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# Mainstreaming Gender and Empowering Women in Agriculture in the Thar Region of India

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Neetu Sharma, Shalander Kumar, Padmaja Ravula, Prakash Tyagi

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Gramin Vikas  
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## Acronyms

AFRI	Arid Forest Research Institute
AWC	Anganwadi Centre
CAZRI	Central Arid Zones Research Institute
CGIAR	Consultative Group for International Agricultural Research
CIAH	Central Institute for Arid Horticulture
CRP	CGIAR Research Program
GRAVIS	Gramin Vikas Vigyan Samiti
ICDS	Integrated Child Development Scheme
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
KVK	Krishi Vigyan Kendra
PDC	Pasture Development Committee
SHG	Self Help Group
VDC	Village Development Committee

# Contents

Executive Summary .....	1
Introduction.....	2
I Study Design .....	3
Aims and objectives .....	3
Scope and methodology .....	4
II Women in Agriculture: Global, National and Local Scenario.....	4
Empowering women in agriculture: what purpose will it serve? .....	6
III Walking the Difficult Path: Key Challenges Confronted in the Thar.....	6
Oppressive social norms .....	6
Patriarchal institutions and structures.....	8
IV Gender Responsive Integrated Community Development in the Thar: Collaborative efforts by ICRISAT and GRAVIS .....	9
Designing gender responsive strategies.....	9
Building drought resilience through management of productive resources .....	11
Ensuring food security and sustainable livelihoods .....	13
Mobilization and organizing: creation of and support to self help group.....	14
Empowerment through capacity enhancement and alternative income generation .....	14
Reaching out to the world of opportunities: linkages to market, technical agencies and government programs .....	15
Gender mainstreaming at the core of all endeavors.....	15
V Going Forward .....	16
Financial empowerment through income diversification and market access.....	16
Designing mainstreaming .....	17
Use of gender sensitive tools and interventions .....	17
Gender inclusive approach .....	17
Filling the capacity deficit .....	18
Mobilization and awareness .....	18
Facilitation through addressing socio-economic and political context .....	18
Larger advocacy agenda .....	19
Conclusion .....	20
References .....	21

## List of Figures

Figure 1. Conceptual framework linking gender and social equity.....	3
Figure 2. Decision making regarding purchase of inputs (%).....	10
Figure 3. Actual purchase of agricultural inputs done by (%).....	10
Figure 4. Decision on marketing of produce (%). ....	11
Figure 5. Actual marketing of crop inputs (%). ....	11
Figure 6. Decision making regarding various activities.....	11

## Executive Summary

Social inequities based on gender norms reinforce nonparticipation of women in decision making at various levels, consequently depriving them of the benefits arising out of any technological advances. These advances could be in all fields in general, and in particular financial services. Integration of a gender responsive approach in all development initiatives assumes great importance in the context of economic relations in an agrarian economy. Despite the fact that women contribute immensely to agriculture and allied activities and consequently to food security, rural economy and development, their contributions go largely unrecognized. The need to empower women and mainstream gender in agriculture is necessary not only due to the extent and importance of their contribution but also for ensuring creation of equitable economic relations and progressive social milieu. This is important to build capacity of the large human capital (women) supporting agricultural production, marketing and consumption.

As part of the CGIAR Research Program on 'Dryland Systems: Integrated Agriculture Production System for the Poor and Vulnerable in Dry Areas', ICRISAT in collaboration with GRAVIS, has implemented a project in eight randomly identified villages in three districts - Barmer, Jaisalmer and Jodhpur in western Rajasthan. The program is aimed at developing technological, policy and institutional innovations to improve food security and livelihoods using an integrated systems approach. The project reaches out directly to more than 3000 poor rural farming households, about 11% of which are headed by women<sup>1</sup>.

Gender mainstreaming has been identified as one of the key strategies in the project and accordingly a number of interventions have been designed as part of the project with a view to empower women in agriculture. These include formation of women's self-help groups (SHGs), trainings of farmers including women farmers on innovative farming techniques, water harvesting techniques, crop demonstrations, value chains, management of common property resources (CPRs), etc, that has helped farmers in improving their livelihoods. Besides participatory identification of key constraints and potential interventions, direct support provided through the project included distribution of good quality seeds, plants and assistance to establish and nurture horticulture units. Utility tools such as weighing scales were provided to SHG group, while developing marketing linkages for certain products, especially medicinal plants. Training and support in livestock management have also formed part of these interventions. Regular interactions with SHG members have facilitated a platform for women to mobilize themselves and discuss issues that concern them.

Nonetheless, a number of constraints exist in the rural settings that, either negate or dampen the efforts towards empowering women financially and/or socially. Social and cultural factors affect women in different ways including issues of mobility and access to education. The cycle of illiteracy, lack of skills and non-involvement in decision making further disempowers them. Absence of institutional support, time and energies spent on less productive work that does not get quantified in terms of financial contribution, have an aggravated effect on women in a patriarchal society. Extreme climatic conditions add further to their woes.

The project coordinated goal oriented interventions that empower rural communities and is gender sensitive as well as context specific. The aim was to create an enabling environment to empower, specifically women and communities in general. Sensitizing different stakeholders on the contributions of women to their livelihoods as well as the economy was a first step towards this. Direct interventions like new knowledge, agricultural technologies along with access to services – financial, health and child-care – enable women to participate in the decision making processes at the household and community level. Participation in decision making process along with the male members is empowerment for women as they acquire the ability to make strategic life choices.

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<sup>1</sup> Women headed farming households in the context of this report are those where adult male member of the family is either not alive or not available as a human resource or decision maker for agriculture related processes. In the Thar Desert this phenomenon is related to largescale migration of male heads of the households in search of viable livelihood options especially during lean seasons. Some widows are heading the households in absence of any adult male member in the family.



It is well recognized and understood that larger policy level issues pertaining to land rights, access to resources, education, skill enhancement and health have direct implications for women. Therefore advocacy with the state for introducing gender friendly provisions and operationalizing existing provisions, have to be part of long term development strategy.

## Introduction

Social equity and equality are key concerns that require urgent attention in the current development paradigm. Elements of existing development models that contribute towards concentration of wealth and opportunities thereby increasing the economic and financial divide also have a gender dimension to it. All-encompassing impact of this discrimination and deprivation can be noted in all aspects of life – social, cultural, political - economic and financial implications seem to be most tangibly visible.

The intersections of gender, race, class, ethnicity, and nationality are, and have been historically, central to the politics of agriculture, structuring who produces food, who benefits from the food system, and who eats. Women across the globe have always played major roles in agricultural production, contributing substantially to food production and food security, but they often work in difficult conditions with low pay and inadequate access to land and capital<sup>2</sup>. Despite women's considerable role in agricultural production processes, their concerns continue to be markedly absent (or overlooked) from policy priorities of national and international institutions, and national and state governments that determine directions for agriculture.

Role of women in agriculture is generally determined by a combination of factors. These include the extent and nature of agricultural labor performed, quantum of food produced, access to technology, decision making ability and access to institutions. It is beyond doubt that women make important contributions to agricultural and rural economies across all regions of the world, despite differing viewpoints. A comprehensive review on the role of women in agriculture was published by the Food and Agriculture Organization (FAO) in 2011, on the exact contribution of women both in terms of magnitude and nature<sup>3</sup>. Moreover, the share of women in unorganized and unskilled labor force is more than men that reinforces and regenerates another form of discrimination in terms of access to opportunities for skill development. This impacts their employability for skilled employment even in unorganized sector. Contribution of women to agricultural output is extremely significant, although difficult to quantify with accuracy. It has often been claimed that women produce 60-80% of food in many parts of the world<sup>4</sup>. However, assigning contributions to agricultural outputs by gender is challenging and tricky because in most agricultural households both men and women are involved in agricultural production. In India, there is no concept of man's plot or a woman's plot. The household, owns the plot. In addition to participation in agriculture, women spend considerable time in allied activities like livestock management, home gardening along with the responsibility of domestic and reproductive work.

This report is based on the study to understand the constraints and disadvantaged situations experienced by women in rural agrarian economy of western arid Rajasthan. The study also explores pragmatic solutions for overcoming the barriers faced by women in agriculture as well as leveraging existing interventions supporting women. The background for this study and analysis is derived from the CGIAR Research Program (CRP) Dryland Systems implemented by ICRISAT with support from GRAVIS, CAZRI, Krishi Vigyan Kendra (KVK) Barmer and local partners for creating sustainable livelihoods and enabling integrated development of rural agrarian communities. The report is organized in four sections: study design including the aims, objectives, and methodology is presented in the following section; section two discusses the global, national and local scenario on women in agriculture; section three outlines the challenges facing rural poor in the Thar region. The collaborative efforts of ICRISAT and GRAVIS towards gender responsive interventions are presented in section four followed by recommendations, conclusions and way forward.

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<sup>2</sup> The role of women in agriculture 2011. Prepared by the SOFA Team and Cheryl Doss. Agricultural Development Economics Division, FAO. Accessed in November 2016 from <http://www.fao.org/docrep/013/am307e/am307e00.pdf>

<sup>3</sup> Ibid

<sup>4</sup> FAO 1996. Women feed the world accessed from <http://www.fao.org/docrep/x0262e/x0262e16.htm#p> in November 2016.



## I Study Design

The study is located within the context of socio-cultural as well as economic aspects of community life in rural Rajasthan. The role and status of women in the Thar region is greatly influenced by occupation of people, extreme climatic conditions and extent of access by the community to modern technological advancements. A broad qualitative methodology was adopted to analyze and understand the impact of CRP Dryland Systems on the lives of women in the arid environment of Rajasthan.

### Aims and objectives

The study was undertaken as part of the CRP on Dryland Systems and was geared towards the larger vision of empowering women playing diverse roles in agriculture and related processes in drought prone areas of western Rajasthan. Hence, the central theme of this study was to assess women's role in agriculture and specific constraints perceived by them in the difficult terrains with extreme climatic conditions.

The objectives of the study were:

- To understand how different factors interact and influence women's access to technology, resources and market in the mixed dryland farming systems in the Thar region.
- To identify factors that constrain empowerment of women in the mixed dryland farming systems
- To identify the factors that can be leveraged and built upon to ensure empowerment and participation of women in the farming systems

Figure 1, presents the conceptual framework underlying this study linking gender and social equity in accomplishing the desired outcomes namely, enhanced nutrition, resilient climate-smart agriculture and empowerment of women.

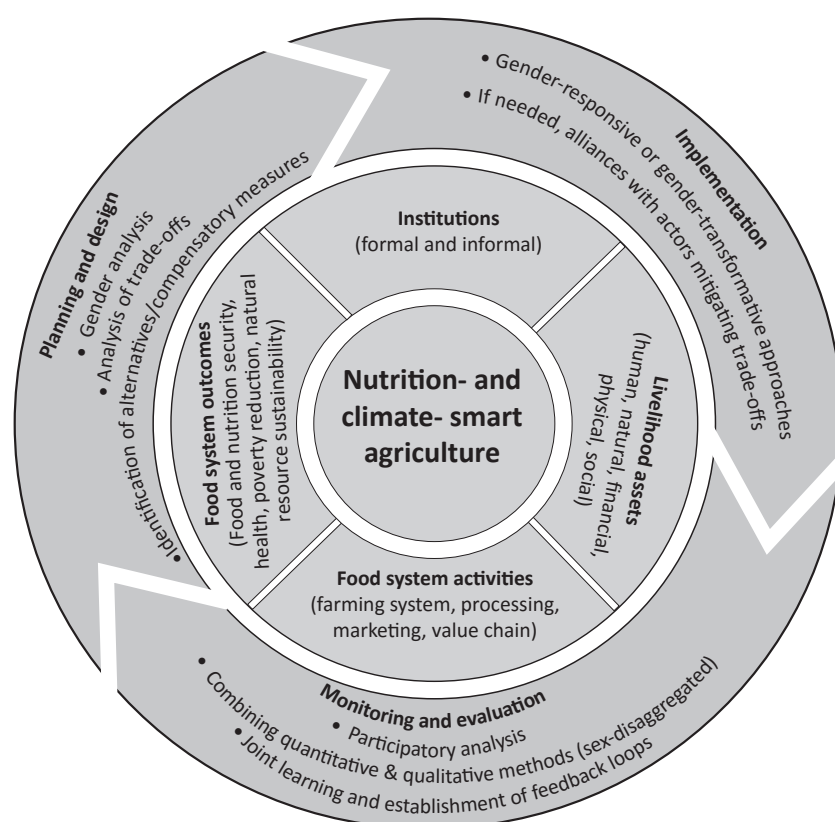


Figure 1. Conceptual framework linking gender and social equity<sup>5</sup>.

<sup>5</sup>. Figure adapted from Beuchelt TD and Badstue L. 2013. Gender, nutrition- and climate-smart food production: Opportunities and trade-offs, pp716

## Scope and methodology

The study is primarily based on the information gathered from three identified districts in western Rajasthan: Jodhpur, Barmer and Jaisalmer. The primary data was collected from a sample of 256 randomly selected households from eight clusters of villages and three districts for household level analysis. Qualitative methods of data collection (iterated below) were used to gather insights into the efficacy and impact of interventions carried out by ICRISAT and GRAVIS in collaboration with their partners:

1. Field visits to the villages in these districts
2. Interactions with the community, community leaders, women's groups, farmers' groups and development activists working closely with the rural communities provided the basic understanding of the context.
3. Focus group discussions and unstructured interviews were conducted with farmers especially women. Ongoing research on gender mainstreaming in agriculture, especially in the context of dryland and rainfed agriculture helped further probe and explore the subject.
4. State level policy and program environment was also analyzed to identify linkages between gender mainstreaming and empowering women in agriculture.

Following sections deal with overall global and national scenario and corresponding status of women in agriculture and allied activities in the Thar region.

## II Women in Agriculture: Global, National and Local Scenario

Agriculture is not just a livelihood generation activity but also a way of life for the rural communities. It encompasses a range of other associated activities such as animal husbandry, food processing and horticulture. Women make crucial contributions in agriculture and rural enterprises in all developing regions, as farmers, workers and entrepreneurs. Women work in agriculture as farmers either as unpaid workers on family farms and or as wage laborers on other farms and agricultural enterprises. They are involved in both crop and livestock production at subsistence and commercial levels. Despite varying patterns of participation, women's roles in agriculture remain critical both in terms of the quantity of their effort put in as well as the quality and nature of labor performed. It is estimated that across the world, two-thirds of poor livestock keepers, aggregating approximately 400 million, are women (Sachs 1996). This figure masks the situation in developing and primarily agrarian economies, where it has crossed the 50% mark and is also increasing owing to various factors, such as distress migration of male population. In addition to contributing to various agriculture processes, women in most regions of the world share responsibility with men and children for caring of animals.

Moreover, caring of particular species of animals and types of activity are more associated with women than men. For example, women often have a prominent role in managing backyard poultry, dairy animals and in caring for other animals that are housed and fed within the homestead.

Even though there is recognition of the important role played by women in agriculture and their contributions to household level food security and financial resilience, women across the globe continue to face constraints that reduce their productivity. This in turn lowers economic growth and ultimately the well-being of their families, communities and countries. These constraints mostly stem from the social and cultural milieu and are amplified due to lack of access to education, skills and financial services.

Number of studies have shown that women spend more time in the field compared to men which depends on the crops they grow and the level of mechanization. Alongside this, traditions, social norms and customs restrict their work to the household where they are involved in crop processing and in charge of household maintenance. In most cases, women's efforts are non-monetized despite large labor contributions to a range of marketed products such as dried fruits, fuel wood, dairy products and handicrafts. There are community-based differences regarding women's participation in agriculture, therefore, location, cropping patterns, ethnic affiliation, economic and educational background have

implications for the specific division of labor within a given family unit. Poor households require greater involvement of women in income generating activities than financially stable households. Women and girls engage in a number of activities ranging from seedbed preparation, weeding, harvesting, horticulture and fruit cultivation as well as a series of post-harvest crop processing activities like cleaning and drying vegetables, fruits and nuts for domestic use and for market.

Time use studies that indicate the proportion of time spent on agriculture provide another analytical framework for ascertaining the role of women in agriculture. Some studies have indicated that in India this share has remained steady at just over 30 %, although inter country variations exist. While the nationally representative data indicates that the national average for women's share of total time-use in agriculture is 32 %, data for West Bengal and Rajasthan report women's share as less than 10 % and more than 40 %, respectively. In Rajasthan, girls between 14 and 19 years of age spend almost 60 % of the total time on agriculture (FAO 2011).

The policy regime in India recognizes the needs and concerns of women in agriculture which have received specific attention in several policy pronouncements. The New Agriculture Policy of 2011<sup>6</sup> promises appropriate structural, functional and institutional measures to empower women and build their capabilities and improve access to inputs, technology and farming resources<sup>7</sup>. The policy also pointed towards the need for recognition of women's rights on land. 'Vision 2020 for Agriculture' published by the erstwhile Planning Commission<sup>8</sup> of India gives particular attention to the needs and participation of women farmers; that would, inter alia, involve primary education, health care, clean drinking water, sanitation, adequate nutrition particularly for children (through mid-day meal at schools) and women<sup>9</sup>.

Women empowerment in agriculture has been noted as a major thrust in the Agriculture Policy of Rajasthan state as well. The policy prescribes the need for special programs for women empowerment, targeting maternal and child health care including development and promotion of women friendly, drudgery reducing implements, training for skill upgradation and formation of women SHGs. Credit linkages and their mobilization for economic empowerment, have also found place in the policy of the state as gender mainstreaming measures. The policy also talks about incentives to women for undertaking education in agriculture and to evolve special provisions and programs to encourage women's participation in agriculture sector<sup>10</sup>.

The Thar region is an exceptionally challenging climatic zone of the country, especially for agriculture, given extremely low precipitation, and lack of irrigation facilities. Agriculture in the state of Rajasthan constitutes a large area of the Thar Desert and is primarily rainfed covering 13.27 % of available land in India. The arid part of the state which receives annual rainfall ranging from 15 cm to 35 cm, thrives on agriculture with traditional irrigation systems. As a major portion of the state is parched, the risks and instability in agricultural production and productivity are quite high.

Despite such challenges, 65% population of the state is dependent on agriculture and allied activities for livelihood and 58.2% of total agricultural laborers in the state are women (Swain et al. 2012). Most of the processes such as sowing, weeding, watering, harvesting are dominated by women's work force, while role of men is limited to preparation of land, ploughing and marketing the produce. In addition to various agricultural processes, livestock management in the region is also primarily done by women. However, this labor share domination does not get translated into empowerment or decision making authority. It is not merely farming but a string of interspersed activities that have bearing on every aspect of community life. Disproportionate contribution made by women in all these aspects, unquestionably establish the need to empower them and mainstream their role in the sector.

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<sup>6</sup>. New Agriculture Policy. 2011. Accessed in November 2016 from <http://rrtd.nic.in/agriculture.html>

<sup>7</sup>. *ibid*

<sup>8</sup>. Planning Commission has been replaced by NITI Aayog on 1 January 2015.

<sup>9</sup>. Agriculture Policy: Vision 2020 by Planning Commission of India. Accessed from [http://www.planningcommission.nic.in/reports/genrep/bkppap2020/24\\_bg2020.pdf](http://www.planningcommission.nic.in/reports/genrep/bkppap2020/24_bg2020.pdf) in November 2016

<sup>10</sup>. State agriculture policy. 2013. Accessed in November 2016 from [http://www.krishi.rajasthan.gov.in/Draft\\_Agriculture\\_Policy\\_ENGLISH.pdf](http://www.krishi.rajasthan.gov.in/Draft_Agriculture_Policy_ENGLISH.pdf)

Women in the Thar region typically invest long working hours in agriculture and allied activities at household levels. While in most areas women do not work as agricultural laborers on other farms, the non-recognition of their hard labor is a greater concern than discriminatory compensations.

### **Empowering women in agriculture: what purpose will it serve?**

The international development community recognizes that agriculture is an engine of growth and poverty reduction in countries where it is the main occupation of the poor and women. Agriculture contributes significantly to rural economies in developing countries. Women constitute a crucial resource in agriculture and rural economy as farmers, laborers and entrepreneurs, yet they face more severe constraints than men in accessing productive resources including improved technologies. This is partly resulting in underperformance of agriculture sector in many developing countries.

Efforts by national governments and the international community<sup>11</sup> to achieve their goals for agriculture development, economic growth and food security will be strengthened and accelerated if they build on contributions that women make and take steps to alleviate these constraints<sup>12</sup>.

Agriculture also has direct links to nutrition as it provides a source of food and nutrients and a broad-based source of income. Gender roles also mediate these linkages, particularly in relation to increased food availability and increased income. Thus, one possible pathway through which agricultural development could improve health and nutrition outcomes is by considering gender roles and gender equity in agriculture<sup>13</sup>.

In summary, gender mainstreaming has various dimensions that relate to status of girls and women in families, communities and in society as citizens. Women empowerment has direct ramifications for building equitable and sustainable societies. Recognition of the role of women, especially in agrarian economies, constitutes an important aspect of national development. Mainstreaming gender concerns is also reflective of general wellbeing and harmonious social relations that further propel growth, livelihood security and better standards of living.

## **III Walking the Difficult Path: Key Challenges Confronted in the Thar**

Adoption of gender mainstreaming approach and gender sensitive strategies confront constant challenges when translated into interventions. Since gender connotes the differences in opportunities and privileges available to women and men in almost all spheres of life, the constraints are either embedded or emanate from socio-cultural and institutional factors. Understanding and acknowledging these constraints is crucial to address them effectively and ensure favorable outcomes.

### **Oppressive social norms**

Economic and social issues are closely intertwined, one reinforcing the other. In India and in most of South Asia, socio-cultural and religious factors continue to impede the empowerment of women in varying degrees. These constraints manifest themselves at various levels and forms for women. Patriarchal structures and male dominance keep women at the periphery of any substantive decision making. Restrictions imposed within the rural households and by the immediate community, prevent women and girls to explore available avenues for growth and development.

The decision making abilities also get constrained by the low level of education, often times absolute illiteracy, among women. This represents a cyclical phenomenon of exclusion of women from decision

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<sup>11</sup> International community such as FAO, The World Bank, UN Women, NGOs, development practitioners etc.

<sup>12</sup> The role of women in agriculture 2011. Prepared by the SOFA Team and Cheryl Doss. Agricultural Development Economics Division, FAO. Accessed in November 2016 from <http://www.fao.org/docrep/013/am307e/am307e00.pdf>

<sup>13</sup> The role of women in agriculture 2011. Prepared by the SOFA Team and Cheryl Doss. Agricultural Development Economics Division, FAO. Accessed in November 2016 from <http://www.fao.org/docrep/013/am307e/am307e00.pdf>



making processes and renders them disempowered: socially and financially. In most of the villages, barring few exceptions, women are illiterate and the current generation of girls has started going to school. This is dampened by unavailability of schools in the vicinity beyond preliminary classes.

Low education levels and lack of educational facilities for girls further aggravate an already imbalanced gender situation. This has a direct bearing on the women's ability to access and use facilities, resources and knowledge. Their bargaining power also remains skewed further discouraging them to play a greater role in the market processes and financial transactions. All the above is associated with the lack of financial capital, inaccessibility to institutional credit, lack of access to marketing network, marketing information, and appropriate training for entrepreneurship. Similarly, women in the farming sector also face constraints in accessing and using modern technology, these constraints potentially lead to relatively higher costs of production and uncompetitive pricing.

Many rural institutions play a central role in the local economy as well as social relations. Caste, class and cultural barriers prevent diffusion of power with gender representation remaining a distant goal to achieve in the process of decision making in rural context. This affects the opportunities and recognition to the challenges and obstacles faced by women farmers that prevent them from benefitting or accessing any financial and technical power.

Most of the contributions made by women in traditional rural societies go unrecognized because of preset gender roles. Many of the tasks that women perform do not get quantified in labor terminology and hence no financial value is attached to that. The invisibility of the extensive contribution especially in the exploitative patriarchal traditional society coupled with minimal opportunities for learning and restrictions on mobility disempower women.



*Women in agriculture have additional responsibilities of looking after the household and children.*

## Patriarchal institutions and structures

The major issue related to women in agriculture is their limited access to productive resources, especially land. Limited inheritance rights defined by the patriarchal structures deprive women ownership of land, control of assets and decision making powers.

A combination of social and structural factors shape women's empowerment. Feminization of agriculture is a global phenomenon which is more so in western Rajasthan. During times of distress, men migrate searching for livelihood options and women are expected to take charge of households, cattle and fields. This feminization may ensure an expanded role in decision making for women in interim, however it does not translate into social and financial empowerment. The provisional decision making power gets counterpoised by the additional burdens. Market access remains elusive and a male-only domain.

Women's access to credit, which is critical for agriculture production process, is also limited because both formal and informal credit institutions seek tangible collateral for loan. Access to institutional credit is a major constraint as majority of rural women in India do not have property ownership or even rights. Low levels of awareness, education and limited mobility outside the home further exacerbates this situation.

In addition to the above discussed constraints faced by women, the Thar region by virtue of its agro-ecological constraints and limitations presents further challenges. The region receives minimal rainfall, water is scarce even for household use, drinking and for livestock, leading to a large share of time spent by women in fetching water from long distances. Young girls and women have the primary responsibility of fetching water resulting in girls dropping out from schools to fulfil these tasks. The time spent on this activity and the drudgery involved in fetching water, limits their time on self-care impacting negatively on their health and wellbeing. Although there have been improvements in the availability of water resources, women still spend significant amount of time in managing water resources within households, and to that extent their opportunity to participate in financially empowering activities remains restricted.



*Harvested rainwater for silvi-pasture.*

Jadaodevi, has four daughters and two sons, and except her youngest daughter who is barely seven, all of them work for about seven to eight hours a day on an average in the field. These hours stretch up to 13 or 14 during harvest season, especially for females in the family who also look after the household as well as cattle. While her sons continued their studies beyond 8<sup>th</sup> standard, her daughters could not, owing to the distance of secondary school from the village and inhibitions of the family in sending their daughters beyond village limits for acquiring education.



*Veil is a social norm for women in Rajasthan.*



Impoverished rural communities of the Thar have been demonstrating resilience by adopting traditional coping mechanisms to combat drought by: promoting water harvesting, low input agriculture, resource conservation and livestock integration. In spite of the risky and harsh environment, rural communities do not receive significant support from the government. Government schemes and programs have had limited impact in empowering women. One reason is the lack of access to extension services – extension officers find it difficult to reach these remote rural communities because of the difficult terrains. Many programs in the past have aimed at women empowerment and farmer's wellbeing which did not achieve desired success because of the lack of extension services and field staff. The governments and other implementing agencies therefore have to be cognizant of this and offer innovative options for remote rural communities to have timely access to new knowledge, technological improvements and institutional arrangements.

## **IV Gender Responsive Integrated Community Development in the Thar: Collaborative Efforts by ICRISAT and GRAVIS**

Difficult and challenging climatic conditions in the Thar pose a constant challenge to livelihood and food security for the primarily agrarian and pastoralist rural communities in the region. The mission of the project was to support impoverished farming households' livelihoods. The CRP activities were therefore focused towards promoting sustainable livelihoods through integrated agro-ecosystem approaches by: a. building capacity of key stakeholders on sustainable natural resource management including water conservation, b. innovations in farming practices, c. sustainable management of common property resources, d. strengthening value chains and, e. appropriate institutions and policies in western arid Rajasthan.

ICRISAT collaborated with GRAVIS and other partners to implement CRP activities in western Rajasthan. The project targeted poor and highly vulnerable populations of drought prone arid areas. It aimed to overcome the overarching challenge for the dry land system to deliver food security and livelihood benefits with a focus on marginalized segments of society. Vulnerability reduction, increased resilience and risk mitigation from biophysical and socio economic shocks have been the key strategic focus.

A participatory approach was adopted to enable involvement of local communities and key stakeholders at all levels in planning of the project interventions. Stakeholder participation was integrated at all stages of the project - from constraint analysis, selection of technology options, selection of sites for potential interventions, farmers' participation and implementation of interventions. The suitability and potential impact of each option was carefully evaluated on technical and socio-economic parameters, leading to design modifications to suit the context. Through gender mainstreaming and integration at every step in an iterative process, economically and technologically viable and environmentally sound innovations could be evolved for addressing a gamut of core needs of dry land communities. Eight villages from Barmer, Jodhpur and Jaisalmer, of western Rajasthan were identified for a wide range of interventions. There have been deliberate and dedicated attempts to integrate recognize and respond to the needs of women farmers and in empowering them to play a greater role and benefit from technical advancements, innovations, products and services. The project directly reaches out to more than 3000 farming households, out of which 11 % are headed by women.

### **Designing gender responsive strategies**

Developing a robust gender sensitive planning process required a broad, all-inclusive social assessment for ascertaining gender inequality issues in access to and control over resources, opportunities and decision-making. The status of women participating in decision making as well as benefits they eventually reap from agriculture and allied activities as juxtaposed to challenges witnessed by them, were ascertained at the onset of the project. Useful insights gathered through an exhaustive mapping of status and constraints informed the project design and implementation. The baseline information collected as part of the project indicated huge gender imbalance that disproportionately favored males. Women were spending much more time and energies in the field as compared to men. Despite their large contributions in the field, it was found that they had negligible say in key decisions on farming and related processes.

Figure 2 shows that in almost half of the cases there is absolutely no participation of women in taking decisions regarding agriculture inputs. While one third of the household reported joint decision being taken, a negligible proportion of households (3.9%) reported decisions taken by females. Further discussions and conversations revealed that even in cases of joint decisions, in event of differences of opinions, decisions by males were taken as the final decision. Though 11% of the total households were female headed only 3.9% reported involvement in decision making. This is an observation that needs further examination. Having headship of the household does not necessarily mean that women will be key members in making decisions at the household level. There might be male members in the household in control and responsible for all decisions at the farm and household level. Hence this finding is interesting but it is not always a reflection of non-acknowledgement of decision making abilities of women. There should be a better understanding of how women become heads of the household and what their role is in that position. Purchase of agricultural inputs is largely done by males (Figure 3). It was found that in few cases women were involved in purchase, but the number was very low and was prevalent only when males were not available either due to migration or some other reason.

A complex set of crucial decisions are involved in the marketing of the agricultural produce that can eventually determine the livelihood status of the family. These decisions may range from:

- How much to sell
- When to sell
- Where to sell
- Whom to sell
- At what price.

In nearly half of the sample households such decisions were taken only by males without consulting their female members of the households, while in about 30% cases such decisions were taken jointly, which in practice means a decision taken by males in consultation with females (see Figure 4). Further, as seen in Figure 5, only a small proportion of women (about 3 %) actually market the produce. Agriculture as an economic and social activity, involves many tasks that entail a variety of decisions. These decisions may range from crop inputs, timings of harvest, social events, and investment in health and education of family members, hiring of labor and transportation of produce. Figure 6 illustrates the small or minimal role of women in decision making, and males being the final authority for any such decision even if they choose to consult women.

Despite the fact that livestock rearing and management is mostly done by women and children in rural farming communities, an absolutely disproportionate equation exists between males and females with regards to decisions for this enterprise. Similarly, access, extent, and trends in decision making pertaining to common property resources and use of pasture land are traditionally taken only by senior male members of the community, most often without consulting females. In cases where decisions on the use of fallow land, cultivable wasteland, and village forest wood are taken by the democratically elected village level authorities the women’s voice remains unheard and their interest unattended.

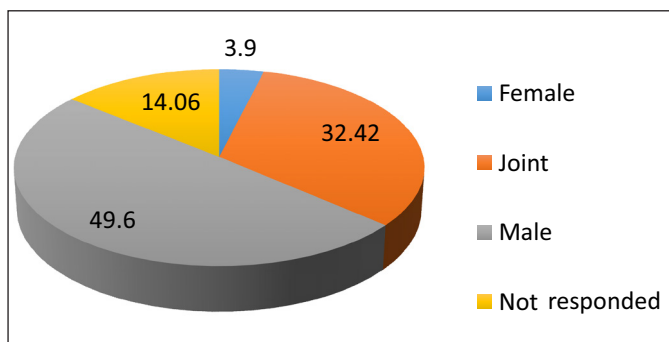


Figure 2. Decision making regarding purchase of inputs (%).

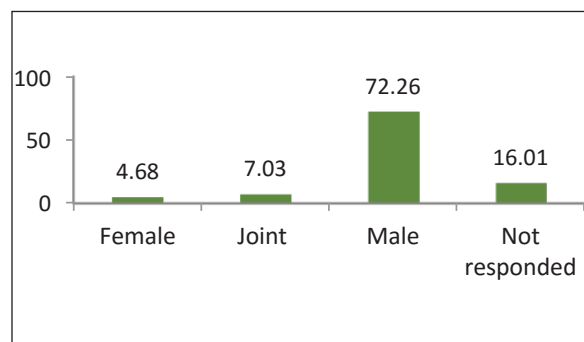


Figure 3. Actual purchase of agricultural inputs done by (%).

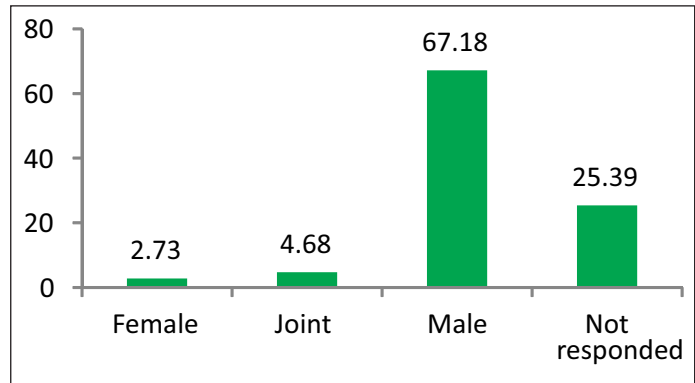
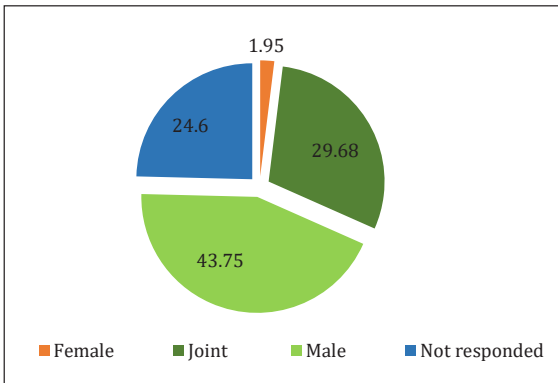


Figure 4. Decision on marketing of produce (%). Figure 5. Actual marketing of crop inputs (%).

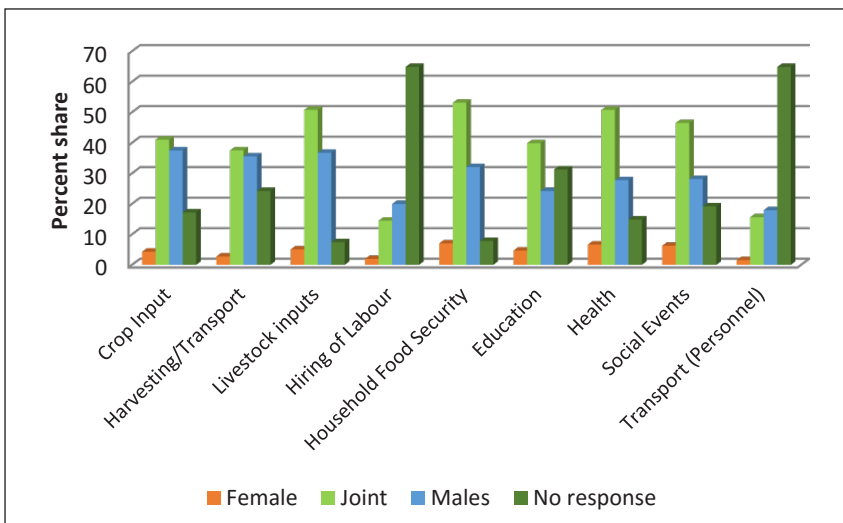


Figure 6. Decision making regarding various activities.

Manifestation of gender gap in various agriculture processes has its own nuances in different regions, and a specific assessment has helped unearthing real issues and challenges. Intervention designs and methodologies were based on the cognizance of these issues. With the overall focus on inclusive development, some interventions were specifically devised to cater to needs of women farmers and few other interventions were adjusted to accommodate effective participation of women farmers.

Reversing the marginal status of women was the aim of this initiative implemented by ICRISAT and its partners. Focused on water conservation and the regeneration of degraded common pasture lands, efforts were made to include women by conducting household surveys disaggregated by gender and involving women farmers in group discussions to understand existing constraints and opportunities. Empowering women by having them as members on the village development councils was also done. Despite initial resistance, women are now directly contributing to the development of their communities.

Dryland Systems researchers adopted a strategic and practical approach to gain contact with local women. Researchers collaborated with female facilitators as per the prevailing social and cultural norms. They identified few men within the community who not only understood and supported these activities but also could help influence other people who may have been initially hesitant.

### Building drought resilience through management of productive resources

Water scarcity is a reality in the region and any efforts to support agriculture and increase agriculture production in dryland agro ecosystems demands a well-designed water resource management strategy. Accordingly, rainwater conservation along with prevention of erosion and land utilization has been the fulcrum of the strategy targeting sustainable livelihoods of farming communities. Tried and tested traditional techniques of water conservation and land utilization have been adapted and further innovated to suit climatic conditions and optimize benefits. New techniques have been introduced that are resilient and best suited in the given conditions.

A variety of strategies and interventions were adopted to enable access to water and achieve increased water use efficiency. Construction of improved versions of traditional surface rainwater harvesting structures called *Tanka* and promotion of integrated water use at individual and community level, have been applied to ensure household level water needs. All these initiatives have directly benefitted women, saving the exorbitant amount of time that they otherwise spend on fetching water for various household needs and livestock. Water use efficiency has also been enhanced in agro-horticulture units through installation of pitcher and drip irrigations system. Considering the fact that invariably all the agriculture-horticulture units are primarily being maintained by women, the utility of such interventions was quite high. Women were integral part of the process of designing and implementing these interventions through membership in SHGs and village development committee (VDC). In addition investing their time and energies to better use, financial dividends resulting from the enhanced production empowered women to assert their roles in decisions making at household and community levels.

A range of water conservation techniques have been applied in farms for reducing loss of ground water and conserving rain water. Both methods and practices have directly helped farmers enhance their agricultural productivity. Construction of innovative *Khadins*, *anicuts*, embankments and check dams not only benefitted existing crop but also retained moisture in the soil for subsequent crops. Such interventions facilitated vertical and horizontal expansion and amplified farming activities in the region. This helped farmers cultivate more crops during different seasons along with expansion of cultivable lands.

Farming households including those headed by women directly benefitted from the use of improved water harvesting technologies. Participatory approaches have helped in mainstreaming gender in all the project activities and interventions. In dry and arid regions where drinking water is scarce, women spend a large portion of their potential productive time on fetching water; hence increasing availability of water for domestic use as well as agriculture development through *tanka*, *khadin* and *anicuts* formed a major aspect of the work being done to support women.

Land is the most important resource for agriculture which is available in abundance in the Thar region. However, scarcity of water, sand erosion and salinity add to the woes of poor farmers. Attempts have been made to meet these challenges with a wide variety of interventions that focus on three different aspects – optimization, improvement, and expansion – of available land resources. Promoting use of decomposed farmyard manure/organic manure in horticulture and agro forestry plantation and promoting use of soil test based fertilizers at different stages of crops, were integral components of soil nutrient management. Optimization of land from gender mainstreaming perspective was facilitated through promotion of cultivating improved seasonal varieties of vegetables among women SHGs. Introduction of suitable fodder plants and fodder development grass species on community land through establishment of Silvi-pasture system supported women directly given that livestock management remains women’s responsibility in the rural community.



*Khadin* is an exemplar of the innovated version of traditional runoff water conservation system that helps arresting of water from high catchment area through a bund or embankment. Stored water gradually recedes into the ground and enhances moisture content of the soil. Individual and community *khadins* were promoted in all three districts with varying dimensions according to need. These *khadins*, in addition to increasing fertility of soil have also checked soil erosion that has resulted in increased productivity, in some cases as high as 70%.

*Not letting the water run off.*

Survivability of trees in few areas has been observed up to 80%

in spite of desert conditions. Predetermined ownership of these structures by women coupled with the nutrition and livelihood security benefits, added to the efforts being made to improve the status of women in society.



Women's groups were also supported for establishment of large and medium size agro-horticulture units for cultivation of fruit trees suitable for the climatic and soil conditions in the region. Such optimization of land resources coupled with diversification of crops resulted in utilization of land in different seasons and subsequently direct financial benefits for women's groups, and other farmers. The interventions on agro-horticulture, medicinal plants involving women resulted in their increased access to nutrition and income.

Similarly the management roles entrusted to women as member of the Pasture Development Committees (PDCs), along with exclusive rights for fodder collection has resulted in women being the focal point for silvi-pastures, lending the much needed impetus to women's financial, social as well as political and notional empowerment in the community. All interventions that aimed at livestock management focused on women and were undertaken with women self-help groups as participants and community animators.

### Ensuring food security and sustainable livelihoods

Integrated approach to community development encompasses a variety of context specific initiatives. While the natural resource management options provided for optimum utilization of available resources, specific direct support provided for agro-horticulture units, silvi pastures and seed improvement contributed to food and nutrition security. As a consequence created sustainable livelihood mechanisms for the community. Most of these units are being managed primarily by women and control over these horticulture units has amplified their abilities to secure livelihoods for their families. The contribution of women is now recognized given that women are playing multiple roles within the household and communities for overall improvement in the livelihoods of rural community. Even though there is better recognition of women because of their involvement in community roles, there is need for further investing in mainstreaming of gender in agriculture through specific measures and activities.

Women farmers have also been given various varieties of medicinal and other plants to grow and generate financial benefits from the yield. Most of them were women who underwent trainings in taking care of those plants. All these interventions have helped women explore their potential to contribute towards ensuring food and nutrition as well as livelihood security for the family.



*Agro-horticulture by SHGs.*

## Mobilization and organizing: creation of and support to self help group

Women make invaluable contribution to agricultural process, family income, food security and ensuring sustainable livelihood for the families. The initiative of creation of self-help groups of women in few villages has provided platform to women to interact, discuss common issues, consolidate their opinions and make it heard in decision making at community level.

The basic purpose of the SHGs was the component of monthly savings by the members for their financial empowerment. This will potentially lead to other collective opportunities and activities, creation of assets and control of resources by them. Other women also got encouraged and motivated by SHGs and have used this opportunity to learn and build their capacities.

There have been a number of initiatives introduced and implemented through SHGs. Promotion of women centric activities such as goat rearing, kitchen gardens, orchard management and creation of group assets including storage drum for seed banks, have encouraged the activities of women's groups.

Value chains in agro-forestry and small ruminants have been particularly strengthened by involving women in a strategic way. Technical experts were invited to the regular meetings of SHGs in different locations. During the meetings, women discussed various issues concerning their livelihoods including farming and allied activities (eg, animal husbandry). The challenges faced by women and men in rural areas of arid Rajasthan were discussed (eg, providing education for their children) along with opportunities present and finding plausible solutions or avenues for livelihood enhancement.

Apart from awareness generation, capacity building and sensitization on rights that contributed to empowerment, support was also provided to SHG members to equip them with better negotiating skills and enhance their earnings. Animal weighing machines were provided to women SHGs to record weights of small animals. Armed with this information, women were able to negotiate a rational and fair price while selling small ruminants. Prior to this initiative farmers used to sell their goats and sheep by numbers and not by weight. In addition to the weighing machines, superior quality breeding male buck was provided to women SHGs for improving the quality of the breed of goats, and thereby assuring more income for women and farming households.

## Empowerment through capacity enhancement and alternative income generation

Gender inclusive capacity strengthening of individual farmers and farming community to fill knowledge gaps and orient on promising technologies has been a key feature of the project. While capacity development was done on improved farming practices at village level with a particular focus on women, specific skills based trainings were also organized for women's groups.



*Geeta Devi exudes a confident smile.*

Life was very different for Geeta Devi, she was almost getting used to bearing the wrath of village folk for not observing cultural norms such as veil system. The journey from an average woman farmer to a catalyst and a change maker has not been easy. She had to defy many cultural norms to make her voice heard. With support provided by the project team she mobilized women and helped in executing and monitoring many programs. She is also a member of farmers' club and VDC. Trainings provided on innovative farming practices, water management techniques and affiliation with the women's SHGs changed her life for good. After recognizing the benefits that she received from trainings, she has been instrumental in mobilizing other women in the community to undergo trainings on livestock management and other interventions. She has established a horticulture unit and is a key member of PDC and VDCs in decision making roles. Geeta Devi is an exemplar of the torchbearers for the cause of gender mainstreaming in the community.



Capacity strengthening of women on alternative forms of income generation is premised on the basic tenets of optimizing available resources, traditional activities and financial viability of the endeavor. Promotion of cultivation of medicinal plants such as *Sankhpuspi*, *Arna* and *Jivanti* within the traditional farming system is an example of using the dry and arid conditions. Building capacity of women in growing such plants contributes to financial resilience at household level. The farm women were also part of capacity strengthening activities: on soil health and fertility management, use of bio fertilizers and pesticides, arid horticulture, animal husbandry, rainwater harvesting, establishing and nurturing horticulture units, management of community pasture lands, seed production and storage, improved varieties of seed and various methods of cropping for judicious and optimal use of water resources in the field, such as line cropping. Water harvesting interventions in the project which resulted in increased availability of water for drinking, livestock and agriculture had a significant social impact. This led to saving of time especially for school aged girls not required to go long distances for fetching drinking water enabling them to regularly attend schools. Moreover it was safer for women as they did not need to walk long distances to fetch drinking water.



*Promoting cultivation of medicinal plant-Sankhpuspi.*

Besides ICRISAT and GRAVIS, other partners such as Central Arid Research Institute (CAZRI), Jodhpur; KVK Barmer, National Seed Corporation, Dabur India Ltd, and state line departments played key role in strengthening farmer's capacity. On an average women constituted 30-40% of the total participants in these trainings.

### **Reaching out to the world of opportunities: linkages to market, technical agencies and government programs**

Impoverished and mostly illiterate women in the Thar region are largely disconnected from the outside world and do not have the knowledge nor access to innovations and advancements in technology, finance and agriculture. Technical support and inputs from institutions such as CAZRI, AFRI, CIAH, KVK, through this project, facilitated access to requisite information for selection and cultivation of fruits and fodder trees, grasses and field crops. In many instances such capacity building was directly associated with profitable enterprise. Through the project interventions, linkages were established for direct procurement of the produce. For instance, in addition to imparting technical skills in growing medicinal plants, procurement of the same by companies such as Dabur India Pvt. Ltd enabled direct access to market for all the women farmers who were involved in growing such plants.

### **Gender mainstreaming at the core of all endeavors**

As mentioned earlier, women were given many decision making roles such as participation in and management of pasture development committees. Decisions relating to construction of contour bunds, loose stone check dams, stabilization of banks of water stream etc, were taken by these committees. Similarly, only women were authorized to do seed collection and harvesting of fodder from the community pastures.

Women were also encouraged to establish their own start-up groups. These bodies were established in three villages, each focused on a specific value chain: pastoral systems, small ruminants, and horticulture.

Informal in nature, with internal democratic governing structures, these groups are enhancing the marketing of agricultural products and providing funds to improve women's access to technologies and other inputs. These processes have helped the participating women in many ways: i) price realization for their goats increased by 10-15% due to sale of meat goats on weight basis; ii) new found interest among women for managing the neglected common pastures and resultant multifold increase in edible biomass productivity and, iii) establishment of agro-horticulture nutritional gardens.

Most of the trainings considered the needs of women farmers with recognition that women are expected to play a greater role both in terms of time, complexity and the nature of the processes in animal husbandry, horticulture and certain labor intensive processes of agriculture. Trainings on animal husbandry, cattle feeding, breed improvement and caring practices of animals especially during common diseases, were all targeted to cater to women's needs.

Role in decision-making at community level and household levels is both a determinant and an indicator of status of women in society and local economy. An assessment conducted during the course of the project, indicated increased political, economic and social participation of women in various institutions. In all the VDC meetings participation of women increased up to 40%. It was also noticed that interactions with the local communities also led to almost 80% of increase in participation of women making planting pits, treatment of soil, seed, and irrigation that are considered all male domains. The participation of rural women in self-help groups and decision making has encouraged them to become information seekers from that of reluctant listeners. The approach of ICRISAT prioritized socio-economics, rules governing the use of common resources, and patterns of interaction among various actors. Women were a primary focus, and their needs and views were fully taken into account when technological and institutional options for natural resource management were shared with participating communities.

With women's involvement guaranteed in village development committees, researchers show optimism that gender focus is a defining feature of Dryland Systems' contributions to regional development moving forward.

## V Going Forward

A number of initiatives and interventions have contributed towards strengthening farmers' ability to combat drought and build resilient livelihoods. Integrated farming practices were adapted to suit the extreme climatic conditions and appropriate institutional arrangements were facilitated and put in place in the action villages. Such a forward looking gender inclusive approach based on a reemphasized gender mainstreaming agenda looking at financial, technical as well social aspects needs to be institutionalized as part of the development process.

### Financial empowerment through income diversification and market access

Financial empowerment of women can potentially be achieved through encouraging enterprise in the allied processes that are largely controlled by women. Along with traditional farming, allied processes and some other small-scale home-based vocations can yield additional income to women. In times of distress, women can fall back upon these other sources of incomes. Additionally, traditional crafts have survived through community based practices in rural areas, some of them being dying arts. Investments in reviving, augmenting and making them financially viable for the rural poor will result in financial empowerment of women and girls since in all likelihood they are going to be involved in such vocations. There is also immense potential for income generation through marketing of processed local fruits and spices. Financial investment and technical knowhow is already being provided for some medicinal plants and fruits. This needs to be further expanded through capacity building of women's groups as farmers' producers' organization/SHGs for development of promising value chains.

Combination of subsistence and cash cropping has immensely contributed towards the resilience of farmers. In addition to growing staples such as millets and legumes, farmers in arid areas also grow

medicinal plants, spices and herbs. It is needed to encourage this practice and make efforts to retain this character of mixed farming to avert any livelihood crisis. This may also facilitate seed production, availability of grains for household consumptions in times of distress, substantiation of family income, and judicious utilization of productive resources such as land. Regular supply of required inputs, such as seeds for plants that can be grown in different seasons along with necessary trainings on improved practices, livestock management and other such interventions will support the rural farming structures and will benefit women immensely given their high involvement in such auxiliary activities.

Medicinal plants have a huge potential to grow even in the difficult terrain of Thar and can be grown and managed by women in agro-horticulture units. This potential needs to be further explored and leveraged by promoting women to grow varieties of medicinal plants that have market in pharmaceutical industries. Self-help groups should be initiated into this collective venture that would also entail imparting requisite trainings in growing, nurturing, harvesting, packaging, marketing and managing of medicinal plants.

Remote locations, poor transport, and low mobility issues among women need to be overcome by combining measures for providing marketing opportunities in the vicinity and also ensuring better transport facilities. There are examples of farmers collectively marketing their produce in the local market and economizing transport costs. Similar efforts can be encouraged and supported for women farmers and those engaged in home based income generation activities, such as handicrafts, processed food and processed medicinal plants. The market linkages facilitated in the project with herbal industry for medicinal plant cultivation should be further harnessed through building organizational capacity of women.

## Designing mainstreaming

Social and financial empowerment of women is directly linked to all aspects of agriculture and allied processes. While specific and focused interventions are needed, taking cognizance of and weaving in the concerns at every initiative is of paramount importance. Inclusion of such approach at the planning stage itself can assure optimum gender balanced outputs. For instance, while planning for trainings, special consideration for the needs, convenience, preferred content, methodology and even timings should form part of key determinants. Similar approach can be followed in other interventions too. Distance from residence and extensive labor during harvest season keep women occupied, eventually compromising their opportunities to benefit from such trainings. Hence, limits to their mobility should also be considered while planning and scheduling any capacity building program.

## Use of gender sensitive tools and interventions

There are a range of interventions that can be introduced in the drought stricken agriculture in the Thar. Many of them could be based on mechanization or may require physical strength. However, fundamental prerequisite for gender mainstreaming is to apply tools and techniques that are much more gender sensitive in application, suitable for use by females and are sustainable. Introduction of training methodologies, market access catalysts, and income generation initiatives must take note of these factors. Packaging of interventions must also be done in a way that suits women, for instance supports such as, weather insurance offered through women's SHGs for crop and livestock.

## Gender inclusive approach

Women face multiple constraints in all spheres of life and one constraint usually reinforces the other. Preempting such impediments and devising strategies to overcome at the stage of designing a project or an initiative is an important part of gender inclusiveness. The buy-in achieved through involving men from the onset can lend much needed impetus to gender specific interventions. Such an inclusive approach also consists of awareness on the need to invest in empowerment of women. Sensitization of community, community leaders and members of local elected bodies on the need to educate and empower girls is equally important. Recognition of the contributions made by women in securing livelihoods and the consequences of gender mainstreaming in terms of food nutrition security and overall community development needs to be emphasized.

## Filling the capacity deficit

Capacity building and awareness generation is the first step towards empowerment and ensuring equitable and just communities. Training in various techniques relating to certain vocations such as: food processing, various water management techniques, and financial management, needs to be imparted on a regular basis. Promotion of improved tools and techniques among women should be initiated on a large scale. This would ensure dissemination of new technologies, enhanced production, reduced workload and drudgery for women farmers. According to Sharma and Acharya (1997), promotion of financial literacy contributes toward demystifying financial services such as credit to largely illiterate rural female population. There is also an urgent need to address the capacity deficit especially regarding the functioning of SHGs that could potentially evolve into the epitome of women's mobilization ensuring sustainability to efforts. Members of the SHGs are needed to be oriented on transacting SHG business, collective working and professional interface within the group and outside, equipped with the skills in managing financial contributions, right from collection to deposits in the bank and making investments at individual, household and community level.

## Mobilization and awareness

Creation of SHGs of women in remote villages has helped mobilizing women, which is the first step towards awareness generation and empowerment. It is important to expand the scope of this initiative especially given that there have been absolutely no such interventions in any of the identified eight villages prior to this project. In addition to lateral expansion, intensification of efforts in this direction is needed, that would entail providing more avenues for interactions among the members to enable discussions on various issues of concerns, handholding in establishing systems for transactions, and building capacities for managing the systems. While financial transactions are already being facilitated, structured interventions for collective entrepreneurial ventures, such as extraction, processing and packaging of agricultural products and other allied activities like medical plants, handicrafts, can be explored and supported.

## Facilitation through addressing socio-economic and political context

Socio-economic milieu in the rural areas is not conducive for mobility and participation of women in economic activities. There is a need to work around various settings, institutions and groups to ensure that women have access and opportunity to build their capacity and participate in and influence decision making. Convenient access to water, firewood and markets relaxes women's time constraints and can bring in desired change.

**Political participation and decision-making:** In order to ensure that the decisions taken at community level in local self-government institutions benefit women, effective representation of women in local self-governance structures is required. It also contributes to mainstreaming gender in any decision taken for community by way of having their views counted in the process of decision making at community and household levels. Local bodies could be instrumental in stimulating, leveraging and operationalizing government schemes to support women in various sectors.

**To reach the unreachable:** facilitation of services and access to institutions Women's empowerment is closely linked to their access to technology, new knowledge, innovations, social services and institutions. Provision of childcare, healthcare and educational facilities along with sensitizing rural institutions, can be identified as key components of an enabling environment to promote empowerment of the rural poor. Appropriate childcare facilities are needed to be provided close to the workplace for women to reap professional and financial benefits. Similarly, in a community where first generation of females are acquiring formal education, lack of schools within or close by villages prevents people from sending their daughters to schools after primary education. Illiteracy and low education levels have been the major impediments for women's empowerment in social, economic, political and professional spheres. A long-term strategy for gender mainstreaming entails provision for quality education services too.



Rural institutions play a significant role in poverty reduction, economic development, empowerment of small producers and rural poor. These institutions have direct outreach to women and hence their understanding of gender issues and sensitivity to the need for empowering women can go a long way toward gender mainstreaming in rural economy. It is important to build requisite capacities of local institutions and work closely with them. Similarly, initiatives to cover expenses during pregnancies, child birth and even funerals that are fiscal shocks for rural households can create safety nets and add to notional and operational empowerment of women. Health insurance to women can also potentially reduce livelihood vulnerability

## Larger advocacy agenda

National and state level agriculture policies recognize the need for gender mainstreaming in agricultural processes and there are several policies and programs meant to facilitate them. It is, however, necessary to ensure that such intentions are imparted with a much-needed operational and functional nature. Advocacy needs to be built around all these policy elements that are needed to be converted into achievable outputs.

Along with the operationalization of policy provisions in agriculture sector, similar linkages need to be explored and leveraged through the concerned state government departments for promoting horticulture, agro-forestry, agro-food processing and animal husbandry. There is need to strengthen capacity of women and marginalized farmers on improved technologies, self-organization and access to information and markets. Schemes and programs of these departments focusing on allied activities may be channelized in a manner that large number of women could reap benefits from them. A long term strategy at policy level is needed to address the gender biased statutes pertaining to land rights. In addition, there is also a need to review the statutory framework relating to other natural resources. Similarly, inheritance and family law are important legal areas that play a significant role in ensuring gender equitable control over land.

Policies that deal with natural resources, infrastructure and market access have different manifestations and implications for men and women. Location specific and tailor made solutions need to be created so that concerns of women farmers based on their location can be taken into account. Policy interventions in social and economic domains also need to focus on school enrolment for girls, health interventions such as immunizations and nutrition programs that target women's specific needs during the life cycle. In addition to special provisions meant for farmers, access to education, health facilities, childcare facilities and other such services should be made available to women effectively and efficiently. Closer engagement with the state and administrative machinery is required to ensure that benefits of these policies, programs and schemes reach remote areas of the villages in the Thar. There is need to encourage participation of multiple stakeholders which includes: research for development institutions, NGOs, private sector, elected local bodies and farmers together with government departments to achieve gender mainstreaming objectives.

Non-recognition of the contributions made by women is also a result of non-availability of data to corroborate the claim that women play a major role in agriculture and boost productivity. Not only such data and information need to be further explored and well documented, it is also required to analyze such data to exhibit the importance of female farmers and the value they contribute to the rural economy.

## Conclusion

Agriculture unarguably constitutes an integral part of development discourse in India. It is beyond doubt that agricultural growth in India is profoundly contingent on skills and capacity of farmers and agricultural labor force. There is however, an innate gender imbalance noted in this workforce. Women's participation in agriculture is a critical feature of agrarian economies of developing world. The contributions of women, the non-recognition of their role and limited decision making power, continues to be an issue of concern. Social and economic costs of ignoring this vital aspect of economy may counterbalance development gains for the nation.

Social, cultural and structural barriers constantly challenge and subdue any efforts made towards gender mainstreaming and reinforce the exclusionist approach. An all-encompassing, comprehensive approach that involves all the stakeholders and relevant sectors is critical to combat such difficulties. It is equally important to note that gender mainstreaming is not only about lending support to women, but also involves working closely with communities as a whole, and reaching out to men as well. Dealing with the mindsets and stereotypes that control social behavior against women, needs to be addressed. Gender mainstreaming in agriculture, especially in dry regions is a larger social, economic, ecological and policy agenda that needs to be pursued constantly through a wide range of social, technological, financial and innovative tools.

The recognition of the need for gender mainstreaming and empowering women socially and financially propels certain initiatives: directly reaching out to communities, facilitating capacity building, and enabling access to technological advancements and financial services. The interventions introduced by ICRISAT in collaboration with GRAVIS, CAZRI, KVK Barmer and other partners as part of integrated agro-ecosystems approach has ensured sustainable rural livelihoods in the dry regions of western Rajasthan. They also integrated an inherently gender sensitive approach. It is important to consolidate the gains achieved through these initiatives and at the same time replicate, scale up and expand the outreach.

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We believe all **people** have a right to nutritious food and a **better livelihood**.

ICRISAT works in agricultural research for development across the drylands of Africa and Asia, making farming profitable for smallholder farmers while reducing malnutrition and environmental degradation.

We work across the entire value chain from developing new varieties to agri-business and linking farmers to markets.

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