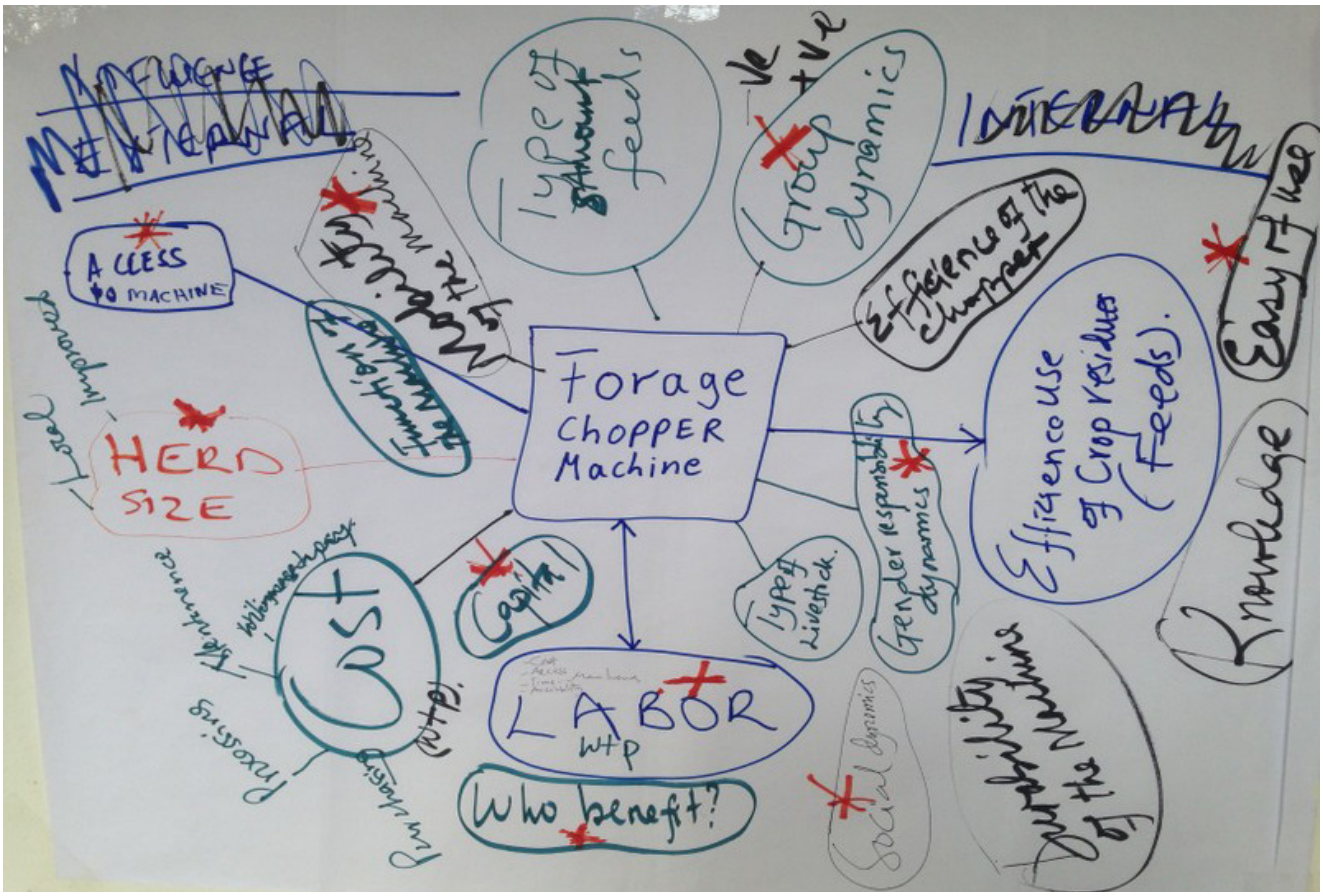


Figure 17: Linkage diagram for forage choppers drawn by researchers. Photo credit: Gundula Fischer/IITA.

Figure 18: Linkage diagram for forage choppers drawn by farmers. Photo credit: Gundula Fischer/IITA.

Annex 19: Format for drawing a linkage diagrams

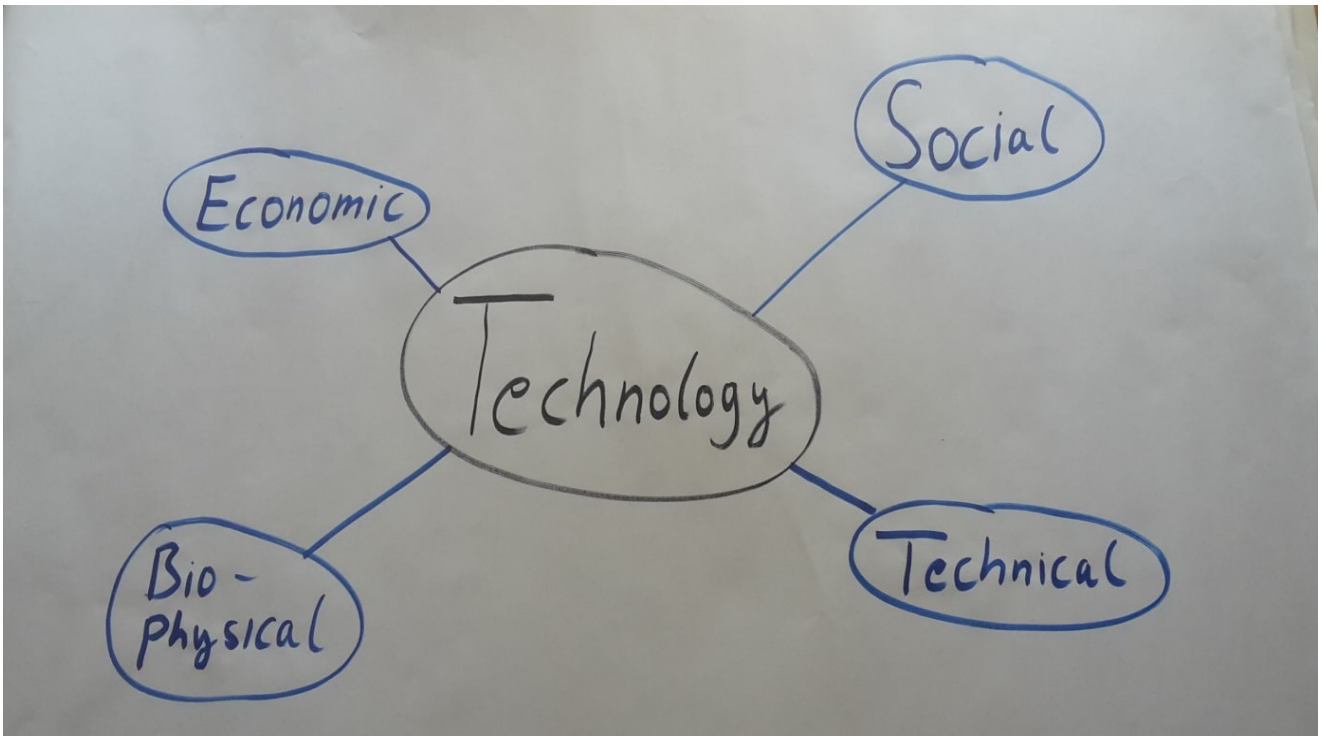


Figure 19: Template – linkage diagram with thematic key areas. Photo credit: Simon Wittich.

Figure 20: Drawing a linkage diagram with facilitation. Photo credit: Ben Lukuyu/ILRI.

Annex 20: Instructions for group work (by researchers during the training)

Instructions for group work (researchers) on linkage diagrams

1. Agree on the technology for which you will draw the linkage diagram.
2. Select the socio-economic and agro-ecological context of the technology (decide on one context if people in the group work in different contexts).
3. Write the technology in the center of the flipchart.
4. Start drawing a linkage diagram around the selected technology. Brainstorm aspects that you associate with the technology and record them on the flipchart.
5. Think about interrelations between the different aspects and insert them into the diagram (establish links by means of lines, arrows, etc.).

After around 20 minutes continue with step 6.

6. Revisit your linkage diagram and mark those aspects that you perceive to have a link with gender (clearly mark them!). When marking them, use a different color than the one used for the other aspects and their interrelations.

After another 5-10 minutes continue with step 7.

7. Reflect upon other social dynamics that are relevant in relation to the technology (e.g. age, ethnicity, education). Mark these aspects with another color.

Annex 21: Field guide for using linkage diagrams with farmers

Preparation

- Selection of farmers for gender separate groups (4-5 farmers per group)
- Identification of suitable venues and times (different venues for male and female groups)
- Template with demographic roster (name, sex, age, education, etc.)
- Equipment: Flipchart paper, marker pens (different colors), audio-recorder

Process

Step 1: *Self-introduction of facilitators*

- Introduce yourself (name, research focus, affiliated organization, etc.). All facilitators should introduce themselves at the beginning**.**

Step 2: *Introduction of study objectives*

- Present the objectives and scope of the study and the meeting.

Step 3: *Informed consent*

- Obtain farmers' oral informed consent to conduct research and to audio-record their discussion (no recording without consent!)

Step 4: *Introduction of respondents*

- Self-introduction of participating farmers (after the recorder has been turned on!). The name of every farmer on the recording is needed for later transcription and attribution of comments.
- Begin with a brief warming-up discussion on general aspects of the topic concerned.

Step 5: *Introduction to the tool*

- Familiarize farmers with the basic idea and features of linkage diagrams.
- If possible, demonstrate and simulate the process of drawing a linkage diagram by using the example of another agricultural technology (separate template) before moving to the actual drawing exercise.

Step 6: *Drawing the linkage diagram*

- Facilitators provide a template with or without thematic key areas. The decision on how much facilitation is needed should be taken together with the participating farmers.
- Farmers are requested to draw a linkage diagram for the topic concerned. Alternatively, they may note aspects on cards and later arrange them as a diagram on a poster and establish links.

Step 7: *Marking gender and other social dynamics*

- After completion of the diagram, ask the group to mark with a different color those aspects that have a link with gender.
- Request the group to do the same for other social dynamics (e.g. age, class, ethnicity).

Step 8: *Discussion of the linkage diagram*

- Discuss the linkage diagram with the farmers. Request them to elaborate on the diagram as a whole or focus on certain aspects.
- Include gender analysis questions to get insights into gender-relevant aspects (e.g. "Can you explain how this aspect relates to gender"?).

Step 9: *Closing of the meeting*

- Ask the farmers if they have any questions or comments.
- Collect basic demographic information in respect of the farmers, using the demographic roster.
- Thank the farmers for their participation and close the session (turn off the recorder!).

Annex 22: Linkage diagrams handout

What is a linkage diagram?

A participatory research tool that

- Visualizes interrelations between different aspects of a specific research object (e.g. an agricultural technology)
- Reflects the different perspective(s) of the individuals in the group and thus provides insights into personal perceptions
- Provides entry points for gender analysis, but needs additional methods to unpack the identified aspects (e.g. surveys; semi-structured interviews; activity profiles)
- Encourages a holistic perspective (farming systems approach), is participatory (action research), and supports the identification of gender-relevant aspects (gender transformation)

Farmers drawing a linkage diagram in Babati, Tanzania. Photo credit: Ben Lukuyu/IITA.

Drawing linkage diagrams with researchers

Scientists can draw linkage diagrams to

- Reflect upon and conceptualize their work and plan subsequent research activities.
- Identify entry points for gender analysis.
- Identify and select relevant stakeholders for research and collaboration.
- Compare their own perspectives to those of farmers.
- Develop research assumptions and hypotheses.

Drawing linkage diagrams with farmers

The tool may also be used for data collection with farmers and other stakeholders.

Methodological considerations

- Work with gender-separate groups (4-5 persons per group)
- Conduct meetings with male and female groups at different venues
- Select farmers with sufficient experience of using the targeted technology
- Audio-record the discussion for subsequent transcription and analysis

Components of the tool in fieldwork

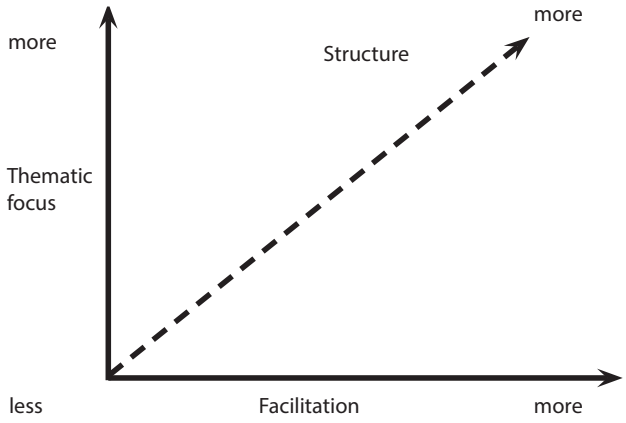
a. Drawing exercise (including marking gender and other social aspects)

b. Focus group discussion on the diagram (to contextualize the diagram and obtain explanations)

Selection of a suitable format

A format should be selected for the drawing exercise. The format depends on the research interests (broad or specific focus) and the farmers' situation and preferences (level of literacy, willingness to work without facilitation). Researchers may choose between more or less structured formats. Structure may be added through

- *A thematic focus*: Definition of thematic key areas to gain insights into certain domains
- *More facilitation*: Facilitation of the drawing process as opposed to independent group work



Formats for drawing a linkage diagram

Module 3.2: Recap of the first day

Overview	Recap of the first day
Time	15-30 min
Learning objectives	The participants: • Recall what they have learned on the previous day • Discuss ideas and insights from day one with their colleagues • Clarify remaining questions from the previous day • Evaluate their individual learning foci • Provide oral feedback to facilitators
Topics	◎ Topics and learning processes on the first day ◎ Review of individual learning foci ◎ Feedback to facilitators ◎ Program for the second day
Preparation	☞ Organize a gallery: Put up all posters and group work results from the previous day on the walls of the training venue. You may think about a meaningful order. ☞ Prepare a poster with three questions (Annex 23) – What was new for me? What became clear(er) to me? – What will I apply/pay attention to in my practice as a researcher? – What are my (new) questions? ☞ Hang the poster with the learning foci (established at the beginning of the first day, Module 1.2) on a flipchart stand ☞ Prepare a poster with the schedule and contents of the second day
Materials	✂ Posters
Methods	⌘ Gallery walk ⌘ Plenary discussion

Steps and guidelines

1. Welcome the participants. Explain that the second day will start with a recap of the previous day. This will be done by means of a "gallery walk". Draw attention to the materials you have put up on the wall.
2. Introduce the participants to the method. Explain that they may walk around the gallery with one or two colleagues. While revisiting the topics from the previous day, they should reflect upon the three questions presented on the poster (Annex 23).
3. Present the questions, and then encourage the participants to choose one or two colleagues and start the gallery walk.
4. Allow 10-15 minutes for the gallery walk, depending on the intensity of the discussion. Then request the participants to return to their seats. Ask them if they would like to share their insights. Answer any questions or comments, if needed.
5. Place the poster with the learning foci in front of the group. Invite the participants to revisit their learning foci (=cards) and decide whether they have been covered. Covered learning foci should be turned over. Make sure that participants only turn over their own cards. Go through the remaining open learning foci.
6. Ask the participants if there is anything else they would like to share, for instance suggestions to the facilitator(s) concerning the methods, presentation, the schedule, etc. Discuss their suggestions and make amendments, where possible.
7. Present the topics and the schedule for the second day (Chapter 4, section 4.4). Discuss them with the participants.

Annex 23: Guiding questions for gallery walk

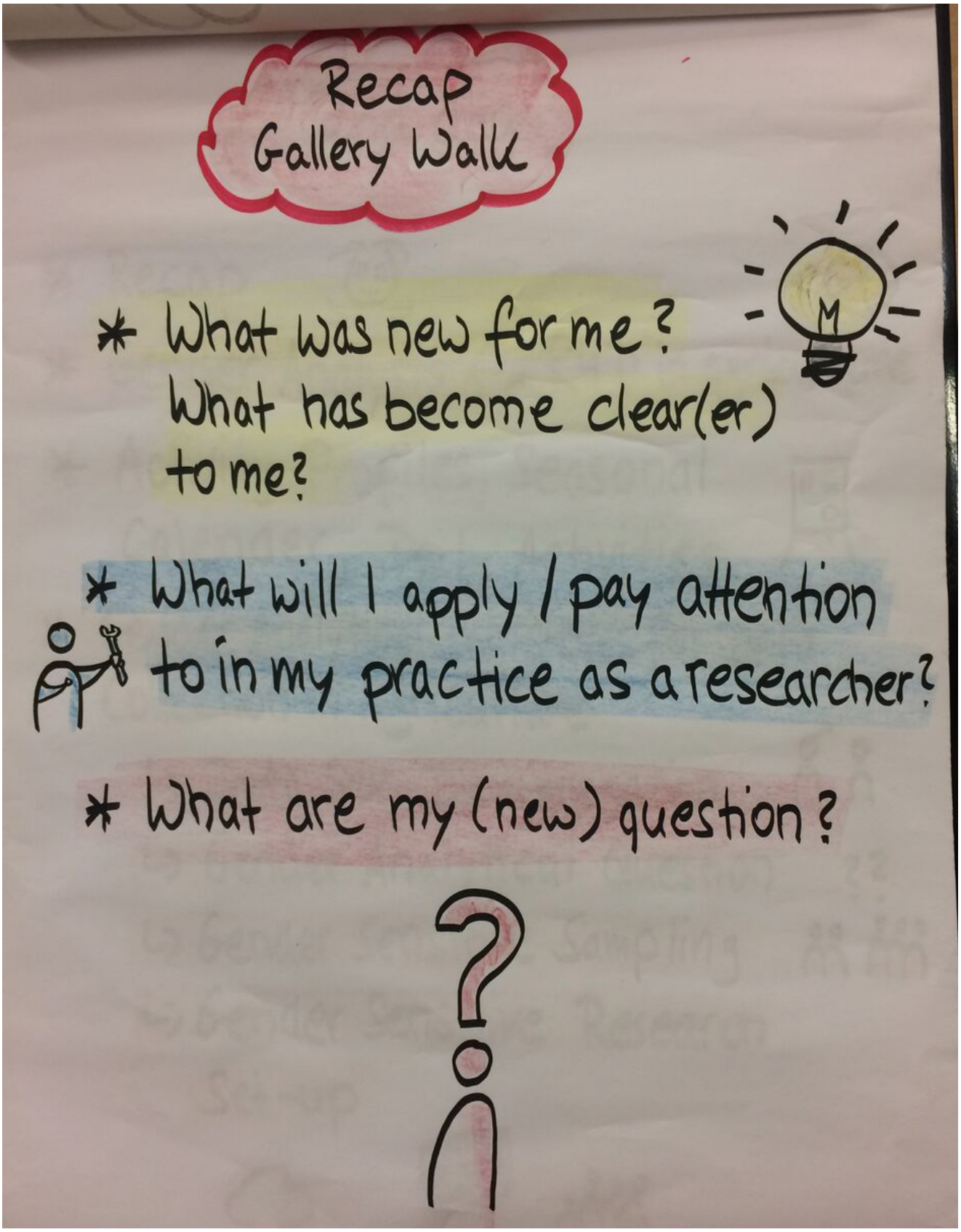


Figure 21: Guiding questions for gallery walk. Photo credit: Sabine Fründt.

Module 3.3: Basics of gender analysis

Background information

Module 3.3 presents basic aspects of gender analysis in agriculture along a wheel of five questions. These are:

What is gender analysis in agriculture?

Gender analysis employs various frameworks and tools. An overview of the most common frameworks and tools, including their strengths and limitations, is available in March et al.'s book "A Guide to Gender Analysis Frameworks" (1999). Gender analysis in agriculture explores gender roles and relations in multiple spheres by focusing on key areas including resources (access, use and control), labor, decision-making, and benefits (FAO 2005:12). It provides insights into the differential opportunities, constraints and needs of various groups of men and women. Intersectionality is an integral part of it: gender is studied in relation to other criteria such as age and education.

> "Gender analysis is a systematic analytical process used to identify, understand and describe gender differences and the relevance of gender roles and power dynamics in a specific context. It examines the different roles, rights, and opportunities of men and women and relations between them" (USAID 2011:2)

Why is gender analysis needed in agriculture?

The need for gender analysis in agriculture results from the vital contributions made by both men and women to agricultural processes. Besides, gender is an important factor affecting the use of agricultural technologies, often demonstrated by pronounced gender gaps in their adoption (Doss and Morris 2001:27). Gender analysis helps to adjust technologies to the conditions of male and female farmers in a specific context (Feldstein 2000:72). It helps to reveal and analyze the features and underlying causes of gender inequalities, and thus provides entry points for transformation.

Who conducts gender analysis in agricultural research?

Social scientists and gender experts do not bear exclusive responsibility for gender analysis. It is the shared responsibility of all scientists within agricultural research. Mainstreaming gender (analysis) requires every research team to integrate gender in their studies. The management should institutionally support this process.

When should gender analysis be conducted?

Gender analysis is an ongoing activity throughout the entire research process. Therefore, it needs to be part of research planning, implementation, monitoring and evaluation. If gender analysis is only introduced towards the end of the research cycle (for instance for impact evaluation), the effects of having overlooked gender-differentiated preferences and needs at earlier stages may be severe. Undesired outcomes may include not only poor adoption of technologies, but also augmented or new inequalities.

How should gender analysis be conducted?

It can be incorporated into research using conventional methods, such as surveys, semi-structured interviews and focus group discussions. Gender analysis questions can be integrated in questionnaires and interview guides. Also, tools for gender analysis can be combined with other methods (for instance the combination of a focus group discussion with an activity profile). In modules 3.1, 3.4, 3.5, and 3.6, we provide examples of how to do this. Gender analysis does not necessarily produce a separate body of knowledge. It may adopt the thematic focus of a study and look at gender-related aspects (FAO 2005:11).

The wheel presented in module 3.3 uses five questions relating to the basic features of gender analysis. However, researchers may also employ these questions to plan their specific gender analysis. They can ask "what" should be analyzed in the course of their gender analysis, "who" will be responsible for certain activities, and "why", "when", and "how" the study should be conducted.

An example of how to use the five questions for planning a specific analysis can be found under: http://www.pointk.org/resources/node/640

Suggestions for further reading

Doss, C. (2013): *Data Needs for Gender Analysis in Agriculture*. Washington: International Food Policy and Research Institute (IFPRI) (IFPRI Discussion Paper 01261).

Online: http://www.fsnnetwork.org/sites/default/files/ifpridp01261.pdf

March, C., Smyth, I. and Mukhopadhyay, M. (1999): *A Guide to Gender Analysis Frameworks*. Oxford: Oxfam.

Online: http://wafira.org/onewebmedia/Guide%20to%20Gender%20Analysis%20Frameworks.pdf

Meyers, L. and Jones, L. (2012): *Gender Analysis, Assessment, and Audit Manual & Toolkit*. Washington D.C.: ACDI/VOCA.

Online: http://www.acdivoca.org/wp-content/uploads/2016/07/ACDI-VOCA-Gender-Analysis-Manual.pdf

Swedish International Development Cooperation Agency (SIDA) (2015): *Gender Analysis – Principles and Elements*. Stockholm: SIDA.

Online: http://www.sida.se/contentassets/3a820dbd152f4fca98bacde8a8101e15/gender-tool-analysis.pdf

United States Agency for International Development (USAID) (2011): *Tips for Conducting a Gender Analysis at the Activity or Project Level*. Washington: USAID.

Online: http://pdf.usaid.gov/pdf_docs/pdacx964.pdf

Facilitation, steps and guidelines

Overview	Basics of gender analysis
Time	20 min
Learning objectives	The participants: • Are able to explain the basic features of gender analysis in the context of agriculture • Assume responsibility for integrating gender analysis into their research work • Recognize that gender analysis is not necessarily a separate new activity but can be incorporated into conventional research processes • Can use the "wheel of questions" for planning their own gender analysis
Topics	◎ Gender analysis in agriculture
Preparation	☞ Prepare two or three posters with the heading "Gender Analysis" (otherwise empty) and hang them on flipchart stands ☞ Prepare the poster template for the "wheel of questions" exercise (Annex 24) ☞ Prepare questions and answers for the "wheel of questions" exercise on cards (see background information and Annex 24)
Materials	✂ Posters ✂ Cards
Methods	⌘ Presentation ⌘ Plenary discussion

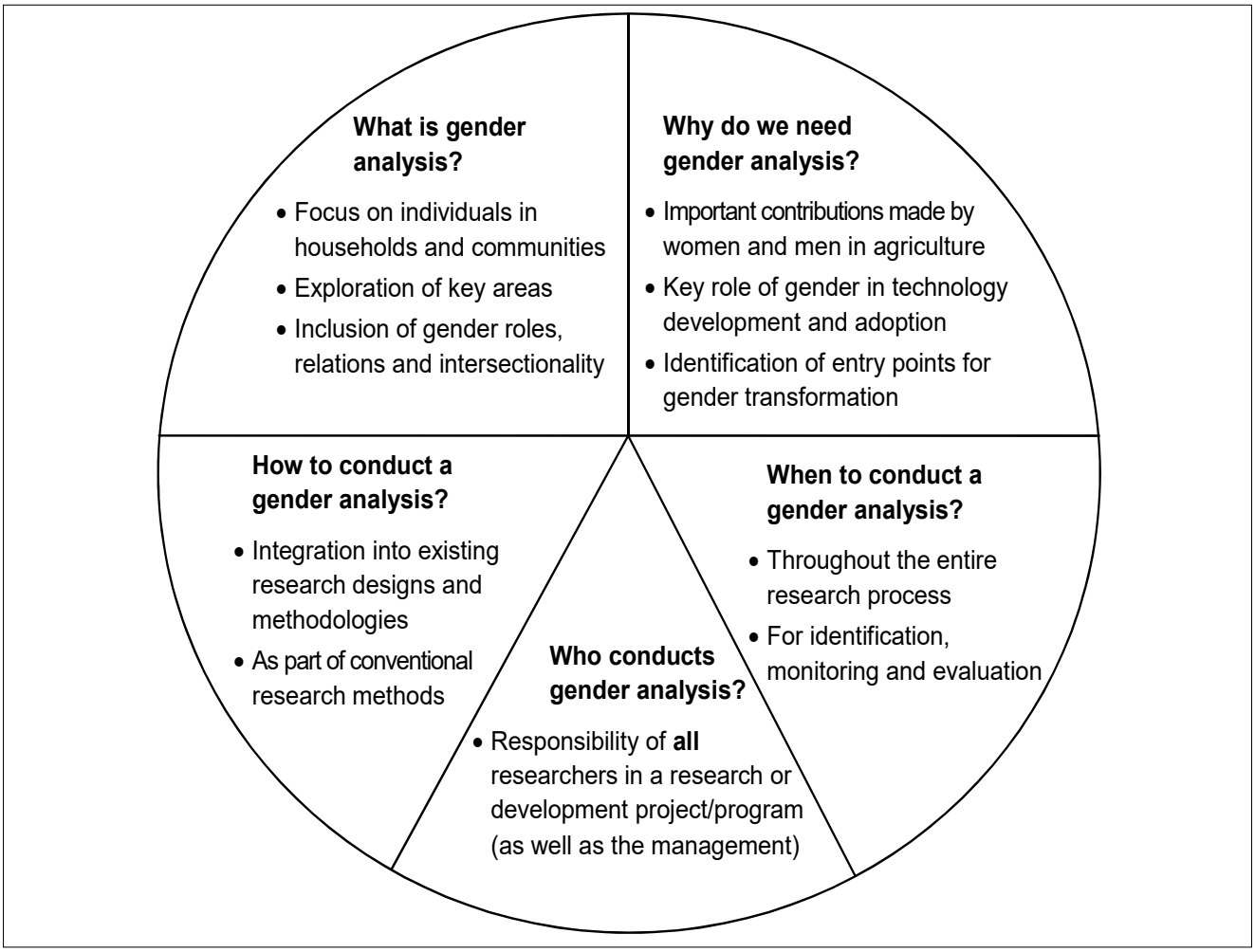
Steps and guidelines

1. Explain that this module introduces the basic features of gender analysis in the context of agriculture.
2. Invite the participants to stand up and gather in front of the two or three flipchart stands with the posters (heading "Gender Analysis", otherwise empty). Request them to note on the empty posters what they associate with gender analysis. Encourage them to write whatever comes to their mind in connection with gender analysis. As soon as they have finished, ask them to return to their seats, and read out loud what has been written on the posters.
3. Put the template for the "wheel of questions" exercise on the floor in the middle of the circle of chairs.
4. Explain that you will introduce and discuss the main aspects of gender analysis along this wheel of questions (use the background information and Annex 24).
5. Start with the "what" question. Place your card with the "what" question in the respective field of the template and read it out. Read out each answer card related to the "what" of gender analysis and place it in the "what" field.
6. Read out the "why" question and place it in the respective field. Ask the participants to suggest answers before you present and deposit the answer cards you have prepared.
7. Turn to the "who" question. Again, ask for answers before you proceed
8. Introduce the "when" question following the procedure outlined above.
9. Finally, present the "how" question and discuss it. Invite comments and questions before you close the module.

Facilitator's notes

- The introductory exercise (Step 2) encourages the participants to reflect on and evaluate their knowledge of gender analysis. When (after completion) the facilitators read out the notes on the posters to the whole group, they should not comment on them.
- The template for the "wheel of questions" exercise is empty at the beginning. Questions and answers are added step by step after having been introduced and discussed.
- If more than one person is facilitating the training, different questions can be presented by different facilitators.

Annex 24: Wheel of questions for gender analysis in agriculture



Adapted from FAO 2005:11-12; Siems and Kienzle 2006:47; Feldstein 2000:72-73

Figure 22: Wheel of questions for gender analysis in agriculture

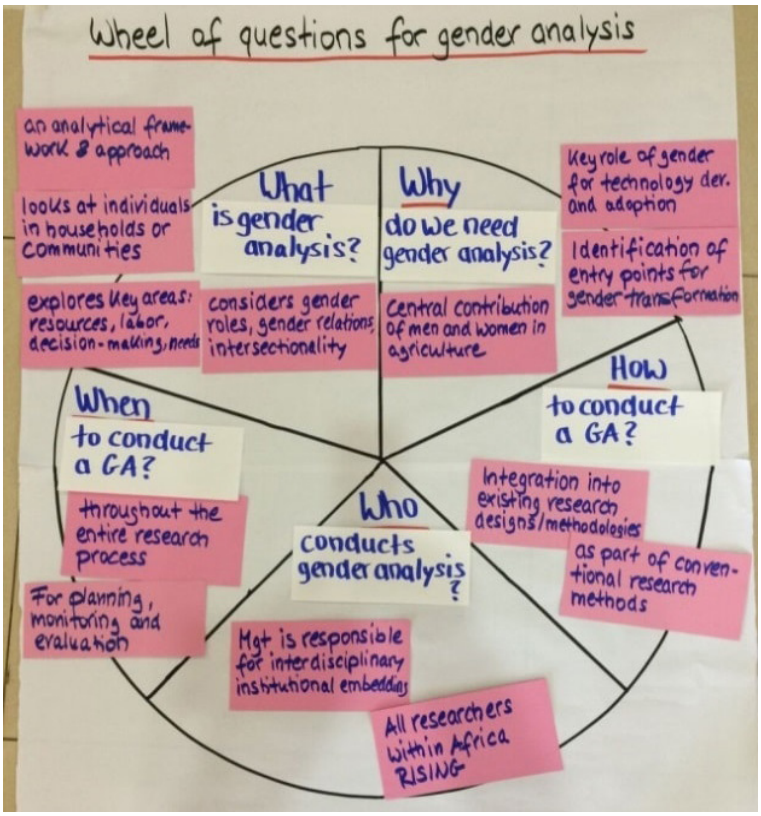


Figure 23: Training poster - wheel of questions for gender analysis in agriculture. Photo credit: Sabine Fründt.

Module 3.4: Activity profiles, seasonal calendars and daily activity clocks

Background information

Labor is an important factor in the development and adoption of technology. Men, women and children often take up different roles in agricultural labor processes and carry unequal labor burdens. These roles and burdens may interact with intensification practices. Scientists, who unpack the relationship between gender and labor, are better equipped

- To develop gender-sensitive and labor-saving technologies
- To plan their R4D activities at times suitable for both men and women farmers.

Standard tools for investigating gender and labor are activity profiles, seasonal calendars and daily activity clocks.

Activity profiles record the gendered division of labor with different levels of detail. Those that employ a more holistic approach show gender and age roles in production, reproduction and community work. They may describe further aspects, such as whether payment is received for labor, or the amount of time invested in certain activities. Other profiles illustrate gender arrangements for a specific labor process only. *Daily activity clocks* depict men and women's daily routines and work assignments for different periods of the year. They include periods of sleep and relaxation and may also record off-farm activities. While activity profiles and daily activity clocks provide in-depth information on labor allocations, *seasonal calendars* give an overview of peak seasons and important recurring events and activities. All three are established through research. Data collection for activity profiles, seasonal calendars and daily activity clocks can be done through

- Surveys (with pre-established answers; pre-testing recommended and sex-disaggregation needed)
- Gender-separate focus groups (as a participatory exercise)
- Individual semi-structured interviews.

The following considerations are important:

- The tools merely record tendencies in gendered labor allocations. Gendered labor arrangements may vary among households and communities. Within households there may be differences between unpaid household members and paid laborers. It is important to record these variations for a nuanced analysis.
- You may only be able to identify suitable times for R4D activities (for both women and men) if your research considers more than the activities related to your technologies.

By using activity profiles, you can cross-check whether you are working with the farmers whose roles are actually related to your technologies. However, take into account that offering training to both men and women allows for role flexibility and will eventually promote gender transformation (e.g. inclusion of husbands, grandmothers and community leaders in nutritional trainings). Where activity profiles serve to promote gender stereotypes, or to work around a given inequitable division of labor, a more exploitative or accommodating approach is pursued (see gender continuum in 2.3).

Suggestions for further reading

Jost, C., Ferdous, N. and Spicer, TD. (2014): *Gender and Inclusion Toolbox: Participatory Research in Climate Change and Agriculture*. Copenhagen: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), Care International, and World Agroforestry Center (ICRAF).

Online:https://cgspace.cgiar.org/bitstream/handle/10568/45955/CCAFS_Gender_Toolbox.pdf

Concern Worldwide (2016): *Daily Activity Clock*. Dublin: Concern Worldwide (BRACED Gender and Resilience Toolkit No. 1).

Online:https://doj19z5hov92o.cloudfront.net/sites/default/files/resource/2016/12/daily_activity_clock_toolkit.pdf

Facilitation, steps and guidelines

Overview	Activity profiles, seasonal calendars, daily activity clocks
Time	60 min
Learning objectives	The participants: • Recognize the importance of investigating links between gender and labor in agriculture • Have gained first experiences in the application of one research tool to unpack gendered labor arrangements • Are familiar with methodological considerations for the application of the tools in fieldwork • Are able to evaluate the strengths and limitations of each tool for gender analysis
Topics	◎ Gender and labor ◎ Activity profiles ◎ Seasonal calendars ◎ Daily activity clocks
Preparation	☞ Print several copies of the template for activity profiles (Annex 25) ☞ Prepare two or three posters with examples for each tool (Annex 26). Example posters are provided (Annexes 27 and 28).
Materials	✂ Print-outs ✂ Posters
Methods	⌘ Group work ⌘ Presentation
Remarks	In this training, group work on tools forms a sequence. Many participants will have identified a link between gender and labor through a linkage diagram (Module 3.1). Activity profiles (this module) are a complementary tool for unpacking this relation. In Module 3.6 participants will tailor a matrix scoring template to the selected technology. The participants work on the same technology (and in the same groups) in three sequential steps.

Steps and guidelines

1. Open this module by referring to the linkage diagrams. Remind the participants that the strength of linkage diagrams lies in their ability to reveal entry points for further research. However, for this deeper investigation other methods and tools will be needed. This is where a sequence of methods is established. As soon as the limitations of one method are reached, other methods allow for further exploration and validation. This combination of several methods to study one research problem is called triangulation. Triangulation helps to overcome the weaknesses and biases that each method has and helps to achieve validity.
2. Linkage diagrams often reveal a relationship between gender and labor that needs to be unpacked. One way to unpack this relationship is to establish an activity profile. An activity profile contains steps in the production/labor process and an indication of who usually implements each step. You should also consider what methods are used for each production step (e.g. mechanized or manual labor, or hand hoe versus ox plowing).
3. Group work: Request the participants to establish an activity profile for the technologies they selected for the linkage diagrams. They should work again in the same groups. Introduce the template (Annex 25) including group work instructions. Note that for some technologies several production processes can be distinguished (for instance pre- and post-harvest processes). Because of the limited time, groups should select one production process (for instance only post-harvest) and work on it in-depth.
4. While the participants are working in groups, put up the posters (with examples) on the wall or on flipchart stands (Annex 25).
5. After completion of group work, go into the debriefing part. Initiate a discussion on the following questions: How was this exercise for you? How difficult or easy was it to indicate who usually implements the different steps? How useful could this tool be for your research work? How could you integrate it into your research activities? How would you modify it to fit your research topics?
6. At the end of the debriefing, make clear that this group work was meant to familiarize the participants with the tool. However, in "real research" activity profiles would be established differently. In any case, the respondents (here: farmers) would provide answers on the "who does what" questions. For the other sections (steps in the production process and methods) there are different ways of establishing the answers, depending on the research method. For instance, when an activity profile is integrated into a survey, the researchers list the steps in the production process and the methods. They also offer pre-given answers for the "who" section. By contrast, in a focus group discussion, the respondents (farmers) describe the steps in the production process as well as the methods and labor allocation.
7. Turn to the theoretical debriefing. The debriefing content is based on the background information provided above. Invite the participants to gather in front of the posters you have put up (Annex 26). Repeat that labor is an important factor in the development and adoption of technology. Changes in farming practices very often interact with the division of labor in households and communities. Roles in the labor process may change correspondingly. The labor burden or labor time may increase or decrease. These changes will affect men, women and children in different ways.

8. Outline that researchers who unpack the relationship between gender and labor in their field of research are better equipped to develop gender-sensitive and labor-saving technologies. They assess and reflect upon the consequences of changed labor processes. At the same time, they may plan their R4D activities more efficiently: When do women have time to participate and for how long? When do men have time? What is the best time to engage with male and female farmers during the day or the year or the season?

9. Introduce the participants to three standard tools for unpacking gendered labor arrangements (activity profiles, seasonal calendars, daily activity clocks) and their strengths and limitations. Do so by using the examples on the posters and the related remarks (Annex 26).

10. Relate back to the gender continuum in 2.3. Ask how activity profiles could be employed with a gender transformative approach. Explain that activity profiles risk being used to promote or work around an existing inequitable division of labor. However, they should inspire critical analysis and transformation (for instance by offering training to both women and men irrespective of the roles recorded in the activity profile).

11. Invite comments and questions before you close the session.

Facilitator's notes

- In our trainings we had a coffee break after the group work and before going into the theoretical debriefing (see schedule 4.4).

Annex 25: Template activity profile

Instructions for group work (by researchers during the training):

Please

1. List all steps in the production process chronologically.
2. Add variations in the practices and methods used.
3. Indicate who usually implements each step, using which practice or method.

Step in the production process	Who in the household? Paid or unpaid labor?	Method/Practice

Annex 26: Using the tools (examples)

A) Example of activity profile

Table 9: Activity profile example A

Activity	Gender/Age						Time	Paid/Unpaid
	Female adult	Male adult	Female child	Male child	Female elderly	Male elderly		
Production								
Agriculture								
Step1								
Step 2								
Etc.								
Income generation								
Activity 1								
Activity 2								
Etc.								
Reproduction								
Water								
Fuel								
Food								
Child care								
Etc.								
Community work								
Meetings								
Etc.								

Adapted from Meyers and Jones 2012:46

Remarks (Example A):

- This tool considers gender, age and multiple labor burdens (production, reproduction and community work) on the community level. Time allocation (seasonal, per day) and paid or unpaid labor are also captured, although the space provided might not suffice to relate these aspects to various social groups.
- It neglects different methods in the production process (unless specified in different steps).
- Due to its holistic approach, sufficient time for data collection is needed.
- Since the tool is not technology-specific, it is most suitable for a gender analysis at the beginning of an intervention (and less suitable for technology evaluation).
- Activity profiles (as well as daily activity clocks and seasonal calendars) can be established using different interview formats (e.g. semi-structured interviews, focus group discussions). Their development should be embedded in a discussion that is audio-recorded and transcribed for analysis.

B) Example of activity profile

Table 10: Activity profile example B

Feed preparation for livestock – crop residues	Who in the household? Paid or unpaid labor?	Method
Cutting in field	Men, temporary labor	Machete
Collecting	Men, women, temporary labor	By hand
Loading	Men, temporary labor	By hand
Transport	Men Men Women Men Men and women	Cart Tractor Head Motor tricycle Bicycle
Cutting, processing	Women Men	Machete chopper machine
Storing	Men, temporary labor	By hand
Feeding	Women and children	By hand

Activity profile based on Africa RISING focus group discussion with male farmers in Hallu, Tanzania, 2016

Remarks (Example B):

- The farmers established steps in the labor process and added methods and gender allocation.
- Temporary labor and child labor were included. However, even for these groups gender arrangements should have been investigated.
- The results recorded in the table are from one focus group discussion only in which the participants were male. In the same village, women stressed in their discussion that head transport and cutting by machete are the rule and allocated to them. Therefore, for a final analysis, activity profiles from several focus group discussions with male and female farmers need to be compared.
- By comparing activity profiles for the time before and after the introduction of a technology (or for various methods), you may identify who will potentially benefit or suffer from changes.

C) Example of daily activity clock

Figure 24: Daily activity clock example C

CCAFS and FAO 2013:47

Remarks (Example C):

- This clock is drawn for two seasons and for men and women separately.
- The tool may be used to investigate changes or variations in the daily routine that are due to different agricultural practices (e.g. you may compare clocks of those who use practice A to clocks of those who use practice B).
- The tool should include productive and reproductive tasks, as well as community work. In this example, childcare and community work (often assigned to women) do not appear at all.

D) Example of daily activity clock

Table 11: Daily activity clock example D

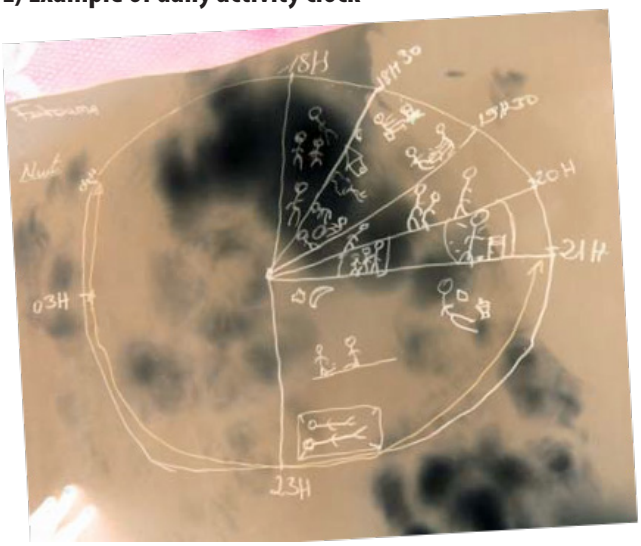
Time	Activity	
	Men	Women
4.00- 9.00	Field cultivation, ridging, weeding, banking, fertilizing, etc.	Field cultivation, ridging, weeding, banking, fertilizing, etc.
9.00-12.00	Mostly resting and waiting for food	Drawing water from the borehole, looking for relish and preparing food for the family
12.00– 14.00	Continue resting	Clean the plates and resting
14.00– 17.00	Return to the field (baby trial field or bigger field)	Return to the field (baby trial field or other fields)
17.00- 19.00	Feed the livestock, take a bath and eat	Fetch and heat water for bathing for husband and herself, prepare supper and wash the utensils
19.00- 5.00	Sleeping	
19.00- 4.30		Sleeping

Daily activity clock for the rainy season, based on Africa RISING focus group discussion with male farmers in Nsipe, Malawi, 2016.

Remarks (Example D):

- This table does not focus on specific crops and practices.
- It should be revised, since time slots for men and women may not be synchronous. For instance, women may wake up earlier than men and go to bed later (as indicated in the last rows, but contradicted in the first). Therefore, time indications for men and women should be separated.
- In this example, the male respondents neglected women's reproductive tasks, such as childcare (while Nsipe women described these tasks in their focus group discussion).
- The clock could include information on various on-farm and off-farm activities, and support the identification of time bottlenecks and windows for R4D activities.

E) Example of daily activity clock



Concern Worldwide 2016:3

Figure 25: Daily activity clock example E

Remarks (Example E):

- Daily activity clocks can be established with groups of less literate respondents/farmers. Symbols and drawings may denote activities.

F) Example of seasonal calendar

Table 12: Seasonal calendar example F

Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Rainy season		■	■	■			■	■				
Hunger season											■	■
Maize	Clearing	Preparing	Planting		Weeding 1		Weeding 2		Harvest			
Livestock			High disease								Sell for emergencies	Sold for school fees
Etc.												

Jost et al. 2014:128

Remarks (Example F):

- This tool provides an overview of how various labor tasks are distributed over the year. This helps to identify peak periods, labor shortages and competing tasks.
- Important recurrent situations or events may be included (such as school holidays, initiation rites, ceremonies, etc.). However, seasonal calendars do not deal with irregular but recurrent shocks such as illnesses (and neglect the workload of those who deal with them).
- Researchers may identify suitable (less labor-intensive) periods to work with household members.
- The tool is not gender-sensitive as such. Therefore, it is advisable to combine it with activity profiles or daily activity clocks.

Annex 27: Training poster – activity profiles

Africa RISING Gender Training:
Activity Profiles, Seasonal Calendars and Daily Activity Clocks

Labor is an important aspect for technology development and adoption. Men, women and children often take up different roles in agricultural labor processes and carry unequal labor burdens. Roles and burdens may interact with intensification practices. Scientists who unpack the relationship between gender and labor are better equipped

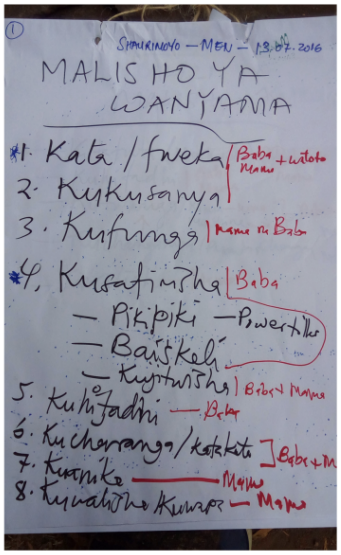
- to develop gender-sensitive and labor-saving technologies
- to plan their R4D activities at times suitable for both men and women farmers.

Standard tools for investigating gender and labor are activity profiles, seasonal calendars and daily activity clocks.

Activity Profiles (Examples)

Example (Adapted from ACDI/VOCA, 2012, p. 46)

Activity	Gender/Age						Time	Paid Unpaid
	Female Adult	Male Adult	Female Child	Male Child	Female Elder	Male Elder		
Production								
Agriculture								
Step1								
Step 2								
Etc.								
Income G.								
Activity 1								
Activity 2								
Etc.								
Repro-duction								
Water								
Fuel								
Food								
Child Care								
Etc.								
Community Work								
Meetings								
Etc.								



Example (Africa RISING)

Feed Preparation for Livestock – Crop Residues	**Who in the household? Paid or unpaid labor?**	**Method**
Cutting in field	Men, temporary labor	Machete
Collecting	Men, women, temporary labor	By hand
Loading	Men, temporary labor	By hand
Transport	Men Men Women Men Men and women	Cart Tractor Head Motor tricycle Bicycle
Cutting, processing	Women Men	Machete Chopper machine
Storing	Men, temporary labor	By hand
Feeding	Women and children	By hand

(Activity profile based on focus group discussion with male farmers in Hallu, Tanzania, 2016, photos above and to the left are from the same study)

CGIAR FEED THE FUTURE The U.S. Government's Global Hunger & Food Security Initiative USAID FROM THE AMERICAN PEOPLE ILRI IFPRI IITA

The Africa Research In Sustainable Intensification for the Next Generation (Africa RISING) program comprises three research-for-development projects supported by the United States Agency for International Development as part of the U.S. government's Feed the Future initiative.

Through action research and development partnerships, Africa RISING will create opportunities for smallholder farm households to move out of hunger and poverty through sustainably intensified farming systems that improve food, nutrition, and income security, particularly for women and children, and conserve or enhance the natural resource base.

The three projects are led by the International Institute of Tropical Agriculture (in West Africa and East and Southern Africa) and the International Livestock Research Institute (in the Ethiopian Highlands). The International Food Policy Research Institute leads an associated project on monitoring, evaluation and impact assessment.

www.africa-rising.net

Figure 26: Training poster – activity profiles

Annex 28: Training poster

Africa RISING Gender Training:
Activity Profiles, Seasonal Calendars and Daily Activity Clocks

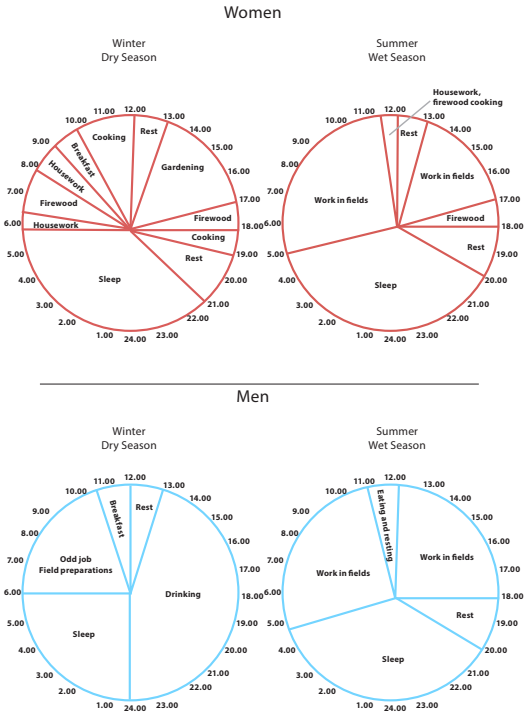
Seasonal Calendar (Example)

Example (CCAFS, 2014, p. 128)

Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Rainy Season												
Hunger Season												
Maize	Clearing	Preparing	Planting		Weeding 1		Weeding 2		Harvest			
Livestock			High disease								Sell for emergencies	Sold for school fees

Daily Activity Clocks (Examples)

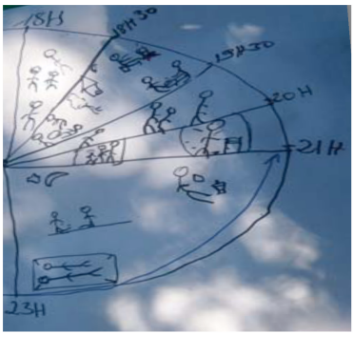
Example (CCAFS and FAO, 2013, p.47)



Example (Africa RISING)

Time	Activity	
	Men	Women
4.00-9.00	Field cultivation, ridging, weeding, banking, fertilizing etc.	Field cultivation, ridging, weeding, banking, fertilizing etc.
9.00-12.00	Mostly resting and waiting for food	Drawing water from the borehole, looking for relish and preparing food for the family
12.00–14.00	Continue resting	Clean the plates and resting
14.00–17.00	Return to the field (baby trial field or bigger field)	Return to the field (baby trial field or other fields)
17.00-19.00	Feed the livestock, take a bath and eat	Fetch and boil water for bathing for husband and her, prepare supper and clean the utensils
19.00-5.00	Sleeping	
19.00-4.30		Sleeping

(Daily activity clock for the rainy season, based on focus group discussion with male farmers in Nsipe, Malawi, 2016, Malawi Gender Consultancy)



(CONCERN/BRACED Gender Tool Kit)

CGIAR FEED THE FUTURE USAID FROM THE AMERICAN PEOPLE ILRI IFPRI IITA

The Africa Research In Sustainable Intensification for the Next Generation (Africa RISING) program comprises three research-for-development projects supported by the United States Agency for International Development as part of the U.S. government's Feed the Future initiative.

Through action research and development partnerships, Africa RISING will create opportunities for smallholder farm households to move out of hunger and poverty through sustainably intensified farming systems that improve food, nutrition, and income security, particularly for women and children, and conserve or enhance the natural resource base.

The three projects are led by the International Institute of Tropical Agriculture (in West Africa and East and Southern Africa) and the International Livestock Research Institute (in the Ethiopian Highlands). The International Food Policy Research Institute leads an associated project on monitoring, evaluation and impact assessment.

www.africa-rising.net

Figure 27: Training poster – daily activity clocks and seasonal calendars

Module 3.5: Principles of gender analysis in survey research

Background information

The quality of a gender analysis depends to a great extent on the quality of the data that informs it. Thus, data production plays a critical role in the process of gender analysis. In this regard, the Consultative Group on International Agricultural Research (CGIAR) has developed standards for the production of data for gender analysis in survey research (see https://cgspace.cgiar.org/handle/10568/76974). They provide a reference for agricultural researchers and contain useful guidelines in relation to the design of gender-sensitive questionnaires, sampling strategies and research setups. The CGIAR standards formed the basis for the development of this module.

In general, one can identify four major principles that need to be considered when conducting gender-sensitive survey research in agriculture (Fig. 28). In what follows, each principle is explained.

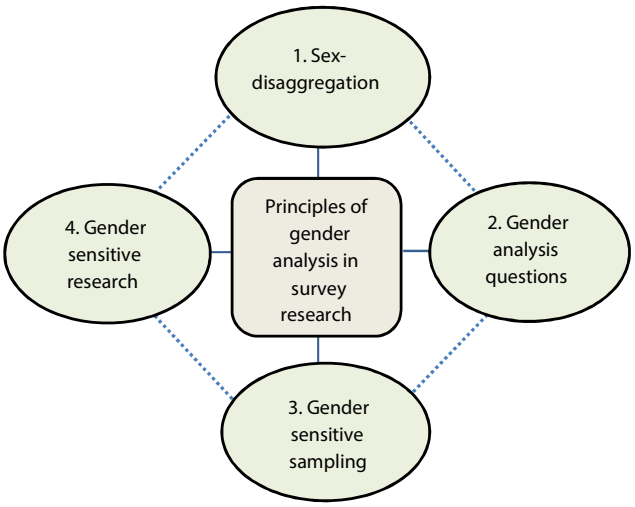


Figure 28: Principles of gender analysis in survey research

Principle 1: Sex-disaggregation

In survey research, the term sex-disaggregation describes the categorization and tabulation of data by the *sex of the respondent*, either as a single variable or in combination with other demographic criteria (e.g. household position, age). It is a technique to prepare survey information for analysis. After the collection of survey data, sex-disaggregation helps to uncover and present the gender dimensions linked to certain aspects in the survey (Fig. 29). Sex-disaggregation is thus an integral part of gender analysis.

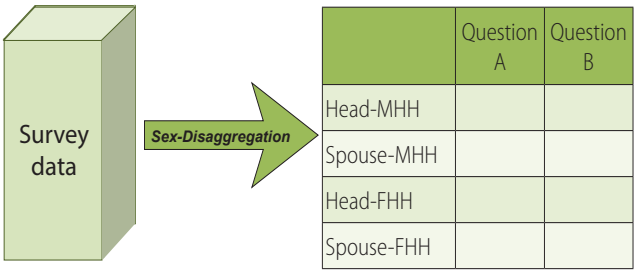


Figure 29: Sex-disaggregation by household position

Collection of demographic information – a prerequisite for sex-disaggregation

While the sex-disaggregation of survey information is part of data processing, preparations for it have to start during the design of the questionnaire. Understandably, researchers can only disaggregate data by those demographic variables that are recorded in the survey. Therefore, it is important to collect sufficient demographic information about the respondents and their households, for instance sex, age, education, household position, marital status, household composition, household type. In questionnaires, this is usually done through demographic rosters.

What are relevant categories or variables for sex-disaggregation?

Before researchers begin sex-disaggregating survey data, it is necessary to select suitable categories or variables. In general, these need to be chosen in relation to the specific research purpose and social context ("What groups of women and men do we need to analyze for our research purpose?"). Gender analysis in agricultural research occasionally compares ***men and women.*** For the household level, such a broad comparison is not sufficient, as it neglects the diverse realities of women and men in different household types and positions. With regard to household position, another problem sometimes occurs, namely that women in male-headed households are often overlooked despite their critical role in agricultural activities and the adoption of technology. This at times results in a mere comparison of male and female heads, a problematic approach, which we will discuss in more detail below. In the majority of cases, it is advisable to sex-disaggregate survey information by combining the respondent's ***sex*** and ***household position***, and routinely looking into the categories of male and female *household heads* and *spouses*. This allows researchers to understand and analyze the livelihoods, opportunities, constraints, preferences and behaviors of women and men in different household positions. However, certain research contexts and purposes may require the consideration of additional combinations of categories (e.g. sex and age) in order to capture relevant information.

The type and number of analytical categories that result from a combination of sex and household position depends on the predominant household structure in a specific context (e.g. monogamous versus polygamous household structures). In areas with predominantly monogamous household structures, a sex-disaggregation process could produce the following table (Tab. 13):

Table 13: Example for tabulation of survey data by sex and household position

	Head-MHH	Spouse-MHH	Head-FHH	Spouse-FHH
Variable A				
Variable B				
…				

While the respondent categories of head in male-headed household (Head-MHH), women in male-headed household (Spouse-MHH) and women in female-headed household (Head-FHH) are present in many contexts, male spouses in female-headed households (for instance as migrant workers) are at times under-represented or absent. In this case they should not be considered as a separate category.

Why is a comparison of male-headed and female-headed households not considered as gender analysis?

In agricultural research, gender analysis is occasionally confounded with the comparison of male-headed versus female-headed households. Following CGIAR standards (Doss and Kieran 2014), such studies cannot be considered as gender analysis for two reasons: First, a restriction to the level of headship excludes the majority of women (all those who live in male-headed households). Second, gender is confounded with household structure. The situation of men and women in male-headed and female-headed households is not necessarily the result of gender (Doss and Kieran 2014:6).

Principle : Gender analysis questions

Investigating gender conditions and dynamics within households requires the integration of gender analysis questions in questionnaires. These questions elicit information on gender roles and relations, such as resource access and control, gendered division of labor, decision-making, and others. Three types of questions have emerged as particularly relevant for agricultural research (Tab. 14).

Who-questions: Provide information on gender roles. Who-questions help researchers to obtain insights into allocation patterns and the division of labor within households. Answers may inform R4D interventions at different stages.

How-questions: Generate data on gender relations and dynamics. How-questions provide information on decision-making and negotiations as well as available opportunities and constraints. Due to their complementary foci, how and who-questions should be combined in surveys.

Why-questions: Investigate the social and cultural contexts of gender roles and relations. Why-questions focus on social norms, attitudes, mindsets and traditions and seek entry points for gender transformation. Often this requires extensive qualitative research and can hardly be achieved through survey formats. While who and how-questions should constitute an integral part of gender-sensitive questionnaires, why-questions tend to fall into the remits of social scientists and the field of qualitative research.

Formulation of questions in questionnaires

Whether a survey question delivers the desired information largely depends on how the question is formulated. In general, a good survey question has a clear focus, deals with only one aspect at a time, and uses language that is adjusted to that of the respondent (Thayer-Hart 2010:7f). Agricultural surveys occasionally contain questions that deal with more than one aspect at a time (double-barreled questions), or relate to broad concepts that allow respondents to refer to different aspects of a concept (e.g. responsibility):

Example 1 (double-barreled question):
Who in the household decides about crops to be planted and input use?

Example 2 (broad concept)
Who in the household is responsible for crop production?

Questions targeting several aspects or having an unclear focus make it difficult for respondents to answer, and impossible for researchers to accurately interpret the response. For instance, respondents may associate responsibility with labor, decision-making, marketing or a variety of other issues, which the researcher is unaware of during data analysis. Researchers can avoid this confusion by formulating questions with a specific focus that is clear to both respondent and researcher.

Example 1: Who in the household decides about crops to be planted and input use?

Reformulation
A: Who in the household decides about crops to be planted?
B: Who in the household decides about input use?

Example 2: Who in the household is responsible for crop production?

Reformulation
A: Who in the household provides labor for the production of crop A?
B: Who in the household decides on which inputs to purchase for the production of crop A?

Table 14: Types of gender analysis questions in agricultural research

Type	Who?	How?	Why?
Example	Who in the household has access to land?	How do women access land in the household?	Why does land access differ between men and women in the household?
Alternative formulations	What person(s)/ member(s)/…?	In what way…?	What are reasons…? What causes…?
Generate data on	Gender roles	Gender roles and relations	Underlying forces and norms of gender roles and relations

Principle 3: Gender-sensitive sampling

Gender-sensitive sampling is necessary to produce adequate information for gender analysis. Gender analysis studies the multiple perspectives of women, men and young people. It is based on the notion that individuals speak best for themselves. In the social science debate on "Who can speak on whose behalf?" most scholars agree that a speaker's social location and identity (for instance being a household head, spouse, community leader, etc.) shape their claims, reflections and statements (Alcoff 1991). Heterogeneous samples are therefore needed to enable different categories of women and men to speak for themselves. The inclusion of equitable numbers of men and women is regarded as a first requirement for gender-sensitive sampling (Leduc 2009:3). Starting from there, gender-sensitive sampling is a two-step process.

Step 1: How many members of a household should be interviewed?

In many cases it is sufficient to interview one person only in a household, as long as equal numbers of men and women are consulted (Doss and Kieran 2014:4). To keep numeric parity, the researchers could split the sample and interview men in one half of the selected households and women in the other half. An analysis of men and women's perspectives, as well as their experienced realities, is then made across (not within) households. In larger samples, this approach is often sufficient to understand and analyze general patterns of gender inequality and differences within a specific context.

On the other hand, there may be a need to interview several household members

a. If knowledge pertaining to the surveyed topics is bound to different members of a household. In such cases, researchers have the option to subdivide the survey questionnaire into different sections and select one suitable respondent for each section.
b. For research on intra-household dynamics and the perspectives of different household members. Here, interviewing only one person may not be sufficient to obtain accurate information (e.g. intra-household decision-making, competing preferences, etc.).

Step 2: Who in the household should be interviewed?

In a second step, researchers have to decide who in the sampled households should be interviewed. At this point, the team needs to consider the categories chosen for data disaggregation and analysis, and select sufficient numbers of respondents for each category. A common practice in agricultural survey research is consultation of the household head. While household heads represent an important category, a sole focus on male and female heads is problematic as

a. They do not necessarily have the required knowledge to answer all questions regarding the household, and
b. This excludes the voices of people in other household positions, such as women in male-headed households, who constitute the majority of women in rural households.

Principle 4: Gender-sensitive research setup

Gender analysis requires paying attention to the circumstances under which data are collected. A comfortable and relaxed environment will enable male and female respondents to participate and speak freely. This may considerably improve data quality. The preferences and needs of women and men often differ in respect of the study setup. Therefore, the design of gender-sensitive research setups will take the following aspects into account:

Venue: The venue is the geographic and social environment in which researchers engage with respondents. The respondents' ability and willingness to participate often depends on the selection of suitable venues. For instance, men and women tend to differ in their mobility. If this is not taken into account, certain respondents may be discouraged or excluded from active participation (especially women). A gender-friendly venue also considers power relations within households and communities. In some contexts, women may be silent in front of men or in public (Leduc 2009:3; Feldstein 2000:71). Unequal power relations also exist between people of the same sex (e.g. a male farmer may feel inhibited in the presence of a male extension officer). While women and men should generally be interviewed in separate venues, it is also important to critically assess the presence of other people who could restrict the ability and willingness of a respondent to speak openly (community or religious leaders etc.).

Time: Similarly, the selection of days and times for research activities will shape the respondents' participation and the accuracy of the data. When scheduling interview appointments, researchers need to factor in the daily routines of men and women, as well as important events in the community (such as market days) in order to avoid conflicts with other obligations (Elias 2013:2). Women, for instance, often have specific domestic duties that take priority at certain times of the day (Kanesathasan 2013:8). The identification of suitable times to engage with male and female farmers is critical for gender-sensitive research methods.

Enumerators: The enumerators facilitating the interviews are an additional factor in the social context of a survey. Thus, selecting an enumerator who is of the same sex as the respondent will often contribute to a more relaxed study setup. For instance, a female enumerator may find it easier to interview another woman, while at the same time the female farmer may feel less inhibited in this context. Similar considerations are needed for other social criteria, such as age and religion. While similarity in terms of age and gender is often favorable, in many cases men and women will find it difficult to share sensitive and confidential information with enumerators who are members of the same community and who might reveal the information to others, or enumerators who are part of the local village hierarchy. For this reason, the selection of enumerators who do not belong to the studied community may enhance a favorable study setup.

Suggestions for further reading

Doss, C. and Kieran, C. (2014): *Standards for Collecting Sex-disaggregated Data for Gender Analysis: A Guide for CGIAR Researchers.*

Online: https://cgspace.cgiar.org/handle/10568/76974

Elias, M. (2013): *Practical Tips for Conducting Gender-Responsive Data Collection*. Rome: Bioversity International.

Online: https://www.bioversityinternational.org/uploads/tx_news/Practical_tips_for_gender_responsive_data_collection_1658_02.pdf

Leduc, B. (2009): *Guidelines for Gender Sensitive Research*. Patan: Centre for Integrated Mountain Development (ICIMOD).

Online: https://www.icimod.org/resource/1290

Facilitation, steps and guidelines

Overview	Principles of gender analysis in survey research
Time	60 min
Learning objectives	The participants are able to: • Outline four major principles for the production of survey data for gender analysis • Discern the need to combine all principles to produce data suitable for gender analysis • Employ these principles in future research
Topics	◎ Survey research ◎ Sex-disaggregation ◎ Questions for gender analysis ◎ Formulation of survey questions ◎ Gender-sensitive sampling ◎ Gender-sensitive research setup
Preparation	☞ Prepare a PowerPoint presentation with information on each principle (see background information) ☞ Optionally: Print handouts (Annex 29) ☞ Optionally: Print copies of the CGIAR standards for the collection of sex-disaggregated data: https://library.cgiar.org/handle/10947/3072
Materials	✂ PowerPoint presentation ✂ Optionally: Printouts
Methods	⌘ Presentation ⌘ Plenary discussion
Remarks	This module focuses on data collection at the household level (although survey-based gender analysis may also be conducted at other levels).

Steps and guidelines

1. Introduce the overarching topic for this module: how can gender analysis be done based on survey data? Emphasize that the quality of a gender analysis depends on the quality of the data that informs it. It is therefore important to consider quality standards during data production. The focus of this module is on survey research at the household level, although gender analysis may also be conducted at various other levels.

2. Inform the participants that the CGIAR and other organizations have developed standards and guidelines for gender-sensitive data production in agricultural research. Call attention to the CGIAR standards for the collection of sex-disaggregated data. They not only make a useful reference source, but also require agricultural scientists to follow principles of gender analysis in their research. The content of the module is consistent with the CGIAR standards.

3. Turn to the first principle (sex-disaggregation). Ask the participants what they associate with the term and collect their contributions on a flipchart.

4. Present the basic features of sex-disaggregation (use the background information for this and the following steps and principles). Explain that sex-disaggregation is a technique for data processing. It requires the collection of demographic information on the respondent and the associated household. Outline basic data requirements for sex-disaggregation at the household level. Make clear that different social contexts may call for the inclusion of additional information.

5. Turn to the issue of male-headed versus female-headed households. Point out that comparisons at the headship level cannot be considered as gender analysis. You may ask participants why they think this is the case. If needed, explain why a comparison of male-headed vs. female-headed households differs from a gender analysis.

6. Present the second principle (questions for gender analysis). Explain what gender analysis questions are. Discuss the three most relevant types for agricultural research. Highlight the different features of who, how, and why questions. Emphasize that each type has a different focus. As a result, a combination of types is needed to study gender roles and relations (e.g. who and how questions). Explain why surveys have a limited potential to study "why" questions.

7. Turn to the formulation of questions. The quality of information gained from a survey question largely depends on how the question is formulated. Present the two examples below and ask participants why these questions could be problematic: Who in the household decides about crops to be planted and input used? Who in the household is responsible for crop production? If needed, illustrate problems and suggest reformulations. Then outline the main features of a good survey question.

8. Continue with the third principle (gender-sensitive sampling). The researchers should think carefully about who provides information in a survey. A basic requirement for gender analysis is to sample equitable numbers of women and men. Present and discuss the two guiding questions for the selection of respondents.

9. End with the fourth principle (gender-sensitive research setup). The quality and accuracy of information provided by respondents is considerably influenced by the context in which the meeting takes place. Discuss the three main aspects of gender-sensitive research setups. You could ask the participants what they associate with a gender-sensitive selection of venues, times, and enumerators, before presenting the key aspects.

10. Conclude by saying that all four principles are of equal importance. Taken together, they will substantially improve the quality of data collected for a gender analysis. Leave time for comments and questions. If you have printed handouts (Annex 29), distribute them and close the session.

Facilitator's notes

- Make sure that the participants have opportunities to ask clarifying questions. Where participants have specific questions in relation to their field of research, these may be discussed during breaks (depending on the time available).

Annex 29: Principles of gender analysis in survey research handout

General background

- The quality of a gender analysis depends on the quality of the data that informs it.
- The production of data for gender analysis in survey research requires sex-disaggregation; questions for gender analysis; gender-sensitive sampling; a gender-sensitive research setup.

Principle 1: Sex-disaggregation

- ***Disaggregation:*** Categorization and tabulation of survey data along demographic variables of the respondent and/or the associated household.
- ***Sex-disaggregation:*** Presentation of information by the "sex" of the respondent (alone or in combination with other demographic criteria).
- ***Requirement:*** Collection of demographic information about the respondent and the associated household, such as sex, age, household position, household type, sex of household head.
- ***Limitations:*** Sex-disaggregation is a technique of data processing. For gender analysis it needs to be combined with questions that provide information on gender issues within households and communities.

Sex-disaggregation at the household level

- It is not sufficient to compare *men with women*.
- There is a need to sex-disaggregate data by combining sex and household position. Mandatory categories for gender analysis at the household level are:
  i. Men in male-headed households
  i. Women in male-headed households
  i. Women in female-headed households
  i. If applicable, men in female-headed households.

	Aspect 1	Aspect 2 …
Men in MHH		
Women in MHH		
Women in FHH		
Men in FHH (if applicable)		

- Certain social contexts require the consideration of additional categories to capture gender and other social dimensions (e.g. areas with polygamous household structures).

Comparisons of male-headed versus female-headed households are NOT gender analysis as they

a. *Exclude the majority of women in agriculture from research (all women in male-headed households)*
b. *Confound gender and household structure.*

Principle 2: Gender analysis questions

Provide insights into gender roles, relations and underlying factors. Main types of questions are:

- **"Who"** questions: Produce data on gender roles and involvement (e.g. Who in the household has access to land?)
- **"How"** questions: Provide information on gender relations and dynamics (e.g. How do women in the HH access land?)
- **"Why"** questions**:** Investigate underlying factors of gender inequalities (e.g. social norms, attitudes and behaviors). "Why" questions often require extensive qualitative research and therefore tend to be the responsibility of social scientists.

Formulation of survey questions

- The formulation of questions shapes the quality and accuracy of the responses.
- Good questions require a clear focus, deal with only one aspect at a time, and use simple language.

Principle 3: Gender-sensitive sampling

An equitable representation of women and men in the sample is a basic requirement. Additional considerations for the selection of suitable respondents are:

How many household members should be interviewed?

- It is often sufficient to interview one person per household. Women can be interviewed in one half of the sample and men in the other half.
- If knowledge is bound to different people in the household, or if you are studying highly sensitive topics (such as intra-household decision-making), there may be a need to interview several household members.

Who in the household should be interviewed?

- Consider what categories of respondents should be analyzed (e.g. women in MHH, women in FHH, men in MHH etc.) and interview sufficient numbers for each category.
- A focus on household heads only will exclude the voices of most women in agriculture.

Principle 4: Gender-sensitive research setup

The interview environment (research setup) influences the accuracy and quality of the data. Gender-friendly research setups take the following aspects into account:

Venue:

- Consider the accessibility of the venue (large distances can exclude farmers from participation, especially women).
- Consider power relations and dynamics within households and communities. Engage with women and men in ***separate venues*** (e.g. no husbands and other men present when interviewing women).

Times:

- Consider the differential schedules and obligations of different categories of men and women. It is important to identify convenient times (e.g. through daily activity clocks) to engage with women and men.

Enumerators:

- Select enumerators of the same sex (female enumerators for women; male enumerators for men).
- Consider other social differences (age, ethnicity) and their influence on the research setting.

Suggestions for further reading

Doss, C. and Kieran, C. (2014): *Standards for Collecting Sex-disaggregated Data for Gender Analysis: A Guide for CGIAR Researchers*.

Module 3.6: Matrix scoring and the Sustainable Intensification Assessment Framework

Background information

The gender analysis tool presented in this module draws on two components: the *Sustainable Intensification (SI) Assessment Framework* (Musumba et al. 2017) and the participatory methodology of *matrix scoring*. These are introduced below.

What is the SI Assessment Framework?

Researchers from Michigan State University and University of Florida developed the SI Assessment Framework in cooperation with USAID and Africa RISING. The aim of the framework is to conduct research on sustainable intensification in a holistic manner. It moves away from a sole focus on one or two dimensions. For instance, productivity (the production of more food on the same amount of land), profitability or environmental issues are often chosen as dimensions of sustainable intensification research. The framework adds other dimensions, such as nutrition or gender. These dimensions are important to achieve balanced or equitable outcomes of intensification. This orientation towards more holism is based on a farming systems approach and relates well to gender transformation. It takes into account various components of the system, and how they interact and change in the context of sustainable intensification. At the same time, it emphasizes the importance of including equity issues: for instance, more production might not be sustainable if it is not to the benefit of all.

The framework has five domains: productivity, profitability, environment (natural resource base, pollution), human condition (nutrition) and the social domain (gender, equity, social dynamics). For each domain a list of indicators was developed (see http://www.k-state.edu/siil/documents/docs_siframework/Sustainable Intensification Assessment Methods Manual - 10.24.17c.pdf). The framework can be used on two levels: (1) monitoring of a development project, and (2) evaluation at the technology level. In this manual we focus on gender analysis at the technology level. Besides, the indicators of the SI Assessment Framework can be integrated into various research instruments: surveys, experiments, focus group discussions, key informant interviews and participatory exercises (as done in this exercise).

What is matrix scoring?

Matrix scoring is a method that helps to explore different perceptions of respondents related to the advantages and disadvantages of a particular issue (Pretty et al. 1995: 85-86, 250-252). In the context of this manual, these are the positive or negative outcomes of a conventional practice as opposed to a new agricultural technology. By comparing two technologies or practices in relation to a set of criteria, researchers get to know the decisions farmers make, when managing their activities. The criteria used in this exercise relate to the five domains of the SI Assessment Framework. From each domain, one indicator is selected as a criterion.

To design the tool, the technologies or practices to be compared are listed on the left (y-axis) and the evaluation criteria on the right (x-axis). Several technologies or practices (minimum two) and several evaluation criteria (Tab. 15) are selected. The sides can be swapped. The practices would then be placed on the right and the criteria on the left. The inclusion of the farmers when designing the tool ensures the relevance of the criteria.

After having designed the tool for specific technologies or practices (on a large flipchart paper), the participating farmers (separate groups of male and female farmers) are requested to compare the conventional and the new practice for each criterion separately (one after the other). They do so by placing stones (or beans) in the prepared boxes. Even numbers of beans should be issued so that the farmers may give the same number of beans to the two technologies or practices if desired. The facilitating researchers discuss the score for the first criterion with the farmers by asking additional questions (including gender analysis questions). After

having completed evaluation and discussion of the first criterion, they move on to the second criterion. This process is repeated until all criteria have been covered. Finally, the research facilitators encourage a discussion on the overall result for both technologies/practices (all criteria).

It is important to note that the scores (the number of stones or beans in particular fields) should not be taken as a quantitative measurement. The scores serve only as a starting point for discussions involving questions such as: Why have you given more stones to the conventional practice than to the innovation in respect of this criterion? How would you explain that for this criterion there are equal scores for both technologies? Summing up the numbers can be misleading, since you assume that the farmers weight all indicators equally (Pretty et al. 1995: 86). What counts more in terms of results is the process of discussion. Therefore, audio-recordings of the discussions should be made (additional documentation such as field notes may be done as well). In the end, the research team evaluates both the matrix scores and the transcriptions of the discussion.

Table 15: Simplified template for a matrix scoring tool

	Criterion 1 (Productivity)	Criterion 2 (Profitability)	Criterion 3 (Environment)	Criterion 4 (Human)	Criterion 5 (Social)
Conventional practice					
Technology					

How to prepare and conduct a matrix scoring exercise in the field

The development and application of the tool comprises several steps:

Step 1: Production of a matrix scoring template

As a first step, the researchers in collaboration with the farmers select the technologies to be compared. In addition, they select one indicator from each of the five Sustainable Intensification Indicator domains. The selection is based on the interests of the collaborators. However, it is important to make sure that the farmers will be in a position to assess the chosen indicators (they would probably not be able to assess crude protein production per hectare, for instance). In the case study presented in Annexes 32 and 33, the farmers were requested to discuss the indicators suggested by the researchers. During the discussion they confirmed the relevance of these. Men brought up an additional indicator for inclusion, namely the amount and quality of manure. An alternative process would be to facilitate open focus group discussions, in which farmers develop their own indicators for the five domains. For the matrix scoring template, technologies and indicators are written on a large piece of flipchart paper.

Step 2: Positive and negative direction of indicators

As a second step, the research team looks at the direction of the indicators (negative versus positive). A positive direction is given when improvements in the evaluated domain are associated with an increase in the units of the indicator (e.g. income, productivity, dietary diversity). A negative correlation is given when improvements are linked to a reduction in the units of the indicator (e.g. female labor, use of chemicals). It can be difficult for research facilitators and farmers to switch between negative and positive directions (to change the direction of thinking) during scoring (Pretty et al. 1995: 250). Therefore, it is recommended to select five indicators with the same direction (negative or positive). In some cases, a reformulation of the indicator can change its direction. For instance, female labor (negative direction) could be replaced by amount of female labor saved (positive direction).

Step 3: Translation and illustration

As a third step, researchers and farmers make sure that the criteria on the matrix have been adequately translated into the local language. They add pictures or photos for illustration (Annex 32 and 33), preferably from the context in which the investigation takes place. A careful formulation of criteria and selection of pictures (as neutral as possible, not biased towards one technology) enables research facilitators and respondents to develop a common understanding of the contents of the exercise and to relate to the same criteria during evaluation.

Step 4: Sampling of respondents

Just as for linkage diagrams and activity profiles, the respondents (farmers) participating in this exercise should have actually employed both technologies or practices under evaluation. Again, having attended a technical training does not imply that a farmer has sufficient experience to make a thorough assessment. In order to use the tool for gender analysis, equal numbers of men and women should be sampled. The exercise is conducted in gender-separate groups (for a conducive study setup and subsequent comparison of the results). Age-separate groups may also make sense, since the priorities and ideas of young and elderly farmers may differ. In our experience, it is best to work with a small number of farmers in order to have an in-depth discussion not exceeding 90 minutes.

Step 5: Ranking exercise

Before going into the actual matrix scoring exercise, the research facilitators introduce the farmers to the five indicators and rank them. Ranking the indicators helps the research team to interpret the results of the subsequent matrix scoring exercise. Ranking is done in several rounds (equal to the number of indicators). If there are five indicators, each farmer is given five beans for the first ranking (the number of beans in the first ranking round should be equal to the number of indicators). Each farmer is requested to place her/his five beans in the box next to the indicator she/he finds most important. Farmers may differ in their assessment of importance. When this step is completed, a discussion is initiated on why farmers have made their individual choices. Then four beans are given to each farmer. They are requested to place them in the box next to the indicator each sees as second most important. Again a discussion on reasons for their selection is initiated. This process continues until the least important indicator has been determined (the number of beans is reduced by one in each ranking round). Group dynamics can be balanced by requesting less vocal or less domineering farmers to place their beans first, before "stronger" farmers get their chance. At the end of the ranking exercise, the overall ranking results are discussed with questions such as: How come that this indicator ranked last? How would you explain the high importance of this indicator?

Step 6: Matrix scoring exercise

After completion of the ranking exercise, research facilitators introduce the matrix scoring template and the process of scoring. They request the farmers to evaluate the two technologies. For this, each farmer is given an even number of beans for comparing technology 1 to technology 2 in relation to the first indicator. The better a technology fares, the more beans should be given to it. The farmers are free to give all their beans to one technology, to give an equal number of beans to each of the technologies, or to allocate beans to the two technologies, in any way they find appropriate. The research facilitators demonstrate this on the template before the farmers embark on the exercise. When the farmers have finished scoring in relation to the first indicator, the research facilitator initiates a discussion on the result. The discussion is guided by gender analysis questions that have been prepared in advance (see examples under "Steps and Guidelines" in the facilitation section below). This process is repeated for each indicator separately. Finally, the overall result (visible through the allocation of beans on the template) is discussed.

Suggestions for further reading

Pretty, J., Guijt, I., Thompson, J. and Scoones, I. (1995): *A Trainer's Guide for Participatory Action and Learning*. London: IIED (IIED Participatory and Learning Action Series 6021).

Online: http://pubs.iied.org/pdfs/6021IIED.pdf

Musumba, M., Grabowski P., Palm, C. and Snapp, S. (2017): *Sustainable Intensification Assessment Methods Manual*. Feed the Future Innovation Lab for Collaborative Research on Sustainable Intensification.

Online: http://www.k-state.edu/siil/documents/docs_siframework/Sustainable Intensification Assessment Methods Manual - 10.24.17c.pdf

Facilitation, steps and guidelines

Overview	Matrix scoring and the Sustainable Intensification Assessment Framework
Time	90 min
Learning objectives	The participants are able to: • Explain the main features of matrix scoring in combination with the SI Assessment Framework • Develop customized versions of the tool for the evaluation of agricultural technologies • Apply the tool for the comparison of agricultural technologies and analysis of gender-relevant issues across five sustainability domains
Topics	◎ Participatory technology evaluation ◎ Matrix scoring ◎ SI Assessment Framework
Preparation	☞ Prepare flipcharts to introduce the tool (Annex 30) ☞ Prepare posters to showcase the ranking and matrix scoring exercise (own cases or Annexes 31, 32, 33) and put them up on a wall ☞ Print copies of instructions for group work (Annex 34) ☞ Print one copy of SI Assessment Framework for each group (Appendix A)
Materials	✂ Posters ✂ Printouts ✂ Flipchart paper ✂ Marker pens
Methods	⌘ Presentation ⌘ Group work ⌘ Plenary discussion
Remarks	The tool can be used to compare several agricultural technologies. This exercise focuses on the evaluation of two technologies.

Steps and guidelines

1. Draw participants' attention to the posters of ranking/scoring exercises you have put up on the wall in advance (use your own case studies or the ones in Annexes 30, 31 and 32). Explain that this module introduces them to a tool for participatory technology evaluation. The tool needs to be adjusted to various technologies and contexts. The participants will get to know how to tailor the tool to their specific needs.

2. The tool is based on two "ingredients" (Annex 30, Flipchart 1): the *Sustainable Intensification (SI) Assessment Framework* and a participatory method called *matrix scoring*. The tool allows farmers to compare technologies in relation to five domains. A gender perspective is integrated into these domains.

3. Introduce the SI Assessment Framework (Annex 30, Flipchart 2). Present the idea and components of the framework. The framework may be used at two levels (monitoring a development project and evaluating a technology). This exercise focuses on the technology level. Explain that the indicators of the framework can be made part of different research instruments (e.g. survey, semi-structured interviews). In our case, the framework is combined with a participatory method. The tool that results from this combination guides farmers and facilitators through a process of participatory technology evaluation. This is done in gender-separate groups.

4. Introduce the matrix scoring method (Annex 30, Flipchart 3). It explores respondents'/farmers' perceptions, preferences and experiences. The matrix scoring template lists items to be compared and criteria for comparison on different axes (see background information). In our case, farmers compare technologies to conventional practice. The criteria for comparison are indicators from the five domains of the SI Assessment Framework. Respondents compare technologies or practices for each criterion separately by placing beans or stones in the prepared boxes (at this point don't go too much into the details of how to do matrix scoring; this will be done later). Note that the scores – the number of stones or beans placed in particular fields – indicate tendencies and serve as a starting point for in-depth discussions. **They should not be taken as quantitative measurements!** Conclude that what counts more is the process of discussion, which is recorded, transcribed and analyzed together with the results of the scoring exercise.

5. After this, take the participants through the steps needed to prepare and implement matrix scoring with farmers (use your own examples or the case study of the forage chopper machines in Annexes 31-33). Invite the participants to gather in front of the first template developed for a comparison of manual chopping versus mechanized chopping of crop residues as livestock feed (Annex 33). Explain the first four steps in the tool development process: production of matrix scoring

template; positive/negative direction of indicators; translation/illustration; sampling of respondents (see background information).

6. Turn to the ranking exercise and show the participants the ranking template (Annex 32). Introduce the concept, process and rules of ranking (see background information). The results of this exercise will enable the researchers to better understand the outcomes of subsequent matrix scoring. However, make clear that quantitative ranking results should not be interpreted as strict priorities. For instance, for the female group in Annex 32, a reduction of their labor burden ranked last and income first. They expressed the view, that with sufficient income they would be able to employ temporary laborers, who would relieve them. Here, one criterion was seen as a prerequisite for the achievement of another (and did not necessarily imply a lower priority of the latter).

7. Request the participants to gather in front of the matrix scoring template (Annex 34). Again explain the concept, process and rules of the matrix scoring exercise (step-by-step comparison of technologies in relation to each indicator). The discussion of results for each indicator is guided by general questions and additional questions for gender analysis that are prepared in advance. Examples of questions for gender analysis used in the chopper machine study are:

    - Productivity: Who in the household would like the animals to produce more? Why?
    - Profitability: Who in the household receives the income from the sales of milk? Why?
    - Environment (= feed quality): Who in the household is more affected by low feed quality? Why?
    - Human condition (= dietary diversity): Who in the household decides on the use of income for food purchase? Why?
    - Social condition (= reduced time of labor): Who in the household uses the chopper? Why?
      Indicate that a sample discussion guide for matrix scoring with farmers is available (Annex 35).

8. Prepare the participants for group work, in which they will draft a matrix scoring template for the same technology (and in the same groups) as for linkage diagrams (Module 3.1) and activity profiles (Module 3.4). If the participants prefer to work on another technology (and form new groups), make sure that they all have sufficient experience of this technology.

9. Once the groups are ready, provide each group with instructions (Annex 32), flipchart paper, marker pens, and the list of SI indicators (Appendix A). Read out the instructions to everyone and invite questions or comments. During group work, walk around and provide support, if necessary.

10. When they have finished, the groups put up their templates on the wall. Invite them to take a short "gallery walk" so that everybody can see the products. Then return to the circle of chairs for debriefing. Initiate the debriefing discussion with the following questions:

    - What was this exercise like for you?
    - Are there any questions or remarks you would like to share?
    - In what sense could this tool support you in analyzing your innovations from a gender perspective?
    - What challenges do you see in relation to the tool?
    - Do you have suggestions on how to further develop the tool? If yes, what would you do?

11. Complete the session. Explain that matrix scoring is a tool to be used at advanced stages of the research process in order to evaluate. However, indicators from the five domains may be chosen at earlier stages (e.g. before the technology has been introduced) and ranked with farmers. This could help to explore what farmers value in relation to technological changes.

Facilitator's notes

- In addition to the templates exhibited on the walls of the room, we prepared one ranking result and one scoring result on a large table (templates including beans or stones farmers had placed). We gathered the participants round the table and outlined the concepts and processes of ranking and scoring. This made our explanations more tangible. For instance, we were able to simulate the process of distributing and placing beans.
- In this module, matrix scoring is introduced through case studies conducted in Babati district, Tanzania. For the facilitation of this module, you may produce your own case study templates and test them with farmers in advance of the training. During the training you could then showcase your own material. This is recommended, since pre-testing will equip facilitators with insights into the strengths and challenges of the tool.

Annex 30: Flipcharts for introduction

Flipchart 1: Participatory technology evaluation

Participatory technology evaluation

Two "Ingredients"

- Sustainable Intensification (SI) Assessment Framework
- Matrix scoring

Tool

- Allows farmers to compare practices
- Must be tailored to specific needs and contexts

Flipchart 2: SI Assessment Framework

SI Assessment Framework

- More Holistic/Complex Research on SI
- Five Domains
  - *Productivity*
  - *Profitability*
  - *Environment*
  - *Human Condition (Nutrition)*
  - *Social Condition (Equity)*
- Originally highly quantitative, here combined with a qualitative, participatory tool

Flipchart 3: Matrix scoring

Matrix scoring

- Farmers compare two technologies/practices in relation to set criteria

Criteria

	C1	C2	C3	C4	C5
T1					
T2					

Technologies

- Farmers compare technologies or practices by placing stones, beans for one criterion after the other
- Discussion of results for each criterion, and of the overall picture
- Scores less important than information gained in subsequent discussion

Annex 31: Matrix development: positive and negative responses

Table 16: Example – positive and negative responses for matrix development (see background information)

Indicator/ Technology	**Productivity** Animal productivity (positive)	**Profitability** Profitability (positive)	**Environment** Feed quality (positive)	**Human** Dietary diversity (positive)	**Social** Female labor (negative) Reduced labor time (positive)
					 
Machete					
Chopper					

Case study: forage choppers

The above table and the information contained in Annexes 32, 33 and 35 relate to an Africa RISING case study conducted in Babati district, Tanzania. In 2015, researchers introduced electric and petrol-driven forage chopper machines in seven villages, with the aim of improving the use of locally available feeds in agro-pastoralist households. The farmers established village groups to jointly operate the machines. In 2016, we investigated the gender implications of this intervention through a survey, focus group discussions, activity profiles, linkage diagrams and matrix scoring and ranking exercises.

Annex 32: Case study example for ranking exercise

Figure 30: Case study example for ranking exercise in Swahili. Photo credit: Gundula Fischer/IITA.

Annex 33: Case study example for matrix scoring exercise

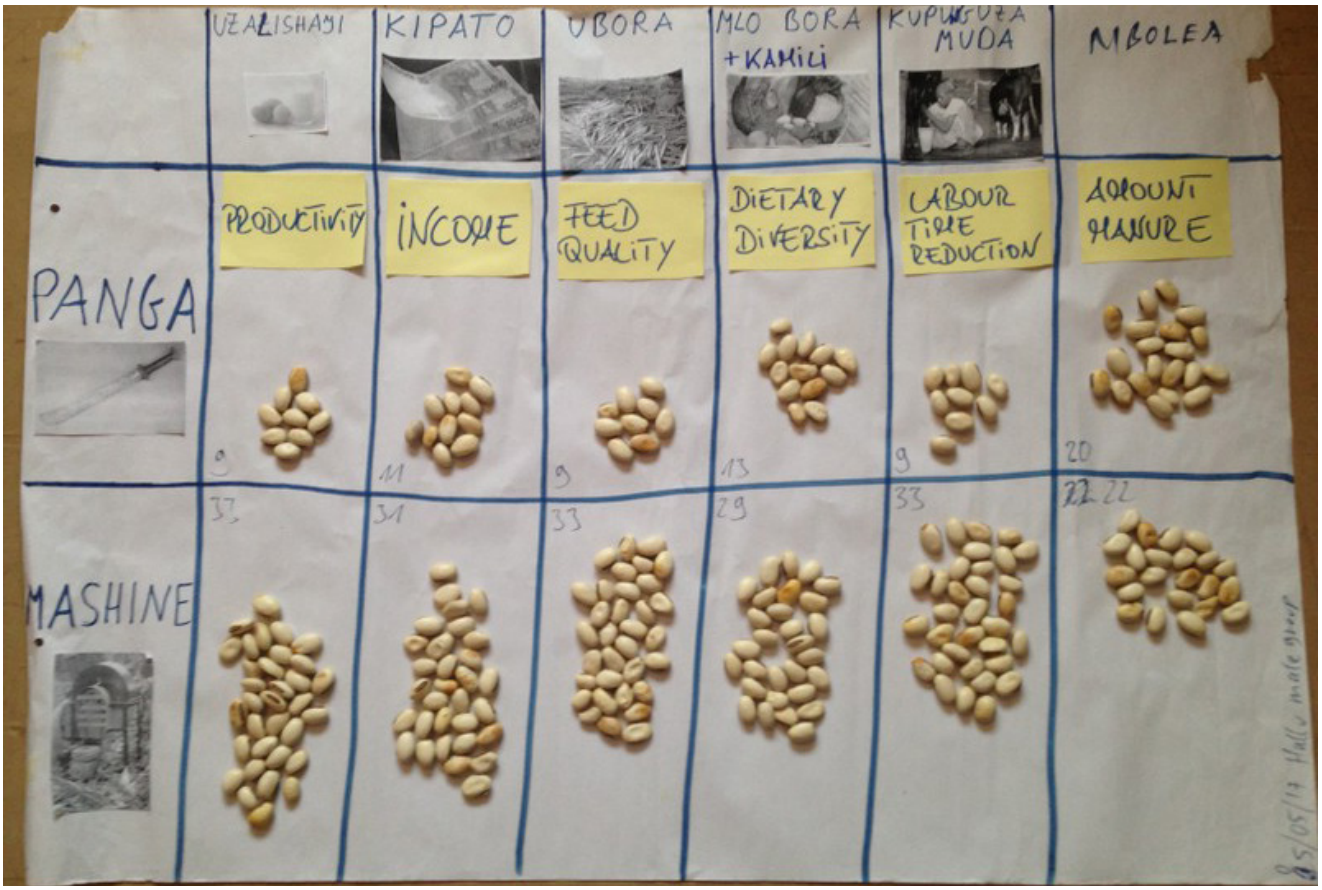


Figure 31: Case study example for matrix scoring exercise in Swahili . Photo credit: Gundula Fischer/IITA.

Annex 34: Instructions for group work (by researchers during training)

Instructions for group work

1. Select a technology that you would like to compare to conventional practice.
2. Select a relevant indicator for each domain. You may consult the list of indicators provided. Farmers must be in a position to assess changes as related to the indicators. Proxies are possible.
3. Crosscheck to ensure that all indicators are either positive or negative. If not, reformulate them so that they all go in the same direction (either positive or negative).
4. Draw a matrix template on a flipchart paper (see below).
5. Discuss how well indicators can be translated into local languages.
6. Prepare to report back to the plenary on the following questions:
   - What was the exercise like for you?
   - Are there any questions or remarks you would like to share?
   - In what sense could this tool support you in analyzing your innovations from a gender perspective? What are your ideas?
   - What challenges do you see in relation to the tool?
   - Do you have suggestions on how to further develop the tool? If yes, what would you do?

Matrix template

	Productivity indicator:	Profitability indicator:	Environment indicator:	Human domain indicator:	Social domain indicator:
Technology 1					
Technology 2					

Annex 35: Matrix scoring field guide

This field guide is an example from an Africa RISING study on feed processing with machetes as opposed to forage chopper machines in Tanzania. The guide needs to be adapted when being used in other contexts.

Preparation

The following should be prepared:

- Two rooms or places with some privacy for a discussion without interruptions and unwanted listeners (one venue for women, one venue for men)
- A table and chairs for each venue. Alternatively you can sit on the ground with stones to fix templates (wind) or use a wall and sticky tape or a flipchart stand
- Two prepared matrix scoring templates

  First template: Ranking of criteria for evaluation

  Second template: Comparison of conventional practice and technology
- Marker pens of different colors
- Beans, stones or stickers
- Recording device and batteries
- Interview guide including questions for gender analysis
- Refreshments (if wanted)

Process

Step 1: Self-introduction of facilitator(s)

Introduce yourself (name, organization you are affiliated to, specialization). Emphasize that you have come in order to get to know the farmers' perspectives and their evaluation of work practices.

Step 2: Introduction of study objectives

Introduce the study objectives. Explain that there will be a discussion and two exercises. Show the templates you have prepared. State the time the discussion will take (in our case not more than one and a half hours).

Step 3: Informed consent and consent to recording

Request oral consent to continue with the discussion and consent to recording the discussion. Ensure confidentiality. Only after having received consent: **SWITCH THE RECORDING DEVICE ON!**

Step 4: Self-introduction of participants (after the recording device has been swtiched on!)

Invite the participants to introduce themselves. Initiate a warming-up discussion of your topic. In our case, this was based on the following questions:

- How do you keep your animals (semi-intensive, zero-grazing)? Why?
- How do you feed them?
- Who does the work?
- Have there been any major changes in your feeding practices in the past years? If so, what changes?

Step 5: Introduction of the indicators (selected by a group of researchers and farmers in advance)

Introduce the ranking template with the five indicators below. Put it on the table in front of the respondents. On the template there are five aspects that have a relation to feeding animals:

Productivity: When you feed your animals, they produce milk, eggs, meat, etc. You can look at feeding from the angle of productivity. How much do they produce?

Profitability: When you sell milk, eggs, meat, you receive money. You can look at feeding from the angle of profit. How profitable is it to keep animals?

Environment (here: feed quality): When you feed your animals, you may consider the feed quality – you can look at feeding from the angle of quality. What kind of quality is needed?

Human (here: dietary diversity): When you have milk, eggs, meat, you may consume them at home. Or you may sell them and use the money to buy other food items and improve the nutrition of the household (more diversity). You can ask yourself: Does feeding support dietary diversity at home?

Social (here: female labor): When you feed your animals, there is labor involved, especially for women. You can look at feeding from the angle of labor. How much work is needed, especially in the case of women?

After introducing the indicators, discuss the following questions:

- Do you sometimes evaluate feeding from one of these perspectives? How?
- Are there perspectives that do not matter to you? Why? Should they be excluded?
- Would you maybe add further perspectives that we have not included? Which? Why? (If yes, add the indicators to the ranking template).

Step 6: Introduction of the template for ranking

Delete indicators that are seen as irrelevant. Add indicators if new ones have been brought up.

Note: If you change the number of indicators, you must also change the number of beans used according to the number of indicators!

Introduce the respondents to the idea and process of ranking.

Criteria	Ranking
Productivity	
Profitability	
Feed quality	
Dietary diversity	
Female labor	
.... (Additional)	

Step 7: Ranking of indicators (exercise)

Start the exercise:

1. Give five beans to each farmer and ask them to allocate them to the criterion they view as most important. Discuss! Is there anybody who would like to explain what is most important to him/her? Ask why!
2. Give four beans to each farmer and request them to allocate them to the criterion they view as second most important. Discuss! Ask why!
3. Give three beans to each farmer and request them to allocate them to the criterion they view as third most important. Discuss! Ask why!
4. Give two beans to each farmer and request them to allocate them to the fourth most important criterion. Discuss! Ask why!
5. Give one bean to each farmer and request them to allocate to the least important criterion. Discuss! Ask why!

After completion of the ranking, count the beans in each field and note the number with a marker pen on the template. Establish the general ranking. Ask the farmers for reasons why certain indicators have been ranked higher or lower.

Step 8: Introduction of the template for matrix scoring

Introduce the second template and explain the components (here, technologies on the x-axis and indicators on the y-axis).

Indicator/ Practice	Productivity	Profitability	Feed quality	Dietary diversity	Female labor	Additional
Conventional						
New						

Take six beans and demonstrate the scoring procedure. Show the different options farmers have for place the beans according to their opinion. Leave room for questions.

Step 9: Matrix scoring (exercise)

Start the exercise:

1. Begin with the first column (productivity). You may cover the other columns to the right with a blank flipchart paper to direct exclusive attention to the first column. Give six beans to each farmer. Ask them to allocate the beans to the two boxes (rows) below productivity in accordance with their private opinion. They should allocate more beans to the practice or technology that fares better in their eyes. Remind them that they can also allocate equal numbers of beans.
2. When the farmers have placed their beans, discuss the result and ask why they have allocated them in such a manner. In the discussion, include the questions for gender analysis you have prepared in advance: Who in the household would like the animals to produce more? Who benefits more from productivity increases (not only in terms of income)? Why?
3. Repeat the procedure for the second column (profitability): Give six beans to each farmer and ask them to allocate them as in point 1. Discuss why the farmers have allocated the beans in a certain manner and go through the questions you have prepared: Who receives the income from the sales of milk, eggs and meat? How is the income used within the household? Who pays the veterinary bills? Why?
   Do the same for the remaining indicators. Always include questions for gender analysis in the discussions.
4. At the end of the exercise, look at the overall pattern and discuss it with the respondents: How would you explain the overall pattern? Why are there more beans in this box than in the other?

Step 10: Venting question and end

Thank the participating farmers for the discussion and their participation. Ask a venting question: Is there anything we have not discussed, but that you would like us to know? Close the meeting!

Learning unit 4. Wrap-up, evaluation and closing

This unit contains the second part of the gender and participation blog. It wraps up the contents of the gender training and provides space for open questions. Participants review their learning foci and evaluate the training.

Module 4.1: Gender and participation blog, part 2

The second part of the "blog" serves to jointly go through the questions, texts and images on the posters and read the comments participants have posted during the course of the two days. Further discussion is encouraged.

Module 4.2: Wrap-up, evaluation and closing

The last module begins with a recap of the training objectives and topics. The participants review how far they have achieved their learning objectives. Questions that have been left open are discussed in the plenary. The participants then fill in the second part of the self-assessment and evaluation forms. The training is concluded by an oral feedback session.

Module 4.1: Gender and participation blog, part 2

Overview	Gender and participation blog, part 2
Time	20-30 min
Learning objectives	The participants: • Reflect on questions of gender and participation in agricultural research and development • Relate the topics of the blog to their own knowledge and experience • Recognize the need to act on gender and participation beyond questions of sampling
Topics	◎ Gender and participation
Preparation	☞ Prepare an open space in front of the three posters in order to gather the entire group ☞ Makes sure sticky notes and pens are available
Materials	✂ Posters ✂ Sticky notes ✂ Pens
Methods	⌘ Joint reading (and discussion)
Remarks	In this session the blog is jointly read and closed.

Steps and guidelines

1. Invite the group to "go online" together in order to read and share the blog. All participants move to the wall where the posters are.
2. Depending on how many comments have already been left during lunch and coffee breaks, give the group another 5-10 minutes to write more comments. Invite them to take another look at the texts, images and sticky notes that have already been placed. Encourage additional comments.
3. Explain that you will now read out every sticky note and that all participants are invited to contribute their views or ideas. Start with poster 1: Introduce the overall topic of this poster. Go to a quotation that has a sticky note. Summarize the quotation in one sentence and read out the comments it has received. Ask the participants if they have additional views or comments. Repeat the procedure for all quotations or images that have received sticky notes. Do the same for Posters 2 and 3. In this exercise, the facilitators should not give any feedback (in the sense of airing their own opinion), unless actively asked to do so by one or more participants.
4. After the last sticky note has been discussed, thank the participants for their reflections. Conclude the session with the remark that the group will now go "offline" again. Reflections on these topics will certainly continue in other contexts.

Facilitator's notes

- After having read out a comment, you can ask who wrote it and request further explanations. However, participants are not always happy to be identified as authors and may feel uncomfortable if exposed. Therefore, the comments may also be kept anonymous.

Module 4.2: Wrap-up, evaluation and closing

Overview	Wrap-up, evaluation and closing
Time	60-90 min
Learning objectives	The participants have: • Recapped the content of the training • Examined how far they have achieved their learning objectives • Clarified lingering questions • Assessed their own learning outcomes in relation to the training • Evaluated the training
Topics	◎ Recap of training objectives and topics ◎ Evaluation of learning foci ◎ Clarification of lingering questions ◎ Self-assessment ◎ Oral evaluation ◎ Delivery of certificates (optional)
Preparation	☞ Display all posters and materials used during the training on walls or flipchart stands ☞ Prepare a flipchart stand with the learning foci ☞ Print a copy of the self-assessment questionnaire (for after the training) for each participant (Appendix C) ☞ Prepare a poster with the following evaluation questions: – What do you think your colleagues (who may be interested in this kind of training but were not able to participate) would appreciate most in the training? – What do you think they would like us to change? – What do you think your supervisor would suggest to us? ☞ Optionally: Prepare certificates for participants
Materials	✂ Training materials ✂ Self-assessment questionnaire ✂ Certificates
Methods	⌘ Presentation ⌘ Self-assessment

Steps and guidelines

1. Welcome the participants to the final module. Introduce them to the contents of this module: a recap of the training's objectives and contents, an assessment of the learning foci, an opportunity to clarify remaining questions and concerns, a written evaluation, an oral feedback session and (optional) the presentation of certificates.
2. Draw attention to the training's objectives and topics displayed in the room. Read out the objectives in order to remind the participants of them. Read out the topics of the training one after the other.
3. Continue with the learning foci: Put the flipchart stand with the learning foci in front of the group and ask participants to turn around those cards whose topics have been answered during the second day. Jointly go through the open learning foci that remain. You may discuss with the group how these could be addressed. You may also name additional learning sources or invite interested participants for a discussion after the training has been completed.
4. Clarify lingering questions on other aspects of the training.
5. Request all participants to fill in the self-assessment and evaluation questionnaire (Appendix C). Distribute the forms and give enough time (15-20 min.) for this step.
6. After having collected the questionnaires, invite the participants to give more feedback. Point out that such trainings are a continuous learning opportunity even for the facilitators. Initiate a discussion on the following questions:
   - What do you think your colleagues (who are interested in such a training but could not participate) would appreciate most in this training?
   - What do you think they would like us to change?
   - What do you think your supervisor would suggest to us?

   Thank the participants for their feedback and express your appreciation.
7. If you have prepared certificates, present them. Congratulate each participant on completing this gender training. If wished, take a photo of the whole group.
8. Before closing, ask the participants to take part in a last exercise. The exercise takes only one minute. Request the participants to stand in a circle. When the circle is formed, ask them to turn to the right. Each puts their right hand on the right shoulder of the person in front of them. Each pats the shoulder of the person in front and says, "You have done well".

Facilitator's notes

- Do not react to the participants' feedback (for instance by explaining why you did certain things or by defending yourself).

Gender training and beyond

After the training it is often easy for participants to shift back to their accustomed ways of doing things without making use of the new knowledge and skills they have acquired. To avoid this, a short reflection can be made part of the wrap-up session. This reflection can be done in pairs or individually and is guided by the following question: "How can I integrate gender-related activities into my ongoing work within the next three months?"

In the introduction to this reflection, the facilitators should make clear that gender-related activities need not necessarily be linked to an additional budget. They could consist of:

- Analyzing existing data sets from a gender perspective
- Revising data collection tools to make them more gender-sensitive
- Rethinking established ways of inviting men and women to R4D activities, etc.

Participants are encouraged to record the results of their reflection on paper. They may later share these in the plenary. Commitments made in terms of integration into ongoing activities can serve as entry points for further cooperation, especially if the facilitators are part of the participants' project team or if they (or other gender experts) are available for long-term support. The follow-up questionnaire in Appendix D (to be used several months after the training) serves

- To maintain the participants' competence and confidence in integrating gender analysis into research activities
- To identify and (where possible) solve challenges that limit the application of knowledge and skills acquired during the training

References

Alcoff, L. (1991): the problem of speaking for others. In: *cultural critique* 20, pp: 5-32.

Online: https://www.jstor.org/stable/1354221?seq=1#page_scan_tab_contents

Ashby, J. A. and Lilja, N. (2004): *Participatory research: Does it work? Evidence from participatory plant breeding*. 4th International Crop Congress 'New Directions for a Diverse Planet', Brisbane, Queensland, Australia, 26 September to 1 October 2004.

Online:https://www.researchgate.net/publication/228880475_Participatory_Research_Does_it_Work_Evidence_from_Participatory_Plant_Breeding

Asian Development Bank (2013): *Preparing a Project Gender Action Plan*. Mandaluyong City: Asian Development Bank (Tip Sheet No. 2).

Online: https://www.adb.org/sites/default/files/institutional-document/34132/files/tip-sheet-2-preparing-gender-action-plan.pdf

Biggs, S. D. (1985): A Farming Systems Approach: Some Unanswered Questions. In: *Agricultural Administration* 18, pp: 1-12.

Online: http://pdf.usaid.gov/pdf_docs/PNAAT637.pdf

Bingen, J. and Gibbon, D. (2012): Early Farming Systems Research and Extension Experience in Africa and Possible Relevance for FSR in Europe. In: Darnhofer, I., Gibbon, D. and Dedieu, B. (eds.) (2012): *Farming Systems Research into the 21st Century: The New Dynamic*. Dordrecht: Springer, pp: 49-72.

Online: https://www.researchgate.net/publication/270881297

Bolwig, S., Ponte, S., du Toit, A., Riisgaard, L. and Halberg, N. (2008): *Integrating Poverty, Gender and Environmental Concerns into Value Chain Analysis. A Conceptual Framework and Lessons for Action Research*. Copenhagen: Danish Institute for International Studies (DIIS Working Paper no 2008/16).

Online:http://pure.diis.dk/ws/files/56383/WP08_16_Integrating_Poverty_Gender_and_Environmental_Concerns_into_Value_Chain_Analysis.pdf

Britwum, A.O. and Akorsu, A.D. (2016): *Qualitative Gender Evaluation of Agricultural Intensification Practices in Northern Ghana*. Ibadan: International Institute of Tropical Agriculture (IITA).

Online: https://cgspace.cgiar.org/handle/10568/78479

Campbell, J. (2002): A Critical Appraisal of Participatory Methods in Development Research. In: *International Journal of Social Research Methodology* 5(1), pp: 19-29.

Online: https://www.researchgate.net/publication/248988611

CGIAR (2011): *Consortium Level Gender Strategy*. Montpellier: CGIAR Consortium.

Online:https://cgspace.cgiar.org/bitstream/handle/10947/2630/Consortium_Gender_Strategy.pdf?sequence=4

CGIAR Research Program on Aquatic Agricultural Systems (AAS) (2012): *Building Coalitions, Creating Change: An Agenda for Gender Transformative Research in Development*. Penang: AAS (Workshop Report AAS – 2012 – 31).

Online: http://pubs.iclarm.net/resource_centre/WF_3447.pdf

CGIAR Research Program on Climate Change, Agriculture, and Food Security (CCAFS) and Food and Agricultural Organization of the United Nations (FAO) (2013[2]): *Training Guide. Gender and Climate Change Research in Agriculture and Food Security for Rural Development*. Rome: FAO

Online: http://www.fao.org/docrep/018/i3385e/i3385e.pdf

Concern Worldwide (2016): *Daily Activity Clock*. Dublin: Concern Worldwide (BRACED Gender and Resilience Toolkit No. 1).

Online:https://doj19z5hov92o.cloudfront.net/sites/default/files/resource/2016/12/daily_activity_clock_toolkit.pdf

Croppenstedt, A., Goldstein, M. and Rosas, N. (2013): Gender and Agriculture: Inefficiencies, Segregation, and Low Productivity Traps. In: *The World Bank Research Observer* 28, pp. 79-109.

Online:https://openknowledge.worldbank.org/bitstream/handle/10986/19493/wbro_28_1_79.pdf?sequence=1

Darnhofer, I., Gibbon, D. and Dedieu, B. (2012): Farming Systems Research: An Approach to Inquiry. In: Darnhofer, I., Gibbon, D. and Dedieu, B. (eds.) (2012): *Farming Systems Research into the 21st Century: The New Dynamic*. Dordrecht: Springer, pp: 3-31.

Online: https://www.researchgate.net/profile/Ika_Darnhofer/publication/258375147

Doss, C. and Morris, M. L. (2001): How Does Gender Affect the Adoption of Agricultural Innovations? The Case of Improved Maize Technology in Ghana. In. *Agricultural Economics* 25, pp: 27-39.

Online: not available

Doss, C. and Kieran, C. (2014): *Standards for Collecting Sex-Disaggregated Data for Gender Analysis. A Guide for CGIAR Researchers*.

Online: https://cgspace.cgiar.org/handle/10568/76974

Elias, M. (2013): *Practical Tips for Conducting Gender Responsive Data-Collection*. Rome: Bioversity International.

Online:https://www.bioversityinternational.org/uploads/tx_news/Practical_tips_for_gender_responsive_data_collection_1658_02.pdf

Escobar, G. (2000): My Initiation into FSR in Latin America. In: Collinson, M. (ed.) (2000): *A History of Farming Systems Research.* Rome: Food and Agriculture Organization of the United Nations (FAO), pp: 13-18.

Online: https://www.researchgate.net/publication/282442287

Eksvärd, K. and Rydberg, T. (2010): Integrating Participatory Learning and Action Research and Systems Ecology: A Potential for Sustainable Agriculture Transitions. In: *Systematic Practice and Action Research* 23(6), pp: 467- 486.

Online: not available

Feldstein, H. S. (1987): *Intra-household Dynamics and Farming Systems Research and Extension Case Studies Project.* Washington D.C.: AWID Preconference Workshop, 14-15 April 1987.

Online: http://pdf.usaid.gov/pdf_docs/PNABE738.pdf

Feldstein, H. S. (2000): Gender Analysis: Making Women Visible and Improving Social Analysis. In: Collinson, M. (ed.) (2000): *A History of Farming Systems Research.* Rome: Food and Agriculture Organization of the United Nations (FAO), pp: 67-75.

Online: not available

Fisher, R.J. (2004): *What is Action Research? An Introduction to Action Research for Community Development.* Sydney: University of Sydney.

Online: https://cmsdata.iucn.org/downloads/what_is_action_research__apo_2004_.pdf

Food and Agriculture Organization of the United Nations (FAO) (2005): *Gender and Farming Systems – Lessons from Nicaragua*. Rome: FAO.

Online: ftp://ftp.fao.org/docrep/fao/008/y4936e/y4936e00.pdf

Food and Agriculture Organization of the United Nations (FAO) (2011): *Communicating Gender for Rural Development. Integrating Gender in Communication for Development*. Rome: FAO.

Online: http://www.fao.org/docrep/014/am319e/am319e00.pdf

Giller, K. E. (2013): Guest Editorial: Can We Define the Term Farming Systems? A Question of Scale. In: *Outlook Agriculture* 42, pp: 149-153.

Online: http://edepot.wur.nl/279629

Greenwood, D.J. and Levin, M. (2007): Power and Social Reform: Southern PAR, Education, Feminism, and Action Research. In: Greenwood, D.J. and Levin, M. (eds.) (2007[2]): *Introduction to Action Research – Social Research for Social Change.* Thousand Oaks: Sage, pp: 152-167.

Online: http://14.139.206.50:8080/jspui/bitstream/1/2307/1/Greenwood&Levin%20-%20Introduction%20to%20Action%20Research.pdf

Hankivsky, O. (2014): *Intersectionality*. Burnaby: Simon Fraser University (SFU).

Online: https://www.researchgate.net/profile/Olena_Hankivsky/publication/279293665

Hillenbrand E., Karim N., Mohanraj P. and Wu D. (2015): *Measuring Gender transformative Change: A Review of Literature and Promising Practices.* Atlanta: CARE USA (Working Paper).

Online:www.care.org/sites/default/files/documents/working_paper_aas_gt_change_measurement_fa_lowres.pdf

Hope, A. and Timmel, S. (1999): *Training for Transformation. A Handbook for Community Workers*, *Book 4*. London: ITDG.

Online: not available

Interagency Gender Working Group (IGWG) (2017): *Gender Integration Continuum*. Washington D.C.: IGWG.

Online: https://www.igwg.org/wp-content/uploads/2017/05/FG_GendrIntegrContinuum.pdf

International Institute of Tropical Agriculture (IITA), International Food Policy Research Institute (IFPRI) and International Livestock Research Institute (ILRI) (2012): *Africa Research in Sustainable Intensification for the Next Generation (Africa RISING) Program Framework 2012 – 2016*. Nairobi, Kenya: International Livestock Research Institute (ILRI).

Online: https://cgspace.cgiar.org/handle/10568/25079

Ison, R. (2008): Systems Thinking and Practice for Action Research. In: Reason, Peter W. / Bradbury, Hilary eds. (2008[2]): *The Sage Handbook of Action Research Participative Inquiry and Practice.* London: Sage Publications, pp: 139–158.

Online: http://oro.open.ac.uk/10576/1/Ison.pdf

Jost, C., Ferdous, N. and Spicer, TD. (2014): *Gender and Inclusion Toolbox: Participatory Research in Climate Change and Agriculture*. Copenhagen: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), Care International, and World Agroforestry Center (ICRAF).

Online: https://cgspace.cgiar.org/bitstream/handle/10568/45955/CCAFS_Gender_Toolbox.pdf

Kanesathasan, A. (2013). *Cultivating Women's Participation: Strategies for Gender-Responsive Agriculture Programming*. Washington D.C.: International Center for Research on Women (ICRW) (Technical Brief).

Online:https://www.icrw.org/publications/cultivating-womens-participation-strategies-for-gender-responsive-agriculture-programming

Kantor, P. and Apgar, M. (2013): *Transformative Change in the CGIAR Research Program on Aquatic Agricultural Systems.* Penang: CGIAR Research Program on Aquatic Agricultural Systems.

Online: http://pubs.iclarm.net/resource_centre/AAS-2013-25.pdf

Kesby, M. (2000): Participatory Diagramming: Deploying Qualitative Methods through an Action Research Epistemology. In: *Area* 32(4), pp: 423-435.

Online: http://www.geog.leeds.ac.uk/projects/autonomousgeographies/kesby_2000.pdf

Krewer, B. and Uhlmann, A. (2015): *Models for Human Capacity Development. Didactics Concept of the Academy for International Cooperation*. Bonn/Eschborn: German Corporation for International Development GMBH (GIZ).

Online:https://www.giz.de/akademie/de/downloads/AIZDidaktikkonzept_E_150217_SCREEN.pdf

Leduc, B. (2009): *Guidelines for Gender Sensitive Research*. Patan: Centre for Integrated Mountain Development (ICIMOD).

Online: https://www.icimod.org/resource/1290

Ludgate, N. (2015): *Harvard Analytical Framework. Integrating Gender and Nutrition within Agricultural Extension Services (INGENAES)*.

Online: https://agrilinks.org/library/harvard-analytical-framework

March, C., Smyth, I. and Mukhopadhyay, M. (1999): *A Guide to Gender Analysis Frameworks*. Oxford: Oxfam.

Online:http://wafira.org/onewebmedia/Guide%20to%20Gender%20Analysis%20Frameworks.pdf

Mayoux, L. and Mackie, G. (2008): *A Practical Guide to Mainstreaming Gender Analysis in Value Chain Development*. Addis Ababa: International Labour Office.

Online:https://www.oitcinterfor.org/sites/default/files/Value%20Chain%20Design%20low%20res2%201.pdf

McCracken, J., Pretty, J. and Conway, G. (1988): *An Introduction to Rapid Rural Appraisal for Agricultural Development*. London: IIED.

Online: not available

McNiff, J. and Whitehead, J. (2002): *Action Research: Principles and Practice.* London/New York: Routledge Falmer.

Online: https://kapanjadibeda.files.wordpress.com/2010/08/action-research-princip-and-practice.pdf

Meyers, L. and Jones, L. (2012): *Gender Analysis, Assessment and Audit Manual and Toolkit*. Washington: ACDI/VOCA.

Online: http://www.acdivoca.org/wp-content/uploads/2016/07/ACDI-VOCA-Gender-Analysis-Manual.pdf

Musumba, M., Grabowski P., Palm, C. and Snapp, S. (2017): *Sustainable Intensification Assessment Methods Manual*. Kansas: Feed the Future Innovation Lab for Collaborative Research on Sustainable Intensification.

Online:http://www.k-state.edu/siil/documents/docs_siframework/Sustainable Intensification Assessment Methods Manual - 10.24.17c.pdf

Mutua, E., Njuki, J. and Waithanji, E. (2014): *Review of Gender and Value Chain Analysis, Development and Evaluation Toolkits*. Nairobi: International Livestock Research Institute (ILRI).

Online: https://www.fsnnetwork.org/sites/default/files/Ilri_manual_10_0.pdf

Neef, A. and Neubert, D. (2004): *Assessing Participation in Agricultural Research Projects: An Analytical Framework*. Hohenheim: University of Hohenheim (= Discussion Paper No.6/2004).

Online: http://opus.uni-hohenheim.de/volltexte/2005/92/pdf/FEP2004_06.pdf

Norman, D. W. (2002): *The Farming Systems Approach. A Historical Perspective*. Kansas: Kansas City University.

Online: https://www.researchgate.net/publication/251791709

Oakley, P. and Garforth, C. (1985): *Guide to Extension Training*. Rome: Food and Agricultural Organization of the United Nations (FAO) (FAO Training Series No. 11).

Online: http://www.fao.org/3/a-t0060e.pdf

Okali, C. (2011): *Achieving Transformative Change for Rural Women's Empowerment*. Accra: UN Women (Expert Group Meeting Enabling Rural Women's Economic Empowerment: Institutions, Opportunities and Participation, Accra, 20-23 September 2011).

Online: http://www.un.org/womenwatch/daw/csw/csw56/egm/Okali-EP-8-EGM-RW-Sep-2011.pdf

Packham, R. and Sriskandarajah, N. (2005): Systemic Action Research for Postgraduate Education in Agriculture and Rural Development. In: *Systems Research and Behavioral Science* 22(2), pp: 119-130.

Online: https://www.researchgate.net/publication/229506031

Pretty, J. (1995): Participatory Learning for Sustainable Agriculture. In: *World Development* 23(8), pp: 1247-1263.

Online: https://entwicklungspolitik.uni-hohenheim.de/uploads/media/Day_4_-_Reading_text_3_02.pdf

Pretty, J. , Guijt, I., Thompson, J. and Scoones, I. (1995): *A Trainer's Guide for Participatory Action and Learning*. London: IIED (IIED Participatory and Learning Action Series 6021).

Online: http://pubs.iied.org/pdfs/6021IIED.pdf

Ragasa, C. and Niu, C. (2017): *The State of Agricultural Extension and Advisory Services Provision in Malawi: Insights from Household and Community Surveys*. Washington D.C.: International Food Policy Research Institute (IFPRI) (Technical Report).

Online: http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/131093

Rubin, D., Manfre, C. and Barrett, K. (2009): *Promoting Gender Equitable Opportunities in Agricultural Value Chains. A Handbook*. Washington: USAID.

Online: http://www.culturalpractice.com/wp-content/downloads/4-2009-16.pdf

Schirch, L. (2004): *Women in Peacebuilding. Resource and Training Manual* (long version). West African Network for Peacebuilding and Conflict Transformation.

Online: not available

Seager, J. (2015): *Sex-Disaggregated Indicators for Water Assessment Monitoring and Reporting*. Paris: UNESCO (United Nations World and Water Assessment Program Gender Series No. 1, Technical Paper)

Online: http://www.unesco.org/fileadmin/MULTIMEDIA/HQ/SC/pdf/Sex_disaggregated_indicators_for_water_assessment_monito.pdf

Shaner, W. W., Philipp, P. F. and Schmehl, W. R. (1982): *Farming Systems Research and Development – Guidelines for Developing Countries*. Boulder: Westview Press.

Online: http://pdf.usaid.gov/pdf_docs/Pnaal237.pdf

Siems, B. G. and Kienzle, J. (2006): *Farm Power and Mechanization for Small Farms in Sub-Saharan Africa*. Rome: Food and Agriculture Organization of the United Nations (FAO).

Online: http://www.fao.org/3/a-a0651e.pdf

Stoller, R. (1968): *Sex and Gender: The Development of Masculinity and Femininity*. New York: Science House.

Online: not available

Swedish International Development Cooperation Agency (SIDA) (2015): *Gender Analysis – Principles and Elements*. Stockholm: SIDA.

Online: http://www.sida.se/contentassets/3a820dbd152f4fca98bacde8a8101e15/gender-tool-analysis.pdf

Symington, A. (2004): *Intersectionality: A Tool for Gender and Economic Justice*. Toronto: Association for Women´s Rights in Development (AWID).

Online:https://lgbtq.unc.edu/sites/lgbtq.unc.edu/files/documents/intersectionality_en.pdf

Thayer-Hart, N. (2010): *Survey Fundamentals. A Guide to Designing and Implementing Surveys*. Madison: University of Wisconsin-Madison (WISC).

Online: https://oqi.wisc.edu/resourcelibrary/uploads/resources/Survey_Guide.pdf

Theis, S. and Meinzen-Dick, R. (2016): *Reach, Benefit, or Empower: Clarifying Gender Strategies of Development Projects* (IFPRI Blog).

Online: http://www.ifpri.org/blog/reach-benefit-or-empower-clarifying-gender-strategies-development-projects

Tow, P., Cooper, I., Partridge, I., Birch, C. and Harrington, L. (2011): Principles of a Systems Approach to Agriculture: Some Definitions and Concepts. In: Tow, P., Cooper, I., Partridge, I. and Birch, C. (eds.) (2011): *Rainfed Farming Systems.* Dordrecht: Springer, pp: 3-44.

Online: not available

United Nations Development Fund for Women (UNIFEM) (1988): *Fish Processing*. New York: UNIFEM (Food Cycle Technology Sourcebook No. 4).

Online: http://staging.ilo.org/public/libdoc/igo/1988/268846.pdf

United Nations Development Program (UNDP) (2001): *Learning and Information Pack – Gender Analysis*. New York: UNDP (Gender in Development Program).

Online: http://www.undp.org/content/dam/undp/library/gender/Institutional%20Development/TLGEN1.6%20UNDP%20GenderAnalysis%20toolkit.pdf

Whitfield, S., Dixon, J. L., Mulenga, B. P. and Ngoma, H. (2015): Conceptualizing Farming Systems for Agricultural Development Research: Cases from Eastern and Southern Africa. In: *Agricultural Systems* 116, pp: 54-62.

Online: not available

Appendix A: Sustainable Intensification Assessment Framework

PRODUCTIVITY DOMAIN					
Indicator	**Field/Plot (NPP)**	**Farm**	**Household**	**Landscape +**	**Measurement method**
Yield	Yield (kg/ha/season) [a,b,c] Tree product/area under crown (kg/m^2/yr) [a,b,c] Rating of yield [d]	Yield (kg/ha/season) [a,b,c]	Yield (kg/ha/season) [a,b,c]	Net primary productivity (NPP) (kg C/ha/yr) [e]	[a] Recall survey [b] Yield measurements [c] Crop models [d] Farmer evaluation [e] Remote sensing
Residue production	Residue production (kg/ha/season) [a,b,c] Rating of residue production [d]	Residue production (kg/ha/season) [a,b,c]	Residue production (kg/ha/season)	Net primary productivity (NPP) (kg C / ha / yr) [e]	Same as for Yield
Animal productivity	Animal products (amount/animal/year) Animal by-products (Amount/animal/year) Rating of animal productivity	Animal productivity per unit land (product/ha/yr) Animal by-products per unit land (Amount /ha/ year) Herd composition	Animal productivity (product/hh/yr) Animal by-products (Amount/hh/year)	Net commercial offtake (product/ha/yr) [a]	[a] Recall survey [b] Production measurements
Variability of production	Coefficient of variability [a] Probability of low productivity [a]	Coefficient of variability [a] Probability of low productivity [a]	Rating of variability [b] Rating of production risk [b]	Variability of NPP [c]	[a] Productivity over time [b] Farmer evaluation [c] Remote sensing
Yield gap	Yield gap (kg/ha/season)	Yield gap (kg/ha/season)	Yield gap (kg/ha/season)		Same as Yield
Cropping intensity	# of cropping seasons per year [a]				[a] Recall survey

ECONOMIC DOMAIN					
Indicator	**Field/Plot**	**Farm**	**Household**	**Landscape +**	**Measurement method**
Profitability [1]	Net income [a]	Net income [ac]	Net income [ac]	Contribution to regional or national GDP [b]	[a] Survey [b] Regional and national statistics [a]Participatory evaluation
Variability of profitability [2]	Coefficient of variability of net income [a]	Coefficient of variability of net income [a]	Coefficient of variability of net income [a]		[a] Survey
Income diversification[3]	N/A	Diversification index [a]	Diversification index [a]		[a] Survey
Returns to land, labor and inputs [5]	Net returns (monetary value/ input)	Net returns (monetary value/ input)	Net returns (monetary value/input)		[a] Survey and productivity measurements
Input Use Efficiency [4]	Product per input [a,b]				[a] Survey and productivity measures [b] Models
Input use intensity	Input per ha [a]	Input per ha [a]	Input per ha [a]		[a] Survey
Labor requirement	Labor requirement (hours/ ha) [a,b] Farmer rating of labor [c]	Labor requirement (hours/ha) [a,b] Farmer rating of labor [c]	Labor requirement (hours/ha) [a,b] Farmer rating of labor [c]		[a] Recall survey [b] Direct observation [c] Farmer evaluation
Poverty [6]	N/A	N/A	Asset index [a] Per capita hh expenditure [a] Participatory wealth categorization [b]		
Market participation [7]	N/A	N/A	% production sold [a]	Total sales [a]	[a] Survey
Market orientation [8]	N/A	N/A	% land in cash crops [a] Market orientation index		

ENVIRONMENT DOMAIN (Part 1: Biodiversity and water)					
Indicator	**Field/Plot**	**Farm**	**Household**	**Landscape +**	**Measurement method**
Vegetative Cover	% Vegetative cover by type [a,b] % Burned land [a,b] % Bare land [a,b]	% Vegetative cover by type [a,b] % Burned land [a,b]	N/A	% Vegetative cover by type [c] % Burned land [c]	[a] Quadrats or visual estimate of cover [b] Participatory exercise [c] Satellite images
Plant biodiversity	Alpha Diversity Index [a,b] # species or varieties [a,b]	Beta Diversity Index [a,b] # species or varieties [a,b]	N/A	Gamma Diversity Index [a,b] % natural habitat [c]	[a] Vegetation sample [b] Transects [c] Satellite images
Insect biodiversity	# pollinators [a,b] Diversity index [a,b] # beneficial insects [a,b]				[a] Traps [b] Direct observation
Fuel security	N/A	N/A	% of fuel collected Time necessary to collect fuel [a] % household fuel from farm [a]	% of fuel from off-farm [a,b] Spatial arrangement of fuel sources [b]	[a] Survey [b] Participatory exercise
Water availability	Soil moisture [a,b,c] % of plants wilting	Irrigation use [b] % of fields wilting	Water sufficiency [b] Water security index [b] Water security rating [d]	% of irrigated land [b] % of stream flow not diverted [e] % hh with sufficient water [b]	[a] Soil moisture measures [b] Survey [c] Crop models [d] Participatory exercise [e] Stream sampling
Water quality	Salinity [a] Nitrate (mg/L) [a] Phosphate (mg/L) Pathogenic microbe concentration - #/ml [a]	Salinity [a] Nitrate concentration (mg/L) [a] Pathogenic microbe concentration - #/ml [a]	Rating of water quality [b]	% water sources with clean water [a,b] % population with clean water supply [b]	[a] Water sampling [b] Household survey

ENVIRONMENT DOMAIN (Part 2: Soil and pollution)					
Indicator	**Field/Plot**	**Farm**	**Household**	**Landscape +**	**Measurement method**
Erosion	Runoff (m^3/ha/yr) Erosion (tons/ha/yr) Rating of erosion	Runoff (m^3/ha/yr) Erosion (tons/ha/yr) Rating of erosion	N/A	Sediment load (mg/L) Erosion (tons/ha/yr)	[a] Direct measurement [b] Models [c] Survey Participatory exercise [d] Stream sampling
Soil carbon	Labile carbon Total carbon (Mg/ha) Carbon budget	Labile carbon Total carbon (mg/ha) Carbon budget	N/A	N/A	[a] Soil test [b] Survey Participatory exercise
Soil acidity	Soil pH (acidity) [a] % Aluminum saturation [a]	Soil pH (acidity) [a] % Aluminum saturation [a]	N/A	N/A	[a] Soil test [b] Soil mapping
Soil salinity	Electrical conductivity [a]	Electrical conductivity [a]	N/A	N/A	[a] Soil tests
Nutrient balance	Nutrient Partial Balance [a] Biological nitrogen fixation [b]	Nutrient Partial Balance [a] Biological nitrogen fixation [b]	N/A	Nutrient Partial Balance [a,b]	[a] Survey and lookup tables [b] Soil tests
GHG emissions	CO2 equivalent emitted per hectare [a]	CO2 equivalent emitted per hectare [a]	N/A	CO2 equivalent emitted per hectare [a]	[a] Lookup tables by activity or input
Pesticide use	Active ingredient applied per ha [a]	Active ingredient applied per ha [a]	N/A	Pesticides concentration in water [b]	[a] Agricultural survey [b] Water tests

HUMAN DOMAIN					
Indicator	**Field/Plot**	**Farm**	**Household**	**Landscape +**	**Measurement method**
Nutrition	Protein production (g/ha) [a,b] Micronutrient pro-duction (g/ha) [a,b]	Total protein production (g/ha) [a,b] Total micronutrient production (g / ha) [a,b] Availability of diverse food crops [a]	Access to nutritious foods [a] Dietary diversity [a] Food consumption score [a] Nutritional status (underweight, stunting, wasting) [c] Uptake of essential nutrients [d]	Market or landscape supply of diverse food [e,f] Dietary diversity [a] Rate of underweight, stunting and wasting [c] Average birthweight [c]	[a] Survey [b] Look up tables [c] Anthropometric measurements [d] Blood tests [e] Survey of marketed foods [f] Participatory mapping
Food security	Food production (Calories/ha) [a,b]	Food production (Calories/ha) [a,b]	Food availability [a] Food accessibility [a] Food utilization [a] Food security composite index [a] Months of food insecurity [a] Rating of food security [c]	Total food production [a]	[a] Survey [b] Look up tables [c] Participatory assessment
Food safety			Mycotoxins (toxicity units per gram) [a] Pesticide contamination [a,b] Post-harvest losses [c]		[a] Chemical testing [b] Health center data [c] Survey
Human health				Incidence of zoonotic diseases [a] Incidence of vector borne diseases [a]	[a] Health center data
Capacity to experience			# of new practices being tested [a,b]	% of farmers experimenting [a,b]	[a] Individual survey [b] Focus group discussion

SOCIAL DOMAIN					
Indicator	**Field/Plot**	**Farm**	**Household**	**Landscape +**	**Methodological methods**
Gender equity	N/A	N/A	Resources: Land access by gender Livestock ownership by gender Agency: Time allocation by gender Management control by gender Market participation by gender Achievements: Income by gender Nutrition by gender Food security by gender Health status by gender Cross cutting: Rating of technologies by gender	Women's Empowerment in Agriculture Index [a, d]	[a] Individual survey [b] Participatory evaluation [c] Focus group discussions [d] Household survey
Equity (generally)	N/A	N/A	Access to resources Agency Achievements Rating of technologies	Variability and distributions resources, agency, and achievements	[a] Individual survey [b] Participatory evaluation [c] Focus group discussions [d] Household survey
Social cohesion	N/A	N/A	Participation in community activities [a,b] Level and reliability of social support Family cohesion [a,b]	Social groups Participation in social groups Incidence of social support	[a] Household survey [b] Focus group discussions [c] Key informant interviews
Collective action	N/A	N/A	Participation in a collective action group [a]	Collective action groups Capacity of groups Incidence of conflicts related to collective action Effectiveness of conflict resolution measures	[a] Household survey [b] Key informant interviews

Appendix B: Self-assessment before the training

Dear participants,

Thank you for agreeing to participate in our training on gender analysis in agriculture! We would like to ask you to take time to fill in this questionnaire. Please rate below to what extent each statement applies to you and – if you wish – provide additional comments in writing. This questionnaire is aimed at assessing your gender competencies. At the end of the workshop you will be asked to fill in a similar questionnaire (second part) and to assess the content, methods and general conditions of the training. Thank you for your kind cooperation!

Please indicate

a) Your sex: ☐ female ☐ male
b) Your experience in agricultural research: ☐ 1-5 years ☐ 6-10 years ☐ more than 10 years

	Very high 5	High 4	Medium 3	Low 2	Very low 1		Can't answer 0
1. Ability to describe action research, farming systems and gender transformative approaches, and their relation with gender	☐	☐	☐	☐	☐		☐
Comments:							
2. Ability to distinguish main features of gender roles and gender relations	☐	☐	☐	☐	☐		☐
Comments:							
3. Ability to define the concept of inter-sectionality in relation to your research	☐	☐	☐	☐	☐		☐
Comments:							
4. Ability to apply gender concepts in your research							
a. gender roles	☐	☐	☐	☐	☐		☐
b. gender relations	☐	☐	☐	☐	☐		☐
c. intersectionality	☐	☐	☐	☐	☐		☐
Comments:							

	Very high 5	High 4	Medium 3	Low 2	Very low 1		Can't answer 0
5. Ability to explain basic principles of gender analysis in agricultural contexts	☐	☐	☐	☐	☐		☐
Comments:							
6. Ability to apply participatory gender analysis tools in cooperation with social scientists	☐	☐	☐	☐	☐		☐
Comments:							
7. Ability to outline the following principles in survey research							
a. data sex disaggregation	☐	☐	☐	☐	☐		☐
b. gender analysis questions	☐	☐	☐	☐	☐		☐
c. gender-sensitive sampling	☐	☐	☐	☐	☐		☐
d. gender-sensitive research setup	☐	☐	☐	☐	☐		☐
Comments:							
8. Ability to employ the following principles in survey research							
a. data sex disaggregation	☐	☐	☐	☐	☐		☐
b. gender analysis questions	☐	☐	☐	☐	☐		☐
c. gender-sensitive sampling	☐	☐	☐	☐	☐		☐
d. gender-sensitive research setup	☐	☐	☐	☐	☐		☐
Comments:							

Appendix C: Self-assessment <u>after</u> the training and evaluation

Dear participants,

Please help us by filling in the second self-assessment questionnaire (after the training). In addition to questions on your knowledge and skills, the questionnaire also includes evaluation questions (contents, methods, facilitation and framework conditions). Your feedback is very much appreciated.

Thank you for your kind cooperation!

Please indicate

a) Your sex: ☐ female ☐ male
b) Your experience in agricultural research: ☐ 1-5 years ☐ 6-10 years ☐ more than 10 years

A) Competencies

How would you rate your ability in terms of the following statements?

	Very high 5	High 4	Medium 3	Low 2	Very low 1		Can't answer 0
1. Ability to describe action research, farming systems and gender transformative approaches, and their relation with gender	☐	☐	☐	☐	☐		☐
Comments:							
2. Ability to distinguish main features of gender roles and gender relations	☐	☐	☐	☐	☐		☐
Comments:							
3. Ability to define the concept of inter-sectionality in relation to your research	☐	☐	☐	☐	☐		☐
Comments:							
4. Ability to apply gender concepts in your research							
a. gender roles	☐	☐	☐	☐	☐		☐
b. gender relations	☐	☐	☐	☐	☐		☐
c. intersectionality	☐	☐	☐	☐	☐		☐
Comments:							

	Very high 5	High 4	Medium 3	Low 2	Very low 1		Can't answer 0
5. Ability to explain basic principles of gender analysis in agricultural contexts	☐	☐	☐	☐	☐		☐
Comments:							
6. Ability to apply participatory gender analysis tools in cooperation with social scientists	☐	☐	☐	☐	☐		☐
Comments:							
7. Ability to outline the following principles in survey research							
a. data sex disaggregation	☐	☐	☐	☐	☐		☐
b. gender analysis questions	☐	☐	☐	☐	☐		☐
c. gender-sensitive sampling	☐	☐	☐	☐	☐		☐
d. gender-sensitive research setup	☐	☐	☐	☐	☐		☐
Comments:							
8. Ability to employ the following principles in survey research							
a. data sex disaggregation	☐	☐	☐	☐	☐		☐
b. gender analysis questions	☐	☐	☐	☐	☐		☐
c. gender-sensitive sampling	☐	☐	☐	☐	☐		☐
d. gender-sensitive research setup	☐	☐	☐	☐	☐		☐
Comments:							
9. I have identified entry points for an inclusion of gender analysis in my research work in cooperation with social scientists ☐ Yes ☐ No Please explain:							

B) Content

How far do you agree with the following statements?

	Strongly agree	Agree	Partly agree	Hardly agree	Disagree		No answer
1. The training topics are relevant to research in agriculture.	☐	☐	☐	☐	☐		☐
Comments:							
2. The training topics are comprehensive.	☐	☐	☐	☐	☐		☐
Comments:							
3. The training topics meet my needs.	☐	☐	☐	☐	☐		☐
Comments:							
4. I would have liked to focus more on ... (please name topics)							
5. I would have liked to add the following topics ... (please name topics)							
6. I would have liked to do less on ... (please name topics)							
7. What did you particularly like/dislike about the topics?							

C) Methods

How far do you agree with the following statements?

	Strongly agree	Agree	Partly agree	Hardly agree	Disagree		No answer
1. The training topics were clearly structured.	☐	☐	☐	☐	☐		☐
Comments:							

2. The methods used were suitable for helping me to learn.	☐	☐	☐	☐	☐		☐
Comments:							
3. The workshop provided me with adequate opportunities to participate..	☐	☐	☐	☐	☐		☐
Comments:							
4. What did you particularly like/dislike about the methods?							

D) Facilitation

How would you rate the facilitation in terms of the following aspects?

	Excellent	Good	Average	Fair	Poor		No answer
1. Performance of the facilitators in general	☐	☐	☐	☐	☐		☐
Comments:							
2. Time management	☐	☐	☐	☐	☐		☐
Comments:							

3. Consideration of my individual needs	☐	☐	☐	☐	☐		☐
Comments:							

4. What did you like?	dislike about the facilitation?
5. What should be improved?	maintained?
6. Further comments	

E) Framework conditions

How do you value the following aspects?

	Excellent	Good	Average	Fair	Poor		No answer
1. Group size	☐	☐	☐	☐	☐		☐
Comments:							
2. Group composition	☐	☐	☐	☐	☐		☐
Comments:							

3. Venue	☐	☐	☐	☐	☐		☐
Comments:							
4. Catering	☐	☐	☐	☐	☐		☐
Comments:							
What did you particular like/dislike about the framework conditions?							

Appendix D: Follow-up questionnaire after the training in gender analysis in agriculture

The objectives of this follow-up questionnaire are:

- To maintain the participants' competence and confidence in integrating gender analysis into research activities.
- To identify and (where possible) solve challenges that limit the application of knowledge and skills acquired during the training.

Questionnaire

Name of participant: _____

Sex: ☐ female ☐ male

Country of training: _____

Experience in agricultural research: ☐ 1-5 years ☐ 6-10 years ☐ more than 10 years

1. Which skills have you found useful in your work since returning from the training?
2. Which areas of the training have you shared with your colleagues?
3. Have you had a feedback conversation with your supervisor about the training? If so, describe it! If not, why not?
4. What has changed in your interaction/collaboration with the gender focal point in your organization since the training?

5. Which of the following gender concepts have you been able to consider in your research?			
Gender concept	Considered since training?	If so, how?	If not, why not? Problems encountered?
Gender roles			
Gender relations			
Intersectionality			

6. Which of the following gender tools have you been able to apply in your research?			
Gender tool	Applied since training?	If so, how?	If not, why not? Problems encountered?
Activity profiles, daily activity clocks, seasonal calendars			
Linkage diagrams			
Matrix ranking and scoring			

7. Which of the following standards for gender-sensitive surveys have you been able to employ in your research?			
Gender concept	Employed since training?	If so, how?	If not, why not? Problems encountered?
Sex-disaggregation of data			
Inclusion of questions for gender analysis			
Gender-sensitive sampling			
Gender-sensitive research setup			

8. Have you had any other difficulties applying the content of the gender training? If so, please describe!

9. Do you have any suggestions for how to address these challenges? If so, please specify!

10. Are there any additional resources or tools that you would need to carry out gender analysis? If so, please specify!

11. In view of your day-to-day responsibilities, what are your suggestions for improving the training and follow-up support after the training?

Thank you!

About Africa RISING

The Africa Research in Sustainable Intensification for the Next Generation (Africa RISING) program comprises three regional research-in-development projects supported by the United States Agency for International Development as part of the US Government's Feed the Future initiative. Inaugurated in late 2011 and currently in its second phase (since September 2016), the purpose of Africa RISING is to provide pathways out of hunger and poverty for smallholder farm families through sustainably intensified farming systems that sufficiently improve food, nutrition and income security, particularly for women and children, and conserve or enhance the natural resource base.

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