Em(Powering) Farm Women:
Powering Agriculture

National Institute of Agricultural Extension Management (MANAGE)
(An Autonomous Organization of Ministry of Agriculture & Farmers Welfare, Govt. of India)
Rajendranagar, Hyderabad-500030, Telangana, India
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Edited by

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Shirisha Junuthula

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This e-book is the proceedings of a two-day national seminar was conducted on the occasion International Women's Day by MANAGE on Women Empowerment. This was a forum to bring together researchers, scientists, extensionists and students to discuss innovative ideas on diverse topics and generate pool of knowledge and learnings to further research and scientific/ academic activities. Hundreds of attendees (online), paper presenters, keynote and tutorial participants, students had benefited in many ways from this seminar. Researchers presented their papers under six themes put forth by the scientific committee. Among the fourteen presentations, three stood out technically and scientifically from the rest and were awarded best papers. Neither the publisher nor the contributors, authors and editors assume any liability for any damage or injury to persons or property from any use of methods, instructions, or ideas contained in the e-book. No part of this publication may be reproduced or transmitted without prior permission of the publisher/editor/authors. Publisher and editor do not give warranty for any error or omissions regarding the materials in this e-book.

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FOREWORD

Dr. P. Chandra Shekara
Director-General, MANAGE-Hyderabad

Women's contribution to Agriculture is significant. She plays a crucial role in carrying out all agricultural activities, and they are the major food producers. However, though she carries out more than 80 percent of the farm activities, their role and contribution in agriculture remain overlooked.

According to an FAO report of 2011-12, women farmers could increase farm yield by 20-30 percent, which could raise agricultural output in developing countries by 2.5-4 percent and reduce hunger by 12-17 percent if they had the same access to productive resources and training as men. But their picture was shadowed in the patriarchal society of the underdeveloped and developing countries: India is no exception. To add more power to the agriculture sector recognizing women and strengthening their status from farm to home is the need of the hour.

National Institute of Agricultural Extension Management (MANAGE), Hyderabad, India, is an autonomous organization under the Ministry of Agriculture, & Farmers Welfare, Government of India. One of the mandates of the institution is to bring gender equality in agriculture and encourage farm women to take an active lead in it. Therefore considering the importance of women in agriculture and to bring out the best possible innovative ideas to strengthen their role and status in agriculture, the Centre for Gender Studies, MANAGE conducted the two days National Seminar on the occasion of International Women's Day.

The chapters included in this book are part of the original research papers received from various parts of the country. Many scholars, researchers, Scientists, and Experts from ICAR institutes, SAUs, NGOs working in the field of gender studies/ farm women presented their research papers. In this context, MANAGE has selected the best nineteen papers presented during the seminar proceedings in the form of an e-Book covering all the subjects/topics, which could potentially contribute to Empowering Farm Women in agriculture.

I congratulate and appreciate the efforts of Dr. Veenita Kumari, Deputy Director (Gender Studies), and her team on bringing out this highly useful textbook on "Em (Powering) Farm Women: Powering Agriculture". I believe that this book will facilitate researchers, policymakers in taking steps forward for a more gender-inclusive approach to bring gender equity in agriculture & allied fields.

Yours Sincerely

(Dr. P. Chandra Shekara)

PREFACE

Today, there is an ever-growing understanding and a dedication in the modern-day world to arrive at self-sufficient and wide-range growth in agriculture. This can be achieved through regional, national, and international initiatives. Also, there's an ever-rising need for inclinations and adjustments in agricultural research towards filling existing gaps and towards concurring challenges in sustainable development and livelihood of poor and middle-class agriculture laborers, especially women. Women play a crucial role in all farm-related activities starting from land preparation to marketing. Women make up about 33 percent of cultivators and about 47 percent of agricultural laborers. Women farmers are identified as an important link in the development of agriculture, are very well known to play a significant and crucial role in agricultural development and allied fields (main crop production, livestock production, horticulture, post-harvesting operations, agro/social forestry, fishing, *etc.*). Empowering women means creating/providing an environment for women where they can make decisions of their own for their benefit and society. Women Empowerment also refers to increasing and improving the social, economic, political, and legal strength of the women, to ensure equal-right to women, and to make them confident enough to claim their rights, such as: freely live their life with a sense of self-worth, respect, and dignity, have complete control of their life, have equal rights for social and economic justice, determine financial and economic choices, get equal opportunity for education and employment without any gender bias, to get their voices heard.

The chapters in this book are a collection of manuscripts and an extract of the papers published at a National Conference held on the occasion of International Women's Day. Manuscripts were received, and they were processed and reviewed as per the standard guidelines. The chapters in the book cover a wide range of topics like women empowerment through agriculture, finding innovative technologies in reducing the drudgery of women, market linkages of women farmers and Agri-preneurs, and food and nutritional security among households and working women.

Our book mainly presses on the role of women in various agricultural sectors along with drudgery activities carried out by women in global agriculture and particular Indian agriculture of the present-day in many ways in many developing countries for as many reasons. One such reason is women farmers are the dearth of resources and opportunities are needed to make productive use of their time. Women are farmers, workers, and entrepreneurs. But almost everywhere, they face more severe constraints than men in accessing productive resources, markets, and services. This so-called "gender gap" hinders their productivity. It reduces their contributions to the agriculture sector and the achievement of broader economic and social development goals. Closing the gender gap in agriculture would produce significant gains for society by increasing agricultural productivity, reducing poverty and hunger, and promoting economic growth.

I am very hopeful and confident that this book will provide a written record of the synergy that already exists between communities and represents and a solid framework from which new scientific interactions will result in the future. I hope that these chapters will add to the literature and will be useful references.

Editors

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ABSTRACT

India is predominately an agrarian and a developing economy; and agriculture is the engine of growth. Women are major producers of food in most of the developing countries. She contributes a higher proportion of labour than men in agriculture, carries out more than 70 per cent of farm work; contrary to this, nearly 63 per cent of all economically active men are engaged in agriculture. She plays a crucial role in most of the agricultural activities, from land preparation to marketing of the agricultural produces, live-stock production, horticulture, post harvesting operations etc. However, around the world and in India especially in patrilocal society women farmers are not active decision makers and do not have equal access to productive resources; and this significantly limits their potential in enhancing productivity. According to a FAO report of 2011-12, women farmer could increase yields on their farms by 20-30 percent, which could rise agricultural output in developing countries by 2.5-4 percent and reduce the hunger by 12-17 percent effectively, if they had the same access to productive resources and training as men. As it was rightly said by Pandit Jawaharlal Nehru "In order to awaken the people, it is the woman who has to be awakened. Once she is on the move, the family moves, the village moves, the nation moves".

This book on "*Em (Powering) Farm Women: Powering Agriculture*" is about contribution of farm women in agriculture & allied sectors, recognizing their strengths and how to empower them. It gives an insight into the issues and challenges of women farmers in agriculture, their status in the country's economy. The book is divided into five themes. First theme addresses on women's empowerment through agriculture. Market linkage of women farmers/ agriprenuers is discussed in theme second. Women & household food and nutritional security has been covered in the theme three; followed by Access to assets, Resources and Knowledge: Policy and strategies discussed in theme four. Empowering farm women through group approaches like FIGs/CIGS/SHGs/FPOs *etc*. are addressed under the theme five. The book also throws light on the obstacles faced by them in terms of less access to productive resources, programs which do not recognize her work as active productive member. This book is useful for the researchers to find out the research gap and to define the problems of women farmers. It also gives a strong call to the policy maker regarding the reality of farm women status, innovative ideas for strong policy formulation to strengthen her status in the map of agriculture.

Keywords: Women, Agriculture, Production, Empowerment

Women's Empowerment through Agriculture

MEASURING THE IMPACT OF TRAINING ON EMPOWERMENT OF FARM WOMEN USING 5DE SUB INDEX OF WOMEN'S EMPOWERMENT IN AGRICULTURE INDEX (WEAI)

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ABSTRACT

The Women's Empowerment in Agriculture Index (WEAI), launched by IFPRI, Oxford Poverty and Human Development Initiative (OPHI), and USAID's Feed the Future in February 2012, is the first comprehensive and standardized measure to directly measure women's empowerment and inclusion in the agricultural sector. The WEAI is an innovative tool composed of two sub-indices: one measures women's empowerment across five domains in agriculture and the other measures gender parity in empowerment within the household. The present study is conducted in Junagadh district which comes under the jurisdiction of Farmer Training Centre, Junagadh. Total 120 trained and 120 untrained farm women were selected as respondents. The study revealed that out of the total 120 trained respondents only 45 (37.5 %) were empowered and out of 120 untrained respondents only 28 (23.33 %) were empowered. Mainly farm women lack control over the use of income and decision-making power over productive resources domain of WEAI. The 5DE sub-index value of trained and untrained farm women is 0.691 and 0.582 respectively. Thus, it can be interpreted that training has brought desirable empowerment among farm women. Still, this value is sufficiently low to describe the status of women in society. Therefore, it is essential to bring changes in policies and programs for rural women's development to bring a significant change in their life. Skill development for technological innovations through training can provide important opportunities to free women's time, boost women's production potential as well as improve their quality of life and that of their families.

Keywords: Women's Empowerment in Agriculture Index, training, Farm women

INTRODUCTION

Both women and men play critical roles in agriculture throughout the world, producing, processing, and providing the food we eat. Rural women in particular are responsible for half of the world's food production and produce between 60 and 80 percent of the food in most developing countries. Yet, despite their contribution to global food security, women farmers are frequently underestimated and sidelined in development strategies. Although rural women are assuming an increasingly prominent role in agriculture, they remain among the most disadvantaged of populations.

The importance of training to farm women is progressively realized all over the world. It is observed that farm women play a significant role in agriculture and allied

activities. They also contribute to making important decisions such as acquiring and pre-disposing of agricultural assets, borrowing money to meet the farm and home obligations, taking care of livestock, etc. Thus, farm women play a very important role in managing their farms, depending upon the situational, personal, and socio-economic characteristics of the family to which they belong. Therefore, it is essential to equip the farm women with the needed knowledge and skills. It can successfully bring about certain changes in the outlook and attitude of farm women and thereby making them capable of rendering this task more effectively and efficiently (Halakatti et al., 2007). Women play a critical and potentially transformative role in agricultural growth in developing countries, but they face persistent obstacles and economic constraints limiting further inclusion in agriculture.

The Women's Empowerment in Agriculture Index (WEAI) measures the empowerment, agency, and inclusion of women in the agriculture sector to identify ways to overcome those obstacles and constraints. The Index is a significant innovation in its field and aims to increase understanding of the connections between women's empowerment, food security, and agricultural growth. It measures the roles and extent of women's engagement in the agriculture sector in five domains: (1) decisions about agricultural production, (2) access to and decision-making power over productive resources, (3) control over the use of income, (4) leadership in the community, and (5) time use. It also measures women's empowerment relative to men within their households. The WEAI is a composite measurement tool that indicates women's control over critical parts of their lives in the household, community, and economy. It allows us to identify women who are disempowered and understand how to increase autonomy and decision-making in key domains. The WEAI is also a useful tool for tracking progress toward gender equality, which is one of the Millennium Development Goals. The WEAI was developed to track the change in women's empowerment levels that occurs as a direct or indirect result of interventions under Feed the Future, the US government's global hunger and food security initiative. The United States Agency for International Development, International Food Policy Research Institute, and Oxford Poverty and Human Development Initiative collaboratively developed it. (Anon., 2012)

RESEARCH METHODOLOGY

The study was conducted under an ex-post facto research design. The multistage, purposive, and random sampling techniques were used for this study. In the present

investigation, the population for study constitutes trained farm women (trained at FTC, Junagadh in the last two years) and untrained farm women. In the first stage, the Junagadh district of Gujarat state was purposively selected as it is under the jurisdiction of Farmer Training Centre, Junagadh. In the second stage, out of ten talukas of Junagadh district, four talukas were randomly selected for the study. Two villages from each taluka were selected, thus eight villages from selected talukas. The villages and taluka from the Junagadh district were selected based on the information given by Farmers Training Centre, Junagadh.At the third stage, 15 trained farm women were selected by random sampling method from each selected village. Thus, a total of 120 trained farm women were selected as a sample for the study. The equal numbers of untrained farm women also were randomly selected from the same villages. The interview schedule was prepared to ask the respondents relevant questions regarding the study.

Table 1: Selected Taluka, Villages, and respondents for survey or data collection

Name of the taluka	Name of the village	No. of trained farm women respondents	No of untrained farm women respondents
I Junagadh	1. Bandhala	15	15
	2. Goladhar	15	15
II Manavadar	3. Sanosara	15	15
	4. Pajod	15	15
III Vanthali	5. Tikar-padardi	15	15
	6. Thanapipli	15	15
1V Visavadar	7. Shirvaniya	15	15
	8. Sarsai	15	15
Total		**120**	**120**

The Women's Empowerment in Agriculture Index is an innovative new tool composed of two sub-indexes: one measures the five domains of empowerment for women and the other measures gender parity in empowerment within the household. It is an aggregate index reported at the country or regional level that is based on individual-level data on men and women within the same households.

Five domains of empowerment (5DE): This sub-index assesses whether women are empowered across the five domains examined in the WEAI. (See Figure 1.) For the women who are disempowered, it also shows the percentage of domains in which they meet the quired threshold and thus experience "sufficiency."1 The 5DE sub-index captures women's

empowerment within their households and communities.

The five domains are agricultural production, resources, income, leadership, and time (see Figure 1), and they comprise ten indicators. Each domain is weighted equally, as are each of the indicators within a domain. The 5DE sub-index is constructed using a robust multidimensional methodology known as the Alkire Foster Method. It is a measure of empowerment rather than disempowerment that shows how many domains women are empowered in. The 5DE sub-index contributes 90 percent of the weight to the WEAI.

The domain indicators are built on the following definitions.

- **Production:** Sole or joint decision making over food and cash-crop farming, livestock, and fisheries as well as autonomy in agricultural production
- **Resources:** Ownership, access to, and decision-making power over productive resources such as land, livestock, agricultural equipment, consumer durables, and credit
- **Income:** Sole or joint control over income and expenditures
- **Leadership:** Membership in economic or social groups and comfort in speaking in public
- **Time:** Allocation of time to productive and domestic tasks and satisfaction with the available time for leisure activities

FIGURE I. THE FIVE DOMAINS OF EMPOWERMENT IN THE WEAI

Domain	Indicators	Weight
Production	Input in productive decisions	1/10
	Autonomy in production	1/10
Resources	Ownership of assets	1/15
	Purchase, sale, or transfer of assets	1/15
	Access to and decisions on credit	1/15
Income	Control over use of income	1/5
Leadership	Group member	1/10
	Speaking in public	1/10
Time	Workload	1/10
	Leisure	1/10

A woman is defined as empowered in 5DE if she has adequate achievements in four of the five domains or is empowered in some combination of the weighted indicators that reflect 80 percent total adequacy. A key innovation of the Index is that it can show in how many domains women are empowered and at the same time reveal the connections among

areas of disempowerment. This enables decision-makers to focus on improving the situation of the most disempowered women. In addition to tracking the nature of empowerment in five domains, the WEAI measures how empowered women are relative to men in the same household, which is critical to understand the gender empowerment gap.

Scoring the WEAI

Measuring the 5DE results in a number ranging from zero to one, where higher values indicate greater empowerment. The score has two components. First, it reflects the percentage of women who are empowered (He). Second, it reflects the percentage of domains in which those women who are not yet empowered (Hn) already have adequate achievements. In the 5DE formula, Aa is the percentage of dimensions in which disempowered women have adequate achievements: 5DE = He + Hn (Aa), where He + Hn = 100% and 0 < Aa < 100%. The total WEAI score is computed as a weighted sum of the country- or regional-level 5DE and the GPI.

RESULT AND DISCUSSIONS

Input in productive decisions domain of 5DE is having maximum positive response by farm women both in trained (84.16 %) and untrained (79.17 %), it reveals farm women are Sole or joint decision-maker over food and cash-crop farming, livestock, and fisheries. More than half-trained (71.67 %) and untrained (61.67 %) farm women have autonomy in agricultural production about the decision concerning which crop to be sown or which livestock to purchase. The contribution of farm women in productive decisions shows the value of their knowledge and experience in farming. (Roy and Kadian, 2016)

Low empowerment among trained (51.67 %) and untrained (42.50 %) farm women are in individual or joint ownership of assets. This is mainly because women are not considered among heirs of properties. Out of total respondents 62.50 percent of trained and 55.83 percent have decision-making power over purchase, sale, or transfer of productive resources such as land, livestock, agricultural equipment, consumer durables, *etc*. (Christian and Chauhan, 2019). 66.67 percent of trained and 63.33 percent of untrained farm women have access to and decision-making power over credit. This shows the vital economic empowerment of farm women.

Low empowerment among trained (55 %) and untrained (45.83 %) is observed in sole or joint control over income and expenditures. Membership in economic or social groups

is among 69.17 percent trained and 55 percent untrained farm women. Membership in the organization increases confidence and social contact among farm women (Jain 2017, Makarabbi et al. 2017). Out of the total respondents, only 32.5 percent trained and 17.50 percent untrained farm women are comfortable in speaking in public. This reveals less interest in farm women in leadership. 78.33 percent trained and 67.50 percent of untrained farm women believe they have balanced allocation of time to productive and domestic tasks. 78.33 percent of trained and 67.50 percent of untrained farm women are satisfied with the available time for leisure activities. Mainly farm women don't consider having leisure time as essential; therefore, they are mostly satisfied with the time available to them. Only 45 (37.5 %) trained and 28 (23.33 %) farm women were empowered. The reason for all over low empowerment is that it is not essential if farm women are empowered in one domain must be empowered in another. This results in the decline of all-over empowerment.

Figure 2. Percentage of trained farm women empowered in different domains

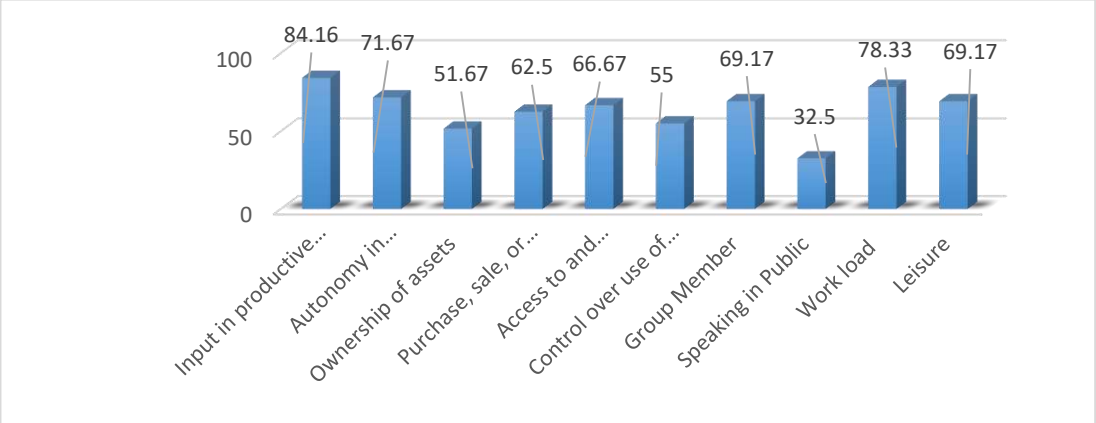
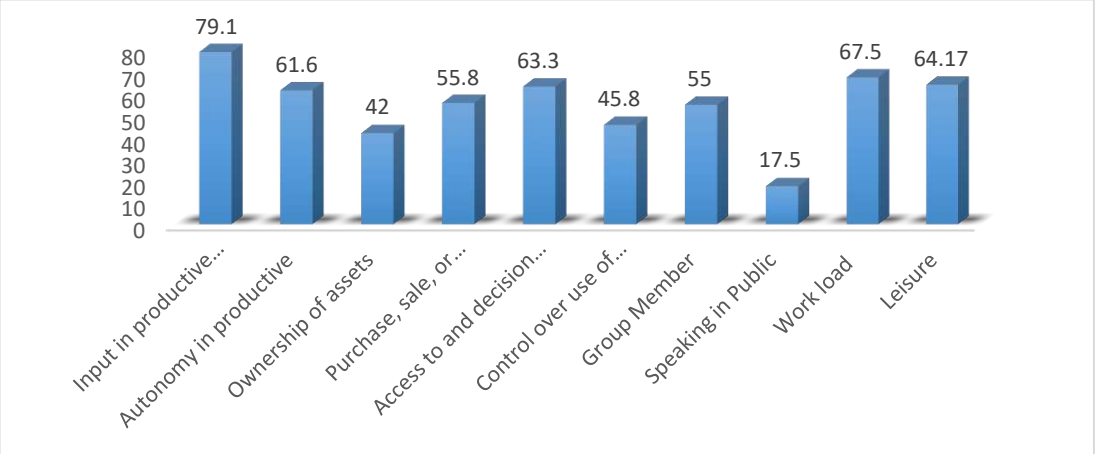


Table 2: Frequency and percentage of respondents empowered in each domain

Domain	Indicators	T	UT
Production	Input in productive decisions	101(84.16)	95(79.17)
	Autonomy in production	86(71.67)	74(61.67)
Resources	Ownership of assets	62(51.67)	51(42.50)
	Purchase, sale, or transfer of assets	75(62.50)	67(55.83)
	Access to and decisions on credit	80(66.67)	76(63.33)
Income	Control over the use of income	66(55.00)	55(45.83)
Leadership	Group member	83(69.17)	66(55.00)
	Speaking in public	39(32.50)	21(17.50)
Time	Workload	94(78.33)	81(67.50)
	Leisure	83(69.17)	77(64.17)

	Total Farm Women Empowered	**45 (37.5)**	**29 (24.16)**

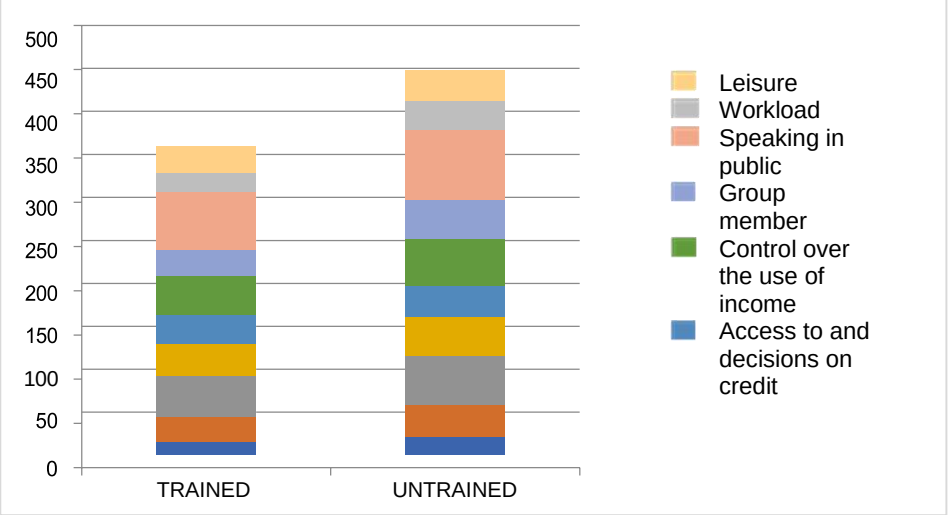
Figure 3. Percentage of untrained farm women empowered in different domains



Scoring 5DE Sub Index

The 5DE for trained farm women shows that 37.5 percent of women are empowered. In the selected area, 62.50 percent of women who are not yet empowered still have, on average, adequate achievements in 50.60 percent of domains. Thus, the overall 5DE is 37.5% + (62.50% x 50.60%) = 0.691.

Figure 4. Contribution of each indicator to disempowerment for trained and untrained farm women



The 5DE for untrained farm women shows that 24.16 percent of women are empowered. In the study area, 75.84 percent of women who are not yet empowered still have, on average, adequate achievements in 44.90 percent of domains. Thus, the overall 5DE is 24.16% + (75.84% x 44.90%) = 0.582. The difference in the index shows the impact of

training on the empowerment of farm women. It is visible that training brought a desirable change in the empowerment of farm women.

WHO IS EMPOWERED?

The 5DE deliberately focused only on issues of empowerment in agriculture. To show clearly how empowerment in women's specific agricultural roles relates to their wealth, their levels of education, and their empowerment in other domains, the pilot survey also included questions related to these other households and individual characteristics.

- **Annual Income:** Annual Income is significantly and positively associated with empowerment, but it is not sufficient to ensure it: 12 percent of women in the low annual income group were empowered, compared with 42 percent in the medium annual income group. The fact that 73 percent of women in the high annual income group were not yet empowered indicates that greater wealth increases empowerment but does not guarantee it.

- **Education:** Education is significantly and positively associated with empowerment. The farm women with higher educational status were more empowered. So, in the study area, women's empowerment in agriculture was defined by their educational attainment.

- **Age**: Results by age were also distinct for women: 41 percent of women aged 35 to 50 were empowered, compared with less than 20 percent of those in younger or older age categories. This may reflect the relative lack of power of younger females, who are typically daughters-in-law, and much older women, who may now be dependent on sons for support.

- **Other domains:** The literature empowerment in one domain may not necessarily create empowerment in other domains. Hence, the survey included information on women's decision-making and autonomy concerning agriculture and related activities.

CONCLUSION

The 5DE structure offers clear incentives for change. First, the 5DE score can be increased by increasing the percentage of empowered women. Second, the 5DE can be increased by ensuring that disempowered women are empowered (or, have adequate achievements) in a greater percentage of domains. The study clearly defined the empowerment of women in the present situation of agriculture. There is a long journey ahead to bring equal respect to the profession of being farm women. One of the inevitable tools to make it possible is to bring women empowerment in agriculture and farm families. Even

while conducting this research, it was observed for most of the answers farm women looked to their husbands and were not enough comfortable sharing their views. The study inferred that empowerment of farm women was more in social factors than economic factors, showing that they lack decision-making in money matters.

Training helps in bringing more exposure to farm technologies and confidence among farm women. The difference in empowerment of farm women in terms of different domains of WEAI and 5DE sub-index was significant enough to prove my words. But still, the overall women's empowerment in the study area is very low. We require strong policies and relevant programs based on the development of farm women to narrow this gap. We require including some social messages also along with skill development in the training program to enhance its impact on the betterment of life of farm women.

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WOMEN EMPOWERMENT IN INDIAN AGRICULTURE

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ABSTRACT

The women establish practically half of the labor force occupied with agriculture. The rural women take an interest in a wide scope of agricultural activities, for example, creation, handling conservation, and usage of food. They assume a critical part in the whole food system beginning from the determination of seeds, planting, manuring, drying, and care about of the family from the harvested items. Even though women contribute 60 to 80 percent of the work in agriculture cultivation, their inclusion in the determination of reasonable harvests and selection of imaginative and great administration rehearses is extremely low. The significant reasons might be the absence of experts in decision-making in agricultural production, gender in the land, absence of awareness about the innovations in agriculture, and the helpless admittance to female extension experts for a conference about their farmlands. The strengthening of women in growing India will lead the country to a critical situation of the humanist deduction for globalization.

Keywords: Agriculture, production, and rural women.

INTRODUCTION

Women are the foundation of the agricultural labor force and are a crucial piece of the Indian economy. When women are engaged and can guarantee their privileges and admittance to land, authority, openings, and decisions, economies develop, food security is upgraded and prospects are improved for current and people in the future. The woman assumes an essential part since farming is generally a family unit undertaking. The key part of women remembers their commitment to the field of farming, food security, agriculture, dairy, sustenance, sericulture, fisheries, and other associated areas. Women make fundamental commitments to agriculture and country financial exercises in all non-industrial nation areas. Their jobs differ significantly among and inside districts and are evolving quickly in numerous pieces of the reality where monetary and social powers are changing the agriculture area. The rise of agreement cultivating and present-day supply chains for high-esteem Agricultural items, for instance, present various freedoms and difficulties for women than they accomplish for men. These distinctions get from the various jobs, what's more, duties of women, and the limitations that they face.

Women in Agriculture

Women's work in agriculture as farmers all alone account, as unpaid laborers on family, cultivate and as paid or unpaid workers on different farmers and rural ventures. They are engaged with both harvest and animals' creation at means and business levels. They produce food and money crops and oversee blended Agricultural tasks regularly including harvests, domesticated animals, and fish cultivating. These women are viewed as a feature of the agriculture labor (FAO, 2010). The Southern Asian normal is ruled by India, where the portion of ladies in the agriculture labor has stayed consistent at a little more than 30 percent. This makes changes in different nations where the female contribution of the farming labor seems to have expanded drastically, for example, Pakistan where it has nearly significantly increased since 1980, to 30 percent, and Bangladesh where women currently surpass 50 percent of the agricultural labor.

Economy Contribution

Farming is the principal occupation in India offering work to around 58 percent of individuals. The commitment of farming and unified area in the Gross Domestic Product (GDP) of the nation has reached around 14 percent in 2011–2012. India is a quickly developing nation that stays as one of the countries with farmers beneath the destitution line on the planet. It is inclined to climate-related stuns and encounters undeniable degrees of food uncertainty, especially among rustic populaces and smallholder farmers. Women assume a basic part in Agricultural development in India, yet they face steady financial imperatives restricting further incorporation in farming. In the general farmer creation chain, women's normal commitment is assessed at 55–66 percent of the absolute work with rates a lot higher in specific areas. Women farmers, a fourth of the total populace, produce more than 50 percent of the world's food and offer 43 percent of the agriculture labor. The women contribute right around multiple times a greater amount of their profit than the man on the prosperity of the family, including family wellbeing, youngster wellbeing, training, and sustenance. However, they have less access than men to farming-related resources, data sources, and administrations. Women's strengthening is a socio-political idea that includes intellectual, mental, monetary, and political measurements. The women comprise practically 50 percent of the work power occupied by agriculture. The country women take an interest in a wide scope of agricultural practices, for example, creation, preparing protection, and usage of food. They assume a vital part in the whole food framework beginning from the

determination of seeds, planting, manuring, drying, putting away, and taking care of the family from the gathered item. Even though women contribute 60 to 80 percent of the work in Agriculture and creature cultivation, their association in choice of appropriate harvests and reception of imaginative and great administration rehearses is exceptionally low.

Social protection for women in the rural economy

Gender-based imbalances in the work market, women's inconsistent portion of unpaid consideration and family work, and predisposition in the manner by which social security frameworks are organized in the proper economy have brought about inconsistent access, inclusion also, arrangement of federal retirement aide for women. In addition, sexual orientation disparities and the absence of thought given to women explicit social insurance needs frequently put ladies at more noteworthy hazards for the duration of their life.

CONCLUSION

Rural women are the major contributors in agriculture and its allied sectors. Her work ranges from crop cultivation, livestock production, and other related activities. From household and family maintenance activities to transporting water, fuel, food, and fodder. Regardless of a particularly immense association, her job and respect have yet not been perceived. Women's status is low by all social, monetary, what are more, political pointers. Women's pay work is viewed as a danger to the male inner self and women's commitment to numerous locally situated financial exercises prompts under-compensation for their work. Women spend extended periods bringing water, doing clothing, planning food, and completing farming obligations. Not exclusively are these undertakings genuinely hard and requesting, they additionally deny young ladies the chance to consider. The nature and circle of women profitability in the work market is generally controlled by socio-social and financial components

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NEED FOR OPEN AND DISTANCE LEARNING PROGRAM IN GENDER, AGRICULTURE AND SUSTAINABLE DEVELOPMENT- AN ANALYSIS

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ABSTRACT

The researchers designed the present study to assess the need for the program 'Gender, Agriculture and Sustainable Development' in Open and Distance Learning (ODL) at Indira Gandhi National Open University (IGNOU). The researchers collected data from 164 respondents which include 72 students, 44 employers, and 48 experts. The critical survey questions were on: profile of the respondents, awareness about similar programs, relevance, benefits, mode, level, the medium of instruction, job prospects, scope to pursue higher education, career development, placement opportunities, interest in enrolling in this Programme, expectations from the Programme and suggestions for course contents to include the Programme. The respondents' flavor launching the Programme on Gender, Agriculture and Sustainable Development in Open and Distance Learning (ODl) mode. The results further revealed the need for a Certificate or Diploma level academic program in the ODL mode on Gender, Agriculture, and Sustainable Development. The respondents also felt that the Programme in Gender, Agriculture, and Sustainable development might sensitize learners and others to recognize the women's contribution to agriculture and allied activities. It will help the learners to work in a gender-sensitive manner at every level. It will also help policymakers formulate policies by including the women's needs in agriculture and allied sectors. It will even recognize women's contribution to sustainable agriculture. In light of the study and study's findings, the university took the necessary steps to develop a Programme in Gender, Agriculture, and Sustainable Development Programme in ODL to meet the continuing education needs and build all stakeholders' capacities.

Keywords: Needs assessment, Gender, Agriculture, ODL, IGNOU

INTRODUCTION

Women play a significant role in Indian agriculture from the sowing of seeds, harvesting crops, and post-harvest value-addition. Due to gender inequalities in society, women lack ownership, access, and control over resources and lack decision-making (Batliwala et al., 1998). This culminated in the lack of valuation of women's work in agriculture. With the changing pattern of agricultural activities and the mechanization of agriculture, women's role in agriculture increased significantly among small and marginal farmers. Even though industrialization has changed agricultural activities, still women have more labor-intensive farm activities such as weeding and harvesting. Change in land ownership and gender-sensitive labor laws facilitated women to be involved in decision-

making and reduced drudgery. But Indian agriculture has not yet addressed many issues confronted by women in agriculture. In this scenario, the School of Gender and Development Studies (SOGDS) and School of Agriculture (SOA), Indira Gandhi National Open University (IGNOU) decided to design and develop a Post Graduate Diploma in Gender, Agriculture and Sustainable Development in Open and Distance Learning (ODL) with the following objectives to.

- Create awareness about gender roles and typology of issues in sustainable agriculture;
- Enhance the knowledge on gender analysis, mainstreaming and policies, and
- Build capacities in gender research in agriculture.

To understand the viability of the program, researchers conducted the present need assessment study.

Rationale and Background

Feminization of agriculture, gender biases in agriculture, and rural development are the global issues of concern. More than one billion people live in poverty worldwide, and a great majority of them are women. Women's poverty is a violation of their human rights to health and wellbeing, food, adequate housing, a safe and healthy living environment, social security, employment, and development (Beijing platform for action, Global Framework, point no.17, UN 1995). Along with persisting poverty, they occupy only a subordinate position in political, economic, and social life. As per NSSO data in 2004-05, India has an estimated 166 million farmers with 86 percent considered small and marginal farmers owning up to two hectares of cultivable land. About women in agriculture, the NSSO data of the year 2004-05 estimated 259 million total agriculture workforces in India. In rural areas, the workforce in agriculture is 249 million. In that, women constitute 41.6 percent of the overall agriculture workforce.

The modernization in agriculture and other sectors resulted in taking over subsistence activities formerly undertaken by women. Often a majority of the better-paid jobs involving new technology go to men. The modernization of agriculture has also altered labor division between the sexes, increasing women's dependent status and workload. The study conducted by Esther Boserup proved alteration of women's labor on the African Agricultural pattern after introducing modernization (Boserup, 1970). Women often lose control over resources such as land and are generally excluded from access to improved agricultural methods.

Productivity equated with the cash economy, so most of the women's work was ignored, and the women's contribution to the economy was not part of the National Systems Account (NSA). Women and men are affected differently by economic change and development, and thus an active public policy is needed to intervene to close gender gaps. In the mission statement of the Beijing Fourth World Conference on Women, held in 1995, it was said that '[a] transformed partnership based on equality between women and men is a condition for people-centered sustainable development' (Beijing platform for action, Global Framework, point no.17, UN 1995). According to the 2010-2011 Karnataka Households Asset Survey, women-owned only 16 percent of the total wealth in the wealthiest 20 percent of rural households. In rural areas, 71 percent of all land plots were owned by men, and only 14 percent were owned by women (Swaminathan, et al., 2011).

In this context, agriculture needs to look towards sustainability in the country's planning and policy process and the women's contribution to sustainable agricultural development. Gender inequality is inbuilt in our society due to patriarchy, so in all spheres of our lives, including agriculture. The subordination of women has become a way of life. Changing the policy makers' mindset, government functionaries, extension workers, researchers, and students is a need of an hour. This ODL program on 'Gender, Agriculture and Sustainable Development is expected to address these issues and create awareness among all stakeholders.

METHODOLOGY

The need assessment was carried by survey method based on a questionnaire sent through electronic mail and post. The questionnaires contained both open-ended and closed-ended questions. The questionnaires were administered to the purposively selected sample population, which includes students, employers of the organizations/ agriculture-based industries, and the experts in agriculture. Equal numbers of samples were chosen from four regions of the country.

Three types of questionnaires were prepared for students, employers, and experts. The Universities/institutes selected from each area were as follows:

- North- Indian Council of Agriculture Research, New Delhi
- South – Tamil Nadu Agriculture College and Research Institute, Madurai
- East- College of Agriculture, Tripura

- West - College of Agriculture, Rajasthan Agriculture University.

The questionnaire to students consists of the items on profile characteristics of the respondents, availability of similar programs, benefits, mode and level of the program, medium of instruction, job prospects, scope to pursue higher education, career development, placement opportunities, interest in enrolling this program and expectations from the proposed program. The questionnaire to employers consists of the items on awareness about a similar program, benefit of the program to the industry, employability, level of the program, and medium of instruction. The questionnaire to experts consists of the items on awareness about a similar program, demand for the program, relevance of the proposed program, employability, and suggested relevant courses and inclusion content. A total of 200 questionnaires were mailed, and 72 students, 44 employees, and 48 experts returned the filled-in questionnaires.

RESULTS AND DISCUSSION

- **Profile characteristics of the respondents**

Concerning the respondents' distribution by sex, an equal percentage (50%) of respondents in the student category belong to male and female. The majority (90%) of the student respondents belong to 18- 25 years and 10 percent in the age group of 26-35 years. Only 3 percent of the students are pursuing Ph.D. programs, 16 percent of the students were postgraduates, while the majority of the respondents (82%) were graduates.

The majority of the employers' category respondents (81%) were female, and 19 percent were male. The program coordinators contacted purposely young employers who recently joined the industry /organization to understand the nature of gender relations in the industry/ organization and the industry's expectations from the students who enroll in this program. With this assumption, 68 percent of the employers' category respondents belong to the age group of 26-35 years, followed by 36-45 years (27.00 %) and 56-55 years (4.5%) categories, respectively. While 72.7 percent of them were Ph.D. degree holders, 4.5 percent of the respondents joined the industry/organization after completing their post-graduation, and 22 percent of the respondents were graduates.

In the expert category, 71 percent of the respondents were male, and only 29 percent were female. While 50 percent of the experts belong to 26-35 years, followed by 36-45 years (20.8%) and 46-55 years (29%) age group categories, respectively. About 70.8 percent of

the respondents in the experts' category were Ph.D. holders, while 29 percent were postgraduates.

The need assessment study results were presented and discussed under three sections: students, employers, and experts' opinions.

- **Opinions of the Students**

The program coordinators posed the respondents' questions about whether similar programs were offered by any other university (Table 1). About 83.3 percent of the respondents are not aware of this kind of program. In comparison, 16.6 percent of the respondent knew similar types of courses as part of their university program, and they listed the following universities offering this kind of program:

Tripura University, Agartala; National Institute of Agricultural Extension Management (MANAGE), Hyderabad; MBB college, Agartala, West Tripura; and National Academy of Agricultural Research Management, Hyderabad.

Table 1: Similar programs available in any other University

A similar program offered by any other University	Frequency	Percentage (%)
No	60	83.3
Yes	12	16.6
Total	72	100

Source: computed

About 14 percent of the respondents felt that this kind of program would not help them profoundly. But, the majority of the respondents (86%) answered positively (Table 2). They also cited the reasons and how this program will help them. According to the student respondents, the program will help agriculture students understand women's contribution to sustainable agriculture. Women could regain their actual status in society and create a broader understanding among various agriculture stakeholders on women's knowledge and skills in agriculture. The program will make the agriculture students develop skills and attitudes and create a cadre of students to become self-sufficient in job making. It makes the student analyze the impact of the socialization process and how socialization made the women in agriculture vulnerable. About 56 percent of the respondents preferred distance mode, followed by regular (18 %) and online (26%) modes, respectively (Table 3).

Table 2: Benefits of the program

Will this program help you?	Frequency	Percentage (%)
Yes	62	86
No	10	14
Total	72	100

Source: computed

About 56 percent of the respondents preferred distance mode, followed by regular (18 %) and online (26%) modes, respectively (Table 3).

Table 3: Mode of the program

Mode of the program	**Frequency**	**Percentage (%)**
Distance	**40**	**56**
Regula	**13**	**18**
On line	**19**	**26**
Total	**72**	**100**

Source: computed

Table 4: Level of the program

Level of Programme	Frequency	Percentage (%)
Appreciation	4	5.5
Certificate	22	30.5
Diploma	20	28
PG	26	36
Total	72	100

Source: computed

Respondents were requested to provide their preferences about the level of the program. About 5.5 percent of the respondents preferred appreciation programs, followed by certificate (30.5%), diploma (28%), and post-graduate diploma (36%) levels, respectively (Table 4). The majority (89%) of the respondent preferred English as the medium of instruction, followed by both English and Hindi (9.7%) and Hindi (1.3%), respectively.

Table 5: Medium of instruction

Medium of instruction	Frequency	Percentage (%)
English	64	89
Hindi	1	1.3
Both E/H	7	9.7

Total	72	100
Medium of instruction	Frequency	Percentage (%)

Source: computed

Table 6: Usefulness of the program

Usefulness	Frequency	Percentage (%)
Job prospects as self-employment		
Yes	54	75
No	18	25
Total	72	100
Helpful to pursue higher education		
Yes	61	84.7
No	11	15.3
Total	72	100
Mid-term career development		
Yes	68	94.4
No	4	5.6
Total	72	100
Placement opportunities		
Corporate	7	9.7
NGO	31	43
Research organizations	31	43
Any other	3	4.2
Total	72	100

Source: computed

About 75 percent believed in self-employment opportunities after completing the program. But 25 percent perceived no opportunities. One can pursue higher education after completing the program. This was opined by the majority of the respondents (84.7%). But 15.3 percent of the respondents opined that this program would not help the prospective students to pursue higher education after completing the program. About 94.4 percent of the respondents opined that this program would help them in their mid-tern career development, while only 5.6 percent had opined that this program would not help in mid- tern career development. An equal number of respondents (43 % each) opined those students would get placement opportunities in NGOs and research organizations. Only 9.7 percent of respondents reflected that students would also bring opportunities in the corporate sector.

Apart from this, some respondents expressed their opinion. They mentioned few more areas where students could be absorbed viz., extension and training institutes; ICAR institutions; agriculture clinics; and as agriculture officers in banks (Table 6).

Table 7: Reasons for enrolling in this program

Immediate reason for enrolling this program	Frequency	Percentage
Employment opportunities	29	40
Mid-term career advancement	9	12.5
Self-development and learning	29	40
Social benefit	2	2.8
Any other	3	4.2
Total	**72**	**100**

Source: computed

About the reasons for the immediate interest in enrolling in this program, an equal number of (40%) respondents would like to join this program to gain employment opportunities and self-development, followed by mid-term career advancement (12.5%), respectively (Table 7).

Expectations of the students from the program:

The expectations of the students from the program were:

- Knowledge enrichment in the field of gender and agriculture.
- Field knowledge.
- Self-development as well as employment generation by learning skills.
- One hundred percent job assurance after completing the program.

Students were also expected that the needs of the agricultural graduates should be reflected to help them in the future work as gender-sensitive agriculture technocrats. This program should help the students to know the role and rights of women very clearly in sustainable agriculture. It has to be designed to pursue a career as a gender-sensitive agriculture extension specialist.

They were also expecting that the program makes more students employable and brings social benefits to the county. This program should bring awareness about innovative technologies/ practices to reduce women's drudgery so that Indian agriculture could be more gender-sensitive. Opinions of the Employers

The opinions of the prospective employers were sought to understand the employment opportunities available in the market and know the employer's expectations from the program. The majority (81.8%) of the employer respondents in the agriculture-related industries and the organizations were not aware of this kind of program offered by some other universities in India/abroad (Table 8). Only 18.2 percent of the respondents were aware of this kind of the courses provided by some other universities viz., National Dairy Research Institute, Karnal; GB Pant University of Agriculture and Technology; Course on Gender in Agriculture, Tamil Nadu Agriculture University; and Course on Gender, Sustainable Agriculture and Natural Resource Management offered by Michigan State University, USA.

Table 8: Awareness about these kinds of Programme

Have you heard about a similar program like this?	Frequency	Percentage (%)
Yes	8	18.2
No	36	81.8
Total	44	100

Source: computed

The respondents answered positively to the subsequent questions, and they stated that the industries/organizations need specialists' employees with this background. They also said that employees recruited as agriculture extension officers in the industries, banks, and organizations usually did not contact women agriculturist to explain the scientific advancements in the agriculture industry.

Table 9: Benefit of the program to the industry

Will this program help your industry?	Frequency	Percentage
Yes	44	100
No	0	0
Total	44	100

Source: computed

All the respondents said that this program would be helpful to the agriculture industries and organizations. They cited the reason for the significance of developing this kind of program as to mainstreaming gender in agriculture-related sectors and organizations. Creating this kind of program would improve the socio-economic status of women. Once employers gain knowledge in gender and agriculture, they could research various aspects of gender-related projects, and more studies could have emerged for policymaking. Focusing on technological empowerment in this program would benefit primary sectors like fisheries also. The male-female ratio in the veterinary profession is reversing, and the percentage of women in the veterinary industry had increased. This program would help them realize the increasing share of women in the veterinary profession and empower the sector. Gender-sensitive and sector would also practice sustainable development practices that would be helpful to create women enterprises. Practical experiences from this proposed program would help the younger generation to become well-trained persons in sustaining gender-sensitive agriculture.

Table 8: Awareness about these kinds of Programme

Have you heard about a similar program like this?	Frequency	Percentage (%)
Yes	8	18.2
No	36	81.8
Total	44	100

Source: computed

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Table 9: Benefit of the program to the industry

Will this program help your industry?	Frequency	Percentage
Yes	44	100
No	0	0
Total	44	100

Table 10: Recruitment

Will you recruit students who have completed this program?	Frequency	Percentage
Yes	42	95
No	2	5
Total	44	100

Source: computed

About 95 percent of the respondents provided a positive reply, and they agree to recruit students who would complete this program successfully. Only 5 percent of the respondents said: "No" (Table 10).

We posted the open-ended questions to the employers. The first question asked regarding their expectation from the proposed program to make the students employable in their organization/industry? They replied that the program would be an innovative one that started first in India as a full-fledged post-graduate program. The syllabus should have an appropriate percentage of practical components to address the needs of farming sectors and animal husbandry enterprises. Students should have a clear idea about the contribution of women in agriculture and gender roles in society. They also could have an idea about women's skills and knowledge and women's participation in various aspects of agriculture and allied activities and non-farm activities.

The next question was posed on the components to be included in the syllabus. The respondents listed various features to be included in the syllabus apart from those listed in the questionnaire. These include field visits and exposure visits; stress management; market linkage for agriculture and its allied products; collaborative enterprise; sustainable production; modern technologies in the agriculture sector; gender role in agriculture and biodiversity; successful gender and development projects; case studies in the agriculture sector; the role of research organizations and development industries in promoting women's participation in agriculture and its allied sectors; innovative gender practices in the agriculture sector; policy reforms and gender roles in the agriculture sector.

Table 11: Level of the program

Level	Frequency	Percentage
Appreciation	2	4.5
Certificate	6	13.6

Diploma	6	13.6
Post-Graduation	30	68.18
Total	**44**	**100**

Source: computed

The need assessment questionnaire listed the level of the program from appreciation to post-graduation. The majority (68.18%) of the respondents suggested offering a post-graduate program, followed by a certificate and diploma suggestion by an equal number of respondents (13.6%) (Table 11).

Table 12: Medium of instruction

Medium	Frequency	Percentage
English	34	77.2
Hindi	0	0
Both English/Hindi	8	18.1
Regional Languages	2	4.5
Total	**44**	**100**

Source: computed

The majority of the respondents (77.2%) opined that the proposed program should be offered in English as the medium of instruction, followed by Hindi and English (18.1%), and in regional languages (4.5%).

Table 13: Employment opportunities

Employment Opportunities	Frequency	Percentage
Corporate	2	4.5
NGO	18	40.9
Research Organization	22	50
any other	2	4.5
Total	**44**	**100**

Source: computed

About half of the respondents expressed their opinion that successful students may get opportunities in research organizations, followed by NGOs (40.9%) and corporate sectors (4.5%), respectively (Table 13).

Another open-ended question posed to the employers was their expectations of the program. The employees from the proposed program are expected to acquire knowledge and

develop skills in policy studies about gender in the agricultural sector. The relevant field visits to local environmental organizations pertinent to agricultural research. They were also expecting that the program should also create a cadre of professionals who clearly understands the need for gender empowerment in the agriculture sector and strategies to be followed to implement the same. This program had to bring out the essential and crucial role of women in sustainable agriculture. It should help highlight the concerns of women and the challenges they face in the agriculture sector; Gender mainstreaming is the current international approach to advancing gender equality and equity in society. This program could help in mainstreaming gender in the agricultural industry. This program would help the educational and research institutions promote gender equality and equity. It would help the policymakers bring reforms to give full and equal access to women's economic resources, and research methods for gender-sensitive research and policy-making process must be included in the program.

The researchers also posed the question to the employer and sought their opinion about the usefulness of such program". They cited the following reasons.

- Since it is an interdisciplinary program, care should be taken to include a cross-disciplinary approach. (Life Sciences, Social Sciences, Pure Sciences, Biological Sciences, Agriculture and Animal Husbandry);
- Major gender issues like equal access to land and water resources, credit facilities to women and other support services should be included; and women and men in agriculture and allied sectors would be sensitized; diversity and commercialization should be included;
- A holistic approach should be adopted and in turn that will help in mainstreaming the agriculture sector; and
- Including successful case studies of women in the agriculture sector will motivate others to apply innovative practices.

- **Opinions of the Experts**

The first questions posed to the experts were whether similar kind of programs exists in any other Universities or not? 78.3 percent experts expressed that they did not know about similar types of programs in any other university, but 21.7 percent of the experts have come across the identical kinds of the program in universities/ institutes viz.,

- Entrepreneurship Development Programme as Vocational Training for rural youths by KVKs;

- National Academy of Agricultural Research Management, Hyderabad;
- PG Diploma in Agriculture Management, Kerala Agriculture University; and
- Women Study Centre, Jai Narain Vyas University, Jodhpur.

About the demand for the program, 95.7 percent agreed that there is a growing demand for this kind of program. They cited the reasons for their opinion. According to them, this kind of program is vital for all the stakeholders involved in agriculture development. Everybody has to be sensitized then only gender-based technology would come up, and it could be disseminated among the farmers, especially women farmers. Scientists have to be sensitized to develop gender-friendly technologies. This kind of program would help society and re-orient them to make a gender-sensitive society. Developing technologies and training women to be employed in agriculture and related cottage industries is vital to improving rural economies. Women should be trained in the area of food technology and nutrition. There is an increasing awareness that agricultural productivity (crop, livestock, and fisheries) could be significantly increased if women get access to credit, resources, and technologies as men do. Now everyone is accepting the fact that women are contributing to the primary sectors. So, it is essential to empower them and make people aware of it. Educational programs with an emphasis on female education had resulted in better awareness among them. Gender equality and total empowerment of women lead to the overall development of society and the nation. Awareness is generally created in the society and to start, such type of humble beginning, is required to avoid bewildering afterward, when the stakeholders are shortly changed emotionally. Especially gender empowerment and sustainable development, the burning issues world over due to imbalance, empowerment, and development across the world, especially in developing countries.

Questions were posed to the experts about the program's relevance and their responses were presented in Table 14. About 39 percent of the respondents felt that this kind of program is relevant to the agriculture scientists and other staff in the research organizations; 25 percent opined that the program would be relevant to the NGOs; 16.7 percent of the experts expressed that this would be relevant to the agriculture extension staff, and; 29 percent of respondents opined that the program is relevant to different fields.

Table 14: Relevance of the program

Relevance	Frequency	Percentage
Agriculture scientists	6	12.5

NGOs	12	25
Agriculture Extension Staff	8	16.7
Any Other	14	29
Staff in research organizations	8	16.7
Total	48	100

Source: computed

The responses of the experts on the inclusion of specialized courses in the proposed program are presented in Table 15.

Table 15: Inclusion of specialized courses in the program

Specialized courses	Frequency	Percentage
Rural livelihoods	10	21
Sustainable agriculture	9	19
Science, society & sustainable technologies	5	10
Consequences of technology	2	4
Sustainable seed preservation techniques	22	46
Total	**48**	**100**

Source: computed

The majority of the (46%) experts preferred the course on sustainable seed preservation techniques as a specialized course in the program. They opined those women are playing a significant role in preserving seeds. This has to be documented and widely published. About 21 percent of the respondents preferred the course on Rural Livelihoods; 19 percent suggested having a course on sustainable agriculture; 10 percent preferred to have a course on science, society, and sustainable technologies.

Apart from the listed courses in the questionnaire, experts would like to include the topics viz., gender audit and gender budgeting, access to resources in India and global context, gender research, gender-sensitive agriculture technologies, water harvesting and management, program-specific knowledge, planning, methodological aspects, monitoring and evaluation, finance management, history of agriculture, conventional agriculture with farmyard manures, modern agriculture with fertilizers, pesticides, bio-fertilizers, biopesticides, and an integrated approach for sustainable agriculture with ecological balance.

The experts also opined that the course on sustainable development must deal with sustainable agriculture production, human health, society, and ecology as a whole. Apart from the above mentioned, the program could also include meteorology, gender-sensitive farm technologies, schemes for empowering farm women, rural leadership patterns, and community mobilization.

Responses on the helpfulness of self-employment, pursuing higher education, and mid-term career development was summarized in Table 16. The majority of the experts (77%) opined that the proposed program would bring self-employment while the rest of the experts (23%) thought the program would not be helpful. About 87.5 percent of the experts expressed that the proposed program would help the students pursue higher education, and 87.5 percent said that the proposed program would undoubtedly help mid-term career development. They also stated that the students would have more scope in the universities where M.Sc. and Ph.D. degrees are given in gender. They will have more capacity for a job in international organizations because they need gender specialized degree, which is not part of the agriculture syllabus in Indian universities.

About the employment opportunity in various sectors, the responses of the experts were placed in Table 17. Like students and employers, 44 percent of the experts also opined that NGOs could provide employment opportunities for the students. Apart from NGOs, research (21%) and corporate (6 %) organizations could also offer opportunities. Apart from the listed sectors, they opined that the students could find placement opportunities in the departments/sectors like Women and Child Welfare Department, Health and Nutrition, Health and Sanitation, Consumer Protection, and Public Administration Cell.

Table 16: Helpfulness for self-employment, higher education, and mid-term career development

Statements	Response	Frequency	Percentage
Can this program help in self-employment?	Yes	37	77
	No	11	23
Can this program lead to higher education?	Yes	42	87.5
	No	6	12.5
Can this program lead to mid-term career advancement?	Yes	42	87.5
	No	6	12.5

Source: computed

Table 17: Employment opportunities in different sectors

Employment opportunities	Frequency	Percentage
Corporate	3	6
NGO	21	44
Research organization	9	21
Any other	9	19
All	4	10
Total	**48**	**100**

Source: computed

Experts opined that the program might be planned in such a way that the project component should be included and learners could be placed while doing the project in any organization involved in extension/research /management of agriculture technologies for better understanding. Courses on drudgery reduction aspects of women in agriculture need to be added to the program. Case studies and initiatives taken in this regard could be added to the syllabus. About 98 percent of the respondents from the student's category appreciated the IGNOU's effort to launch a socially relevant program like 'Gender, Agriculture and Sustainable Development". Respondents would like to know about the program details like the number of courses to be offered, the courses' title, level of program, and modes of delivery. Respondents offered suggestions to IGNOU to tie up with agriculture colleges and universities to provide this program. Some of the respondents felt that IGNOU should give scholarships to the students to pursue the proposed program. About 11 percent of the respondents with this program should be launched immediately. All the respondents felt that awareness should be created among all students to pursue this socially relevant program. According to the respondents, the program design committee should give more weightage to the practical components. Finally, all the respondents expressed that this initiative will help policymakers incorporate women's concerns in gender-sensitive agricultural policies by considering women's contributions to this sector.

CONCLUSION

Very few universities or institutes in India offer gender and agriculture standalone courses that are inadequate to provide awareness and knowledge on gender issues in sustainable agriculture. Hence, it is necessary to improve the stakeholders' capacity in understanding the role of women in sustainable agriculture development. Further, there is no

ODL certificate/diploma program exclusively on gender, sustainable development to meet all stakeholders' continuing education needs in India. Therefore, an educational program on gender, agriculture, and sustainable development in ODL mode have significant academic importance in building all graduates' capacities in general and agriculture students, particularly academicians, researchers, extensionists, and other stakeholders closely related to agriculture development in particular. In light of this study's findings and related discussion, it is recommended to develop an ODL program on gender, agriculture, and sustainable development.

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IMPACT OF MAHATMA GANDHI NATIONAL RURAL EMPLOYMENT GUARANTEE SCHEME ON FINANCIAL INCLUSION OF RURAL WOMEN LABOUR

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ABSTRACT

The present study helps us to compare the financial inclusion level under MGNREGS in different districts of Punjab and Karnataka. The study is based on primary data was collected by the phase-wise implementation. Total respondents are 300 from all the 12 selected villages. Financial inclusion was examined based on the number of bank account holders, timely access to credit, saving instruments, and other banking services. The study found that the use of bank accounts reported account activity has improved moderately during the study period. In 2016-17, 43 percent of account holders obtained passbooks and ATM cards as their mandatory basic requirements for every bank account holder. In Punjab, 51 percent of the respondents revealed that they take nearly half a day duration of time to visit a bank or post office to complete a transaction for depositing and withdrawing money purposes whereas 44 percent in Karnataka was revealed the same. In Punjab, 31 percent of the respondents revealed that payments get credited to beneficiary account holders within one week while in Karnataka, the response was 55 percent. In Punjab, the annual savings of the rural women laborer after implementation of MGNREGS was Rs. 4350. In Karnataka, it was Rs.6093. Thus, the study highlighted the existence of significant gaps in the ownership of accounts and usage of savings and credit products.

Keywords: Financial inclusion, women beneficiaries, financial services

INTRODUCTION

The Mahatma Gandhi National Rural Employment Guarantee scheme mandate is to provide 100 days of guaranteed wage employment in a financial year to every rural household whose adult members volunteer to do unskilled manual work (Anonymous 2014). The financial inclusion task force in the UK had identified three priority areas for financial inclusion, access to banking, access to affordable credit, and access to free face-to-face money advice. No frills accounts had been introduced. An enhanced legislative environment for credit unions had been established, accompanied by tighter regulations to ensure greater protection for investors (Swain and Singh 2008).

In the Indian context, Rangarajan defined (Report of the Committee on Financial Inclusion in India, 2008), as the process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups such as weaker sections and low-income groups and women at an affordable cost. The financial services included the entire

gamut - savings, loans, insurance, credit, payments, etc. By providing these services, the aim was to help them come out of poverty and illiteracy. To ensure timely payment to MGNREGS workers and financial inclusion, in May 2008 the Government declared that wage payments, under the Mahatma Gandhi National Rural Employment Guarantee scheme would be made through banks and post offices. This approach assumes that a bank account enables poor households to perform important financial functions such as saving money safely outside the house, accessing credit, making loans or premium payments, and transferring money.

Access to financial services allowed lower-income groups to save money outside the house safely prevented concentration of economic power with a few individuals and mitigated the risk that poor people face as a result of economic shocks (Beck, Demirguc- Kunt and Peria 2006). The financial inclusion in a region of a country was usually measured by the percentage of the people in the region who have access the bank accounts (Beck and De La Torre, 2006). This was primarily because a bank account enabled poor households to perform important financial functioning such as saving money safely outside the house, accessing credit, making loans or premium payments, and transferring money within the country. Thus, although a bank account covered only one aspect of financial inclusion, it may determine access to many other financial services (Littlefield et al, 2006).

The financial inclusion had also evolved from the underlying public policy concerns that many people, particularly those living on a low income, cannot access mainstream financial products such as bank accounts and low-cost loans, which, in turn, imposed real costs on them - often the most vulnerable people (H.M. Treasury, 2007). Financial inclusion was playing a catalytic role for the economic and social development of society but still, there was a long road ahead to achieve the desired outcomes (Sharma and Kukreja 2013). Legal discrimination against women and gender norms explained some of the cross-country variations in access to finance for women. The countries where women faced legal restrictions and had no right to live freely and inheritance were less likely to own an account, save and borrow as compared to their male counterparts. The results confirmed that manifestations of gender norms, such as the level of violence against women and the incidence of early marriage of women, contributed to explaining the variation in the use of financial services between men and women (Kunt et al. 2013).

The extent of Financial Inclusion

According to a survey conducted by Basu, (2005), the most common sources for rural households with access to credit were commercial banks, rather than RRBs. Commercial banks had over half the deposits, while RRBs had only 34 percent of the accounts. Studies across the world had found that the level of income and occupation were the important determinants of access to credit and savings (United Nations, 2006 and Peachy and Roe, 2006).

Divya (2013) revealed that more percentage of married daily wage earners were utilizing financial inclusion services when compared with unmarried daily wage earners. Therefore the present study focus on financial inclusion and its effect on rural women laborers. The inter-district level analysis will throw more light on the performance of a scheme at the micro-level. The main objective of the study was to know the impact of MGNREGS on the financial inclusion of beneficiaries. So an inter-district analysis in Punjab and Karnataka will shed more light on the progress of MGNREGS in ensuring financial inclusion through the opening of bank or post office account and wage payment transaction by these accounts.

METHODOLOGY

Presently MGNREGS has been implemented in all the states and union territories of India. The study is based on primary as well as secondary data. The primary data has been collected from all over Punjab and Karnataka by a phase-wise implementation which was presented in the table, Total of 300 respondents was enumerated in all the 12 selected villages was done covering both Punjab and Karnataka households. The pre-tested and well-designed questionnaire has been used to collectthe information regarding the financial inclusion of all the households of the selected villages. Financial inclusion was examined based on the number of bank account holders, timely access to credit, saving instruments, and other banking services before and after implementation of the scheme. The secondary data has been collected from various published and unpublished sources like DMU report available at the official website of MGNREGA (http://nrega.nic.in/netnrega/home.aspx). The information will be subjected to various statistical tools to draw meaningful conclusions.

Table 1. a: Sample Distribution from Punjab State

Phase-wise	Punjab			
	District	Block	Village	No. of Respondent
Phase I	Hoshiarpur	Hoshiarpur II	Mona- Kalan	25
			Patti	25
Total	**1**	**1**	**2**	**50**
Phase II	Nawashahar	Balachaur	Dr. Ambedkar Nagar	25
			Jat Majri	25
Total	**1**	**1**	**2**	**50**
Phase III	Ludhiana	Ludhiana I	Ayali Kalan	25
			Jhammat	25
Total	**1**	**1**	**2**	**50**
Grand Total	**3**	**3**	**6**	**150**

Table 1. b: Sample Distribution from Karnataka State

Phase-wise	Karnataka			
	District	Block	Village	No. of Respondent
Phase I	Chitradurga	Hiriyur	Muskal	25
			Babbur	25
Total	**1**	**1**	**2**	**50**
Phase II	Ballari	Hospet	Malapanagudi	25
			Hampi	25
Total	**1**	**1**	**2**	**50**
Phase III	Kolar	Kolar I	Huttur	25
			Sugatur	25
Total	**1**	**1**	**2**	**50**
Grand Total	**3**	**3**	**6**	**150**

RESULTS AND DISCUSSION

Socio-economic profile of the sample rural women laborers

Table 2 revealed that in Punjab, the majority of the laborers 37 percent were middle-aged rural women laborers, in the age group of 38 to 47 years. Similarly, 21 percent were range between 48 to 57 years and 5 percent of them attain old age. Therefore, in the study

area, middle-aged women and old-aged women laborers were predominantly working under MGNREGS.

While in Karnataka, it was reported that 45 percent were middle-aged women laborers, in the age groups of 28-37 years respectively. 27 percent of them were middle-aged ranging from 38-47 years and 7 percent of them are attained old aged ranging from 48-57 years. Hence in Karnataka, middle-aged women laborer was predominant working under MGNREGS. Therefore, it was reported that overall, 37 percent of the respondents were in the age group of 28 to 37 years in both the states.

Religion wise distribution of the respondents

Table 2 revealed that 50 percent of the respondents were Sikhs, 49 percent were Hindus, and none of them belonged to Muslims and Christians in Punjab. In Karnataka, 84 percent of the respondents were Hindus, and a very meager percent of respondents were Muslims and Christians. Overall respondents were 67 percent which is Hindus was present in both the states.

Caste wise distribution of the respondents

Table 2 revealed that in Punjab, more than half of the respondents about 51 percent were from the scheduled castes category and 38 percent from backward classes. The remaining 11 percent of them belonged to general or other categories. Thus, scheduled caste was the predominant caste present and engaged in participation of scheme in the study area. As for Karnataka, caste distribution was concerned, 44 percent of them belonged to scheduled castes categories, and 23 percent of them belonged to scheduled tribes category, the remaining proportion of the respondents have belonged to the general class which came out to be 30 percent. Hence scheduled caste and OBC categories were predominant in the study area. Therefore 47 percent of the respondent in both states belonged to scheduled castes.

Marital Status of the respondents

Table 2 revealed that in Punjab, 3 percent were unmarried, 78 percent were married, and 13 percent were widows while 5 percent were divorced. In Karnataka, 14 percent were unmarried, 74 percent were married, and 8 percent were widows, while 4 percent were divorced. Hence overall 76 percent of the respondents were married rural women laborers in both states. Overall, 76 percent of the respondents were married rural women laborers in both states.

Education-wise distribution level of the respondents

The educational level of the respondents was reported that 53 percent were illiterate, 22 percent of sampled laborers were educated up to primary level and around 17 percent and 6 percent of them had educated up to middle and secondary high school level, and only a small percent of women laborers had education up to the undergraduate or pre-university level in Punjab, and in Karnataka, overall literacy of rural women laborers showed 15 percent of laborers were illiterate, 45 percent of sample laborers were educated up to primary level and around 27 percent and 9 percent of them had education up to middle and secondary or high school level respectively, and remaining 4 percent of the sample women laborers were studied up to undergraduate who attained pre-university level. Hence overall 34 percent of the respondents were illiterate's rural women laborers, in both the states of the study area (Table 2).

Distribution of annual family income of the respondent

In Punjab, it was reported that 21 percent of respondents had an annual income of Rs. 30000 to Rs. 40000. About 55 percent of respondents had an annual income of Rs. 40000 to Rs. 50000. While 19 percent of respondents had an annual income of Rs. 50000 to Rs. 60000. Only 4 percent of respondents had an annual income of Rs. 60000 to Rs. 70000. Therefore, the majority (55 percent) had their family income between Rs. 40000 to 50000. Likewise in Karnataka, 40 percent, of the respondents had a family income of Rs. 30000-40000, while 37 percent of respondents have an annual family income range between Rs. 40000 to Rs.50000 and 21 percent of respondents have income ranges between Rs.50000 to Rs.60000 and the remaining 3 percent of respondents have a range between Rs. 60000-Rs.70000 respectively. Hence it was reported that overall 46 percent of the respondents were having annual family income in between Rs. 40000 to Rs. 50000 in both the states of the study area.

Table 2: Socio-Economic Profile of the sampled beneficiaries (Percent)

Sl. No	Particulars	Punjab	Karnataka	Overall
I	**Age-wise distribution (Years)**			
1	18-27	6.7	20.7	13.67
2	28-37	29.3	44.7	37.00
3	38-47	36.7	26.7	31.66
4	48-57	20.7	7.3	14.00

5	58-67	4.7	0.7	2.66
6	68-77	2.0	0.0	1.00
II	**Religion**			
1	Hindu	49.33	84.67	67.00
2	Christian	-	5.33	2.67
3	Muslim	-	10.00	5.00
4	Sikh	50.67	-	25.33
III	**Caste wise distribution**			
1	SC	51.3	44.0	47.67
2	ST	-	22.7	11.33
3	OBC	38.0	30.0	34.00
4	General	10.7	3.3	7.00
IV	**Marital status**			
1	Unmarried	3.3	14.0	9.00
2	Married	78.0	74.0	76.00
3	Widow	13.3	8.0	11.00
4	Divorced	5.3	4.0	5.00
V	**Educational level**			
1	Illiterate	53.3	14.7	34.00
2	Primary	22.0	45.3	33.67
3	Middle	17.3	26.7	22.00
4	Secondary	6.0	9.3	7.67
5	Undergraduate	1.3	4.0	2.67
VI	**Annual family income (Rs)**			
1	30000-40000	21.3	40.0	30.67
2	40000-50000	55.3	36.7	46.00
3	50000-60000	19.3	20.7	20.00
4	60000-70000	4.0	2.7	3.33
	Total	**100.0**	**100.0**	**100.0**

Source: Survey data, 2016-17

Type's access and usage of bank accounts

Table 3 revealed types of bank accounts in Punjab, 97 percent of the respondents having saving bank accounts, whereas, in Karnataka, 95 percent of respondents revealed the

presence of saving bank accounts, the overall majority of respondents revealed 96 percent of them having saving accounts. However, in Punjab, very minor respondents revealed 2 percent of the current account, 1 percent of fixed deposit accounts, and none of the respondents possesses credit accounts respectively. However, in Karnataka also, very minor respondents revealed 3 percent of the current account, 1 percent of fixed deposit accounts, and none of the respondents possesses credit accounts respectively.

Use of bank accounts

Types and used services, of banks, revealed account activity in terms of two basic indicators like services obtained through a bank, Table 3 showed that account activity has improved moderately during the study period. In Punjab, 43 percent of respondents obtained passbooks, 43 percent of respondents obtained ATM cards which is mandatory basic requirements for every bank account holder, 3 percent of respondents revealed the presence of checkbook, 1per cent having insurance policy, 5 percent of respondents possess Kisan credit cards, 1 percent of them use e-banking through friends and relatives members, 3 percent of them have locker bank service.

In Karnataka, 37 percent of respondents obtained passbooks, 37 percent of respondents obtained ATM cards which is mandatory basic requirements for every bank account holder, 6 percent of respondents revealed the presence of a checkbook, 3 percent having insurance policy, 7 percent of respondents possess Kisan credit cards, 4 percent of them use e-banking through friends and relatives members, 5 percent of them have locker bank service.

Travel to Accesses to financial services

Table 4 revealed that in Punjab 26 percent of respondents used to walk to reach and access the bank for its services because banks are located far away from their homes across villages, 73 percent of respondents take some transport facilities, while only 1 percent of them utilized BC/BF services. In Karnataka, 30 percent of respondents used to walk to reach and access the bank for its services, because banks are located far away from their homes across villages, 65 percent of respondents take some transport facilities, while only 4 percent of them utilized BC/BF services.

Duration of time to visit the bank/ post office to complete a transaction

Table 4 revealed that in Punjab, the time duration for visiting bank/post offices the response was 35 percent. The 35 percent of beneficiaries take only a couple of hours to

complete the transaction work, 51 percent revealed they take nearly half a day, 11 percent take the entire day, while 2 percent take few minutes because they prefer to use BC/ BF services.

In Karnataka, respondents revealed time duration for visiting bank/post offices that 40 percent, take only a couple of hours to complete the transaction work, 44 percent of them take nearly half a day, 14 percent take the entire day, while 2 percent take few minutes because they prefer to use BC/ BF services for to complete a transaction for depositing and withdrawing of money purposes.

Table 3. Types of bank accounts and access to the banking of rural women laborers under MGNREGS, Punjab, and Karnataka (In Percent)

Sr. No.	Financial services access	Punjab	Karnataka	Overall
I	**Type of bank account**			
1	Saving	96.7	95.3	96.0
2	Current	2.0	2.7	2.35
3	Fixed deposit	1.3	1.3	1.3
4	Credit	0.0	0.7	0.35
II	**Bank services**			
1	Passbook	43.4	37.1	40.25
2	Cheque book	2.9	6.2	4.55
3	ATM card	43.4	37.1	40.25
4	Insurance	1.4	3.0	2.2
5	KCC	5.5	7.4	6.45
6	E-banking	0.9	4.0	2.45
7	Locker	2.6	5.2	3.9

Source: Survey data, 2016-17

Source of information to know when the MGNREGS payment is credited to the account

Table 4 revealed share of the beneficiaries who received MGNREGS payments was increased tremendously. In Punjab, 47 percent of respondents revealed the source of information was getting from bank officials, 40 percent of respondents from sarpanch and secretary, while 13 percent of them visit the bank/post office branch to find out. In Karnataka, 31 percent of respondents revealed sources of information from bank officials, 44 percent of respondents from sarpanch and secretary, etc., while 24 percent of them visit the bank/ post

office branch to find out.

(Number of days after the MGNREGS work is completed payment get credited)

Table 4 revealed in Punjab, payments get credited to beneficiary account holders that 31 percent of respondents revealed in one week, 6 percent of them in two weeks, 9 percent of them revealed three weeks, 22 percent of them revealed one month, and 32 percent of them revealed it depends on work-to-work condition at different periods, this pattern was not consistent across districts of the study area. Similarly, in Karnataka, 55 percent, of respondents revealed in one week, 16 percent of them in two weeks, 8 percent of them revealed three weeks, 8 percent of them revealed one month, and 13 percent of them revealed it depends on the work-to-work condition of different periods, this pattern was not consistent across districts of the study area.

Awareness of women beneficiaries about the benefits of bank accounts and their uses

Table 4 revealed in Punjab, the response was 23 percent of them received MGNREGS payment from the government, in terms of wage payments directly into their bank accounts, 22 percent of them make deposits for savings, 19 percent of them avail small loans, 1 percent get a general-purpose credit card and none of them remit/ transfer money, etc. This indicates there was awareness among laborers who received these benefits directly from their bank accounts. Thus, we found that it is consistent with the MGNREGS directive of using bank services.

Similarly in Karnataka, the majority of rural women laborers response was 23 percent of them received MGNREGS payment from the government, in terms of wage payments directly into their bank accounts, 23 percent of them make deposits for savings, 17 percent of them avail small loans, 1 percent get general-purpose credit cards and none of them remit/ transfer money, etc., this indicates there was awareness among laborers received these benefits directly from their bank accounts. Thus, we found that it is consistent with the MGNREGS directive of using bank services. A similar observation was made from the study conducted by Vanitha during 2010-11 in their micro-level study they revealed that that 93 percent of beneficiaries received wages from banks and 3 percent from post offices.

Different Sources of loans taken

Table 4 revealed in Punjab, 30 percent rural women laborers are a sourcing loan from local money lenders, 9 percent from the bank, 0.6 percent from SHG's, 30 percent from the

landowner, and 30 percent from the shop keeper, similarly in Karnataka, the response was 24 percent are a sourcing loan from local money lenders, 18 percent from the bank, 25 percent from SHG's, 16 percent from the landowner, and 17 percent from the shop keeper, they are making the best use of SHGs who are the majority are joined as members of SHGs groups in their respective villages in sourcing the loan for their consumption activities to meet unforeseen contingency and daily meeting financial obligations. Unusually large expenditures such as medical emergencies, agricultural inputs, weddings, etc. are met either from one's savings or by taking a loan in case of the poor generally it is the latter. Based on the documented evidence, one can conclude that although overall progress concerning financial inclusion has been substantial, both for access and use of accounts, it masks the wide divergence across states and over time, presumably to an extent reflecting the uneven composition of MGNREGS payments to the bank accounts of beneficiaries.

Table 4. Access and usage of bank accounts, sourcing of loans, and payments of financial services by rural women laborers under MGNREGS, Punjab, and Karnataka (percent multiple responses)

SL.No.	Particulars	Punjab	Karnataka	Overall
I	**Travel to access financial services**			
1	Access through the walk to it	25.9	29.9	27.9
2	By taking some transport	72.8	65.6	69.2
3	Utilized BC/BF services	1.3	4.5	2.9
Sl.No.	**Particulars**	**Punjab**	**Karnataka**	**Overall**
II	**Duration of time to visit the bank/ post office to complete a transaction**			
1	A couple of hours	35.6	40.0	37.8
2	Half a day	51.4	44.0	47.7
3	Entire day	11.2	14.3	12.75
4	Few minutes as we use BC / BF services	1.8	1.7	1.75
III	**Source of information to know when the MGNREGS payment is credited to the account**			
1	The bank/ post office informs me	47.5	31.0	39.25
2	Get to know from the Sarpanch, secretary, etc.	39.6	44.4	42.0
3	Visit the bank/ post office branch to find out	12.9	24.5	18.7

IV	**Number of days after the MGNREGS work is completed payment get credited**			
1	One week	31.0	55.6	43.3
2	Two weeks	6.4	16.0	11.2
3	Three weeks	8.8	7.8	8.3
4	One month	22.1	7.8	14.95
5	Differ from work to work	31.7	12.8	22.25
V	**Awareness of women beneficiaries about the benefits of bank accounts and their uses**			
1	Receive payments from government (including MGNREGS)	22.9	23.0	22.95
2	Make deposits of savings	22.0	23.0	22.5
3	Avail small loans	19.3	17.5	18.4
4	Get a general-purpose credit card	1.0	1.0	1.0
5	Remit/ transfer money	0	0	0
VI	**Different sources of loan taken**			
SL.No.	**Particulars**	**Punjab**	**Karnataka**	**Overall**
1	A bank	8.9	18.1	13.5
2	SHG's	0.6	24.8	12.7
3	Local moneylender	30.3	24.1	27.2
4	Landowner	30.1	16.1	23.1
5	Shop keeper	30.1	16.8	23.45

Source: Survey data, 2016-17

Impact of MGNREGS on savings of the rural women laborers

Normally when the income of laborers increases it will have a huge impact on the savings of laborers. In Punjab, the annual savings of the rural women laborers before implementation of MGNREGS was Rs. 2573 was increased Rs. 4350 after implementation of MGNREGS with a net difference were Rs. 1777. The paired-t value was 35.12, statistically significant at a 1 percent level of significance.

In Karnataka, the annual savings of the rural women laborers before implementation of MGNREGS was Rs. 2981 was increased to Rs. 6093 after the implementation of MGNREGS. Thus, the net savings difference due to MGNREGS was Rs. 3112. The paired t-value was 39.44, statistically significant at a 1 percent level of significance.

Therefore, after the implementation of MGNREGS rural women laborers were prudent in saving part of their earnings every year towards meeting unforeseen contingencies. Most of the laborers expressed that they were saving a large part of their earnings towards children's education after implementation under MGNREGS, laborers saving increased modestly by Rs. 1777 in Punjab and Rs. 3112 in Karnataka. A similar observation was made from the study conducted by Harish and Vanitha during 2010-11 in their micro-level study they revealed that that the annual savings of laborers before getting MGNREGS employment was Rs. 4805 and after working under MGNREGS were Rs. 5616 increased by 17 percent. Vanitha in their study reported that MGNREGS beneficiaries are members of SHG and their annual savings were Rs.1931.

Therefore, the impact of MGNREGS was found that income was increased as result savings were increased. Thus, the difference between the annual income of rural women laborers and their annual family expenditure was taken to calculate savings of rural women laborers annually.

The details of loans obtained by the rural women labor are presented in Table 5. In Punjab, before the implementation of the MGNREGS, the loan amount borrowed Rs. 7246 but after implementation of MGNREGS loan amount was increased to Rs. 23,526 per borrower. Thus, the overall differences were Rs. 16,280 per year with a paired-t value of 29.63 significant at a 1 percent level of significance. Similarly in Karnataka, before the implementation of the MGNREGS, the loan amount borrowed Rs. 10,243 per borrower but after implementation of MGNREGS, the loan amount was increased to Rs. 29,486 per borrower. Thus, the overall differences were found to be Rs. 19,243 with a paired-t value of 33.11 statistically significant at a one percent level of significance. Awareness access and availability of banking service to rural women laborers would result in more loans obtained as utilization most of rural women laborers utilized the loan for the stipulated purposes like to meet for the consumption expenditure of their families, unemployment of their husbands, low wages, health problems might be the reason to availed loans to meet the family expenditure in the unforeseen situations. Thus, rural women laborers used the loan amount for meeting the family expenses of rural households. A similar observation was made from the study conducted by Vanitha during 2010-11 in their micro-level study they revealed that that the average amount of loan borrowed Rs. 87727 and repaid Rs. 41818 but in the case of non -participant was Rs. 33272 and repaid Rs. 11761.

Transaction's cost incurred by rural women laborers in availing loans for benefits and other facilities under financial inclusion. Transaction costs are incurred only to avail loans and other benefits from banks. Transaction costs include transaction cost, opportunity cost, incidental cost, and cost of documentation. The rural women laborers had to incur certain costs in availing of loans and other benefits and services from banks. Table 5 presents the details of transaction costs involved in availing loan.

In Punjab, before the implementation of MGNREGS, transaction cost Rs. 344 per borrower but after implementation of MGNREGS were Rs. 1341 per borrower. Therefore, the overall differences were Rs. 995 with a paired -t value of 65.22 was statistically significant at a one percent level of significance.

In Karnataka, before the implementation of MGNREGS, transaction cost Rs. 457 per borrower but after implementation of MGNREGS, the transaction cost was increased by Rs. 1411. Therefore overall differences were Rs. 954 with a paired-t value of 54.09 was statistically significant at a one percent level of significance, it is expected that transaction cost would be higher because after implementation of MGNREGS, it is mandatory to open a bank account it requires time spent for opening an account and availing loans and other benefits as most of the laborers were illiterates and they are landless laborers in Punjab and Karnataka.

They are mainly dependent in MGNREGS for their livelihood and middlemen acts as a broken agent in getting loan sanctioned. Thus higher the education and awareness level, the lower will be the incidence and magnitude of transaction costs.

Factors influencing the rural women laborers' transaction costs and results are given in Table 4.5.12 revealed that the total transaction cost was regressed against the number of explanatory variables like loan amount, distance to the bank was used to whether there is any variable significantly influencing the transaction costs.

Table 5 in Punjab, a rupee increase in the loan amount leads to a decrease in the transaction costs by Rs. -0.003 and it was not significant at a 5 percent level of significance. The transaction cost increased by Rs. 2 for every kilometer increase in the distance to the banks, which is non-significant, a rupee increase in the MGNREGS income leads to a decrease in the transaction cost by Rs. -0.006 and it was not significant at 5 percent of significance. The R^2 for the model was 0.24 interpreted as the proportion of response variable

total variations explained by 24 percent of the explanatory variables.

In Karnataka, a rupee increase in the loan amount leads to a decrease in the transaction costs the Rs. 0.002 and it was not significant at a 5 percent level of significance. The transaction cost increased by Rs. 3 for every kilometer increases in the distance to the banks, which is also non-significant, a rupee increase in the MGNREGS income leads to an increase in transaction cost by Rs. 0.002 and it was non-significant at 5 percent level of significance. The R^2 for the model was 0.23 interpreted as the proportion of response variable, total variations explained by the 23 percent of the explanatory variable.

Table 5: Impact of MGNREGS on annual savings and other banking services by rural women labor under MGNREGS, Punjab

(Mean values in rupees per annum)

Particulars	Before			After			Difference (N=150)	Paired-t
	Per labor	S.D	t-value	Per labor	S.D	t-value		
Savings	2573.3	655.86	48.05	4350.35	715.24	74.49	1777.05	35.12*
Loans	7246.6	4339.5	20.45	23526.6	4818.4	59.79	16280.0	29.63*
Transaction costs	344.86	125.5	33.63	1340.74	136.02	120.72	-995.0	65.22*

Note: * *indicates significant at 1% level of significance*

SD – Standard deviation,

Table 5.1: Impact of MGNREGS on annual savings and other banking services by rural women labor under MGNREGS, Karnataka.

(Mean values in rupees per annum)

Particulars	Before			After			Difference (N=150)	Paired-t
	Per labor	S.D	t-value	Per labor	S.D	t-value		
Savings	2981.46	610.34	59.82	6093.4	715.65	104.28	3111.9	39.44*
Loans	10243.3	3455.72	36.30	29486.6	6071.98	59.47	-19243.3	33.11*
Transaction costs	456.8	79.44	70.41	1410.66	196.6	87.84	-953.9	54.09*

Note: * *indicates significant at 1% level of significance*

SD – Standard deviation,

Table 6 Factors affecting the annual magnitude of transaction costs while using various banking services by rural women labor participants under MGNREGS, Punjab

Variables	Coefficients	S.E	t-value	p-value
Constant	1563.66*	110.81	14.11	0.001
X1 (Age in years)	-2.11	1.16	-1.81	0.071
X2 (Education in years)	8.84	7.77	1.13	0.257
X3 (Family size in number)	-1.34	6.06	-0.22	0.824
X4 (Annual income earned from MGNREGS in rupees)	-0.0061	0.005	-1.33	0.183
X5 (Loan amount in rupees)	-0.0034	0.002	-1.50	0.134
X6 (Distance to the bank from the village in Km)	-1.81	6.00	-1.30	0.763
N=150	**R^2=0.24**	F value =1.48		d.f=149

Note: * *indicates significant at 5% level of significance*
S.E – Standard Error,

Table 7 Factors affecting the annual magnitude of transaction costs while using various banking services by rural women labor participants under MGNREGS, Karnataka

Variables	Coefficients	S.E	t-value	p-value
Constant	1324.65	130.65	10.13	0.001
X1 (Age in years)	1.28	1.96	0.65	0.51
X2 (Education in years)	13.52	5.45	2.47	0.09
X3 (Family size in number)	-3.66	8.36	-0.43	0.662
X4 (Annual income earned from MGNREGS in rupees)	0.0020	0.036	0.55	0.578
X5 (Loan amount in rupees)	-0.0010	0.0026	-0.39	0.692
X6 (Distance to the bank from the village in Km)	2.527	6.14	0.41	0.682
N=150	**R^2=0.23**	F value =1.38		d.f=149

Note: * *indicates significant at 5% level of significance*
S.E – Standard Error,

CONCLUSION AND POLICY IMPLICATIONS

Based on the results obtained a significant amount of research has been undertaken in recent times regarding the efficiency of the MGNREGS. Another body of research has focused on various facets of the financial inclusion process. We integrate these two strands of literature by examining the impact of MGNREGS on financial inclusion, using

household-level data on Indian states encompassing over 6 districts and 300 sampled rural women laborers during 2016-17. Districts where MGNREGS was implemented early experienced greater financial access, although the evidence regarding use is less compelling. What is important is the differential effect of the scheme across districts with different age groups, gender and caste composition, rural mix, literacy, and income level. These findings are therefore a pointer to the fact that a public work such as MGNREGS plays an important role in influencing financial inclusion. But creating more awareness among women workers about MGNREGS and its silent features would make more participations in respective districts linking with taluks/blocks for reaching grass root level that make the scheme transparent and inclusive financial inclusion for rural development.

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EMPOWERMENT OF FARM WOMEN THROUGH HOUSEHOLD INTERVENTIONS

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ABSTRACT

"When women move forward the family moves, the village, and the nation move." These words of Pandit Jawaharlal Nehru are often repeated because it is an accepted fact. Women are vital development agents who can play a significant role in the economic development of a nation, but they should have equal access to productive resources, opportunities, and public services. Empowerment is the process of increasing the capacity of individuals or groups to make choices and to transform those choices into desired actions and outcomes. Empowerment of women means developing them as more aware individuals, who are politically active, economically productive, and independent and can make intelligent discussions in matters that affect them. Women empowerment as a concept was defined as a redistribution of social power and control of resources in flavors of women. The training and Development function plays a significant role in energizing and empowering human resources by increasing their skills through innovative and productive programs. When proper exposure, knowledge, training was imparted to them, women proved themselves to be highly potential and productive forces. If women acquire skills, they can carve a niche for themselves on the outside. All India Co-Ordinated Research Project on Home Science Extension, UAS, and Dharwad imparted a series of training programs like Tailoring, Bag making, Ready Mixes & Energy-saving & banking to 70 farm women with a specific objective to study and analyze the profile of farm women and to study the kind of enterprises/business activities taken up by them. Cent percent of the respondents attended training on tailoring (100 %), followed by bag making (93 %), Ready mixes (85 %), and Informative and Knowledge upgrading (79 %). The majority of members indicated that the training had a positive impact on their confidence, decision making, and awareness about linkages in the Banks and credit-related aspects. However, there was marginal improvement in skill development, managerial ability respectively as a function of training.

Keywords: Training, Empowerment, Skill, Women, Development

INTRODUCTION

"When women move forward the family moves, the village, and the nation move." These words of Pandit Jawaharlal Nehru are often repeated because it is an accepted fact. Women (especially rural women) are vital development agents who can play a significant role in the economic development of a nation, but they should have equal access to productive resources, opportunities, and public services. The development of the whole community cannot be separated or viewed in isolation from the development of women. The process of economic development would be incomplete and lopsided unless women are fully involved in it.

“Emancipation of women is an essential prerequisite for economic development and social progress of the nation" (Gurumoorthy 2000).

Women constitute about 48 percent of the total population of the country. According to India's constitution, women are legal citizens of the country and have equal rights with men. Because of a lack of acceptance from the male dominant society, Indian women suffer immensely. Women are responsible for bearing children, yet they are malnourished and in poor health. Women are also overworked in the field and complete all domestic work. Most Indian women are uneducated. Training programs aim to provide skills and confidence to women from economically backward families and help them to achieve economic and social independence.

A microenterprise is an effective instrument of social and economic development. The development of micro-enterprises in general and particularly for the woman would be the appropriate approach to fight against poverty at the grass root and generate income at the household level

The training and Development function plays a significant role in energizing and empowering human resources by increasing their skills through innovative and productive programs. When proper exposure, knowledge, training was imparted to them, women proved themselves to be a high potential and productive force. If women acquire skills, they can carve a niche for themselves in the outside world too (Sounder 1999). Right efforts on all fronts are required in the development of women entrepreneurs and their greater participation in entrepreneurial activities.

Several institutions or agencies have been set up to assist women entrepreneurs by giving them training and providing financial and marketing assistance. Both the governments as well as the NGOs are facilitating the development of such enterprises at the grass-root level. The success, stability, and sustainability of such enterprises have a significant impact on the confidence of women. Hence the study was conducted with the following objectives.

- To provide hands-on training on microenterprise to the rural women
- To study the impact of training programs.

REVIEW OF LITERATURE

Unni, Jeemol & Uma (2004) have observed that there is a need not only to bring change in status & image of women but also in the attitude of society towards them. There is a demand

to create awareness among the rural women who are unemployed to gain self-esteem & confidence.

Dhruba Hazarika (2011) concluded that women are the future of the country's development. Empowering women will be the right approach for growth in this competitive world.

Vijaya & Lokhandha (2013) suggested that skill development will boost women's empowerment with high productivity & earnings. Skills lead to confidence among them to be more innovative.

Kittur Praveen (2014) concluded that to encourage women entrepreneurship, a special training course for women entrepreneurs must be started to improve their skills.

Mamta Mokta (2014) found that women need to find their way in this male-dominated society. They should be motivated for growth & empowerment by self-help groups, NGOs, government policies & microfinance institutions.

Prasanna Kumar (2014) stated that it is our need to identify the areas where women are still facing problems and are unable to access resources, institutional knowledge & basic education.

METHODOLOGY

The present study was carried out at Sulla village of Hubballi taluka, Dharwad

District of India Co-ordinated Research Project on Karnataka state during 2018-19 by All Home Science Extension, UAS, Dharwad. 70 farm women were randomly selected for the study. Respondents were trained on Tailoring, Bag making, Ready mixes, and energy-saving equipment, and Awareness about banking. The training was imparted by different resource persons related to the particular topic. Tailoring training was given by the Department of

Textiles and Apparel Designing, Bag making by All India Co-ordinated Research project on Clothing and Textiles, Ready mixes by All India Co-ordinated Research project on Home Science extension and Awareness about banking training by Director of Women's bank. Energy-saving equipment by the department of microbiology.

Table 1: Adoption level of respondents about skill development training

n=70

Skill Development Training program attended	Respondents attended training	Percent	Adoption level (%)
Tailoring	70.00	100.00	54.28
Bag Making	65.00	93.00	38.46
Ready mixes	60.00	85.00	33.33
Awareness about banking	55.00	79.00	10.00

Table **1.** This shows that cent percent of respondents have undergone training on tailoring because Stitching as an enterprise could be done by women alone at home in free hours. They can start it as an income-generating activity this was followed by 93.00 percent received training on bag making & 85.00 percent of them attended training on ready mixes. 79.00 percent attended training on awareness about banking & credit facilities. Regarding the adoption level of respondents, tailoring as an income-generating activity it was found that around 54 percent of women now can very well stitch theirand other cloth. During the training women learned stitching of designer Saree blouses, Women also acquired proficiency in stitching blouses. Before attending the training program 50 percent of the women stitch blouses for themselves, after the training they started to stitch blouses for others on a cost basis. 38 percent of the respondents adopted bag making followed by 33 percent of the women adopted preparing ready mixes as an income-generating activity. Normally, the female members in the family do not possess bank accounts in their name and are neither encouraged by the family members to possess any bank account. Only 10 percent of the women have opened their account to save their earned money & also in their children's name.

Table 2. Awareness about Energy Saving Equipment

Activity	Action points	Performance indicator	Result
Electricity saving	Awareness program • on importance of electricity saving,	• 70 houses were provided with LED bulbs by Gram Panchayat Sulla • The previous electricity bill was Rs. 300 - 500. • Change in the electricity bill ranges from Rs. 90 -250.	40-60 percent savings in the bill amount

Table 2 indicates the Awareness program on energy-saving equipment like biogas, use of solar energy; LED bulbs, etc. were imparted to beneficiaries. They were provided with LED bulbs by Gram Panchayat Sulla. The previous electricity bill was Rs. 300 -500, now the change in the electricity bill ranges from Rs. 90 -250. 40-60 percent savings in bill amount.

Table 3 indicates the satisfactory level of the trainees about the training they have received by AICRP-HE. 85.71 percent of the women expressed that tailoring training was highly satisfied and 14.29 percent of them expressed they are satisfied with tailoring training followed by 64 percent women opined that they were satisfied with bag-making training and 35 percent expressed that they were highly satisfied by the training. About 75 percent of the trainees are satisfied by ready mixes training and 25 percent were highly satisfied by the training.81.82 percent of them opined that they were not satisfied by awareness about banking and only 18 percent of them are satisfied by the training

Table 3. Satisfactory level of the trainees

Topic	Highly Satisfied	Satisfied	Not Satisfied
Tailoring	85.71	14.29	--
Bag Making	35.38	64.62	--
Ready mixes	25.00	75.00	---
Awareness about banking	--	18.18	81.82

The impact of training received by the members was assessed in terms of developing confidence, acquiring skills. The information is presented in table 4. It indicates that a cent percent of the respondents agree that due to the training, their skill development has increased, while 82.85 percent of members indicated because of training their confidence has grown and 54.28 percent indicated that their decision-making capacity has increased. 14.28 percent revealed that their linkages in the Banks and awareness about the credit-related aspects have improved.

Table 4: Impact of Training

Impact of Training	Yes	
	Frequency	Percentage
Confidence building	58	82.85
Skill Development	70	100.00
Decision-making capacity	38	54.28
Improving Bank linkages, information about credit	10	14.28

CONCLUSION

Training impact shows that entrepreneurship quality of farm women has improved to some extent and therefore there is a wide scope of development of entrepreneurship. Though thereis a positive growth of entrepreneurship it is observed that the development of women entrepreneurship is very low in rural areas. Hence, it is important that need-based training should be imparted to farm women, to manage enterprises more improvement is needed in the development of managerial ability, administrative skills, good leadership, conflict management, marketing skills, account-keeping, and information of legal aspects in farm women by organizing more focused and skill-oriented training programs.

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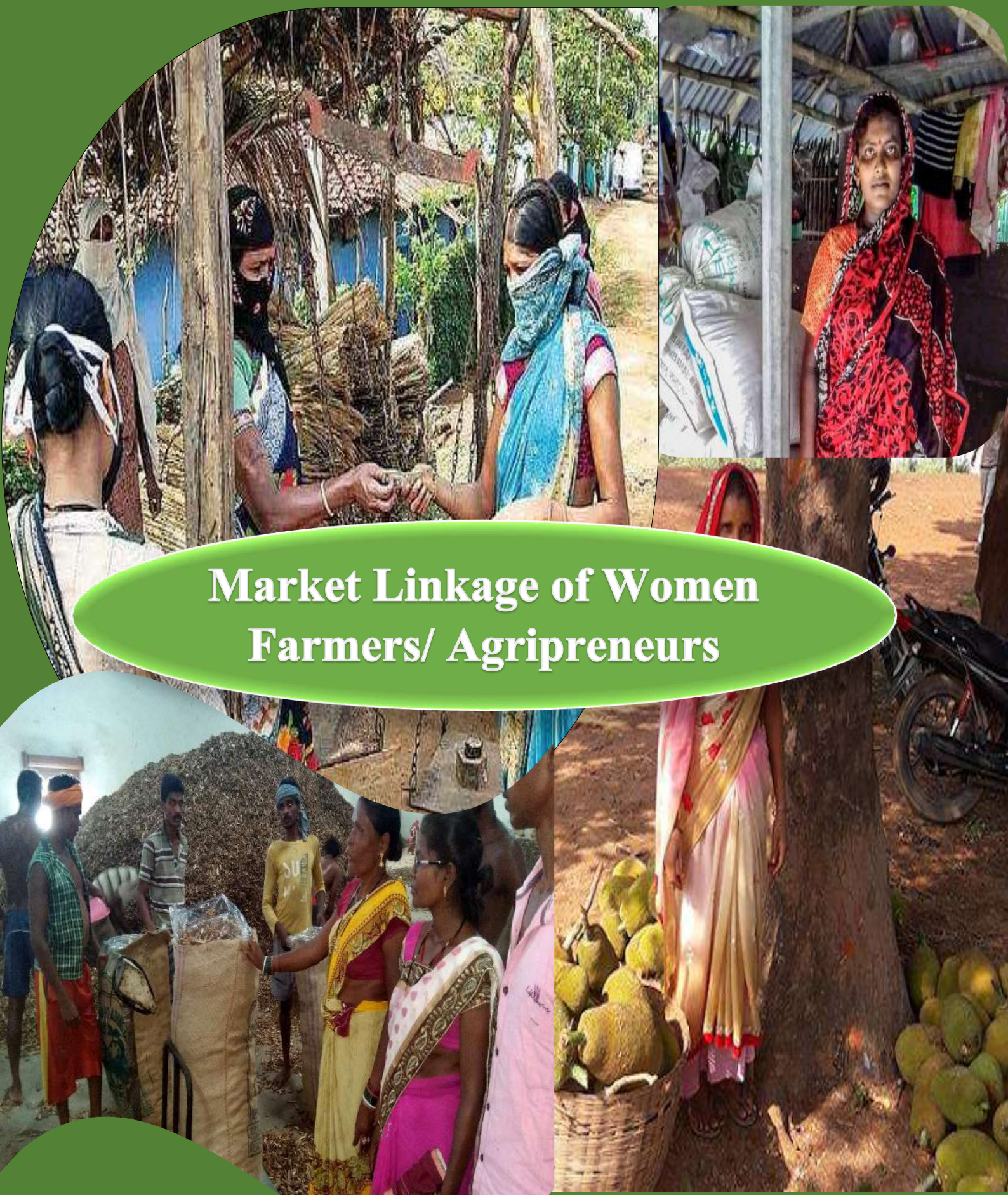

Market Linkage of Women Farmers/ Agripreneurs

WOMEN FARMERS AND MARKET LINKAGE THROUGH GROUP APPROACH

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ABSTRACT

Women account for 43 percent of the agricultural labor force in developing countries and slightly more than 30 percent in South Asia and India (FAO 2011). The Millennium development goals specified by the United Nations have "promote gender equality and empower women" as the third most important goal. Group marketing activities have a greater chance of success when attention is not only paid to capacity building in marketing, but also to overall organizational and management skills that could help the groups operate independently (FAO, 2017). Sankalp Streewadi Aoudhyogik Utpadak Sahakari Sanstha Limited, Uruli Kanchan under BAIF (Bharatiya Agro Industries Foundation) is one of the successful women farmers groups which conduct combined training for all the members for costing, pricing, quality control, and product development. It also helped in participating in domestic exhibitions/ trade fairs (Ardhendu and Dilip, 2014).

Keywords: Group approach, Market linkage, Women empowerment, Women farmers

INTRODUCTION

India's agricultural extension system is the largest in the world and it helps to fulfill the technology and information needs of about 100 million farm families. The focus of extension agencies on production technologies yielded outstanding results, and hence India becomes self-reliant in food production. Significantly, the extension system had played its role untiringly in the transfer of production technologies from lab to land, besides the agricultural scientists, farmers, and marketing network. But the farmers at the individual level are not realizing remunerative prices for their produce. Therefore, extension functionaries need to play a major role to build the capacity of the farmers to meet the emerging challenges and make the farmers realize better prices for their farm produce. But, market-led extension so far is a peripheral issue in the extension scenario. Hence, the extension focus should extend from mere production to market-led extension on an end-to-end basis.

METHODOLOGY

According to Swaminathan “The famous agricultural scientist, it was a woman who first domesticated crop plants and thereby initiated the art and science of farming, while men went out hunting in search of food, women started gathering seeds from the native flora and

began cultivating those of interest from the point of view of food, feed, fodder, fiber, and fuel." Women have played and continue to play a key role in the conservation of basic life support systems such as land, water, flora, and fauna (Prasad, 1992). Agriculture is the invention of women. Farming in India is mainly a family occupation (Chauhan, 2011). Women's role is multi-dimensional in nature; agricultural fields need sowing, transplanting, weeding, irrigation, fertilizer application, plant protection, harvesting, winnowing, storing, etc. (Chaubey, 2020). "An empirical study of agricultural labor in India" implied that almost half of the world's agricultural workforce comprises women. They are contributing from production to sale as well as preparation of food (Vetrivel and Manigandan, 2013).

Women farmers should provide various benefits like access to the market through retail agriculture which has been the traditional source of income, and linking it with some entrepreneurial activities has smoothened the process of empowerment among the women outlet. Apart from it, they also had got linked with suppliers of raw materials at urban places and provided regular skill up-gradation training for producers in their respective spheres. The engagement of women groups in farming has become an increasing trend in state rural development programs in several states. Kudumbashree in Kerala and Community Managed Sustainable Agriculture (CMSA) in Andhra Pradesh are two initiatives among them that have caught the attention of policymakers and rural development programmers. These two initiatives are often cited as the desirable pathways of women empowerment in the context of increasing feminization of agriculture (Landesa 2013).

1) Statement of the problem

There is inadequate participation of women in agriculture, this can be because of the lack of group approach in carrying out various agricultural activities. Poor collective action leads to limited market linkage.

The study is based on only secondary data which were collected from books, journals, government reports, websites, and NSSO data.

Objectives of the study

- To study the importance of group approach among women farmers
- To identify the market linkage among women group farmers

Self Help Group Approach

The concept of the Group approach is to organize small farmers especially women farmers to collaborate to increase productivity as well as bargaining power. They can achieve productivity in acting jointly rather than individually and can help spread the risk of farming among a larger number and increase production and marketing opportunities. In India, several organizations are promoting market-led extension among women farmers through the formation of self-help groups (SHGs). The self-help group movement strives to empower rural farmers through their efforts to better utilize resources, access information, enhance savings, and also avail credit (Mandal, 2005). Marketing is an important area of functioning of SHGs that helps farmers to realize reasonable returns from the produce, minimize the transportation cost and improve the product value and marketability. Thus, the market-led extension activities through SHGs are aimed to empower rural farmers personally as well as socially. Self-help groups are increasing rapidly in our country. Especially in rural India it works very well and shows a good effect on the economy and society. The extent of participation in production, grading, and standardization, packaging, and distribution activities are more among the women members of SHG rather than nonmembers (Tehra, 2014).

Mahila Kisan Sashaktikaran Pariyojana

Ministry of Rural Development launched 'Mahila Kisan Sashaktikaran Pariyojana' (MKSP) in 2011. The scheme, a sub-component of DAY–NRLM. It aims at bringing at least one woman member from each identified rural poor household under the self-help group (SHG) network in a time-bound manner. The primary objective is to empower women by making systematic investments to enhance their participation and productivity in agriculture and allied activities for creating sustainable livelihood opportunities. MKSP in 2018–19 focused on promoting sustainable agricultural practices through organic certification and marketing to enable farmers to get better market access. The MKSP has been instrumental in increasing the visibility of women in allied activities as an interest group where women SHG members are trained to become Pashu Sakhi for improved rearing and management of goats. The activity resulted in the creation of weekly haat for the sale and purchase of animals, which especially benefited landless and single women (GoJ 2017).

Collective marketing

The continuity and success of collective marketing depend on decisive factors like learning the rules of the market. The price information for different products, different

marketing outlets, and timeliness of delivering the product to the market, on spot computation of sale value, price negotiation with the purchaser (Landesa 2013). The group of women vegetable farmers in Muzaffarpur, India, benefit from collective marketing, cutting out the middlemen and putting more money back into their businesses and families. Techno Serve, with funding from the Bill & Melinda Gates Foundation (BMGF), is implementing the Women Economic Empowerment project in collaboration with the Government of Bihar's JEEViKA program. The team has worked to strengthen the all-women "Samarpan Jeevika Mahila Kisan Producer Company Limited" (SJMKPCL), a farmer producer organization (FPO) comprised of smaller producer groups, transparently leveraging their aggregation advantage Timely payment and cashless transactions are a key benefit of the intervention. The project is helping smallholder producers achieve higher prices and direct market access by removing intermediaries and adopting best practices, including collective marketing, quality control, and transparency in weighing and pricing. (https://www.technoserve.org/blog/collective-marketing-individual-gains/)

CONCLUSION

Women play a key role in agricultural development and allied fields including crop production, livestock production, horticulture, post-harvest operations, agro/ social forestry, fisheries, etc. The group approach among women farmers is the key to increase the participation of women in marketing agricultural produce. The market linkage can help them to get more exposure and can become their source of income. Women's economic empowerment starts with earning and saving from that income.

Figure 3. Logical Framework Approach Matrix

	Intervention Logic	Objectively measurable and verifiable indicators	Sources of verification	Important Assumptions
Development objectives/Goal	To empower Women farmers through group approaches	Role of SHGs in the empowerment of women. Implications of Group approach in the market-led extension	Review of related literature, Reports from secondary data (Books, websites)	Market-led extension through group approaches help Women farmers to empower
Project objective/Purpose	Documenting and verifying how Self Help Group Approach empowering Women farmers.	self-help group approach Mahila Kisan Sashaktikaran Pariyojana Collective Marketing	Market Intelligence, Market Orientation, Market Integration	The formation of SHGs, FIGs, CIGs help farmers empower
Results/Output	Appropriate reception of Market Intelligence, Market needs, empowerment among the women farmers at all the four main levels *i.e.*, Personal, social, technological, and economic.	Market awareness, Information source utilization, Income generation, Credit utilization, Social participation, Social recognition	Utilization of experienced gain, improvement in output, change in attitude, change in skills	Market-led extension leads to better performance
Activities	Collection of data from secondary sources of information	Proper collection and analysis of Collected information.	Collected Information from Research papers, manuals, books, etc.	Adequate information
Inputs/Resources	Research papers, manuals, books, etc.	Proper selection of variables and statistical tools	Implications on empowerment	Adequate Review of Literature

Source: (Self-made)

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EMPOWERING WOMEN FARMER PRODUCER ORGANIZATIONS THROUGH MARKET LINKAGES

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ABSTRACT

India, being an agrarian country, employs more than 50 percent of the workforce in agriculture and contributes around 13 percent to Gross Domestic Product. India is now in a position to produce the best quality products with a wider acceptance in international markets and few of these products have been turned into global brands. Though India has achieved self-sufficiency in food production, yet faces many growing concerns. One of such concerns is the empowerment of women in agriculture. Women are the invisible producers and empowering them is very crucial to the nation's development. The other concern is a weak market linkage for the produce being faced by stakeholders in agriculture in general and women groups in particular. Many institutional mechanisms like Cooperatives, Farmer Interest Groups (FIGs), Self Help Groups (SHGs), Farmer groups, etc. have been able to address the challenges faced by the farming community especially to ensure the farmers getting higher prices through efficient market linkages. However, limited success was achieved over some time. Hence, a new aggregation model i.e. Farmer Producer Organizations (FPOs) has emerged and is designed in such a manner that they are professionally managed and can take care of total supply chain aspects in general and marketing problems in particular. The new generation FPOs promoted under different schemes, mainly encompass men as members. However, with the efforts of civil society organizations and public agencies, some of the women FPOs were promoted. Recently, such exclusive women FPOs have achieved success. Hence, in the present study, an attempt has been made to discuss in detail the functioning of a few women FPOs in India and how efficiently they are involved in establishing both backward and forward linkages to their women farmer members.

Keywords: Cooperatives, FIG, FPO, SHG, market linkage

INTRODUCTION

Agriculture in India has become a primary source of livelihood for about 58 percent of the population. During the year 2019-20, India has achieved a record food grain production of 296.65 million tonnes with a target of 301 million tonnes for the year 2020-21. Concerning horticulture, India has reached a substantial position with a production of 320.48 million tonnes (as per the 2nd estimates) which was 3.13 percent more than the previous year. Furthermore, India is a leading producer of milk, meat, eggs, fish, etc., and a major exporter of various agriculture and allied sector commodities both indirect and processed forms. India has become a tough competitor in international agriculture trade and this can be possible only with the efforts of the farmers without which it could have been a herculean task. Despite these

achievements, there is one grey area in Indian agriculture i.e. gender mainstreaming. In Indian agriculture, as far as the title of ownership is concerned, it is male-dominated. Even if the title is with women, in such cases also men normally dominate in the decision-making process. This issue needs to be addressed for empowering women. The studies conducted by Food and Agriculture Organization (FAO) in India during 2018 reported that only 5.6 percent of purchased lands hold the ownership title of women and around 85.9 percent with men's name as the title. Women's names were relatively more registered when the plots were given as a gift. Nevertheless, to address this issue various initiatives were taken by the government of India and have been thriving for the empowerment of women. At late, the new generation FPOs are emerging as an effective tool for solving the problems faced in the agriculture sector. Even in this sector, the role of women is very limited. Some of the FPOs exclusively with women as a member has evolved. However, the numbers are insufficient to address the problems of empowering women. Moreover, in this regard, the role of women farmers needs to be highlighted and appreciated for their major contributions in various activities involved in farming including non-mechanized farm operations and post-harvest management.

Role of Women in Agriculture

The Indian agricultural sector employs 80 percent of all economically active women comprising 33 percent of the agricultural labor force and 48 percent of self-employed farmers in the country (MoA & FW, 2019-20). From Table-I it can be observed that out of total operational holdings in India, the percentage of female operational holdings have increased from 12.78 percent in 2010-11 to 13.96 percent during 2015-16 with a major share occupied by marginal and smallholdings. This positive trend silently indicates the contribution of women to agriculture. However, the percentage of female employment in Indian agriculture has declined from 75.62 percent during 1991 to 53.60 percent as of September 2020. On the other side, during the same period, the number of male farmers employed was declined from 58.19 percent to 38.46 percent. (ILOSTAT, 2020). This trend indicates the migration of men farmers towards non-farm activities especially in urban areas leading to a significant role of women in agriculture.

Table-1: Percentage of Female Operational Holdings in India (Agricultural Census 2015-16)

S.No	Size Group	2010-11	2015-16
1	Marginal (< 1.00 ha)	13.63	14.68
2	Small (1.00-2.00 ha)	12.15	13.44

3	Semi-Medium (2.00-4.00 ha)	10.45	11.76
4	Medium (4.00-10.00 ha)	8.49	9.76
5	Large (> 10.00 ha)	6.78	7.83
	All Size Groups	**12.78**	**13.96**

Source: Annual Report 2019-20, DAC, Ministry of Agriculture & Farmers' welfare

Indian Economic Survey 2017-18 reported that with growing rural to urban migration by men, there is 'feminization' of the agriculture sector, with an increasing number of women in multiple roles as cultivators, entrepreneurs, and laborers. Oxfam India, a non-government organization reports that about 75percent of rural women in India who work full-time are farmers with numbers rising as men migrate to work in factories and construction sites. Yet farming is still widely seen as men's work and only 13 percent of women own the land till today.

Despite their significant contributions in agriculture and allied sectors, women still face challenging issues like illiteracy, lack of recognition and access to land, no freedom of choice, dependency on credit requirement, lack of or low access to information, drudgery at the workplace, lack of awareness on the benefits of group approaches, limited mobility, etc. Hence, realizing the increased role of women in agriculture, the Government of India has come up with the promotion of Gender Mainstreaming initiatives in agriculture. Some of such initiatives are (is) earmarking 30percent of funds for women under various major schemes/programs and development interventions; (ii) taking pro-women initiatives to help women derive the benefits of the beneficiary–oriented components of various programs/ schemes and missions. Focus is also being given on the formation of women Self Help Groups (SHGs), capacity-building interventions, linking them to microcredit, enhancing their access to information, and ensuring their representation in decision-making bodies at various levels (MoA & FW, 2019-20). Furthermore, October 15th of every year has been declared as "Mahila Kisan Diwas" and is celebrated all over India. On this occasion, women from agriculture and allied sectors will be invited by various state agricultural departments, institutes, organizations, etc., and will be honored for their significant contributions in the relevant fields. Such initiatives encourage and motivate the women farmers to improve their work efficiency. While remarkable progress has been made in advancing gender equality, significant gaps remain to be addressed. As stated by the UN Secretary-General in his message on International Women's Day 2018, "achieving gender equality and empowering women and girls is the unfinished business of our time, and the greatest human rights challenge in our world." (FAO Report, 2020). Several initiatives introduced by central and state governments, non-governmental organizations, institutes, for

empowering women farmers have yielded fruitful results. Yet, one major challenge that needs to be addressed is linking these women farmers to markets. Nevertheless, several studies reported that through group approaches women themselves proved successful in various areas like efficient utilization of resources, cost minimization, increased and assured returns through crop cafeteria, organic cultivation for attaining nutritional security, adoption of technologies to reduce drudgery, establishing small scale enterprises like mushroom cultivation, vermicompost units, horticultural nurseries, processing and value addition, etc. However, further efforts are to be made to empower the women farmers to establish a market linkage for their produce through the formation of group approaches.

Aggregation among women farmers

In India, over some time, different aggregation models were evolved in general and for women, in particular, to empower them in various aspects. Few of such models were studied in detail and presented as below

Women Cooperatives: The Cooperative movement in India started with the principle of mutual help and intending to encourage thrift, self-help, and cooperation among the agriculturalists, artisans, and other persons of limited means. Cooperatives aimed to improve the quality of livelihood among poor people through the creation of employment. Cooperative societies in India played a multidimensional role both in the rural and urban areas and are no more limited to rural credit. In due course of time cooperatives have come up in various sectors like consumer cooperatives, sugar cooperatives, horticulture cooperatives, fisheries cooperatives, women cooperatives, and credit societies.

With the advent of the cooperative movement in India and with a focus on gender mainstreaming during the early 1990s, gender equality has become the main focus of the international cooperative movement and thus a resolution called "Gender Equality in Cooperatives" was passed with a priority of gender equality. Thus, the women cooperative societies came into existence. An International Cooperative Alliance-Asia and Pacific (ICA-AP) study stated that 'Investing in women's empowerment leads to gender equality, poverty eradication, and economic growth. Muzamil, 2008 in their study reported that in India, women found it necessary to form Consumer Societies as prices of essential commodities were rising speedily and the problem of adulteration had become a serious social danger. With the formation of Women's Industrial Cooperatives, the formation of Women's Cooperative Banks and Women's Multi-Purpose Societies. However, as per ILO National Advisory Council,

"Development of Cooperatives in India" 2018, women's cooperatives were less than 2 percent of the total number, and their membership comprised less than one-half percent of the total membership in cooperatives in the country. Although, an attempt has been made in the following section to document success stories in India.

A) Self Employed Women's Association (SEWA)

SEWA, a national trade union was the first to initiate the concept of all-women dairy cooperatives in Ahmedabad, Gujarat in the year 1972 with a strategy of joint action of union and cooperatives. It has become the single largest poor women's labor union in the country with 1.9 million poor, self-employed women from across 16 states of India. The association came into existence intending to achieve full employment and self-reliance. To achieve its goals, SEWA renders various supporting services like savings and credit, health care, child care, insurance, legal aid, capacity building, and communication services in a decentralized and affordable manner to its women members.

SEWA has carved out a niche market for wholesale vegetable business in Jamalpur, which offers better rates both to sellers and buyers. (Rajni 2008). Over some time, SEWA has come up with various initiatives for small and marginal women farmers like provision of voice / SMS based agro- advisory services, established tool and equipment library through which farmers can get easy access to time-based equipment. The provision of information about the spot and future prices helped around 50 percent of the farmers to decide upon the crops to be grown in the field.

At the time of nationwide lockdown due to pandemics, SEWA has reached its 1.9 million members through various technology platforms like WhatsApp, Kaizala, Zoom, Facebook, etc. It has also designed E-modules for agricultural training, made a provision for the storage of seeds and fertilizers. Moreover, the cooperative was involved in the procurement of 210 tons of wheat harvested by small farmers through RUDI - a rural distribution network for small and marginal farmers.

B) Mulkanoor Women's Cooperative Dairy

The Mulkanoor Women's Mutually Aided Milk Producers Cooperative Union Ltd (MWCD) was formed as a unique initiative for rural women engaged in the dairy sector in and around Mulukanoor, Telangana. Established in August 2002, the Mulukanoor Women's Cooperative Dairy Society has set an example for collective action and rural women

empowerment. It has become the largest dairy woman cooperative and was the first time when women completely managed and governed a community-based enterprise, where the producers were present at all stages of the value chain. It was and continues to be, a self-sufficient and self-managed women's cooperative dairy with the primordial mission to improve the economic status of dairy producers and consumers. The cooperative dairy maintains transparency in every aspect related to the stakeholders — their milk supply, accounts, procurement of milk, and profit accounts. This has helped to instill faith among the women members of the society since their monthly income and expenditure are audited at both the village and cooperative levels.

Marketing Strategy: The milk from this co-operative is marketed under the brand name "Swakrushi". The three categories of products offered to the consumers are milk, cream, and other value-added products that are currently marketed in the Warangal, Karimnagar, Medak, and Adilabad districts of Telangana. During the initial stages of establishment, to create awareness among the people, 10 working representatives each from 62 groups i.e 620 members went around the district of Warangal advertising "Swarakshi as an all-women initiative and they highlighted the purity of the milk and the fact that this is an entirely women-owned enterprise. As a result, the demand for swakrushi rose far beyond the expectations, and finances were raised to its members for their growth i.e to purchase additional buffaloes. Income today has gone up by 3-4 times. Income obtained from the sale of milk is generated every 15 days and thus the returns have been raised by 3-4 times.

The Mulukanoor model modified the blueprint of unions promoted by the National Dairy Development Board (NDDB) during Operation Flood. The design strategy followed by the management was key to the success of the Mulukanoor dairy. The cooperative of 21000 women members, with an annual turnover of 64 crores from 65000 liters of milk per day and profitability of 2.1 crores has helped women to attain economic independence and walk their heads held high. Now the focus of the cooperatives was shifted to the ways and means of breeding the cattle, their health, their fodder, and so on to address the problems of animal health, milk yield, etc. with the help of ALC India, livestock centers were also established.

Apart from these cooperatives discussed above, Amalsad cooperative Society for sapota and farming co-operative (Gambhira) in Gujarat, MAHAGRAPES in Maharashtra, HOPCOMS, and CAMPCO in Karnataka, has even performed well. However, these successful models could not be emulated in other regions of the country. By and large, the experiences of

performance of cooperatives have been poor with an exception of co-operative sugar factories and dairy cooperatives in Maharashtra and Gujarat.

In the recent past, a new model of aggregation namely Farmer Producer Company (FPC) came into existence to cater to the needs of farmers at the grass-root level. These FPCs are registered under the Companies Act 1956.

1. Farmer Producer Organizations/Companies (FPO/FPCs): The FPOs are a group of producers coming together based on the principle of membership to pursue specific common interests of their members and developing technical and economic activities that benefit their members and maintaining relations with partners operating in their economic and institutional environment. In India, the FPOs are mainly promoted by the Government of India through apex agencies viz., SFAC and NABARD, and NCDC. Besides, several FPOs are being promoted by non-government agencies and state govt. agencies. The main aim of the formation of FPC is to establish basic business principles within farming communities, to bring industry and agriculture closer together, and to boost rural development (Kumar Sharma, 2008) by the collectivization of the farmers, especially small and marginal farmers.

Status of FPCs in India: The instrument of FPC being relatively new, efforts are being made by the government and policymakers for making it a viable option of aggregation as compared to other models of aggregation. The studies of Richa *et al*, 2020 revealed that in India, as of March 2019, there are 7374 FPCs registered and promoted by various agencies covering 4.3 million small producers all over the country, with an average of 582 shareholders Producer Company. Around 92 percent of these PCs are farm-based and 3 percent of PCs were formed with only women members. Out of the total women FPCs, in the country around seven percent are engaged in dairying, 82 percent are engaged in other types of farm-related activities, four percent in non-farm activities, and eight percent of the companies are unclear about their activities. Of the total women producer companies, the State of Maharashtra accounts for 20 percent, followed by Madhya Pradesh (18 percent) and Odisha (13 percent).

However, more efforts are to be made in creating awareness among different women groups about how the concept of a producer company has proved to be a successful model in establishing market linkages to its member farmers. Hence, for the present study, few women FPOs successful in agriculture and allied sectors have been discussed as below. The discussion about these successful FPCs will enlighten them about good practices and the factors responsible for their success.

A) Dev Bhumi Natural Products Producers Co. Ltd (DNPPCL) is a community-owned company located at Dehradun, Uttarakhand with a vision to create conservation through enterprise. It works towards this goal by actively promoting its core activities — such as sericulture, organic honey, organic spices, and eco-tourism in some of the remote villages of Uttarakhand. DNPPCL works closely with 8,500 primary producers, including 5000 shareholders who are also involved in the commercial cultivation of some of these products. These activities are spread out over 450-odd remote villages in the five districts of Rudraprayag, Chamoli, Tehri, Uttarkashi, and Pauri Garhwal in Uttarakhand.

DNPPCL's pioneering efforts to develop infrastructure in all these areas have enabled the primary producers to actively move up the value chain, and also enabled primary producers, mostly women, now get better prices for their produce, aided by innovative steps like the setting up of primary processing facilities for organic spices, organic honey production and in sericulture. These initiatives have improved the capacity of primary producers and helped in value addition, improved processing, sorting, and grading, hygienic storage, and transportation. The company has created a strong marketing network across the country and is continuously working towards establishing a national and global presence for its certified organic produce from the Himalayan region. This has brought rural produce from the remote hill regions to the mainstream market. Once the producers start cultivating commercial crops, such as honey, spices, and other items, they can become the DNPPCL shareholders; and the company helps them across various stages of the value chain so that they don't just limit themselves to the supply aspect of it.

The producer company provides doorstep support in collection, storage, transportation as well as primary processing of the produce, and offers the required infrastructure for effectively undertaking these value chain-based activities. Thanks to the firm's pioneering work in marketing its products, the Dev Bhumi brand name is well-recognized and readily available in the market, especially certified organic honey. In addition, the company's sericulture wing (which involves rearing and processing cocoons into yarn) weaves a unique blend of "oak tussar" which is used to make a variety of designer shawls, stoles, and scarves, which is widely popular. Highly-priced organic spices and rajma (kidney beans) indigenous to the Himalayan regions are also grown, processed, and marketed by the company. Its eco-tourism section allows the visitors to experience the lifestyle, culture, and natural wealth of rural Uttarakhand without compromising on comfort or luxury, along with minimal damage to the delicate ecological

balance of this region. Thus, DNPPCL has put in place a viable model of agribusiness for market-oriented growth of small farmers. This is both relevant and suitable due to its focus on sustainable market development for marginalized farmers.

Awards/Honors: DNPPCL has bagged the "Best Rural Enterprise Award" by Citibank Foundation in January 2013, which included a cash prize of Rs8.5 lakh and continued capacity-building support.

A) Shreeja Mahila Milk Producer Company Limited (SMMPCL):

Having incorporated in the year 2014 at Tirupati, Andhra Pradesh with a vision to become top 10 Dairy Enterprises in India and with an initial paid-up share capital of Rs.436.63 lakh, SMMPCL now has become the world's largest only women-owned milk producer company and is also the End Implementing Agency for various projects under National Dairy Plan I (NDP I) funded by World bank through GoI. With more than 74,000 members and 3000 + state-of-the-art milk pooling points, Shreeja MMPCL has spread its operations in different districts of Andhra Pradesh viz., Chittoor, Kadapa, Nellore, and Anantapur along with bordering villages of Karnataka and Tamil Nadu. Besides production, processing, and marketing of milk, it is also involved in organizing various capacity-building programs for its member farmers.

Backward and Forward linkages: The PC has efficiently established forward and backward linkages for its farmer members. To reduce the cost of feeding the animals and improve their productivity, Shreeja provides low-cost ration formulation through Ration Balancing Program (RBP). In addition to this, the PC also sells high-quality cattle feed with 20 percent-plus protein content under the brand name "Shreeja Cattle Feed" and also makes available mineral mixture, dewormers, and other supplements to its producer members. The PC procures the milk on an average of 4.22 lakh kg from its members through Milk Pooling Points (MMPs) and provides them competitive and remunerative prices.

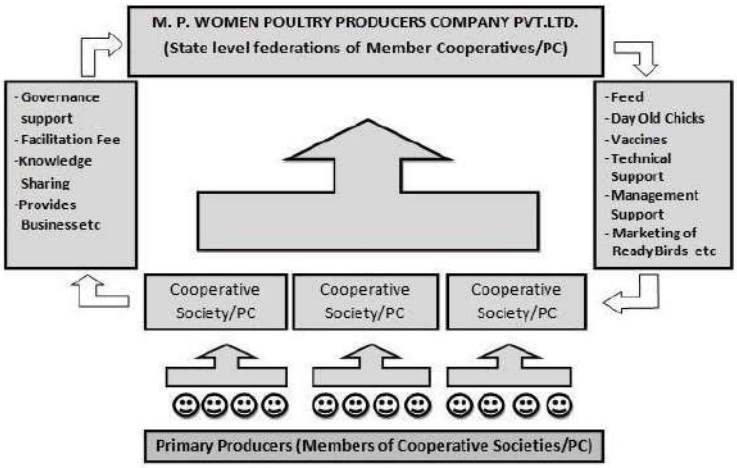
Value Addition: Upon pooling the milk in MPPs, with the help of sophisticated equipment, it is further processed into other value-added products like full cream milk, standardized milk, toned milk, double toned milk, curd, buttermilk, and ghee. These products are well packed in a packing station by following all the quality parameters and then marketed with a brand name 'Shreeja" through its vendors, distributors, and bulk purchasers.

Achievements: Has become capable of ensuring assured income to its members by providing them with a competitive price.

- Became the End Implementing Agency (EIA) for various projects implemented by the Government of India through the National Dairy Development Board (NDDB) under National Dairy Plan 1 (NDP 1).
- Recorded an annual turnover of Rs.41588.24 lakh during 2018-19 as against Rs. 13,836.92 Lakh in the year 2014-15 with a target of Rs. 500 crores for the year 2019-20

B) Madhya Pradesh Women Poultry Producer Company (MPWPCL)

MPWPCL, a federation of fourteen producer organizations incorporated in Madhya Pradesh with a vision to empower rural women by livelihood creation through smallholder poultry farming, has become one of the largest people's institutions in Central India, posting collective sales turnover of Rs 297.69 crores in FY 2018-19 and has impacted over Eight thousand one hundred families in the region. This is India's first market-led company that integrates all women poultry producers drawn from rural ST & SC families living below the poverty line. Each of them rears a flock size of 400-800 birds, The members include 8121 women poultry producers belonging to poor tribal and Dalit families spread over Hoshangabad, Betul, Sidhi, Dindori, Chhatarpur, Tikamgarh, Sagar, Vidisha, Singrauli, Anuppur, Alirajpur & Katni districts of the state.



Source: www.mpwpcl.org/

The producer company provides its members raw materials like feed additives, feed ingredients, produce hatching eggs for captive consumption by hatchery unit, manufactures poultry feed premix and ready poultry feed & produce day-old chicks primarily sold to its member cooperatives In addition to this, the MPWPCL also assists its members in accessing loans and ensures regular income by sharing all benefits among its members.

Retail chain Linkage: MPWPCL has an exclusive marketing network of live chicken with its retail chain under the brand name of "Sukhtava Chicken" and a chicken processing plant is under construction. These shops are one-of-its-kind and consist of all the modern tools and techniques for selling and processing chicken and maintaining hygienic conditions.

Achievements: Has become India's first market-led company that integrates all women poultry producers drawn from rural ST & SC families living below the poverty line.

C) Savitribai Phule Goat Producer Company Ltd.

The situation of consistent drought has become a challenging task for the women of Sinnar Taluka located around 30 Km west of Nashik, Maharashtra in creating a sustainable livelihood. To cope up with the adverse situations of water scarcity, the women came up with an idea of goat farming which was identified as a low risky income generation activity when compared to other livestock species. Thus, the Savitribai Phule goat Producer Company was established in the year 2016 to improve goat rearing practices among women and enhance their income by targeting livelihood opportunities. The FPC has emerged with the main objective of providing fair market linkages and also branding of by-products like milk and milk products, manure, meat, skin products

SPGPCL provides its members with goat insurance services, Training and capacity building, veterinary services, knowledge & financial support, and goat trading to prevent women from this distress sale, company introduced weight-based goat trading where any woman can come and sell her goat purely based on the weight of the goat at the predefined price which is higher than the prevailing market price and thus helped in reduction of market exploitation of members.

Marketing: Goat milk and meat are marketed to distance markets with a brand name 'Sahaj' and ensure better prices to member's produce. Promoting institutional sales, exploring and introducing various value-added products through processing is the prime agenda of the company.

The FPC also intends to provide the best quality products to the consumers and ensure end-to-end traceability in offering pure and hygienic products. To produce the best quality of value-added meat products for the consumers, the company has tied up with National Research Centre on Meat, Hyderabad for technical support. The company operates with annual revenue of Rs.1 crore for the year 2018-19.

From the case studies discussed above, it can be inferred that as compared to the cooperatives, the Farmer Producer Companies appear to be an effective tool of aggregation to empower the women. They also help in establishing backward and forward linkages to ensure their women farmer members with assured profit in all the sectors of agriculture. However, depending on the socio-economic conditions of the region, cooperatives also can be leveraged for collective operations and empower women.

CONCLUSIONS AND WAY FORWARD

The above findings revealed that major initiatives were taken by the Government of India, different departments of state governments, NGOs, and other institutions in empowering women in agriculture and allied sectors. Many of such initiatives have achieved success. Several aggregation models like cooperatives, SHGs, Farmer Interest Groups implemented their concept of women empowerment. However, many of these initiatives and models failed to find a solution in establishing market linkages for the produce of women farmers. This is the key area that needs to be focussed on. Moreover, Farmer Producer Organizations have become a one-stop solution as they could establish forward and backward for their member farmers. It was also interesting to note that, majority of the women-based FPCs are involved in dairy and non-farm sectors, and hence strategies need to be identified/framed to encourage the women farmers' information of FPCs in agricultural and allied activities as well. India being a major exporter of horticultural commodities, spices, fish, and fish products, the majority of the demand from other countries is being met only through the supply carried over by the private exporters. This is an important area where the FPC should take a major role. Moreover, in India, only a limited FPCs promoted by different agencies are involved in exports and with a more or less negligible contribution of women FPCs. Moreover, women should be empowered and trained to get out of the social and cultural constraints as they play a key role in rural areas.

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GENDER-RESPONSIVE AGRICULTURAL MARKET LINKAGES

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ABSTRACT

Women's contribution to the agriculture sector has been traditionally undervalued and even invisible in various statistical measures. Even though women play a significant role in agriculture, much of their work figures into the 'informal economy. They are usually engaged in non-mechanized farm occupations that include sowing, winnowing, harvesting, and other forms of labor-intensive processes such as rice transplantation. The root cause of the problem lies in the lack of official recognition of female agricultural workers. This results in the institutional invisibility of gender in Indian agriculture. An important step towards achieving the socio-economic and political empowerment of women in India is through granting entitlements to women in agriculture and ensuring their visibility across the value chain. There have been various initiatives, in policy, research, and practice that focused on gender gaps in agriculture. But the interventions largely focused on ensuring access to land, equal wages, and building of production capacity of women farmers, as opposed to promoting the role of women, as effective decision-makers, in other stages of the agricultural value chain. In the value chain links, the presence of women is largely concentrated to the bottom, as producers or agricultural laborers. As one moves forward in the value chain, in processing, marketing, and so on, it becomes exclusively men-dominant spaces. The autonomy, agency, and decision-making power of women across is another major concern, where their role is often limited to just daily wage laborers.

In this context, this paper is an attempt to suggest strategies that would enable agricultural market linkages for women's increased visibility, autonomy, agency, and economic empowerment. APMAS, over the last two decades, has worked extensively on the collectivization of women and farmers to mold them to become viable and sustainable business enterprises. The experience of working with such collectives has brought to light the potential that women farmers and agripreneurs hold. However, the experience has also exposed the gaps that exist that hinder the existence of a truly enabling environment. Hence, a three-pronged strategy is proposed to address this concern. Firstly, the implementation of gender-responsive schemes and provisions at a policy level, that would create an enabling environment for women

across the value chains. Secondly, capacity building of women's collectives/organizations specifically about women's leadership and entrepreneurial skills. Lastly, establishing linkages between these collectives/organizations, and key value-chain players that adopt gender-smart solutions while also keeping sustainability, growth, and profitability in mind. The strategies proposed are supplemented with case studies and field experiences of work done by Mahila Abhivruddhi Society, Andhra Pradesh (APMAS), as well as other examples that show their effectiveness, and how they can be modified to be adapted to varying scenarios. Moreover, this paper attempts to put forth suggestions to effectively promote women's leadership and their role across the development of value chains.

Keywords: Women farmers, Women's leadership, Market linkages, Sustainability

INTRODUCTION

Gender responsiveness can be broadly defined as understanding the different needs, roles, capabilities, and interests of men and women, and is strategically positioned to take these into account when planning interventions. Given the structurally and institutionally imbibed societal gender standards and norms, targeted efforts have to be made to ensure equal participation of women. In other words, gender responsiveness is a multi-stage approach, where a gender lens has to be applied in analysis, planning, implementation, monitoring, and evaluation.

The importance of gender responsiveness, in policy and practice, is reiterated through four broad arguments, namely in terms of social justice, poverty, business, and impact. Since the very idea of social justice is based on equal rights for men and women, the perspective mandates the same for any initiatives or programs. The poverty perspective stands to argue that since women have the potential to be crucial factors in poverty reduction, the gender gaps need to be addressed. Even though the basic idea of the argument is extensively debated, most of the development programs do leverage this socially envisaged role of women.

While several cases can be made to justify the need to address the gender gap, the business argument sets the context that this paper is set in. Women often play important, but invisible, roles in value chains, Gender gaps in agricultural value chains create a missed business opportunity. Addressing the gender gap can not only reduce this loss but also increases the impact. For instance, if women have the same access to resources as men, agricultural production would increase, reducing food insecurity and hunger. But to eliminate historical

and structural gender inequalities, there is a need for affirmative actions.

The following are the objectives of this paper:

- Identify gaps in the policy framework due to which the gender inequality in agricultural marketing persists.
- Explore successful input and output marketing models that have adopted gender-responsive strategies.
- Being a major stakeholder in capacity building and field implementation, to reiterate unique and successful approaches from the experiences of APMAS
- Provide suggestions to strengthen the value chain ecosystem for women farmers and entrepreneurs to increase their visibility, autonomy, agency, and economic empowerment.

This paper is divided into four sections. Firstly, the background sets the context for the paper. Secondly, an analysis of the policy framework within which women farmers and entrepreneurs operate is provided. Thirdly, successful gender-responsive models of input and output marketing are explored with the help of varied examples. Lastly, based on the understanding developed over the course of the paper, several suggestions are put forth to create a more enabling environment for women in agricultural marketing value chains.

BACKGROUND

The Agricultural Census report of 2015-16 indicates the fact that Indian agriculture is dominated by small and marginal farmers, the majority of whom are women and largely engaged in subsistence farming for self-consumption. However, some of the farmers have to sell their produce immediately after harvest at low prices and buy the same products later at high prices. Assured and remunerative markets hold the key to retaining the interest of farmers in farming.

CHALLENGES FORWOMEN FARMERS/ENTREPRENEURS

2.1.1. Lack of recognition

Women cultivate but don't get the deserved price for their produce. Women are most often engaged in laborious tasks that are invisible and underpaid. Gendered division of labor and notions of power have created a situation in almost all the natural resource management systems

such that all critical assets are in the name of men.

Women's lack of time due to family responsibilities remains a barrier for those participating in collective action to improve engagement in markets. Also, gendered stereotypes about women as incapable of intelligence often lead to patronizing attitudes and a denial of what the women know and what they want.

The Women Farmer's Entitlement Bill, 2011 highlighted that while women constitute more than 60 percent of the workforce in agriculture, their entitlements are often neglected. The Census of India does not define the term 'farmer'. It classifies women in agriculture as 'cultivators' or 'laborers'. As there is an official lack of recognition of the female agricultural worker, therefore no inclusiveness in the policy interventions targeted for farmers' welfare. This has resulted in exclusion from rights and entitlements, such as institutional credit, pension, and irrigation sources

2.1.2. Skill development

As Indian agriculture has got mechanized it has reduced the burden on male farmers but on other hand has burdened the women farmers with more manual activities. As per the data comparison from census 2001 and census 2011, the proportion of female laborers increased from 54.20 percent to 63.10 percent, and the proportion of female cultivators reduced from 45.8 percent to 36.9 percent in the same period.

With no or minimal access to better technologies, it has a direct impact on the production and productivity of produce cultivated by women farmers. The low volumes or low quality of production can be addressed by training in improved production techniques and increased access to inputs, equipment, or finance. But the funds are limited to provide new technologies and training to large numbers of women who lack funds to acquire their equipment. Adding to this is the low female literacy, awareness, and inadequate business skills which act as barriers to access to market information. For women farmers there are limited opportunities to develop human and social capital, largely due to a) access to extension services, b) training, c) participation in producer organizations, and d) opportunities for group-based networking.

2.1.3. Access to resources

The State of Food and Agriculture 2010-11 argues that there is a productivity gap between men and women farmers and attributes this to the gender gap in access to productive

resources and assets.

A national survey of 5,000 markets in India showed that none of the markets had a rest house for women farmers, and neither did they have basic facilities like toilet blocks. The findings indicate that the market yards are both not available and accessible for women farmers/collectives.

2.1.4. Credit facilities

There is no gender-disaggregated data concerning the exact number of women farmers availing credit for agricultural purposes from various sources. While various initiatives have been taken by the government over the years for enhancing the flow of credit to agriculture through special farm credit packages, interest subvention to farmers, the extension of interest subvention on post-harvest loans, collateral-free loans, Kisan Credit Card Scheme (KCC), etc., access to formal credit institutions continues to elude a large number of women farmers.

A 2010 report by the 'Task Force on Credit Related Issues of Farmers' set up by the Ministry of agriculture observed that when woman farmers take credit for agricultural purposes from other non-banking institutions such as Self-Help Groups (SHGs), it is often not recorded as 'agricultural loans'. Further, in the case of tenant farmers, share-croppers, oral lessees, who had received loans for agriculture through Joint Liability Groups (JLGs), it is often recorded as 'other loans'.

Experience from different parts of India reveals that when banks don’t lend money, women farmers end up taking debts from private moneylenders often at very high rates of interest thus leading them into a vicious cycle of indebtedness.

The income guarantee scheme of Rs 6,000 per annum under the Pradhan Mantri Kisan Samman Nidhi Yojana for farmers owning less than 2 hectares of land announced in the Interim Budget is also outside the framework as most women in agriculture do not own lands.

2.1.5. Weak marketlinkages

There is a lack of assured markets for women farmers. There are evident gender gaps in agribusiness value chains:

- Women's contributions largely figure into informal works, where they remain unacknowledged and under-resourced across all stages of the value chain, i.e., inputs, production, post-harvest processing, and storage.

- Women are highly underrepresented in transportation, marketing, and sales environments as well.

Through targeted interventions, there are cases where strong market linkages were established for women. For instance, in Telangana, women farmers floated ‘Benishan’, a company to procure and sell their produce in association with Farmer Producers Organisations (FPO) and Society for Elimination of Rural Poverty (SERP). Kerala’s Kudumbashree initiative, under the National Rural Livelihoods Mission, has promoted 'Naatuchanta' or weekly markets which are run entirely by women. However, these remain isolated cases of success.

3. POLICY REVIEW

The budget for the Ministry of Agriculture increased from Rs 57,600 crore (£580 Billion) in 2018-19 to Rs 1, 40,764 crores (£1400 Billion) in 2019-20. But the total allocation for women farmers in 2018-19 was just 2 percent of the total expenditure under the Ministry of Agriculture and Farmers’ Welfare for the same year.

The gender budget statement declares two types of funding--one, where the entire provision is for women (Part A), and second, where the allocation for women is at least 30 percent of the entire funds (Part B). In terms of placing the term 'welfare of women' in the budget has taken huge leaps but not much has been focused on the employment aspect. Schemes under the gender budget usually go unspent and whatever is spent is not of much help to women. The programs meant for women are so poorly designed and badly implemented that they merely perpetuate the gender imbalances that persist.

There is no specific scheme that emphasizes solely market interventions for the empowerment of women farmers, rather it finds its way in bits and pieces in various policies and schemes at center and state levels.

When unpacking schemes for women farmers, the Mahila Kisan Sashaktikaran Pariyojana (MKSP) is the only sub-program under the Deendayal Antyodaya Yojana-National Rural Livelihood Mission (DAY-NRLM) particularly aimed at women farmers. One of the sub-components of this program is to encourage women farmers to take up organic farming to explore new market channels. While the women farmers have been kept at the center of implementing the objectives of organic farming of the government, the total budgetary allocation for MKSP in the year 2018-19 (BE) was a mere Rs 1,000 crore.

3.1 Farmer Producer Organisation (FPO) and women farmers

FPO has been considered an effective instrument in the empowerment of farmers. FPO is proposed to level the farmers with other players in the domain and strengthen the position of farmers in the value chain. Women producers being the active players at all stages of the agriculture chain, this collective form would be a step forward from the learnings of SHGs and PACS. But surprisingly, as of now, the FPO domain has been largely male-dominated. There is no aggregated data on the number and types of FPOs currently registered and functioning. Field experiences state that out of the existing 10000 FPOs the number of all-women FPOs would not be even over 200.

Even the new central scheme of forming another 10000 FPOs across India, doesn't emphasize the significant role of women farmers. There is no specific and dedicated budgetary allocation done for women FPOs. One good example from the early days is the SFAC guidelines. It stated that to avail matching equity grant the concerned FPO needed to have a minimum of one woman BoD. Though this was a good policy, the policymakers didn't add anything to this. The FPOs largely disbanded the women BoD after attaining the grant.

3.2 Representation of women farmers in decision-making bodies for policymaking

Under the National Mission on Agricultural Extension & Technology (NMAET), there are provisions of one "*Gender coordinator"* in the Agricultural Technology Management Agency (ATMA). The scheme also emphasizes the representation of women farmers in various important decision-making bodies. But on the ground, there is not adequate representation, participation, and involvement of women farmers/ their organizations in the management and decision-making processes in Agricultural Produce and Livestock Market Committee, District-Level Coordination Committee, Block-Level Committee, Primary Agricultural Societies, ATMA program forums at block, district, and state levels, and other decision- making bodies related to agriculture and economic policies and programs.

3.3 The Farm Acts and women farmers

The **Farmers' Produce and Trade and Commerce (Promotion and Facilitation) Act, 2020** is premised on the assumption that all farmers are equally mobile and have equal access to transportation facilities to become potentially mobile to sell or purchase their agricultural produce anywhere in the country. Women farmers, with their poor mobility and

access to transport facilities, are especially on an unequal footing when it comes to traveling to another place to trade their produce or bargain around better prices. What women farmers need is proximal markets but with oversight to protectthem from exploitation by buyers/traders.

Besides, the produce from small unirrigated lands that women cultivate is very negligible in quantity and often wanting in the desired quality. Moreover, lack of storage facilities, transportation costs, need for cash for new investments, paying off old dues, and meeting household expenses often mean that women farmers cannot stock and wait for better prices to sell their produce. They may also not be able to wait out the delayed payments compared to upfront cash payments. The male-dominated APMCs as they operate in the current form has never really benefited the women farmers, especially single women who often have to deal with the marketing of their produce.

Instead of bringing in reforms that regulate the traders outside of the APMCs and correct the anomalies in the APMC to make it more women farmer-friendly, the Act has proposed to bypass the APMC and usher in an era of fragmented and unregulated markets. For instance, Telangana uses women's self-help groups to strengthen farm-gate procurement. Andhra Pradesh has direct marketing avenues for Adivasi and other farmers in the form of Rythu Bazaars where infrastructure specially meant for women farmers has been set up. The Central Acts are not in this direction, however. Withdrawal of the government with direct interventions in the market as well as regulatory oversight effectively means that the small and marginal farmers would be left at the mercy of the big sharks in agribusiness.

Under the **Essential Commodities Act 2020**, with the cap on storage and pricing being taken away (except under extraordinary situations), women as farmers, agricultural workers, consumers as well as beneficiaries of the PDS will be adversely affected in the future.

The **Farmers (Empowerment & Protection) Agreement of Price Assurance and Farm Services Act, 2020** seeks to legalize contract farming across the country while claiming to enable farmers to get into other agreements related to seeds, other inputs, and prior agreed on the price, etc. Read from the perspective of a majority of women farmers, who are dependent on small and marginal holdings, either as direct cultivators or tenants, these provisions are neither empowering nor provide any protection in reality. Given the fact that women farmers and workers are placed at a disadvantaged position, over and above the class and caste dynamics in the rural agrarian structure means that they will be in a weak bargaining position while entering into any contracts that are in turn determined by networks of knowledge, power,

and prior market intelligence.

Across the country, the slow, often uneven, and largely incomplete nature of agrarian transition, which involves shifts of labor from agriculture to other sectors, has also been gender-biased. As more and more men have moved to non-farm work in the industrial and service sectors, women have remained substantially in agriculture. Women's domestic work burden, lower mobility, lesser education, and fewer rights and control over assets such as land, livestock, etc. has limited their entry into non-agricultural sectors and their range of non-farm options. Increasing feminization of agriculture and the agricultural workforce, with little recognition of their role in land and livestock management, has meant that women have largely remained invisible to the government in terms of agricultural policies, schemes, programs, and budgets as well as formal support systems such as credit, extension, insurance, and marketing services.

4. Successful Gender-responsive models in agricultural markets

4.1 Overview

Market linkages have been widely acknowledged as a means by which small and marginal farmers and processors gain a competitive advantage in the market. These linkages refer to the input market as well as the output market. In most cases, small farmers are not connected to value chains that reach beyond their local community, putting them in a grossly disadvantaged position. Hence, an understanding of the entire value chain and facilitating the establishment of these linkages is critical to enable farmers to realize a fair price for their products and the long-term competitiveness of their value chains. The relationship between the buyers and sellers, i.e., the farmers, is indicative of the nature of the power that resides with each player in the value chain. While this balance is unambiguously tipped away from the farmers, this is true more so in the case of women farmers, as their role in any value chain is defined and limited by their gender. Hence, while the promotion of market linkages is

imperative to improving the viability of agriculture as a business enterprise, interventions that solely target women are equally critical to improving the sector.

Input marketing is one of the first and widely adopted interventions to promote market linkages for farmer collectives. Output marketing linkages, on the other hand, have proven to be more challenging to establish sustainably. The reason for this is that input marketing by collectives entails bulk procurement of the inputs which means that the inputs are more readily accessible and more affordable. The benefits are tangible and very visible and hence, it is easier to convince farmers to partake in this linkage. Output marketing, however, requires a lot more commitment from the farmers, who do not easily trust new avenues of sales. On the whole, however, the issues that exist at either end of the value chain are only compounded for women as their role is largely diminished to that of labor.

APMAS has been actively involved in promoting and developing the input as well as output marketing. The first step to promoting the involvement and role of women in these stages of the agricultural value chain called for a mapping of the presence of women across the value chain before any interventions. A simple value chain for the tomato has been developed to explain the scenario depicted pictorially below. It is evident from the flowchart that as one moves along the value chain, the visibility of women in terms of ownership drops drastically with close to no presence in the latter half.

4.2 Agri-Input Marketing:

Input marketing is a critical component in developing the agricultural value chain and there are now several models that have addressed with considerable success the gender gap that exists in accessing affordable inputs. The following two examples demonstrate two such models. The first model is that of women's collectives, where women farmers are organized into producer groups and clusters to provide input services that are affordable, accessible, and suited to the requirements of the members. The second model is a micro-franchise model that looks at an interface between a promoting agency and private input providers. This model is meant not only to address the needs of small and marginal women farmers but to also provide private businesses with a lucrative customer base, that would incentivize them to invest in addressing gender gaps. One of the models promoted by APMAS can be broadly defined as a hybrid of the two models described, where the existing SHG platforms were leveraged to form collectives for input marketing. These collectives were then actively engaged in establishing linkages with input providers for bulk procurement and disbursement to customers.

4.2.1. Example-1

Orissa's Kolnara Block in Rayagada District has a tribal population of over 72 percent (2011 census data). Agriculture is one of the primary sources of livelihood and a majority of the workforce is made up of women. Despite this, the economic contribution women made to the family, which was substantial, was largely unrecognized even by the women themselves. This was because all the significant decisions (what crop to grow, what inputs to acquire, and where to market) were made by the men and this gave them absolute economic power. The first attempt to get recognition for the women farmers and empower them was made by forming 51 village-level producer groups, with the support of PRADAN and the Mahila Kisan Sashatikaran Pariyojana. These groups were further collectivized into 3 production clusters in the block. One major issue that these collectives addressed was that of input availability. By way of exposure visits, training, and an all-round community approach that relied on CRPs (Community Resource Persons), the following were undertaken by the collective to improve the farmers' access to inputs:

- Crop planning services were provided to each member of the group by taking factors such as season, farmer suitability, and market conditions into consideration.
- Based on the collective crop planning of all the members, quality inputs were purchased in bulk and supplied to the farmers at their doorstep.
- Community-level nurseries were established that were maintained and monitored by the members and CRPs and would provide quality saplings on time that enabled early initiation of the crop cycle.
- Organic medicine, which was difficult for each farmer to produce on their own, was then produced and sold at reasonable rates by community entrepreneurs.
- When the area of land cultivated by the member farmers increased or contiguous patches of land were cultivated, farm implements such as power weeders and power sprayers were procured by the collective and rented out at nominal rates.

4.2.2. Example -2

Krishi Utsho is an agro-input micro-franchise network that was established in Bangladesh by CARE Bangladesh. It is essentially a network of stores that provides inputs and services to small and marginal women farmers to address the gender gap in input accessibility.

Under this model, local shops were established which were owned and operated by the entrepreneurs from the rural community and the targeted customer base was the women farmers whose needs were not addressed by the existing markets. Based on the small-scale nature of the farming that is prevalent with the women farmers in Bangladesh, linkages were established with input providers willing to customize products as per the requirements of these farmers, which would be priced affordably. Moreover, these local stores were also used as service points for linkages with veterinary services and sales points for dairy farmers. This model proved to be lucrative not only for the women, who now had access to reliable and affordable inputs but also for the agricultural input providers, for whom this acted as the link for last-mile delivery to a new and targeted customer base.

4.2.3. Case Study: Leveraging SHG platforms to form women's collectives

Gender mainstreaming, being a core focal domain for APMAS, the projects have always focused on promoting women's leadership and empowerment. APMAS has actively encouraged and groomed women leaders in its FPOs, which are directly promoted and in some cases supported in terms of capacity building and have also promoted exclusive women FPOs. Apart from these, APMAS has also channeled initiatives by leveraging the existing SHG platforms. Under the Green Innovation Centre project, implemented by APMAS, one of the objectives was to implement gender-responsive interventions, targeted at women farmers in the tomato value chain, in Chittoor district of Andhra Pradesh.

Since APMAS had a strong presence in the area, promoting the SHG movement, it had the resources to mobilize SHG women to form a Grama Rythu Sangham (GRS). In 2017, a group of 100 SHG women of Ankisettipalli, Kothapalli, and Vempalli Panchayats came together to form the Dharani GRS. Since the base to form the GRS was SHG groups, its members had the advantage of past experiences in collective groups, capacities for management and book-keeping, and strong group dynamics.

4.2.4. Key Challenges

- The promoting agencies to the collectives need to understand that the needs of men and women farmers are different and hence, cater to their specific needs.
- The examples from Orissa and APMAS presented cases of all women collectives. Typically and in the experience of APMAS, projects meant to support such collectives often have an average duration of three to five years. While the time

constraint of such interventions is a concern for the sustainability of any people's institutions, all women collectives usually require hand-holding support for a longer period. The process of mobilizing women into collectives and capacity-building programs, with a focus on leadership and management, would require a much longer time frame due to the institutional gender constraints.

- While the promotion of all-women collectives addresses gender gaps in terms of access to resources, and representation, they don't necessarily bring a fundamental behavioral change to the larger society. They are viewed as patronized initiatives rather than competitive business enterprises.
- In the case of scaling up women collectives, membership is often extended to male farmers to achieve the required number to be sustainable. Dharani GRS had a similar case. To upscale the initiative, APMAS promoted it to become an FPO. In a mixed FPO, where the number of women in the collective is typically lower than those of men, the men automatically assume the role of decision-makers, undermining the participation of women.
- When a targeted collective is a mixed group, focused efforts have to be made to promote a gender-friendly environment, and support members to become gender-sensitive and challenge gender stereotypes.

Box-Item 1:

APMAS in collaboration with BRLP-JEEVIKA is working in the Dighwara and Gurkha blocks of Bihar to enable women, farmers, to procure seeds and food grains, and engage with market structures. Under this project, APMAS has promoted Village Organisation (VO) which is a collective of 10-12 women SHGs at the village level. Each VO has a 'procurement committee' (kharidari committee) with nominated members who are responsible for bringing samples from the market, bargaining and negotiating for the best rates and making purchases on us on behalf of other members before distribution. APMAS is also involved in the training of all those members on seed technology, market prices, and plantation techniques through the Village Resource Persons (VRPs). The members then use this knowledge to make informed decisions about their purchases.

4.3 Agri-Output Marketing

Agricultural output marketing that provides a fair price for the farmers has proven to be a significant challenge at a collective level, and more so at an individual level. Given that agriculture is practices extremely diverse conditions and different produce calls for specialized value chains and mark channels, there are multiple models of marketing that exist. One possible way to broadly group these models, which is relevant to the concerns of this paper, would be to look at them as either 'push strategies r 'pull strategies. The first category, i.e., 'push strategies' essentially refer to models that for marketing what farmers are producing by any means possible and hence, establishing linkages in that manner. 'Pull strategies', on the other hand, focus on encouraging the farmers to produce and market. These commodities for which there is significant demand. The first two examples stated below are those for the pull strategies where value chains are established based on the existence of demand for the commodity and the consumers' willingness to pay a premium for the same. In the Indian context, however, limitations to implementing this strategy do exist and this is something that has been realized in the course of the tireless efforts made by APMAS in promoting the output marketing of the collectives it engages with.

4.3.1. Example-1

Primark, a significantly large European retail company, has since 2013 partnered with Cotton Connect and the Self-Employed Women's Association (SEWA) to initiate their Sustainable Cotton Program. As opposed to most brands that source their cotton from manufacturers, Primark chose to engage directly with women cotton farmers to ensure that their cotton is sustainably and responsibly sourced. Women are crucial to the production of cotton as it is a labor-intensive crop but the gender divide about the income received is large. Under this program, 1,215 women small-farmers were trained in Gujarat. The focus of the program was on better farming practices which resulted in increased yields, efficient use of water, and a significant reduction in the number of fertilizers and pesticides used. Having achieved considerable success, this program was scaled up in 2016 to target 10,000 women farmers. Primark deals directly with the women it trains to source their cotton and hence, at this stage of the value chain the women are not only responsible for the labor involved, but also the decision-making that is involved.

4.3.2. Example-2

Café Femenino is a producer organization that sources its coffee from the poverty-

stricken areas of Peru where coffee is the main source of income. Before the entry of Café Femenino, most of the coffee growers were dependent on unreliable intermediaries to sell and this was done on an individual level. The position of women was similar to that of the rural women in India, where a majority of the farm labor work and housework is done by the women, while the income is controlled by the men. It was in this backdrop that Café Femenino was established by three cooperative organizations- CECANOR (critical player in enabling access to services and acquiring Fairtrade Certification), CICAP (engaged primarily in educating the women in farming practices, leadership, finance, and organization skills), and PROASSA (engaged in the management of the processing, export, and business). Café Femenino is registered with Fairtrade Labelling Organisations International and sells its coffee directly to a licensed international trader or roasting company in a consumer country. This company pays Fairtrade prices and premiums that are a price above the conventional market price. The Fairtrade label is indicative of ethically sourced coffee that includes a "social premium" used for the development of the producer group. This is a label for which consumers are willing to pay a premium which is passed on to the farmers. On the whole, the women of the café Femenino Producer Organisation make 17 cents more per pound of coffee, i.e., 30 percent more, and have also managed to successfully initiate community development activities.

Some of the key goals of this model were to address land ownership, which was easier given the land laws of Peru as opposed to other countries, develop women's self-worth, and develop community life. What sets this example apart, however, was the goal of men's involvement which was achieved to a considerable extent. (From McMurtry, 2009 and references therein) According to Isabel Uriarte La Torre, founder of Café Femenino, "There's a change that is happening in the mentality of the male members. Now they accept the involvement of the women in the organization, they accept that they go to meetings. You can see men staying at home with the children, cooking something while their wifeis in a meeting. It's a very important change that for us is fundamental…We don't want to separate them [men and women], given our perspective that we are interested in the family's development, in the community's development and the development of the country, which is work for both men and women, together, the same rights, the same opportunities." This in effect summarises the ultimate end that every intervention or initiative should aspire for.

4.3.3. Case Study: Interventions for Output Procurement Business by APMAS

In output marketing, APMAS works on both perishable and non-perishable commodities. The model usually followed is to identify major crops of the FPOs, support them for bulk procurement and link them to the best potential buyers. In this approach, the focus is to promote women leaders taking charge of the process. At the same time, women farmers, especially small and marginal, are encouraged to exercise autonomy overselling their produce. During the procurement process, preference is given to women farmers, and the entire deal is done with the women themselves. The non-perishable commodities are procured through MSP, while the perishables are often linked to private players. FPOs promoted by APMAS have linkages with e-fresh, big basket, MARKFED, NAFED, and the price support program (or Minimum Support Price).

To promote women's leadership and enable women to gain visibility across the agriculture value chain, APMAS conceptualized a project titled, 'Achieving Gender Equality through Empowerment of Women in Agriculture (AGEEWA), with financial support from AEIN Luxembourg. The pilot phase of the project was initiated in 2017 and currently, all the four women FPOs, supported by the project, collectively market their commodities along with generating good turnover through input marketing as well. Three of the FPOs were also able to do MSP procurement. For instance, in 2019 AGEEWA FPCL in Yadadri- Bhongir district of Telangana, launched Minimum Support Price (MSP) center with Red gram procurement. AGEEWA FPCL procured 1,292 quintals of Red gram from 234 farmers and supplied it to Hyderabad Agricultural Co-operative Association. Each farmer got a direct benefit of Rs. 2175 per quintal. The success of the procurement center incentivized farmers to come forward to join AGEEWA FPCL. Another instance of successful procurement through MSP is from the women FPOs in Midthur and Nandikotkuru, where 5,000 tonnes of maize was procured in the last season through MSP. Nallamada Agriculture Producers Mutually Aided Cooperative Federation Ltd is a Mandal level FPO in Nallamada. Though it is a mixed FPO, the procurement is managed by a sub-committee of women members who successfully ran three rounds of procurement.

In the Chittoor district of Andhra Pradesh, 9 FPOs (out of which one is a woman FPO) promoted by APMAS, came together to form a federation, the M-Tomato Producer Company. Tomato is a highly perishable commodity and a major crop in the area, its collective procurement and marketing hold huge potential. The federation is also used as a platform to

market other horticulture commodities produced by the farmers. The Federation currently has 7,223 shareholders including 2,702 women farmers, and the president of the federation is a women farmer named Krishna Radha. Krishna Radha has become an inspiration to fellow women farmers to actively participate in value chain-related activities. Her involvement motivates other women to pursue higher functions such as negotiating with service providers, market players, and marketing of produce. The proactive leaders and members of the federation were able to strategize timely interventions even during the lockdown period.

They collectively procured the tomato and sold it to Sunsip Agro processors. Her journey of success, amidst all the odds, received wide recognition and she got the opportunity to participate in the Inter-Ministerial Approval Committee meeting of the Operation Greens project for the development of tomato, potato, and onion values chains in New Delhi organized in February 2019. She was also recognized by GIZ with the Game Changer Award, instituted for women in agriculture who spearheads revolutionary changes.

Dharani Agriculture Producers Mutually Aided Cooperative Society Ltd (Dharani FPO), formed in 2017 in Kamareddy district of Telangana, is an apt example member-driven farmers collective, where 20 percent of shareholders are women. Even though the proportion is not favorable in a gender lens, the FPO has strong proactive women leaders. The business committee of the FPO, which manages the procurement activities, is led by women. Dharani FPO is linked to State Agricultural Cooperative Marketing Federation Limited (MARKFED), for both paddy and maize. The FPO also supplies vegetables to Akshaya Patra Foundation, an NGO based in Bangalore, where the product is given to the world's largest (not-for-profit run) Midday Meal program serving 1.8 million children across India.

Box-Item 2

Procured from women farmers by women farmers

In the women FPO in Kurabalakota, small onions were collectively procured which was then given to Big Basket in Bangalore. The success of their procurement business stood out, since the activities were led and managed by women farmers, with commodities sourced from

4.3.4. Key Challenges:

- Lack of women representation in the domain of marketing makes it appear to be a male-dominant space making women hesitant to enter into the field. Increased

representation of women in the field will encourage, motivate and create a supportive environment for women. In the experience of APMAS, having a female head for marketing has been an added motivational

The factor for the women farmers.

- Even if women successfully assume leadership roles, more often than not they deal with male officials/counterparts in other organizations who may not be gender-sensitive. This could in many cases prove to be discouraging for the women, causing them to shy away from any leadership roles, to begin with.
- The procurement business would require the members to travel and meet the stakeholders to negotiate and finalize contracts. The gender norms and stereotypes in our society make it difficult for women farmers to take such initiatives. The mobility constraint is caused both due to the cultural norm as well as their lack of time due to household responsibilities.
- While the best of market linkages and output marketing models may ensure that the inflow of monetary resources reaches the women directly, there is nothing to say about the extent of the autonomy the women have over the income they earn.
- While a demand-pull-driven strategy shows considerable success, the actual implementation of such a strategy in the Indian scenario is easier said than done as there is always resistance from farmers to commit to something drastically different from their traditional ways.

5. Way forward

While the paper has touched upon the various means by which gender gaps that exist in the domain of agricultural marketing can be addressed, certain cross-cutting insights can be drawn. These insights can be consolidated into certain suggestions that could contribute towards a more gender-responsive environment for increased visibility of women in market linkages:

Adopting a gender lens: A simple, yet the understated approach is that of adopting at all times a gender lens when it comes to the drafting and implementation of all policies or interventions. All the stages, from analysis to budgeting to evaluation, should be sensitive to differential gender needs.

Extension of hand-holding support: FPOs are the most promoted form of farmer's collectives in India today as they have the potential to make agriculture a viable business activity. Nevertheless, hand-holding support has so far been limited to the duration of project interventions, typically 3-5 years, during which time sustainability cannot be achieved. The support to these FPOs, especially women's FPOs, needs to be extended for a longer period, a minimum of 6-8 years to establish them as sustainable business enterprises.

Focus on capacity-building: Currently, the schemes that focus on the promotion of FPOs have given little attention to the capacity building of the organizations. There is inadequate budgetary allocation for the same despite the capacity building being a critical component of the development of FPOs. Hence, increased importance needs to be placed on capacity-building initiatives.

Marketing guidelines: All the schemes that relate to the post-production processes merely mention the infrastructural aspects. While it can be argued that policies related to market linkages are not something that can be developed, a framework or guidelines for the same should be developed. Moreover, institutions that do engage in aiding the linkages for collectives should be strengthened and involved in the development of such frameworks.

Database of women's collectives: While a database of the number of FPOs operational across India exists, it isn't a comprehensive one and the figures for Women's FPOs are grossly outdated. A sound database of the women's collectives, the activities they undertake and their business profile would aid better designing of development interventions, as well as gender budgeting.

Alternative marketing platforms: Given that mobility is a major constraint for women to access 100markets, steps need to be taken to link them to alternative marketing channels such as online trading platforms, such as NCDEX-AGRIDEX. This would require better information dissemination, training, and connectivity.

Gender mainstreaming framework: A Gender Mainstreaming Framework can be developed by the nodal agencies which would include aspects such as representation. Currently, SFAC provides grants to FPOs by matching the share capital on the condition that at least one Board member is a woman. Given such a quota, every FPO has incorporated one woman in its Board, with absolutely no power or role. She merely serves the purpose of attaining the grant for the FPO. These quotas should be revised by this framework to have adequate and

meaningful representation.

Monitoring framework: While provisions have been made to institute agencies and committees to overlook the implementation of extension services, in reality, they rarely materialize. Even if there are such bodies, there tends to be an inadequate representation of women. A more stringent monitoring framework needs to be instituted, with a highly decentralized approach to ensure effective policy and program implementation.

Procurement quotas: The systems of procurement under MSP and PSS should have provisions as to the minimum percentage of procurement that will be done only from women farmers.

Incentivize off-farm/non-farm enterprises for women: Despite the knowledge of success stories of various non-farm/off-farm enterprises run by women, these have not been scaled up by way of creating an enabling ecosystem. Hence, these success stories remain as isolated examples of the potential this holds. These are activities that have only the involvement of women in most cases, but they need to be incentivized to be willing to invest more time and effort in it.

Women's contribution to the agriculture sector has been traditionally undervalued and even invisible in various statistical measures. Even though women play a significant role in agriculture, much of their work figures into the 'informal economy. Over the years, there has been a continuous increase in the presence of women in agriculture, mainly due to the increase in the migration of rural men to urban spaces in search of better economic opportunities. Due to this, a majority of the small and marginal farmer's category is women farmers. Despite this, women are most often not recognized as farmers and are often referred to only as cultivators or farm labor. This is an idea that is so ingrained that often the women don't consider themselves to be farmers. Changes at an individual level, collective level, and a larger societal level are imperative to uplifting these women farmers and elevating their role as decision-makers. Hence, an important step towards achieving the socio-economic and political empowerment of women in India is through ensuring the visibility of women across the agriculture value chain.

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ROLE OF FARM-BASED ENTERPRISES IN AGRICULTURAL DEVELOPMENT

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ABSTRACT

In a situation when farmers' suicide and distress sell remain the key issues in India's Agricultural scenario, we are dreaming of achieving a double income for the farming community. This gap in the income level of farmers can only be bridged by adopting newer income-generating opportunities like establishing Farm based enterprises. When we are referring to farm-based enterprises we mean four types of ventures like farm input enterprises, farm product enterprises, farm value addition, and processing enterprises, and in the end farm service enterprises. These innovative ventures are not only capable of creating newer employment in society but also can augment farmers' economic stability by imparting sustainability to their income. Eventually, it will lead to achieving a doubling farmer's income by 2022. To cater to this need Government of India has implemented various schemes like a Dairy entrepreneurship development scheme, National livestock Mission, and Capital invested subsidy scheme for commercial production units for organic/biological inputs, ACABC scheme for Agripreneurs. These interventions are capable of providing food security by boosting the agricultural production system. In this seminar, an effort has been made to enlighten the role of farm-based enterprises in agricultural development by making the farmers self-sustained and economically stable, achieving the goal of doubling farmer's income by 2022.

Keywords: Agripreneurs, agricultural development, farm productivity, modernizing agriculture

INTRODUCTION

India's great economist farmer prime minister of India Dr. Manmohan Singh recognizes that farm enterprises and food processing are important parts of modernizing our economy, of modernizing our Agriculture and move into a phase where more modernized agriculture helps not only farmers but also consumers.

It is a long-held view that innovation in the farming sector in India has progressed since the green revolution of the 60s and 70s, the drastic change in that period brought high yielding varieties of seeds, along with major improvement in irrigation methods and soil nutrition, it is a common argument that farmers in India continue to follow the paradigm established by the green revolution even today, even though natural and economic factors demand revolutionary changes in the agricultural sector once again.

Farm-based enterprises are an important vehicle for imparting sustainability in farmer's income, In a situation when farmer's suicide and distress sell remain the key issues in India's Agricultural scenario, we are dreaming of achieving a double income for the farming community. This gap in the income levels of farmers can only be bridged by adopting newer income-generating opportunities like the establishment of farm-based enterprises by the farmers.

- Meeting the nutritional requirement of family
- Supply soil nutrients meeting the increased demand of soil nutrients
- Farm products processing and value addition
- Waste utilization
- Employment creation
- Increasing the income of the farmers
- Sustainable agriculture will be achieved through farm-based enterprises

❖ Agriculture frames are the foundation of the Indian economy. Thus, India is likewisecalled as **'Agriculture –Commanded Nation.'**

❖ Agriculture assumes a vital part in the Indian economy is confirmed by the certaintythat it contributes 22 percent to the aggregate gross residential items, gives business to around 65 percent of the aggregate work constrain, and contributes 14.7 percent of aggregate fares of the nation.

❖ That agriculture has created throughout the years is reflected by different pointers, for example, expanding profitability, editing power, high yielding variety seeds, broadening, motorization, and modernization of agriculture.

Areas of farm-based enterprises in India:

(1) Input Management

- Livestock feed, fodder
- Machinery and equipment
- Fertilizers, pesticides

(2) Agro-based Production

- High-yielding varieties of seeds
- Floriculture, Horticulture, Fisheries
- Animal husbandry, Livestock, Dairy farming

(3) Agri Processing

- Fruit Processing - Jams, Squash, Canned Fruits

- Sugarcane Processed- Sugar, Candies, Jaggery
- Dairy Products- Curd, Butter, Milk Powder, Ghee

(4) Agri Services

- Agricultural finance and Insurance
- Transportation
- Storage and warehousing
- Sorting, grading, standardization,
- Packaging, labeling, advertising

Types of farm-based enterprises:

1. Farm input enterprises
2. Farm product enterprises
3. Farm value addition and processing enterprises
4. Farm service enterprises

1. Farm input enterprises: These are the enterprises that supply inputs for agriculture. Which includes

- Planting materials.
- Farm machinery.
- Plant protection chemicals and plant nutritional substances etc.
  - **Various farm input enterprises:**
    - Biofertilizer unit.
    - Bio pesticide unit.
    - Horticultural nursery.
    - Vermicomposting

Importance of farm input enterprises in agricultural development:

1. Increase the productivity and quality of agricultural production
2. Plant protection chemicals and nutrients enhances the yields of crops
3. Farm machinery is more essential to manage labor scarcity in the agricultural sector
4. Farm input enterprises play a major role in the agricultural development of the country

CASE STUDY-1: Vermicomposting Name: Chandranna

Place: Tumkurlahalli, molakalmuru taluk of chitradurga district of Karnataka state

Training has taken: Nursery and vermicomposting by BAIF institute of rural development,

Karnataka

Vermicomposting brings better yields and returns -a small farmer shows the way Chandranna initially build four pits of size 6×6×3cubic feet with 2kgs earthworms which coasted 300rs he produced 20q vermicompost applied to his 2acrs of ragi field he got 6q more yield compared to others. He has earned Rs. 1.4 lakhs from the sale of 35tons of vermicompost and earthworms in 3 years. He stated supplying vermicompost and earthworms to other farmers in nearer villages he become Nursery chandranna in that area 40 percent yields of the crops in that area will be increased.

2. Farm production enterprises: These are enterprises where the farmer can adopt as a subsidiary enterprise or as a whole enterprise for livelihood and it gives some economic returns for the farmer

Importance of Farm Production Enterprises in Agricultural Development

1. The livestock plays an important role in the economy of farmers, the farmers in India maintain a mixed farming system i, e a combination of crop and livestock where the output of one enterprise becomes the input of another enterprise, livestock contributed 16 percent to the income of small farm households as against an average of 14 percent for all rural households. And it contributes 4.11 percent GDP and 25.6 percent of total Agricultural sector
2. The farm production enterprises like dairy, poultry, fishery, beekeeping, goat and sheep rearing, mushroom cultivation contribute to farm income as a subsidiary enterprise.
3. The waste of these enterprises can be used as an input for another enterprise on the farm by this the farm efficiency could be increased.
4. Diversification of farming by adopting two or more enterprises will help in continuous income inflow to farm

CASE STUDY-2: Inland Fish Farming In Farm Pond

Name: Shri Mohamad killed

Place: Gudageri village, Kundagol, Dharwad district of Karnataka

Farm pond of size: 25×20×3.5m

Before Adoption: utilizing the farm pond only for crop cultivation and other agricultural

activities

Intervention process:

- Training in inland fish farming sponsored by kvk Dharwad and line departments has resulted in the breakthrough of yield and profit
- Small Industries Development Bank of India (SIDBI)
- Technologies adopted: Promotion of inland fish farming in the underutilized farm pond.

Economic Impact after 1 year	Farm Income
Before the adoption of fish farming	Rs 72000/-[through agriculture]
After the adoption of fish farming	Rs 150000 [additional income]

Dissemination of technologies in and around the villages of Gudageri

CASE STUDY-3: Bee-Keeping

Name: Josephine Selvaraj

Place: Kondaiyampatty

Training: Took a 3days course in bee-keeping at KVK Madurai.

- She started bee-keeping in 2006, with an investment of Rs 5000 and ten boxes to rear the bees, Today rears bees in more than 8000 boxes and earns about a lakh rupee per month.
- Employing many rural women in Vadapathi town and nearby areas of Madurai district.
- She was conferred the 20th Jankidevi Bajaj Puruskar 2012 for her initiative in spreading awareness about the advantages of honey and beekeeping.

3. **Farm Value Addition and Processing Enterprises:** Refers to the subset of manufacturing that processes raw materials and intermediate products derived from the agricultural sector (or) it means transforming products originating from agriculture, forestry, fisheries.

- Importance of Farm Value Addition and Processing Enterprises in Agricultural Development
- Processing enhances the shelf life of products and is made available throughout the

year

- Storage and processing is the only solution to avoid seasonality constraints in agricultural production
- Increasing in the processing of agricultural products will increase demand for agricultural commodities and prices will be increase ultimately farmers get good prices for their commodities
- It helps in reducing Post-harvest losses and helps in increasing nutritional security for the growing population

Therefore, the growth of farm value addition and processing enterprises directly influences agricultural development.

CASE STUDY-4: Value Addition in Mushroom Name: George Thomas

Place: Kozhikode of Kerala

Land: 4.5acres

- Desire to experiment with a crop that requires little input, less care, and at the same time gives good returns made him turn to mushroom cultivation.
- He sold in the local market at Rs 100per kg. he able to earn Rs 500 a day able to get a net income of Rs 15000 in 2006 and Rs 25000 in 2007.
- He also started value addition by converting a portion of fresh mushroom into pickles, and are being exported to U.S and Gulf at Rs 50 per 300gm bottle

4. Farm Service Enterprises: Farm service enterprises provide the services which support the decision-making process of the farmer on different aspects like

- Crop selection
- Pest and disease control
- Soil fertility conservation
- Post-harvest losses management etc.
- Farm service enterprises fulfill the instant needs of farmers like repair of farm machinery etc.

Success Stories of Agripreneurs Krishi Ratnas in Agripreneurship

1. Shri. Neelesh Vasekar, Pune, Maharashtra
2. Smt. Sangeeta Savalakhe, Yavatmal, Maharashtra
3. Shri. Avinash Salunke, Shirdi, Maharashtra

4. Shri. Vinodsingh Tarasingh Killedar, Amravati, Maharashtra

Story 1: Leading lady of Organic Agriculture

Ms. Sangeeta Deepak Sawalakhe completed Post Graduation in Agricultural Sciences and later underwent AC&ABC training from Krishi Vigyan Kendra [KVK], Durgapur, Amravati, Maharashtra and started Vidharbha Biotech Laboratory [VBL] for production of Biopesticides and Biofertilizers in the year 2008. The Vidharbha Biotech Laboratory received ISO-9001-2008 certificate for the best quality products manufacturing and providing marketing services. The organization also received "Maharashtra Udyogika Puraskar" from the Maharashtra State Government, UNESCO Linked "Women's Wing Award" for providing farmers services in the rural areas.

Ms. Sangeeta Deepak Sawalakhe is working in 8 districts in the Vidharbha region and has employed 30 women. She availed of a loan of Rs.34 lakhs from the State Bank of India, Yavatmal in the year 2010. The present sales turnover is Rs.1.25 Crores and an Annual income of Rs.40 lakhs.

She is providing the following services to farmers:

- Manufacturing and marketing of Biofertilizers, Biopesticides, and Biocontrol agents.
- Consultancy services on Organic farming and training to farmers associations. As a result, 5000 women farmers converted to Organic farming.
- Providing training through Organic farmer's school under ATMA.

Story 2: Lady Plant Doctor of Rahuri

Ms. Kavita D. Bidwe is a determined lady Agripreneurs from Maharashtra who has made a dent in agricultural extension with her hard work. She graduated in Agriculture from Mahatma Phule Krishi Vidyapeeth, Rahuri, and Maharashtra in the year 2005. During graduation itself, she was passionate about working with farmers directly. She took up the responsibilities of her family after the unexpected demise of her father, by establishing her Agri-input supply center. She was encouraged by the Agri Clinics & Agri-Business centers (AC&ABC) Scheme and underwent training at KVK, Babhaleshwar. KVK provided her a broad vision of Agri clinic services, other allied activities, and entrepreneurial skills.

After completion of AC&ABC training, she started her unit in 2005, which delivers the

following services:

- Provides various Agri inputs at the farm gate.
- Library services to farmers, by making available monthly bulletins and Agri-related information in local language at a fee of Rs.50.
- Collects water and leaf samples from farmers, gets them analyzed at agricultural university, and provides recommendations based on lab reports.
- Mobile soil testing kit for on-site recommendations.
- Formed and is guiding Self Help Groups and Farmers' Clubs.
- Conducts training to farmers.

Recently, she opened another unit of Agro Service Centre and created gainful employment on regular basis for two persons. She also provides useful tips to entrepreneurs on the maintenance, management, and marketing of agricultural inputs. She is covering 450 farmers in Rahuri Taluka and has an annual turnover of Rs. 40 lakhs. She wants to expand her business by providing clinical services like soil and water testing, diagnostic services, and farmers' training school. She opined that AC&ABC training showed her the way to set up her venture and the Refresher Training Programme at Sangali provided her broad vision to expand her business.

Advantages of farm-based enterprises:

- More than 60 percent of the population in India depends on agriculture as a major occupation.
- Agriculture needs inputs every season
- Now a day's climate change is a big challenge for agriculture, so the application of technology in agriculture is essential
- In India, the post-harvest losses account for around 35 to 40 percent

CONCLUSION

1. Farm-based enterprises are the need hours to make agriculture a more attractive and profitable venture.
2. It is clear that there is a great scope for farm-based enterprises in agriculture and this potentiality can be tapped only by effective management of Agri elements such as – soil, seed, water, and market needs.
3. In the world India ranks 2nd in unemployment more than 60 percent population depend

on agriculture farm-based enterprises providing ways to the unemployment

4. The agriculture sector has a large potential to contribute to the national income while at the same time providing direct employment and income to the numerically larger and vulnerable section of the society.

5. Farm-based enterprises are not only an opportunity but also a necessity for improving the production and profitability in agriculture and the allied sector.

6. Good investment opportunities exist in areas of food processing industries like fruit & vegetable processing, meat, fish & poultry processing, packaged, convenience food and drinks, milk products, etc.

7. Farm based enterprises will be the future of Indian agriculture

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RURAL WOMEN POULTRY FARMERS' ACCESS TO MARKETS: A CASE STUDY IN SAMASTIPUR DISTRICT OF BIHAR

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ABSTRACT

This study examined the issues faced by rural smallholder women in accessing the state's markets. Increasingly, market access to rural smallholder farmers is being promoted as a way to catalyze sustainable rural development. However, without addressing the gender-specific issues faced by women rural smallholder farmers in accessing markets, market access as a sustainable rural development strategy can fail to achieve its objectives. The key objectives of the study were to identify the issues affecting the marketing of poultry in the Samastipur district of Harpur village. The study used both primary and secondary data. First, a literature review was conducted to examine the problems faced in accessing markets by smallholder rural women farmers in the state and how the issues vary from those faced by male smallholder farmers. Secondly, primary data was collected in Harpur village of Samastipur district, Bihar from rural women farmers. Data were collected through focus group discussions, personal interviews, and document review methods. Fifty structured interviews with 16 poultry producers, 25 wholesalers, 5 local retailers, and 4 private & community doctors with these market actors were conducted to explore organization, price dynamics, and socio-cultural aspects of poultry marketing. Some of the key findings are rural woman farmers face a Lack of technical knowledge (56.25 percent), Predator's problems (56 percent), Lack of transportation (81.25 percent), Fluctuation of market prices and demand (98 percent), Lack of storage facilities (68.75 percent) and Marketing agent & distributors (62.5 percent). Other problems faced by women farmers while marketing their products were low market price, external competition, and exploitation by intermediaries. The study concluded that compared to male farmers, rural smallholder female farmers face multiple issues among which market access was a prominent one. Therefore, market access initiatives that do not recognize and address the gender-specific challenges facing female farmers may not be catalysts for sustainable rural development. It is therefore recommended that market access initiatives should go beyond promoting market access to tackle systemic social, economic, and cultural problems that pose specific challenges and constraints for women farmers.

Keywords: Market access, rural women farmers, poultry, gender, rural development.

INTRODUCTION

Poultry refers to all domesticated birds mainly kept for meat and egg production which are primarily utilized for consumption purposes. The poultry sector is one of the fastest-growing sectors in India. The annual growth rate of broiler meat production in India was around 7 percent from FY 2012 to FY 2017. The Indian poultry market, consisting of broilers and eggs was worth INR 2,049 billion in 2019 (India livestock census, 2019). The sector provides

diversified opportunities such as manufacturing of cosmetics, feathers for making pillows and mattresses; production of eggs and meat, etc. Poultry farming is one of the most popular and profitable enterprises in rural and resource-poor areas of India. It supports rural families with income generation, provides nutritionally rich food sources (meat and eggs), boosts women and unemployed youth, and reduces the gap between demand and supply of poultry eggs and meats. The protein requirement of the farm families can be easily met through poultry eggs and meat which serves as the best and cheapest source of protein. It can help make rural women economically and socially empowered to address the issues of food insecurity and malnutrition. The major constraints of poultry farming in India are the high mortality rate in young chicks due to a combination of diseases, lack of infrastructure, and low production performance of desi birds, lack of scientific knowledge, predation, malnutrition, climate exposure, and feed price fluctuation throughout the year.

To overcome these constraints there is a need of introducing improved varieties of poultry, scientific skill development of farmers on feeding, housing, disease prevention as well as management. The poultry sector contributes to 1percent of national GDP and 14 percent of national GDP. (India livestock census, 2019). Women farmers play a major role in the activity of livestock production and decision-making related to farm management (Al- Rimawi, 2002). Most rural households have poultry maintained by women and children. The family poultry farm business contributes around 19-50 percent as a part of farm income. For smallholder farmers, keeping poultry represents a household saving, investment, and insurance as the value of birds increases over time (Sonaiya et al, 1999). Vincent et al (2011) added that the poultry is reared traditionally which are favorable to woman. However, the involvement of women in poultry farming in India is affected by social, cultural, and religious realities. The present study entitled "Rural Women Poultry Farmers' access to markets: A case study in Samastipur district of Bihar" throws light on the market access of women farmers towards the poultry sector and the constraints involved in it.

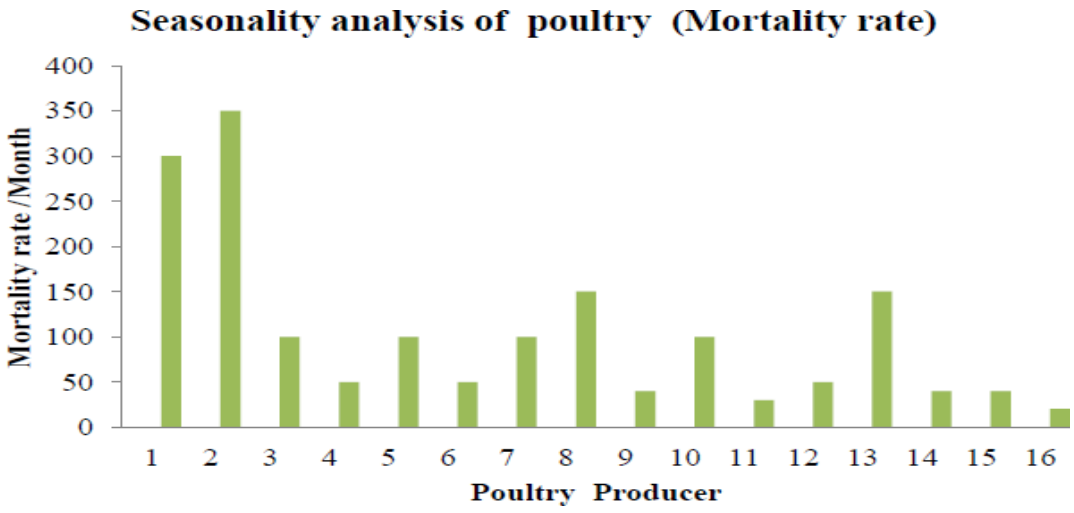
METHODOLOGY

The present case study was carried out in the Pusa block of Samastipur district, Bihar. The village Harpur from the Pusa block was selected purposively where the volume of poultry production was large. Total sample respondents of fifty comprising of poultry producer (16), wholesale customer (25), local retailers (5), private and community doctors (4) were selected using a convenient sampling technique. Primary data were obtained using personal interviews

and focused group discussions. Statistical tools like percent, average, and charts were employed using Microsoft office software for the study.

RESULTS AND DISCUSSION

The study revealed that most woman farmers were involved in broiler production, layer production, and backyard poultry farming among which broiler production was most dominant in nature because of the consumption pattern and selling behavior among the community. The broiler chicken price was governed by the supply and demand conditions prevailing in the market. The seasonality analysis confirmed that piece, supply, and demand was highest during the month of November and January due to many religious festivals like Diwali, Bakrid, Christmas, New Year, etc. whereas lowest price was observed during the month of April due to hot climate spanning from March to May. The mortality rate of broilers was highest during the fourth and fifth weeks of age may be due to the incidence of infectious Bursal disease which disturbs the immunological balance of birds leading to other infections. The mortality rate during the first and second week was mainly due to yolk sac infection with Omphalitis and Colibacillossis which needs the intervention of good quality feed along with fresh drinking water to reduce the mortality rate.



(Figure 1: Seasonality analysis of Poultry)

The identification of problems hindering the marketing of poultry products in the study area can be categorized as producer's problem and marketing problem.

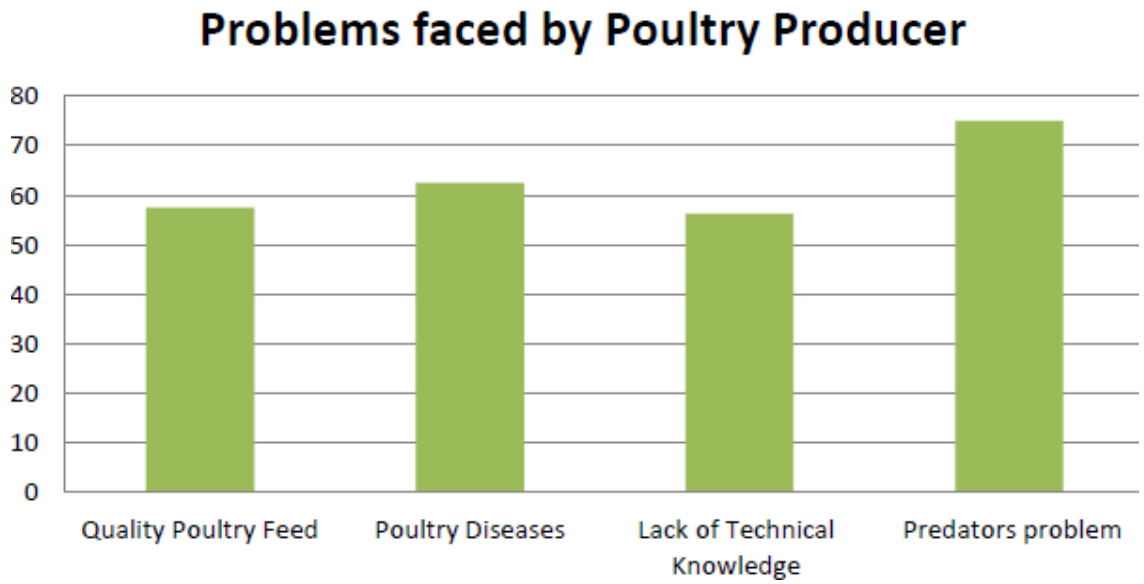
Producer's problem:

I) Quality of poultry feed: Lack of quality feed was reported by 57.52 percent of respondents because of the high market price of poultry feed which indirectly affects the producer's profit margin.

II) Poultry diseases: Among the sample poultry producers, around 52.5 percent responded that the incidence of diseases like bird flu and others adversely affect poultry production. The mortality of chicks was also a major concern. However, the producers had limited access to government veterinary dispensaries because of their remoteness from the village. The vaccination program was not conducted at regular intervals.

III) Lack of technical knowledge: Successful poultry farm needs sound knowledge of the enterprise. Among sample poultry growers, it was found that 56.25 percent of respondents were not technically sound at raising chicks thereby not getting remunerative returns. Training at regular intervals should be conducted to aware the producers regarding the care, maintenance, and profitability of the enterprise.

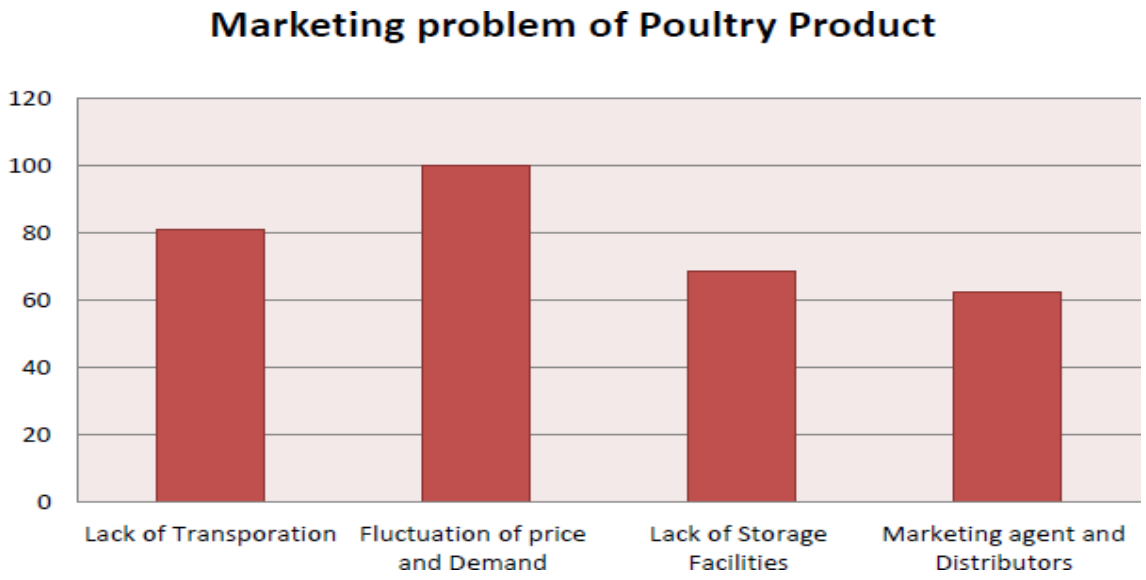
IV) Predator's problem: The predator's problem was reported by 56 percent of sample respondents. Picking of chicks, birds by their natural enemies like cats, rats, dogs, and snakes are a common event of poultry farming. Therefore, proper care is needed to protect the birds from these kinds of predators by net fencing or iron wire fencing**.**



(Figure 1: Problem faced by the Poultry producers)

Marketing problems:

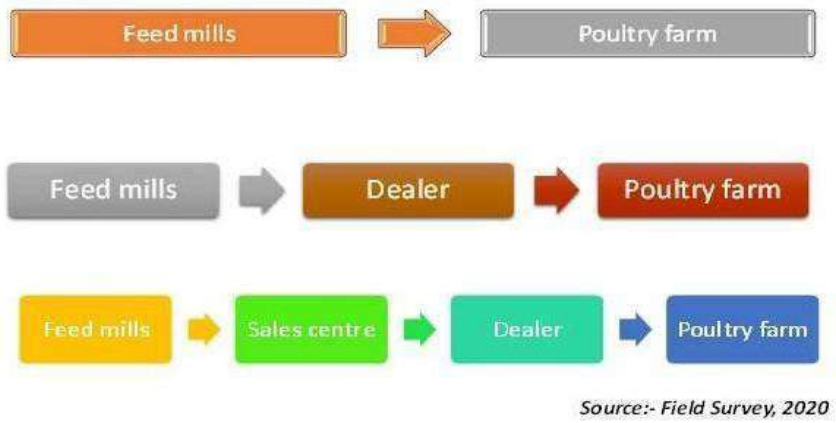
Among sample poultry farmers, 81.25 percent reported transportation as a major obstacle for marketing. Lack of storage facilities was reported by 68.75 percent of respondents. Around 62.50 percent of respondents reported problems with marketing agents and distributors.



(Figure 3: Marketing problems of Poultry)

Backward and forward linkages of marketing:

Backward linkage: Poultry feed mills provide an important linkage among feed grain producers and feed using farms. Backward linkage in poultry includes all the raw materials related to poultry feed production.



(Figure 4: Backward linkages of marketing)

Forward linkage: Forward linkage in poultry farms involves the marketing of poultry products like eggs and meats.

Figure 4: forward linkages of marketing

Existing marketing channel of poultry in Harpur village:

The study revealed that 12 percent of poultry producers preferred channel 1 (producer-consumer) whereas 72 percent preferred channel 2 (producer- retailer-consumer) and 16 percent preferred channel 3 (producer- wholesaler-retailer-consumer) for selling of the product. Channel 2 was most popular among the poultry growers signifying the role of the retailer.

Suggestions for improving the marketing channel in Harpur village:

The following marketing channel can be suggested for improving the market access and profit margin of the producers. Focused group discussion with 16 farmers in the study area highlighted several issues and challenges out of which high cost of feed (corn and soybean), disease outbreak (Bird flu, infectious Bursal disease), lack of storage, water, and electricity problems were prominent in nature.

CONCLUSION AND RECOMMENDATIONS

Poultry farming plays an important role in the economic development of the rural community. The females were engaged successfully in the study area. The majority of the respondents preferred trading via retailer only. Low market prices, external competition, and exploitation by intermediaries were the major problems affecting the market. In the light of the above, it can be recommended that government should treat poultry farming as par with agriculture. Female poultry development must be woman-friendly. Participation of women in poultry farming through co-operatives mode must be encouraged to achieve the objective of woman empowerment. Poultry feed price must be fixed by the government and may be supplied to the poultry owner at a concessional rate. Poultry feed fluctuations should be monitored and steps should be taken to make them stable. Quality high breed chicks may be supplied by the government for higher productivity. The minimum cost of medicines and vaccines may be supplied to poultry farms for protecting the farm from diseases. Transport facilities at concessional rates may be provided to the poultry farms for minimizing transportation costs. Many periodical training programs may be conducted for unemployed youth and awareness may be created about the poultry industry among them. Middlemen in the process of marketing may be minimized. The government should verify if these poultry farmers are receiving various grants, subsidies, and financial benefit schemes. Those who are found

guilty of not providing the same to the farmers or who misappropriate these funds should be punished severely. The cost of raw material inputs used as feed ingredients like maize and soya DOC is continually increasing which results in an increase in expenditure for the farmer. Government should provide the feed ingredients and should also keep control over the demand, supply, or import of these materials.

The government, through its initiatives and programs for the elimination of malnutrition, should raise awareness about the availability of required nutrition in poultry products. This could be achieved through various public awareness campaigns.

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Women and Household Food and Nutritional Security

NUTRITIONAL AND FOOD SECURITY FOR WOMEN HEALTH IMPROVEMENT: STATUS AND STRATEGIES

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ABSTRACT

United Nations' Committee on World Food Security defined food security, that all people at all times have physical, social, and economic access to sufficient, safe, and nutritious food. Over decades, there has been increasing recognition that though there has been a reduction in severe acute food insecurity, dietary intake in large segments of the population does not meet energy (hunger) and micronutrient (hidden hunger) requirements. India currently has the largest number of undernourished people in the world i.e. around 195 million which is 690 million at the global level. According to FAO estimates in the "The State of Food Security and Nutrition in the World, 2018" report, about 14.8 percent of the population is undernourished in India. Also, 51.4 percent of women of reproductive age between 15 to 49 years are anemic. Further according to the report 38.4 percent of children aged under five in India are stunted (too short for their age), while 21 percent suffer from wasting, meaning their weight is too low for their height. India ranked 76th in 113 countries assessed by The Global Food Security Index (GFSI) in the year 2020, based on four parameters affordability, availability and quality, and safety. As per the Global Hunger Index, 2020, India was ranked 103 out of 119 qualifying countries. The number of food-insecure people grew from 42.65 crores in 2014-16 to 48.86 crores in 2017-19. India accounted for 22 percent of the global burden of food insecurity, the highest for any country, in 2017-19. Poor nutrition starts in utero and extends, particularly for females, till adulthood. Malnutrition that occurs during childhood, adolescence, and pregnancy for women harms the birth weight of infants. When undernourished women are pregnant, they are unable to provide the right environment for the fetus in the first 270 days of the window of opportunity when children are completely dependent on their mothers to get essential energy, protein, fats, and micronutrients. Greater women empowerment can be achieved by increasing maternal education, economic empowerment, intra-household decision-making power, and community-level empowerment. Therefore, it becomes important to recognize the role of women in agriculture given a majority of them work in agriculture and allied activities. Women play important role in ensuring household food and nutritional security. Women should ensure food security with the inclusion of pulses, cereals, milk & milk products. Also, promoting vegetable cultivation through household and community level gardens with naturally bio-fortified fruits and green leafy vegetables to address micronutrient malnutrition. Various nutrition programs should be revamped to enable management by women's Self-Help Groups, local bodies along with orientation and training of community health workers other opinion leaders, and other stakeholders. Efforts should be made by the concerned health departments and authorities to initiate and supervise the functioning of the nutrition-related schemes in an efficient way. The cooperatives play an important role in food security in India. Many schemes like ICDS, NRHM Rajiv Gandhi National Crèche Scheme, Mid-Day Meal, and Rajiv Gandhi Scheme for the Empowerment of Adolescent Girls (RGSEAG), Kishori Shakti Yojna, and NFSM are being

run to mitigate all such issues.

Keywords: Malnutrition, food security, nutrition security, Global Hunger Index

INTRODUCTION

India comprises 2.5 percent of the total global landmass and 16 percent of the global population (Planning Commission 10th five-year plan, 2012). Here in India, human resources are recognized as the engines, powering national development. As per Article 47 of the Constitution of India, "the State shall regard raising the level of nutrition and standard of living of its people and improvement in public health among its primary duties", therefore gave high priority to improvement of the health and nutritional status of the population. India's Five-Year Plans enunciated the policies, laid down multi-pronged strategies, outlined multi-sectorial programs to improve food security and nutritional status of the population, laid the goals to be achieved in a specified time frame, and provided the needed funds to implement the interventions. As a result of all these interventions, famines and severe food insecurity are no longer a threat but even today seasonal food insecurity is seen in different pockets of the country.

According to the definition put forward by FAO in 1996, food security exists when all people at all times have the access to sufficient, safe, and nutritious food to maintain a healthy and active life. Food security has mainly three dimensions i.e. availability, access, and utilization and it can be analyzed in two levels; macro level and micro level (Fig.1). The macro-level or we can say on national-level food security mostly aims at the food availability aspects, while the micro aspects focus on household or individual food acquirement and utilization aspects. Hence, the micro-level food security or the household food security depends on many factors such as agricultural production, market availability of food either through national production or imports, income-earning opportunities of household members, food aids received to households, intrahousehold decision making, resource allocation, and responsibility sharing, care practices in households and health care given to the household members, etc. It also depends on women empowerment, employment opportunities, assets ownership, credit availability, and human capital, these strategies are identified as an effective tool for improving household food security (Quisumbing & Smith 2007; Smith & Haddad 2000). India is one of the countries suffering from food insecurity (Upadhyay, 2011) and this lack of food security raises many problems e.g. hunger, poverty, and increase crime, malnutrition for children that would be easy to die, and decrease health (Venugopal, 2010). Many children under five age

suffer from undernourishment because of a lack of nutrition and hunger (Saxena, 2012). Adult people cannot work properly when they do not have sufficient energy resulted from the food they eat. Consequently, they trap in poverty again and cannot buy nutritious food to sustain their life. To eradicate hunger and to achieve food & nutritional security, more emphasis would be given to the household level (Venugopal, 2010). The problem that needs to be addressed here is how to provide an affordable situation for households, whether in terms of price or other sources of food, so they can have good access to food to fulfill their nutrition. Instability in food prices, food production, and household income result in a decline in household access to food and produce famine and undernourished.

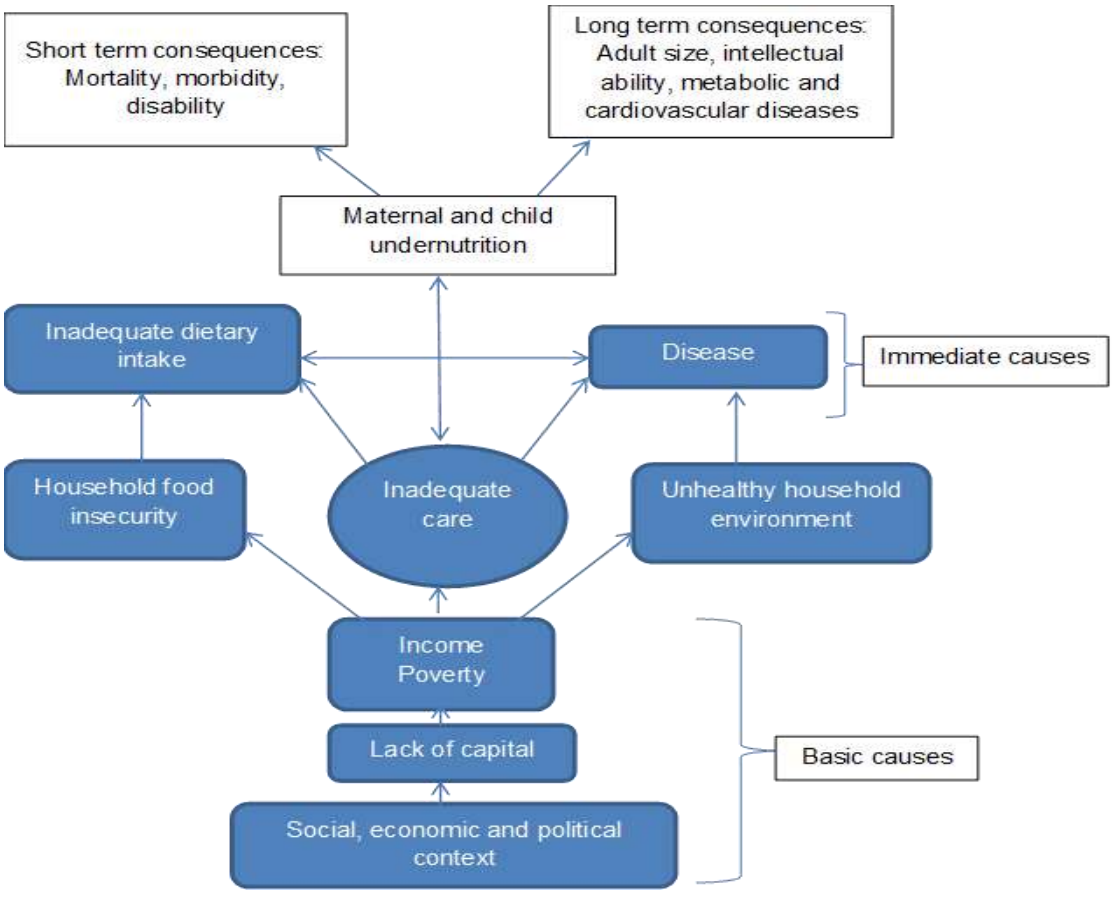

Fig.1 FNS (Food & Nutritional Security) levels

Status of food and nutrition security in India:

India ranked 76th in 113 countries assessed by The Global Food Security Index (GFSI) in the year 2020, based on four parameters—affordability, availability, and quality and safety. As per the Global Hunger Index, 2020, India was ranked 103 out of 119 qualifying countries. The number of food-insecure people grew from 42.65 crores in 2014-16 to 48.86 crores in 2017-19. India accounted for 22 percent of the global burden of food insecurity, the highest for

any country, in 2017- 19. About 58 percent of rural households in India are dependent on agricultural production (NSSO, 2014) and are largely undernourished (IIPS, 2016). Dillion et al. (2014) demonstrated that a 10 percent increase in agricultural revenue or crop diversity results in a 1.8 percent or 2.4 percent increase in dietary diversity, respectively. Hoddinott (2011) listed six pathways by which levers in agriculture production and markets have positive impacts on human health. Vepa et al. (2016) reported that a 1 percent increase in land productivity increases the percentage of well-nourished children below 6 years of age by about 0.08 percent. Pro-nutrition interventions in agriculture and the introduction of backyard production of garden fruits and vegetables could help promote household dietary diversity (Chakravarty, 2000; Ruel, 2001; Nagarajan et al., 2014). Undernutrition occurs as a result of insufficient macro-and micronutrient intakes and manifests in four forms: wasting, underweight, growth stunting, and nutritional deficiencies. Empowering women farmers is vital to lifting rural communities out of poverty, especially as many developing nations face economic crises, food insecurity, HIV/AIDS, environmental degradation, and increasing urbanization. Agricultural productivity and income gains are necessary but not sufficient to eliminate hunger and malnutrition.

Impact of malnutrition on women and adolescent girls:

According to WHO Adolescents ranged from 10–19 years and they account for about 18 percent of the global population. They are under physiological, cognitive, and psychosocial changes but remain neglected by many health and nutrition services (SCN, 2005 & Kraisid Tontisirin GS, 1999). The burden of energy, protein, and micronutrient deficiencies is high in adolescents of developing courtiers. The subsequent social, economic, health, and development impact of undernutrition in adolescents is expected to be high in developing countries. Malnutrition in adolescents may be genetically inherited; however, the vast majority of cases are linked with food insecurity, poor care, and poor socioeconomic status. The nutritional needs and status of adolescents, particularly of adolescent girls, are crucial as girls will be the future mothers and their health will impact future generations. According to WHO, 2006 addressing the nutritional needs of adolescents, is an important step in breaking the inter-generational cycle of malnutrition? Stunting in adolescents is the result of the cumulative effect of poor nutrition, largely during the first two years of life (Shrimpton et al., 2001). Thinness and stunting are also more prevalent among adolescents. Undernutrition is a universal health concern that affects mainly children and adolescents from low- and middle-income countries, LMICs (WHO July 2020). According to a World Bank report, India accounts for more of the

world's undernourished children than any other country, which has huge consequences on childhood and adolescent morbidity and mortality and the national economy (World Bank, July 2020).

A study being conducted across eight Indian mega-cities among women with a specific focus on slum–non-slum demonstrated that being underweight was significantly higher in slum dwellers while being overweight was notably higher in non-slum areas (Gaur K et al. 2012). Several previous Indian studies 5–7 frequently reported higher percentages (range: 16%~30%) of being underweight among slum-resident adolescent girls from different urban areas (Awasthi. R et al, 2016 and Bhattacharyya M *et. al*, 2012). According to Delisle H *et. al*, 2005 & Cordeiro L *et. al*, 2006 adolescent girl's time of life is critically important because it is during this period that rapid growth and development occurs, and thus, adolescents require higher nutrients intakes. Furthermore, health and food behaviors are shaped during this period and thus, adolescents are more vulnerable to health and nutrition concerns than other age groups (Dennison CM *et al*, 1995 & Videon TM *et al*, 2003). More importantly, adolescent girls need good quality nutritive foods in sufficient quantity to cope with the added nutritional requirements associated with the onset of maturity, menstruation, participation in various physical activities(Spear BA et al, 2002 & Story M et al, 2000) and to reduce health risks and break the intergenerational cycle of malnutrition (Arlinghaus KR et al, 2018, Mitchell K, 2009).

According to UNICEF's 2011 State of the World's Children Report, undernutrition among teenage adolescent girls was higher (47%) in India than in any other country (SOS Children's Villages Canada, 2020). According to Narayan J et al, 2019 a recent Indian study cautioned that rates of malnutrition among adolescent girls, pregnant and lactating women, and children are alarmingly high and stated that the reasons for higher rates among nutritionally vulnerable populations were maternal nutritional status and lactation behavior, women's education, and sanitation. The World Health Organization (WHO, 2008) estimated that more than two billion people about a quarter of the world are affected by anemia and about 29.4 percent of women of reproductive age have anemia. The majority of south Asian adolescent girls were anemic; for instance, anemia was detected among 70, 51.8, and 67.7 percent of adolescents in Bangladesh, India, and Nepal, respectively (UNICEF, 2002). In the further, adolescence anemia will be contributing to high maternal mortality, increased incidence of low birth weight, perinatal mortality, and fetal loss (Kulkarni *et. al.,* 2012).

Impact of Covid-19 on food security:

The pandemic has threatened India's food security landscape across all four indicators:

availability, access, stability, and utilization of resources. It could in turn further intensify the existing problem of malnutrition among women and children. The country-wide lockdown led to a sudden cessation of economic activity and triggered large-scale unemployment. According to a joint report by the International Labour Organization (ILO) and the Asian Development Bank (ADB), nearly 4.1 million Indians have lost their jobs during this time. People often adopt coping mechanisms such as purchasing less food, substituting wholesome food with less nutritious alternatives, and decreasing the number of meals eaten on a day-to-day basis to deal with the crisis and reduced incomes. A reduction in financial security risks increasing gaps in the intra-household distribution of resources, which could further negatively impact women in the household. Further, women account for 81 percent of the country's workforce employed in the informal sector. The pandemic's impacts also cut off their access to steady jobs and salaries.

The disruption of food supply chains, labor shortages, limited production, and restricted mobility also has a direct bearing on pregnant women's food and nutrition consumption. For instance, a shortage of fruits, vegetables, meat, fish, eggs, etc. could potentially compromise nutrient supply to pregnant women and new mothers. This, in turn, accelerates undernutrition and lowers immunity amid a pandemic, making them more prone to infections and diseases. COVID-19 has also substantially affected the network of government-run health and development centers, popularly known as Integrated Child Development Services (ICDS). These centers are responsible for providing food and primary healthcare, among others, to children below six years of age, and mothers ---especially those from low-income-families--- through *Anganwadi *workers.

Indicators of food and nutritional security:

Weingartner (2010) further developed a definition of food and nutrition security as a condition under which adequate food (quantity, quality, safety, socio-cultural acceptability) is available and accessible for and satisfactorily utilized by all individuals at all times to live a healthy and happy life. An important set of factors that should be considered as potential causes of undernutrition are those which might not be captured within a single layer of factors (Fig. 2), but cut across causal layers or derive from the interactions between several causes: population growth control and natural resource management, poverty and social inequalities, and the effects of macro-economic structural adjustment policies. Therefore, it is necessary to include agroecological indicators and macroeconomic indicators, such as international food prices, food price volatility, the degree of price transmission between international and national markets, as well as market and trade regulation, in causal analysis of under-or malnutrition.

The most commonly used Food Nutrition Security (FNS) indicators at different social levels according to the matrix found in National food availability depends on supply and demand. Therefore, data on the production of different food commodities, fertility rates, and the trends in the internal population should be reviewed to determine the national situation of food availability. Food prices and per capita food consumption are indicators for national food accessibility. The rates of stunting, wasting, and underweight in children, low Body Mass Index (BMI) in adults, and low birth weight are FNS impact indicators that designate the extent to which food is adequately being used and utilized and converted into a satisfactory national nutrition situation. Fluctuations in food prices and regional shortages of food availability or accessibility are sensitive indicators for national food and nutrition instability.

At the meso level delayed harvest time and reduced staple food production are indications of reduced food availability. Food prices are sensitive indicators for accessibility. Types of sewage disposal and diarrheal diseases (DD) rates provide information on the effectiveness of food utilization. The comparison between pre-and post-harvest food availability and accessibility as well as chronic energy deficiency of women (low BMI) indicate temporal food and nutrition insecurity. The lack of stored food and the consumption of wild foods are indicators for reduced food availability at the household level. A reduced number of meals per day and an increased rate of under-or unemployment may indicate low food accessibility. The appearance of wasting, goiter, or anemia among household members are outcome indicators of reduced food utilization at the micro-level, and finally, changes in pre-harvest food consumption practices and migration may be sensitive indicators for temporal food insecurity. Major food security indicators are The FAO Indicator of Undernourishment (FAOIU); The Global Hunger Index (GHI); The Global Food Security Index (GFSI); The Poverty and Hunger Index (PHI); The Hunger Reduction Commitment Index (HRCI); Anthropometric indicators (AI); The Diet Diversity Score (DDS); Medical and biomarker indicators (MBI).

Role of women in ensuring nutritional security:

Food & Nutritional security is one of the major issues of most developing countries. Therefore, it has been prioritized in the domestic economic policies of many developing countries and also in the agendas of many international organizations especially in the Food and Agriculture Organization (FAO). The FAO has recommended that such measures aim to: ensure that women have equal opportunities with men to own land; facilitate women's access to agricultural services tailoring such services to their needs; encourage the productions of food

crops through the use of incentives; promote the adoption of appropriate inputs and technology to free up Women's time for income-producing activities; improve the nutritional status of women and children; provide better employment and income-earning opportunities; promote women's organizations; review and re-orient government policies to ensure that the problems that constrain the role of women in food security are addressed. The UN Conference on Sustainable Development held in June 2012, known as Rio+20, also stressed the importance of the empowerment of women in rural areas as key players for improving agrarian and rural development as well as food and nutritional security. Moreover, the specific UN organizations for the fight against poverty and hunger, namely the FAO (International Food and Agriculture Organization of the United Nations), the IFAD (International Fund for Agricultural Development), and the WFP (World Food Programme), undertake initiatives which specifically highlight the important role of rural women in reducing hunger and poverty.

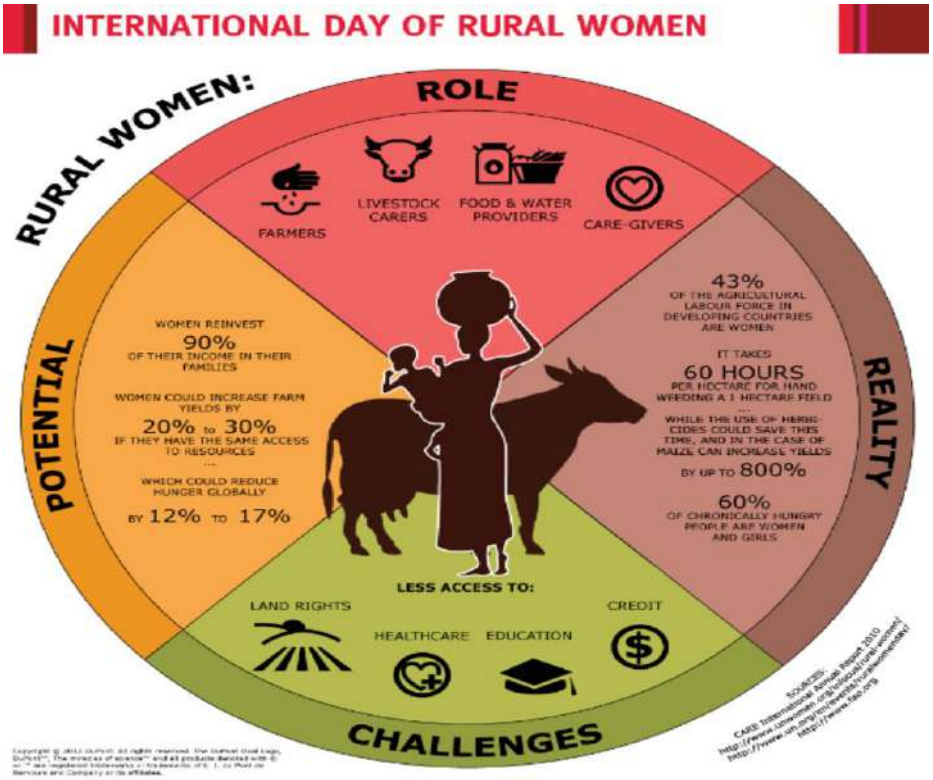

Fig.2 A conceptual framework of undernutrition (Black et al. 2008)

Women who live in rural areas represent 25 percent of the world's population and constitute an average of 43 percent of the workforce in developing countries. This percentage oscillates between 20 percent in South America and 50 percent in South-East Asia and sub-Saharan Africa. And it is precisely in such rural areas where the differences and difficulties suffered by women and girls are most acute. Yet similar inequalities also exist closer to home,

in Europe. A few statistics will suffice to prove this point: more than 80 percent of women living in the countryside collaborate with or assist their husbands, 28.7 percent of agricultural workers are women, and agricultural holdings run by women are 40 percent smaller than those run by men.

Reasons for food insecurity and malnutrition among women:

In many developing countries, the land is predominantly owned by men and transferred intergenerational to males. Therefore, women may lack access to land, water rights, and livestock. In addition, even when women can access land, lack of ownership creates a disincentive to invest time and resources into sustainable farming practices, which in turn lowers production and results in less income and food for the household. Women and girls do not receive adequate education and training opportunities. Education has proven to be an important tool to increase agricultural productivity and reduce poverty and malnutrition. However, girls in developing countries often have less access to basic education and women receive only five percent of agricultural extension services worldwide.

Food insecurity is at the heart of the international movement to overcome hunger and poverty. The first Millennium Development Goal (MDG) sets as its target the eradication of extreme poverty and hunger, with a target of halving the incidence of poverty and hunger by 2025. This research contributes to that process, by analyzing the connections among rural poverty, hunger, and education for rural people. Many studies using Demographic and Health surveys (DHS) find that hunger is highly correlated with educational deprivation. Moreover, the correlations are highest at the primary level, decreasing in strength with higher levels of education. Incoherence with the Capability Approach, which stresses education's active role in developing people's capabilities, these results suggest that to fight food insecurity, governments, international organizations, and civil society should invest more in the education sector, especially primary education for rural people. Greater investment in quality primary education is likely to make substantive progress possible towards the achievement of MDGs. With the concentration of population and poverty in rural areas in most low-income countries, education for rural people can be seen as a key factor for promoting overall national food security. Increasing educational participation will require substantially greater investments of resources and mobilization of political will at international, national, and local levels. The study aims at raising awareness primarily among policymakers outside education of the central role of education in fighting hunger and poverty. Women have less access to credit than men, as

well as less control over financial resources. This lack of credit limits their ability to purchase agricultural tools, seeds, fertilizers, or hire labor that could increase their crop production. (USAID's Office of Women in Development 1300 Pennsylvania Avenue, NW, Washington, DC 20523 www.usaid.gov/our_work/cross-cutting_programs/wid/index.html). Women often do not have the appropriate technology, tools, and inputs for farming productively. Studies in Burkina Faso, Kenya, Nigeria, and Zambia showed that due to differential control over resources, when men and women grew the same crop on individual plots, women were at a disadvantage. Most inputs, such as labor and fertilizer, went to the men's plots. Some experts estimate that if women had the same inputs as men, household agricultural output in sub-Saharan Africa could increase between 10 to 20 percent. Time is a major constraint for women. In many instances, women have to spend a great deal of time traveling on foot to collect water and firewood, preparing meals and feeding the family, and traveling between the home and fields, forcing them to make difficult trade-offs. Women's mobility may be constrained because they are tied to their homes and are the primary caretakers of children. They may also lack access to transportation and roads. Furthermore, women may be confronted with risks to their safety, especially in conflict and post-conflict environments; violence against women is a serious problem around the world. Households affected by HIV/AIDS have increased vulnerability to food insecurity. Illness due to HIV/AIDS impedes a family's capacity to grow food while their nutritional needs are even more critical. Additionally, burdens on women as caretakers are increased.

Strategies and policies for food and nutritional security:

To achieve food security at the household level to avoid families from malnutrition and hunger, many ways can be done. In the case of India, what the Indian government has done are good ways if, to some extent, we can maintain the policies and focus on nutrition not only to subsidy staple food. People not only need staple food to be secured, but they also need nutritious food with protein and vitamins to make it balance. First, we need to educate women about how to empower her household. It is imperative because women suffer from malnutrition explained above, and women are closer to children who also suffer negatively from food insecurity.

So, teach women and give them an education about food and nutrition would be suitable for food household security. Sidh (2011) also argues that "Mother's education is positively associated with better children education, health, and nutrition outcomes." In addition to

pregnant and lactating mothers, we can implement the program through socialization about maternal education the important of breastfeeding for babies, and the important of a pregnant mother get a sufficient amount of vitamins, iron, calcium, and other types of nutrition. This program can be done by local community development, NGO, or government program (Galhena et al. 2013, p. 5). We can solve the problem with rising food prices by creating a home garden. So, the household will still get the nutritional food they need, although they cannot buy them from the market. Galhena *et al.* (2013) define "Home gardens as a mixed cropping system that encompasses vegetables, fruits, plantation crops, spices, herbs, ornamental and medicinal plants as well as livestock that can serve as a supplementary source of food and income". Home gardening has been proven as a reliable source to supplement food and nutritional security at the household level (Upadhyay, 2011). Berbazuah (2013) believes that home gardening can help family income because home gardening can be developed into a small cottage industry. There should be the active involvement of women as well as men in the design of agriculture and nutrition programs.

Encourage property, divorce, and inheritance laws that allow women to hold title to land and provide a mechanism for enforcing the laws. Provide women and girls with access to primary education as well as training on agricultural production, resource management, and conservation. Ensure agricultural extension agents understand and consider the needs of women farmers, and recruit more female extension workers. Always facilitate lending to women entrepreneurs working in agriculture; make financial services more accessible to rural women. Provide rural women with greater mobility and market information by facilitating access to roads, transportation, and water and information technology services. Creating an enabling external food environment requires coherent policies across sectors that govern the food system. A wide range of policies across multiple sectors influences processes and costs associated with production, processing, transport, wholesale, and retail marketing practices of fruit and vegetables. While health actors have an interest in supporting the accessibility of affordable healthy foods – including fruit and vegetables– the health sector has little jurisdiction over the food supply chain. Engaging with food policymaking across sectors thus becomes an imperative for health policymakers, but one that is fraught with challenges due to existing policy incoherence. There is a need for win-win solutions for a food policy that identifies shared policy agendas between health and the sectors governing the food supply chain and creates mutually beneficial outcomes across sectors. This means that research must

engage with the existing policy and governance structures, and build capacity for change among public health practitioners.

India has favorable climatic conditions to produce a variety of fruit and vegetables and is the largest producer of fruits in the world and second-largest producer of vegetables after China. However, the majority is exported, with limited production for domestic consumption (Kusuma and Basavaraja, 2014, Vanitha *et al.*, 2014). Domestic supply also remains limited due to wastage, including high post-harvest losses, and costs to consumers are relatively high compared to less nutritionally dense foods (Sachdeva *et al.*, 2013, Rais and Sheoran, 2015). The Government of India has made significant investments in The National Food Security Act, which aims to provide subsidized food grains to two-thirds of the population of India (Government of India, 2013). The Act articulates the provision of food as a legal entitlement and leverages several existing food security programs, such as the Midday Meal Scheme, the Integrated Child Development Services (ICDS) scheme, and the Public Distribution System (PDS). However, the vast National Food Security Act structure distributes only rice, wheat, and coarse grains (millets) – not fruit and vegetables.

CONCLUSION

Women are responsible for half of the world's food production, and in most developing countries they produce between 60 and 80 percent of the food. Yet, women continue to be regarded as home producers or assistants on the farm, and not as farmers and economic agents on their merit. Women are responsible for nutrition in most homes, including the purchase and preparation of food. However, because of traditional norms, they often have limited access to education and control over resources. When allowed to manage household finances, studies show that women are more likely than men to spend on their family's nutritional needs, healthcare, and school fees for children. Therefore, empowering women to increase access to and control over resources is critical to attaining food and nutritional security in the developing world. Women, if educated and aware, can contribute more to the improvement of the health of their children by simple measures like good hygiene, exercise, and dietary habits. Women are responsible for 70–80 percent of the entire healthcare provided in India. Female healthcare providers can play an important role in educating society to recognize their health and nutrition needs. Women professionals and the empowerment of women at all levels are required for the improvement of the health and nutrition structure in India. Agricultural programs should ensure the needs and preferences of both men and women when developing and introducing new

varieties and technologies. Include gender-specific monitoring and evaluation indicators in food security programs. Also, provide training for agriculture and nutrition specialists on how to apply gender methodologies to the design and implementation of programs. Build local leadership and leverage relationships with government ministries and other institutions to create responsible food security policies that prevent crisis, integrating gender considerations into policies using evidence-based advocacy. Empowerment of women in India as an open-ended process aiming at the abolition of gender-based discrimination in all institutions and structures of the Indian society and also the participation of women in policy and decision making processes at private and public levels of assorted activities, qualified by all dyadic relations among mind, matter, politics of knowledge, gender politics, and poetics of lack and desire.

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FARMING SYSTEMS FOR NUTRITION (FSN) -A PATHWAY TO ADDRESS FOR HOUSEHOLD FOOD SECURITY TO COMBAT MALNUTRITION

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ABSTRACT

Despite the green, white, yellow, and blue revolutions in happened in India, the majority of its population is malnourished. Hidden hunger or micronutrient deficiency is prevalent among vulnerable groups such as pregnant and lactating women, infants and preschool children is in rural areas. To demonstrate the feasibility of agriculture-based remedy to malnutrition, MSSRF, Chennai demonstrating farming systems for nutrition models in six KVKs of Andhra Pradesh for validating the Farming System for Nutrition (FSN) approach. On-farm demonstrations of FSN is an interventional approach, conducted in KVK instructional farms which includes a combination of sustainable measures including advanced crop production practices, bio-fortification, promotion of nutrition gardens of fruits and vegetables, livestock and poultry development, small scale fisheries, and nutritional gardens as a stimulant for rendering consistent output of higher income and better nutrition along combined with nutrition awareness programs, especially to women. This resulted in a wide choice of cereals, pulses, nutritive vegetables which can enhance food diversity and ensure higher availability of nutritive vegetables to the households. The additional nutritional gain through FSN can be calibrated to ensure that the households get the recommended daily intake of nutrition. Accordingly, the FSN approach is evolved to provide nutritional security to every household. This paper discusses the importance of the FSN approach for household nutritional security to combat malnutrition.

Keywords: Farming systems for Nutrition (FSN), Hidden hunger, Household nutritional security

INTRODUCTION

Agriculture is a way of life and the major source of livelihood in India. After independence, sincere efforts were made to increase productivity in agriculture and allied sectors to feed its population. As a result, India has witnessed a green revolution in food grains, the white revolution in milk, the golden revolution in fruits and vegetables, the yellow revolution in oilseeds, and blue revolution in fisheries and looking forward to achieving rainbow revolution, in all the activities of agriculture and allied sectors including value addition. Despite all these revolutions, major sections of the Indian population are suffering

from nutritional deficiencies. The quality of food people consuming in rural areas is not meeting their nutrient requirements, so the food is deficient in micronutrients such as the vitamins and minerals that they need for their growth and development which is ultimately leading to hidden hunger or micronutrient deficiency. The consequence of malnutrition is caused by multiple factors such as small landholdings, lack of nutritional education, low purchasing power; lack of availability of nutrient foods, etc., hence a multipronged need to be devised to address the issue of malnutrition.

After fifty years of the green revolution in India, MS Swaminathan Research, Chennai Promoting Farming Systems for Nutrition (FSN) model by inclusion of agriculture and allied sectors with a main focus on the availability of nutrients to the entire farm family. MSSRF has been leading a study since mid-2013 to demonstrate the feasibility of an FSN approach under a research program on Leveraging Agriculture for Nutrition in South Asia (LANSA). According to Dr. M S Swaminathan, The father of the green revolution in India, the Farming Systems for Nutrition approach is defined as:

“The introduction of agricultural remedies to the nutritional maladies prevailing in an area through mainstreaming nutritional criteria in the selection of farming system components involving crops, animals and wherever feasible fish”.(Nagarajan et.al2014). It is an interventional approach that includes a combination of sustainable measures including advanced crop production practices, bio-fortification, promotion of nutrition gardens of fruits and vegetables, livestock and poultry development, and setting up of small-scale fisheries, combined with nutrition awareness, as a stimulant for rendering consistent output of higher income and better nutrition. Primarily, the approach calls for the promotion of location-specific farming systems that integrate arable farming, horticulture, backyard farming, and animal farming, feasible agricultural interventions to address the nutritional deficiencies of the household/community/location would have to be incorporated. In the words of M.S.

Swaminathan," the design of the farming system can include specific crop varieties that can address the identified deviancies. Sweet potato might provide vitamin A, drumstick tree (moringa olifera), and Amaranthus sp. Could address the lack of iron."(Rao and Swaminathan) In addition, the approach recognizes the need for other direct interventions to improve production and market linkages of nutritious crops- and indirect intentions- to improve women's empowerment, nutrition, education, drinking water, sanitation, and natural resource

management, along the pathway from agriculture to nutrition(Das et al.; Gillespie and Kadiyala, 2012; Shetty, 2015).

The objective is to address malnutrition in all its forms, viz. calorie deprivation, protein deficiency, and hidden hunger or micronutrient deficiencies.

The objectives of FSN

1. To encourage small and marginal farmers for implementing mixed farming in 1 acre so that they can meet the nutritional security.

2. To encourage farmers to address the problems of undernutrition and nutritional deficiencies by introducing biofortified varieties and nutrient-dense crops

The principle of FSN

The underlying principle of FSN is ensuring the availability, accessibility, and utilization of nutrient-dense foods to farm families for their nutritional security. Because Food Security encompasses 'Availability', 'Accessibility' and 'Utilization' which includes 'absorption' and bioavailability of food making it inclusive of 'Nutrition Security' (Rainer et al., 2000). Increasing food production alone cannot address the issue of malnutrition unless there is a nutrition focus and the poorest have access to sources of diversified and nutritious foods. Underlying the concept of FSN is a principle that household

Food production contributes positively to the diets of farm families, particularly smallholders. In other words, a diversified food production system has the potential to diversify the consumption basket of farm families. The FSN model is a location-specific, inclusive model based on the resource endowments and specific environment, to address the nutritional needs of families. Given that FSN is a flexible model that takes into account the nature of resource endowment, specificities in the environment, and nutritional problems, ideally, a farmer can decide on the possible combinations of different components of FSN depending on his/her location. Nutrition literacy has to be an integral component of the FSN approach, as an understanding and acceptance of the concept is crucial for sustained practice.

The main focus of FSN

Farming systems for nutrition broadly focuses on macro (Carbohydrates, Proteins, and fats) and micro (vitamins and minerals) nutrient requirements thus ensure the nutritional requirement of the farm families. FSN will help to not only improve the yield of crops but also mainstream the nutrition dimension in the choice of crops. To enable farmers to identify crops,

which can provide specific nutrients like vitamin A, a Genetic Garden of Biofortified Crops is being established as part of FSN.

Examples of FSN:

Some examples of farming systems are:

1) Crop Husbandry with different nutrient-dense/nutrient rich crop combinations+ Nutri garden
2) Crop Husbandry + Livestock+ Nutri garden
3) Crop Husbandry + Livestock + Poultry/sheep+ Nutri garden
4) Crop Husbandry + Horticulture + Sericulture + Nutri garden
5) Crop Husbandry (Rice) + Fish culture+ Nutri garden
6) Crop Husbandry (Rice) + Fish + Mushroom+ Nutri garden
7) Crop Husbandry + Fishery + Duckery + Poultry+ Nutri garden

Based on the feasibility different Nutri-sensitive agriculture models can be taken up by farm families to guarantee the nutritional security of their members.

Crop Husbandry:

The crop-based interventions under the FSN approach focus on the promotion of nutrient-dense millets like (sorghum, pearl millet, foxtail millet, etc..,) pulses crop diversification through varietal substitution and crop intensification for small and marginal landholders. Varietal substitution through the introduction of nutrient-dense improved package of practices to increase the production and productivity, thereby increasing nutrient availability per farm household. Like, wise crop intensification through intercropping systems will aim in increasing land-use efficiency and generating higher monetary income.

Animal Husbandry:

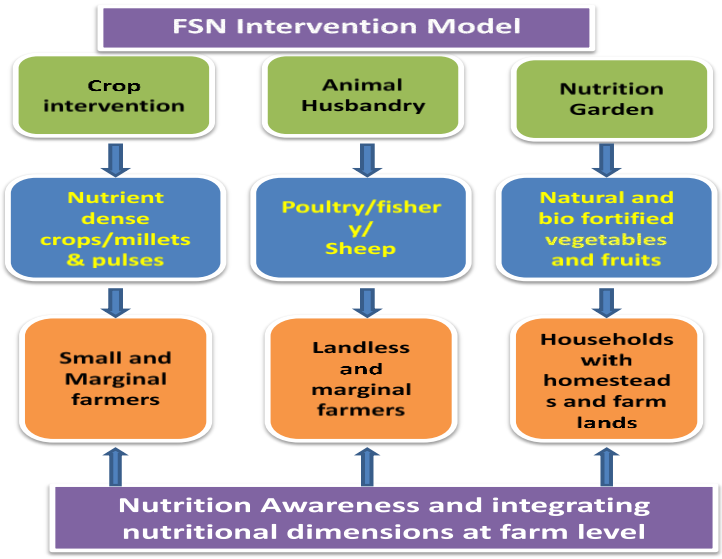
To improve the health and productivity of livestock and fodder for livestock are the important component of this approach. Poultry farming will be introduced for landless and marginal farmer households as it provides livelihood support and enhances in consumption of quality protein.

Nutrition Garden:

The major objective of promoting Nutri gardens is to increase availability and access to Nutri-dense vegetables and fruits for household consumption, homestead Nutri-gardens can

make a critical contribution to diversifying the food basket of the household. It will enhance the consumption of fresh vegetables and fruits which are rich sources of both micro and macronutrients and can majority address the problem of micronutrient problems.

The expected results of FSN are: Converting agriculture into Nutri - sensitive and income-generating agriculture. The pathways through which agriculture can influence nutrition outcomes to cover four broad areas: (1) consumption of own production or agriculture as a source of food; (2) income from agriculture; (3) food prices; and (4) aspects related to genders such as the status of women in agriculture and women's nutritional status that directly or indirectly influence food, nutrition, and health. Of the different linkages that prevail between agriculture and nutrition, 'cultivation and consumption of own production' is a pathway that can bring about direct changes in the food production system enhancing availability and access to food for farming households, in particular the smallholders.



CONCLUSION

Agriculture is the major stay for the majority of rural households in India. Due to the cereal-based cropping system, micronutrient deficiency or hidden hunger is more predominant among vulnerable groups such as infants, preschool children, adolescent girls, pregnant and lactating women in farm families. Hence, the promotion of Nutri-sensitive agriculture programs or initiatives like farming Systems for Nutrition (FSN) addresses the challenges related to malnutrition.

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Access to Assets, Recourses and Knowledge: Policies and Strategies

CONSTRAINTS FACED BY THE WOMEN ORGANIC FARMERS IN PRODUCTION OF VERMICOMPOST IN VILLAGE TIKE OF RATNAGIRI DISTRICT OF MAHARASHTRA STATE

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ABSTRACT

Women farmers are invisible as far as the state and society are concerned. They perform most of the 'big jobs' like sowing and harvesting, yet, their access to resources is less than that of men. To accelerate the pace of growth in India's agricultural sector, there is a need to bridge this gap and give equal access to men and women (Munshi, 2017). Indiscriminate use of chemical fertilizer causes several problems on the farm as well as the outside farm. Chemical fertilizers deteriorate the fertility of the soil and now our production is stagnated and many efforts are failed to increase productivity and leads to health hazards (Kharmale, 2006). The worldwide worry for protecting the environment from human usage and consciousness of socio-economic peaky effects of the use of chemical fertilizers and pesticides has to lead to thinking of alternate ways of agricultural production like organic farming. Organic farming is a farming method that involves cultivating and nurturing crops without the use of synthetic-based fertilizers and pesticides. Inorganic manures, vermicompost is the highly efficient fertilizer that is made from farm waste and involves advantages of an increase in crop production and improves the quality of agricultural products (Kale *et, al*., 2011). Keeping in view all of the above the present study entitled, "Constraints Faced by the Women Organic Farmers in Preparation of Vermicompost in Village Tike of Ratnagiri District of Maharashtra State" was conducted. The study was conducted in the village Tike of Ratnagiri block of Ratnagiri district of Maharashtra. List of well-functioning groups of the organic farmers working under the central Govt. scheme "Paramparagat Krishi Vikas Yojana" running through Agricultural Technology Management Agency (ATMA) was obtained from ATMA Ratnagiri. The selection of the village was made purposively as a farm women's group working under this scheme in the village Tike was the only group in the district. The results of the study concluded that the majority of the respondents 96.00 percent expressed that lack of organized market facility as the most severe constraint, followed by moisture and pH of bedding material and lack of quality raw material for vermicomposting by 84.00 percent 64.00 percent respondents respectively. Lack of scientific knowledge, inadequate training facility, and lack of extension contact was reported by 48.00, 46.00, and 42.00 percent of the respondents.

Keywords: Women farmers, vermicompost and constraints

INTRODUCTION

Women farmers are invisible as far as the state and society are concerned. They perform most of the 'big jobs' like sowing and harvesting, yet, their access to resources is less than that of men. To accelerate the pace of growth in India's agricultural sector, there is a need to bridge

this gap and give equal access to men and women (Munshi, 2017). The aim of the modern farming system has to maximize production through the use of increased quantities of external inputs such as chemical fertilizers without due consideration to their ill effects. Indiscriminate use of chemical fertilizer causes several problems on the farm as well as the outside farm. Chemical fertilizers deteriorate the fertility of the soil and now our production is stagnated and many efforts are failed to increase productivity and leads to health hazards (Kharmale, 2006). According to the International Federation of Organic Agriculture Movement (IFOAM), the goal of organic farming is the sustainable production of quality food with little or no effect on the environment. This goal has not been fully achieved by current agricultural practices i.e. conventional farming. Therefore there is a need to encourage organic farming which is capable of providing solutions to the current agricultural problems and help to achieve optimal production of quality food sustainably (IFOAM, 2007). The growth of organic farming in India is relatively slower although it is the best solution to the environmental problems such as climate change, health, and sustainability issues that India is facing today due to conventional farming (Rifat *et*.al.,2019). The Government of India and many State Governments have felt it necessary to promote organic farming in a big way. In this direction Government of India launched "Paramparagat Krishi Vikas Yojana".

Organic farming takes the best of these and combines them with modern scientific knowledge. According to Unilever (2003), the challenge of using natural resources sustainably is fundamentally a social one, and decisions made on the farm have effects on the local community. Vermicompost is a safe, non-polluting, and one of the most economical and convenient ways of recycling organic waste. The vermicompost technology not only gives vermicompost but also gives allied products like vermiwash, vermicast, etc. The vermiwash has importance for spraying on crops and also help to fetch a good price for its products in the market. Inorganic manures, vermicompost is the highly efficient fertilizer that is made from farm waste and involves advantages of an increase in crop production and improves the quality of agricultural products (Kale *et*. al., 2011). Keeping in view all of the above the present study entitled, "Constraints faced by the organic women farmers in preparation of vermicompost" was conducted.

METHODOLOGY

The study was conducted in the village Tike of Ratnagiri taluka of Ratnagiri district of Maharashtra. List of well-functioning groups of the organic farmers working under the central

Govt. scheme “Paramparagat Krishi Vikas Yojana” running through Agricultural Technology Management Agency was obtained from ATMA Ratnagiri. The selection of the village was made purposively as a farm women's group working under this scheme in the village Tike was the only group in the district comprising only women as the farmers. All the Fifty farm women in the group were selected as respondents. The selected respondents were interviewed personally with the help of a semi-structured interview schedule to get relevant information and to draw a conclusion.

RESULTS AND DISCUSSION

A study about Constraints Faced by the women organic farmers in preparation for Vermicompost was conducted. The results obtained are presented in Table1.

Table-1 Distribution of the respondents according to constraints faced by them in preparation of Vermicompost.

(N=50)

SL.No	Constraints	Frequency (50)	Percentage	Rank
1	Inadequate training facility	23	46.00	V
2	Lack of quality raw material	32	64.00	III
3	Lack of relevant literature	20	40.00	VII
4	Lack of organized markets	48	96.00	I
5	Lack of extension contact	21	42.00	VI
6	Moisture and pH of bedding material	42	84.00	II
7	Lack of scientific knowledge	24	48.00	IV
8	Attack of insect-pest and diseases	19	38.00	VIII

The data in the table-1 reveals that the majority of the respondents 96.00 percent expressed that lack of organized market facility as the most severe constraint, followed by moisture and pH of bedding material and lack of quality raw material for vermicomposting by 84.00 percent 64.00 percent respondents respectively. Lack of scientific knowledge, inadequate training facility, and lack of extension contact was reported by 48.00, 46.00, and 42.00 percent of the respondents. Lack of relevant literature 40.00 percent and attack of insect-pest and diseases 38.00 percent were the other constraints expressed by the respondents. The findings are in line with the finding reported by (Kalita *et*.al., 2017).

CONCLUSION

From the result of the present investigation, it can be concluded that the majority of respondents had reported a lack of organized market facility for vermicompost as the main constraint. Farm women reported difficulty in selling vermicompost due to a lack of market information. The lack of awareness among people is the main hurdle in selling vermicompost. These constraints need to be overcome by appropriate intervention. Information regarding moisture and pH of bedding material was not known to many respondents and hence the extension agencies can take a notice of this and give special attention to improvement in these areas. Extension workers through their regular contact try to provide detailed information and guide them to solve their problems.

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AN EMPIRICAL STUDY ON GENDER DIFFERENCES IN THE ACCESS TO ECONOMIC AND PRODUCTIVE RESOURCES IN THE FARM-HOUSEHOLDS OF MANIPUR

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ABSTRACT

Manipuri women, hailed for their active and evidential participation in the socio-economic activities in the public sphere are often presumed to be equitable with men. But despite the speculation within a household, women's access to economic-productive resources and decision-making is heavily influenced by their reproductive work, their social roles, and norms. Gender analysis had been employed to try and explore if Manipuri women and men are equitable in terms of access to, ownership of, and decision making over economic resources and productive resources within a household. The sample population consisted of 69 farm households wherein the primary male and female of the same house were taken as respondents for the study which totaled to a sample size of 138 respondents. The study revealed gender disparity in terms of ownership and access to productive resources. But with regards to major economic resources patterns of joint decision making could be observed. The major implication that was derived from the study was that the household allocation and access to resources especially in terms of farm resources followed a gendered pattern where the primary male had major control over such resources even though women were found to be more actively participating in agricultural activities. This pattern may cause certain delays and inefficient utilization of resources and further act as an impediment towards women from realizing as well as in utilizing the ulterior capabilities.

Keywords: Gender differences, access to the resource, agriculture, farm-households

INTRODUCTION

The manifestation of various women's movements such as the Suffrage Moment and the rise of the western born waves of feminism with the definitive motive of seeking women's human rights and gender equality, gender roles ascribed by the society to men and women have changed over time as an aftereffect of these feminist movements. But these changes though profound in the western countries, mostly the places where these movements had originated, weren't so in the developing countries and the underdeveloped third world countries. The women's movements had minimal success in bringing about changes in the male hegemonic societies of the middle- east, the Asian, and the African nations. The atrocity of gender inequality is much severe in these countries as women are still not given the equality and fairness that they deserve, they are still being excluded socially, economically, and politically

leaving them dependent on men.

Indifferent from the other developing and under-developing countries the western feminist movement had a minimal influence on the social issues and structure of our country India. The movements gave birth to only a handful of sporadic Indian feminist movements, which failed to achieve what they had sought to achieve which is equality and inclusion of women in all socio-economic and political spheres on a larger scale. Indian society as of now is still highly patriarchal and androcentric. Men are still the dominant, the hegemon, and the breadwinners while women are stereotyped as the weaker sex, the support, and the caregiver.

Although, over the past few decades' access to education for Indian women has increased and that gender disparity in terms of education had been narrowed down but women continue to be excluded, underrepresented, and remains unrecognized in social, economic, and political domains, which shows the inadequate attention towards inclusive growth and unequal gender relations. Also, gender biases due to patriarchal culture and tradition continue to exist within the household, impacting women's lives in the public and private sphere (IDSK, 2015). Besides, they have increasingly stayed away from employment because even when the Indian economy grew at a healthy average of about 7 percent, there was a decline in female participation in the country's labor force from over 35 percent to 25percent (ILO, 2014).

A reason for the decline may be the underrepresentation of women in the workforce, even though women's average contribution in the workforce in sectors like agriculture is estimated at 55 percent to 66 percent of the total labor with percentages, much higher in certain regions. The underrepresentation maybe because the works and tasks taken up by women are largely uneconomical and unmarketable. Also as per Rao (2012) most women in India work and contribute to the economy in one form or another, much of their work is not documented or accounted for in official statistics. Women plow fields and harvest crops while working on farms; women weave and make handicrafts while working in household industries; women sell food and gather wood while working in the informal sector. Additionally, women are traditionally responsible for the daily household chores (e.g. cooking, fetching water, and looking after children) which are uneconomical and unmarketable regardless of which no or insignificant efforts are being made to appropriately account for their contribution, nor do our policymakers have the vision to appreciate the importance of women for sustainable development of the country's economy.

This goes on to show that inequality is still prevalent in our society and that it started from

the deprivation of women from participating in economic activities and access to economic resources, the male dominance and hegemony over women in the social framework of the country, the under-representation of women in the workforce and failure to give them their deserved recognition for their contribution towards the development and alleviation of rural poverty through their unpaid care and reproductive work.

What ought to be remembered is that gender is a social construct and is interwoven with the culture and tradition of a community, that the roles and norms ascribed may have ethnocultural variations. In a multi-cultural, multi-ethnic country such as India, the social- perception towards gender issues and roles widely vary. As can be seen, women from different regions enjoy different levels of status and statures.

Women in the North-Eastern region when compared with their counterparts in other parts of the country, are often portrayed as enjoying greater freedom concerning their mobility and the absence of certain practices such as dowry or obligatory wearing of burqas (Mahanta, & Nayak, 2013). Similar is the case in Manipur where women are hailed for their active and evidential participation in the socio-economic activities in the public sphere are often presumed to be equitable with men in terms of participation in economic-productive activities and access to resources. The very existence of the all-women market, "The Ima Market" in the state is often considered as a symbol for women's empowerment, a symbol for women of the state enjoying higher access to the market and greater involvement in economic activities. Manipur is indeed a state where women dominate the market, a state where women do not hide behind the veil but participated in social, political, and economic activities. As per the 2011 census, Manipur had a total workforce solely made up of 43.32 percent women. The main and marginal workers among females constitute 42.49 percent and 57.51 percent of the total female workers respectively. Moreover, the female literacy rate of Manipur rose from 60.50 percent in 2001 to70.26 percent in 2011 (GoM, 2016). These facts surely portray a significant contribution of Manipuri women towards the transformation of the state in the socioeconomic domain. This often led people to conclude that women in Manipur are equitable with men be it in terms of access to resources, finances, or social participation. However, equality is multifaceted and this assumption may be a misconception, at least in the household sphere were unlike the public sphere as women's power over and participation over/in economic-productive resources, activities, and decision making are heavily influenced by their reproductive work, their social roles, and norms.

Khetrimayum, (2004), in his article, commented that the society in Manipur is still engulfed

by the patriarchal system. Women don't have much say in the decision-making process. Their representations both in the secondary and tertiary sectors are quite minimal. The preference for male children is still prevalent. There are certain rituals where women's involvements are considered profane and restricted their participation. Women produce children; they are mothers and wives; they do the cooking, mending, sewing, and washing; they take care of men and are subordinate to male authority; they are largely excluded from high-status occupations and positions of power. In terms of the reward of prestige, wealth, and power attached to gender roles, women almost invariably come off worst.

Regardless of all the societal barriers and constraints imposed upon them, women are the backbone of agricultural activities in Manipur. Women are extensively involved in agricultural activities. Female participation in the agricultural system varies with the status and land ownership. Women's roles involved from managers to the landless laborer. Women have been the primary seed keepers, processors. They have been both the experts and producers of food, from seed to the kitchen. Women carry the laborious work burden in agriculture. Women mostly do the transplant, weeding, and harvesting in Manipur. Women play a significant role in agricultural and allied fields' development including crop production, livestock production, horticulture, post-harvest operations, agro-forestry, fisheries, etc. in Manipur. The nature and extent of women's involvement in the workforce vary from region to region. (Devi and Singh, 2015)

Though figures shown in the census are quite suggestive of the fact that women in Manipur enjoy a higher level of access to education and a higher level of economic freedom, it cannot be concluded that Manipuri women are equitable and are at par with their male counterparts. As most of the women's contributions towards the household economy are not monetized and their involvement in the household decision making and power over the utilization of economic resources are also not well defined and, in most cases, limited by societal norms. Furthermore, it is a common perception that women in Manipur enjoy a relatively higher level of autonomy and hence, enjoy greater access to economic and productive resources but no study has been conducted in the state to assess the gender differences in the involvement of farm-household activities. Moreover, it is imperative to understand the gender dynamics and relations of farm-households as it is the key to solve the issues of gender imbalance in the involvement in economic activities and access to assets. Similarly, a better understanding of the gender relations and differences in economic activities in farm-households is important for further improvement of the society as a whole. Therefore, with these views, the study was taken up with the hopes that it will enlighten and disclose

the gender differences that these farm women and men have.

METHODOLOGY

The study was conducted in the Imphal West district of Manipur. Imphal West was selected purposively out of the hitherto 9 districts of the state as the district has the highest female literacy rate and comparatively higher female labor force participation. The sex ratio of the district is 1031 females for every 1000 males and is well above the state sex ratio of 985. There are two Community and Rural Development Blocks in Imphal West. Two villages each were selected randomly from each of the two blocks. 69 farm households were randomly selected from the four villages. For intra-household comparison, the primary male and primary female members of each of the selected households were taken as respondents. Thus a total of 138 respondents constituted the sample of the study. Data were collected using a pre-tested interview schedule.

The extent of participation in agricultural activities was examined separately for both the male and female respondents, control and decision-making were examined in four important areas: Control and decision over expenditure, Income and savings, Access to and control over credit and ownership, and decision over household assets. Mann Whitney U test was used to find out the significant differences wherever necessary.

RESULTS AND DISCUSSION

The summary of the significant findings of the study is presented below:

a) Participation in agricultural activities

In this section, the extent of participation in farm and agricultural-related activities was examined. Since rice cultivation is the major farming activity in the study area, farm activities are broadly categorized into two categories; rice farming and other farm activities. Seven main areas of rice farming were identified and the extent of participation of each of the two categories of respondents is presented in table 1. In terms of the extent of participation female respondents were found to have a higher extent of participation in most rice farming activities as compared to the male respondents. Through the differences in the extent of participation between the male and female respondents were not much pronounced except in the case of irrigation and pest management, indicating that these two activities are man's responsibilities. If we consider the overall scenario, the participation level of the two categories remains almost the same and somewhat low at around thirty percent. This is because the majority of the operations were

undertaken jointly with the participation of families, friends, or hired labor. The other farm activities considered for the study were vegetable cultivation, small livestock management, large livestock management, fisheries, and food processing. Detailed findings are presented 2.

In vegetable cultivation, the extent of participation by male and female respondents was relatively much higher as compared to other activities and the highest extent of participation was observed in male respondents. Regarding small livestock management, the participation of women was somewhat higher than that of males. Small livestock is often taken care of by women with much help from other family members mostly children. For large livestock, the extent of participation was less as the sample households had less ownership of large livestock animals. Even fishery was less practiced. Some female respondents reported being practicing food processing like drying of chilies, turmeric, etc.

Table 1: Extent of participation in rice farming

Sl. No.	Agricultural activities	EXTENT OF PARTICIPATION (Percentage mean score)		Mann U Test
		FEMALE (n=69)	MALE (n=69)	U value
1	Seed selection	36.96	35.51	2268.00
2	Sowing and nursery management	37.68	32.61	2151.00
3	Land preparation	36.96	32.61	2151.00
4	Intercultural activities	36.96	32.61	2219.00
5	Irrigation	0.00	2.90	2242.00*
6	Pest management	6.52	18.12	1948.50**
7	Harvesting	36.96	34.06	2242.50
8	Storage	36.96	36.23	2346.00

Table 2: Extent of participation in other farm activities

Sl. No.	Agricultural activities	EXTENT OF PARTICIPATION (Percentage mean score)		Mann U Test
		FEMALE (n=69)	MALE (n=69)	U value
1	Vegetable cultivation	43.48	60.14	2270.50

2	Small livestock management	21.74	18.84	2264.50
3	Large livestock management	10.14	10.87	2346.00
4	Fisheries	3.62	5.07	2378.00
5	Food processing	2.90	0.00	2264.50
6	Vegetable cultivation	43.48	60.14	2270.50

b) Control and decision over income and saving

Table. 3 and Figure. 1 earning and managing money were included in recognition of the notion that access to cash can be a source of power within families (Dolan, 2001). A common assumption in gender studies is that the ability to earn one's income is likely to enhance a woman's options (Doss, 2013), so we needed to identify the differences in the income level and capabilities to manage the individually earned income. As can be seen, female respondents had a lower average annual income of Rs. 66, 264 while the minimum and maximum annual income ranging from non to Rs. 2, 36, 000. Male respondents had a higher average annual income, Rs. 1, 61, 684 with the minimum and maximum income ranging from non to Rs. 4, 70, 000. The huge differences in terms of income highlight the differences in terms of access to higher-paying economic activities. The resulting gender gap in income may be resonated with the fact that women are often left behind in the local limiting their opportunities to explore and their ability to participate in higher-paying cosmopolite economic activities.

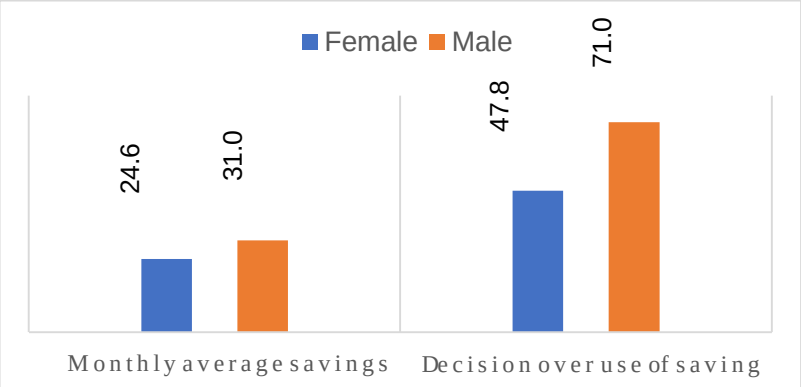
Table 3: Annual income of the respondents

	Parameters	**Female (n=69)**	**Male (n=69)**
Annual income (in Rupees)	Mean	66264.54	161684.06
	Min	0.00	0.00
	Max	236000.00	470000.00

Male respondents also had a higher amount of saving with an average monthly saving of 31.01 percent of their income while female respondents had an average of 24.64 percent. This may be due to the reason those male respondents had higher-paying jobs which added to their increased saving capability. Furthermore, 71.01 percent and 47.83 percent of the male and female respondents respectively, made some decisions over the use of their savings. The findings disclose the gender differences in the household use and control of savings in terms of decision making wherein the presence of a male family head a women's autonomy is highly

reduced as the majority of the decisions over the use of savings is made by the male head of the household. Furthermore, the lower-income level of the female respondents is an indication of disparity in availing economic opportunities, as these females unlike their male counterparts were largely confined to localized and low-paying economic activities.

Figure 1 – Monthly average saving and decision overuse of the savings



c) Control and decision over expenditure

Figure 2 portrays the decision-making pattern within a household regarding the various facets of expenditure. It was observed that the extent of participation in decision making was higher for women in the items of expenditure which had a relatively smaller expense like food (71.88%), clothing (70.14%), social expenditure (68.70%), and religious expenditure (79.71%). On the other hand, male respondents were found to be more involved in decision-making over the expenditure on items that are associated with higher investment and larger stakes like education (76.53%) and health (74.78%). In addition to this, the extent of participation in the decision-making process followed a gendered pattern as females made most of the decisions over the expenses relating to household requirements while male respondents were more involved in decisions relating to expenses on a peripheral developmental cause such as education and health.

Moreover, there were significant differences in the decision-making input between female and male respondents in all areas of expenditure except livestock. These results were in fact, the most unsurprising. In all study villages, there was a statistically significant tendency for men to claim more involvement in decision-making about education, health, entertainment, and agriculture input. While the decision input of females was higher in food, clothing, household, religious and social expenditures. These results indicated a gendercides decision-making pattern over expenditure because areas like food, clothing, household, religious and

social expenditures were women's domain while decisions on education health, agriculture inputs were male's domain and these differences are pronounced in male-headed households.

Table 4: Decision making over expenditure

Sl. No	Items of Expenditure	The extent of participation (percentage)		Mann U test
		FEMALE (n= 69)	MALE (n=69)	U-value
1	Food	71.88	59.42	**1310.00****
2	Education	60.58	76.23	**1153.00****
3	Clothing	70.14	62.32	**1632.50****
4	Health	59.71	74.78	**1092.00****
5	Entertainment	54.20	66.96	**1531.00****
6	Agriculture input	44.64	82.61	**505.50****
7	Livestock	46.09	51.30	**2103.00**
8	Household	58.84	69.86	**1397.00****
9	Social expenditure	68.70	62.03	**1804.00****
10	Religious expenditure	79.71	45.22	**456.50****

d) Access to and control over credit

The respondents despite having their saving accounts opened in a financial institution didn't avail of the credit facilities available in the institution. Because most of the respondents (59.42 percent female and 60.87 percent male) were found to avail credits from relatives and friends on a basis of group micro-financing or individual credit. On the other hand, only 2.90 percent of the female and male respondents accessed the credit facilities from the institutions. On the subject of decision over procurement of credit female and male respondents were found to made decisions jointly with additional decision inputs given bythe other members of the family which is why the percentages of sole decision over credit are low and not reflected.

Table 5: Source of credit

Source of credit	FEMALE (n= 69)	MALE (n=69)
The non-governmental organization (NGO)	2.90	2.90
Informal lender	13.04	11.59
Formal lender	2.90	2.90
Friends or relatives	59.42	60.87

Group based micro-finance	0.00	0.00

Table 6: Decision overuse of the procured credit

Use of credit	FEMALE (n= 69)		MALE (n=69)	
	Self	Joint	Self	Joint
The non-governmental organization (NGO)	0.00	2.90	0.00	2.90
Informal lender	2.90	7.25	1.45	10.14
Formal lender	0.00	2.90	2.90	0.00
Friends or relatives	2.90	42.03	2.90	50.72
Group based micro-finance	0.00	0.00	0.00	0.00

e) Ownership and control over household assets

The ownership and control of household productive assets were examined with a conception that ownership of productive assets opens up a wider economic opportunity and increases the capability of a person to participate in household economic activities. The results though expected, revealed a gendered pattern in the ownership of the assets and that the ownership and control varied according to the type of the assets and according to how these assets were procured. For instance, female respondents had the highest ownership to assets such as non-farm business assets like handloom and weaving equipment, large durable assets, and small durable assets with 69.57 percent, 39.19 percent, and 82.61 percent of the respondents having ownership to these assets. The reason being that these assets were gifted to the female respondents by their maternal at the time of their marriage. While male respondents had relatively higher ownership of assets like agricultural land, farm equipment, and residential land with 53.62 percent, 81.16 percent, and 84.06 percent of the respondents having ownership of these assets respectively, these assets were directly inherited from the forefathers. The findings could be interlinked with the fact that the differences in the type of economic activities involved by the respondents differed according to the type of assets on which they had ownership. Especially in the case of females, since they had ownership of non-farm business assets viz. the handloom equipment, they could fully participate in weaving and other handloom activities as a way for generating income without anyone's accord or consent. Likewise, male respondents confined their key decision-making role in the agricultural sphere because of their inherited ownership of agricultural land.

Table 7: Ownership of productive assets

Ownership of productive assets	FEMALE (n= 69)	MALE (n=69)
Agricultural land	4.35	53.62
Large livestock	2.90	6.52
Small livestock	8.70	2.90
Fish pond and fishing equipment	0.00	2.90
Farm equipment	1.45	75.36
Farm mechanized equipment	0.00	5.80
Non-farm business equipment	69.57	5.80
House	5.80	81.16
Large durables assets	39.13	5.80
Small durables assets	82.61	7.25
Mobile phone	37.68	92.75
Residential land	4.35	84.06
Transport	7.25	86.96

The decision-making scenario over buying and selling of productive assets revealed that most of the decisions over the purchase and sales of the productive assets are made jointly. But in the comparison between primary females and primary males of the same household, it was found that men made more decisions exclusively than the female members. Almost half of the male respondents (47.83%) made most of the decisions over buying and selling of the farm equipment, also more than half of the male respondents (56.51%) made some decisions over the buying and selling of mobile phones, similarly, 39.16 percent of the male made sole decisions over the purchase and sales of transport means. While in the case of female respondents, they made most of the decisions jointly with few low percentages of exclusively made decisions. The only assets for which females made sole decisions were in the case of non-farm business assets (32.61%) and small durables (25.36%) the reason being that they had sole ownership over these assets as both of these were given to them by the maternal family at the time of their marriage thereby giving them control over these assets.

Table 8: Decision over sales and purchases of assets

Decision on sales and purchase	FEMALE (n= 69)	MALE (n=69)	JOINT
Agricultural land	0.00	7.24	53.63

Large livestock	0.00	0.00	20.28
Small livestock	7.24	1.44	33.33
Fishery	0.00	1.44	10.14
Farm equipment	1.44	44.92	46.37
Farm mechanized	0.00	5.79	1.44
Non- farm equipment	28.98	5.79	43.47
House	1.44	5.79	88.40
Large durables	2.89	2.89	85.50
Small durables	23.18	7.24	73.91
Cell phone	8.69	65.17	31.88
Residential land	0.00	10.14	79.01
Transport	0.00	40.57	60.86

CONCLUSION

A household is an institution bounded by culture and tradition. It is a place where women's participation in economic-productive activities and decision-making is heavily influenced by their reproductive work, their social roles, and norms. This paper tried to unravel the extent of gender differences in an intra-household level to see if women or men are lagging from their counterparts, to see if they could make their own household decision or earn their income and manage it themselves.

The gender analysis conducted across the four selected villages in the Imphal West district of Manipur revealed that there were gender differences in the participation in agricultural activities with the female having a relatively higher rate of participation in farm activities. The decision-making pattern also uncovered the expected gendered pattern in the sampled households, for instance, females took major responsibilities in managing the expenditures relating to household needs like food, clothing, and religious expenses while male respondents were more involved in agricultural, health, and educational expenses. Interestingly, the study on ownership and control over household assets implicated the severity of inequality and customary laws in terms of land ownership with 53.62 percent of the male respondents having ownership of land through inheritance while only 4.35 percent of the female had the ownership. The discriminatory ownership of land affected the decision-making

capability of the female respondents regarding the use of the assets for economic and productive activities. Despite having more involvement in agricultural and farming activities women lack ownership and hence they had lower autonomy regarding agricultural-related issues.

On the subject of income-earning and management of savings female respondents had a lower average annual income of Rs. 66264.54 as well as lower average monthly savings of 24.64 percent while the male had Rs.1,61,684.06 and 31.01 percent respectively. What can be deduced from the lower income is the involvement of rural women in low-paying economic activities such as handloom and weaving. Unlike men who went out of their locality to earn income women stayed at home cutting them off from availing better economic opportunities.

The results of the gender analysis were astounding as it clearly showed how limited these women were, how their societal roles bounded them to the roots of their houses denying them from their involvement and access in high paying cosmopolite economic activities, from utilizing their skills, from realizing their full potential and all in all leaving them dependent on the decisions and economic allocations made by the primary male member. This demands policymakers to formulate plans directed towards meeting the needs of women to reduce their workload. Additionally, policymakers and the masses alike need to be educated on the existing gender issues to sensitize them and to instill in them the importance of equality and the need to change the whole gender division of labor and customary laws of ownership of inheritable properties within a household.

To sum up, gender equality, empowerment, and gender differences despite being some of the most talks about matters are often taken lightly and often ignored by the national indicators. But in fact, it was only recently when the real efforts and drive towards delivering equality in terms of participation and access to the most basic economic and productive resources began. Furthermore, agriculture is such a sector that is mostly confined to the rural society, is entangled with the social norms, culture, and tradition. It would be an injustice if more researches aren't conducted targeting the problem of marginalized agricultural women.

Truthfully being said social research especially on gender issues may not be generalizable as the data gathered depend on the respondent's perception making it highly susceptible to personal bias, for instance, women's under-reporting of their authority having been noted in numerous past quantitative and qualitative studies (Becker *et al.*, 2006) and

because of the variations in the gender roles, culture, and tradition prevailing in the locale of the study. Even though with the possibilities of ethnocultural variation it would not be wise for us to forget that gender differences and inequality was indeed disclosed in Manipur, a place hailed for empowering women. Highlighting the fact that interventions are indeed needed to closing the gender differences that exist in society. If not, this pattern may cause certain delays and inefficient utilization of resources and further act as an impediment towards women from realizing as well as in utilizing the ulterior capabilities.

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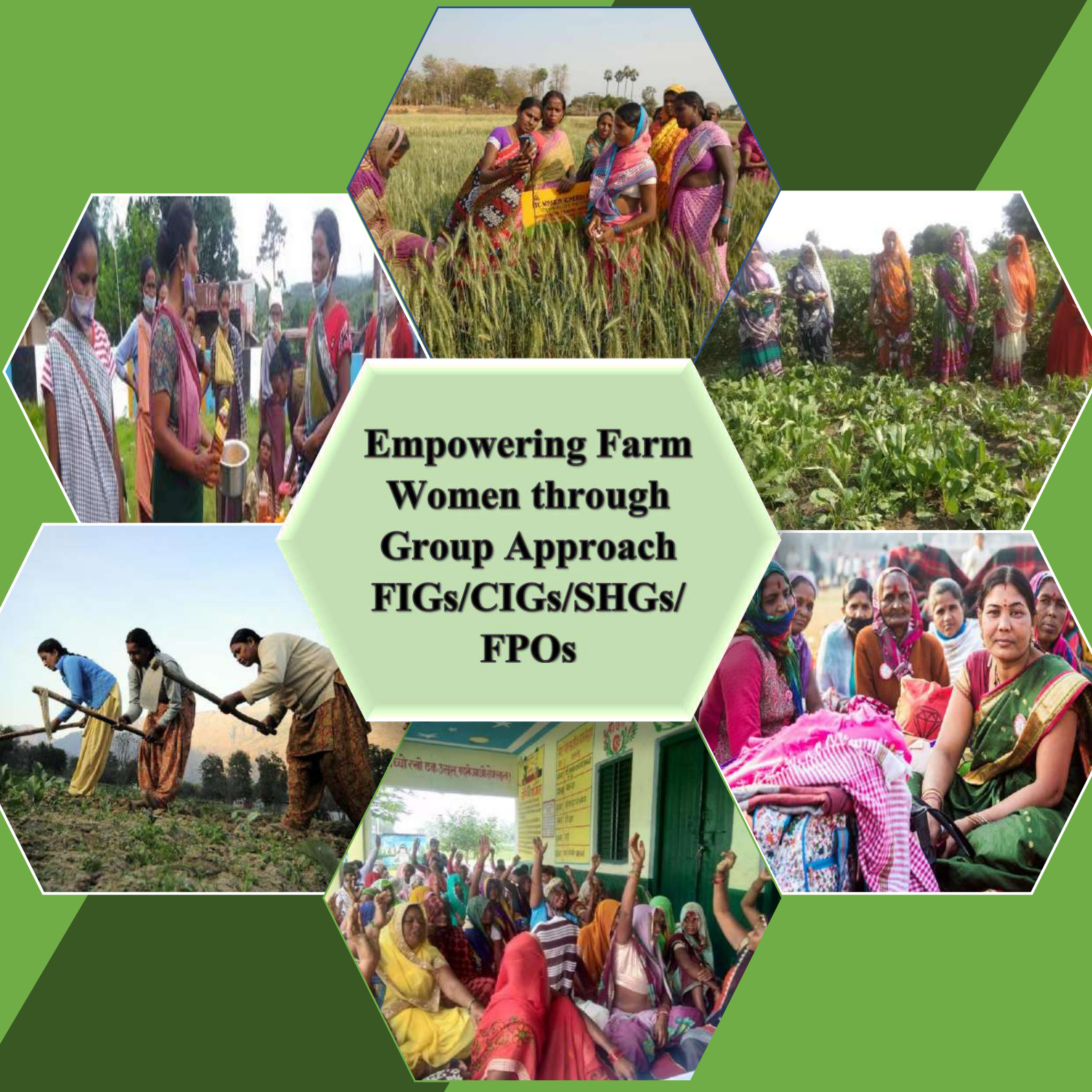

Empowering Farm Women through Group Approach FIGs/CIGs/SHGs/ FPOs

PLURALISTIC EXTENSION NETWORKING STRATEGIES FOR SUSTAINABILITY OF MILLET BASED FARMER PRODUCER ORGANIZATION (FPO) IN TRIBAL AREAS OF SRIKAKULAM DISTRICT OF ANDHRA PRADESH

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ABSTRACT

Pluralistic extension, Convergence, and Public-Private Partnerships (PPP) are the most popularly emerging dimensions of extension for delivering a package of extension services to the farming community in the last two decades. Pluralistic extension focuses on the planning, implementing, monitoring, and evaluation of extension programs jointly through the active collaboration of various extension organizations such as public, private, NGOs, Community Based Organizations, etc., to bring sustainable development. Considering agriculture as agribusiness instead of livelihood, necessitated tremendous changes in conventional production-led extension. The new dimensions of extension envisaging the importance of market-led extension, bottom-up planning, group-led extension, and farmer-led extension, and gender mainstreaming for creating sustainable community-based organizations at the grass-root level. But on the other hand, the majority of the farmers in India are small and marginal farmers, who cannot access credit, input, marketing, infrastructure, and other facilities. Hence, the Government of India has been promoting a new form of collectives called Farmer Producer Organizations (FPOs) to address the challenges faced by the small and marginal farmers. The convergence of multiple extension organizations at various levels is necessary for strengthening, sustaining, and effective functioning of FPOs. This paper discusses the Pluralistic Extension networking strategies for sustainability of millet-based Farmer Producer Organizations (FPOs) in tribal areas of the Srikakulam district of Andhra Pradesh. It also elaborates the success saga of women-led Farmer Producer Organization (FPO) named Manya Deepika for the promotion of millets and value-added products with millets through the various extension organizations.

Keywords: Pluralistic Extension, Farmer Producer Organizations (FPOs), agribusiness, Convergence, Public-Private Partnerships (PPP)

INTRODUCTION

Small and marginal farmers constitute the major portion of the farming community and nearly 85 percent of farm holdings are less than 2 hectares in India. Small farm holdings by the farmers are the major constraint for the introduction of farm mechanization, value addition, and marketing of agricultural produce for remunerative prices. Hence in India agriculture is still being considered as a livelihood option rather than an enterprise. Farmers in India are vulnerable to various risks involved in agriculture. The small scale of operations by farmers significantly reduces the access to quality inputs, credit, technical information, transportation, and marketing facilities. These factors creating the need for the formation of farmers collectives

to mitigate risks in agriculture and facilitate various aspects in agriculture development. Several community-based organizations are emerging to integrate them into the value chain with the objectives of increasing profits and reduction in transaction costs. One such initiative is the Farmer Producer Organizations (FPOs). According to The Food and Agriculture Organization (2013), Farmer Producer Organizations (FPOs) are independent, non-governmental, membership-based rural organizations of part or full-time self-employed smallholders and family farmers, pastoralists, artisanal fishers, landless people, women, small entrepreneurs, and indigenous peoples."

Like any community-based organization, Farmer Producer Organizations also need to pass through all the stages of group forming, Storming, Norming, and performing. To pass through all stages FPOs require different types of extension facilitation from different public and private extension organizations. Various kinds of facilitations such as credit facilitation, technology facilitation, input facilitation, infrastructure facilitation, and marketing facilitation are required at different phases in the institutionalization of FPOs.No single extension organization can provide all these kinds of facilitation. Hence, multi-pronged extension services need to be provided for the formation of any kind of FPO. Pluralistic extension networking strategies not only accelerate the process of mobilization of people to form into a group, strengthen to storm into an organization, monitor to set norms for proper functioning, and facilitate to perform as an enterprise.

By considering all these facts in view, the present paper attempted to discuss the Pluralistic Extension networking strategies for the sustainability of millet-based Farmer Producer Organizations (FPOs) in tribal areas of the Srikakulam district of Andhra Pradesh.

MATERIAL AND METHODS

The case study method was followed for the study of the Pluralistic Extension networking strategies for sustainability of the Manya Deepika Farmer Producer Organization (FPO) in Seetampeta Mandal of Srikakulam District. The present study was conducted in the Seetampeta Mandal of Srikakulam district of Andhra Pradesh. Primary data was collected by personal interviews, Focused Group Discussions (FGDs), and observation. The secondary data were collected from records, books, and the literature available.

RESULTS AND DISCUSSION

The present study discusses the various pluralistic networking strategies for supporting and institutionalizing the Millet-based Farmer Producer Organization (FPO) in the Seetampeta Mandal of Srikakulam district. The results of the study focus mainly on how various extension organizations facilitated tribal women to take up millet value addition as entrepreneurial activity by forming into a farmer producer organization. Various kinds of facilitation such as knowledge / technical facilitation, Infrastructure facilitation, Credit facilitation, Input facilitation, Transport facilitation, and Marketing facilitation.

Table.1: Pluralistic Extension networking strategies for providing different types of facilitation

Type of facilitation	Extension Institutions involved
Technical Facilitation	Krishi Vigyan Kendra, Amadalavalasa
facilitation	CAVS, ITDA
Input facilitation	KVK, ITDA, NABARD
Organizational facilitation	NABARD
Financial facilitation	NABARD, ITDA
Infrastructure facilitation	ITDA and NABARD
Marketing Facilitation	District Magistrate, NABARD, ITDA, ICDS, KVK, GCC, Rythubazaar, NABARD
Capacity building facilitation	SERP, STRY, DRDA, and ITDA
Networking facilitation	ITDA, NABARD, ICDS, KVK, IARS Vizianagaram, IIMR, GCC, Dept. of Agriculture, ARTS, ATMA, DHAN Foundation, WASSAN, NGOs, training institutions, and Local millet entrepreneurs

Knowledge / technical facilitation:

Micronutrient deficiency or hidden hunger is prevalent in tribal and rural areas in India. By keeping this view Krishi Vigyan Kendra, Amadalavalasa was actively involved in the promotion of millets which are considered nutrient-dense cereals in the Srikakulam district of Andhra Pradesh. Millets offer a potential solution for combating malnutrition as they are rich in carbohydrates, protein, minerals, and phytochemicals. Though they are the oldest grains for ages people have been consuming, their consumption has been gradually decreased due to the difficulty of its processing and surplus availability of rice and wheat after the green revolution.

But processing and value addition of millets have a lot of scope in promoting a balanced diet and entrepreneurship.

By keeping this in view KVK, Amadalavalasa conducted various extension activities to promote value-added products with millets. KVK, Amadalavalasa conducted the following extension activities for the promotion of the millets in the Srikakulam district. A series of vocational training programs have been conducted to promote value-added products with millets with the department of Agriculture, APSSDC, SERP, and other allied departments. Various extension activities such as exhibitions, method demonstrations, group discussions were conducted for the promotion of value-added products. Literature such as booklets, folders, and popular articles was published on millet value addition. Along with knowledge facilitation KVK, Amadalavalasa encouraged tribal women in Seetampeta Mandal of Srikakulam to form a Farmer Producer Organization.

Institutional facilitation:

Institutional is another important extension strategy to empower women to involve them in economic activity. The tribal women in Seetampeta Mandal formed into Farmer Producer Organization (FPO) called Manya Deepika in the year 2013-14. Chinmaya Adivasi Vikas Sangham (CAVS) local NGOsupported women in mobilization and formation of promotion Farmer Producer Organization for promotion of millets.With the support of NABARD tribal women formed into Manya Deepika Farmer producer Organization. Smt.Padala. Bhudevi, as the Director of FPO, lead the organization for empowering the women through value addition of millets as a livelihood option. producer organization produces millet products under the brand name of NeelammaTalli Bakery. Presently manya deepika FPO is having 872 women and 38 women were working in the bakery. Convergence of various extension agencies in promotion Millet-based entrepreneurship among tribal women in Srikakulam District.

Input facilitation:

Inputs are vital for enterprise promotion.ITDA, Seetampeta provided infrastructure facilities for processing of millets and preparation of millet value-added products in the premises of Integrated Tribal Development Agency.

Market facilitation:

Various Government and non-government organizations provided market linkages for sustaining the entrepreneurial activity. The then District Collector encouraged them to marketing biscuits to the tribal children in social welfare hostels. The Neelamma Tallibakery supplies ragi and multigrain biscuits to school children of the Integrated Tribal Development Agency (ITDA) hostels and government schools in Srikakulam as well as at the airports in Tirupati, Vijayawada, and Visakhapatnam through the Girijan Cooperative Corporation (GCC) stalls. Presently the women were supplying Rs. 52,625/- worth of millet biscuits per month to Anganwadi schools of Integrated Child Development Scheme (ICDS). The unit serves 47 schools in the 38 mandals of Srikakulam.

Through facilitations provided by various extension organizations, Neelammatalli bakery, Seetampeta was producing 50- 60 kgs millet biscuits in a day. The millet processing unit employs 48 tribal women from Seetampeta and earning a profit of Rs 60,000/- per month. Smt. Padala. Bhudevi, received Naari Shakthi Puraskar Award from the president of India during the year 2020 for her contributions to millet value addition and strengthen of Famer Producer organizations in the Tribal area of Srikakulam District.

CONCLUSION

The convergence of various extension organizations through dovetailing of developmental programs with similar objectives is one of the crucial extension strategies to strengthen the community-based organizations for empowering women in rural and tribal areas.

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SWARM INTELLIGENCE BASED GROUP DECISION MAKING: POTENTIAL INTERVENTION FOR STRENGTHENING FARMERS' SELF-HELP GROUPS

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ABSTRACT

The group-led extension (GLE) has emerged as one prominent approach in Agricultural Extension. Sharing of agricultural technology to farmers in organized groups is the major emphasis of Group led extension approach. The group-led extension focuses on the formation of Self-Help Groups (SHGs), Farmer Interest Groups (FIGs), Commodity Interest Groups (CIGs), etc. The group approach is advantageous as it led to efficiency, effectiveness, collective action, and equity among group members. Among various models of group approach, Self Help Groups (SHGs) have assumed greater importance with time as the most necessary tool to adopt the participatory approach for the social, economic, marketing, and financial improvement of the people at the grassroots level especially in terms of empowering farm women. Studies on social problems faced by members of SHGs revealed that the majority of the members perceived conflicts that arose during the decision-making process as the major constraint to the effectiveness and sustainability of these groups. Looking into the potential solution to the problems faced by SHGs, swarm intelligence-based group decision making emerge as a potential intervention, which can play an instrumental role in strengthening the SHGs in term of effectively utilizing their collective intelligence. The intuitive notion of "swarm intelligence" is that of a "swarm" of agents (biological or artificial) which, without central control, collectively (and only collectively) carry out (unknowingly, and in a somewhat- random way) tasks normally requiring some form of "intelligence". Present paper reviews a case of Swarm A.I., a software that has modeled the group decision-making ability of honeybees into real-time software, which facilitates human groups to make decisions with both accuracy and speed, as in the case of honeybees. The review strongly recommends research studies to go beyond ICT use in Agricultural Extension towards the use of Artificial Intelligence in agricultural extension, as in the case of farmers' groups to strengthen their group dynamics.

Keywords: Self-Help Groups, group approach, swarm-intelligence based group decision making, Artificial Intelligence in agricultural extension

INTRODUCTION

Agriculture plays a pivotal role in the Indian economy. In the context of the country's agricultural growth & development, Agricultural extension has an important role to play as it acts as a strong linkage between researchers and farmers. Therefore, the agricultural development of the nation is closely associated with the strengthening of the agricultural extension system. Over the years, looking into the challenges faced by Agricultural Extension, a paradigm shift has emerged in the extension approach from the earlier top-down approach towards the participatory extension approach. Among the various Participatory Extension

Approaches (PEA), Group led extension (GLE) has emerged as one prominent approach. Sharing of agricultural technology to farmers in organized groups is the major emphasis of Group led extension approach. The group-led extension focuses on the formation of Self-Help Groups (SHGs), Farmer Interest Groups (FIGs), Commodity Interest Groups (CIGs), etc. The prominent extension models currently running successfully in our country like Agricultural Technology Management Agency (ATMA) and Farmer Producer Organizations (FPOs) both highlight this concept of group-led extension and promote group formations. In the present scenario, the role of extension is much wider with a major focus on enabling farmers to organize better and participate fully in development programs (Singh, 2009). To strengthen agricultural extension through a group approach, boosting group dynamics is of utmost essential. Kurt Lewin coined the term Group dynamics to describe the way groups & individuals act and react to changing circumstances. Lewin (1947) identified various factors like teamwork & coordination, participation, leadership, decision making, problem-solving, cohesiveness, communication, conflict management, and group structure which contribute to the dynamics of a group that shares a common goal. Among all these factors, group decision-making has been identified as one of the crucial factors for group effectiveness. Moreover, most of the groups also find it as a limiting factor to group effectiveness because of the multiple challenges associated with it. Group decision making is a participatory process in which multiple individuals, collectively perform situation analysis, think of alternative courses of action, and select the best alternative, which can act as a solution to the problem. Group formation is a slow, time-consuming process. Once the members get the crux of the goals and realize the benefits, they would remain loyal throughout and never leave the group. When the group becomes stabilized in its functioning, internal factors like participation, good leadership, unity, interpersonal trust, mutual understanding among the members, and group decision making determine the pace of growth and development (Mercykutty et al., 2018). Group decision-making can be observed in its most dynamic and efficient form if we observe insect and animal behavior. Moreover, it has been a topic of research for a long. The collective behavior that emerges from a group of birds, fishes, and social insects like ants, bees, termites, etc. has been dubbed as 'Swarm Intelligence (SI)' (Bonabeau & Meyer, 2001). In the swarm-intelligence concept, the important learning is the way these simple little creatures collectively carry out miraculous tasks like bees creating hives of equal-sized hexagonal cells, termites forming mounds ten times taller than even men, ants lifting food a hundred times heavier than them, etc. without any central control. Seeley (2010) suggested the implication of swarm

intelligence of honey bees for optimal group decision-making in humans. He claimed that the bees demonstrate several principles of effective group decision making which if implemented in human groups can raise the reliability of decision making by humans. Therefore, this paper is an effort to highlight one such innovative intervention of Swarm intelligence among human groups, which suggests a potential implication of Swarm-intelligence in the context of Farmers' groups, especially Self-help groups.

Agricultural Extension System of India: Challenges and opportunities

The extension is one of the core mandates of Agricultural universities in India along with teaching and research. Tracing back to the history of extension, earlier it merely focused on the transfer of technologies developed in the laboratories to farms. But with time, the focus and approach of extension got transformed from the earlier top-down approach towards the participatory extension approach. According to Nagel (1997) in the top-down approach farmers were treated as just mere passive recipients of programmed technology and their indigenous knowledge was considered as primitive but the Participatory extension approach acknowledges farmers' knowledge, skills, and creativity. Moreover, it is emphasized that solutions to problems should be searched in a collaborative way between extension workers and farmers. Pioneer researchers like Robert Chambers and Paulo Freire also emphasized the importance of the participation of grassroots people in the process of their development. A long-lasting interaction between scientists, development workers, government agents, and local populations has led to the development of the concept of Participatory approaches. Among the various participatory approaches, the group-led extension is becoming more popular and impactful. The group-led extension emerges as an answer to the pressing challenge faced by the agricultural extension system in the present time. The emerging challenge is of wider extension worker to farmer ratio i.e., 1:2879 (Mukherjee and Maity, 2015). Due to the scarcity of extension workers, it is almost impossible to contact farmers individually hence, the group approach appears to be of utmost importance. An extension can most effectively carry out its mandate, not by working directly with individual farmers but by working indirectly with and through farmers' groups or organizations (Byrnes, 2001). The group-led extension focuses on sharing agricultural technology with farmers in organized groups.

Group Approach: Key element for the success of extension process and system

Panda and Pal (2004) reported that through a group approach, ATMA was able to engage seven unemployed rural youth of Khurda district, Orissa in poultry production. Through

ATMA initially, these youth were organized into a group, then they were provided initial support of 200 chicks and other essential requirements. Within two years, the group was able to open 58 operational poultry units within the district. This is not a single case, but there are multiple cases where extension delivery was effectively possible through a group approach. The factors, which make the group approach so important and beneficial, are:

- **Efficiency:** Group approaches can potentially provide greater coverage of the target population
- **Effectiveness:** Decisions made as a result of group processes tend to be more binding especially where group pressure enforces the decision.
- **Collective action:** Ideas have a better chance of being accepted if they are presented to a group of farmers than to an individual.
- **Equity:** A group approach of extension has the potential to distribute the benefits equitably to all categories of farmers in the community.

Self Help Groups: Most prevalent and successful example of the group approach

Self Help Groups (SHGs) are a small informal group of 10-20 adult women, who are homogenous concerning the social and economic background and come together voluntarily for promoting saving habits among members and for a common cause to raise and manage resources for the benefit of group members (NABARD, 2018). Along with savings and loans, these groups receive training and inputs to pursue some group enterprise. SHGs are a voluntary association of adult women who are common in respect to social background, heritage, caste or traditional occupation come together to attain a collective goal (Kumar, 2011). One of the key features of SHGs is providing employment opportunities to women by imparting training to generate both incomes as well as employment (Kaur and Sachan, 2016).

Self-help groups carrying out development activities possess the ability of women empowerment by providing required knowledge, skills, motivation, and competencies that underpin sustainable agriculture. Group cooperation supports establishing appropriate marketing relationships and minimizing input costs (Kalra et al., 2013). These groups can play a significant role in many core aspects of farming, such as increasing production at a reduced cost; providing expert technical guidance; purchasing inputs; marketing products; training; credit or equipment; representing members' interests; building influence, fundraising, and carrying different projects (Pertev and King, 2000). With time, Self-Help groups have assumed

greater importance as the most necessary tool to adopt the participatory approach for the social, economic, marketing, and financial improvement of the people at the grassroots level (Siva Kumar and Kavithasri, 2017).

Constraints faced by SHGs

Though, SHGs play important role in empowering their members and acting as a support for the entire agricultural extension system of the country but being a group-driven approach besides various advantages it also faces few constraints. According to some research studies, SHGs face problems such as lack of cooperation, lack of teamwork among members, lack of timely support from other organizations, ineffective group leadership, lack of training in group formation, mismanagement on accounts, time constraints, lack of decision making, inadequate space to conduct activities, lack of uniform growth, lack of marketing intelligence for the new products, and lack of information when needed (Ajith et al., 2017; Mercykutty et al., 2018). Among the various problems and constraints, most of the studies suggest that SHG members perceived problems faced during group decision-making as a major constraint. Kalra et al. (2013) reported that among the hindering factors of group effectiveness the emerging conflicts during decision-making were prominent. Studies on social problems faced by members of SHGs revealed that about 58.33 percent of respondents perceived conflicts arose during the decision making process as the major problem, followed by lack of communication regarding group activities (50%), lack of unity among members (46.66%) and lack of mutual trust (38.33%). It was also revealed that the majority of the respondents (70%) had the unwillingness to take the leadership role. (Kaur and Sachan, 2016; Ajith et al., 2017). Kaur and Sachan (2016) in respect to the social problems faced by Self Help groups, reported Moreover, one common point observed in the groups facing decision-making constraints was the centralized control of the leader on the decisions in other words we can say the dependence of the members on the leader for the decisions. SHGs are self-governed with decisions about production and marketing have taken collectively, although the group leader is responsible for identifying potential marketing centers and consumers informal groups (VijayBharathi and Masthani, 2014) In many of the Self-Help Groups, the same person is continuing in the offices as group secretary (Sivakumar and Kavithasri, 2017).

Swarm-Intelligence based Group Decision-making: A Case of Swarm A.I

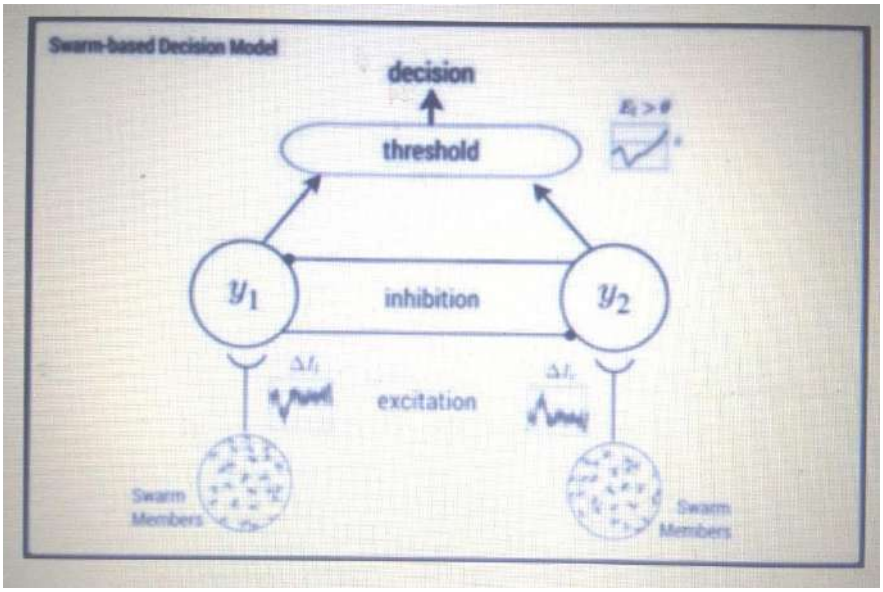
The research area identified as 'swarm intelligence' (SI) has been evolving now for almost 25 years. In the year 1989, the term swarm intelligence was first time introduced 1989

by Gerardo Beni and Jing Wang in the context of the cellular robotics system. The intuitive notion of "swarm intelligence" is that of a "swarm" of agents (biological or artificial) which, without central control, collectively (and only collectively) carry out (unknowingly, and in a somewhat-random way) tasks normally requiring some form of "intelligence" (Beni, 2014). Looking into the swarm intelligence of the social insects and some other similar living species like fishes and birds, the various factors identified by Bonabeau and Meyer (2001) which contribute to the swarm intelligence of a group are:

- **Awareness:** Each member must be aware of their surroundings and abilities.
- **Self-Organization:** Each member must operate as an autonomous master (not as a slave); this is essential to the self-coordinate allocation of labor.
- **Solidarity:** Each member must cooperate in solidarity; when a task is completed each member should autonomously look for a new task (leveraging its current position).
- **Expandability:** The system must permit expansion where members are dynamically aggregated.
- **Resiliency:** The system must be self-healing; when members are removed, the remaining members should undertake the unfinished tasks.

Modeled after biological swarms, the Swarm A.I. software (https://unanimous.ai/), an online platform uses the Artificial Swarm Intelligence (ASI) method for amplifying the collective intelligence of human groups by connecting networked participants into real-time systems modeled after natural swarms and moderated by AI algorithm. In this way, human swarms can answer questions, reach decisions, make predictions, and solve problems by searching a diverse set of options together and converging on a preferred solution. Swarm AI software is an innovation of Unanimous AI, a technology company that amplifies the intelligence of human groups using AI algorithms modeled after natural swarms. Louis Rosenberg, in the year 2014 founded the company and from then has performed multiple types of research to check the validity, reliability, and application of this software for multiple aspects. Willcox et al. (2019) reported that Swarm A.I. simulates the decision-making behaviors of honey bee swarm into a Swarm A. I. system which is based on an artificial intelligence algorithm wherein a group of people work together as real-time systems and their interaction is moderated by AI algorithms modeled on the natural mechanisms of Swarm Intelligence. It works on the simple principle that the simple decision-making units work together in real-time to identify alternatives, weigh

competing evidence, and converge on decisions. Decisions emerge when a sub-group in favor of a particular decision or alternative is excited beyond a threshold level, the corresponding alternative supported by that sub-group is selected as the group's collective decision. Similar to the decision process of honey bees, Swarm AI enables human groups to (a) consider evidence, (b) weigh a set of alternatives, and (c) converge on group decisions, all in real-time. Swarming algorithms process the complex behavioral interactions among the group members in real-time and empower the system to reach solutions that maximize the collective confidence and conviction of the group. The study proposed three stages of group decision making i.e., consideration, contemplation, and conclusion. A mutually inhibitory swarm-based decision model describing honeybee swarms' decision-making process:



According to Rosenberg (2016), Swarming allows groups to make predictions and craft estimates that are more accurate than those achieved by-polls, votes, surveys, and traditional forms of group decision making. Multiple types of research show that Swarm A.I. software has outperformed the conventional methods of group decision making at various fronts till now like an amplification of accuracy in group decisions, the decision regarding financial investments, forecasting financial markets, analysis of human behaviors, medical diagnosis, improvement in social intelligence of business teams, measurement of group personality, amplification of sports predictions, amplification of the collaborative IQ of teams, etc. (Askay et al., 2019; Willcox et al., 2019; Patel et al., 2019; Schumann et al., 2019; Rosenberg and Pescertelli, 2017).

CONCLUSION

Group approach like FIGs/CIGs/FPOs and SHGs have an important role in the context of Agricultural Extension. Glendenning et al. (2010) highlighted that the promotion of farmer-based self-help groups is also part of a fundamental shift in extension policy. However, SHGs are playing an instrumental role in strengthening and empowering their members but various studies suggest that SHGs face few constraints, which hinder their effective functioning, and among those factors, ineffective group decision making has been identified as one of the prominent problems. Therefore, it is a challenge in front of Agricultural extension system to sustain these farmers' groups by strengthening their group decision making and utilize the collective intelligence of a group to fetch the best results Here, appears an important concept of Swarm-intelligence as a probable answer to this emerging challenge, The ability of the group of social-insects like honey-bees, ants, termites, etc. to collectively perform various tasks without any central control has been termed as swarm-intelligence. Group decision-making is a common process in the case of both human groups and honeybees. Moreover, the emergence of conflicts and debates during decision-making is also common to both humans and honey bees. However, in the case of the honeybee swarm, decision-making is democratic and self-organized without the central control of a leader. In addition, the group solidarity with which a swarm's scout bees end their debate/conflict is critical to the success of the entire swarm. The successful case of Swarm A.I. software, suggests swarm-intelligence as a potential intervention in Agricultural Extension for strengthening farmers' Self-help groups as well. The paper strongly recommends studies to go beyond ICT use in Agricultural Extension towards the use of Artificial Intelligence in agricultural extension, as in the case of farmers' groups to strengthen their group dynamics.

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PERCEIVED BY THE MEMBERS OF SELF-HELP GROUPS

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ABSTRACT

The Self-Help Group (SHG) program is a pragmatic approach to eradicate poverty. It is initiated as a self-employment program in the jargon of poverty eradication measures as well as to improve their livelihood and empowerment program in the country. This present study was designed to trace out the constraints and impact of Self-Help Groups in women empowerment in the Bhiwani district of Haryana, India. The research area was selected purposively and data was collected from different Self-Help Groups randomly. Further 4 blocks and 8 villages from the district were selected through a random sampling procedure. Fifteen respondents were selected based on their participation in SHG activities through a simple random sampling technique, therefore, all 120 respondents were interviewed personally or at their Self-Help Group Centers. The present study revealed that the majority of the respondents (42%) perceived family responsibility as a major constraint because with these responsibilities they were unable to take part in Self Help Group (SHG) activities. Among Bank-SHG coordination constraints majority of the respondents (28.70%) perceived that perception about SHGs by bank officials is poor as a major constraint. While among institutional constraints maximum respondents (35.70%) faced marketing problems due to the distant location of the market as a major constraint. Among educational constraints majority of the respondents (39.50%) perceived having a lack of knowledge about advantages and facilities provided by the government as a major constraint faced by them. Other major problems perceived by the respondents' ineffective functioning were: price problems, delay in getting loans, improper demand and supply chain of commodities, marketing of products, and transportation.

Keywords: Constraints, poverty, Women, Livelihood

INTRODUCTION

The Self-Help Groups can be used as an effective mechanism for technology dissemination to support the public extension system; social and mutual learning, the institutionalized process of empowerment & sustainable, equitable, and participatory extension and development. Besides effective cooperation and coordination among the members, the most essential thing is to infuse favorable intentions and attitudes, self-confidence, and capacity for self-determination among the clientele system. The expansion in the range of potential choices available to women includes three inter-related dimensions that are inseparable in determining the meaning of an indicator and hence its validity as a measure of empowerment. These dimensions are (1) Resources: The pre-condition necessary for women to be able to exercise choice; women must have access and future claims to material, human and social

resources;

(2) Agency: The process of decision-making, including negotiation, deception, and manipulation that permit women to define their goals and act upon them;

(3) Achievements: The well-being outcomes that women experience as a result of access to resources and agency.

The success of the Indian Self-Help Groups helped in realizing the fact that the rural people will be able to save and are capable enough to repay the loans in time and open up the potential markets for formal financial institutions. Self Help Groups are promoting savings, credit along with other income-generating activities. SHGs nowadays becoming the vehicle of change and transforming the lives of the people below poverty lines. Realizing that problems cannot solve alone these small voluntary groups are formed to pool their resources, skills, and talent for raising the livelihood or living standards. Therefore, Aajeevika Mission NRLM was launched by the Ministry of Rural Development (MoRD), Government of India (June 2011), and support by the World Bank. This mission aimed to create efficient and effective institutional platforms for the rural poor people, to enable them to increase their household income through sustainable livelihood enhancements and improved access to financial services. In November 2015, the program was renamed as Deendayal Antayodaya Yojana (DAY-NRLM).

In developing countries, Swanson (2006) mentioned that building social capital is critical to agricultural development strategies aimed at reducing rural poverty. SHGs have been recognized as a reliable and efficient mode of technology transfer, but it needs a positive attitude of SHG members as a prerequisite. The training program will have a significant impact on the knowledge level of SHG members while the experience and family size had contributed significantly (Singh and Meena 2012). The Government of India and state authorities alike have increasingly realized the importance of devoting attention to the economic betterment and development of the rural poor. Nowadays, SHGs are playing a great role in technology dissemination and improvement of livelihoods of rural women (Khan *et al.* 2010). Despite the rapid growth of SHGs in India, the full potential of utilizing SHGs remains unexploited. The impact of Self-Help Groups (SHGs) is noteworthy in terms of self-worth like self-confidence cum capacity building by providing self-employment opportunities to meet the economic crisis. It also improves the assessment-making capacity in terms of various social, political, economic, help, and educational dealings and mobilizes women to fight against various types of exploitation

against them in family and society at large (Chiru, 2018). Many other institutions like government bodies, NGOs, youth clubs, health care workers, and cooperative societies are using this approach for the overall empowerment of women and development in all senses social as well as in economic terms. The present study was thus, undertaken to measure the constraints faced by the SHG members and the impact of these groups on their livelihood in selected blocks and villages of Bhiwani district, Haryana.

METHODOLOGY

The present study was conducted in Bhiwani district of Haryana state, this district was selected, purposively as it has the history of SHGs work and has the second-highest number of working women SHGs. From Bhiwani district two blocks i.e. Bhiwani and Bawani Khera were selected randomly. From two blocks, four villages were selected by random sampling technique. From the selected area total of 120 respondents were selected, thus, a sample of 30 women from each village was selected for taking the responses against the statements of constraints perceived by them. Primary data on rural women of self-help groups were collected by applying purposive and systematic random sampling procedures for the selection of respondents. The data were collected with the help of a well-structured and pretested interview schedule comprising the items for assessment of various constraints perceived by them. The constraints categorized into four viz. personal, educational, bank-SHG coordination and institutional constraints and impact of SHGs development on their livelihoods were computed with the help of statistical measures like frequency score, percentages, weighted mean score, and rank order were used to analyze the data to draw the tangible inferences from the study.

RESULT AND DISCUSSION

The results along with relevant discussion have been presented in prime heads as reasons for the formation mechanism of SHGs, impact of SHGs on members, the number of activities undertaken by the members, constraints perceived by the rural women of different self-help groups. The findings in Table 1 indicated that for the majority of the members' local leaders (79.16%) were the main sources of motivation for joining the SHGs, followed by their friends/relatives/neighborhoods (33.34%), NGOs/ self-motivation (31.66%) for joining the groups and some role also played by banks (23.34%) in this respectively. The results conform with the earlier findings of Parihar *et al*, (2013) he studied the impact of self-help groups on rural women in the Jammu district and his studies revealed that the majority of women 84.8

percent joined SHGs by getting motivated through NGOs followed by KVKs and department of agriculture followed by 48.00 and 42.00 percent respectively.

The further table also elaborated the reasons for joining the SHGs by members, A significant number of women members that is 100.00 percent joined SHGs for savings, facilitation of loans, for income generation, and getting training and acquiring knowledge for carrying out difficult activities, followed by 73.34 percent for problem-solving, 54.16 percent for raising family standards and 31.66 percent for exposure to social life. The results were found in conformity with the findings of Parihar *et al*, (2013) his studies revealed that 99.20 percent joined SHGs to save followed by income generation, facility of loan, and exposure of social contacts i.e., 96.00, 92.00, and 92.00 percent. The table also indicating the willingness of the members for joining the groups, the majority of this is, 81.66 percent joined for self, followed by for family and other purposes.

Table 1: Formation mechanism of SHGs

(n=120)

Sr. No.	Statements	Yes (2)		No (1)	
		f	%	f	%
A. Source of motivation for joining SHGs					
1.	Department of agriculture	00	00.00	120	100.00
2	KVK's	00	00.00	120	00.00
3	Banks	28	23.34	92	76.66
4.	Local leaders	95	79.16	25	20.84
5.	Friends /Relatives/Neighbor's	40	33.34	80	66.66
6.	NGOs/ self and others	38	31.66	82	68.34
B. Reasons for joining SHGs					
1.	Savings	120	100.00	00	00.00
2.	Facility of loans	120	100.00	00	00.00
3.	Income generation	120	100.00	00	00.00
4.	Exposure to social media	38	31.66	82	68.34
5.	Problem-solving	88	73.34	32	26.66
6.	Getting training and knowledge for difficult activities	120	100.00	00	00.00
7.	Improving family\conditions or others	65	54.16	55	45.84
C. Willingness for joining SHGs					
1.	Self	98	81.66	22	18.34

2.	Family	75	62.50	45	37.50
3.	others	69	57.50	51	42.50

f=frequency %=percentage

Table 3 indicated that the majority of the members now capable of deciding on their children's education ranked I^{ts} with 1.65 mean weighted score, followed by their participation in decisions regarding the marriage of their children's (1.59), taking decisions independently about the health of their family (1.32), freedom for outside the home like markets, etc. (1.28), decisions taken on social customs and taking independent decisions about family planning (1.24), Participating in decision-related to business or other activities in the family (1.20) and Participating in decisions on purchasing of household materials (1.15) with IInd, IIIrd, IVth, Vth, VIth, and VIIth ranked respectively. This indicates relatively positive impacts of self-help group development in rural areas which will empower women and they are now becoming capable of taking important decisions on family aspects. The study was found in similar lines with the results of Parihar *et.al,* (2013) The respondents as SHGs members were able to make more decisions as compared to those who were not members of SHGs because SHGs members could acquire more knowledge and more scientific information by mutual interactions, social gatherings, and training conducted by different departments/agencies engaged in women empowerment.

Table 3: Impact of SHGs on developing decision-making power of members

(n=120)

Sr. No.	Statements	Frequency		TWS	MWS	Rank
		Yes (2)	No (1)			
1	Decisions for children's education	78 (65.00)	42 (35.00)	198	1.65	I
2	Independently taking decisions for nutrition of the family	38 (31.70)	82 (68.30)	158	1.32	III
3	Participating in decisions on purchasing of household materials	18 (15.00)	102 (85.00)	138	1.15	VII
4	Decisions taken on any social customs	29 (24.20)	91 (75.80)	149	1.24	V
5	Freedom for enjoying outside the homelike market etc.	34 (28.30)	86 (71.70)	154	1.28	IV
6	Taking independent decisions about family planning	28 (23.34)	92 (76.66)	148	1.24	V

7	Participating in decisions of the marriage of children's	71 (59.20)	49 (40.80)	191	1.59	II
8	Participating in decisions related to business or other activities in family	24 (20.00)	96 (80.00)	144	1.20	VI

Considering the constraints perceived by the respondents, an attempt was made to know about the forces which slowing down the activities or impedes the respondents. The constraints or the restrictions or limitations on the behaviors of the respondents restrict them from doing work smoothly. Table 4 elaborated that among the personal constraints the 'family responsibility was the main constraints faced by the respondents (weighted mean 2.07), it may be due to women's in the villages unfavorably because they have the responsibility to provide care for the family members and also due to assumptions made by the people about women, followed by lack of commitment among SHG members (weighted mean 2.05), lack of discipline (weighted mean 1.98), lack of experience (weighted mean 1.85), lack of confidence (weighted mean 1.82), lack of management skills (weighted mean 1.82) and lack of education respectively. Similar findings were reported by Singh (2011) revealed that the majority of respondents 92.00 percent having family responsibilities as major constraints followed by education and management skills.

The data in Table 4 further indicated that constraints namely, labor scarcity ranked at the top with 2.14 weighted mean, followed by the distant location of the market and low price of products ranked at second and third with 2.10 and 2.00 weighted mean score respectively, Further, lack of technical training, it may be due to one unavailability or the small number of trainers, the second one is if available engaged in other training programs and third one member of SHGs unable to reach training site, followed by don't have a supportive network, similar results reported by, lack of transport facility, absence of marketing of SHG products, financial constraints, and no visit of SHG members to developed SHGs ranked least among all. Similarly, Ngemu (2010) in her study also mentions that 'High cost of paid labor' is one of the major constraints faced by SHG members. Among the Bank-SHGs Co-ordination constraints, 'Lack of recovery' considered as the main constraints faced by the respondents having a weighted mean of 1.96, these results may be due to unawareness or lengthy procedure of loan sanction, and similar result cited by Sharma (2007) in his study, that the SHG movement has not successful in some north-eastern states because of some peculiarities prevailed in the region. The study observed that the banking constraints as a factor that hinders the quality of

SHG in Northeast India. Followed by the unfavorable attitude of bank officials (weighted mean 1.81), officials demand flavor in terms of money, over-dependence on intermediaries, and delay in loan disbursement with 1.77, 1.65, and 1.60 weighted means, respectively.

Table 4: Constraints perceived by the members of SHGs

(n=120)

Sr. No.	Statements	Frequency			TWS	WMS	Rank
		Agree (3)	Undecided (2)	Disagree (1)			
A. Personal Constraints							
1.	Family responsibilities	48	33	39	249	2.07	I
2.	Lack of commitment	17	92	11	246	2.05	II
3.	Lack of discipline	19	80	21	238	1.98	III
5.	Lack of experience	16	70	34	222	1.85	IV
6.	Lack of management skills	16	67	37	219	1.82	V
7.	Lack of confidence	14	70	36	218	1.82	VI
8.	Lack of education	23	73	24	239	1.20	VII
B. Institutional Constraints							
1.	Labor problems	33	71	16	257	2.14	I
2.	Distant location of markets	38	56	26	252	2.10	II
3.	Low product prices	25	71	24	241	2.00	III
4.	Lack of training	19	79	22	237	1.98	IV
5.	Lack of supportive networks	26	62	32	234	1.95	V
6.	Lack of transportation facilities	36	38	46	230	1.91	VI
7.	Financial problems	15	66	45	210	1.75	VII
8.	No visit of SHG higher authorities	10	62	48	202	1.69	VIII
C. Constraints related to Banks-SHGs							
1.	Lack of recovery	17	81	22	235	1.96	I
2.	The unfavorable attitude of bank officials	11	76	33	218	1.81	II
3.	Demand flavor of money	16	60	44	212	1.77	III
4.	Over-dependence on intermediaries	16	47	57	199	1.65	IV
5.	Delay in loan disbursement	05	61	54	191	1.60	V

CONCLUSION

The results of the study of constraints perceived by the members found that among personal constraint family responsibility (40%) as with these responsibilities they are not actively taking part in SHG activities. Among bank-SHG coordination constraints study shows that the majority of the respondents (26.70%) perceived that perception about SHGs by bank officials is poor as a major constraint. While among institutional constraints, the majority of the respondents (31.70%) perceived marketing problems due to the distant location of the market as a major constraint. The recommendations based on the findings of the study should be highlighted to make good use of the findings from the study. Therefore, timely sanctioning of loans from the concerned financial institutions must be earned for better performance of SHG and individual activities. SHGs increased mobility and participation of rural women in the social activities indicated by the impact of SHGs on their decision-making change. Self-help groups have a high impact on the economic development of the respondents, followed by sociocultural, legal/political, infrastructure/ educational, family/ interpersonal and psychological development. The SHGs could be used as an effective mechanism for technology dissemination to support the public extension system, social and mutual learning, and institutionalized process of empowerment, conflict management, participatory extension, and sustainable and equitable development.

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DEVELOPMENT OF WOMEN FARMERS THROUGH EXTENSION ADVISORY SERVICES IN AGRICULTURE: A REVIEW

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ABSTRACT

This paper focused impact of current innovative extension approaches for the development of women farmers. The perceptions about gender deeply rooted in society differed extensively in cultures concerning power and resources. The study revealed that women involved 43 percent in agricultural labor under heavier worked force than men holding household duties. In rural areas, differences between men and women access productive resources, services, and opportunities like land, livestock, financial services, and education which are the causes in the agriculture sector. These factors are contributed to food and nutrition security, economic growth, and overall development. Agricultural extension services helped rural communities to become gender-responsive, nutrition-sensitive and by assessing and providing the needs of both men and women farmers. In rural areas, women have the right in households to remove the gender-related obstacle by disseminating gender-appropriate and nutrition-enhancing technologies to improve nutritional mal-practices. Keep in view extension advisory services (EAS) shaped policy; develop strategies and provide effectively; and support to women farmers influencing decision-making to maintain the livelihoods, incomes, and nutrition level. The main work of this advisory increased awareness and interest, adaptation, finally, adoption among rural women. The services covered technical knowledge in the aspect of crop production for improving nutrition and preservation of women farmers' more than build capacities of women development.

Keywords: Advisory Services, Extension Development, Gender and Women farmers

INTRODUCTION

It is concerned of farmer image is drawn in people mind that is a man. In developing countries and especially in India, women accomplish most of the tasks associated with farming. Only, women do the hoeing, sowing, weeding, and harvesting, particularly for food crops. A lot of the time the men are away from towns for earning cash income or when they stay home. Ideas of farmers as men have meant that the significance of women in food production has been largely overlooked. In this instance, women's social responsibilities in the community and their daily tasks such as looking after children, preparing food, and collecting fuel and water are not taken into consideration. Yet these time-consuming chores mean that women have much less time to spend on farming activities. At the same time, they face substantial challenges related to gender inequalities such as unequal access to resources, services, and technologies which significantly undermine food security and nutrition objectives. The lower levels of education, as well as socio-cultural norms and values, have limited women's power

and ability to participate in decision-making processes in families and societies. Evidence showed that empowering women and promoting gender equality leads to superior agricultural and development outcomes. The paradigm shift of Agricultural Extension and Advisory Services (AEAS) from a production-oriented technology transfer emphasis on broader development and potential role for AEAS; emerged in promoting gender equality and supporting nutrition (FAO, 2017). The report argued that reducing gender inequalities and services may increase yields on women's farms of between 20 percent and 30 percent. Which augment agricultural output in developing countries by 2.5 to 4 percent (Manfre, et al., 2013). Approximately 482 million workers,150 million are women, Data indicated that the overall female work participation rate is much lower than the overall male work participation rate; the female work participation rate in India has almost doubled from 12.11 percent in 1971 to 25.50 in 2011. Work participation of women in India indicates that 96 percent of them are under the unorganized sector. Further, it shows that the male work participation rate in rural India is almost stagnant while the female participation rate has tremendously increased. It is mentioned that gender-wise work participation rate 13.42 percent in 1971 to 30 percent in 2011. Both the male work participation rate and female work participation rate in the urban area have increased. As per the 2011 census, 97.6 million females are involved in agriculture, which forms around 37 percent of the total agricultural workforce. It has been estimated that by 2020, women's participation will be around 115 million. A study found that Indian extension personnel at the district (100%) and block (97%) level is male while only one female extension personnel (3%) was found at the block level. Need to increase the number of female extension personnel to keep balance in gender to attend the clients (CN, et al., 2018). Despite this information and services are demanded by farmers and other actors in rural settings to assist them in developing their own technical, organizational, and managerial skills and practices. The best-fit framework allows us to understand the state of various EAS systems (Davis and Franzel, 2018).

Essentiality of extension advisory services for women

The delivery of EAS is essential to ensure that rural population groups particularly women farmers are equally recognized as key stakeholders with their needs and socio-economic properly addressed. This calls for a gender-sensitive approach to agricultural EAS that contributes to the goal of promoting gender equality as a component of poverty alleviation in rural settings. A wide range of EAS approaches become dull in developing countries but few

have been achieved systematically considering gender perspective in the provision of agricultural advisory services. The success of EAS delivery depends largely on strategies that are promoted for reaching women and men farmers on an equal basis (Mbo'o-Tchouawou and Colverson, 2014). It is stated that gender and access to advisory services show relatively lower levels of contact; disproportionally lower levels of access for women. The potential of public extension delivery systems to reach women farmers is not fully achieved the reason is that bias for the socio-cultural which has often hindered women's active participation in farmer training centers; extension meetings; and most important services and economic resources such as credit. As a result, extension services pointed to women farmers in many advisory services programs tend to be mostly concentrated on productive activities dominated by rural men farmers (Worku, 2016). Extensive integrating of gender in agricultural research and development processes. AEAS understands farmers' decision-making processes also impact livelihoods, incomes, and nutrition outcomes. Training of extension agents should include an emphasis on creating awareness of the potential causes of malnutrition. Extension agents need soft skills such as facilitation, negotiation, communication, gender sensitivity, and sensitization to minimize the harmful effect. Extension Advisory Services capable of assessing and responding to the needs of women farmers in 'Feed the Future countries. Agricultural Extension and Advisory Services (AEAS) is the system that directly deals with farm people through educational procedures to improve farming methods and techniques increasing production efficiency and income and facilitating empowerment.

Why Women's Participation in Agricultural Extension is needed?

Indulgencing women in agricultural extension education services have convincing reasons. To carry out gender equality towards these approaches contribute to different aspects like personal, social, and economic development. The study revealed that confirming similar access between male and female farmers regarding fertilizers and other agriculture inputs increased maize yields by 16 percent in Malawi while 17 percent in Ghana. It was also found that in Kenya women enhanced their crop yield by approximately (20%) as compared to men. Participation in extension activities an increased income level to improve their livelihood. However, women are organized into groups, augment their production and increase the sale of the product in their surrounding market for better sustainability. In this instance, women farmer has desired way of disseminating a broad range of information related to health and nutrition, hygiene, family planning, technical and economic knowledge for enhancing family income

level. In Indian scenario where women's has a high earned income level that increased her children's year of schooling (Mamun-ur-Rashid, 2018)

Impact of agricultural extension service on women access

Particular	Process	Impact
Increased access of women to agricultural extension service	Extension service for real actors	Improve the efficiency of business
	Enhanced use of new technologies and practice by women	Improve the efficiency of business
	Better performance of home garden, small scale livestock, poultry, and fisheries	Improvement nutrition of household
	Retain women for production to supply of quality products	Ensure the flow of quality goods
	Help women to enter chains as supplier of key inputs and services	Creation of new business opportunities for women
	Set instances and build awareness of equal access to extension service	Remove discriminatory beliefs and practices

Conceptual framework

The EAS enables us to compare across countries and connect country-specific cases to broader learning through EAS, to advance overall learning and apply to other donor and government programs and priorities. The framework identifies characteristics of EAS systems on which policy decisions are taken. The framework suggests an impact chain approach to analyze the performance and impact of EAS.

Developing Local Extension Capacity are the EAS characteristics shown in the framework.

Advisory methods: Advisory methods can be classified according to various aspects, such as the number of clienteles involved in individuals, groups and media used such as radio and internet, etc. Market engagement: It refers to the market elements that EAS can use to better serve farmers, such as aggregation, finance, price discovery, and input and output markets.

Livelihood strategies:

How EAS develops content to meet the unique needs of clientele and how do gender roles impact farming strategies?

Community engagement: EAS services based on local social institutions, mechanisms to articulate demand, and community psychosocial characteristics (Steven et al., 2018).

Information and Communication Technology for Gender-Responsive CSA

To reach women in agriculture ICTs need to address gender constraints and priorities. For instance, women's information networks are often smaller than men's, so they offer fewer opportunities for learning about new productive and commercial opportunities. Gender-specific climate services will need to take into account women's agricultural tasks. The communication channels required to reach the most marginalized groups depending on socio-cultural differences. The communications channels useful to women farmers were SMS messages in the local language, forecasting blackboards, information broadcasting at public places where women gather, and community radio and chatterboxes (World Bank Group, 2015).

Maintaining the gender gap through Extension advisory services

Improving women's access to Extension Advisory Services brings close the gender gap in agriculture by making information, skills, knowledge, new technologies, and other productive resources more accessible for women farmers. Continuous access to EAS is a reason for providing new opportunities and enabling them to gain new skills and confidence. It is confirmed that knowledge is the source for improving women's decision-making power, both in the household and in the community, and influencing overall family well-being in terms of nutrition, education, and health. Hence, it is crucial to improve the access and relevance of rural advisory services towards women (Petrics, 2018).

Table 1. Status of men and women contribution as agricultural labor force in few countries

Sl. No.	Country names	Contribution	
		Women (%)	Men (%)
1.	Sri Lanka(2012)	35	42
2.	India(2012)	60	43
3.	Pakistan(2014)	76	34.5
4.	Nepal(2013)	83	89
5.	Bangladesh(2013)	60	87
6.	Liberia(2010)	48	50
7.	Ghana(2010)	38	46

8.	Vietnam(2012)	49.5	45
9.	Philippines(2013)	20	38
10.	China(2012)	70	70

Awareness towards agricultural extension services

The data presented in Table 2, majority of 56 percent of women possess awareness about agricultural extension services with its mean value i.e. 10.6, whereas standard deviation value was found 2.01 which is belonged to medium awareness (6-10) followed by 43.20 percent of women aware about extension services with their mean value 10.6.

The finding indicates that the rural women of the study area, in general, had a medium to the high level of awareness on agricultural extension services and activities of different public service extension agencies, particularly of DAE. The finding stands against the popular belief of the academicians that rural women are not well aware of agricultural extension activities (Asaduzzaman et al., 2004).

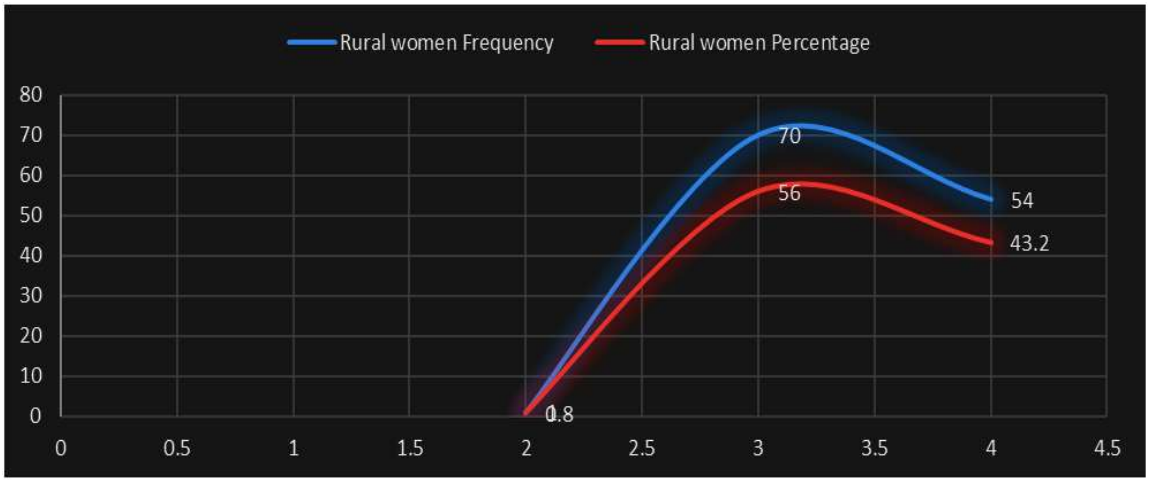

Figure 1: Distribution of the rural women by the awareness scores

Table 3. Item-wise analysis of the responses regarding awareness on extension services

(n=125)

Sr. No.	Particulars	Known	Not Known
1.	Receive information on agricultural production	86.40	13.60
2.	Assisting farmers in aspects of aquaculture and livestock production	56.80	43.20
3.	Helps farmers and farm families in any aspect of farming	98.40	01.60
4.	Method demonstration organized to use of new technologies	63.20	36.80
5.	Conduct result demonstration for new farm technologies	57.60	42.40
6.	Conduct group discussion meetings for men and women	79.20	20.80

7.	Organize a meeting to identify farmers' problems and needs	70.40	29.60
8.	Inform about new farm practices	88.00	12.00
9.	Receive reliable information regarding inputs and credit	78.40	21.60
10.	Visit farmer fair and rally to learn appropriate farm technologies	27.20	72.80
11.	Collecting seeds of different vegetables and fruit trees	33.60	66.40
12.	DAE provides several training programs farmers can participate	71.20	28.80
13.	Organize training programs for rural women by DAE	75.20	24.80
14.	Receive advice and treatment of disease from livestock office	52.80	47.20
15.	Provide doors service to see the condition of our poultry and cattle	41.60	58.40

It is revealed that in Table 3, the majority of respondents (98.44%) were highly aware regarding "helps farmers and farm families in any aspect of farming" followed by (88.00%) "Inform about new farm technology" for good implementation of cultivation. In the case of (86.40%) "Receive information on agricultural production".

Conduct group discussion meetings for women farmers (79.20), "organizing training programs for rural women by DEA" (75.20), "DAE provides several training programs farmer can participate" (70.40%). It was found that 70.40 percent "organize to identify farmers problems and need" followed by (63.20%) on the statement on method demonstration organized to use of new technology while 57.60 percent conduct result demonstration for new farm technology and 56.80 percent assisting farmers for aquaculture and livestock production. Whereas, 52.80 percent of farmers receive advice and treatment of disease livestock office followed by 41.60 percent farmers provides door services to see the condition of our poultry and cattle. As many as 33.60 farmers have visited farmer's fairs and rallies to learn appropriate farm technology while 33.60 percent collect seeds of different vegetables and fruit trees. A summary of rural women's selected characteristics is presented in Table 4. The Table gives useful information about the rural women under the study.

Table 4. Socio-economic profile rural women with their selected characteristics

Sr. No.	Characteristics	Mean Score	St dev.
1.	**Age**	**31.82**	**09.73**
2.	**Education**	**03.30**	**03.68**
3.	**Family size**	**05.14**	**01.59**
4.	**Extension contact**	**15.74**	**02.74**
5.	**Cosmo politeness**	**05.63**	**01.94**
6.	**Training exposure**	**03.31**	**02.24**
7.	**Participation in farming activities**	**15.03**	**4.33**

8.	**Social participation**	**14.42**	**7.38**
9.	**Role in decision making**	**10.19**	**3.83**

The data revealed in (Table 4) the mean value (31.82) was higher for rural women regarding their age followed by rural women who had more extension contact with the mean value (15.74) also had participation in farming activities with a mean value (15.3). However, rural women had more social participation with its mean value (14.42). While rural women had excellent decision-making power for particular activity at village level along with male farmers with mean value (10.19), women had cosmopolite type of nature with mean value (5.63), family size (5.14). Further, the rural women had less education (3.30) and less training exposure with their mean value (3.31).Study cleared that rural woman requires more education for to acquire field activate as well as the need to increase their capacity building level at village level.

Relation between awareness and rural women's

The summary of the results of correlation tests has been presented in Figure 5. Education, family size, extension media contact, and cosmopolitans of the rural women possessed significant factors in shaping their awareness about agricultural extension activities as provided by different public sector extension agencies. A positively significant relationship between education and awareness of agricultural extension activities implies that education is instrumental to make one conscious about ongoing development activities and so was the case for the women of the present study. A negative correlation between the family size of rural women and their awareness of extension activities meant that big family size may hinder one's exposure to matters outside the household and in this case, it might negatively contribute to the rural women's awareness of extension activities. Extension media contact and cosmopolitans are two important traits, which may have a positive impact on one's awareness of agricultural extension activities. The positive and significant relationship of rural women's awareness with these two traits implies that the more the cosmopolitans and extension media contact one has, the more aware one is of agricultural extension activities

Extension Advisory Services at different levels

The majority of EAS initiatives have focused on providing messages and technical knowledge on the production and management of crops, through demonstration, training, and use of media, in effect providing very little support beyond technology dissemination. However, family women farmers also need to have information about training and value

addition such as agro-processing and marketing. However, very few of the traditional rural advisory service providers can link farmers to markets, or support farmers to adapt better to climate change. To support women', should collectively perform a wide range of roles. These include developing networks, organizing producers, facilitating access to credit, inputs, and output services, convening and brokering within innovation platforms, promoting gender equality, facilitating knowledge management and exchange, supporting adaptation to climate change, and creating and providing new knowledge and skills through social innovation, training, and demonstrations. As per individual level, RAS need staff with strategic thinking, a good understanding of technical knowledge and practices, plus organizational and facilitation skills to manage social processes (FAO and GFRAS, 2016).

Emerging practices for improving EAS delivery systems

Promoting gender-sensitive agricultural EAS systems through farmer group approaches

In India should Farmer-to-Farmer extension was developed by the Farmers' Groups Network which is promoted women's participation in networking and decision-making processes. The formation of women farmers' groups facilitated the dissemination of agricultural innovations and provided them with better access to farm inputs and credit facilities. Over the years, the program has proved to be effective in incorporating female farmers' needs into national agricultural development strategies and uplifting the socio-economic wellbeing of women beneficiaries in rural areas, and delivering agricultural EAS through volunteer advisory services programs.

Delivering agricultural EAS through volunteer advisory services programs

Providing affordable extension delivery systems and increasing AEAS coverage to female farmers in remote areas of India. The Women Extension Volunteer model will be the result of collaborative efforts. The leadership role of the community-based female volunteers in supporting the community farmer groups through facilitation and basic training on topics discussed during regular meetings. While being a female farmer was the primary criterion for selection; other important characteristics such as literacy, marital status, volunteer experience, and innovativeness were also considered during the selection process.

Delivering agricultural EAS through information and communication technologies (ICTs)

Increasing the use of ICTs can potentially speed up the effective dissemination of information. It also enhances the interactive functionality provided by traditional and modern ICT services ICT-based solutions are viewed as an enabling tool for EAS delivery targeting rural women farmers. The provision of agricultural EAS using ICT-based applications offers promise as an innovative approach for enhancing the agricultural productivity of rural women farmers (Mbo'o-Tchouawou and Colverson, 2014).

Implementing a Gender-Transformative Extension and Advisory Facilitation System

The extension and advisory facilitation system are placed at the heart of the pie chart in Figure 6, which continue to work on traditional areas of expertise such as agronomic research and training but they would be mandated to liaise closely with other stakeholders to create the enabling environment required to transform gender relations. It provides relevant technical research but facilitates and coordinates overlapping activities among the stakeholders. The idea in itself is not new and in many countries' extension services are taking on a multitude of new roles. They will need to build in the links and partnerships required for progress to be achieved and be adjusted as time moves on and iterations become necessary (Farnworth et.al 2015).

Initiatives are taken by Government

1. Agriculture Extension Services
2. Integrated approach
3. Krishi Vigyan Kendras (KVKs)
4. Gender Division of Labour in India
5. Literacy
6. Time allocation
7. Property Ownership Rights of Indian Women
8. Rural Credit

Policy and Programs for feminization in Agriculture

1. Direct Benefit Transfer
2. Approaches to mainstreaming gender concerns
3. Lack of technology refinement for women

4. Budgetary allocations for Women in Agriculture
5. Women oriented Mass Media and ICT support
6. Women and Research

CONCLUSION AND RECOMMENDATIONS

The agricultural sector in India needs to support scientific information, advice, and technologies to those who are engaged in this sector. The half proportion of the population of women, have to get considered as a right farmer and their equal access to agricultural advisory service that has to be targeted. Rural women, particularly the women within the male-headed household are noticed less in sight of extension workers to reach with agricultural advisory services. Hence, I suggest some recommendations so that advisory service will be utilized by the rural women in the farming community and adult education has to be given more attention, more commitment among extension workers.

It is revealed that services are going away from top-down, technology-derive, and male-dominated approaches, to demand-driven, gender-sensitive approaches where the influence of these reforms on female farmers is still unclear. It was found in the recent study (World Bank and IFPRI, 2010) in Ethiopia, Ghana, and India found that despite efforts to elevate farmers-based organizations as vehicles for agriculture extension, while the farmers in all three countries had less access than male farmers because women were not preceded as agricultural decision making. In India, this perception bias is particularly strong no female extension workers were employed in the study area. The step to recruit and train female extension agents will be more successful if they take into account socio-cultural norms and adapt the program accordingly (Quisumbing, 2010). To ensure that gender concerns are incorporated in agriculture, extension personal may require training in gender analysis and gender-se3nsitive agricultural planning methods.

1. Governance Structures and Policy Environment
2. Organizational and Management Capacities and Cultures
3. Advisory Methods
4. Market Engagement

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WOMEN EMPOWERMENT THROUGH SELF-HELP GROUP (SUCCESS STORIES)

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ABSTRACT

Women constitute the backbone of any country. Women comprise 50 percent of the world population and get only10 percent of world income. The welfare of the nation depends upon the well-being of its women. Though, the role played by the rural women in economic development has not been earmark adequate importance. Women face many problems or obstacles as compared to men in different matters like literacy rate, labor participation rates, and earnings. Women's empowerment is a vital instrument in the development of any nation. It promotes the women's sense of self-worth, their ability to determine their own choices, and their right to influence social change for themselves and others. Today's women come forward to identify their potentialities and their desired goal. The government of India provided the scheme – "Self Help Groups" to enable women to achieve economic independence through self-employment, entrepreneurial development, etc. Self Help Groups plays an important role in the empowerment of women in our country and also a major role in poverty alleviation in the rural area. It is reported that the SHGs have a role in accelerating a country's economic development. It is now developed as a movement. Self Help Group (SHG) is a village-based financial mediator committee generally comprised of 10 to 20 local women or men. It is a group of people from the same socio-economic background. The total number of Women Self Help Groups sanctioned in India as of 31st March 2020 is 2, 04,381. Self Help Groups change the life of women from Moradabad district Uttar Pradesh (South Goa) Goa, (Amravati) Maharashtra, (Mohali) Punjab, (Morbi) Gujarat, and (Senapati) Manipur. Women from these regions face many challenges like could not earn enough to even to feed their families, husbands are alcoholics without a confirmed or fixed source of income, some having kids without a source of income, they face problems to feed their family also, after a husband's demise women had to run the family all alone and face problems to searching employment. Interventions of SHGs change their life. Through the interventions of SHGs women from these regions become more confident, self-independent, change their mindset from subsistence level earning to profit or business-oriented, can start and run their enterprise, and can generate employment for others. This is some successful stories of WSHGs; actually, it reached to the most of the parts of the country and play the important role of women empowerment. Extension workers, students, researchers, professionals, social workers, etc. can play a vital role to spread the appropriate information of SHGs up to the unreached and which will help to generate more women empowerment in our country through SHGs.

Keywords: Women empowerment, self-help group.

INTRODUCTION

The welfare of the nation depends upon the well-being of its women. However, the role played by rural women in economic development has not been earmark adequate importance. Near about 50 percent of the total human resource in our country is constituted by women. This has led to boost the process of women's empowerment in our country. Women's empowerment is a vital instrument in the development of any nation. It promotes the women's sense of self-worth, their ability to determine their own choices, and their right to influence social change for themselves and others. The year 2001 was declared as "Women Empowerment Year" by the Government of India intending to focus on the vision where women are equal partners on par with men. Women of today are different from their early days. Today's women can come forward to identify their potentialities and their desired goal. The government of India provided the scheme – "Self Help Groups" to enable women to achieve economic independence through self-employment, entrepreneurial development, etc. Self Help Groups plays an important role in the empowerment of women in our country and also poverty alleviation in the rural area. It is reported that the SHGs have a role in accelerating a country's economic development. It is now developed as a movement. Self Help Group (SHG) is generally comprised of 10 to 20 local women or men and they mostly belong to the same socio-economic background. These groups are assisting by Government agencies or Non-Governmental Organizations (NGOs) intending to solve the major or common problems of group members either financial or social through mutual help. Mainly SHGs members are women. Therefore, the participation of women in economic development is increasing and also plays an important role to uplift the economic status of their families.

Objectives of SHG

- To save small amounts of money regularly
- To mutually agree to contribute to a common fund
- To meet emergency needs
- To resolve conflicts through collective leadership and mutual discussion
- To provide collateral-free loans with terms decided by the group at the market-driven rate

Table No. 1: Implementation of Women SHG in Backward & LWE districts (Status as of 31/03/2020) (Rs. Lakh)

					Expenditure out of WSHG Dev. Fund		
Sr. No.	State	Total No. Of WSHGs sanctioned to the anchor agency	WSHGs savings linked	WSHGs Credits linked	Grant to anchor agency	Others including capacity building, publicity & campaign etc.	Total
1	Andhra Pradesh	6985	25237	24274	698.50	966.84	1165.34
2	Arunachal Pradesh	1489	323	26	10.91	0.34	11.25
3	Assam	1320	1062	532	60.66	42.94	103.6
4	Bihar	17000	16178	16110	1451.60	108.54	1560.14
5	Chhattisgarh	11685	11513	5996	523.66	91.80	615.46
6	Goa	387	343	191	19.30	18.28	37.58
7	Gujarat	3750	1968	1742	76.99	17.92	94.91
8	Haryana	3000	2842	1463	133.33	61.37	194.7
9	Himachal Pradesh	2955	2934	2782	258.01	61.34	319.35
10	Jammu & Kashmir	2000	1642	190	35.81	12.72	48.53
11	Jharkhand	49000	40446	17047	1773.63	425.87	2199.5
12	Karnataka	3000	6948	3010	284.97	20.08	305.04
13	Kerala	2200	2368	1399	145.75	59.64	205.39
14	Madhya Pradesh	11425	9839	4197	550.79	309.71	860.50
15	Maharashtra	14149	14188	11676	1082.11	112.36	1194.47
16	Manipur	767	691	8	15.48	1.07	22.55
17	Meghalaya	1000	1518	349	34.52	16.97	51.49
18	Mizoram	1450	1600	337	43.92	13.60	57.52
19	Nagaland	500	275	0	7.49	0	7.49
20	Odisha	18615	15471	7675	788.19	492.26	1280.45

21	Punjab	1800	1178	683	62.88	11.87	74.75
22	Rajasthan	7100	7297	4444	370.94	19.21	390.14
23	Sikkim	950	720	152	24.85	12.76	37.61
24	Tamil Nadu	1929	1255	781	68.80	103.47	172.27
25	Telangana	7505	9093	8285	721.35	353.14	1074.49
26	Tripura	1000	996	517	42.85	5.71	48.56
27	Uttarakhand	5330	5139	2960	182.78	74.32	257.0
28	Uttar Pradesh	12900	13026	2352	253.11	115.33	368.44
29	West Bengal	13190	12904	9907	934.46	146.94	1081.4
30	All India Total	204381	210994	129167	10657.63	3285.51	13943.13

Source: NABARD Report, 2020

Table No. 2: Region Wise Status of Bank Loan Disbursed to SHGs during 2017-18 to 2019- 20 (Total loan disbursed in r Lakh; Average loan disbursed in R per SHG)

Regions	2017-18			2018-19			2019-20		
	No. Of SHGs	Total Loan Disbursed	Average Loan Disbursed	No. of SHGs	Total Loan Disbursed	Average Loan Disbursed	No. Of SHGs	Total Loan Disbursed	Average Loan Disbursed
North Eastern	35017	35721	102010	27086	29001	107070	37807	57893	153128
Northern	51800	54038	104320	55922	62664	112056	62905	84694	134637
Central	69295	55943	80732	85135	72199	84805	111074	104249	93856
Western	128973	155099	120257	146674	184565	125833	174218	249327	143112
Eastern	720444	908950	126165	909375	1197079	131638	1123517	1785075	158883
Southern	1255603	3508834	279454	1474208	4286256	290750	1636481	5484696	335152
All India	2261132	4718587	208683	2698400	5831763	216119	3146002	7765935	246851

Source: NABARD Report, 2020

The state-wise and region-wise average credit disbursement per SHG during 2018-19 and 2019-20 is presented in table 2. Among the major states, the average credit disbursement per SHG increased in Andhra Pradesh, Kerala, Tamil Nadu, Goa, Gujarat, Assam, and Rajasthan whereas it declined in Punjab, Nagaland, Andaman and Nicobar Islands, and Madhya Pradesh.

SUCCESS STORIES OF WOMEN SELF HELP GROUPS

The Milky Way (Moradabad, Uttar Pradesh)

Challenges faced by the women of Moradabad

- Group of Women Marginal Farmers, could not earn enough to even feed their families. Husbands are wage laborers on daily basis and some are alcoholics without a confirmed or fixed source of income.

- One SHG member did not enough money to start sugarcane cultivation on their small piece of agricultural land.
- Expenses for the daughter's marriage one member had sold her cattle.
- Without any source of income one member have 5 kids to feed. Interventions
- In 2016 Lakshmi Self Help Group was formed with the help of SPARSH, an NGO under the NABARD SHPI project.
- Savings account was opened in Punjab National Bank, Hasanpur, and the Group was given a Cash Credit Limit (CCL) of Rs.50, 000/- in 2017.
- With a saving of almost Rs.20000/-, the group started the livelihood activities.
- Under Livelihood Enterprise Development Program (LEDP), the SHG went through intensive training in Dairy farming and enterprise development and was also given exposure to the drying and packaging plant of UMANG Dairies Limited.
- They got a 2nd CC Limit of Rs.140000/- in 2019 after the successful utilization of 1st CCL. Impact
- Nine out of the ten members started the dairy enterprise with the help of an SHG loan. More than 80 percent of the cattle price was financed by the loan. In 2019, the SHG opened its Village Level Collection Center (VLCC) with help from UMANG Dairies Limited and sells the entire milk production to the Dairy.
- Before the setting up of VLCC, the women members were receiving Rs.30-35 per liter which was controlled by middlemen. Now with the help of the center, the members are getting Rs.40-42 per liter.
- The average increase in the income level of each entrepreneur is Rs.8340/- which has become the main source of income in their family.

Way Forward

- The members are planning to enhance their milk collection from 150 liters to 250 liters.
- They have applied for individual loans under Dairy Enterprise Development Scheme (DEDS) to purchase cattle of an improved breed like Murrah, with a yield of 10-12 litters of milk per day.
- The members are also mobilizing dairy farmers of other SHGs to sell their milk directly to the company through their collection center.
- They now desire to become a service center for providing input services like Animal Feed and Feed Supplements, as well as milk production at a very competitive price and, are in talks with SPARSH.

Ready-Made Success (South Goa, Goa)

Challenges

- Inadequate employment opportunities for poor women.

- To strengthen women's empowerment by promoting livelihood activities. Interventions
- NABARD, Goa RO sponsored 90 SHG members spread over 21 SHGs in Shiroda Village, Ponda Block of South Goa District under LEDP Programme by giving training in tailoring and apparel design through Agnel Vocational Training Institute (AVTI), Verna
- For the conduct of the LEDP, a grant amount of Rs.5.48 lakh was sanctioned AVTI which included Rs.0.50 lakh towards setting up a Common Facility Centre (CFC).

Impact

- Nine members of five SHGs got training under the project have set up a tailoring shop in Borim village named Navdurga Tailoring Shop.
- From their own resources' members purchased seven sewing machines by taking a shop for rent.
- Started different sewing clothes, jute, and cloth bags, doing embroidery works, and selling readymade garments.
- One SHG member started her tailoring enterprise in the name of Saikunj Creations by taking a loan from EDC Ltd. She has also given employment to three more ladies to assist her in tailoring and stitching work.

Way Forward

- They are receiving orders for stitching masks from the Department of Women & Child Development and Handicrafts Corporation during these Covid-19 times.
- Masks are also being supplied by the groups to nearby schools and colleges.
- The LEDP program has helped these nine beneficiaries to start their enterprise and stand on their own feet.
- Not only getting benefitted out of the LEDP, but they are also able to generate employment for other women in their community.

Crunchy Papads and Pickled Meals (Amravati, Maharashtra)

Challenges

- Smt. Kiran Vinod Rode is a widow from Morshi Taluka of Amravati District.
- She had to run the family all alone and was in search of employment after her husband's demise.
- She got information about Self Help Groups and that by becoming a member of SHGs; women can help themselves mutually whenever they need finances.

Interventions

- She along with another woman, Smt. Jyoti Purushottam Mahhale from the same place initiated and formed a Self-Help Group with the name Mangalam Mahila Swayam Sahayita Bachat Gat in their village.

- At the start, the group had 11 members with an average monthly saving of Rs. 200/- from each member.
- They started to prepare pickles, papads, and snacks at home and sell them in their locality.
- At later stages the group was guided by Ashley Sevabhavi Sanstha, Morshi with grant support from NABARD under its SHG Promotion Programme.

Impact

- Slowly their homemade items became famous in their village and now running successfully in another village also.
- The group member has participated in many exhibitions and got a better response from the customers and also received many orders for their homemade items.
- Now, SHG increased their quantity of production started employing other women in their area.

Way Forward

- The group graduated enough to generate employment for themselves within their community. Many needy people are into employment.
- Their financial needs were very small initially.
- Now their financial needs increased many folds and they are availing Rs. 2, 50,000/- loan from agencies like NABFINS.

Handmade Happiness (Morbi, Gujarat)

Challenges

- Elevate the lives of the economically backward community, both socially and economically.
- To help mobilize strong response in fighting poverty and other related problems. Interventions
- One LEDP Project in the manufacture of readymade garments, handloom bags, and handicrafts was sanctioned to Divya Jyoti GVK Mandal, in Morbi district of Gujarat in 2019-20.
- The aim was to stimulate eco-friendly items.
- The project comprises 90 members from 22 SHG groups who have already availed loans from Rajkot DCCB and the Bank of India.

Impact

- After training, 40 women members of 12 SHG groups participated in Sahyog Mela held at Ahmedabad and made sales of Rs. 80000/-.
- Another group participated in SARAS Fair, Surat sponsored by DRDA, Morbi could achieve sales of Rs. 1, 20,000/-.
- Profit generated by both groups was near about Rs. 50,000/-. Way Forward

- By taking part in local exhibitions and melas women get exposure to the latest marketing trends.
- By upgrading their skills, they can have a better demand in the market for their items.
- They can earn their livelihoods and extend financial support to their families.

TAILOR-MADE FOR PROSPERITY (Senapati, Manipur)

Challenges

- Poor women without any skills and source of income.
- Smt. A. Komuhra hailed from a small village of Senapati District of Manipur. She was fighting to make both ends meet and finding it difficult to run her family.

Interventions

- NABARD supported ACCORDS under the SHPI project.
- SBI, Tadubi branch financed the SHGs
- A 13-day MEDP on Tailoring was organized by ACCORDS for matured SHGs at Shajouba village of Senapathi District.
- 35 SHG members from 19 SHGs of Shajouba were trained in the MEDP. Impact
- Smt. a Komuhra, a member of the matured SHG Kariibomii, enrolled herself in the training program and got trained.
- Now she has started her tailoring unit at Shajoba village with a loan of Rs. 50000/- from SHG which she belongs to.
- Now she can earn Rs. 400/- to Rs. 500/- daily from her tailoring unit enabling her to support her family with a monthly income of Rs. 12000/- to 15000/-.
- During the felicitation program Smt. A. Komuhra expressed her gratitude and happiness to NABARD and ACCORDS for imparting training through MEDP.

ROTI, KAPDA AUR MARKETING (Mohali, Punjab)

Challenges

- Low standard of living and no source of income for poor women.
- Smt Daljeet Kaur, Smt Satpal Kaur, and Mahinder Kaur from Khizrabad village in Majri block of Mohali district came together to get benefits from the different SHGs activities.

Interventions

- Mahila Kalyan Samiti, Mohali under the SHPI Project of NABARD, helped in the formation and smooth functioning of Baba Deep Singh MKS SHG.
- It was saving linked with SAS Nagar Co-Operative Bank, Khizrabad.
- Group was credit-linked after 6 months with the Punjab National Bank Sailabha branch.

- The members started tailoring work and contributing extra income to their families.
- Under the MEDP Programme of NABARD, training was imparted in cutting, tailoring, and food processing in the village.

Impact

- Members involved in tailoring, cutting work and started their shops.
- Groups started to make various food products under the administration of the founder members.
- They got an opportunity to showcase their products in CII, PITEX, Swadeshi Mela, and Bhopal Fair.
- The income from the Melas has improved and changed their lives. Way Forward
- One Rural Mart has been set up in village Khizrabad in Majri Block and earning very good income and benefitting the members.
- Women are aware of the banking and marketing-related activities and their children also studying in good schools and colleges.

CONCLUSION

The welfare of the nation depends upon the well-being of its women. Women of our country face many challenges from time to time in their life. But today's women are not the same as early days. She came forward to identify their capabilities, potentialities, and their desired goal. In our country near about 50 percent of total human resource is constituted by women. This has initiated the process of women's empowerment in our country. Self Help Group played a major role in the empowerment of women in our country. The government of India provided the scheme – "Self Help Groups" intending to strengthen the women to achieve economic independence through self-employment, entrepreneurial development, etc. It is a village-based group comprised of 10 to 20 local women or men mostly they are coming from the same economic background. These groups are assisting by Government agencies or Non-Governmental Organizations (NGOs) intending to solve major or common problems of group members either financially or socially by mutual help. Mostly the SHG members are women. That is why the contribution of women in economic development is increasing and also plays a major role to uplift the economic status of their families. Self Help Groups helps the women of Moradabad district of Uttar Pradesh, (South Goa)

Goa, (Amravati) Maharashtra, (Mohali) Punjab, (Morbi) Gujarat, and (Senapati) Manipur. They overcome their challenges by the intervention of SHG like could not earn enough to even to feed their families, husbands are alcoholics without a confirmed or fixed

source of income, some of having kids without a source of income, they face problems to feed their family also, after a husband's demise women had to run the family all alone and face problems to searching employment. Through the interventions of SHGs women from these regions become more confident, self-independent, change their mindset from subsistence level earning to profit or business-oriented, can start and run their enterprise, and can generate employment for others. These are some of the successful models of the SHG it reached to different parts of the country and contributing an important role in women empowerment. Extension workers, students, researchers, professionals, social workers, etc. can play a vital role to spread the appropriate information of SHGs up to the unreached and which will help to generate more women empowerment in our country through SHGs.

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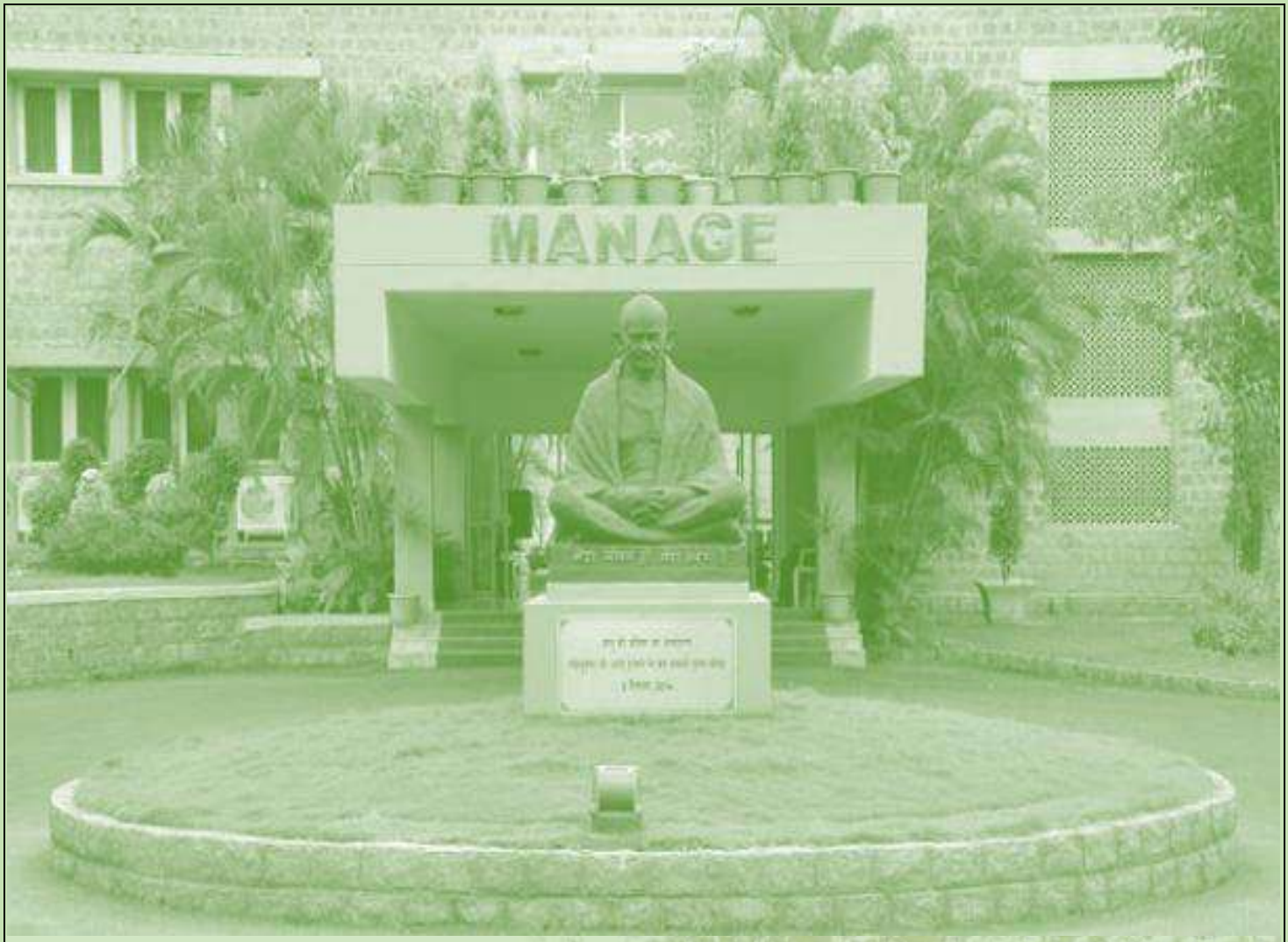

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