

# Bringing women innovators to the fore

Engaging in gender-responsive farmer-led innovation and research

## Guidelines for facilitators



*Benigna Mumbua, explaining her innovation to control mango fruit flies to a group of agricultural research and development staff of Makueni County, Kenya (photo: Chesha Wettasinha)*

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## Table of contents

ACRONYMS .....	3
ACKNOWLEDGEMENTS .....	4
1. WHY FOCUS ON WOMEN'S INNOVATION IN AGRICULTURE .....	5
2. PROMOTING FARMER-LED INNOVATION AND RESEARCH .....	5
3. INTEGRATING GENDER INTO FARMER-LED INNOVATION .....	6
a. Discovering, recognising and documenting local innovation .....	7
b. Designing and conducting farmer-led joint research .....	8
c. Shortcomings in integrating gender into farmer-led innovation .....	9
d. Contextualising the gender lens .....	9
4. HOW TO APPLY THE GENDER LENS IN FARMER-LED INNOVATION .....	13
a. Activity 1: identifying women's innovation .....	14
b. Activity 2: analysing, documenting and sharing women's innovation .....	18
c. Activity 3: Engaging women in farmer-led joint research .....	21
5. FACILITATING FARMER-LED INNOVATION PROCESSES .....	26
REFERENCES .....	28

## Acronyms

ARD	Agricultural research and development
SOFA	State of Food and Agriculture report of FAO
FAO	Food and Agriculture organisation of the United Nations
ISWC	Integrated soil and water conservation
INR	Institute of Natural Resources, South Africa
KIT	Royal Tropical Institute, Amsterdam (Dutch acronym)
LI-BIRD	Local Initiatives in Biodiversity, Research and Development, Nepal
CEDAC	Cambodian Center for Agricultural Studies and Development (French acronym)
KALRO	Kenya Agricultural and Livestock Research Organisation
INADES	African Institute for Social and Economic Development (French acronym)
PROLINNOVA	Promoting Local Innovation in ecologically oriented agriculture and natural resource management

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Many thanks are also due to PROLINNOVA partners across the world who have been discovering local innovators, documenting their stories and joining them in joint research to improve and scale sustainable, locally-adapted and site-specific innovations for sustainable agriculture. Their challenges in trying to better integrate gender into processes of farmer-led innovation development inspired us to develop these guidelines that could help them and many others in agricultural research and development.

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We hope that this publication will help many ARD practitioners as they seek to bring women innovators to the fore in their in family farming communities.

Chesha Wettasinha and Mona Dhamankar

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## 1. Why focus on women's innovation in agriculture?

In a world that is changing rapidly because of climate change and other factors, women seem to be taking on a still larger burden than before in ensuring that food is grown, families are fed adequately, and livelihoods are maintained and even improved. In 2011, FAO reported that women made up on average 43% of the agricultural labour force in developing countries, ranging from 20% in Latin America to 50% or more in East and Southeast Asia and sub-Saharan Africa. Women are involved in both crop and livestock production for subsistence as well as for the market. However, despite their substantial contribution to food and nutrition security, women are still disadvantaged on many fronts. FAO has continued to provide evidence of these facts in its publications, including its flagship “State of Food and Agriculture” (SOFA) report.

Women are continuously innovating, and this characteristic takes on even more importance as they are faced with new challenges that need quick responses. This is clearly demonstrated by the increased role that women play in innovation in small-scale family farming to adapt to climate change. In many areas of the world vulnerable to climate change, there is a trend of male out-migration, leaving women in charge of the family farms with limited labour and resources.

SOFA 2014 highlighted the importance of recognising and supporting innovation in family farming, and called for agricultural research and extension institutions to shift from a research-driven process predominantly based on linear technology transfer to an approach that enables and rewards innovation by family farmers themselves.

Despite this call to action, it remains a challenge for agricultural research and development (ARD) service providers to change their mindsets and to recognise the creativity of small-scale family farmers as innovators and their innovations as relevant for engagement with formal research institutions. The challenge becomes even greater when it comes to identifying women's innovation, and supporting women as innovators.

## 2. Promoting farmer-led innovation and research

**Local innovation**, also called **farmer innovation** when referring to agriculture, is the process by which men and women in a given community develop new and better ways of doing things, using their own resources, on their own initiative and without support from external service providers. Local innovation can be triggered by many factors. A farmer might explore new possibilities merely out of curiosity. More often, though, it is a way of responding and adapting to changes in the condition of natural resources, availability of assets, markets and other socioeconomic and institutional contexts brought about by demographic trends, higher-level policies, natural disasters, climate change and other external influences, positive or negative. Local innovation often occurs in the face of new challenges or opportunities and usually involves informal experimentation by the resource users.

*The term “farmers” refers here to small-scale peasant or family farmers, pastoralists, fishers, forest dwellers, artisans and processors who operate at a local level and are involved in activities related to agriculture and natural resource management, often in marginalised communities.*

The outcomes or products of this innovation process are **local innovations**. These may be developed by individuals or groups of men and/or women or by entire communities. The innovations may involve new techniques for farming or using natural resources, new ways of organising farming

(production, processing or distribution/marketing aspects) or other resource management activities, or changes in behaviour of the resource users. In other words, the innovations may be technical or socio-institutional, including policy change at local level, such as new bylaws for using natural resources. Such local innovations are new for a specific locality but could well have been used or practised elsewhere.

Identifying local innovations is a way of finding out what farmers themselves are doing to solve their problems or grasp opportunities that arise in their environments. Once identified, these local innovations are excellent entry points for further research that is conceived and led by farmers and supported by external ARD stakeholders such as formal researchers, agricultural advisors and other development agents. In this process, called **farmer-led joint research** or **participatory innovation development**, farmers play a leading (or equal) role supported by other ARD actors who bring in different inputs and expertise in planning and implementing the research and in evaluating the process and its findings.

Farmer-led joint research based on local innovation is an approach to developing locally appropriate technologies and systems that address the challenges that small-scale farmers face. It focuses on the creativity and strengths of small-scale farmers and helps them value their own knowledge, ideas and skills. External ARD stakeholders who engage in the process acquire a greater appreciation of local capacities. Mutual respect is built among all partners in the process. The solutions that come out of joint research are less costly and more site appropriate than most outputs from conventional agricultural research and have good potential for uptake by small-scale farmers.

*PROLINNOVA has pioneered and promoted the farmer-led innovation development approach for two decades. It is an NGO-initiated international network and community of practice that promotes local innovation processes in ecologically oriented agriculture and natural resource management. It focuses on recognising the dynamics of indigenous knowledge and enhancing capacities of family farmers (including pastoralists, fishers and forest dwellers) to adjust to change – to develop their own site-appropriate systems and institutions of resource management so as to gain food security, sustain their livelihoods and safeguard the environment. The essence of sustainability lies in the capacity to adapt.*

*The network builds on and scales up farmer-led approaches to participatory development that start with finding out how family farmers create new and better ways of doing things. Understanding the rationale behind local innovation transforms how agricultural researchers and advisors view local people. This experience stimulates interest on both sides to enter into joint action. Local ideas are further developed in a process that integrates indigenous and scientific knowledge. Joint action and analysis lead to social learning.*

*Source: [www.prolinnova.net](http://www.prolinnova.net)*

### 3. Integrating gender into farmer-led innovation

In reflecting on the experiences and achievements of ARD practitioners involved in supporting farmer-led innovation, it is evident that there is still a lack of adequate attention to women's innovation – not only in recognising and supporting women as innovators but also in building on women's innovations through farmer-led joint research. There have been attempts to improve the capacity of partners who work at community level (rural advisors, researchers, development workers) to integrate gender into their work in supporting local innovation and farmer-led joint research, but – as much as they know the theory and have attempted to take small steps in this direction – many partners still feel handicapped in doing this “hands-on”.

### a. Discovering, recognising and documenting local innovation

Small-scale farmers – men and women – are seldom aware that they are innovators; for them, finding better ways of doing things is part of their daily farming activities and often the only means to survive. Therefore, they seldom talk about their innovations. This is especially the case among women, who often consider themselves simply as spouses or mothers or helpers to men and rarely acknowledge their roles as farmers, let alone as innovators. In many rural societies, the work that women do, whether domestic or productive, is treated as insignificant work by men and communities, and accorded lower status. Thus, women often have low self-esteem and shy away from taking credit for their ideas or achievements. Low levels of formal education, time and mobility constraints, and resource limitations add to this negative image carried by women farmers and hinder them from coming forward to share anything new that they have developed.

When ARD facilitators, such as rural advisors and development workers, are tasked with identifying local innovation, they tend to rely on their regular patterns of interaction within communities. This often consists of quick field visits, talking to known key informants, and interacting with farmers who are generally visible and vocal in the communities and easy to access, mostly male farmers with better access to resources. Even though ARD facilitators have become more participatory in their work, they still seem to have a male bias in their interactions with community members and often end up identifying male innovators.

#### **Some ways to identify local innovators**

**Observation:** Walk to the farmhouses and fields; new things you see may be local/farmer innovations.

**Identification by key informants:** Ask key informants (e.g. development agents, local leaders) in the area for the names of farmers whom they regard as local experts, and look for and talk with these people.

**Chain or “snowball” interviews:** Visit farmers who have been identified by key informants as very creative and often trying out new things. Talk with them about their innovations and informal experiments. Ask these farmers for the names of other innovators/experimenters they know of in the area and go and visit these people, and continue along the chain to find other innovative farmers.

**Reconstructing innovation:** Ask a group of farmers to list one or more innovations that have been developed in the last ten years and are relevant for most farmers in the area; ask them to identify the farmers who played an important role in introducing, adapting or developing these innovations, and go and talk with these farmers.

*Source: adapted from PROFIEET (2005)*

Therefore, it requires conscious and deliberate action on the part of ARD facilitators to discover women who are innovators in their own right. This would imply breaking away from their familiar patterns of interaction – who they talk to, what time they select for visits, what questions they ask, what methods they use for collecting information and with whom etc. – and exploring other, less familiar avenues. ARD facilitators need to be mindful and resourceful in finding ways to overcome some of the common challenges in engaging with women, such as finding an appropriate time and space for meetings, and overcoming socio-cultural barriers or illiteracy in order to identify innovators among the women.

Acknowledging women as local innovators and documenting their experiences can go a long way in encouraging their creativity and enhancing their confidence and self-esteem. For ARD service providers, this process helps reinforce the realisation that farmers are creative individuals.



Documenting stories of innovators and the process of innovation offers the possibility to share these innovations with a larger group of stakeholders, including fellow farmers, rural advisors, development workers, research scientists, policymakers and others, within and beyond the innovators' communities. These stories become a source of inspiration for fellow farmers, including women, who are stimulated to try out new things; for external ARD stakeholders who begin to value local innovation and partner with innovators; and for the innovators themselves, who grow in confidence. Here, again, ARD facilitators need to be conscious of factors that often prevent women from participating in the sharing events, more so if these events would require travelling far from the women's homes. The facilitators need to find ways to overcome these constraints so as to ensure that women innovators are given equal opportunities to share their own experiences and to learn from others.

## **b. Designing and conducting farmer-led joint research**

The purpose of identifying and giving recognition to local innovation is not only to recognise the creativity of small-scale farmers, but also to encourage external ARD stakeholders to interact with and build on the research that the farmers are already doing.

The issues that small-scale farmers address in local innovation are those that are relevant to them. Using these as entry points for joint research maintains the farmers' motivation and interest. In joint research, one or more external ARD stakeholders – such as rural advisors, development agents and/or research scientists – combine their efforts with those of farmers to improve/adapt local innovations or develop new ones. In this collaboration, farmers play a leading or at least an equal role to the other (non-farmer) partners in selecting innovations for further investigation, in planning and implementing the research, and in monitoring and evaluating the research process and results. This process also entails strengthening farmers' capacities, and facilitators need to give particular attention to strengthening the capacities of women farmers – young and old.

Engaging in farmer-led joint research – and especially if led by women farmers – is often a difficult role reversal for many external ARD stakeholders, who are used to doing research on behalf of farmers and, if working with farmers in on-farm experiments, dealing mainly with male farmers. However, the farmer-led approach provides an opening for joint exploration and learning that is embedded in local realities, driven by farmers' interests and with the potential to produce research outputs that are taken up by other small-scale farmers. The process leads to improved innovative capacity among farmers and hence their ability to cope with and adapt to changing conditions.

Therefore, ARD facilitators who engage in farmer-led joint research have to learn to work in ways that they are not accustomed to. Often they have to give up control over certain aspects of research in order to let farmers take the lead and make decisions. It is therefore not surprising that many external ARD stakeholders (many are still male) who start to take this approach initially choose the less challenging option of working with male innovators in joint research: men's innovations are easier to identify as they are more visible; male farmers are often more vocal and seem better able to articulate their ideas for further research; they have lower inhibitions in working with people coming from outside the community; male farmers often have more formal schooling than women and thus are perceived by the outsiders as more capable research partners.

Thus, engaging with women innovators in joint research is a challenging activity and one that needs far more attention than it has been given thus far. ARD facilitators need to be flexible, resourceful, patient and mindful of women's specific circumstances and constraints in order to engage with them in joint research.



### c. Shortcomings in integrating gender into farmer-led innovation

Examination of some of the documented experiences of ARD practitioners who are engaged in farmer-led approaches to research reveals that they have encountered challenges in trying to integrate gender into farmer-led innovation and have fallen short on several counts:

- So far, most of the innovations that have been identified and documented are those by men; relatively few women's innovations have been recognised/considered;
- Only a few innovations, particularly in domains where women are more involved (e.g. small-scale livestock keeping, processing and marketing crop and animal products) have been identified and documented;
- Not many women's innovations have been selected for farmer-led joint research;
- The contributions of women in farming households and communities, including their contributions to men's innovation, are rarely taken into consideration; moreover, there have been no studies on the effects of either men's or women's local innovation on both men and women as persons;
- There has been little analysis of how the process of farmer-led joint research and its outcomes have an impact on the situation and roles of local women and men, young and old;
- Factors that inhibit women's participation in processes of local innovation and farmer-led joint research have been inadequately examined and addressed (e.g. lack of access to land and other resources, domestic commitments, low contribution to decision-making in the community).

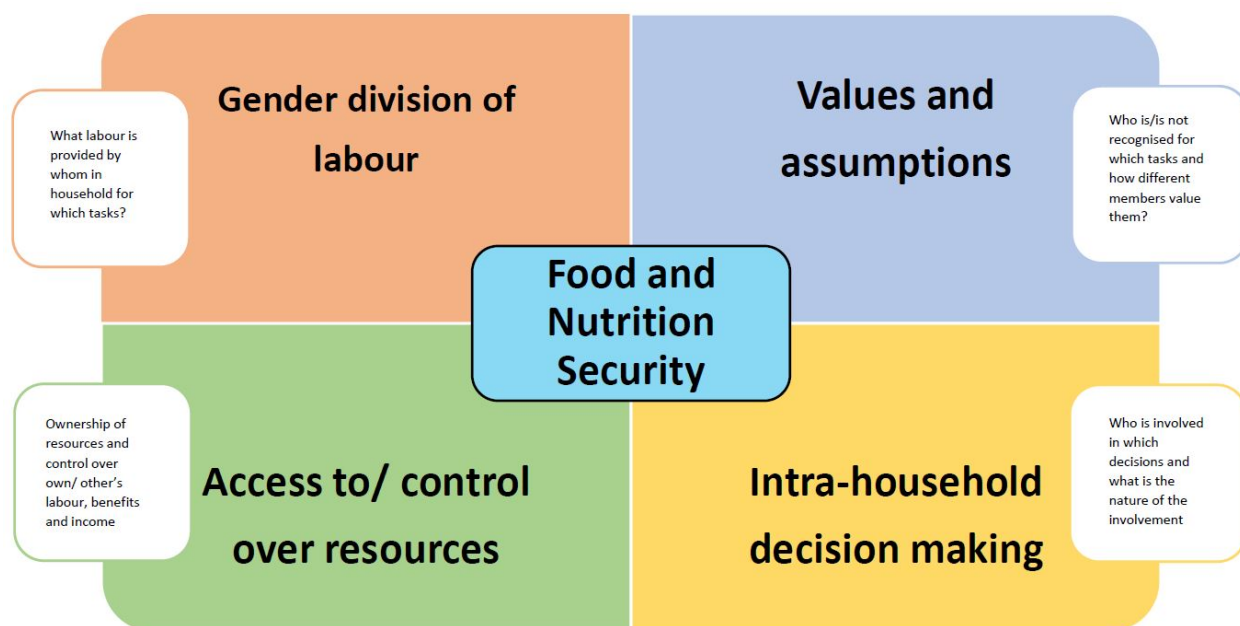
### d. Contextualising the gender lens

A gender lens attempts to make gender visible in social processes and allows for interrogation of why social processes differ systematically for men and women. The underlying assumption of the gender lens when applied to agriculture is that both men and women contribute to farming in the subsistence as well as commercial sphere (van Eerdewijk & Danielson, 2015). However, there are differences in what men and women are expected to do, to have or to decide, and in the challenges they face while contributing to farming. These differences are further influenced by demographic/social categories such as age, ethnicity, location (urban/rural) or religion. Also, women do not form a homogenous group with similar needs, wants and challenges, nor is the nature of their farming activities the same. Therefore, a gender lens is useful to highlight all these aspects while supporting local innovation.

*Gender goes beyond the biological differences between the sexes. It defines what it means to be a man or woman, boy or girl, in a given society and how that influences the roles, status and expectations within households and communities, and how it varies across contexts. These roles and expectations are not static – they evolve and change over time.*

In practice, it is important to consider the following at household and community level:

- Labour allocation and the roles that men and women play in agricultural production and consumption;
- Access to and control over resources and benefits that men and women have in relation to subsistence and/or commercial agriculture and off-farm activities related to agriculture;
- Intra-household decision-making, particularly about production and consumption;
- Norms, values and assumptions that shape what people are supposed/expected to do (conventional roles), their access to resources (assets, services, knowledge and time), and how decisions are made in relation to food production and consumption.



(Source: Gender relations framework, adapted from van Eerdewijk and Danielsen, 2014)

### **Gender division of labour**

Tasks that need to be done at the different stages of production/value chains can affect labour allocation patterns, and can also influence access to information and use of technology. This calls for insight into who does what in the household, on the farm, in the market and in the community. It is also important to understand in what capacity they carry out these tasks in the different spaces, e.g. as owners, managers, decision-makers, labourers etc.

Although women mobilise labour in different ways – from within the household, from their affinity groups or from the market – in all three situations, their access to labour, compared to men, is curtailed by gender roles, including allocation of household reproductive tasks such as cooking, cleaning, caregiving etc. Women often work as unpaid agricultural labourers, self-employed producers, on- and off-farm workers, entrepreneurs, traders, service providers and innovators – but they are mostly invisible in these roles and their contribution to production often goes unnoticed.

Women's inputs to farming labour, including laborious work such as weeding and post-harvest processing, is often overlooked, as well as recognition for preparing food, collecting fuel and water and the myriad of other household tasks they perform. The time women spend on different tasks, as well as the lack of recognition for these tasks, influences women's capacity to provide care and the conditions in which they prepare food (i.e. availability of clean water), which influences their role in nutrition security.

Lack of attention to women's domestic tasks jeopardises the availability and diversity of food crops for household consumption. These are often the crops that women prefer and have control over. If women had as much access to productive resources as their male counterparts, they would certainly be able to produce more food, both for family consumption as well as for sale. In addition, the push towards commercialisation in agricultural production is leading to women's preferred crops getting lower priority and diminishes their control over the choice of crops.

***Gender division of labour entails analysis of:***

- *productive tasks (in relation to crop farming including vegetable/backyard gardens, livestock keeping and other income-generating activities), reproductive tasks and community-related roles;*
- *tasks related to different stages of the farming cycle, from land preparation to post-harvest;*
- *types of task and amount of labour provided by different household members of all ages, male and female.*

### ***Gendered access to and control over resources***

Gender differences with respect to resources are often tied to lack of access to relevant knowledge and inputs. Either because of social norms or by inherent bias in the design of programmes, women usually have less access to information and advisory services, which influence the use and adoption/adaptation of new technologies and farming practices and also stimulate local innovation.

Gender disparities are visible throughout production/value chains, as women farmers have poor mobility and access to markets, and often receive lower prices for produce. It is important to know who actually sells the farm produce and what happens to the income thus generated. Women's control over income and assets can affect their nutritional status, which in turn is based on their spending decisions and the social networks and cultural norms that influence those decisions. Usually, when activities become profitable, men have a tendency to take over women's activities and the women lose control. The risk of male capture of resources and benefits can have a negative effect on women's innovation and adoption/adaptation of new practices and/or technology.

***Gendered access to and control over resources includes ownership and access to land and other productive resources such as trees and plants, agricultural tools and equipment and draft animals.***

*Inputs for farming are also important resources and can include seeds, fertilisers, water, fuel, fodder as well as credit, but also knowledge, information and advisory support.*

*A key resource in terms of control is labour, both one's own and the labour of others in or outside the household.*

*Control over benefits and income is of critical relevance.*

*Other potentially relevant resources include access to groups and organisations, as well as access to and control over media such as radio, TV and mobile phones.*

A common perception held by development practitioners is that it is difficult to increase women's control over family income derived from primary production. Therefore, most development programmes focus on creating additional income-generating activities for women. However, such programmes often fail to consider the "invisible" ways in which women contribute to family income within the household, carrying out both domestic and agricultural tasks (including subsistence farming). Hence, additional activities introduced to support women in earning their "own" income may mean an increased burden for them in terms of time and labour. Understanding these multiple tasks of women in agricultural production, their access to resources to perform these tasks, and the recognition they receive for their contribution are important when facilitating initiatives to increase food and nutrition security of families and communities.

### ***Intra-household decision-making***

At the household level, decisions related to production, sale and consumption are important in relation to food and nutrition security. Households do not act in a unitary manner when making decisions or allocating resources. Women and men within households do not always have the same preferences and needs. Intra-household decision-making also defines the type of innovation that men and women would undertake.

In relation to food and nutrition security, family consumption decisions made by women rather than men are likely to lead to higher dietary diversity, which makes it more probable that a household will be food and nutrition secure and will have a varied diet. This indicates the role women could play in enhancing the quality of food consumed by the family if they are empowered and have access to more resources. Moreover, women's knowledge of nutritional benefits of different crops and their involvement in food preparation would influence crop selection and allocation of household budgets towards high-quality foods for the family. Food processing and preparation are areas in which women are constantly innovating but often invisibly.

*Intra-household decision-making is strongly related to control over resources, but merits separate attention in order to be able to see how control over resources affects decision-making and power within the household.*

*It includes decision-making related to acquiring or selling assets, labour allocation and use of income and benefits.*

*Analysis of intra-household decision-making seeks to shed light on who is involved in which decisions, and also seeks to unpack the nature of that involvement.*

*It is important to look not only at dominant norms but also at how people deviate from and renegotiate these norms.*

Gender relations and intra-household decision-making processes affect technology adoption. For example, because women's time is less valued within male-dominated households, these are more likely to decide to invest in and adopt technologies that save men's time. Nonetheless, women might have their own innovation processes to save their time and effort.

### **Values and beliefs**

Gender norms, values and beliefs draw upon and reinforce widely held gender stereotypes, which are context specific. An important consideration while looking at local innovation is to assess the value afforded to it, depending on who in the household is engaged. With respect to women, this calls for insights into the extent to which their labour is recognised, whether their initiative is encouraged and the value given to it. This requires a deeper understanding of key assumptions undergirding the gender division of labour. In addition, other strong values and norms affecting women's roles, constraints and opportunities can come to the fore. These can include norms related to women's involvement in financial transactions, women's mobility and their access to resources and information. With respect to local innovation, special consideration is required for assumptions around women's engagement in experimentation, use of technology and machines, and the cultural acceptability of their innovations.

*Values and beliefs related to gender refer to a set of social rules and assumptions about what men and women should do, how and with what resources, and the status of individuals and their relative value in society.*

*They draw upon and reinforce gender stereotypes, which are widely held and idealised beliefs about women and men, and are constantly changing.*

*Analysis of values and beliefs requires insight into the extent to which women's and men's labour is recognised, as well as insight into how it is valued.*

Gender analysis supports facilitation of local innovation development based on an understanding of what women and men consider as innovation: what they need in order to innovate, how they contribute to innovation processes led by women and by men, what constrains and what facilitates their participation in joint research processes and what support they, particularly women, require to

function optimally as innovators and experimenters who are supported by their families, communities and other ARD stakeholders.

The gender lens, as described above, can be used to undertake gender analysis of local innovation and farmer-led joint research at every stage in the continuum – identifying local innovation and innovators, documenting and sharing local innovations and the process of innovation, engaging in farmer-led joint research to improve or validate local innovations, and evaluating the results and process. Such analysis would focus on a broader analysis of labour allocation, resource use and intra-household decision-making and how these dimensions are affected by social norms, values and assumptions, and in turn how all these dimensions affect local innovation and farmer-led joint research.

With reference to local innovation, the analysis would elaborate whether and how the identified innovation has affected the division of labour (of the innovator and others in the household or community), whether and how it has impacted access to and control over resources within the innovator's household, whether decision-making patterns have changed and how the innovation has affected the innovator and others in the household, who benefits from the innovation and how. Similarly, the gender lens could be used to analyse how men and women are differentially affected in the different stages of the farmer-led joint research process – designing and planning experiments, executing and monitoring them, and evaluating and sharing the outcomes and process.

#### 4. How to apply the gender lens in farmer-led innovation

Local/farmer innovation can be used as an entry point to make both women and men farmers realise the economic and social benefits of improving (and transforming) gender relations and intra-household dynamics. It can also be used as a means to change perceptions and attitudes of external stakeholders in ARD to recognise both men and women as creative sources of good ideas.

This guide emphasises facilitation of local innovation based on an understanding of these four dimensions that influence what women consider as innovation: i) what they need in order to innovate themselves; ii) how they contribute to innovation processes led by men; iii) what constrains and what facilitates their participation in farmer-led joint research processes; and iv) what support they require to function optimally as women innovators and experimenters who are supported by their families, communities and other ARD stakeholders.

It provides guidance to facilitators on how to incorporate a gender dimension into the activities of recognising, analysing and documenting local innovation, and co-designing and facilitating farmer-led joint research. For ease of use in daily work, the activities have been subdivided into: i) identifying women's innovation; ii) analysing, documenting and sharing women's innovation; and iii) engaging with women in joint research as shown in Table 1 below. There are pointers for considering gender in each type of activity as presented in the schematic below and detailed thereafter.

**Table 1: Activities to incorporate a gender dimension into farmer-led innovation processes**

Activity 1	Activity 2	Activity 3
Identifying women's innovation	Analysing, documenting and sharing women's innovation	Engaging women in farmer-led joint research
How to find women innovators	How to be gender sensitive in analysing local innovation processes and results	How to get more women to engage in joint research
<ul style="list-style-type: none"> <li>Seek information from community</li> </ul>	<ul style="list-style-type: none"> <li>Describe the separate inputs/</li> </ul>	<ul style="list-style-type: none"> <li>Give priority to women's innovations and</li> </ul>

<ul style="list-style-type: none"> <li>workers who work closely with women, especially women-headed households</li> <li>Look for women who are doing things differently than their mothers and grandmothers did</li> <li>Look for women who appear to be active in more male-dominated aspects of agriculture or in related structures</li> <li>Engage with women in spaces where they congregate, share, socialise and work together and use women's organisations as entry points</li> </ul>	<ul style="list-style-type: none"> <li>contributions of men and women in any given local innovation</li> <li>Find out how the local innovation affects men and women, positively or negatively</li> </ul>	<ul style="list-style-type: none"> <li>their areas of interest for further research</li> <li>Use criteria suggested by women for screening innovations for farmer-led joint research</li> <li>Find research partners who are interested in topics of interest to women</li> </ul>
<b>How to find women's innovation</b>	<b>How to give recognition to women innovators</b>	<b>How to ensure that women participate in and benefit from farmer-led research</b>
<ul style="list-style-type: none"> <li>Look for less obvious aspects of farming when visiting a household/ community</li> <li>Pay more attention to so-called women's activities</li> </ul>	<ul style="list-style-type: none"> <li>Document the stories of women innovators</li> <li>Involve women innovators in documenting their own stories</li> <li>Select and support women innovators to share their experiences in relevant events and through various channels</li> </ul>	<ul style="list-style-type: none"> <li>Engage both women and men in the design and process of the experiment</li> <li>Address the specific challenges to women's involvement in experimentation</li> <li>Use criteria of both men and women in evaluating the joint experiment and its benefits</li> </ul>
		<b>How to enable women to share their experiences</b> <ul style="list-style-type: none"> <li>Create spaces where women who experiment can share their experiences</li> </ul>

## Activity 1: Identifying women's innovation

### a. How to find women innovators

#### **Seek information from community workers who work closely with women, especially women-headed households**

Due to the nature of their work, community workers such as midwives, public health workers and primary school teachers tend to have closer relationships with women within farming households. They could be good sources of information in finding out about women who are involved in informal innovation and experimentation, particularly related to family food and nutrition.

#### **Female teachers and students scout for women innovators in rural Tunisia**

*In Tunisia, male researchers and development agents from outside the area are usually not permitted to talk with village women. As the team from the Integrated Soil and Water Conservation (ISWC) project at the Institut des Regions Arides was composed at the time exclusively of men, it was decided to ask female teachers and students returning to their villages for the long summer holidays to identify rural women's innovation. The ISWC team trained 15 women to document the role of women in farming and processing agricultural produce. Within two months, they managed to identify 31 female innovators.*

*Source: Nasr et al, 2001*

Women-headed households are not uncommon in many rural communities, especially in those areas affected by conflict, disaster, migration of men for work etc. Women are left alone to look after their families as well as their crops and livestock. Such women become more creative simply out of necessity and in order to survive. They are often forced to take on tasks that are considered men's tasks and, in so doing, to be seen as women who break societal norms and, in some instances, may also be marginalised within their communities. Women in such situations become more adept at fending for themselves and unwittingly come up with social and institutional innovations. Thus, when looking for women innovators, this is a category to be given attention. At the same time, there



might be resourceful and creative women in male-headed households as well – especially in (but not limited to) those households where the man is not very active or is absent.

#### **Guiding questions**

- *Who are the different community workers and service providers in the village? What do they do?*
- *With whom do they interact? Which target categories (men, women, young men, young women, women-headed households etc.)? Individually or in groups?*
- *Which women in the community take part in activities organised by these community workers and service providers?*
- *Are there any female-headed households? Which activities are these women engaged in? Are they carrying out activities related to food, nutrition and natural resource management different from other women in the community?*
- *Are there women in male-headed households carrying out activities similar to those in female-headed households? Why?*
- *Who shares information about women's innovations? How does the community/society at large view women innovators and their innovations?*

#### **Look for women who are doing things differently than their mothers and grandmothers did**

In many rural homes, women continue to do things as dictated by tradition and social norms. These could be in their kitchens, home gardens, fields - in the crops they grow, animals they keep, how they store and process grain or milk, the food they cook and the ingredients they use etc. However within farming communities, there are also some women who break out of tradition and try out new things. This could be because of changing circumstances, resources/inputs becoming scarce, pests or diseases or other such problems that need to be dealt with.

#### **Susan – the female butcher in Mangala/ Muua village, Makueni County, Eastern Kenya**

*Susan is a single mother who has gone against societal norms to build her livelihood. She owns and runs a butchery and eatery in addition to a grocery shop she inherited from her father. Women slaughtering animals is considered a taboo in Kenya, as slaughtering is a man's domain, so it was a tough decision for Susan to get into the butchery business. At first, there was resistance from the community but she persisted and, within a year, her business prospered. At the start, she did the slaughtering herself but she now employs a man to slaughter the animals and helps him when required. Susan says that her customer base is growing as many people find her butchery to be cleaner than others in the area. She has been continually improving her business to meet the needs of her customers. For example, she has invested in a digital scale so that she can weigh and sell small portions of meat, as low as 50 Ksh worth, which helps to cater to customers who can't afford large quantities.*

*Source: Chesha Wettasinha, KIT, personal communication*

#### **Guiding questions**

- *Which crops are grown traditionally in the area? Which livestock are traditionally kept?*
- *Which women grow "different" crops and/or keep "different" livestock?*
- *Among women growing crops and/or rearing livestock, do you notice any women doing things differently from other women or men? Who are these women? What are they doing differently? And why?*
- *Do their innovations challenge existing values and beliefs? How?*

#### **Look for women who appear to be active in more male-dominated aspects of agriculture or in related structures**

There are a few women in nearly every community who stand out from the rest because they have challenged existing gender roles/positions and entered into spaces that are considered the domain



of men and/or are functioning successfully in male-dominated activity groups. This could be in cash cropping, keeping large livestock or accessing resources such as land or trees. Talking with such women on how they acquired access to these spaces/positions would most likely lead to identifying some form of innovation and provide clues on how women innovate.

***Mam Joyce Dlamini – challenging gender roles in a rural community***

*Mam Joyce Dlamini is an active member of a male-dominated livestock association and also an innovator. She has experimented with conservation agriculture, having listened in to conversations of male commercial farmers at various meetings and having seen their activities “from the road”. She has been instrumental in spreading her knowledge within the local smallholder community.*

*Mam Joyce has been involved in joint experimentation in agroforestry systems with the Institute of Natural Resources (INR), Pietermaritzberg, South Africa.*

*Source: Brigid Letty, INR, personal communication*

**Guiding questions**

- *Are any women involved in activities routinely carried out by men or deemed “men’s” activities? What are these activities? How did women get to do these activities?*
- *Who are these women? And what are they doing differently as compared to other women or men? Why?*
- *Has the innovation brought about changes in existing beliefs and values within the community? In what way?*

***Engage with women in spaces where they congregate, share, socialise and work together and use women’s organisations as entry points***

In most rural communities, there are informal spaces where women get together to talk, share and support each other. These could be, for example, women who join up to collect wood, water or fodder; churn butter or press oil collectively; or take their produce to market together. In many of these activities, it would not be uncommon to discover technological as well as social innovations through which women have tried to reduce their drudgery, save time, improve family nutrition and increase their incomes. Women who have formed groups, traditionally or through external facilitation, are common in farming communities. Savings and credit, processing and marketing are common themes for women’s groups. These groups could serve as platforms to get to know the women in a community better and thereby to scout for innovators amongst them.

**Guiding questions**

- *Where do women get together? How often do they gather? What do they do together?*
- *Do any women stand out in these groups/gatherings? What makes them stand out? What do other women have to say about them?*
- *Are there any producer and/or women’s organisations or informal groups in the area? What are the membership criteria?*
- *Which categories of women are members of those organisations/groups? Are there women who are left out of these organisations/groups; if so, why?*
- *Are there any women who do not join the other women? What prevents them from joining?*
- *Has being a member of these organisations or groups helped the women to find new ways to deal with their challenges? How?*

## **b. How to find women's innovation**

### **Look for less obvious aspects of farming when visiting a household/community**

When outsiders such as ARD practitioners and development agents visit a rural community, the conventional pattern of interaction is that a local man (or several men) welcomes the visitors, leads them through the farms and talks about what is prominent and visible. These discussions are often about cash crops, large livestock and other activities that men engage in and have control over. The activities in which women are involved – in the homegardens, backyards and community commons with subsistence crops and small livestock – are usually considered insignificant in the eyes of men and would generally not be brought up in such conversations. Unless ARD facilitators take the time and make the effort to find ways to interact with women during such visits and to steer the conversations into directions that interest women, they would not be able to find out about the less visible aspects of farming in which women are involved. This would also require the visitors to find ways to venture into parts of the farm(s), gardens or village that are not in the itinerary and to ask questions that can reveal the “invisible” activities of women.

#### ***Homegarden innovations of widow in Konyango East, Kenya, impacts the whole community***

*Rebecca Auma Derois is a widow who lives in Konyango East, Kisumu County, Kenya. Water is becoming an increasingly scarce resource in this dry region of Kenya. Rebecca has been thinking of various ways to make the best use of water. She has several rain collectors and has come up with a new way of drip-irrigating her sack garden to optimise the use of water. Sack gardens have been promoted by various NGOs in the area, but not all plants in a sack get sufficient water, which tends to seep quickly to the bottom. Rebecca put a column of stones and pebbles in the middle of the sack in order to spread the water evenly through the whole sack, thus providing moisture for all the plants. She is also trying out new, more nutritious varieties of vegetables that can tolerate drought. According to Rebecca, these are vegetables that were used by her grandmother but have now disappeared from diets. Not only is she trying to revive these crops, she is also sharing seeds with other women in the area, who are also following her example. Rebecca is also a community health volunteer in the area and is using her interactions with women to share her innovations and to stimulate them to set up sack gardens with drip irrigation and to grow vegetables for the family.*

*Source: Chesha Wettasinha, KIT, personal communication*

#### **Guiding questions**

- Which activities do men show/talk about? Which of those activities do men carry out? Which of those activities do women carry out?
- Which activities do women show/talk about? Which of those activities do men carry out? Which of those activities do women carry out?
- What strikes you as ‘new’ or ‘different’ around the house/homestead? (Observe) Who is responsible for these different things?
- What resources were used to develop these new/different things? How were they accessed? (ask both men and women)

#### **Pay more attention to so-called women's activities**

In many rural communities, there are certain farming activities that are done almost exclusively by women. These are referred to as women's activities and usually relate also to the domestic roles of women. They are often in harvesting and storage, processing and value addition, seed preservation, cooking and food preservation, keeping small livestock, marketing of crop and livestock products etc. Getting better acquainted with these activities enables ARD facilitators to discover new and creative

ways that women have found to deal with challenges, grasp new opportunities, find resources to fund new initiatives etc.

***Portable stove innovation of woman in Kisumu, Kenya, makes cooking easier and cheaper***

*Eunice Ayieko developed a compact portable “jiko” made out of baked clay that is very handy for women, as it can be moved around. It is light in weight, very durable and fuel-efficient. Eunice claims that it is far more durable than the jikos sold on the market. Moreover, it is considerably cheaper than the commercial equivalent. Eunice has been teaching many women in her village to build similar stoves, and many of the women are using them. Eunice has made changes to the stove designs so that they use even less fuel and are smoke-free. When asked whether she would want to turn this into a business, she responded that she prefers to teach others how to build improved stoves, as that gives her a lot of satisfaction.*

*Source: Chesha Wettasinha, KIT, personal communication*

***Guiding questions***

- *Which activities are considered as “women’s activities” in this community or household?*
- *How do women carry them out? Are some women doing things differently? How are they different from what was done by their mothers, grandmothers or others? Why have they embarked on such activities?*
- *How has this new way of doing things affected women and girls in the households? How has it affected men and boys in the households?*

**Activity 2: Analysing, documenting and sharing women’s innovation**

**a. How to be gender sensitive in analysing local innovation processes and results**

***Describe the separate inputs/contributions of men and women in any given local innovation***

A common oversight of facilitators when examining a local innovation is to focus mainly on the contribution of the main innovator – man or woman. In reality, however, in farming households, innovations are generally not developed by one person alone. There are inputs of others in the household that need to be recognised and documented, as this would give a more accurate understanding of how the local innovation took shape. These inputs could be at any stage of the innovation process and could be minor or substantial. Thus, a facilitator needs to probe deeper into every stage of the process to elicit the contributions of not only the main innovator, but also others in the family and even the community. Such an analysis will ensure that the contributions of both men and women, young and old, are captured.

***Guiding questions***

- *Who led/is leading the innovation process? Who else was/is involved in this process?*
- *If men were/are leading, what were/are women’s contributions? If women were/are leading, what were/are men’s contributions?*
- *At which stages in the process did/do women and men contribute? What were/are their separate contributions? How much labour did/do men/women provide?*
- *Has the innovation increased/decreased the workload of men or women in the household? How? To what extent?*

***Find out how the local innovation affects men and women, positively or negatively***

Any local innovation will have effects – positive or negative – on the innovator as well as on others in the household or even the community. In promoting local innovation, it is important for facilitators

to analyse the effects that an innovation has on both men and women in order to decide whether and how to intervene and support the process further. Women, young and old, in rural households have an enormous workload, as they handle most of the domestic tasks in addition to farming activities. Sometimes, local innovations could add to this already heavy burden. A local innovation in which animals are stall-fed instead of being grazed could increase the workload for women and girls who are tasked with collecting fodder and water for the animals. A collective marketing innovation could, on the other hand, relieve women of having to take their produce to market daily, save them time and energy, and increase their bargaining power. It is therefore important for facilitators to assess how a local innovation addresses the specific constraints of women in order to ensure that women are not adversely impacted and, wherever possible, can benefit.

***Dairy goat meal innovation has positive effects on both women and men in Ogili, Kenya***

*Joe Ouko lives in Ogili Village in Kisumu County. He developed a dairy goat feed through trial and error over a period of time in order to find a healthy, well-balanced and nutritious meal for his stall-fed goats. His innovation was also meant to deal with the challenge of prolonged drought because of climate change, leading to a lack of sufficient fodder in the dry season. Joe came up with the idea of harvesting and drying the leaves that are abundant for a short period after the rains. He then mixed the chopped grass with leaves from a variety of drought-tolerant shrubs and trees that grow freely in this landscape and are preferred by goats. Before embarking on research to further improve this innovation, members of Prolinnova's local multistakeholder platform analysed its effects on different members of the community. The innovation had an overall positive effect on both men and women, young and old. It provided a solution to the dry-season fodder problem, which was experienced by all family members. For the women and men who purchase the goat feed, their workload in fodder collection, especially in the dry season, was greatly reduced.*

*Source: Chesha Wettasinha, KIT, personal communication*

**Guiding questions**

- Which decisions do women make in regards to the innovation? Which decisions do men make?
- Has the innovation changed the workload of men and women? How?
- Is the innovation leading to any saving in time, resources and/or labour? For whom? How much?
- Has the innovation helped to reduce constraints to mobility of men and women?
- Has decision-making within the household changed as a result of the innovation? How has it affected men and women?
- How has the innovation benefitted women/men in the household? Who makes decisions regarding use of the benefits? On what basis?

**b. How to be gender sensitive in analysing local innovation processes and results**

**Document the stories of women innovators**

Documenting the innovation journeys of women is one way of acknowledging their creativity and contribution. This means not only documenting their innovations but also documenting how their innovation processes are influenced and shaped by social norms and expectations. Often, documentation is done by outsiders, who select what they prefer or find important to document. Even when women's innovations are identified, these may be undervalued on account of the criteria used by those who want to document innovation. It is necessary to include criteria such as contribution to family nutrition, sustaining biodiversity or reducing drudgery and other criteria of importance to the women in the community, so that their innovations receive higher priority for documentation.

### Guiding questions

- *In what circumstances do women innovate? What (struggles/opportunities) do they go through?*
- *What resources were required to develop the innovation? How did the innovator access those resources? What were the challenges in accessing the required resources?*
- *What do women consider important in their innovation journey?*
- *What were the constraints faced by the innovator? How were they overcome?*
- *What changes do women's innovations contribute to? How? For example, if reducing drudgery, describe how. Have there been any changes in labour division within the household?*
- *How do women innovators share information about their innovations? With whom? Why?*
- *Has the innovation led to changes in access to information/resources within the household?*
- *Has the innovation led to changes in control over information/resources within the household?*

### Involve women innovators in documenting their own stories

Giving women the space and freedom to tell their stories in their own words has several benefits. It not only gives them recognition, but also allows them to articulate aspects that they feel are important. These stories, set in their own surroundings and told in their own local language, are easy to share with others and serve as sources of inspiration, especially for women who face similar circumstances. It is often more appropriate to use audiovisual media, as these help overcome literacy barriers that rural women often face.

### Women in Tigray tell their stories in farmer-led documentation

*A team of three people from ProInnova Ethiopia were involved in a farmer-led documentation pilot in Tigray. The team was made up of a senior and junior researcher from Mekelle University and a female journalist from the regional radio station in Tigray. They decided to focus exclusively on women innovators as their innovations are often in the domestic sphere and are not well known nor publicised. This idea was well received in the communities and even the men agreed that women should be given more recognition for their innovations. Three women innovators were selected – two of the women were widows. The facilitation team gave the women freedom to decide on the times that were suitable to them for this activity. The women were also free to choose what they wanted to highlight in the documentation. As part of the pilot, the women were taught how to use a camera and take pictures. The stories of these three women were published in the form of a booklet and shared with others in the community and broadcast through the regional radio station.*

*Source: Abay et al, 2011*

### Guiding questions

- *Are women interested in documenting their innovation processes themselves? Why?*
- *What aspects of the innovation and innovation process do women consider important for documentation?*
- *Do they see any constraints in documenting?*
- *Which are the most suitable ways to document the women's innovations and the innovation process?*
- *Do women agree to audio- or video-recording of their innovation? Do they have access to resources to undertake such documentation? Are there spaces in which their stories can be told/recorded without inhibition or intimidation and respecting their views on privacy?*
- *How do the men feel about women documenting their own innovations?*
- *Has the woman's innovation brought about any changes in the way other household and/or community members view/treat the innovator?*

### **Select and support women innovators to share their experiences in relevant events and through various channels**

In many events such as agricultural shows, exhibitions and fairs in which small-scale farmers participate, men still form the majority. Many reasons may prevent women from attending such events: women don't usually come forward, as men are expected to play this public role; women are often intimidated by being in unfamiliar spaces; women often lack self-confidence to take part in such public events; men often do not approve of women being in such places. Women have limited options for handing over their work in the household in order to be able to go to such events. It takes more effort on the part of facilitators to find and support women innovators who could present their experiences at such events. This includes helping women to prepare their stories, developing posters, brochures, video clips etc. that women could use as visual aids; ensuring that women are accompanied, if necessary, when travelling to the event; getting consent from men (husbands, fathers, brothers, sons) for women to be able to participate in such events etc.

In addition to including women in special events, their stories could also be shared through other channels such as radio, TV and print media. Here, too, facilitators need to be sensitive to the needs, wishes, cultural barriers, time constraints etc. of women. If, for instance, recordings are done with a radio or TV crew, consent needs to be sought from the women and their families, agreements have to be reached on time slots and locations that are suitable for the women, and the women need to be in control of the content and how it is presented. The same applies even if it is simply a matter of taking a few photographs to highlight their innovations in posters, brochures and other visual material.

#### ***Women innovators from Nepal, Cambodia and Ethiopia tell their stories through written and spoken media***

*In Nepal, a few women innovators took part in a programme initiated by LI-BIRD (an NGO partner in the Prolinnova network) and a FM radio station that covered 13 districts. In Cambodia, women innovators have been featured regularly in the farming magazine produced and distributed monthly by CEDAC (likewise an NGO partner) in the Khmer language. In Ethiopia, Prolinnova partners have published booklets in local languages (in Amharic and Tigrinya) that carry the stories of several women innovators. These stories were written together with the women concerned. In South Africa, Prolinnova partners made a simple poster that highlighted women's innovations in livestock keeping.*

*Source: Wettasinha et al, 2008*

#### **Guiding questions**

- *What are the probable avenues/events where women can share their innovations and innovation journeys?*
- *According to women, what might prevent them from participating in such events?*
- *What do men feel about women participating in such events?*
- *Has the innovation led to any changes in the position of women relative to men? Are men changing their attitude towards women's position in the household and community?*
- *What preparation is required for women to take part in such events?*
- *How can other members of the household support women to participate in such events?*
- *How can you as ARD facilitator support women to participate in such events?*



### Activity 3: Engaging women in farmer-led joint research

#### a. How to stimulate more women to engage in joint research

##### **Give priority to women's innovations and their areas of interest for further research**

Women will be attracted to engage in joint research only if it addresses their areas of interest and if it leads to improvements or benefits to them. Women cannot be expected to invest their limited time, labour and resources in a process that would not lead to tangible outcomes for them. One way to capture their interest is to select women's innovations as entry points for joint research. Another is to select research topics that relate to innovations in the domains that women are active in and have a degree of control over. These topics may not always be those in which external ARD stakeholders are interested but would have to be considered in order to increase the participation of women in farmer-led research processes. Moreover, there may be women's innovations with great potential for community uptake that would go unnoticed if no conscious effort is made to use them as entry points for joint research.

##### **Improving design of woman innovator's fish-smoking oven in Boumba Kaina, Niger**

*In Niger, fish smoking is a typical task of women, whereas fishing in the Niger River is an activity reserved for men only. In most villages, a three-stone open fire is used for smoking fish. In their search for local innovations, Prolinnova partners discovered Madaria, a woman in Boumba Kaina Village in Dosso Region, who had improved on this traditional stove and developed a clay oven, covered on the sides and open on top. Other women in the community were already using this improved oven, but they wanted to improve some aspects of it. Considering that fish smoking is practised by many women and the innovation would benefit both women and men, joint research was carried out to further improve the oven using criteria important to both women and men. All were interested in reducing wood consumption, improving the quality of the smoked fish and making the oven more durable. In addition, women wanted to reduce the time they spent sitting by the oven to prevent burning of the fish and to keep stray animals away. They also wanted to reduce the frequent cases of burns caused to children who are with their mothers close to the ovens. Because their needs and priorities were given attention, women were eager to be involved in the joint research process and to benefit from it.*

*Source: Magagi et al., 2010*

##### **Guiding questions**

- Which processes related to food and agriculture do women lead? What is the role of women and men in these processes?
- What areas of research interest women? Which innovations of women could be entry points for joint research?
- What kind of resources – time, energy, labour – of women and men are required to engage in the joint research?
- What support do women need to be able to participate in joint research activities? Are men willing to support women in such research processes? If not, why not? What could be done to get consent of the men?

##### **Use criteria suggested by women for screening innovations for farmer-led joint research**

Another way of engaging with women in farmer-led joint research is to include criteria they suggest for screening and selecting innovations for further investigation. Even in the case of a man's innovation, women would be interested to join in further investigation if aspects that interest them are included in the research. For example, in doing joint research on a new crop innovation, men might be most interested in aspects such as yield, use of inputs or marketability of products, while



women might tend to focus on taste, nutritional value, storability etc. If their criteria were included in the joint research, women would certainly be more willing to participate.

#### **Guiding questions**

- *What are men's criteria for assessing the "relevance" of innovations for further experimentation?*
- *What are women's criteria for assessing the "relevance" of innovations for further experimentation?*
- *How can the criteria/interests of both men and women be factored into a joint research process?*

#### **Find research partners who are interested in topics of interest to women**

The types of research that interest women may not always coincide with the interests of the other ARD partners who initially engage with them with a view to engaging in joint research. For example, if women are interested in finding out more about the chicken feed mixes they have been developing, then it would be useful to invite a livestock specialist with an affiliation to poultry keeping to join the research team. It may also be helpful to include women researchers in joint research, as this would put the women innovators more at ease.

#### ***Nutritionist from university joins woman innovator in improving her food product in Yendi, North Ghana***

*Neina Naginpoan lives with her family in Yendi, North Ghana. Besides helping her husband farm and feed the family, Neina prepares and sells a local food called wasawasa daily in the local primary school and weekly at the community market. Wasawasa, a common steamed dish in northern Ghana, is traditionally made from yam flour, but Neina's innovation is to make it from a mixture of maize flour and powder from the yellow pulp of the dawadawa (Parkia biglobosa) fruit. This gives the wasawasa a yellow colour and a sugary taste, which is well liked by children and young people in the community.*

*Gladys Gamor, a nutritionist from the Department of Family and Consumer Science in the University for Development Studies in North Ghana, suggested that the nutrient content of the wasawasa made with dawadawa pulp could be further improved through fortification with other ingredients. This could increase the access of local people to more nutritious diets and improve the nutritional status of their families. Neina was concerned that the supply of dawadawa pulp is seasonal; it becomes scarce and expensive in the late dry season and into the wet season before the trees bear fruit. This constrained her ability to prepare and sell the food to her clients and to maintain a profitable business year-round. She was therefore eager to work with the nutritionist in joint experimentation to improve the nutritive content, taste and profit margins of wasawasa by adding or substituting with other flours, leaves and spices in preparing the dish.*

*Source: Gamor et al, 2020*

#### **Guiding questions**

- *Who are the ARD stakeholders interested in women's innovations? What motivates them to be involved?*
- *What attracts them to engage in joint research with women innovators?*
- *What is the nature of investment (time, expertise, funds) required of these ARD stakeholders?*
- *What support will local women need to interact with those ARD stakeholders?*

#### **b. How to ensure that women participate in and benefit from farmer-led research**

##### **Engage both women and men in the design and process of the experiment**

Once a local innovation is selected as a subject for joint research, farmers and facilitators join hands in designing the experiment, addressing questions such as: What is the topic of research? How is the research going to be done? Where activities are going to be done? What resources will be required? How will these resources be mobilised? Who will contribute? It is important that both men and

women are included at the design stage of joint research so that they can indicate how, when and where they wish to participate.

ARD facilitators who partner in the research process need to ensure that women's ideas, concerns and constraints are taken into consideration in the research design. Particularly decisions about the site of joint research should be given careful consideration so as to include – if the women so prefer – locations closer to their homes or that can be reached easily and safely. An alternate approach would be to engage women and men in separate research groups and then bring them together to share their experiences.

After a joint experiment has been co-designed, facilitators need to ensure that both men and women are engaged in conducting the activities and monitoring the progress. Each activity needs to be discussed transparently, allowing both men and women to define which roles they will be playing throughout the research process. Facilitators need to create space for women to articulate their wishes and ensure that they are involved in the joint research activities from planning to implementation and monitoring of progress and evaluation of the results.

### **Guiding questions**

- *What are women's ideas about the research topic and research design?*
- *What are men's ideas about the research topic and research design?*
- *Which locations and times are more convenient for women to be able to take part in the research process?*
- *Are there spaces suitable for women – to voice their opinions and share their concerns and wishes – without fear/inhibition, at different times during the course of the research process?*
- *What problems do women face while taking part in experiments?*
- *Who can help in mobilising resources for the research?*
- *What will be men's roles throughout the research process?*
- *What will be women's roles throughout the research process?*

### **Address the specific challenges for women's involvement in experimentation**

Women in small-scale farming face specific challenges such as time and resource limitations, social expectations or illiteracy that could constrain their participation in non-conventional activities. Facilitators need to be aware of these challenges and address them each time they embark on facilitating joint research based on local innovation. For instance, they should encourage women to select the most convenient locations for the farmer-led joint research and the times that suit them best. The challenges that women face differ depending on factors such as age, social status, religion and ethnicity. For instance, younger women with small children may have more time constraints than older women. Older women may have more freedom of movement than younger women, who could be bound by stricter social norms. Younger women may have had access to education and be more literate than older women. Thus, facilitators need to take a differentiated approach to ensure that women of all ages and backgrounds are included in the joint research.

### ***Woman farmer drops out of enset-related research team in Amaro, Ethiopia, because of time constraints***

*In Amaro, Ethiopia, enset (false banana) is a staple food and is grown mainly for the family. Enset is considered a woman's crop and, although men are involved in land preparation and planting, women are in sole charge of all other operations in maintaining the crop, harvesting and processing. Women also make the decisions on sales and control the income generated from selling enset products.*

*Bacterial wilt is a disease that attacks enset and often destroys large stands of the crop. There is currently no known scientific solution to this problem. Considering the importance of this crop for women, ProInnova partners in Amaro – particularly the local community-based organisation – were seeking local innovations to*

*combat bacterial wilt. Having found several local innovations by men to combat the disease, joint research was undertaken to compare these different treatments. Although the partners in joint research were aware of women's interest in this crop, only one woman was directly included in the research as an experimenter, but she dropped out midway on account of her heavy workload. When evaluating the joint research, the reason for this was discussed, and the lack of attention to women's specific constraints to participation in the research was noted. Another question that was posed was why women's innovations to combat the disease had not been identified, although the crop's importance to women was known.*

*Source: Demekech Gera, 2008*

### **Guiding questions**

- *What challenges do women innovators face in getting into joint research processes?*
- *What issues do women innovators have to deal with during a joint research process?*
- *Are these challenges influenced by age, ethnicity, religion or socio-economic background? How can these challenges be addressed?*

### **Use criteria of both men and women in evaluating the joint experiment and its benefits**

At the end of a cycle of farmer-led joint research, facilitators should ensure that both men and women are involved in reflecting on the process and evaluating its results. Women should be encouraged to share their experiences on whether their involvement in the research process was useful to them, whether they could (or not) maintain their motivation and interest, what factors encouraged or discouraged them, whether they were given sufficient space to provide their feedback during the process, whether they were able to fit the research activities into their work schedules etc.

In evaluating the experiment, facilitators need to include parameters of importance to both men and women, who might have different perceptions on benefits and different ways of assessing success and failure. Often such assessments are done in group settings in which men dominate, and it is therefore important for facilitators to ensure that women's criteria are taken up. For example, an experiment with a new crop could be deemed a failure by men if it did not live up to their yield expectations, but women may find the same crop beneficial as it provided dietary diversity and was easy to harvest. It may be necessary to have men and women in separate groups to evaluate the experiment and then bring the findings into a common forum, so as to allow women to have their say without inhibition.

### **Women and men in Machakos, Kenya, conduct and evaluate farmer-led joint research on finger millet**

*Finger millet is a common cereal crop in the semi-arid areas of Machakos in Kenya. Farmers generally broadcast finger millet seeds in the fields. These seeds germinate with the arrival of the rains. However, increasingly erratic rainfall induced by climate change has caused crop failures, resulting in decreased cultivation of finger millet. Simon Masila, a farmer in Machakos, came up with an innovative way of propagating the crop in these changing conditions. Instead of broadcasting the seed, he established a finger millet nursery from which he transplanted the seedlings to the fields with the onset of the rains. He observed that the transplanted seedlings were able to survive, even with the erratic rainfall pattern, and provided a good yield. His innovation was selected for further joint research by a team of Prolinnova partners including the Kenya Agricultural and Livestock Research Organisation (KALRO) and INADES Formation (an NGO). Women supported selection of this innovation, as they consider finger millet a nutritious cereal useful as weaning food and for feeding children and the elderly. Joint research was carried out in two sub-counties. In Kalama, 51 of the 60 participating farmers were women; in Nwala, 51 out of 75 were women. The women took part at all stages of the experiment: preparing nurseries, transplanting seedlings, weeding, manuring, harvesting, keeping records, collecting data, monitoring progress in their research plots, evaluating the results at the end of the*

*season, and giving their opinion on the nursery method for propagating finger millet. Specific benefits mentioned by the women were the ease of weeding, as the plants stand separately in neat rows, and the ease of harvesting without having to bend over, as the transplanted millet grows taller than directly sown millet.*

*Source: Karanja et al, 2016*

### **Guiding questions**

- *What should be done to enable women to reflect on the research process without fear/inhibition?*
- *Which parameters do women consider important when assessing the research process? Which parameters do men consider?*
- *What do women see as benefits of the research process? What do men see as benefits of the research process?*
- *How can the perspectives of both men and women be skilfully included in participatory evaluation sessions?*

### **c. How to ensure that women participate in and benefit from farmer-led research**

#### **Create spaces where women who experiment can share their experiences**

Women who have been involved in joint research should be encouraged to share their experiences with others. This could be as part of community sharing and learning events such as post-season field days or farmer-to-farmer sharing visits. Facilitators need to organise such events in places that are accessible to women involved in the research and at times that are suitable for them. The women should be encouraged to share about the research process in general, how they got involved in the different activities related to the joint research, what challenges they faced, how they dealt with these challenges, how they managed their time and workload, and what they see as benefits. This could be daunting to some women, especially in mixed groups, where men could be more vocal and assertive. In such situations, facilitators should create opportunities for women experimenters to share their experiences with other women, in settings where they feel less inhibited to talk about their involvement in the research.

### **Guiding questions**

- *What are the regular sharing events in the community? Do women feel free to share their experiences in these events? If not, why not?*
- *What challenges do women face in publicly sharing their experiences in general? What needs to be done to overcome these constraints?*
- *In what ways can women be supported to share their experiences with other women and with men?*
- *How can men be encouraged to support women to share their experiences?*

## **5. Facilitating farmer-led innovation processes**

ARD facilitators – men and women – are key actors in processes of promoting farmer-led innovation. They work in direct contact with farm households. As facilitators of farmer-led innovation and research, staff from governmental and non-governmental organisations of agricultural research, development and education would need to take on a different mode of working than they have been accustomed to. Instead of delivering technology options and advice to farmers, they are now expected to facilitate social learning processes based on local innovation in which farmers and other ARD actors co-generate knowledge through iterative cycles of joint action and reflection. This calls for facilitators to reverse their roles, acquire different skills and change their attitudes. From being in

a leading role as providers of technology and advice to farmers, facilitators have to take on a more supportive role to farmers who take the lead in pursuing research based on their own innovations. Facilitators have to become open to the idea that farmers are not always waiting for technologies to be delivered to them from outside, but are innovating themselves in useful ways. In identifying these innovations and using them as entry points for joint research, facilitators will be acknowledging the creativity of farmers and working alongside them as partners. Considering that joint research is a collaboration of multiple partners with farmers in the lead, facilitators must be skilful moderators. They need to stimulate active participation of all partners in the research, men and women, young and old, but ensure that the control of the process stays in the hands of farmers. In this way, communication patterns that were largely advisory and one-way in nature would gradually be replaced by more interactive, inclusive and transparent forms. This can be a challenge for those who take on the facilitation of farmer-led processes of ARD.

#### ***Skills and competences required by ARD facilitators***

- *Ability to work equitably with both male and female household members (including youth and people with disabilities) in a participatory and inclusive manner;*
- *Empathy with the people they work with, and with their hopes and challenges;*
- *Recognition of each individual's strengths – be it man or woman – and right to be heard and ability to grow and change; the ability to encourage every person's full expression of ideas from his/her own perspective and commitment to supporting an individual's change process;*
- *Willingness to learn, challenge and change one's own mindset (regarding stereotypes and concepts) and behaviour, including attitudes towards gender inequality;*
- *Positive and enquiring mind to ask appropriate questions to household members, especially to "tease out" gender relations, and to identify and propose appropriate ways forward;*
- *Good communication skills, including the ability to listen, build rapport, show respect for different opinions and address sensitive issues constructively;*
- *Ability to instil a sense of reality in action planning, in order to encourage people that change is possible, while managing their expectations;*
- *Ability to network and provide linkages to other services.*

*Source: adapted from IFAD Household Methodologies Toolkit (2014)*

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