

# Small holder farmer's access to extension services: opportunities and constraints from a gender perspective

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## **Abstract**

Agricultural extension has the potential of bridging research laboratories and the in-field practices of individual farmers. Extension starts with knowledge management and ends up with human capital enrichment. Agricultural extension by its nature has an important role in promoting the adoption of new technologies and innovations). In India, agricultural extension has wide mandates and despite the pluralistic extension approaches, its coverage and use of services is limited. This is even more so in the Semi-Arid regions that are characterized by harsh environments, policy bias and represented by marginal and smallholder farmers. In addition, gender inequality exists in the dissemination of extension services which needs special attention to improve the decision making process as well as the livelihoods of men and women. Access to extension services by women is weaker than it is for men, as proportionally fewer women attend community meetings organized by extension agents and substantially fewer women visit demonstration homes and plots. Puskur (2013) finds strong evidence for a cultural perception that “women don’t farm,” a perception that persists even though women engage in a wide range of agricultural activities.

This study assesses smallholder men, women access to extension services and thereby identify gender responsive extension options. This study provides an empirical evidence and analysis on the difference in access to extension services from a gender perspective using data collected from 240 households from six villages of Karnataka and Rajasthan states in India. Women had lower access to extension services as compared to men. Biggest information source was the progressive farmer/Relative/neighbour (18.45 percent), followed by NGO, input dealer and television.

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**Acronyms and abbreviations**

|      |                                           |
|------|-------------------------------------------|
| ATMA | Agricultural Technology Management Agency |
| DoA  | Department of Agriculture                 |
| ICAR | Indian Council for Agricultural Research  |
| KVK  | Krishi Vigyan Kendra (India)              |
| NGO  | Non-governmental organization             |
| NSSO | National Sample Survey Organisation       |
| SHG  | Self-help group                           |
| T&V  | Training and visit                        |
| SAU  | State agricultural university             |
| ICT  | Information and Communication Technology  |
| CDP  | Community Development Projects            |



## Introduction

Extension service has been an important input for agricultural development in most developing countries, including India, where agriculture remains an important source of income for millions of rural poor. Agricultural extension services, a comprises set of organizations that support farmers to facilitate their efforts to solve problems; link to markets and other players in the agricultural value chain; and obtain information, skills, and technologies to improve their livelihoods (*Birner et al. 2009; Davis 2009, Box 1*). Agricultural extension has the potential of bridging from research laboratories and the in-field practices of individual farmers.

The rural women in South Asia, especially those from poor rural households, face a particular burden. In view of the gender division of labor, they spend considerable time fetching water, getting healthcare for their children, and reaching markets. Girls have less access to education than boys, and maternal mortality is high if the specific healthcare needs of women are not met. Though women are engaged in farming and play a major role in almost every agricultural operation, they continue to receive very limited extension support. While several interventions have been made to address this 'gender' bias in extension delivery, there continues to be a shortfall between the kind of support that is provided and the needs and demands of rural women. This gap between supply and demand needs to be addressed in order to improve the lives and livelihoods of women in the rural farming sector (Jafry and Sulaiman, 2013). Hence, extension, it is argued, is an important vehicle for integrating women into development efforts and empowering them to be the change they want to see in the world. Providing better services to women is not only necessary to realize their rights, but it contributes to economic growth and poverty reduction (Quisumbing et al. 1995; IFPRI 2000, 2005; Mason and King 2001). Providing better services to rural women is also essential in using agriculture for development (World Bank 2007; World Bank, FAO, and IFAD 2008).

### **Box 1. Agricultural extension: what does it mean?**

'Agricultural extension' describes the services that provide rural people with the access to knowledge and information they need to increase productivity and sustainability of their production systems and improve their quality of life and livelihoods. It includes, but is not limited to, the transfer of knowledge generated by agricultural research. It has helped countries move towards meeting food needs, conserving natural resources and developing human and social capital.

*Source: Natural Resources Institute, 2014*

## Indian Agriculture and Extension Services: Historical Perspectives

In the past few decades, the increasing food demand for the growing population and various technological and institutional innovations have been the main drivers of improvement in agricultural productivity and livelihoods. With the increasing size of rural families, there was an urge to grow more food and the farmers were encouraged to adopt new methodologies. Many tools and implements were developed to increase the speed of tillage operations and reduce human drudgery work. All these innovative technologies were promoted through various extension methods and consequently many of them were adopted by large number of farmers.

Indian agriculture is dominated by small farmers. The average size of the land holding declined from 2.30 ha (1970-71) to 1.32 ha (2000-01), and absolute number of operational holdings increased from about 70 million to 121 million. If this trend continues, the average size of holding in India would be mere 0.68 ha in 2020, and would be further reduced to a low of 0.32 ha in 2030 (*Singh, 2011*). In most rainfed areas, due to higher variability in rainfall, poor quality soils, and poor economic conditions, many farmers are not able to produce beyond the quantity needed for self-consumption. Additionally, livestock plays a greater role in these areas than crop production, and rainfed regions also employ a greater number of women than irrigated areas (*Rangnekar 1998*).

In India, after independence, the government has launched Community Development Projects (CDP) in 1952. The main aim of this project was to increase agricultural production. This project was covering about 300 villages where the rainfall was assured or irrigated areas. In 1953, the National Extension Service Project was launched with a similar objective of covering larger areas, including the dry regions. The objectives and activities of the project were modified from time to time and continued as a permanent multi-function extension agency in each block. These community development blocks were treated as normal administrative units for planning and development with regular budgetary allocations. Launching of T&V Extension system in 1974–75 on a pilot basis in the Chambal Command area of Rajasthan and M.P. was an important milestone in the history of extension. The basic premise was that there was enough technology available awaiting diffusion to and adoption by farmers (*Swanson and Mathur, 2003, Singh et.al.2005*).

Despite the concerted efforts made by public and private extension systems, the present extension system appears to be inadequate to address the challenges faced by the farmers in the semi-arid tropics in the context of changing climate scenarios. Presently, the government extension system has limited penetration below the sub-district level due to variety of reasons. The major reason is being lack of grass root level extension functionaries to work at village level. Public extension services would continue to play critical role in technology dissemination to serve the large chunk of small farm holders besides other service providers. However, the major concern regarding the public extension system is lack of trained manpower at grass root level for ensuring effective extension services.

In Indian public extension service the information flow is supply-driven and not need based or area specific (*Raabe, 2008*), therefore farmers see the quality of information provided by public extension staff as a major shortcoming (*NSSO, 2005*). There are also insufficient funds

for operational costs, training, and capacity development, which limits the activities and continual development of the extension staff (Swanson, 2006). However, it was experienced that there are about 90,000 on the job, which is an adequate number of extension workers for the number of farmers (about 130 million).

Indian agricultural extension has wide mandates and despite the pluralistic extension approaches, its coverage and use of services is limited; particularly in Semi-arid regions that are represented by marginal and smallholder farmers'. Hence, there is need to develop "need-based" capacity building of small-scale farmers (men and women), as well as gaining access to reliable information in increasing their productivity and profitability for livelihoods improvements. The diverse nature of semi-arid tropics of the southern peninsular India calls for context and situation specific services to deal with emerging problems including climate variation. In addition, gender inequality exists in the dissemination of extension services which needs special attention to improve the decision making process as well as the livelihoods of men and women.

Based on a statistical profile of India (2011), the agricultural sector workforce in the subcontinent was 75% women. In rural India, the percentage of women who depend on agriculture for their livelihood is as high as 84%. Women make up about 33% of cultivators and about 47% percent of agricultural laborers.

## **Organization of the report**

The report is organized as follows. Following the introduction, the second section briefly outlines the objectives of the study and the scope of this report; the next section presents a review of selected literature relevant for this study. This is followed by methodology, data, and the village sites. The next section reports research findings on public extension services. Finally, we summarise our conclusions.

## **Objectives of the study**

This study assesses smallholder men, women and youth access to extension services and thereby identify gender responsive extension options.

The report attempts to seek answer to the following research questions:

1. What are the constraints, opportunities for women in relation to men in accessing and benefiting from extension systems?
2. What are the institutional arrangements for extension services? Are they gender-sensitive and what are their strengths and weaknesses in providing women's services?
3. What are best practices and lessons learnt for integrating gender in extension systems?
4. How can women's access to information improve uptake or access to production technologies?

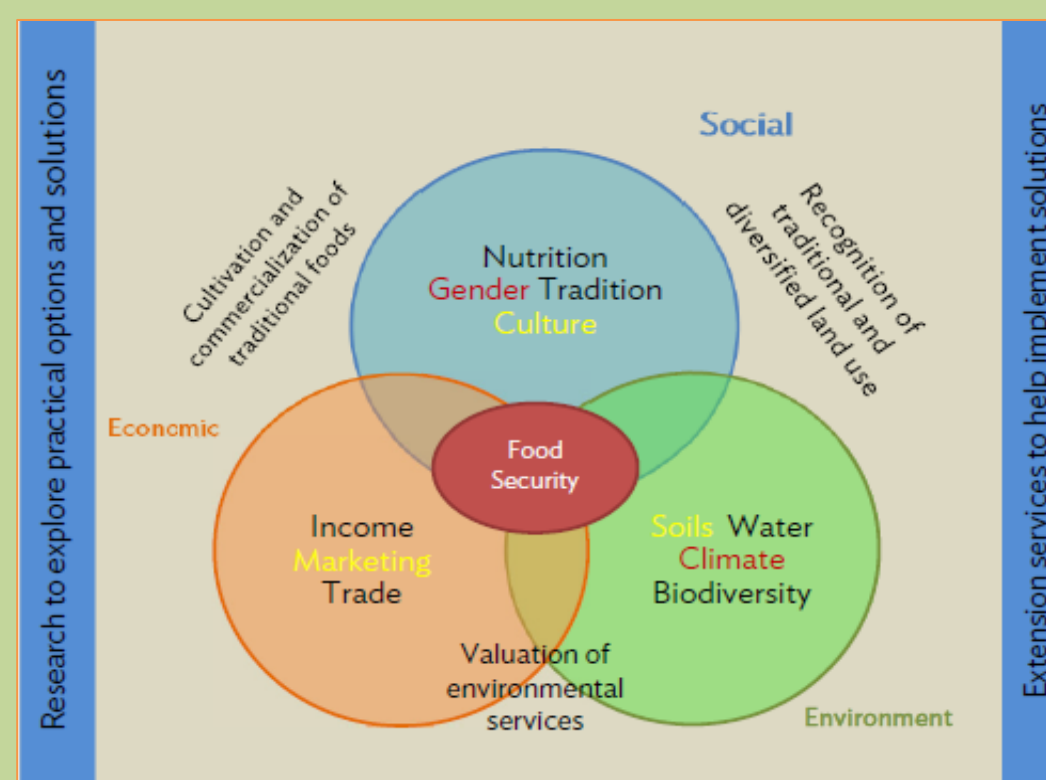


## What does the literature tell us: a brief overview

### A paradigm shift in the concept of “extension services”

The meaning of the term ‘extension’ has changed over time (Swanson, 2008) and is moving away from the dominant emphasis on technology transfer (reflected, for example, in the training and visit approach) towards a much broader concept that includes developing the skills and management capacities of farming families (through the farmer field school approach, for example) and the learning capacity of both farmers and extension organisations (NRI, 2014). Extension has been recently defined as “systems that facilitate the access of farmers, their organizations and other market actors to knowledge, information and technologies; facilitate their interaction with partners in research, education, agribusiness, and other relevant institutions; and assist them to develop their own technical, organizational and management skills and practices” (Christoplos, 2010). The conventional definition of agricultural research includes both applied research and extension (Anderson 2007). Essentially, extension services act as a bridge between scientists, who strive to resolve problems in the practice of agriculture through research, and the farmers who need the solutions (Wesley and Faminow, 2014)). Innovative technologies and good practices translate to increased yields and improved food security only when they are properly shared with farmers (Singh 2002). A good example of an interaction and the roles of agricultural research for development – including applied research as well as extension services and programs – is presented in box 2. As illustrated in box 2, to achieve food security there has to be an interaction between different actors and spheres of development along with a consideration of not just economic factors but also understanding the social, cultural and environmental factors for sustainable development.

Box 2. Agricultural Research and Extension for food security: Complex interconnections to consider



Source: Wesley and Faminow, 2014; adapted from IAASTD, 2009

From the global survey of 115 countries by FAO in the 1980s to the micro-studies by World Bank and IFPRI in 2010, numerous studies show access to extension services is lower for women as compared with men (*Swanson, Farmer, and Bahal 1990; World Bank and IFPRI 2010; Ragasa 2012*).

As Wesley and Faminow (2014) point in their report, in agricultural extension, the local and national context is crucial to understanding and improving the system. An initial question to ask is how do farmers get information? Who gets information from whom? Surveys indicate that a key general source of information for farmers is other farmers, but for more complicated technical matters, farmers prefer first hand or specialized sources of information, such as extension experts (Feder, Murgai, and Quizon 2004). The section below illustrates the case for India and how the extension services are in implementation.

## India story

India has second largest extension system in the world in terms of professional and technical staff. More than 90,000 paid agricultural extension personnel catering to the farming and allied needs of about 130 million farm families. Among these majority were small and marginal farmers with an average land holding of 1.63 ha, scattered and fragmented over different agro-climatic zones (*Brewer, 2000 and Ameru, 1994*). The National Agricultural Research System (NARS) of the country comprising ICAR, SAUs, etc. has generated a number of technologies and huge amount of novel information through concerted research efforts. However, a considerable proportion of this knowledge remains within the confines of research institutes due to poor linkages between research and extension systems (*Reddy and Ankaiah, 2005*).

In India, agriculture is a state subject and the main extension agency is the state Department of Agriculture (DoA). Most of the states have a separate wing (under DoA) or a Department for Horticulture, Soil and Water Conservation and Watershed Development. Low operational budgets, with 85–97 percent of expenditures going to salaries, limit the ability of Department of Agriculture staff to visit farmer fields (*Sulaiman and van den Ban 2003; Swanson 2008*). Large number of schemes and programs coming from the centre and state, extension staff also tends to perform public duties not related to extension, such as election or census duties which will effect of extension services (*Anderson, Feder, and Ganguly 2006*). In remote and marginal areas, further difficulties arise. Extension workers consider remote areas to be “punishment postings”; 50 percent of these post are vacant, and the capabilities of those there are questionable (*Sulaiman and Holl 2002*). Supply driven, narrow focus, weak research-extension linkage, inadequate communication capacity and resources and financial sustainability and multiplicity of public extension systems are the major constraints in agricultural extension system (*Swanson and Mathur 2003*).

In India, though it is generally claimed that public extension is system the predominant source of farm information dissemination (Nirmala et al., 1995), it was disappointing to note that it was accessed only by a small proportion of farm households. Only 40 per cent farm households’ accessed agricultural information from one or the other source. Biggest information source was the fellow progressive farmers (16.7 per cent), followed by input dealers (13.1%), radio (13.0%), television

(9.3%) and newspapers (7.0%). It was surprising to find that public extension system was the source of information for only 5.7 per cent farm households (NSSO, 2005). Input dealer's was the biggest source of information dissemination. Up to 95 per cent of farmers get information from input dealers based on their knowledge and experience gained through discussions with representatives of fertilizer or pesticide firms, and of these, 56 per cent were also found to consult extension workers. By providing information, input dealers try to earn goodwill of the farmers and to some extent are able to promote their business relationships with them (Sugumar et al., 1994).

The recent information revolution by Information and Communication Technology (ICT) has potential to provide a greater quantum of information, covering a wide range of subjects in the shortest possible time. But, to harness this potential for agricultural development, it is essential to understand the existing sources of information and their utility and relevance in terms of outreach, subject matter coverage and utilization by the farmers (Adhiguru et al., 2009). Mass media are found to be the important sources of information dissemination in India. First agricultural telecast started under the programme Krishi Darshan in 1967. Apart from this, regional TV and Radio stations air regular agricultural programs. Even in agriculturally backward states like Jharkhand, a majority of the semi-modern tribal women (90 per cent) were found having used radio, television and film to get information on improved technology of rice production (Ratan et al., 2005).

Small and large farmers have differential access to information sources (Ernest, 1973; Ramachandran, 1974; Singh, 1976). Access to information from any source increased with increase in farm-size. This variation was more pronounced in the case of extension workers, TV and primary co-operative societies. Though the public extension system is considered as the most credible source of information for small farmers (Karippai et al., 1995), it is often criticized for its bias against small farmers (Ernest, 1973; Ramachandran, 1974 and Singh, 1976). The extension workers were found to be the source of information to only about 4.8 per cent of small farmers, as compared to 12.4 per cent of large farmers (Adhiguru et al., 2009). Around the world, 43% of rural workers are women, but only 5% of women have access to extension services. (GFRAS, 2012).

### **Putting a gender lens towards an understanding of extension services**

This section draws on the corpus of literature presented by Manfre et.al (2013). The authors opine that the establishment of national agricultural services in the newly independent states of the developing world during the 1950s and '60s led to expanded efforts to bring new agricultural knowledge to farmers. The approach was top-down and linear, a fashion generally inherited from colonial predecessors. It was not until economist Ester Boserup (1970) published her ground-breaking work, *Women's Role in Economic Development*, building on ethnographic data, that significant attention in both academic and development communities focused on women's productive roles in agriculture. The early "training and visit" (T&V) extension systems, based on an efficiency model of transferring new technologies to farmers, did not effectively reach women farmers, small-scale producers (women or men), or farmers in some ethnic populations. Within the T&V system, women were largely viewed as beneficiaries, in a welfare sense, but not as actors in their own right in agricultural production. At the institutional level, this period marks the beginning of increased attention to gender issues within personnel policies, but gender imbalances remained a

major inadequacy (World Bank, 2009). From that point forward, a growing body of literature emerged, identifying the failure of development programs to incorporate women as producers and, eventually, exploring what approaches actually worked, not just on the composition of the services but the very nature of their construction, criteria for targeting by gender and other perspectives including the Agricultural Innovation Systems (AIS) perspective to agricultural development stimulating innovative behaviour (Staudt K, 1975, 77; World Bank, 1982; Saito and Weidemann, 1990; Thomal-Slayter et.al, 1993; Birner et.al, 20016; Anderson, 2007).

From a sociological perspective, there are a number of compelling reasons why addressing gender issues in agricultural extension matters, ranging from business case arguments that link reducing gender inequalities in extension services and agricultural production with improved institutional efficiency and development outcomes to development arguments that stress the importance of upholding international and national policy commitments eliminating discrimination between men and women and upholding gender equality (Box 3, Manfre et.al, 2014)).

## Box 3. Gender equality and extension services – making the case

| The business case                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | The development case                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Improve the efficiency of business.</b> : Men are often perceived as the “real” farmers and receive a greater proportion of technical assistance and extension services, even for tasks and crops that women manage. As a result, Extension and Advisory Services do not flow to the appropriate individuals, thus reducing service provider’s impact on the quality and quantity of goods produced and marketed . Adopting business practices that reduce these inefficiencies – for example , by hiring women extension officers and by targeting , both men and women for technical assistance –will increase the impact of Extension and Advisory Services.</p>                                                                               | <p><b>Strengthen food security and poverty reduction outcomes</b> : The agriculture sector is considered the engine of growth for many countries . Adopting improved seeds and other inputs and new agricultural practices helps to increase productivity that boosts food availability and , when crops are sold , increases producer’s and processors’ incomes. Providing Extension and Advisory Services to women ensures that all household members can benefit from new technologies and practices and increase yields and incomes. “ Farming for the family business” approaches mean that sharing extension advice will benefit the household as a whole.</p>                                                  |
| <p><b>Ensure the flow of quality goods:</b> A significant portion of the individuals involved in producing and handling crops are women. However , as low- wage and unpaid workers, women have few incentives to invest their time and energy into improving production and processing practices. Evidence from Kenya reveals that, under these circumstances, women may withdraw their labor, particularly if others such as spouses, reap the economic benefits from their work. This then endangers the constant supply of materials necessary for a functioning value chain. Addressing women’s lack of incentives to participate in the value chain can go a long way to ensuring the long-term supply of quality products to the value chain.</p> | <p><b>Removing discriminatory beliefs and practices:</b> Gender inequalities are often the result of discriminatory beliefs and practices that restrict women’s (or men’s) full participation in agriculture and the terms and conditions of their participation . Biases against pursuing careers in agriculture or discriminatory practices in recruitment and retention of extension officers go against commitments to up hold equality of opportunity and create inefficiencies in human capital and productivity . As humans , both men and women have a right to live free from discrimination that reduces their access to education , skills ,and employment opportunities for which they are qualified.</p> |
| <p><b>Creating new business opportunities:</b> women are often invisible and underserved buyers and suppliers in agricultural value chains. Sometimes they are sidelined as chains become more formalized , or they can be inhibited from participating in developed chains controlled by men . Extension and Advisory Services can help women to enter chains as suppliers of key inputs and services ( e.g , artificial insemination services or packing supplies) or to start production or processing of new products.</p>                                                                                                                                                                                                                          | <p><b>Improving household nutrition</b> : Women’s contributions to household food production , including their work with small ruminants and cultivation of vegetable gardens, help to increase essential micronutrient intake needed for child cognitive development . Studies establish a strong relationship between women’s control over earnings and greater investments in children’s health and education(Quisumbing ,2003).</p>                                                                                                                                                                                                                                                                               |

Source: Manfre et.al. 2013.

## Methodology

### Study locations and sample size

This study is based on the primary data collected from selected villages in Karnataka and Rajasthan state in 2015. A cluster of three villages from each state, namely, Nandihal, Balaganur and Mannur in Bijapur district of Karnataka and Jodhpur (Govindpura), Barmer (Dheerasar) and Jaisalmer (Damodara) district of Rajasthan were purposively selected for this study (Table 1 and Figure 1).

**Table 1. Study locations, India**

| State     | District  | Mandal            | Village    |
|-----------|-----------|-------------------|------------|
| Karnataka | Bijapur   | Basawana Bagewadi | Nandihal   |
|           |           | Sindgi            | Balaganur  |
|           |           | Sindgi            | Mannur     |
| Rajasthan | Jodhpur   | Bawadi            | Govindpura |
|           | Barmer    | Choutan           | Dheerasar  |
|           | Jaisalmer | Sam               | Damodara   |

From each village, 40 farm families of different size of holdings, viz., small, medium and large (proportionate to number of families that live in that village) were selected, making an overall sample of 240 farm households for this study (Table 2). A questionnaire (Appendix I) was prepared and used as a research instrument for the collection of data for this study. Efforts were made to design the questionnaire in such a way as to cover all the important and relevant information about the study. The questionnaire was pre-tested in order to check its reliability and validity. The final questionnaire after modifications based on the pre-testing, was implemented in the 240 households. Care was taken to ensure that information was elicited from both men and women of the household. In addition to the quantitative surveys, qualitative surveys such as Focus Group

**Figure 1. Map of India showing the study locations.**



Discussions were also held with the men and women in the study regions. Data was also gathered through conversations and interactions with government departments, NGOs, other research organizations that have their presence in the study locations.

Table 2. Sample selection and size

[illegible]



## Results and Discussion

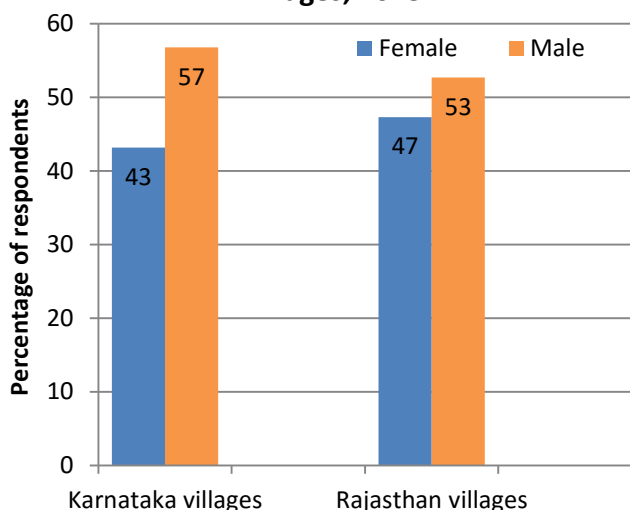
This section of the report presents empirical findings from the study locations in responding to the following research questions.

1. What are the constraints, opportunities for women and youth in relation to men in accessing and benefiting from extension systems?
2. What are the institutional arrangements for extension services? Are they gender-sensitive and what are their strengths and weaknesses in providing women's services?
3. What are best practices and lessons learnt for integrating gender in extension systems?
4. How can women's access to information improve uptake or access to production technologies?

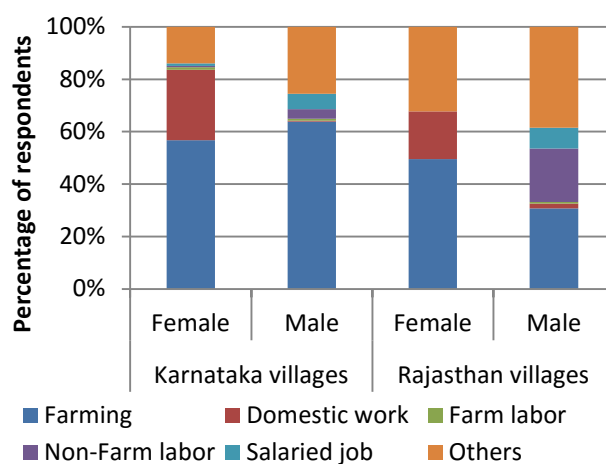
### Profile of study locations

A total of 240 households from six villages of Karnataka and Rajasthan formed the sample for this study. From these 240 households, 507 adults from the three villages of Karnataka and 725 adults from the three villages of Rajasthan were interviewed. Compared to women, more men were part of the sample in Karnataka. In Rajasthan villages, 47 % respondents were women and 53 were men (figure 2). As can be seen from figure 3, in the Karnataka villages, farming is the primary or main occupation for both men and women (about 62% and 58 % respectively). In Rajasthan, compared to women, farming is not the major occupation for men. Non-farm work is a preferred occupation for men in the Rajasthan villages.

**Figure 2. Sample size by gender, study villages, 2015**

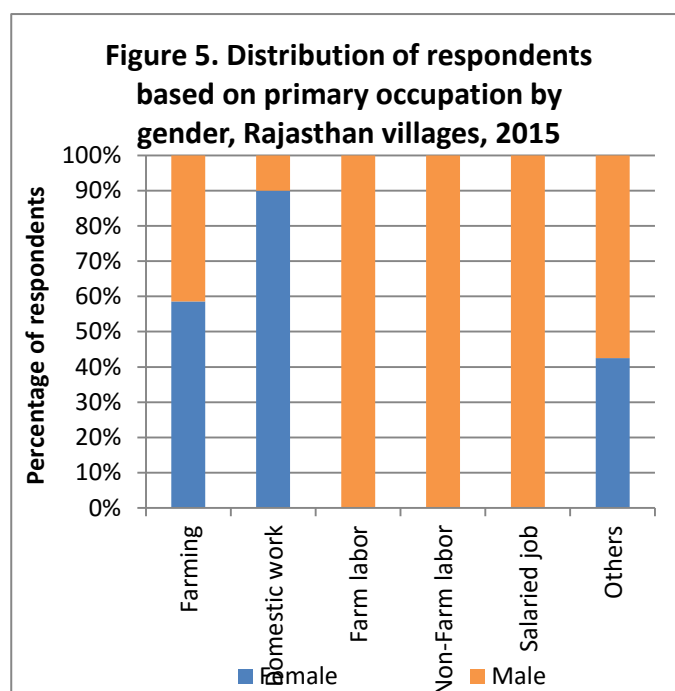
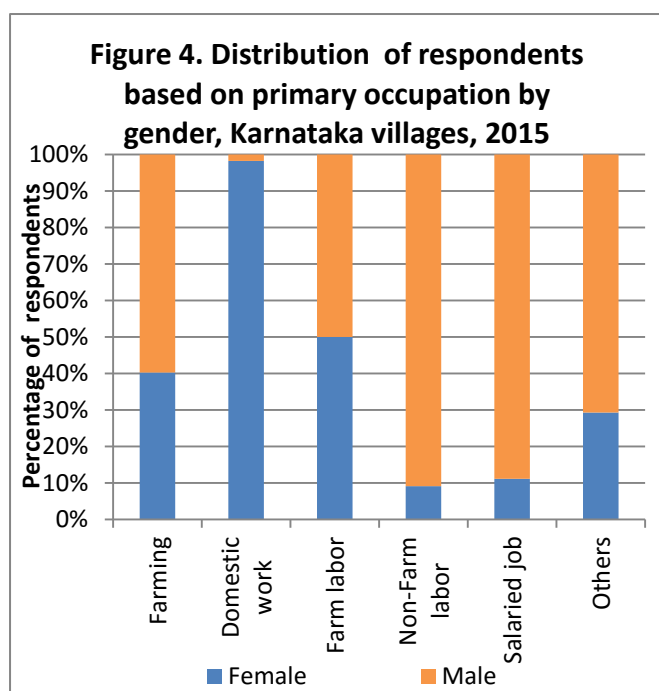


**Figure 3. Primary occupation of women and men, study villages, 2015**



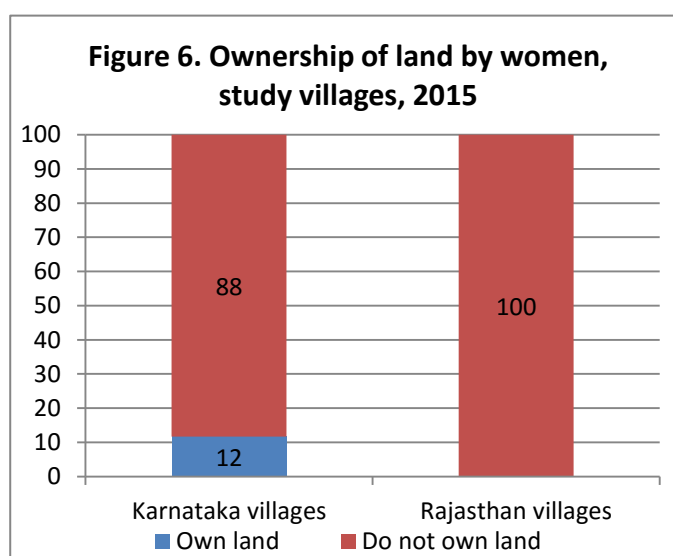
Understanding the distribution of respondents based on their primary occupation, the two locations (Karnataka and Rajasthan) present an interesting picture (Figures 4 and 5). In the Karnataka villages, women work either on their own farms or work as labor on other farms. Majority of the men on the other hand are working in salaried jobs or in the non-farm sector. In the Rajasthan villages, only men have indicated farm-labor, non-farm work and salaried job as their main occupation. Compared to men, in all the locations, 90% or more of women have reported domestic work as their main occupation.





## Gendered access to and control over assets and resources

**Land ownership:** In India, in spite of the new laws and regulations regarding ownership of land and other immovable properties, women do not own land on their name. Analysis of the ICRISAT VDSA data reveals that women rarely have sole ownership of agricultural land and even if they do, they frequently do not know what rights they have over their land. It has also been observed that women's rights over land are often not recognized in the revenue records. If a woman inherits a share of land, for example, the records may not clearly indicate that she has the right to sell or lease out that piece of land alone, implying that she would need the consent of all family members to make these transactions (Padmaja and Bantilan, 2015). The data from the current study also reveals the same trend (Figure 6.)



**Consumer durables:** Data disaggregated by gender was not collected for ownership of building and other consumer durables. Table 3 illustrates the household level ownership of assets especially consumer durables. Some of the striking findings:

- a. Almost all the households in both the sites (98 % in Karnataka, 100 % in Rajasthan) had own houses in which they lived but only 6-9% had toilets constructed along with the house.
- b. 18 % of households in Karnataka villages had cooking gas connections and only 5% households in Rajasthan had the connection. This clearly indicates that in both the sites, firewood collection is an important task which is done by women only (refer to figures 3, 4, 5). Firewood collection and fetching involves not just the time of women but also energy expenditure of women thus impacting on their nutritional status.
- c. Similar is the case with water for domestic use and consumption. 68 % of the households in Karnataka do not have tap water connection either at their doorstep or near their homes. In Rajasthan all households have to go to common public water bodies and tanks for collection of water for domestic use. Just like fire wood collection, fetching, carrying water for household consumption and use entails time, energy and also storage issues.
- d. Comparing the two sites, 98 % of the houses are electrified in the Karnataka villages while only 49% in Rajasthan have electricity at homes; 43 % of households in Karnataka have access to Cable TV connections while in Rajasthan only 8% have so. This finding indicates that access to infrastructure is poor in Rajasthan compared to Karnataka villages

| <b>Table3. Ownership of assets by households, 2015</b> |                                     |     |                                      |     |
|--------------------------------------------------------|-------------------------------------|-----|--------------------------------------|-----|
|                                                        | Karnataka villages (% of responses) |     | Rajasthan villages ((% of responses) |     |
| Type of Asset ↓\ownership status →                     | No                                  | Yes | No                                   | Yes |
| Residential house                                      | 2                                   | 98  | 0                                    | 100 |
| Bathroom                                               | 3                                   | 98  | 5                                    | 95  |
| Cooking gas (LPG)                                      | 83                                  | 18  | 95                                   | 5   |
| Electrified                                            | 3                                   | 98  | 51                                   | 49  |
| Cable TV connection                                    | 57                                  | 43  | 92                                   | 8   |
| Tap water connection                                   | 68                                  | 32  | 100                                  | 0   |
| Toilet                                                 | 91                                  | 9   | 94                                   | 6   |

## Sources of information

Table 4 presents the access to information from different sources by gender in the study villages. The progressive farmer/neighbor/relative is the most important source of information in both the villages, for both men and women. The NGO is the next important source of information for women whereas for men the input dealer is the next important source. The extension officer does not figure anywhere for both men and women.

| <b>Table 4. Access to information from different sources by gender, study villages, 2015</b> |        |    |        |    |        |   |        |   |        |   |          |   |
|----------------------------------------------------------------------------------------------|--------|----|--------|----|--------|---|--------|---|--------|---|----------|---|
| Percentage of responses                                                                      | Rank 1 |    | Rank 2 |    | Rank 3 |   | Rank 4 |   | Rank 5 |   | Rank 6-8 |   |
|                                                                                              | M      | F  | M      | F  | M      | F | M      | F | M      | F | M        | F |
| Progressive farmer/<br>Relative/neighbor                                                     | 14     | 21 | 9      | 7  | 3      | 2 | 1      | 1 | 0      | 0 | 1        | 1 |
| private agency/ NGO                                                                          | 8      | 10 | 8      | 12 | 4      | 3 | 2      | 1 | 1      | 0 | 1        | 0 |
| Input Dealer                                                                                 | 11     | 1  | 4      | 3  | 1      | 3 | 1      | 2 | 0      | 2 | 1        | 0 |
| Television                                                                                   | 1      | 2  | 2      | 4  | 2      | 3 | 2      | 1 | 1      | 0 | 0        | 0 |
| Agri. supervisor/Agri. Officer/<br>Agri. Ext. officer                                        | 0      | 0  | 1      | 1  | 2      | 1 | 3      | 2 | 2      | 0 | 1        | 1 |
| SHG                                                                                          | 0      | 5  | 1      | 1  | 1      | 0 | 1      | 0 | 1      | 0 | 1        | 0 |
| Newspaper                                                                                    | 0      | 0  | 1      | 1  | 1      | 2 | 2      | 0 | 0      | 1 | 1        | 1 |
| Krishi vigyan Kendra                                                                         | 1      | 0  | 0      | 0  | 1      | 0 | 1      | 0 | 0      | 0 | 1        | 0 |
| Radio                                                                                        | 1      | 1  | 0      | 1  | 1      | 1 | 0      | 0 | 0      | 0 | 0        | 0 |
| M = Male; F= Female                                                                          |        |    |        |    |        |   |        |   |        |   |          |   |

Tables 4a and 5 present the access to information from different sources by farm size categories in the Karnataka and Rajasthan villages. In the Karnataka villages, the next in order of importance are: input dealers; private agency, NGO, International Research Organization; television and Agricultural officer and extension officers. 13-30% of women ranked SHGs as an important source of information. In the Rajasthan villages, private agency, NGO, International Research Organization were ranked next to progressive farmers in terms of use and ease of access to information. The input dealer and agricultural officers/extension officers were next in importance. Television did not figure out to be an important source of information as only few households had access to TV connection in the Rajasthan villages. On the whole, in the Karnataka villages there were more options for information source and access compared to the Rajasthan villages.

(Percent)

| <b>Table 4a. Access to information from different sources across farm sizes, Karnataka villages, joint responses from men and women, 2015</b> |       |        |                 |       |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|-----------------|-------|
| Source                                                                                                                                        | Small | Medium | Upper<br>Medium | Large |
| Agri. supervisor/Agri. Officer/ Agri. Ext. officer                                                                                            | 20    | 43     | 32              | 71    |
| Bank                                                                                                                                          | 2     | 0      | 5               | 57    |
| Farmers study tour                                                                                                                            | 0     | 3      | 5               | 0     |
| Government Demonstration                                                                                                                      | 10    | 5      | 5               | 29    |
| Input Dealer                                                                                                                                  | 76    | 85     | 55              | 71    |
| Krishi Vigyan Kendra                                                                                                                          | 4     | 20     | 23              | 43    |
| Newspaper                                                                                                                                     | 20    | 25     | 27              | 57    |
| Others                                                                                                                                        | 2     | 0      | 0               | 0     |
| Output buyers/ food processor                                                                                                                 | 0     | 3      | 0               | 0     |
| Participation in training program                                                                                                             | 14    | 15     | 27              | 43    |
| Primary cooperative society                                                                                                                   | 6     | 10     | 0               | 29    |
| private agency/ NGO                                                                                                                           | 73    | 73     | 55              | 100   |
| Progressive farmer/ Relative/ neighbour                                                                                                       | 100   | 68     | 50              | 43    |
| Radio                                                                                                                                         | 6     | 5      | 9               | 57    |
| SHG (Woman)                                                                                                                                   | 29    | 13     | 14              | 29    |
| Television                                                                                                                                    | 41    | 43     | 32              | 86    |

(Per cent)

| <b>Table 5. Access to information from different sources across farm sizes, Rajasthan villages, joint responses from men and women, 2015</b> |       |        |              |       |
|----------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|--------------|-------|
| Sources                                                                                                                                      | Small | Medium | Upper Medium | Large |
| Agri. supervisor/Agri. Officer/ Agri. Ext. officer                                                                                           | 3.6   | 5.1    | 10.5         | 85.7  |
| Farmers study tour                                                                                                                           | 0.0   | 5.1    | 0.0          | 14.3  |
| Input Dealer                                                                                                                                 | 9.1   | 17.9   | 15.8         | 28.6  |
| Krishi Vigyan Kendra                                                                                                                         | 3.6   | 5.1    | 0.0          | 14.3  |
| News Paper                                                                                                                                   | 0.0   | 2.6    | 0.0          | 0.0   |
| Participation in training program                                                                                                            | 9.1   | 12.8   | 0.0          | 28.6  |
| Primary cooperative society                                                                                                                  | 0.0   | 2.6    | 5.3          | 14.3  |
| private agency/ NGO                                                                                                                          | 41.8  | 51.3   | 68.4         | 100.0 |
| Progressive farmer/Relative/neighbour                                                                                                        | 52.7  | 74.4   | 100          | 57.1  |
| Radio                                                                                                                                        | 1.8   | 2.6    | 0.0          | 42.9  |
| SHG (Woman)                                                                                                                                  | 7.3   | 7.7    | 10.5         | 0.0   |
| Television                                                                                                                                   | 0.0   | 2.6    | 5.3          | 57.1  |

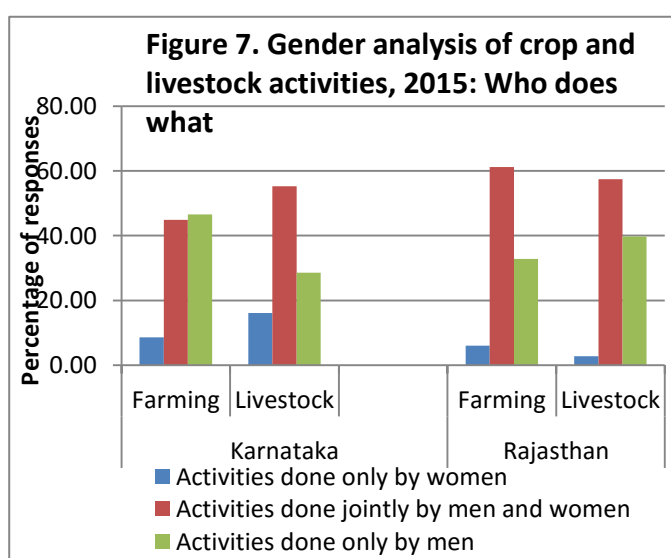
To an enquiry on how frequently they are able to access information on agriculture and related activities from the different sources, the results indicate that it is by season. The progressive farmers/neighbour was the most frequently sought out resource for any information related to crop production, marketing and storage. Farmers also reported that they would contact the information source based on the need and or when they happen to have a casual contact with them (Table 6.).

**Table 6. Frequency of Access to information, by source, Karnataka and Rajasthan villages, 2015**

| Sources                                            | Daily | Weekly | Monthly | Seasonally | Need based | Casual contact |
|----------------------------------------------------|-------|--------|---------|------------|------------|----------------|
| Progressive farmer /Relative/neighbour             | 2     | 10     | 46      | 40         | 54         | 25             |
| private agency/ NGO                                | 1     | 4      | 10      | 121        | 5          | 7              |
| Input Dealer                                       |       | 1      | 5       | 69         | 26         | 6              |
| Television                                         | 49    | 5      | 2       | -          | -          | 1              |
| Agri. supervisor/Agri. Officer/ Agri. Ext. officer | -     | 1      | 5       | 29         | 3          | 13             |
| Participation in training program                  | 1     | 1      | 3       | 17         | 2          | 10             |
| SHG (Woman)                                        |       | 3      | 14      | 13         | 3          | 1              |
| Newspaper                                          | 28    | 1      | 1       | -          | 1          | -              |
| Krishi Vigyan Kendra                               | -     | -      | 3       | 11         |            | 9              |
| Radio                                              | 9     | 7      | -       | -          | -          | -              |
| Primary cooperative society                        | -     | 1      | 1       | 8          | 2          | -              |
| Government Demonstration                           | 1     | -      | -       | 7          |            | 2              |
| Bank                                               | -     | -      | -       | -          | 2          | 4              |
| Farmers study tour                                 | -     | -      | -       | 1          | 1          | 3              |

## Role of gender in crop production

A gender analysis of who does what in crop activities clearly reveals that in both the sites, activities carried out exclusively by women were very few/limited (less than 10%). More than 50% of the activities were jointly performed by men and women. Exclusive male operations were about 45% in Karnataka villages and 32 percent in Rajasthan villages. On livestock activities, activities performed by both men and women were about 55% in both the sites (Figure 7). Table 7 shows who does what by different activities.



| Table 7. Gender analysis of crop and livestock activities, 2015 |                                     |                                                 |    |    |                                                 |    |    |
|-----------------------------------------------------------------|-------------------------------------|-------------------------------------------------|----|----|-------------------------------------------------|----|----|
|                                                                 |                                     | Karnataka villages<br>(Percentage of responses) |    |    | Rajasthan villages<br>(Percentage of responses) |    |    |
|                                                                 | Activity                            | F                                               | M  | J  | F                                               | M  | J  |
| 1                                                               | Selection of crop                   | 1                                               | 78 | 22 | 1                                               | 92 | 8  |
| 2                                                               | Selection of variety                | 0                                               | 87 | 13 | 1                                               | 94 | 5  |
| 3                                                               | Land preparation                    | 0                                               | 58 | 42 | 0                                               | 28 | 73 |
| 4                                                               | Transportation and appl. of FYM     | 0                                               | 60 | 40 | 1                                               | 2  | 98 |
| 5                                                               | Sowing                              | 5                                               | 81 | 14 | 0                                               | 96 | 4  |
| 6                                                               | Transplanting                       | 50                                              | 39 | 11 | 8                                               | 1  | 92 |
| 7                                                               | Chemical fertilizer appl.           | 5                                               | 86 | 9  | 3                                               | 3  | 94 |
| 8                                                               | Hand weeding                        | 72                                              | 3  | 26 | 8                                               | 0  | 92 |
| 9                                                               | Inter-culture                       | 2                                               | 22 | 77 | 3                                               | 5  | 93 |
| 10                                                              | Plant protection measures           | 1                                               | 73 | 27 | 0                                               | 98 | 2  |
| 11                                                              | Irrigation                          | 0                                               | 45 | 55 | 1                                               | 6  | 93 |
| 12                                                              | Watching                            | 1                                               | 3  | 96 | 1                                               | 0  | 99 |
| 13                                                              | Harvesting                          | 0                                               | 5  | 95 | 1                                               | 0  | 99 |
| 14                                                              | Threshing                           | 1                                               | 7  | 93 | 1                                               | 0  | 99 |
| 15                                                              | Marketing                           | 0                                               | 93 | 8  | 1                                               | 99 | 0  |
| 16                                                              | Seed selection and storage          | 1                                               | 5  | 94 | 68                                              | 2  | 30 |
| 17                                                              | Purchase/sale of livestock          | 0                                               | 79 | 21 | 1                                               | 98 | 1  |
| 18                                                              | Livestock-Feeding at home           | 19                                              | 3  | 78 | 6                                               | 7  | 88 |
| 19                                                              | Grazing of livestock                | 13                                              | 11 | 77 | 4                                               | 3  | 93 |
| 20                                                              | Milking                             | 46                                              | 18 | 37 | 3                                               | 4  | 93 |
| 21                                                              | Sale of milk                        | 26                                              | 21 | 53 | 2                                               | 39 | 59 |
| 22                                                              | Bringing green fodder for livestock | 20                                              | 13 | 67 | 2                                               | 3  | 95 |
| 23                                                              | Purchasing concentrate feed         | 4                                               | 48 | 48 | 2                                               | 71 | 28 |
| 24                                                              | Health care of livestock            | 1                                               | 37 | 62 | 3                                               | 94 | 3  |

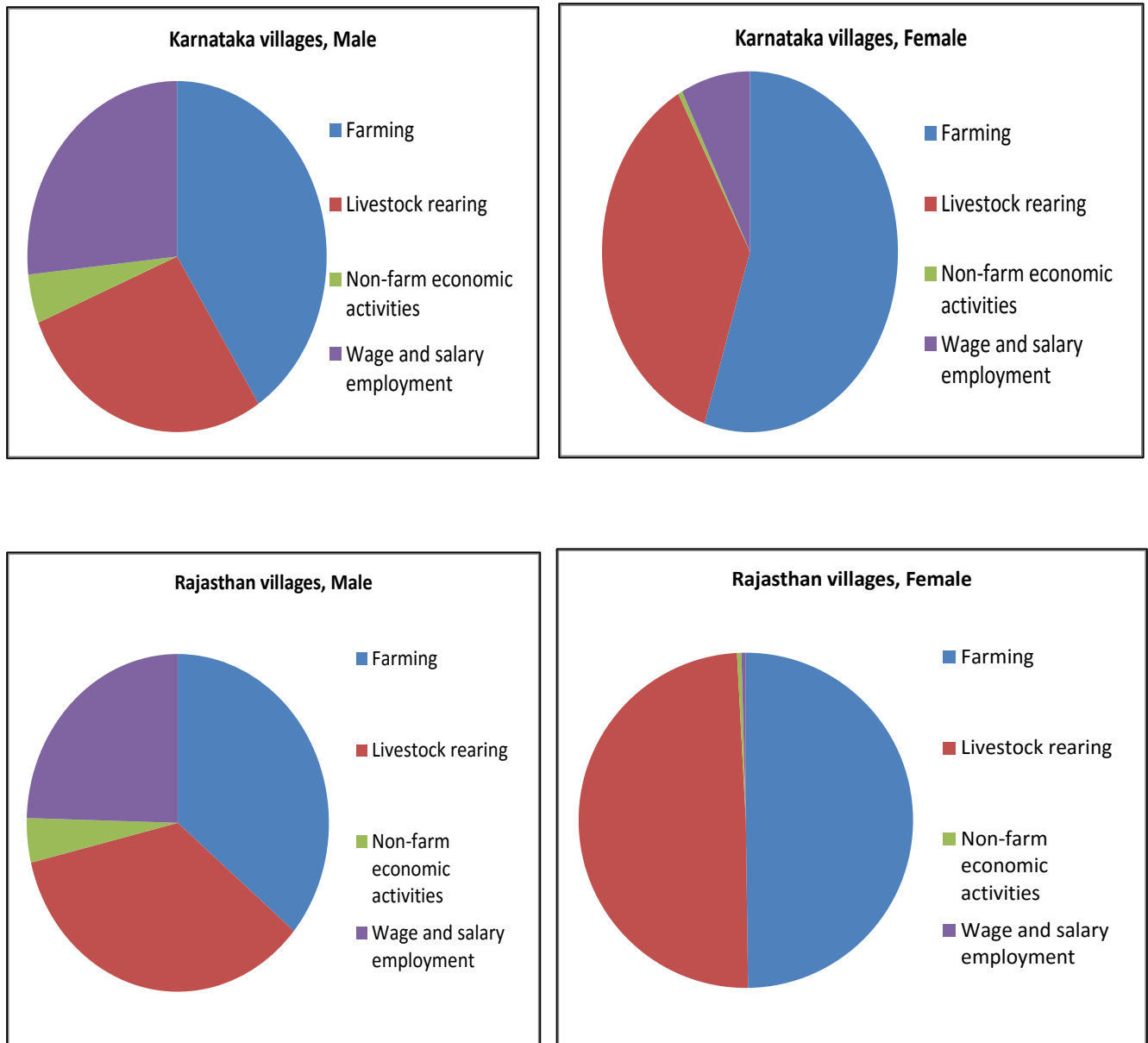
## Role of gender in decision making

In this study, the sociological and qualitative insights are aimed to provide an exploration of women's and men's agency – understood as “the ability to define one's goals and act upon them” (Kabeer 1999, 438) – at the core of which is the capacity to make important decisions pertaining to one's life. For rural women and men, these decisions relate to agriculture, livestock, as well as to other significant events in the household and community spheres. Such instances include, for instance, whether or not to pursue a given livelihood strategy or whether, what crop to grow or plant, decide how to use the household/ or one own self earned income.

To the question on whether the sample respondents decided on what livelihood activities they chose to participate, the findings suggest that women in the Karnataka villages decided to participate in farming, livestock rearing and or wage/salary employment, they did not choose non-farm activities as a source of livelihood or employment. Men on the other hand did chose the non-

farm activities as an option though the percentage of men who decided on this option is very small (Figure 7.) In the Rajasthan villages, women chose only two options – either they participate in agriculture/farming or they do livestock raising. Men, however, chose more options for their livelihoods. There are multiple reasons for making such choices. It appear that the decision is taken at the household level. That women take up the activities which are around their residence and the men would take up other employment which could be bit far away.

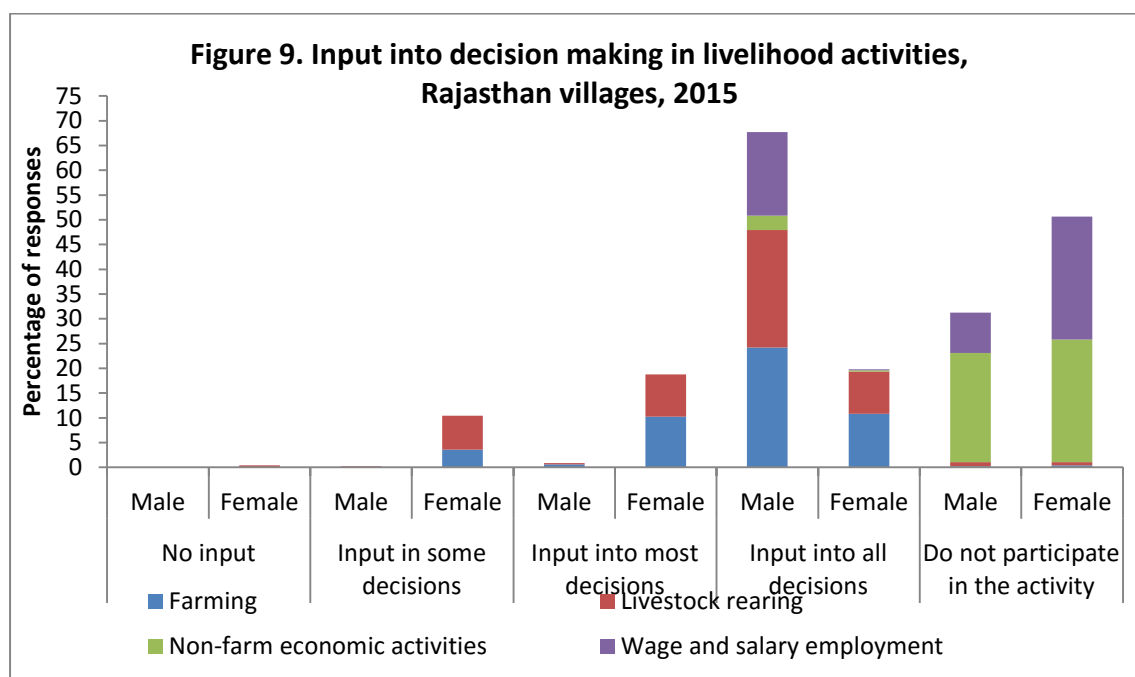
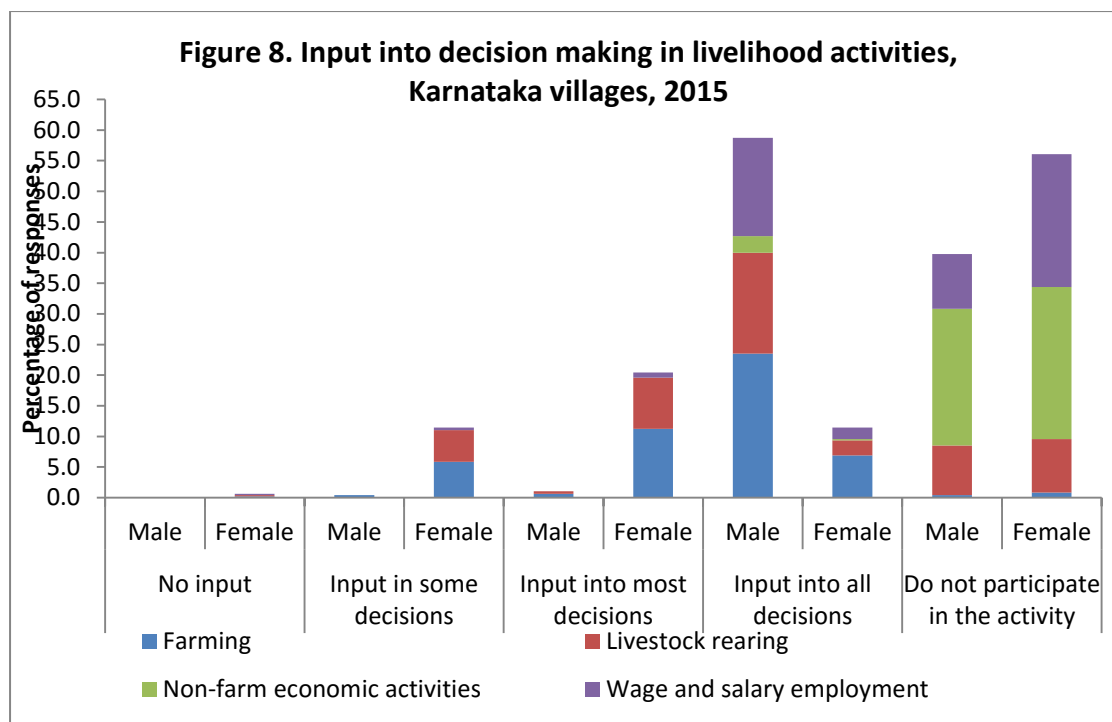
**Figure 7. Decision to participate in different livelihood activities, study sites, 2015**

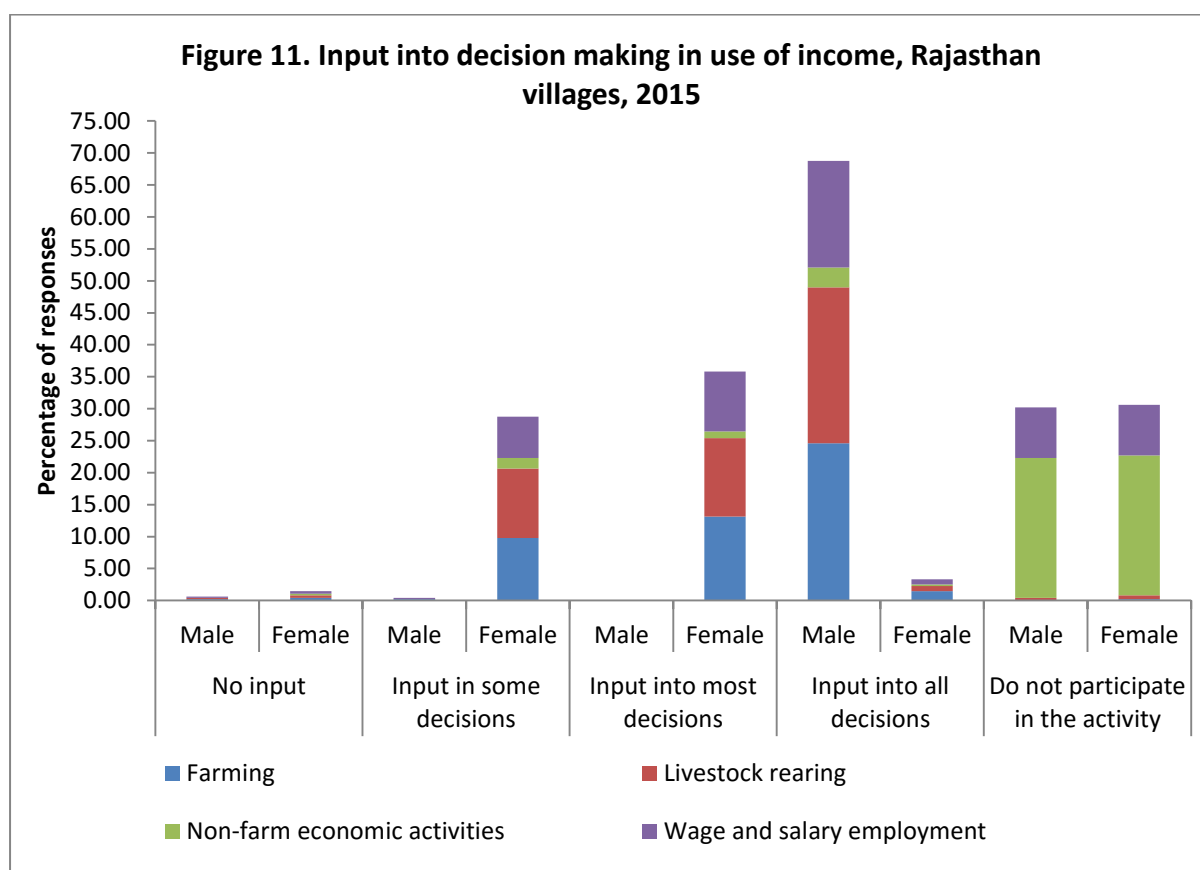
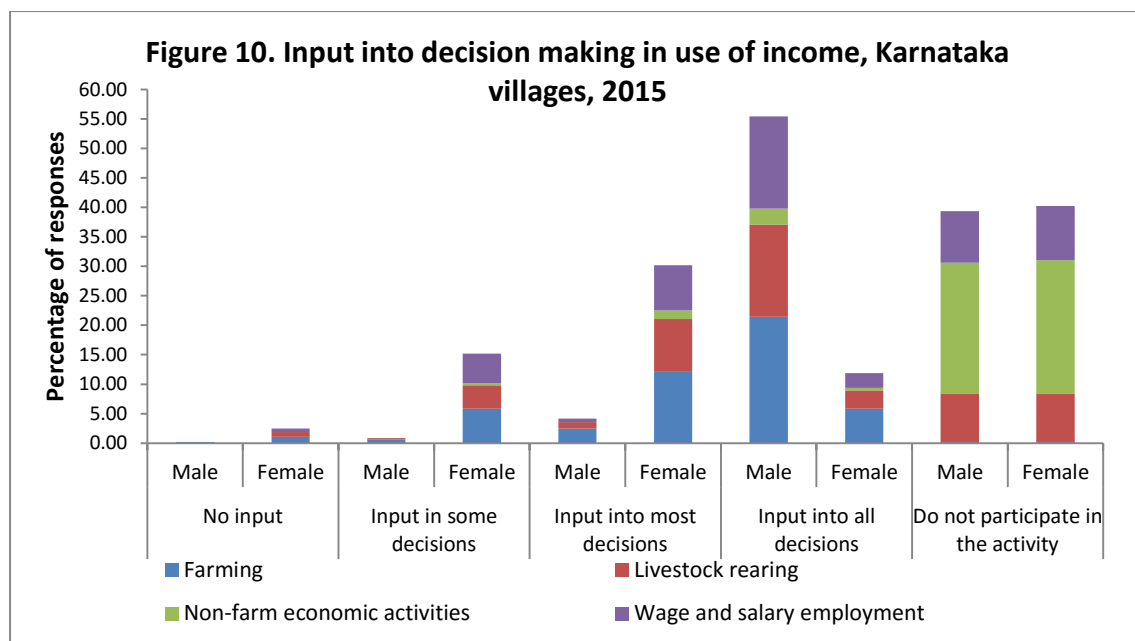


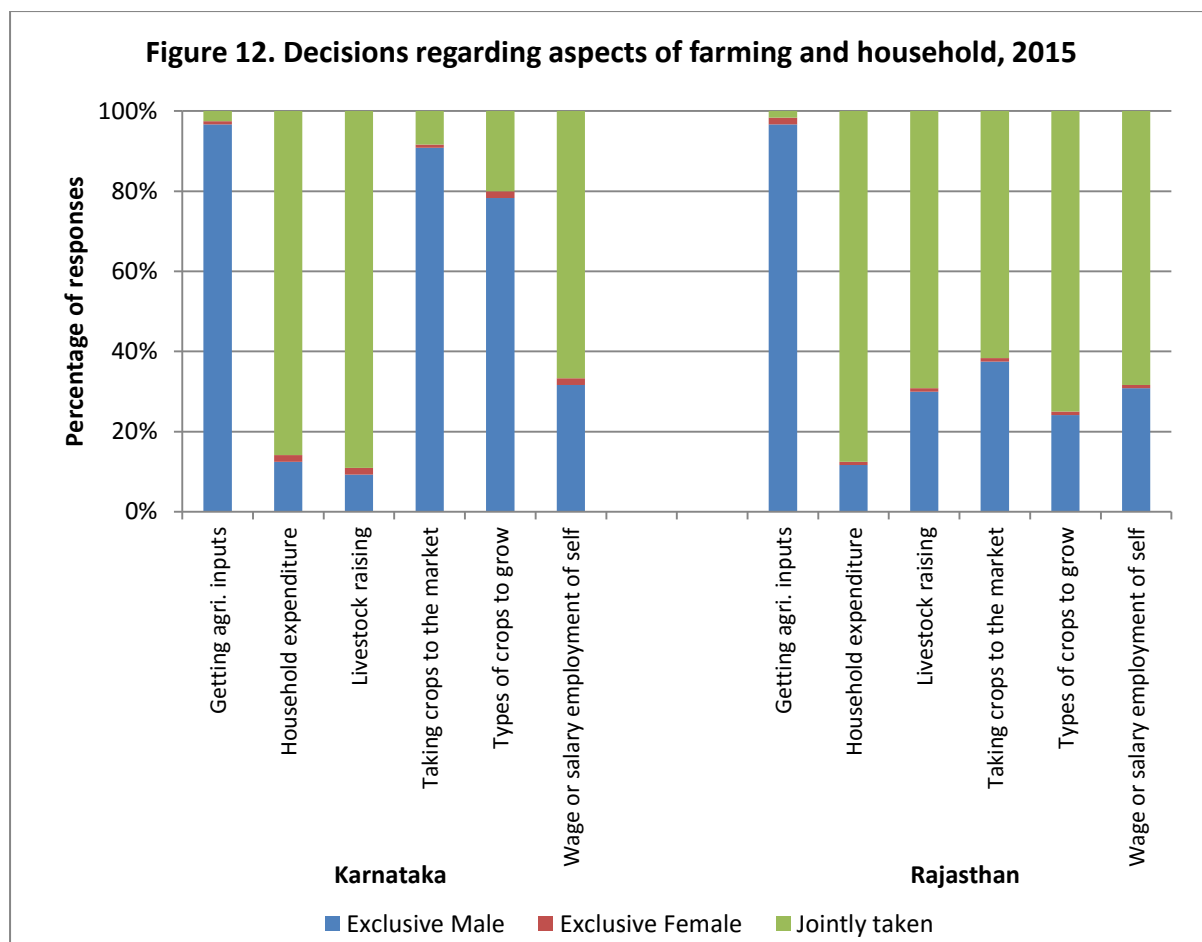


For a further understanding on how decisions were made and to understand the decision-making processes, men and women were then asked the level of input they had in making the decision to participate in these activities. In both the sites i.e., Karnataka and Rajasthan, it was found that 60 % of the men had inputs in all the decisions made in the four activities – Farming; livestock raising; non-farm economic activities and wage/salary employment. Only 20% of the women on the other hand were involved in providing inputs in all decisions (figures 8 and 9). Similar results were obtained when decision making on the use of the income generated from these four livelihood activities was understood. About 30-40% women do have an input into most decisions on how incomes have to be used, the men dominated the decisions on this aspect (figures 10 and 11). And lastly, as can be seen from figure 12, in the Karnataka study villages, men took exclusive decisions on market related activities; all other decisions were made jointly in consultation with the women in the household. In Rajasthan villages, majority of the decisions were taken jointly by both men and women in the household. In both the sites, there were no aspects where decisions were made by women exclusively.

These findings are very much in line with the literature. Most household assets and likewise livelihood options are used and accessed by multiple members of a household, with patterns of use by each individual varying seasonally and/or with changes in the demographic composition of the household. This sharing of rights among individuals is what we mean here by “joint-ness” in rights (Rao, 2016). Since women’s access to assets is often mediated through their families, they are more likely to be joint rather than sole owners of assets (Johnson et al 2015). They are also more likely to participate in decision-making together with other family members rather than alone (Deere et al 2013). Based on the findings above, there should be no extra privilege accorded to individual or sole use and control of assets over joint use and control, given that the ultimate goal is one where women and men can participate as equals in the common project of ensuring the well-being of a household or community (Deere and Twyman 2012). The emphasis is that joint-ness does not mean equality. In the resource-scarce agricultural contexts of the developing world such as the semi-arid and arid tropics, joint access, joint-ness in decision-making may be the only feasible way to ensure broader access to assets for marginalized populations (Rao 2006, Agarwal 2010).







## Sociological observations and findings based on FGDs

The sociological analysis based on the conversations with the men and women from the two study sites reveals interesting discussions. Women in both the sites are responsible for saving the seed of the crop for the next year. In the women farmer's own words, "We are merely using knowledge handed down over generations, trusting the land and traditional seeds." They use local seed and the farming techniques passed on to them by their elders.

Women never or rarely visit the input shop as villages are remotely located from town. In addition, in the Rajasthan villages, there is no transport facility from village to town. So rarely (except in case of emergency) do the women go out of the village. Cultivation of traditional staple food crops almost no use of inputs keeps the private company representatives away from the village.

Men in both villages of Rajasthan have access to information about new varieties and cultivars obtained from GRAVIS staff, and Primary Agricultural Credit Cooperative Society (PACCS) provides them with information on fertilizers and credit. In Govindpura village, farmers also get information from input shop dealers. During the FGDs, the respondents mentioned that the interaction between the extension personnel either from the government or private agricultural organisations are very rare. The government officers rarely visit the village, they added. Even if they visit, they never enter

the Dhani (farmers' residence located at their fields away from main village) and usually meet the large and progressive farmers. The capacity building program as part of CRP Dryland Systems benefitted about 100-250 farmers from each village. Women were usually discouraged by their family members to participate in the training programs. CRP DS staff has had continuous interactions with men and women regularly through meetings and household visits. CRP DS strongly supported the formation of Self Help Groups (SHGs) in the village and provided training on agriculture and livelihood activities. Women farmers generally obtain the knowledge of agricultural production from the immediate family members, especially their in-laws or husband within the household and some relatives and neighbours in the village. Women manage every aspect of farm work, but are not considered farmers by the extension agencies. They do field work—planting, sowing, weeding, and harvesting—but not considered as landowners. Women harvest and process the produce, but men largely control the market and income. Women rarely participate in agricultural related information meetings in the village.

In the Karnataka villages, in addition to the above, there are many constraints faced by the farmers. Lack of awareness, lack of motivation to the farmers towards training, communication gap among the scientist, farmers and extension workers, lack of education, lack of interests to get modern techniques, poor social status and small land holding of farmers. For example, in Bijapur post rainy sorghum is the main crop and farmers were growing M-35-1 (Maldandi) variety. The yield (grain and fodder) of this variety is less as compared to other new varieties released by the regional university. But farmers are not interested to adopt other sorghum variety; even we provide seed free of cost. The quality of Maldandi sorghum grain and fodder is good as compare to other new variety. This study on constraints faced by farmers also revealed that training method was not effective, training subject was as per the need of the farmers. With regard to women farmers, several training programs were organized for the women SHG groups, like vermi-compost training, dairy training, poultry training, tailoring, candle making, agarbatti making, paper bag, embroidery, value addition to sorghum and fruits. These trainings were aimed to enhance the income generation capacity of the rural women.

Among all the activities of the KVK at Bijapur, training programmes and demonstration of new technology were the major activity. Even with the introduction of new innovations and technologies, farmers are reluctant to adopt initially. However with enhanced awareness creation and training along with field level demonstrations, has increased the adoption rates. Example: As result of excessive use of water, farmers of Indi and Sindgi were facing the problems of land salinity, so KVK trained 50 farmers from that area on salinity management. This helped the farmer to improve soil health.

As malnutrition is a serious concern, KVK's are also building the capacity of women farmers in establishment and raising the kitchen gardens. KVK Bijapur provided required inputs for the kitchen gardens. This initiative enhanced the household availability and access of different types of fruits and vegetables thereby enhancing the dietary diversity of the household. In addition, women were also trained in tailoring, preparation of decorative handbags and sericulture. For youth, KVK has arranged training on horticulture crops propagation techniques, production and use of vermi-

compost, bio-fertilizers and bio-pesticides and sericulture. This was aimed at youth to encourage them to start their own agribusiness.

## Concluding explanations

Based on the analysis of the data and the sociological observations presented in the above sections the major constraint faced by women in relation to men in accessing and benefitting from extension systems is lack of access or poor and limited access to resources which includes knowledge and information also. Having no or limited access furthers constrains them from participating in decision making activities be it at the farm level or household level.

The findings presented above clearly reveal that women play a major role in agriculture and agriculture continues to remain as an important source of livelihood for women. The extension needs of women, therefore, will be different from those of men. This is yet to be understood by the extension officers and services provided by the government and other stakeholders. Similarly, this study illustrates that men and women have differential access to assets, information, markets, credits and other services; and many a time these “gender issues” are not clearly identified by the extension officers. *The conclusion from the study is that differential access to resources is the binding constraint for women to benefit from extension services.*

From the study, it was evident that the women farmers generally obtain the knowledge of agricultural production from their immediate family members, especially their in-laws or husband within the household and some relatives and neighbours in the village. Women manage every aspect of farm work, but are not considered farmers. They do field work—planting, sowing, weeding, and harvesting—but not considered as landowners. Women harvest and process the produce, but men largely control the market and income. Men farmers from small, medium and large landholding classes attended training programmes on pearl millet crop starting from land preparation to harvesting, arranged by CAZRI and KVK. Women were not included in the training program.

The study further revealed that women have less access to extension service due to existing gender norms in that region. Low financial status and market awareness deters the rural women in engaging in non-farm income sources like petty business on their own. As per the cultural, social norms, the role of the men and women also differs in farming. Women are mostly involved in the manual operations while men are involved in mechanical and draft power operations. In addition men are involved in marketing of the produce. The extension personnel should plan their training programs based on these norms and should focus their training on intercultural operations, harvesting, weeding, grading and packaging, which would benefit the rural farm women. Also, post-harvest processing has gained much importance in the recent times, which provides additional income to the farmer. So, women might be trained in post-harvest processing techniques for additional income.

There is a need to sensitize extension personnel and services through training in “gender analysis” and “gender-sensitive agricultural planning” methods. This was initially started in the mid 80s to 90s

and have focused on women who are involved in agriculture and improving their capacity to do farming better. The data from the study and the literature points out that just training the officer on gender analysis is not enough and is not sufficient to address gender inequalities. They should ne

Though this study did not shed more light on the institutional arrangements to be in place for extension services to become more gender responsive, it did give information on the current status of the extension services in the study villages.

The rapid changes in the external environment indicate that extension has to deal with a new set of challenges such as land degradation, fragmentation of farm holdings, threats and opportunities with greater integration of markets among others. To address the new challenges, extension should therefore be prepared to understand how globalization affects both domestic and international markets and how the rural poor have to respond to this. Agriculture be viewed as apart of the broader rural development agenda and extension services should go beyond farm production to non-farm economy as well. The existing gender and social norms also should be well understood by the extension services and responses/services should be thought of keeping these in mind. If done so, the extension services will be more gender-responsive. To be successful, farmers (both men and women) require a wide range of knowledge from different sources and support to integrate these different bits of knowledge into their production context. Extension should therefore play a capacity development role that includes training, strengthening innovation process, building linkages between farmers and other agencies, as well as institutional and organisational development to support the bargaining position of farmers. This was well echoed by Sulaiman and Hall (2004) in the early studies of innovation in innovation. Finally, improving opportunities for rural employment and understanding the trends towards the progressive feminization of agriculture, are critical for equitable growth and rural poverty reduction and women comprise a significant portion of the working poor in rural areas

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## Appendix 1: Survey Instrument

### A:- Household Identification

**ENUMERATOR INSTRUCTIONS:** You need to interview the household member who is primarily responsible for making decisions about the HH and HH farm. This is most likely the head of the household, but if the head of the household works off the farm, it will be another household member who is responsible for the household farm.

| Village: |                                                                                                                                                                                                                                        | Mandal/Block: |  | District: |                                                                                                                                                                         | State: KN/RJ |  |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--|
| A 1      | Household Identifier                                                                                                                                                                                                                   |               |  | A 2       | Date of interview :                                                                                                                                                     |              |  |
|          | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> |               |  |           | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> |              |  |
| A 3      | Start time of interview:                                                                                                                                                                                                               |               |  | A 4       | End time of interview::                                                                                                                                                 |              |  |
|          | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>                                                                                                                                                    |               |  |           | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>                                                                                     |              |  |
| A 5      | Name of respondent:                                                                                                                                                                                                                    |               |  |           |                                                                                                                                                                         |              |  |
| A 6      | Respondents Father/ Spouse's Name:                                                                                                                                                                                                     |               |  |           |                                                                                                                                                                         |              |  |
| A 7      | Is Respondent the HH Head?                                                                                                                                                                                                             |               |  | A 8       | Relationship of Respondent to HH Head                                                                                                                                   |              |  |
|          | 1 = Yes, 2 = No (If yes, go to A 11)                                                                                                                                                                                                   |               |  |           |                                                                                                                                                                         |              |  |
| A 9      | Name of head of household:                                                                                                                                                                                                             |               |  |           |                                                                                                                                                                         |              |  |
| A 10     | HH heads farther/Spouse's name:                                                                                                                                                                                                        |               |  |           |                                                                                                                                                                         |              |  |
| A 11     | Caste and sub caste                                                                                                                                                                                                                    |               |  | A 12      | Numbers of mobile in the house?                                                                                                                                         |              |  |
| A 13     | Mobile Numbers of HH Members (for follow-up)                                                                                                                                                                                           |               |  | A 14      | Name of Enumerator                                                                                                                                                      |              |  |
|          | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>                      |               |  |           |                                                                                                                                                                         |              |  |
| A 15     | Name of supervisor and Date of checking                                                                                                                                                                                                |               |  | A 16      | Name of DEO and Date of data entry                                                                                                                                      |              |  |

Codes for relationship of respondent to HH head:

2=Father

5=Son,

8=Daughter-in-law

11=Brother

14=Brother's children

|          |              |                  |                   |                     |
|----------|--------------|------------------|-------------------|---------------------|
| 3=Mother | 6=Daughter   | 9=Grandson       | 12=Sister         | 15=others (specify) |
| 4=Spouse | 7=Son-in-law | 10=Granddaughter | 13=Brother's wife |                     |

**B:- Household Roster:**

| S<br>N | Name of member | Rel <sup>n</sup> .<br>to<br>head | Sex | Age | Edu.<br>level | Main Occu. | Sub.<br>Occu. | Experience<br>of main<br>occupation<br>(Years) | Whether<br>member of<br>any<br>organization |
|--------|----------------|----------------------------------|-----|-----|---------------|------------|---------------|------------------------------------------------|---------------------------------------------|
|        |                | 1                                |     |     |               |            |               |                                                |                                             |
|        |                |                                  |     |     |               |            |               |                                                |                                             |
|        |                |                                  |     |     |               |            |               |                                                |                                             |
|        |                |                                  |     |     |               |            |               |                                                |                                             |
|        |                |                                  |     |     |               |            |               |                                                |                                             |
|        |                |                                  |     |     |               |            |               |                                                |                                             |
|        |                |                                  |     |     |               |            |               |                                                |                                             |
|        |                |                                  |     |     |               |            |               |                                                |                                             |
|        |                |                                  |     |     |               |            |               |                                                |                                             |
|        |                |                                  |     |     |               |            |               |                                                |                                             |

| <u>Relation to head</u> |                       | <u>Education</u>                   |                                            | <u>Occupation</u>       |                                                               |
|-------------------------|-----------------------|------------------------------------|--------------------------------------------|-------------------------|---------------------------------------------------------------|
| 1=Head/Self             | 9=Grandson            | 0=Illiterate                       | 7=Post-graduation                          | 1=Farming,              | 8=salaried job                                                |
| 2=Father                | 10=Granddaughter      | 1=Primary(1-4 <sup>th</sup> )      | 8=Technical degree (BE, MBBS, B.Sc. Agri.) | 2=Farm labour,          | 9=Education                                                   |
| 3=Mother                | 11=Brother            | 2=Middle(5-7 <sup>th</sup> )       | 9=Double degree (Example, BA, B. Ed)       | 3=Non-farm labour       | 10=Domestic work,                                             |
| 4=Spouse                | 12=Sister             | 3=High school(8-10 <sup>th</sup> ) | 10=PhD                                     | 4=Regular farm servant, | 11=No work (Child/Old age/physically or mentally handicapped) |
| 5=Son                   | 13=Brother's wife     | 4=Inter(11-12 <sup>th</sup> )      |                                            | 5=Livestock             |                                                               |
| 6=Daughter              | 14=Brother's children | 5=Diploma                          |                                            |                         |                                                               |

|                              |                      |              |                     |                                  |                     |
|------------------------------|----------------------|--------------|---------------------|----------------------------------|---------------------|
| 7=Son-in-law<br>8=Dau-in-law | 15=others (specify ) | 6=Graduation | 11=Others (Specify) | 6=Business<br>7=Caste occupation | 12=others (Specify) |
|------------------------------|----------------------|--------------|---------------------|----------------------------------|---------------------|

**C:- Yearly income of the household (from June 2014 to July 2015)**

| Source of Income | Annual Income (Rs) | Remark |
|------------------|--------------------|--------|
| 1- Farming       |                    |        |
| 2- Livestock     |                    |        |
| 3- Wage          |                    |        |
| 3.1 On farm      |                    |        |
| 3.2 Non-farm     |                    |        |
| 4. Business      |                    |        |

**D:- Landholding information (from June 2014 to July 2015)**

| S<br>N | Plot Name | Owner-<br>ship<br>status <sup>a</sup> | Total<br>Area<br>(Ac) | Cultivable<br>Area (Ac) | Irrigated<br>Area (Ac) | Source of<br>Irrigation <sup>b</sup> | Distance<br>from the<br>house | Soil Type<br><sup>c</sup> | How much do<br>you get if you<br>sell (Rs /Acre) |
|--------|-----------|---------------------------------------|-----------------------|-------------------------|------------------------|--------------------------------------|-------------------------------|---------------------------|--------------------------------------------------|
|        |           |                                       |                       |                         |                        |                                      |                               |                           |                                                  |
|        |           |                                       |                       |                         |                        |                                      |                               |                           |                                                  |
|        |           |                                       |                       |                         |                        |                                      |                               |                           |                                                  |
|        |           |                                       |                       |                         |                        |                                      |                               |                           |                                                  |
|        |           |                                       |                       |                         |                        |                                      |                               |                           |                                                  |
|        |           |                                       |                       |                         |                        |                                      |                               |                           |                                                  |
|        |           |                                       |                       |                         |                        |                                      |                               |                           |                                                  |
|        |           |                                       |                       |                         |                        |                                      |                               |                           |                                                  |
|        |           |                                       |                       |                         |                        |                                      |                               |                           |                                                  |

<sup>a</sup> **OW**= Own land, **SI**=Leased-in on crop share, **LI**=Leased-in on fixed rent, **SO**=Leased-out on crop share, **LO**=Leased out on fixed rent, **MI**=Mortgaged-in, **MO**=Mortgaged-out

<sup>b</sup>1= Well, 2= Bore well, 3= Tank/Pond, 4= Canal, 5= River, 6= Other (Specify)

**1= Red, 2= Shallow Black/Murum, 3= Medium black, 4= Deep Black, 5= Sandy, 6= Loam, 7= Sandy loam, 8= Clay, 9= Clay loam, 10= problematic soil, 11= other (Specify)**

**D.1 Does any woman member in your household having ownership of land? If yes, who and how many acres?**

**E:- Cropping pattern (from June 2014 to July 2015)**

| Name of Crop             | Area (Ac) | Variety cultivated | Who took decision to grow this variety (M/F/B) | Main output Kg | Price of main produce (Rs/Kg) | Byproduct Qt | Price of byproduct (Rs/Qt) |
|--------------------------|-----------|--------------------|------------------------------------------------|----------------|-------------------------------|--------------|----------------------------|
| Rainy (Kharif) Season    |           |                    |                                                |                |                               |              |                            |
|                          |           |                    |                                                |                |                               |              |                            |
|                          |           |                    |                                                |                |                               |              |                            |
|                          |           |                    |                                                |                |                               |              |                            |
|                          |           |                    |                                                |                |                               |              |                            |
|                          |           |                    |                                                |                |                               |              |                            |
|                          |           |                    |                                                |                |                               |              |                            |
|                          |           |                    |                                                |                |                               |              |                            |
| Post Rainy (Rabi) Season |           |                    |                                                |                |                               |              |                            |
|                          |           |                    |                                                |                |                               |              |                            |
|                          |           |                    |                                                |                |                               |              |                            |
|                          |           |                    |                                                |                |                               |              |                            |
|                          |           |                    |                                                |                |                               |              |                            |
|                          |           |                    |                                                |                |                               |              |                            |
|                          |           |                    |                                                |                |                               |              |                            |
| Summer season            |           |                    |                                                |                |                               |              |                            |

|                   |  |  |  |  |  |  |  |
|-------------------|--|--|--|--|--|--|--|
|                   |  |  |  |  |  |  |  |
|                   |  |  |  |  |  |  |  |
|                   |  |  |  |  |  |  |  |
| Annual/ perennial |  |  |  |  |  |  |  |
|                   |  |  |  |  |  |  |  |
|                   |  |  |  |  |  |  |  |
|                   |  |  |  |  |  |  |  |
|                   |  |  |  |  |  |  |  |

**F:- Animal Inventory of the household (from June 2014 to July 2015)**

| Animals              | Numbers | Mode of acquiring | Present market value (Rs) |
|----------------------|---------|-------------------|---------------------------|
| 1. Draft animals     |         |                   |                           |
| 1.1. Bullocks        |         |                   |                           |
| 1.2. He buffaloes    |         |                   |                           |
| 2. Milking animals   |         |                   |                           |
| 2.1. She buffaloes   |         |                   |                           |
| 2.2. Local Cow       |         |                   |                           |
| 2.3. Cross breed cow |         |                   |                           |
| 3. Young stock       |         |                   |                           |
| 4. Goats             |         |                   |                           |
| 5. Sheep             |         |                   |                           |
| 6. Pigs              |         |                   |                           |
| 7. Camel             |         |                   |                           |
| 8. Poultry           |         |                   |                           |
| 9. Donkey            |         |                   |                           |
| 10. Horses           |         |                   |                           |
| 11. Others (Specify) |         |                   |                           |

**Mode of acquiring**

- |                              |                                       |
|------------------------------|---------------------------------------|
| 1- On farm rearing           | 6- On farm rearing + Received as gift |
| 2- Purchase                  | 7- On farm rearing+ Sharing in        |
| 3- Received as gift          | 8- Purchase+ Received as gift         |
| 4- Sharing in                | 9- Purchase+ Sharing in               |
| 5- On farm rearing+ Purchase | 10- Purchase from SHG loan            |

**A:- Assets (Farm Implements) (from June 2014 to July 2015)**

| Particulars                  | Numbers | Implements are own or having other's share<br>1. Own<br>2. Share with other | Present market value (Rs) |
|------------------------------|---------|-----------------------------------------------------------------------------|---------------------------|
| 1. Desi plough (Iron/wood)   |         |                                                                             |                           |
| 2. Modern plough             |         |                                                                             |                           |
| 3. Blade harrow              |         |                                                                             |                           |
| 4. Blade hoe                 |         |                                                                             |                           |
| 5. Seed drill (Local/Modern) |         |                                                                             |                           |
| 6. Sprinkler set             |         |                                                                             |                           |
| 7. Drip irrigation           |         |                                                                             |                           |
| 8. Manual sprayers/dusters   |         |                                                                             |                           |
| 9. Power sprayer/duster      |         |                                                                             |                           |

|                                          |  |  |  |
|------------------------------------------|--|--|--|
| 10. Chaff cutter                         |  |  |  |
| 11. Sugarcane crusher                    |  |  |  |
| 12. Agro processing unit                 |  |  |  |
| 13. Rice/flour mill/grinding             |  |  |  |
| 14. Power-tiller / Tractor               |  |  |  |
| 15. Submersible pump                     |  |  |  |
| 16. Bullock cart                         |  |  |  |
| 17. Trucks                               |  |  |  |
| 18. Other Minor implements               |  |  |  |
| 19. Mechanical Thresher                  |  |  |  |
| 20. Electric motor                       |  |  |  |
| 21. Diesel pump                          |  |  |  |
| 22. Pipeline (feet) (type)               |  |  |  |
| 23. Combined harvester cum thresher      |  |  |  |
| 24. Implements used for caste occupation |  |  |  |
| 25. Other (Specify)                      |  |  |  |

**G:- Building & Consumer durables of the household (from June 2014 to July 2015)**

| Item                                 |                                                    | Facilities/<br>number | Present market Value<br>(Rs) |
|--------------------------------------|----------------------------------------------------|-----------------------|------------------------------|
| Residential house (Own=1, Rented =2) |                                                    |                       |                              |
| Type of house*                       |                                                    |                       |                              |
| Toilet                               | <b>Write code</b><br><b>1. Yes</b><br><b>2. No</b> |                       |                              |
| Bathroom                             |                                                    |                       |                              |
| Electrified                          |                                                    |                       |                              |
| Tap water connection                 |                                                    |                       |                              |
| Cooking gas (LPG)                    |                                                    |                       |                              |
| Star connection                      |                                                    |                       |                              |
| Others (Specify)                     |                                                    |                       |                              |
| Cattle shed                          |                                                    |                       |                              |
| Farm house                           |                                                    |                       |                              |
| Residential plots                    |                                                    |                       |                              |
| Storage structures                   |                                                    |                       |                              |
| <b>Consumer durables:</b>            |                                                    |                       |                              |
| Television                           |                                                    |                       |                              |
| Radios                               |                                                    |                       |                              |
| Telephone/Cell phones                |                                                    |                       |                              |
| Cooking utensils                     |                                                    |                       |                              |
| Furniture                            |                                                    |                       |                              |
| CD/DVD player                        |                                                    |                       |                              |
| Watches                              |                                                    |                       |                              |



|                                |  |  |
|--------------------------------|--|--|
| Sewing machine                 |  |  |
| Fans                           |  |  |
| Motor cycle/scooter / rickshaw |  |  |
| Auto/car/jeep                  |  |  |
| Computer/Laptop (Internet)     |  |  |
| Fridge                         |  |  |
| Gold & silver                  |  |  |
| Washing machine/ grinders      |  |  |
| Air condition/coolers          |  |  |
| Bicycle                        |  |  |
| Others specify                 |  |  |

**\*Codes for type of House**

- |                                        |                              |
|----------------------------------------|------------------------------|
| 1. Strong walls and RCC roof,          | 4. Mud walls with other roof |
| 2. Strong walls and other type of roof | 5. Tin wall & tin roof       |
| 3. Mud walls with thatched roof        | 6. Others (Specify)          |

### H:- Role in household decision-making

| Activity                                                                    | Did you (singular) participate in [ACTIVITY] in the past 12 months (that is during the last [one/two] cropping seasons)? Yes. 1; No 2 >> next activity |   | How much input did you have in making decisions about [ACTIVITY]? Code* |   | How much input did you have in decisions on the use of income generated from [ACTIVITY] |   |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------|---|
|                                                                             | M                                                                                                                                                      | F | M                                                                       | F | M                                                                                       | F |
| Farming                                                                     |                                                                                                                                                        |   |                                                                         |   |                                                                                         |   |
| Livestock raising                                                           |                                                                                                                                                        |   |                                                                         |   |                                                                                         |   |
| Non-farm economic activities: Small business, self-employment, buy-and-sell |                                                                                                                                                        |   |                                                                         |   |                                                                                         |   |
| Wage and salary employment: in-kind or monetary (agriculture or other wage) |                                                                                                                                                        |   |                                                                         |   |                                                                                         |   |

| Aspects                                       | When decisions are made regarding the following aspects of household life, who is it that normally takes the decision? |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Getting agricultural inputs                   |                                                                                                                        |
| The types of crops to grow                    |                                                                                                                        |
| Taking crops to the market (or not)           |                                                                                                                        |
| Livestock raising                             |                                                                                                                        |
| Your own (singular) wage or salary employment |                                                                                                                        |
| Household expenditures                        |                                                                                                                        |

#### **\*Codes:**

1. No input
2. Input into some decisions
3. Input into most decisions
4. Input into all decisions

#### **Who makes decision**

1. Male
2. Female
3. Both

**A:- Role of gender in crop cultivation and livestock rearing**

| Activity                              | Done by men | Done by women | Jointly (men and women) |
|---------------------------------------|-------------|---------------|-------------------------|
| <b>Farming</b>                        |             |               |                         |
| Selection of crops                    |             |               |                         |
| Selection of variety                  |             |               |                         |
| Land preparation                      |             |               |                         |
| Transportation and application of FYM |             |               |                         |
| Sowing                                |             |               |                         |
| Transplanting                         |             |               |                         |
| Chemical fertilizer application       |             |               |                         |
| Hand weeding                          |             |               |                         |
| Intercultural                         |             |               |                         |
| Plant protection measures             |             |               |                         |
| Irrigation                            |             |               |                         |
| Watching                              |             |               |                         |
| Harvesting                            |             |               |                         |
| Threshing                             |             |               |                         |
| Marketing                             |             |               |                         |
| Seed selection and storage            |             |               |                         |
| <b>Livestock rearing</b>              |             |               |                         |
| Purchase/sold of livestock            |             |               |                         |
| Feeding to livestock at home          |             |               |                         |
| Taking livestock for grazing          |             |               |                         |
| Milking                               |             |               |                         |
| Selling of milk                       |             |               |                         |
| Bring green fodder                    |             |               |                         |
| Purchase concentrate feed             |             |               |                         |
| Livestock's health care               |             |               |                         |
| Other (Specify)                       |             |               |                         |

**Put (✓) tick mark where ever is applicable.**

**A:- Access to modern agricultural technology**

| Source                                                            | Whether accessed?<br>Yes-1<br>No-2 | If yes frequency of contact | Type of Information received | Quality of information received | Whether received information was tried? | Whether Recommended practice has been adopted?<br>(Yes - 1, No- 2) | If no reasons for not adopting | Suggestions for improvement in extension services |
|-------------------------------------------------------------------|------------------------------------|-----------------------------|------------------------------|---------------------------------|-----------------------------------------|--------------------------------------------------------------------|--------------------------------|---------------------------------------------------|
| 1                                                                 | 2                                  | 3                           | 4                            | 5                               | 6                                       | 7                                                                  | 8                              | 9                                                 |
| Participate in training program                                   |                                    |                             |                              |                                 |                                         |                                                                    |                                |                                                   |
| Krishi Vigyan Kendra                                              |                                    |                             |                              |                                 |                                         |                                                                    |                                |                                                   |
| Agricultural supervisor/ Agril. Officer/ Agril. Extension officer |                                    |                             |                              |                                 |                                         |                                                                    |                                |                                                   |
| Television                                                        |                                    |                             |                              |                                 |                                         |                                                                    |                                |                                                   |
| Radio                                                             |                                    |                             |                              |                                 |                                         |                                                                    |                                |                                                   |
| Newspaper                                                         |                                    |                             |                              |                                 |                                         |                                                                    |                                |                                                   |
| Village Fair                                                      |                                    |                             |                              |                                 |                                         |                                                                    |                                |                                                   |
| Government Demonstration                                          |                                    |                             |                              |                                 |                                         |                                                                    |                                |                                                   |
| Input Dealer                                                      |                                    |                             |                              |                                 |                                         |                                                                    |                                |                                                   |
| Progressive farmer/Relative/neighbor                              |                                    |                             |                              |                                 |                                         |                                                                    |                                |                                                   |
| Farmers study tour                                                |                                    |                             |                              |                                 |                                         |                                                                    |                                |                                                   |
| Private agency/ NGO                                               |                                    |                             |                              |                                 |                                         |                                                                    |                                |                                                   |
| Primary cooperative society                                       |                                    |                             |                              |                                 |                                         |                                                                    |                                |                                                   |
| Output buyers/ food processor                                     |                                    |                             |                              |                                 |                                         |                                                                    |                                |                                                   |
| Bank                                                              |                                    |                             |                              |                                 |                                         |                                                                    |                                |                                                   |
| SHG (Woman)                                                       |                                    |                             |                              |                                 |                                         |                                                                    |                                |                                                   |
| others                                                            |                                    |                             |                              |                                 |                                         |                                                                    |                                |                                                   |

**Codes for col. 3:** Daily - 1, Weekly - 2, Monthly - 3, seasonally - 4, Need based - 5, Casual contact – 6

**Codes for col. 4:** Improved seed/variety - 1, fertilizer - 2, plant protection - 3, farm machinery - 4, harvesting/marketing – 5 breeding of livestock - 6, feeding to livestock-7, health care of livestock -8, management of livestock-9, others -10

**Codes for col.8:** lack of financial resources - **1**, non-availability of input and physical resources - **2**, lack of technical device for follow-up - **3**, difficulty in storage, processing and marketing of products - **4**, Not useful - **5**, others (Specify)-**6**

**Codes for col. 9:** Improvement in quality and reliability of information - **1**, timeliness of information - **2**, increase in frequency of demonstration - **3**, improvement of quality of presentation - **4**, improvement of professional competence of information provider - **5**, others (Specify)-**6**

**A:- What are the most reliable and easy to access source of information on agriculture** (List the source of information from the “K” which the household is access and write it in the column of Source of information and then ask respondent to give rank to source of information as per the gender’s easy accessibility in their household)

[illegible]

**I:- Access to extension and other trainings**

|       |                                                                                                                         |                                                |  |
|-------|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|--|
| M 1   | Did a government extension worker visit your HH /farm between Aug-2014 to July-2015, to provide advice about farming?   | 1 = Yes<br>2 = No if No ► M6                   |  |
| M 2   | How many times did the government extension worker visit to provide advice about farming?                               | Number of Visits                               |  |
| M3    | Who met with this extension worker?<br>Multiple responses possible                                                      | A = a female HH member<br>B = a male HH member |  |
| M 4   | What topics were discussed during these visits?<br>Multiple Responses Possible                                          | (please give code) <sup>a</sup>                |  |
| M 5   | Did you or any member of your HH pay anything in order to receive any type of advice or information from them           | 1 = Yes if yes how much?<br>2 = No             |  |
| M 6   | Have you or anyone else in your household attended a Department of Agriculture Extension training in the last one year? | 1 = Yes, if yes M/F/B<br>2 = No if No ► M10    |  |
| M 7   | In what month was the most recent training you attended?                                                                |                                                |  |
| M 8   | What topics were discussed in this most recent training?<br>Multiple Responses Possible                                 | (please give code) <sup>a</sup>                |  |
| M 9   | Did you or any member of your HH pay anything in order to receive any type of advice or information from them           | 1 = Yes, if yes, how much?<br>2 = No           |  |
| M 10  | Did anyone from an NGO visit your HH farm between Aug-2014 to July-2015 advice about farming?                           | 1 = Yes<br>2 = No if No ► M15                  |  |
| M 11  | How many times did the person from the NGO visit to provide advice about farming?                                       | Number of Visits                               |  |
| K12   | Who met with this person?                                                                                               | A = a female HH member<br>B = a male HH member |  |
| M. 13 | What topics were discussed during these visits?<br>Multiple Responses Possible (please give code) <sup>a</sup>          |                                                |  |
| M 14  | Did you or any member of your HH pay anything in order to receive any type of advice or information from them           | 1 = Yes, if yes, how much?<br>2 = No           |  |
| M 15  | Did anyone from a <b>KVK (SMS)/ATMA/Bhoochetana</b> scheme staff visit your HH farm                                     | 1 = Yes                                        |  |

|      |                                                                                                                                                                                                                  |                                                                 |  |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|--|
|      | between Aug-2014 to July-2015 advice about farming?                                                                                                                                                              | 2 = No if No ► M20                                              |  |
| M 16 | How many times did the KVK officer (SMS) the visit to provide advice about farming?                                                                                                                              | Number of Visits                                                |  |
| M 17 | Who met with this person?                                                                                                                                                                                        | A = a female HH member<br>B = a male HH member                  |  |
| M 18 | What topics were discussed during these visits? Multiple Responses Possible (please give code) <sup>a</sup>                                                                                                      |                                                                 |  |
| M 19 | Did you or any member of your HH pay anything in order to receive any type of advice or information from them                                                                                                    | 1 = Yes, if yes, how much?<br>2 = No                            |  |
| M 20 | Did anyone from a private agricultural input company representative visit your HH farm between Aug-2014 to July-2015 advice about farming?                                                                       | 1 = Yes<br>2 = No if No ► M25                                   |  |
| M 21 | How many times did private agricultural input company representative the visit to provide advice about farming?                                                                                                  | Number of Visits                                                |  |
| M 22 | Who met with this person?                                                                                                                                                                                        | A = a female HH member<br>B = a male HH member                  |  |
| M 23 | Did you or any member of your HH pay anything in order to receive any type of advice or information from them                                                                                                    | 1 = Yes, if yes, how much?<br>2 = No                            |  |
| M 24 | Have you ever accessed information about agricultural markets or agricultural prices using your mobile phone?                                                                                                    | 1 = Yes<br>2 = No                                               |  |
| M 25 | Have you ever accessed information about agricultural technology on<br>1=Television<br>2= Newspaper<br>3= Internet<br>4= Agricultural exhibitions<br>5= Visit to progressive farmers field<br>6= other (specify) | 1 = Yes (If yes from whom and on which topic related)<br>2 = No |  |

**Codes for the topic discussed or information gain**

**A.** Land Preparation

**G.** Irrigation



- B.** Seeds
- C.** Fertilizer
- D.** pests and diseases
- E.** Spraying (pesticide, insecticide or weedicide)
- F.** Intercultural operation

- H.** Harvesting
- I.** Compost
- J.** Marketing of agricultural produce
- K.** Government schemes for agriculture
- L.** Other (Specify)

**J:- Role of social networking in extension services**

We would like to ask information about the major advices related to agricultural technology taken or given by adult members (above 15 years) of this household from people within or outside the village

| Name of adult members | Advice taken | Full name of person and or group include surname |     |       | Related<br>1= Yes<br>2= No | From village or outside | If outside Name of the village | Distance | Strength of relation |
|-----------------------|--------------|--------------------------------------------------|-----|-------|----------------------------|-------------------------|--------------------------------|----------|----------------------|
|                       |              | Name                                             | M/F | Caste |                            |                         |                                |          |                      |
|                       |              |                                                  |     |       |                            |                         |                                |          |                      |
|                       |              |                                                  |     |       |                            |                         |                                |          |                      |
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|                       |              |                                                  |     |       |                            |                         |                                |          |                      |
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|                       |              |                                                  |     |       |                            |                         |                                |          |                      |
|                       |              |                                                  |     |       |                            |                         |                                |          |                      |

**Code for advice taken**

- |                     |                                                   |                            |                                       |
|---------------------|---------------------------------------------------|----------------------------|---------------------------------------|
| A. Land Preparation | D. pests and diseases                             | F. Intercultural operation | I. Compost                            |
| B. Seeds            | E. Spraying (pesticide, insecticide or weedicide) | G. Irrigation              | J. Marketing of agricultural produce  |
| C. fertilize        |                                                   | H. Harvesting              | K. Government schemes for agriculture |
|                     |                                                   |                            | L. Other (Specify)                    |