



Gopal Krishna Gokhale

**Gokhale Institute
of Politics and
Economics**

(Deemed to be University)
Pune - 411 004

AERC Report

**Agro-Economic
Research Centre
(AERC)**

Role of Women in Agricultural Sector: Case of Maharashtra

Jayanti Kajale

Atreyee Sinha Chakraborty



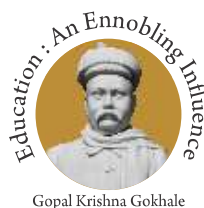
July 2022

**Submitted to
Department of Agriculture, Cooperation and Farmers Welfare
Ministry of Agriculture and Farmers Welfare
Government of India**

AERC Report / 2022

**“Role of Women in Agricultural
Sector: Case of Maharashtra”**

**Jayanti Kajale
Atreyee Sinha Chakraborty**



**Agro Economic Research Centre
Gokhale Institute of Politics and Economics
(Deemed University)
Pune - 411 004**

July 2022

Acknowledgements

This report titled ‘Role of Women in Agricultural Sector: Case of Maharashtra’ was conducted by the Agro-economic Research Centre of Gokhale Institute of Politics and Economics, Pune, at the initiative of the Ministry of Agriculture and Farmers Welfare, Government of India, New Delhi. We are thankful to the Ministry for entrusting this study to AERC Pune. We are grateful to Mr. Lalsanglur, Sr. ESA, DES for his comments on the presentation of the study. We sincerely thank Dr. Promodita Sathish, Adviser, AER Division, DES for her constant support and for useful suggestions relating to the study. We are also extremely thankful to Dr. Kalamkar, AERC-in - Charge, Vallabh Vidyanagar for reviewing the report and for sending the comments.

The study could be completed due to the co-operation and support received from many in the Institute. We would like to thank Prof. Rajas Parchure, former Officiating Director, Gokhale Institute of Politics and Economics for giving us an opportunity to undertake this project. We also thank Dr. Ajit Ranade, Vice Chancellor, Gokhale Institute of Politics and Economics, for the support provided for completion of the study. We sincerely thank Dr. Rath, Registrar, for providing necessary infrastructure throughout the completion of the project. We are grateful to Prof. Sangeeta Shroff, In-Charge, AERC, Pune for guidance provided for completing the work.

We thank Mr. Bote, Superintendent Agricultural Officer, Pune and Mr. Gawasane, Superintendent Agricultural Officer, Latur and their respective teams. We are grateful to them for all the support and information provided for conducting the study in the sample villages. We also thank the agricultural assistants, taluka officials as well as gram panchayat officials for providing necessary data and cooperating with us during the period of the survey. We are grateful to all women respondents for patiently and sincerely providing answers to our questions and to members of all sample households for cooperating with us.

Our sincere thanks to Mr. Anil Memane, Mr. Dete, Mr. Hansraj Suryawanshi, Mr. Sharad Sule, Mr. Birajdar and his team for conducting field work. We thank Mr. Memane for providing statistical assistance. Finally, we thank all our colleagues and staff of the office, computer centre and library for their co-operation.

Jayanti Kajale
Atreyee Chakraborty
Gokhale Institute of Politics and Economics,
(Deemed to be University Under section 3 of the UGC Act, 1956), Pune – 411004
July 5, 2022

Executive Summary

International organisations such as FAO not only recognize the role that women across the globe play in the agri production systems but also the gendered distribution of benefits received from participation in agricultural production. Women cultivators largely contribute to the agricultural production. However, their contribution remains unrecongised. Due to the prevailing gender norms and insufficient access to services, information and technologies, their potential for income generation is adversely affected. It is observed that majority of the women who cultivate their farms do not have title to the land and are less likely to be beneficiaries of various government schemes or extension activities. Therefore, there is a growing recognition about necessity for implementing women centric schemes for the agricultural sector which would empower them for becoming visible part of the food supply chains and contribute to enhancing global food security.

In this regard, measuring the extent of empowerment/ disempowerment of women cultivators, the areas of disempowerment and factors responsible for disempowerment are considered to be important. Women Empowerment Index in Agriculture therefore was first launched in 2012 in a collaborative effort by IFPRI, Oxford Poverty and Human Development Initiative (OPHI), and USAID's Feed the Future. It is a composite index of empowerment of women and index of gender parity within the cultivating household . The former tries to capture empowerment of women in various domains such as decision making capacity of women relating to agricultural production, their access to resources, leadership, control over income earned and their time use pattern. Further, more importantly, the extent of disempowerment / inadequacy can be broken down to find contribution of each domain to disempowerment. The latter index measures the gender gap. The pilot surveys and construction of WEIA based on the data collected in Bangladesh, Uganda and Guatemala highlighted lower level of empowerment of women than men. The studies conducted in India also bring out lower level of empowerment of women cultivators than their men counterparts and various determinants of empowerment such as age, education, market orientation etc. The policy implications that emerge from

such studies are very important. These indicate necessity to understand factors responsible inadequacies in empowerment and interventions needed for increasing empowerment of women cultivators which will ultimately have impact on agricultural productivity and incomes of cultivating households. The need for adapting to region specific modifications in the WEIA has also been revealed. Therefore, it is important to undertake studies which reveal dimensions of contribution of women to the household farms on one hand and the level of their empowerment on the other.

Maharashtra is one of the leading states in India and considering the importance of the state at all India level and need for stepping up the performance of the state agricultural sector, this study aims to focus on the role of women cultivators in their household level agricultural activities, their level of empowerment and areas which demand interventions for increasing the same.

The objectives of the study were -

- To study the district wise and state level trends in rural work force in Maharashtra with a focus on female cultivators.
- To analyse occupational and livelihood pattern of male and female members of the sample households, their time allocation to various paid and unpaid activities and contribution to the farming activity of the household.
- To study awareness and participation of the women cultivators in various government schemes, their access to information and knowledge about farming, their role in decision making relating to cultivation as a member of the household and measure level of their empowerment.
- To discuss various challenges faced by women in the sample farmer households and suggest types of policies that need to be implemented for improving their access to resources, capacity building for enhancing their productivity.

The study was based on secondary as well as primary data. For collection of primary data, two districts- Pune (developed) and Latur (underdeveloped) were selected. 120 cultivator households from each of the districts were selected making the total sample size 240 households. The respondents were female cultivators who were cultivating their own land or leased in land. Data was collected through a structured questionnaire for the year 2020-21.

This data was utilized for understanding the occupational structure of the male and female household members, their socio economic status, time allocation to paid and unpaid activities and contribution of respondents to the farming activity. Data on awareness of respondents, their participation in self-help group activities, extent of digital literacy was also analysed. Further, using qualitative data, empowerment index for the respondents of Pune and Latur was constructed. Seven domains were considered for constructing the index. These were 1. Decisions relating to production, 2. Decisions relating to assets, 3. Ownership of assets, 4. Control over use of income 5. Community participation and knowledge about agriculture and various government schemes, 6. Digital literacy and 7. Involvement in self learning and attending workshops/ training programmes. The indicators capturing these domains were considered to be reflecting extent of empowerment of the respondents.

Major Findings

1. The census data for the years 2001 and 2011 shows that though the agricultural workforce of the country has been declining, still a substantial section of the population – around 70 percent of the male and 80 percent of the female workers were engaged in the agricultural sector in 2011.
2. Among various states, Maharashtra contributed around 15 percent to the pool of total female main workers at all India level and around 19 percent to the rural female main cultivators. The share of female cultivators in total main rural female workers in 2011 was 41 percent out of all the occupational categories.
- 3 As per the Agricultural Census 2015- 16, 15.47 percent of the landholdings were owned by females in Maharashtra. Not only the share of females in landholding is very fragile but majority of the female landholders are the owners of marginal and small size landholding. With increase in land size, share of women as landowners and in area under landholdings has declined.

Following are the *Major Highlights* arising out of *analysis of the primary data* collected from the field-

1. Only 13 percent of the respondents in Pune and 18 percent in Latur had the household land in their name.

2. The average number of days of work of the respondents for 17 crops in Pune and 12 in Latur were higher by 1.4 times and 1.22 times respectively than their male counterparts. However, on an average their notional contribution in terms of imputed total wage income that would be received by them for crops was lower than their male counterparts by 1.4 times in Pune and 1.3 times in Latur due to lower market wage rate for hired women labourers.
3. Overall, the women respondents were performing all the agricultural activities along with the males in the household.
4. The daily average time allocation showed that overall, women spent almost 18 percent of their daily time in unpaid domestic activities as against 4 percent spent by the men in the family. On an average 29 percent and 36 percent of the respondents' and male members' daily time was spent on cultivation activity. It is interesting to note that respondents devoted 1.44 percent of their daily time for learning as against 0.36 percent by men.
5. Majority of the respondents in both the districts perceived that their contribution to farming throughout crop season was more than 50 percent.
6. All four villages in Latur were under women agricultural assistants of the agri department. As a result, there was constant interaction among the women cultivators and the assistants and interaction among women cultivators also. This facilitated flow of information. In three of the villages, women SHGs were found to be active and under the leadership of progressive women farmers. On this background therefore, the responses showed that the extent of women cultivators in Latur who were aware of various government policy initiatives was higher than in case of Pune.
7. The empowerment index was 0.57 for Pune and 0.60 for Latur. This indicated that the level of disempowerment was 0.43 for Pune and 0.40 for Latur in spite of the significant contribution to household agricultural and nonagricultural livelihood activities. This reveals the scope which is there for reducing the inadequacies and improving empowerment in both the districts. It was observed that the index for Latur was only marginally higher than that of Pune in spite of better socio economic status of the respondents of Pune.

8. Breakdown of the empowerment index into various dimensions revealed that absence of joint or single ownership of land for women, inadequacy in knowledge and awareness; lesser opportunities or orientation for self-learning; lack of digital literacy, lack of opportunity to attend training program to enhance farm/ business related knowledge were the main domains wherein extent of inadequacy and resulting disempowerment of women cultivators in both the districts was higher.
9. The observation of the data revealed that proportion of adequate respondents was not directly proportional to the position in the caste hierarchy. In fact, proportion of SC respondents with adequate scores was highest for majority of the dimensions in both the districts. This could be due to necessity to participate in various economic / livelihood activities along with male counterparts of the households. On the other hand, comparatively lower proportion of adequate respondents in the general category indicated lesser need for such respondents to participate in various economic activities to the full extent.

Policy Implications

1. A large proportion of women were not aware about government schemes especially those for women cultivators. Hence efforts at strengthening the extension activities among farmer households for increasing awareness about such schemes have to be made.
2. The interaction among agricultural assistants and women cultivators was found to be more strong and meaningful in villages where the former were women and also where farmer friends were women. Hence, wherever possible, women agricultural assistants can be appointed by the state agricultural department
3. Majority of the respondents had not attended any training programmes relating to information about appropriate cultivation practices, input usage, market for produce etc. and aiming at enhancing productivity of farms. Hence it is important that such training programmes are arranged for not only the land owners but also the women members of the family who are engaged in various agricultural operations.
4. Most of the respondents could make and receive call. However, they were not equipped to use the mobile and the internet for accessing information relevant to the crops grown on farms. It is felt that *training programmes relating to enhancing the*

extent of digital literacy among respondents need to be organised so that the respondents can make use of digital platforms independently for accessing various types of information and for availing online services and for marketing of the produce. E.g. *small informative training modules on relevant information relating to the agricultural activities performed by women cultivators need to be circulated on digital platform among them. Usage of digital tools is important as very often there could be difficulties in organising training programmes for women working on farm.*

5. Around 38 percent of the women felt that given a chance, they would like to work into the non-farm sector. Hence, training programmes / workshops relating to vocational guidance for carrying out employment and income generating activities need to be organized for women in the villages.
6. Though gradually the extent of land owned by female landowners has been increasing, it is still very low at all India level and for Maharashtra. *Therefore, awareness regarding importance of adding the name of the woman cultivator / wife along with the male cultivator / husband needs to be created.*
7. Depending upon the score of women respondents in terms of extent of empowerment, they were classified as adequately empowered, moderately empowered and inadequately empowered. It was found that the extent of inadequately empowered was higher in case of respondents with lower levels of education. This indicated role of formal education in reinforcing level of empowerment in case of the respondents. Therefore, awareness and importance of formal education needs to be stressed among the cultivator households.
8. There has been lack of adequate gender specific information on contribution of women to the household farm. *Therefore, it is important to undertake studies for understanding various agricultural activities performed by women for various crops and regions, relative time spent on these/other activities, gender specific challenges faced in carrying these activities.*
9. It is felt that construction of region specific inadequacy scores and empowerment index would provide understanding of contribution and challenges faced by women cultivators and would be helpful in framing appropriate policies.

Content

		Page No.
	Acknowledgement	i
	Executive Summary	ii-vii
	Content	viii-ix
	List of Tables	x-xi
	List of Boxes	xii
	List of Figures	xii
	List of Maps	xii
Chapter 1	Introduction	1-9
1.1	Introduction	1
1.2	Review of Literature	2
1.3	Need for the Study	5
1.4	Objectives of the Study	6
1.5	Sampling Design and Methodology	6
1.6	Organisation of the Study	9
Chapter 2	Female Cultivators in Maharashtra	10-20
2.1	Introduction	10
2.2	Rural Work Force in India	10
2.3	Structure of Workforce in Maharashtra	13
2.3.1	Structure of Workforce in Maharashtra – An Overview	13
2.3.2	Rural Cultivators in Maharashtra	14
2.3.3	Share of Divisions in Rural Cultivators of Maharashtra	15
2.3.4	District wise and Industrial Category wise Share of Rural Female Main Workers	16
2.4	Gender wise Land Ownership Pattern in Maharashtra	18
2.5	Concluding Remarks	20
Chapter 3	Socio Economic Status of the Sample Households and the Respondents	21-36
3.1	Introduction	21
3.2	Socio economic Characteristics of the Sample Female Respondents and Sample Households	21
3.3	Occupational Pattern of the Sample Households and Household Members	23
3.3.1	Occupational Pattern of the Sample Households	23
3.3.2	Landholdings with the Households	24
3.3	Educational Status of Household Members	26
3.4	Occupational Pattern the Household Members	27
3.5	Income of the Households and Household Members	29
3.6	Cropping Pattern and Contribution of Women	32
3.7	Concluding remarks	35

		Page No.
Chapter 4	Awareness, Decision Making and Empowerment of the Female Respondents	37-62
4.1	Introduction	37
4.2	Agricultural Activities performed by the Female Respondents and Members	37
4.3	Decision making by the Female Respondents	40
4.4	Knowledge of the Respondents	42
4.5	Developing Women Empowerment index in Agriculture	50
4.5.1	The Framework	50
4.5.2	The Domain Areas and Indicators	52
4.5.3	Computation of Inadequacy Score and 7 Dimension Empowerment Index	54
4.5.4	Breaking Down M by Domains and Indicators	55
4.5.5	Correlates of Empowerment Index	59
4.5.6	Classification of Respondents according to Caste and Education Status.	60
4.6	Concluding Remarks	61
Chapter 5	Summary and Conclusions	63-68
Chapter 6	Policy Implications	69-71
	References	72-73
	Appendix I	74-75
	Appendix II	76
	Appendix III	77

List of Tables

No.	List of Tables	Page No.
1.1	Selection of the Sample Districts	8
1.2	Sampling Design	9
2.1	Share of Cultivators and Agricultural Labourers to Total (urban and rural) Workers in India (In percent)	10
2.2	Share of Cultivators and Agricultural Labourers in Total Rural Agricultural Workforce in India (In percent)	11
2.3	Gender-wise Percentage Distribution of Workers across Sectors in Rural Areas of India (In percent)	11
2.4	Distribution of Main and Marginal Workers in India, Census 2011 (In percent)	12
2.5	Share Female Cultivators in Maharashtra to Total Female Cultivators in India 2011 (In percent)	13
2.6	Workforce Structure in Maharashtra: 2001 and 2011	13
2.7	Industrial Category wise distribution of Workers in Maharashtra (In percent)	14
2.8	Division wise Distribution of total Main Rural Cultivators- Male and Female,2011	16
2.9	Share of Landholdings Owned by Women in Maharashtra (in percent)	19
2.10	Land Size Wise Share in Landholdings by Females in Maharashtra (In percent)	20
3.1	Characteristic Features of the Respondent Cultivators	22
3.2	Educational Status of the Female Respondents (In percent)	22
3.3	Religion Category wise Classification of the Sample Households (In percent)	23
3.4	Caste wise Classification of Sample Households (In percent)	23
3.5	Primary Occupation wise Distribution of Households (In percent)	24
3.6	Secondary Occupation wise Distribution of Households (In percent)	24
3.7	Extent of Land ownership and Irrigated Land with the Sample Households (In percent)	25
3.8	Land Size wise Classification of Sample Households (In percent)	25
3.9	Land Ownership among Respondents (In percent)	26
3.10	Land Ownership Pattern in the Sample Villages	26
3.11	Level of Education of the Household Members	27
3.12	Primary Occupation wise and Gender wise Share of the Household Members	28
3.13	Secondary Occupation and Gender wise Share of the Household Members	29
3.14	Occupation wise Average Income and Share of Occupations in Total Average Annual Income of the Households	29

No.	List of Tables	Page No.
3.15	Gender wise Occupation wise average Income from Primary Sources from Sources Other than Cultivation (Rs. per annum)	30
3.16	Gender wise Occupation wise average Income from Secondary Sources Except Cultivation (Rs per annum)	30
3.17	Classification of Sample Households based on Extent of Sources of Income	31
3.18	Characteristics of Households / Household Members with Outstanding Loan	32
3.19	Distribution of the Households according to the purpose of Loan taken (In Percent)	32
3.20	Classification of Households based on Number of crops Cultivated	33
3.21	Contribution of the Female Respondents to Household Cultivation of Crops in Pune	34
3.22	Contribution of the Female Respondents to Household Cultivation of Crops in Latur	35
4.1	Table 4.1: Distribution of Respondents by their Perception about their contribution to Agricultural Activities (In percent)	40
4.2	Decision making by female respondents (In Percent))	41
4.3	Reasons for not Getting involved in Decision Making (In percent)	42
4.4	Share of female respondents who have knowledge about various Concepts and Government schemes (In percent)	44
4.5	Proportion of Respondents who thought they should get more information	45
4.6	Training Programmes/ Workshops Attended by the Respondents	45
4.7	Source of getting Information as reported by the Respondents	45
4.8	Membership of SHGs and Activities under SHGs (In percent)	46
4.9	Extent of Digital Literacy among the Respondents	47
4.10	Responses of the Respondents relating to Problems faced by them (In percent)	48
4.11	Responses regarding Measures to be taken to Remove the Problems	48
4.12	Responses relating to Problems faced by Respondents due to Corona (In percent)	49
4.13	Measures Suggested by the Respondents	49
4.14	Occupational Preference of the Respondents (In percent)	55
4.15	The Domains, Indicators, and Weights in the Women's Empowerment in Agriculture Index	52
4.16	Inadequacy Contribution under each Dimension	58
4.17	Caste wise Proportion of Adequately / Inadequately Empowered Respondents	60
4.18	Education Status wise Proportion of Adequately / Inadequately Empowered Respondents	61

List of Boxes

No.	List of Boxes	Page No.
3.1	Women and Ownership of Land- Recent Trend	26
4.1	Features of the Latur Villages	43

List of Figures

No.	List of Figures	Page No.
2.1	Economic Activity wise distribution of Male and Female Rural Main Workers in Maharashtra 2001 (In percent)	15
2.2	Economic Activity wise distribution of Male and Female Rural Main Workers in Maharashtra, 2011(In percent)	15
2.3	Industrial Category wise Distribution of Rural Female Main Workers	17
2.4	Percentage Change in the Share of Women Main Cultivators to Total	17
2.5	Share of Women Landowners in Total Landowners in Various States (In percent)	19
4.1a	Share of Respondents and Male Counterparts performing Various Agricultural Activities in Pune (In percent)	38
4.1b	Share of Respondents and Male Counterparts performing Various Agricultural Activities in Latur (In percent)	38
4.2a	Daily Average Time Allocation (hrs) of Men and Women Members Hours in Busy schedule in Pune (In percentage)	39
4.2b	Daily Average Time Allocation (hrs) of Men and Women Members Hours in Busy schedule in Latur (In percentage)	39
4.3	Percentage Contribution of each Indicator to the Inadequacy	59

List of Maps

No.	List of Maps	Page No.
Map 1.1:	Sample Districts and Talukas of Maharashtra	9

Chapter 1

1.1 Introduction

Women across the globe are engaged in numerous agricultural operations and largely contribute to the global agri food production. In spite of this however, their contribution to the food production largely remains unrecongnised. Also, the prevailing gender norms relating to division of labour and insufficient access to critical services, information and technologies affects women's work burden and their potential for income generation (FAO, 2020). Amidst growing concerns about various challenges faced by the agricultural sector is the growing recognition about necessity for implementing women centric schemes for the agricultural sector which would increase their productivity and empower them for becoming visible part of the food supply chains and contribute to enhancing global food security (<https://www.fao.org/3/x2950e/x2950e03.htm>).

In case of India, as per Census 2011, out of the total rural workforce of India, around 79 percent were working as the agricultural workforce comprising of cultivators and labourers. Whereas agricultural workforce formed around 74 percent of the total rural male workers, for women workers, this share was around 84 percent. It indicates that there are constraints to their entry into the non-farm sectors of the economy and majority of the women workers in rural areas are still dependent on a sector characterized by low productivity. Various studies have observed lower rate of growth of the agricultural sector than other sectors of the economy. A comparative study of crop wise yields reveals lower yield of various crops in a number of states as compared those realized at global level. Studies have also revealed inadequate incomes of especially marginal farmers and agricultural labourers. Due to the traditional gender norms relating to division of labour and being a major segment of the rural female workforce, female agricultural workers are likely to bear by a greater extent, the brunt of the problems posed due slower growth of the agricultural sector. At the same time however, new emerging segments of the sectors such as horticulture, livestock, agri exports and agro processing have indicated their potential to enhance growth performance of the agricultural sector as a whole and therefore have presented opportunities to the households dependent on the sector. Therefore, it is important that the female agricultural workforce is geared up to take up the challenges posed in the agri and allied sector.

The share of women cultivators in rural female workforce is around 34 percent. Given the substantial engagement of the female cultivators in the family farms, the key question is to what extent women cultivators get opportunities for upgradation of their set of information, knowledge and skills relating to various agricultural operations and farming as a whole and apply the same while working on / managing the farms. Undervaluation of their contribution as cultivators and lower extent of land ownership seem to be the manifestations of the gender related biases and challenges faced by women cultivators. It is hence important that focus of the extension services is on their capacity building which would ultimately enhance their productivity and incomes from crop cultivation and non farm activities and lead to their empowerment. In view of this, it is important to assess contribution of women cultivators to the household agricultural activities and income generation on one hand and their role in decision making and access to resources, knowledge and agricultural extension services on the other. This is necessary for framing suitable policies for their capacity building and empowerment.

1.2. Review of Literature

In view of the extent of engagements of women cultivators in the agricultural sector, their inadequate access to various resources and the challenges faced by them on one hand and the need to increase agricultural productivity and incomes of farmer households on the other, the existing literature addresses few important issues. There are a number of studies which analyse differences in agricultural productivity on farms headed/ managed by women and men cultivators. A gender gap in agricultural productivity necessitates analysis of exact factors that lead to productivity differentials. Women cultivators have traditionally been involved in a variety of agricultural operations such as producing seedlings, sowing, weeding, transplanting, threshing and harvesting of food grains and other crops and often in their sale in the market. They are also involved in allied agricultural activities such as dairy/ poultry. Therefore, a number of studies especially for countries in Africa have analysed productivity differentials on male and female headed/ managed households. These studies found statistically insignificant differences between men and women plot managers, after accounting for input use, farmer characteristics and access to extension service (Moock,1976; Saito et al 1994, Adeleke et al. 2008). A number of other, more recently conducted studies also did not find any significant differences in productivity of men and women (Kazianga and Wahhaj ,2013; Hill and Vigneri, 2011; Doss, 2015). However, the study by Mahajan (2018) observes that such studies have been conducted in many African countries where female headed and male headed households could be

identified and the productivity differential could be found out. But paucity of such studies has been observed for other regions of the globe. This is because generally, agricultural production is an outcome of combined efforts of men and women cultivators and it is difficult to find their productivity separately. As far as India is concerned, Mahajan analysed Indian Human Development Survey (IHDS) data set (2004-05) that covers 41,554 households across 382 districts across all states and union territories except Andaman and Nicobar Islands and Lakshadweep. It was found lower production value on women managed farms even with all controls. According to the study, differences in soil quality and in managerial efficiency could have been major factors explaining lower productivity/profitability on women headed farms. Such studies point out that wherever the differences were significant, they could be related to gender biases. The studies therefore underline prevalence of gender induced inadequacies and need for policies which empower women cultivators and which ultimately would lead to higher agricultural productivity and incomes.

One of the ways of capturing inadequacies if any of a woman as a cultivator is to measure the manifestations of her capabilities as a cultivator engaged in management of the household farm. Ownership of land, capacity to take decisions relating to agri and allied activities, relative time allocation for various paid and unpaid activities etc. seem to be suggesting these capabilities or in other words, empowerment of women cultivators. A lower level of capabilities or empowerment would indicate among other factors, constraints faced by women farmers due to their gendered roles under various domains. There has been an increasing recognition about importance of implementation of policy making for agricultural sector from the view point of stakeholders such as women cultivators for increasing agricultural productivity and for efficient outcomes of projects and policies. Therefore, the need for agriculture specific measures of prevailing state of empowerment and of empowerment after the policy intervention has also been recognized.

The Women Empowerment Index in Agriculture (WEIA) was first launched in 2012 in a collaborative effort by IFPRI, Oxford Poverty and Human Development Initiative (OPHI), and USAID's Feed the Future. The objective was to measure extent of empowerment of women working in agriculture. It is a composite index of empowerment of women and index of gender parity within the cultivating household. The former tries to capture empowerment of women in various domains such as decision making capacity of women relating to agricultural production, their access to resources, leadership, control over income earned and their time use pattern. Further, more importantly, the extent of

disempowerment / inadequacy can be broken down to find contribution of each domain to disempowerment. The latter index measures the gender gap (<https://www.ifpri.org/project/weai>). Based on the Alkire-Foster methodology, the WEAI is constructed with the help individual-level data collected by interviewing men and women within the same households. The measures the extent of empowerment and hence indicates extent of disempowerment/inadequacy also. Further, the extent of disempowerment / inadequacy can be broken down to find contribution of each domain to disempowerment (Alkire et al, 2013). The results of the pilot study based on this index in Bangladesh, Guatemala and Uganda showed higher levels of disempowerment in case of women than in case of males in the family. The study also showed various major areas of disempowerment such as lack of control over resources and ownership of assets. However, the study did not find any significant correlation between empowerment with variables such as age, income and level of education.

There have been attempts to construct the index for women cultivators in case of India also. The study by Gupta et al (2017) constructed WEIA with the help of data collected from states of Bihar, U.P. and Orissa found that absence of group membership accounted for 40 percent of the burden of disempowerment. This was followed by disempowerment due to lack of ownership of land. Study by Gupta et al (2019) found that absence of group membership and lack of ownership of land accounted for major burden of disempowerment. The policy implications that emerge from the review of earlier studies are very important and indicate that various interventions are needed for increasing empowerment across various domains. The need for adapting to region specific modifications in the WEIA has also been revealed.

It can be noted here that international agency like Food and Agricultural Organisation (FAO) has been insisting on the importance of policy making for agriculture and rural sector from the view point of stakeholders such as women cultivators (<https://www.fao.org/3/y3969e/y3969e03.pdf>). Lack of gender specific information on contribution to the sector and challenges faced may not lead to fruitful outcomes of various policies. Therefore, it is important to undertake studies for understanding various dimensions of contribution of women to the household farms and levels of inadequacies/ so that appropriate policies can be designed for their empowerment and for enhancing performance of the agricultural sector as a whole. .

1.3 Need for the Study

In view of the gender related secondary role played by the women in agricultural sector, they are faced with a number of challenges. It is observed that majority of the women who cultivate their farms do not have title to the land and are less likely to be beneficiaries of various government schemes or extension activities. Lower literacy rates and lower exposure to information often puts constraints to their learning about markets and new technologies. A number of women are unaware of the related financial transactions, amount of credit availed from institutional and non-institutional sources, input prices etc. On such background, it is revealed that the agrarian distress in states like Maharashtra leading to the suicides of male members of the family have increased the magnitude of the challenges faced by the women in the cultivator households.

Maharashtra is one of the leading states in India and accounted for highest average share of 14 percent during the period of 2011-12 and 2020-21 in Nominal GDP (base year 2011-12). The per capita income of the state was also higher (Rs. 1.8 lakhs) as compared to that at the all India level (Rs1.2 lakhs) for the year 2020-21. It is also a state with higher Human Development Index (HDI) of 0.697 than that of India (0.646) for the year 2019 (Economic Survey of Maharashtra 2020-21). As far as structure of female workforce is concerned, the share of rural female cultivators of the state in total rural female cultivators of India was almost 19 percent. As per the Agricultural Census, 2015-16, the state contributed 10.43 percent of total number of agricultural landholdings of India and around 12 percent of the total number of female owned total landholdings.

However, the agricultural sector which sustains around 50 percent of the total workers of the state (census 2011) has been contributing only on an average around 12 percent to the state income during 2011-12 and 2020-21. Due to various factors, a large section of farmers are unable to obtain satisfactory income. Around 40 percent of the female total rural main workers in Maharashtra still depend for livelihood on this low productivity sector as cultivators according to census 2011. It is felt that one of the ways to step up the agricultural performance and incomes of cultivator households could be through capacity building and empowerment of the women cultivators. Therefore, considering the importance of the state at all India level and need for stepping up the performance of the state agricultural sector this study aims to focus on the role of women cultivators in their household level agricultural activities, their access to various resources, extent of their decision making, their perceptions and hence their level of empowerment that has direct bearing upon productivity in the farm.

1.4 Objectives of the Study

1. To study the district wise and state level trends in rural work force in Maharashtra with a focus on female cultivators.
2. To analyse occupational and livelihood pattern of male and female members of the sample households, their time allocation to various paid and unpaid activities, their contribution to the farming activity of the household and the extent of land ownership.
3. To study the awareness and participation of the women cultivators in various government schemes, their access to information and knowledge about farming, their role in decision making relating to cultivation as a member of the household and the level of empowerment.
4. To discuss various challenges faced by women in the sample farmer households and suggest types of policies that need to be implemented for improving their access to resources, capacity building for enhancing their productivity.

1.5 Sampling Design and Methodology

The study is based on secondary as well as primary data.

Secondary data sources

- Population Census of India pertaining to the years 2001 and 2011 and Economic Survey of Maharashtra.
- Population Census data has been used mainly to analyse trends in rural main workers with a focus on rural female main cultivators
- As per the Census, main workers are the workers who work for 6 months or more in a year. Marginal workers are the workers who work for less than 6 months in a year.
- These data sources were utilized for understanding workforce structure of the districts and state as a whole.

Primary data-

- For collection of primary data, multistage sampling was followed.
- Firstly, based on various overall indicators of development and relative share of female rural main cultivators, two districts- one developed and the other underdeveloped were selected.
- At the second stage, in each district, two talukas, one near the district place and one away from the district place were selected

- In each of the talukas, based on the discussions with the village officials 2 representative villages were selected.
- From each of the village, 30 cultivator households were selected
- Thus, 120 cultivator households from each of the districts were selected making the total sample size 240 households (table 1.2).
- The respondents were female cultivators who were cultivating their own land or leased in land. They were cultivators who did not necessarily own land jointly/ individually.
- Land size wise distribution of households in the village was considered while selecting the sample households and female cultivators were the respondents.
- Data was collected for the period 2021-22
- Data was collected through a structured questionnaire
- Informal discussions were held with agricultural assistants and farmer friends in the selected villages.
- This data was utilized for understanding the occupational structure of the male and female household members, their socio economic status, time allocation to paid and unpaid activities.
- Data relating to awareness of respondents, their participation in self-help group activities, extent of digital literacy was also analysed.
- Simple statistical tools were used for analyzing the data.
- Using qualitative data, an attempt was made to construct empowerment index for the respondents of Pune and Latur.

Sample Districts

District Pune (Table 1.1, Map 1.1)

- District with second highest HDI value next to Mumbai which is an urban district,
- Very high value of cropping intensity and as well as higher value of per capita gross district value added.
- Highest share (8.12 percent) of total main female cultivators.
- Within the district, Pune has relatively higher share (around 42.54 percent) of female cultivators as compared to the male cultivators.
- Among the total main female workers, share of cultivators was highest (54.5 percent) followed by agricultural labourers, other workers and household

industry workers. Hence, this district was selected as the sample district (map 1.1).

District Latur (Table 1.1, Map 1.1)

- Lower per capita income and HDI
- Relatively lower share of rural main female cultivators as against male cultivators as well as against other category female rural main workers. Table 1.1 shows that within the district , share of women cultivators was only around 35 percent (as compared to 65 percent of the male cultivators). Also, share of women cultivators was around 35 percent in total rural workers. The category of women rural main workers with predominant share (around 56 percent) was that of agricultural labourers.

Table 1.1: Selection of the Sample Districts

	Indicator	Pune	Latur	Maharashtra
1	Human Development Index (2011)	0.814	0.663	0.752
2	Per capita net district income (at current prices), 2020-21 (Rs)	2,56,936	1,38,455	1,69,930
3	Share of female cultivators in total main rural female cultivators of the state (percent) (Census 2011)	8.12	2.51	-
4	Share of total main female cultivators in total* main rural cultivators within the district (percent) (Census 2011)	42.54	34.83	37.88
5	Share of total main female cultivators in total** main rural workers (within the state(percent) (Census 2011)	54.5	35.40	41

Note *= Male + Female, ** cultivators +agri labourers + household industry workers + other workers
Source: Economic Survey of Maharashtra 2021-22, GoM, Poulation Census of India 2001, 2011

Chapter 2

Female Cultivators in Maharashtra

2.1 Introduction

This chapter takes an overview of the structure of rural workforce across various sectors in India based on the census data for the years 2001 and 2011. It also highlights recent trends from various rounds of NSSO surveys. On this backdrop, the contribution of the state of Maharashtra to the total rural female workforce of India is identified. Further, the chapter analyses the structure of female workforce viz a viz their male counterparts in various divisions/ districts of the state. This discussion is followed by discussion based on Agricultural Census data relating to gender wise land ownership pattern in Maharashtra.

2.2 Rural Work Force in India

As per census 2001, 58.2 percent (cultivators and agricultural labourers) of the total workforce was engaged in agricultural and allied sector activities. Over time though the rural workers have shifted from agriculture to other sectors, still agriculture is the most important source of livelihood in rural India. In fact, in 2011 also, 54.6 percent of the total workforce was still engaged in agricultural sector. This can be observed from table 2.1. It also shows gender distribution of agricultural workforce during last two censuses. The table reveals declining share of male and female cultivators and simultaneously increasing share of agricultural labourers. As the combined share of these two categories is declining over the period, this indicates increasing share of non farm workers. However, it can be seen that still around 65 percent of the female workforce was engaged in the agricultural sector.

Table 2.1: Share of Cultivators and Agricultural Labourers to Total (urban and rural) Workers in India (In percent)

Census	Share of cultivators to total Workers			Share of agricultural labourers to Total Workers			Combined share of cultivators and agricultural labourers		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
2001	31.65	31.06	32.93	26.55	20.85	38.87	58.2	51.91	71.8
2011	24.65	24.93	24.04	29.95	24.93	41.07	54.6	49.86	65.11

Source: Population Census of India, 2001,2011

A similar pattern is revealed while considering only the rural workforce (table 2.2). It is observed that the share of rural female agricultural workforce was 77 percent as against male agricultural workers with a share of around 69 percent in 2011. Another distinguishing

feature is increase in the share of female labourers and their high share in the rural workforce in 2011. The highlights lower share of of women working in the non farm sector in the rural areas.

Table 2.2: Share of Cultivators and Agricultural Labourers in Total Rural Agricultural Workforce in India (In percent)

	Share of cultivators			Share of labourers			Combined share of cultivators and agricultural labourers		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
2001	40.24	41.98	37.12	33.05	27.51	42.95	73.28	69.49	80.07
2011	33.00	35.22	28.87	39.28	34.36	48.45	72.28	69.58	77.32

Source: Population Census of India, 2001,2011

The gender distribution of rural workforce also shows that overall, 65.04 percent were male workers and the rest i.e. 35 percent were female workers. Even among rural cultivators , 69.42 percent were males and among agricultural labourers, 56.88 percent were male workers. This reveals overall as well as segment wise lower rate of participation of women workforce in rural areas.

For understanding the recent trends in the workforce across various sectors especially in rural areas,, NSSO data was also observed.

Table 2.3: Gender-wise Percentage Distribution of Workers across Sectors in Rural Areas of India (In percent)

Sectors	1999–2000		2004–05		2011–12		2018-19	
	Male	Female	Male	Female	Male	Female	Male	Female
Agriculture	71.4	85.4	66.5	83.3	59.4	74.9	55	73.2
Mining and quarrying	0.6	0.3	0.6	0.3	0.5	0.3	0.5	0.2
Manufacturing	7.3	7.6	7.9	8.4	8.1	9.8	7.7	8.1
Construction	4.5	1.1	6.8	1.5	13	6.6	14.5	5.3
Trade, Hotel, Restaurant	6.8	2	8.3	2.5	8	3	9.2	4
Other services	9.4	3.6	9.9	4	11	5.4	13.1	9.2

Source: Periodic Labour Force Survey (PLFS 2018-19), NSO, MoSPI, GoI

The data shows that during the last two decades there has been an increase in the non-farm employment opportunity in rural areas and a shift of workforce from farm to non-farm sector. Whereas share of males working in agriculture has reduced from 71 percent in 1999-2000 to 55 percent in 2018-19, that of females in agriculture reduced by a smaller percentage and was 73 .2 percent in this year. The census as well as NSSO data thus clearly

shows that historically women have been playing an important role in India's agricultural production. With the passage of time as men shifted to non- farm activities in greater proportion, the responsibility of women to look after the farming activities thus has further increased.

Table 2.4 shows that majority i.e. around 70 percent of the rural workforce in 2011 consisted of main workers (participants in the workforce for more than 6 months of a year). Out of the rural workforce, only around 27 percent were females and the rest were male workers. Also, it can be observed that the share of main workers was lower in case of female cultivators as well as agricultural labourers as compared to the male counterparts. This reveals greater extent of marginal workers in case of female workers.

Table 2.4: Distribution of Main and Marginal Workers in India, Census 2011

(In percent)

1	Share of main workers to total (main + marginal) rural work force	70.50
2	Total Rural (males+ females) main workforce	
	Share of males	72.43
	<i>Share of females</i>	<i>27.57</i>
3	Share of Main Cultivators in Total Rural Cultivators	
	Share of main male cultivators in rural total (main + marginal) male cultivators	88.26
	<i>Share of main female cultivators in rural total female cultivators (main + marginal)</i>	<i>63.43</i>
4	Share of main agricultural labourers in rural total agricultural labourers(main + marginal)	
	Share of male main agri labourers in rural total male agricultural labourers (main + marginal)	66.26
	<i>Share of female main agricultural labourers in total rural female agricultural labourers (main + marginal)</i>	<i>49.64</i>

Source: Population Census of India, 2001,2011

The tables above clearly indicate dominance of rural and agricultural workforce in total workforce, lower participation of women in the workforce and higher share of marginal workers in case of women cultivators and agricultural labourers as against in case of men.

Among various states, Maharashtra contributes around 15 percent to the pool of total female main workers at all India level (table 2.5). The table also shows very high share of female main cultivators as well as that of rural main female cultivators of Maharashtra.

Table 2.5: Share Female Cultivators in Maharashtra to Total Female Cultivators in India 2011
(In percent)

		Share of Maharashtra
1	Total female main workers	15.41
2	Female main cultivators	18.78
3	Rural female main worker	15.22
4	Rural female main cultivators	18.96

Source: Population Census of India, 2001,2011

Thus, it is observed from the given data that a fairly large proportion of rural female main cultivators of India belong to Maharashtra. We therefore observe the structure of workforce in Maharashtra with particular reference to female cultivators.

2.3. Structure of Workforce in Maharashtra

2.3.1. Structure of Workforce in Maharashtra – An Overview

The structure of workforce in Maharashtra has undergone substantial changes since 2001. A shift has been observed from farm-activities to non-farm activities due to increasing urbanization, industrialization and the growth of service sector. The following two tables present the overall workforce structure and industrial category wise workforce structure in Maharashtra for last two decades.

Table 2.6 shows an increase in the number of total workers as well as main workers over the two census periods. Number and share of marginal workers has reduced during this period. Though majority- more than 60 percent - of the workers were rural workers, there has been a marginal decline in their share.

Table 2.6: Workforce Structure in Maharashtra: 2001 and 2011

Sr. No.		2001	2011	% change
1	Number of total workers in Maharashtra (Cr)	4.11	4.94	20.19
2	Numbers of total Main workers in Maharashtra (cr)	3.47	4.38	26.22
3	Share of Main workers (%)	84.39	88.53	4.91
4	Share of Marginal workers (%)	15.61	11.47	-26.54
5	Share of Rural workers in Total main workers (%)	62.89	60.57	-3.69

Source: Population Census of India 2001, 2011

Following table presents industrial category wise distribution of workers in Maharashtra. It can be observed that there has been marginal increase in the proportion of non-farm (other) workers and agricultural laborers and corresponding decline in share of cultivators during 2001 ad 2011. The overall structure is thus dominated by agricultural workforce consisting of cultivators and agricultural labourers. It can be seen that cultivators formed 25 percent of the workforce in 2011

Table 2.7: Industrial Category wise distribution of Workers in Maharashtra
(In percent)

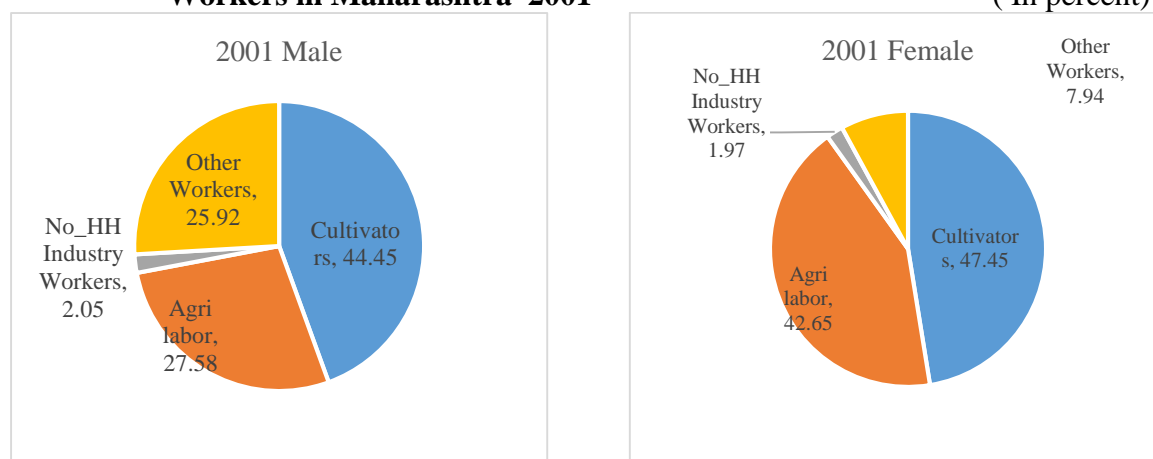
	Category of workers	2001	2011
1	Cultivators	28.7	25.4
2	Agri labourers	26.3	27.3
3	Household Industry workers	2.6	2.5
4	Other workers	42.4	44.8
	Total	100	100

Source: Economic Survey of Maharashtra 2001 ,2011

2.3.2 Rural Cultivators in Maharashtra

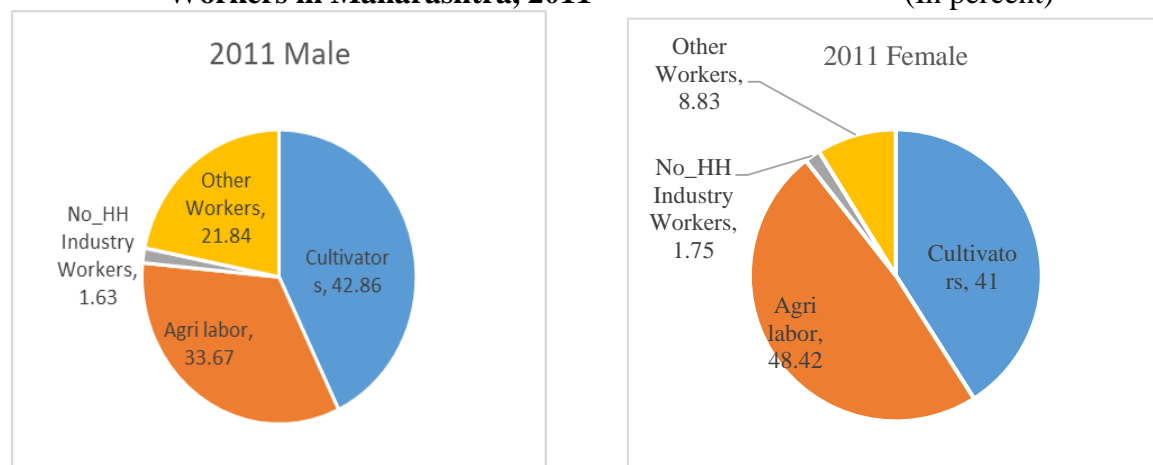
Figures 2.1 and 2.2 show economic activity wise distribution of male and female rural main workers. As per 2001 census, 44.45 percent males and 47.45 percent females of total rural workforce were cultivators. 2011 census shows decrease in the share of cultivators and an increase in agricultural laborers for both male, and female though the shift is more for females. It is interesting to note that the combined share of agricultural workers in fact increased and therefore that of other workers declined in case of males. This observation is in contrast with the trend observed at the all India level. The combined share of female agricultural workers slightly increased over the census years.

Figure 2.1: Economic Activity wise distribution of Male and Female Rural Main Workers in Maharashtra 2001 (In percent)



Source: Population Census of India 2001

Figure 2.2: Economic Activity wise distribution of Male and Female Rural Main Workers in Maharashtra, 2011 (In percent)



Source: Population Census of India 2001, 2011

2.3.3 Share of Divisions in Rural Cultivators of Maharashtra

The state of Maharashtra consists of 36 districts and 8 revenue regions. Table 2.8 shows the division wise distribution of total male and female cultivators. It is observed that Pune division has the highest percentage of male and female main cultivators in Maharashtra. Nasik, Kolhapur and Latur are other divisions with relatively higher proportion of cultivators.

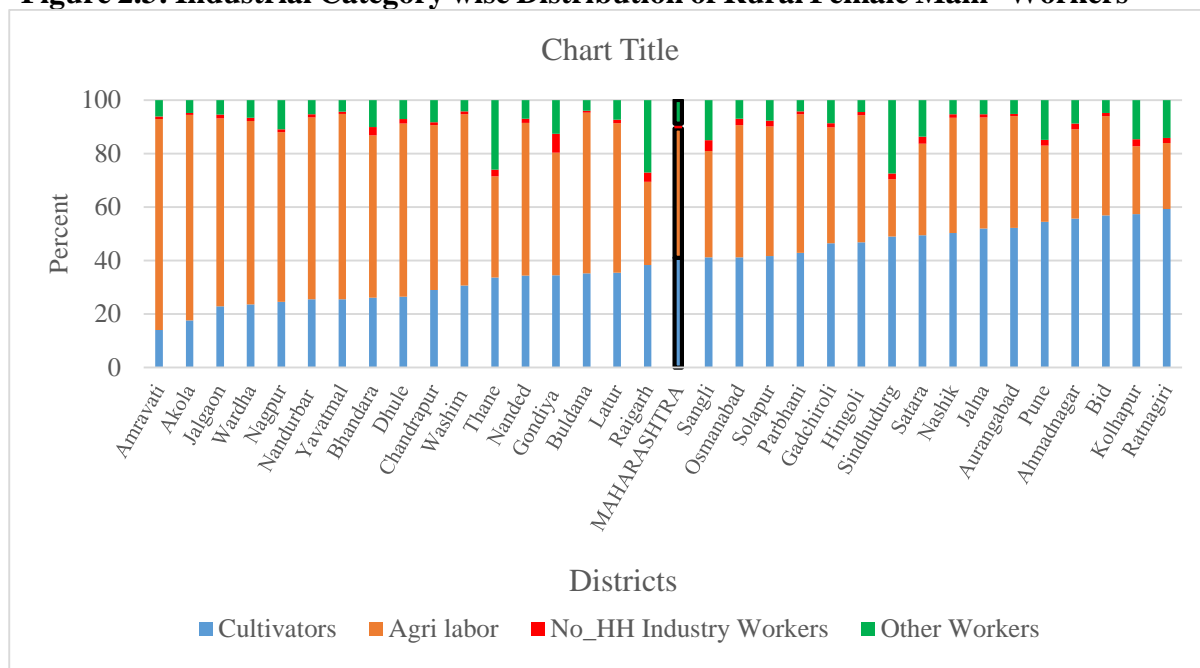
Table 2.8: Division wise Distribution of total Main Rural Cultivators- Male and Female, 2011

	Division	Male	Female	Total
1	Konkan	6.14	7.10	6.50
2	Nasik	14.60	14.54	14.58
3	Pune	20.04	22.75	21.07
4	Kolhapur	14.38	12.05	13.50
5	Aurangabad	12.41	14.68	13.27
6	Latur	13.57	13.01	13.36
7	Amravati	10.37	8.64	9.71
8	Nagpur	8.49	7.23	8.01
	Maharashtra	100.00	100.00	100.00

2.3.4 District wise and Industrial Category wise Share of Rural Female Main Workers

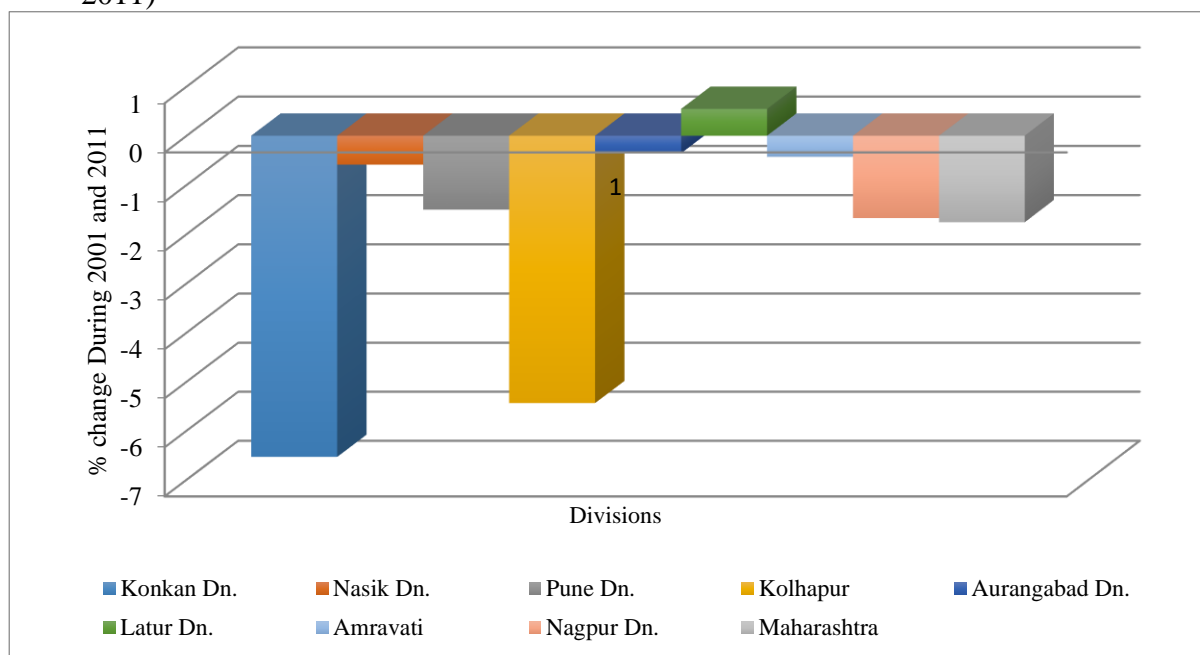
As the focus of the study is women cultivators, we observe their workforce in comparison with other categories. Figure 2.3 shows share of various categories of workers in each district for 2011. It can be seen that district Rantnagiri has the highest share of female main cultivators as per 2011 census and Amravati has the lowest. It is also observed that districts with very high share of cultivators belong mainly to the western region of the state which consists of divisions Konkan, Pune Kolhapur which belong to the developed western region of the state. These districts with relatively higher share of cultivators are also the districts with higher share of non farm workers. Due to the higher percentage of area under cultivation, they depict a relatively diversified cropping pattern and probably higher involvement of household members in cultivation of family farms. The share of agricultural labourers is relatively lower in this region. The districts with lower share of cultivators and non farm workers are dominated by agricultural labourers and mainly belong to Vidarbha (eastern) and Marathwada (central) region of the state. Figure 2.4 shows the percentage change in share of female cultivators during 2001 and 2011. It shows that their share has declined in almost all the division except in case of Latur.

Figure 2.3: Industrial Category wise Distribution of Rural Female Main Workers



Source: Population Census of India, 2001, 2011

Figure 2.4: Percentage Change in the Share of Women Main Cultivators to Total Main Cultivators (2001 to 2011)



Source: Population Census of India, 2001, 2011

2.4 Gender wise Land Ownership Pattern in Maharashtra

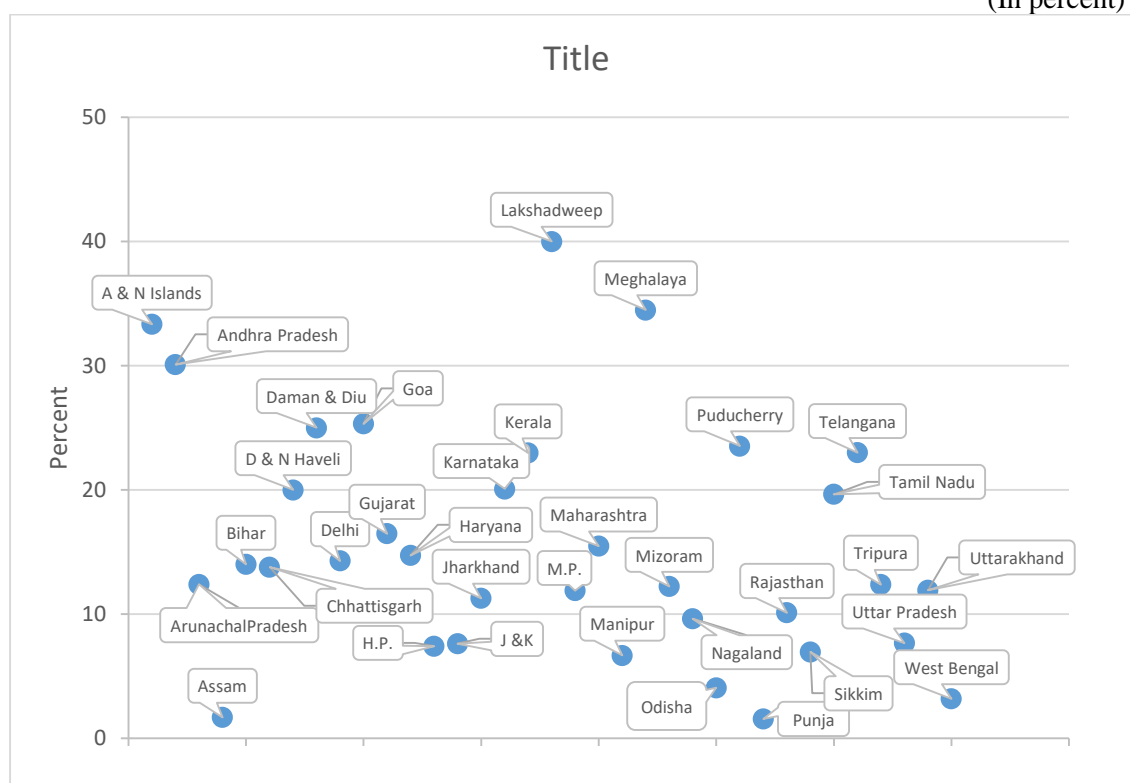
Agricultural Census of India presents data relating to state wise gender wise land ownership pattern. Figure 2.5 shows classification of states based on the share of women landowners among total landowners in each state. It can be seen that the states with less than 10 percent of the landowners are mainly from north India. The share is negligible for agriculturally developed states such as Panjab. The states with higher share (i.e. 20 percent and above) mainly belong to south India with a very high share of women owned holdings. Majority of the states belong to the middle group with share of women owned landholdings between 10 to 20 percent. Agricultural census reports however for various years have shown that the share of women in each land size category has been gradually increasing. Overall, it increased from 11.7 percent (2005-06) to 12.8 percent (2010-11) to 13.9 percent (2015-16) (Madan et al, 2020).

Maharashtra being a bigger state population wise and cultivable area wise, accounted for around 10.43 percent of total *number* of operational agricultural landholdings in India and 12.9 percent of the total area under landholdings of the country in 2015-16. This can be observed from table 2.10.

It can also be seen from table 2.9 that 15.47 percent of the landholdings were owned by females in the state and this share was slightly higher than the national average (13.96 percent). Share of females in the total *area* under operational holdings in Maharashtra was 15 percent. This share was also slightly higher than that at the national level (11.72 percent)

It is evident from the data that not only the share of female in landholding is very fragile but majority of the female landholders are the owners of marginal and small size landholding (table 2.11). With increase in land size, share of women as landowners and in area under landholdings has declined.

Figure 2.5: Share of Women Landowners in Total Landowners in Various States
(In percent)



Source: Agricultural Census, 2015-16

Table 2.9: Share of Landholdings Owned by Women in Maharashtra (in percent)

	Number of Landholdings	Share
1	Share of Maharashtra in total landholdings in India	10.43
2	Share of landholdings owned by females in Maharashtra to total female owned landholdings in India	11.56
3	Share of landholdings owned by females in total landholdings in Maharashtra	15.46
	Area under Landholdings	
1	Share of Maharashtra in total landholdings in India	12.9
2	Share of landholdings owned by females in Maharashtra total landholdings in India	15.6
3	Share of landholdings owned by females in total landholdings in Maharashtra	11.71

Source: Agricultural Census, 2015-16

Table 2.10: Land Size Wise Share in Landholdings by Females in Maharashtra
(In percent)

	Land size category	Area		Number	
		Category wise share of area owned by females in total area	Share of area owned by females in the category	Category wise Share of number of landholdings owned by females	Share of Number of landholdings owned by females in the Category
1	Marginal	20.46	16.87	54	16.31
2	Small	31.76	15.87	28.8	15.67
3	Semi-medium	28.4	13.59	13.5	13.70
4	Medium	15.78	11.10	3.5	11.17
5	Large	3.92	9.70	0.3	10
		100	-	100	-
	Overall	-	11.71	-	15.46

Source: Agricultural Census, 2015-16

2.5 Concluding Remarks

During the last two decades, rural workforce in India has witnessed various changes but still agriculture remains the main source of rural livelihood for male and female workers. Maharashtra is the leading state in agriculture and is the home for 18.96 percent of total rural female main cultivators of India. The rural workforce structure of Maharashtra reveals dominance of cultivators and agricultural labourers. Female cultivators formed substantial segment of the rural workers. District wise analysis showed higher percentage of share of female cultivators and non-farm workers in developed districts than the backward districts. This indicated greater agricultural and non-farm activity and also greater participation of female workers as cultivators on their farms in the developed districts. Analysis of the data relating to ownership of landholding indicates lower extent of land ownership among female cultivators. The dominance of female cultivators in the workforce of the state and their lower share as land owners necessitates an analysis of data collected from the field from the female respondents.

Chapter 3

Socio economic Status of Sample Households and Respondents

3.1 Introduction

This chapter is based on the primary data collected from the sample female respondents of districts Pune and Latur. It analyses social economic status and livelihood pattern of the households, time allocation of male and female household members with a focus on contribution of female cultivators to the household paid and unpaid activities.

Discussions with Gram Panchayat officials



Through the village for the survey



3.2 Socio economic Characteristics of the Sample Female Respondents and Sample Households

Table 1 shows basic characteristics of the respondents. It can be seen that only 17.5 percent and around 51 percent of the respondent's females in Pune and Latur respectively reported that they were heading their own household. It is interesting to note that more percentage of women felt that they were heading the household in case of Latur, which is backward district as compared to Pune. The average age of the respondents was 40 and on an average, the respondents were working as cultivators for 19 years. It was observed that around 87 percent of the respondents had a bank account and 75 percent could operate it independently. The table also shows that a higher percentage- 65 percent of the respondents in Pune had their own mobile as compared to 35 percent in Latur.

Table 3.1: Characteristic Features of the Respondent Cultivators

		Pune	Latur	Overall
1	Respondents as head of the family (%)	17.5	50.83	34.17
2	Average age of the female respondents (yrs)	42	38	40
3	Respondents with their own mobile (%)	65.83	38.33	52.08
4	Average no. of years of working as cultivators	22	17	19
5	Respondents with bank account (single and joint)(%)	87.50	86.67	87.08
6	Respondents who can operate account independently (%)	77.50	71.67	74.58

Source: Field Survey

It can be noted from table 3.2 that on an average around 18 percent of the respondents were illiterate. It can also be noted that more than 50 percent of the respondents in both the districts had obtained education up to secondary i.e. 10th standard. It was also seen that the share of respondents taking education above intermediate level was very low – overall around 7 percent. However, it was higher – 10.5 percent in Pune than in Latur wherein only 2.5 percent of the respondents had obtained education beyond intermediate level.

Table 3.2: Educational Status of the Female Respondents (In percent)

	Category	Pune	Latur	Overall
1	Illiterate	17.5	19.17	18.33
2	Primary	11.67	10.83	11.25
3	Secondary	50.83	54.17	52.5
4	Intermediate	9.17	13.33	11.25
5	Technical	2.5	0.83	1.67
6	Graduate	8.33	1.67	5
	Total	100	100	100

Source: Field Survey

Table 3.3 shows that overall, most of the households belonged to Hindu religion. Only 1.67 percent of the households were Christian households in district Pune. All households in Latur belonged to Hindu religion.

Table 3.4 shows caste wise classification of households. It was observed that most of the households – around 71 percent in Pune and 58 percent in Latur belonged to general category. This was followed by the OBC category households with around 17 percent of the overall households. The share of social class categories such as SC, ST and NT was comparatively lower- overall around 20 percent.

Table 3.3: Religion Category wise Classification of the Sample Households

(In percent)

	Religion	Pune	Latur	Overall
1	Hindu	98.33	100	99.17
2	Christians	1.67	-	0.83
3	Buddhists	-	-	-
	Total	100	100	100

Source: Field Survey

Table 3.4: Caste wise Classification of Sample Households (In percent)

	Category	Pune	Latur	Overall
1	General	70.83	57.5	64.17
2	OBC	10.83	23.33	17.08
3	SC	8.33	7.5	7.92
4	ST	0.83	3.33	2.08
5	NT	9.17	8.33	8.75
	Total	100	100	100

Source: Field Survey

3.3 Occupational Pattern of the Sample Households and Household Members

3.3.1 Occupational Pattern of the Sample Households

93 percent of the of the sample households in Pune and 99 percent of the households in Latur reported cultivation as their main occupation (table 3.5). The respondents were also asked to report secondary occupation of the household (table 3.6). Around 33 percent and 40 percent of the households in Pune and Latur respectively did not have any other source of income and cultivation was the main and only source of income. Overall, this percentage was around 37 percent. Table 3.6 also shows higher share of households with agricultural labour as secondary source of occupation in Pune and higher share of households with trade/ business in Latur. This is indicative of higher agricultural activity in Pune and need to depend upon non-farm sources of income in Latur region. Table 3.7 shows that the extent of households without irrigation facility was around 33 percent in Latur as compared to 15 percent in Pune. This also highlights the need for depending upon non farm sources of income.

Table 3.5: Primary Occupation wise Distribution of Households (In percent)

	Occupational Categories	Pune	Latur	Overall
1	Cultivation	93.33	99.17	96.25
2	Agricultural Labour	3.33	-	1.67
3	Dairying/Fishing/Poultry etc	0.83	-	0.42
4	Salaried	2.51	0.83	1.66
	Total	100	100	100

Source: Field Survey

Table 3.6: Secondary Occupation wise Distribution of Households (In percent)

	Occupational Categories	Pune	Latur	Overall
1	Households with Nil secondary occupation	33.33	40	36.67
2	Cultivator	4.17	-	2.08
3	Agricultural Labour	34.17	16.67	25.42
4	Dairying/Fishing/Poultry etc	13.33	7.5	10.42
5	Salaried	7.5	11.66	9.58
6	Trade / business	7.5	21.67	14.58
7	Non-agricultural labour	-	2.5	1.25
	Total	100	100	100

Source: Field Survey

Interviews of the Respondents



3.2.2 Landholdings with the Households

It can be observed from table 3.7 that all the households in Latur and 98 percent of the households in Pune owned land. 1.67 percent of the households in Pune were cultivating leased in land. Overall, 76 percent of the households had fully or partly irrigated land. It was also observed that share of such households was higher- 85 percent-

in case of Pune than Latur. Share of households without irrigation facility was around 33 percent in Latur and very low- 15 percent in Pune.

Table 3.7: Extent of Land ownership and Irrigated Land with the Sample Households
(In percent)

		Pune	Latur	Overall
1	Households with their own land	98.33	100	99.17
2	Households without any land but cultivating leased in land	1.67	-	0.83
		100	100	100
1	Households with fully or partly irrigated area	85	67.5	76.25
2	Households without irrigated area	15	32.5	23.75
		100	100	100

Source: Field Survey

Table 3.8 shows that overall, only around 4 percent of the households belonged to the large category and around 80 percent of the households were small and marginal households. Around 62 percent of the households in Pune and 39 percent in Latur were marginal. The table shows similar pattern of distribution of the households across size classes. It also shows similarity in average size of landholding in various categories in the two districts.

Table 3.8: Land Size wise Classification of Sample Households (In percent)

	Pune	Latur	Total
Marginal	61.67 (0.57)	39.17(0.54)	50.42 (0.56)
Small	20 (1.48)	42.5 (1.56)	31.25 (1.53)
Moderate	12.5(2.83)	15.83(2.88)	14.17 (2.86)
Large	5.83 (5.66)	2.5(5.47)	4.17 (5.60)
Total	100 (1.33)	100(1.47)	100 (1.40)

Note :1. Marginal- below 1 ha, small-1-2 ha, medium 2-4 ha, Large- above 4

2. Figures in the parenthesis indicate average size of landholding

Source: Field Survey

It can be seen from table 3.9 that overall and in the individual districts, the share of respondent women cultivators who did not own land was very high – almost 80 percent in Latur and 52 percent in Pune. Even the share of women with joint ownership was meagre in case of Latur. As a result, the extent of land ownership among women respondents was very low. It was only 13 percent in Pune and 18 percent in case of Latur. Overall, 65.42 percent of the respondents did not have land in their name.

Table 3.9: Land Ownership among Respondents (In percent)

	Share of respondents with	Pune	Latur	Overall
1	Joint ownership	35.83	2.5	19.17
2	Single ownership	12.50	18.33	15.42
3	No land on the name	51.67	79.17	65.42
	Total	100	100	100

Source: Field Work

A look at the land ownership pattern in the villages as a whole (table 3.10) show that overall, only 21 percent of the landowners were women. Across the villages only in 2 villages the landholding by women was more than 30 percent.

Table 3.10: Land Ownership Pattern in the Sample Villages

		Pune				Latur				Overall	
		Taluka									
	Land Owners	Haveli		Khed		Latur		Ausa			
		Villages									
		1	2	3	4	1	2	3	4		
1	Women	34.55	8.77	8.92	38.96	10.67	22.12	19.69	17.13	21.20	
2	Men	64.13	47.73	45.72	60.61	76.35	69.2	67.21	69.43	63.19	
3	Joint	0.8	43.08	41.64	0.07	6.49	7.67	12.32	12.25	14.27	
4	Institutional / Government	0.52	0.42	3.72	0.36	6.49	1.01	0.78	1.19	1.33	
	Total	100	100	100	100	100	100	100	100		

Source: Offices of Gram panchayats, Field Survey

Box 3.1: Women and Ownership of Land- Recent Trend

Discussions with the villagers and officials revealed that due to increasing awareness about benefits accrued by women cultivators through various government schemes, the trend toward purchase of land/ transfer of land in the name of women in the households was gradually increasing over a period of time.

3.3 Educational Status of Household Members

The table shows that overall, 21 percent of the female household members and 14 percent of the male members were illiterate. Share of illiterate members was marginally higher in Latur as expected. It can be seen that around 55 percent of the female members in Pune and 59 percent in Latur were educated only up to secondary level and the share of

women with higher education was lower as compared to the male members in both the districts. However, the share of females with education up to graduation and above was higher in Pune than in Latur.

Table 3.11: Level of Education of the Household Members

	Level of education	Pune		Latur		Overall	
		M	F	M	F	M	F
1	Illiterate	12.42	20.21	16.67	22.18	14.64	21.2
2	Primary	13.07	16.67	15.48	14.79	14.33	15.72
3	Secondary	42.16	39.01	36.01	43.66	38.94	41.34
4	Intermediate	14.71	12.77	19.64	11.97	17.29	12.37
5	Technical (ITI, Polytechnic)	3.92	3.19	4.46	1.76	4.21	2.47
6	Graduate	9.15	7.09	7.44	5.63	8.26	6.36
7	Post Graduate	0.98	0.71	-	-	0.47	0.35
8	Professional (MBBS, MBA, Ph.D)	3.59	0.35	0.3	-	1.87	0.18
	Total	100	100	100	100	100	100

Note: M= male, F= female

Source: Field Survey

Interviews of the respondents



3. 4: Occupational Pattern the Household Members

In this section, occupational pattern of the sample household members is observed. Table 3.5 had indicated that majority of households primarily were cultivating households. As can be seen from table 3.12, occupation of majority of the household members was cultivation in both the districts. Similarly, share of female cultivators was higher than in case of male members.. The table also clearly indicates diversified occupational structure in case of male members in both the districts as their share as salaried or self employed

workers was higher than the female members. Overall, around 12 percent of the male members and around only around 5 percent of the female household members were engaged as salaried / self-employed / nonagricultural labour. Data relating only to the respondents shows that about 98 percent in Pune and 93 percent in Latur had cultivation as their primary occupation.

Table 3.12: Primary Occupation wise and Gender wise Share of the Household Members

		Pune		Latur		Overall	
		M	F	M	F	M	F
1	Cultivators	43.32	58.57	41.39	49.47	42.32	54
2	Agricultural labour	1.3	0.71	0.3	0.35	0.78	0.53
3	Dairy poultry/ fishing	0.98	0.36	-	-	0.47	0.18
4	Salaried	12.7	1.79	6.04	0.35	9.24	1.07
5	Self-employment in Trade/ business	1.95	0.71	1.51	0.35	1.72	0.53
6	Non agricultural labour	1.63	-	1.21	-	1.41	-
7	Student/ dependents	38.11	37.86	49.54	49.47	44.04	43.69
	Total	100	100	100	100	100	100

Source: Field Survey

Data relating to secondary occupation of the respondents shows that around 78 percent in Pune and 63 percent in Latur did not have any secondary occupation. Table 3.13 shows the secondary occupations of all the earning household members. It can be seen that in case of 80 percent of the female members in Pune and around 54 percent in Latur, the secondary occupation was either as agricultural labour or in agri allied sector. This proportion was lower for male members. It is interesting to note that overall, around 55 percent of the male members and 32 percent of the female members were engaged as salaried or self-employed in trade/ business or as nonagricultural labour. In Pune, the share of females engaged in these sectors was very low- around 16 percent. In Latur however, this percentage was higher- 46 percent. Share of salaried males was higher in Pune than in Latur. This points at paucity of salaried jobs and therefore higher share of self employed in trade/ business. The data indicates more demand for work in nonagricultural sectors perhaps due to constraints to earning adequate agricultural income generating agricultural activity

Table 3.13: Secondary Occupation and Gender wise Share of the Household Members

		Pune		Latur		Overall	
		M	F	M	F	M	F
1	Agricultural labour	16.22	41.67	31.82	37.5	24.69	39.29
2	Dairy poultry/ fishing	27.03	41.67	9.09	16.67	17.28	27.38
3	Salaried	27.02	5.56	15.91	6.25	20.99	5.95
4	Self-employment in Trade/ business	24.32	11.11	38.64	31.25	32.1	22.62
5	Nonagricultural labour	5.41	-	4.55	8.33	4.94	4.76
	Total	100	100	100	100	100	100

Note: The table does not report secondary occupation of dependents / students

Source: Field Survey

3.5 Income of the Households and Household Members

Table 3.14 shows occupation wise average income and average share of various occupations of sample households. In absolute terms, households in Pune earned more average income in all types of occupations than Latur. However, the income shares contributed by various occupations in both the districts were similar.

It was observed that cultivation was the main source contributing around 60 percent to the total income. For Latur, this share was higher- 63 percent- than in case of Pune. Non-farm activities contributed around 32 percent to the total income

Table 3.14: Occupation wise Average Income and Share of Occupations in Total Average Annual Income of the Households

	Occupation	Pune		Latur		Overall	
		Average income (Rs per annum)	Share in total income (%)	Average income (Rs per annum)	Share in total income (%)	Average income (Rs per annum)	Share in total income (%)
1	Cultivation	243356	59.27	166122	63	204739	60.73
2	Allied activities	92520	7.52	44432	5.2	69413	6.61
3	Non farm activities	175957	33.21	93178	31.8	131479	32.66
	Total	194733		119403		156196	100

Source: Field work

Tables 3.15 and 3.16 show that gender wise and primary and secondary occupation wise annual average income of family members respectively. The tables exclude income

from farming as it is normally earned jointly by the male and female members of the households. It was found that the average income earned by members in Pune was higher than that earned by members in Latur. Also, overall, the average income earned by female members of the households as agricultural labourers and as self-employed persons was lower than the male members. In case of primary occupations of dairy and poultry in Pune and salaried in Latur income of female members was higher than the male members. The data for other occupations indicated the capacity of women to earn income equal to or higher than that earned by the male members. The table also highlights that given an opportunity and availability of suitable work, women get involved in all types of economic activities besides cultivation.

Table 3.15: Gender wise Occupation wise average Income from Primary Sources from Sources Other than Cultivation (Rs. per annum)

	Occupation	Pune		Latur		Overall	
		M	F	M	F	M	F
1	Agricultural labour	120000	36000	60000	60000	108000	44000
2	Dairy Poultry /fishing	192000	420000	-	-	192000	420000
3	Salaried	203590	156000	168600	360000	191728.9	190000
4	Self - Employment in Trade / business	190000	60000	117600	36000	157090.9	52000
5	Non-agricultural labor	79200	-	66000	-	73333.33	-

Source: Field Survey

Table 3.16: Gender wise Occupation wise average Income from Secondary Sources Except Cultivation (Rs per annum)

	Occupation	Pune		Latur		Overall	
		M	F	M	F	M	F
1	Agricultural labour	43000	30320	34286	25333	36900	27600
2	Dairy Poultry /fishing	66000	52000	72000	37500	67714	46957
3	Salaried	127200	264000	111429	34000	120706	126000
4	Self - Employment in Trade / business	165333	165000	183882	74080	177462	93221
5	Non-agricultural labor	60000	-	36000	61500	48000	61500

Source: Field Survey

Based on the data relating to primary and secondary occupation, for each household, number of sources of income were calculated. It was found that majority i.e. more than 80 percent of the households in Pune and Latur had more than 4 sources of income (table 3.17). Around 50 percent of the households were marginal and small farmers and the average income of the households was around Rs 2.43 lakhs (tables 3.8 and 3.14 respectively). This translates to around monthly income of Rs 20,000. Existence of multiple sources of income with the households underlines inadequacy of income from cultivation and need for diversification of occupational structure.

Table 3.17: Classification of Sample Households based on Extent of Sources of Income

District	Share of Households				
	Sources of Income				
	1	2	3	>4	Total
Pune	1.67	5.83	12.5	80	100
Latur	-	1.67	11.67	86.67	100
Overall	0.83	3.75	12.08	83.33	100

Source: Field Survey

Borrowings of the Households and the Respondents

Table 3.18 shows that 48 percent of the households in Pune had outstanding loan. However, this percentage was very low in Latur. Only around 17 percent of the households in Latur had outstanding loan. This probably again indicates lower agricultural activity in Latur as compared to Pune. Out of the total members with outstanding loan on their name, around 38 percent and 15 percent were the respondents in Pune and Latur respectively. Out of the total respondent however, a very small percentage of respondents - 18 percent in Pune and 2.5 percent in Latur had any outstanding loan on their name.

It was also observed that majority of the households had availed of loan from formal sources. Table 3.19 shows that overall, 55 percent of the households have availed of crop loan. However, this percentage was higher – 75 percent -for Latur. Responses show that self-help group (SHG) loan for business was taken only in Pune indicating diversification of activities of the women household members. Responses relating to the duration of the loan taken show that majority i.e. around 60 percent of the loans taken were short term loans in both the districts.

Overall, the data shows very low percentage of respondents with loan even for SHG related business.

Table 3.18: Characteristics of Households / Household Members with Outstanding Loan

		Pune	Latur	Overall
1	Share of households with outstanding loan (%)	48.33	16.67	32.5
2	Share of respondents on whose name loan was taken out of total borrower family members (%)	37.93	15	32.05
	Share of respondents who had outstanding loan out of total respondents (%)	18.22	2.5	10.42
3	Share of household taking loan from (%)			
	Formal sources	98.28	75	92.31
	Informal sources	1.72	25	7.69
	Total	100	100	100

Source: Field Survey

Table 3.19: Distribution of the Households according to the purpose of Loan taken (In Percent)

	Share of Households with different types of loan	Pune	Latur	Overall
1	Crop loan	48.28	75	55.13
2	SHGs loan for Business	10.34	-	7.69
3	Domestic purposes	41.38	25	37.18
	Share of Households with different duration of loan	100	100	100
1	Short term loan	58.62	60	58.97
2	Medium term loan	31.03	20	28.21
3	Long term loan	10.34	20	12.82
	Total	100	100	100

Source: Field Survey

3.6 Cropping Pattern and Contribution of Women

Season wise cropping pattern in Pune shows that soybean, bajra and paddy were major kharif crops and wheat and onion were the major rabi crops in villages in Pune.

Sugarcane was the major perennial crop. In Latur also, soybean was the major kharif crop. Gram and jowar were major rabi crops and as in case of Pune, sugarcane was the main perennial crop. Thus, overall, soybean, gram and sugarcane were major crops of the sample households. It can be seen from table 3.19 that around 52 percent of the households in Pune and around 38 percent in Latur were cultivating one crop. It was observed that these were mainly sugarcane or food grain cultivating farmers in Pune and soybean and food grain farmers in Latur. It is also observed that around 11 percent and 26 percent of the households in Pune and Latur respectively were cultivating more than 4 crops. Higher number of crops grown indicates more time allocation by the respondents for the cultivating of crops. The combined share of households cultivating more than one crop was around 55 percent indicating greater involvement of the respondents.

Table 3.20: Classification of Households based on Number of crops Cultivated

Districts	Share of Households				
	Number of crops cultivated				
	1	2	3	➤ 4	Total
Pune	51.67	26.67	10.83	10.83	100
Latur	37.5	25	11.67	25.83	100
Overall	44.58	25.83	11.25	18.33	100

Source: Field Survey

It can be seen from tables 3.20 and 3.21 that for most of the major and minor crops in the cropping pattern, the average number of days spent by female respondents was higher than that in case of their male counterparts (col. 7). The average number of days of work of the respondents for 17 crops in Pune and 12 in Latur were higher by 1.4 times and 1.22 times respectively than their male counterparts. However, on an average their notional contribution in terms of imputed total wage income that would be received by them for crops was lower than their male counterparts by 1.4 times in Pune and 1.3 times in Latur due to lower market wage rate for hired women labourers.

Table 3.21: Contribution of the Female Respondents to Household Cultivation of Crops in Pune

Crops	Female			Male			Number of days of work of (females / males) (Col.1/4)
	Average No. of days of work of female respondent in the season	Average Wage rate paid to the hired labourer (Rs per day)	Contribution in terms of imputed total wage income received (Rs)	Average No. of days of work in the season	Average Wage rate paid to hired labourer (Rs per day)	Contribution in terms of imputed total wage income received (Rs)	
	1	2	3	4	5	6	7
Paddy	20	185	3700	15	280	4200	1.3
Soybean	16	179	2864	12	267	3204	1.3
Onion	17	158	2686	18	433	7794	0.9
Bajra	18	163	2934	16	274	4384	1.1
Tur	18	225	4050	11	300	3300	1.6
Maize	13	150	1950	4	500	2000	3.3
Mung	6	170	1020	10	350	3500	0.6
Udid	6	170	1020	10	350	3500	0.6
Vegetables	23	183	4209	17	390	6630	1.4
Jowar	13	185	2405	13	245	3185	1.0
Wheat	16	149	2384	12	388	4656	1.3
Gram	11	161	1771	11	356	3916	1.0
Onion	29	176	5104	18	355	6390	1.6
Sugarcane	48	160	7680	34	280	9520	1.4
Vegetables Rabi	32	179	5728	18	333	5994	1.8
Cotton	45	213	9585	20	425	8500	2.3
Groundnut	18	150	2700	12	300	3600	1.5

Source: Field work

Table 3.22: Contribution of the Female Respondents to Household Cultivation of Crops in Latur

	Female respondent			Male			
Crops	Average No. of days of work of female respondent in the season	Average Wage rate paid to the hired labourer (Rs per day)	Contribution in terms of imputed total wage income received (Rs)	Average No. of days of work in the season	Avg. Wage rate paid to hired labourer (Rs per day)	Contribution in terms of imputed total wage income received (Rs)	Number of days of work of (females / males) (Col.1/4)
	1	2	3	4	5	6	7
Soyabean	21	214	4494	16	245	3920	1.31
Bajra	15	150	2250	20	200	4000	0.75
Tur	17	205	3485	17	291	4947	1.00
Mung	2	160	320	8	300	2400	0.25
Udid	13	254	3302	18	328	5904	0.72
Jowar	11	197	2167	7	263	1841	1.57
Wheat	21	178	3738	14	369	5166	1.50
Gram	10	199	1990	8	381	3048	1.25
Onion	20	217	4340	15	283	4245	1.33
Sugarcane	32	206	6592	25	384	9600	1.28
Vegetables Rabi	17	153	2601	10	300	3000	1.70
Groundnut	16	167	2672	8	275	2200	2.00

Source: Field work

3.7 Concluding remarks

The analysis of the field level data reveals basic socio economic characteristics of the households. It reveals dependence of majority households on cultivation as the main source of livelihood and at the same time inadequacy of the income through cultivation. It also reveals differences in the level of socio economic development of households in Pune and Latur. It was revealed that the respondents in Pune were comparatively better off with respect to level of education and economic status than in Latur. In both the districts it was

found that respondents had worked for relatively more number of days for majority of crops than the male counterparts. However, their contribution in terms of imputed total wage income that would be received by them was lower than their male counterparts due to lower market wage rate for women labourers. Overall, it was found that the average income earned by female members of the households as agricultural labourers and as self-employed persons was lower than the male members. However, the data revealed that given an opportunity and availability of suitable work, women get involved in all types of economic activities besides cultivation.

Chapter 4

Awareness, Decision Making and Empowerment of the Female Respondents

4.1 Introduction

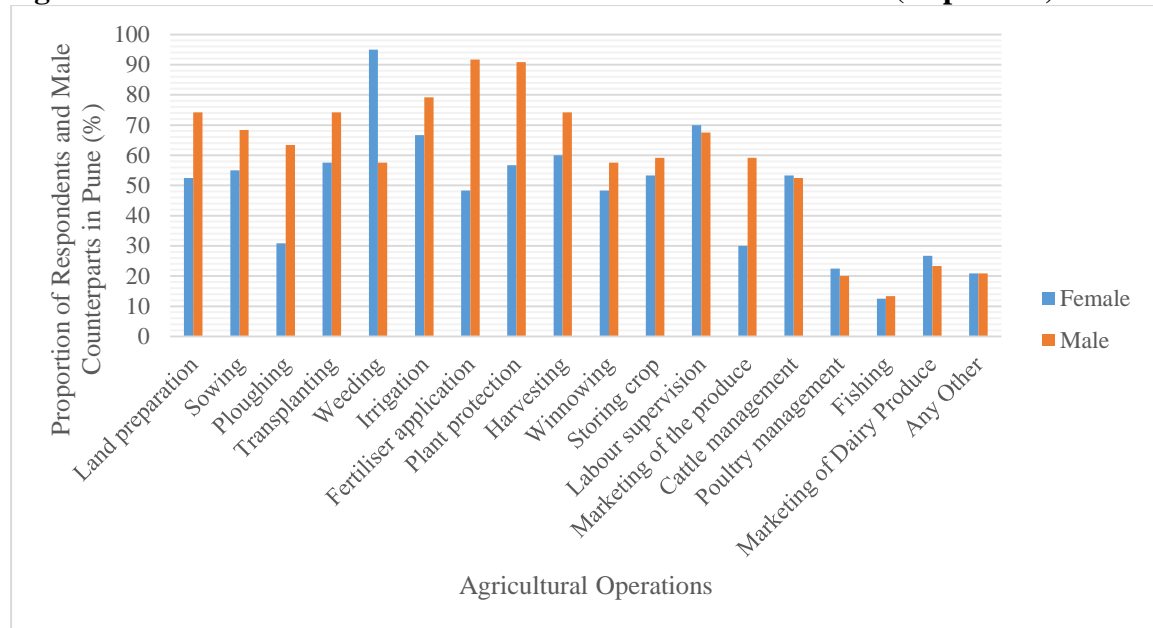
This chapter analyses the contribution of the respondents to the paid and unpaid activities of household. It also studies the role of the respondents in decision making and their awareness and knowledge mainly about agricultural activities and various schemes of the government. Data relating to workshops attended, SHG membership and activities and digital literacy is also analysed. The chapter also discusses various problems faced by them and their perception about the solutions. Finally, based on the data collected, empowerment index for all the respondents is calculated.

4.2 Agricultural Activities performed by the Female Respondents and Male Members

Table 4.1 shows responses of respondents relating to the question as to whether they and their male counterparts in the household performed various agricultural activities. It can be seen that in both the districts, for certain activities such weeding and labour supervision, share of respondents performing the activities was higher as compared to the male counterparts. For all other activities, share of males was higher especially in case of land preparation, sowing, ploughing, irrigation, fertilizer application and plant protection activity. However, it can also be noted that overall, the women respondents have been performing all the agricultural activities along with the males in the household.

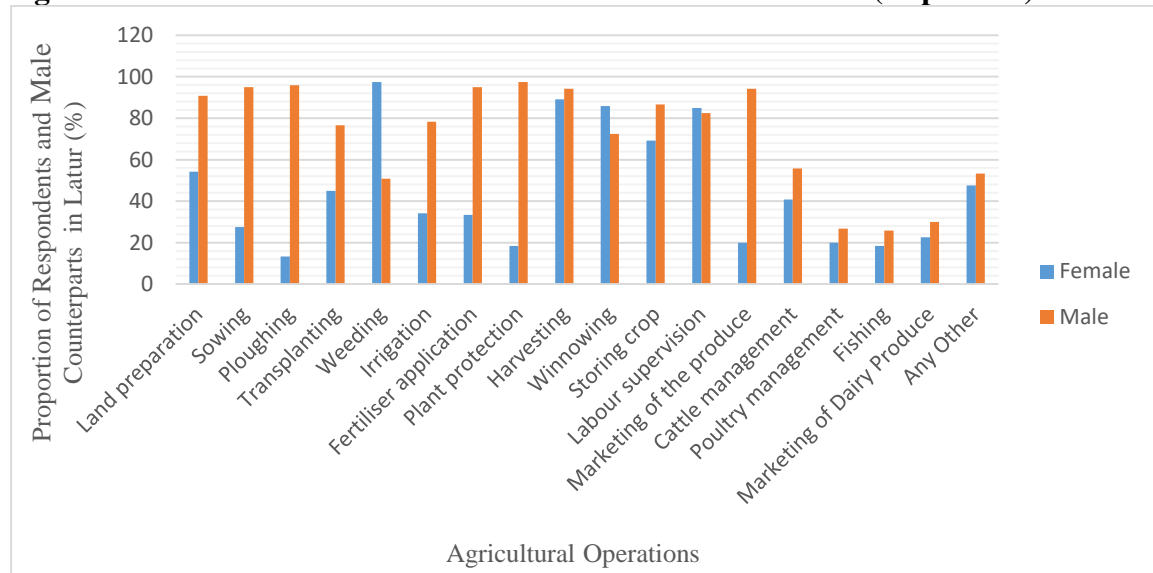
Table 4.2 shows the daily average time allocation of the respondents their male counterparts in the household. It can be seen that overall, women spent almost 18 percent of their daily time in unpaid domestic activities as against 4 percent spent by the men in the family. On an average 29 percent and 36 percent of the respondents' and male members' daily time was spent on cultivation activity. It is interesting to note that respondents devoted 1.44 percent of their daily time for learning as against 0.36 percent by men.

Figure 4.1a: Share of Respondents and Male Counterparts performing Various Agricultural Activities in Pune (In percent)



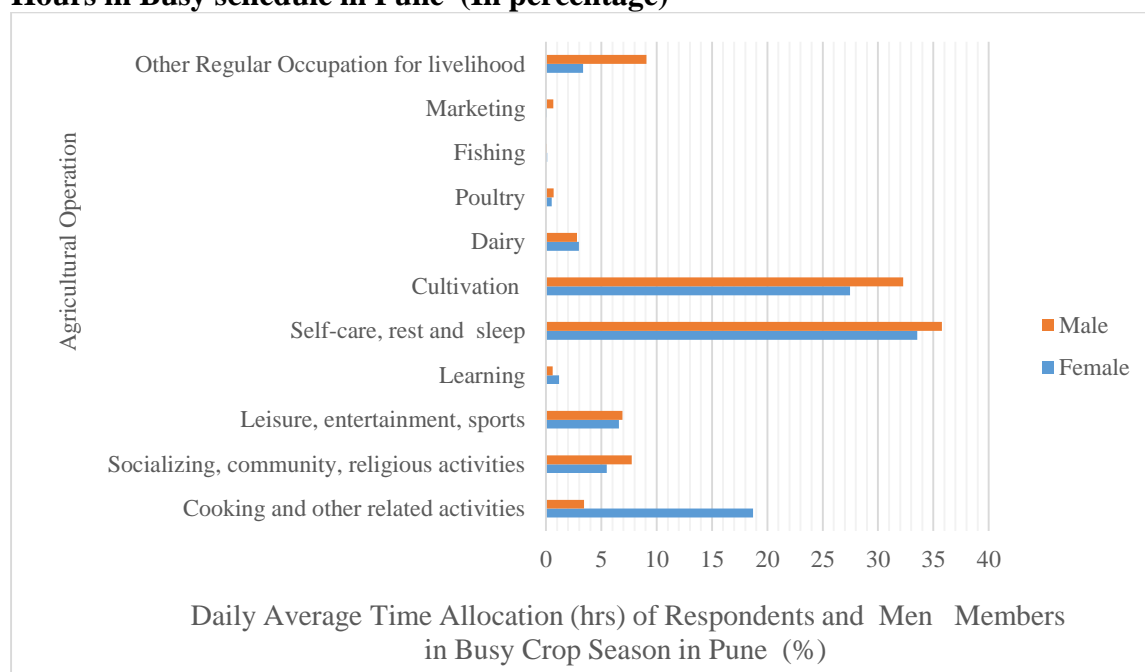
Source: Field Survey

Figure 4.1b: Share of Respondents and Male Counterparts performing Various Agricultural Activities in Latur (In percent)



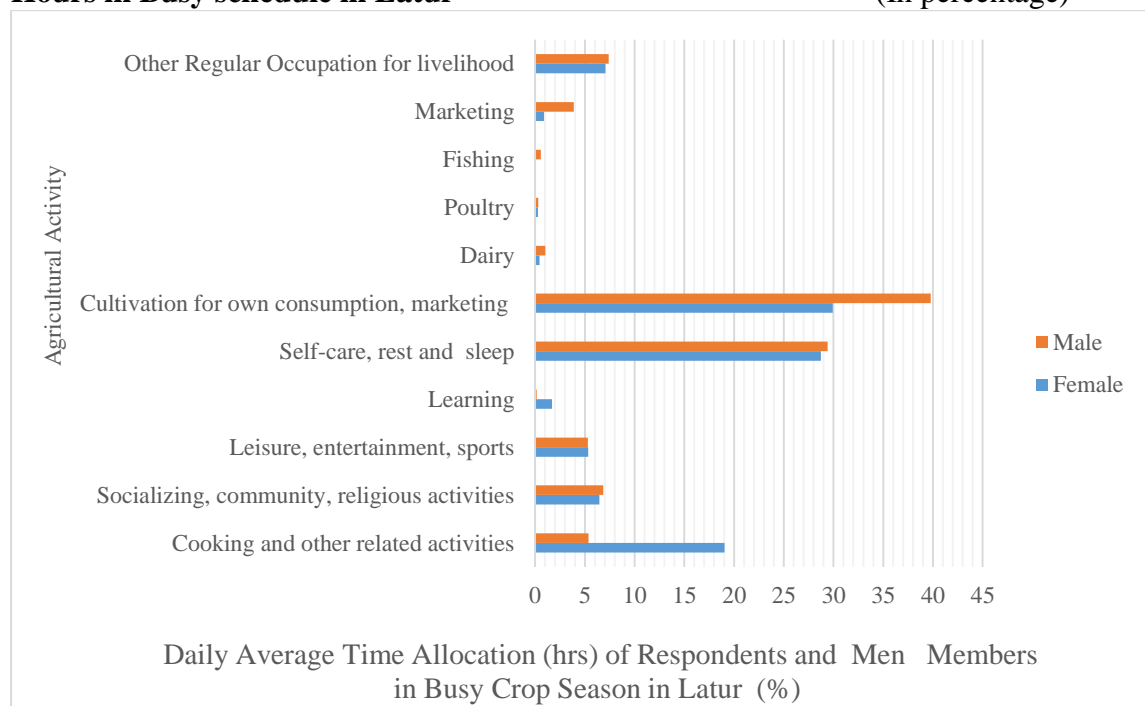
Source: Field Survey

Figure 4.2a : Daily Average Time Allocation (hrs) of Men and Women Members Hours in Busy schedule in Pune (In percentage)



Source: Field Survey

Figure 4.2b: Daily Average Time Allocation (hrs) of Men and Women Members Hours in Busy schedule in Latur (In percentage)



Source: Field Survey

Table 4.3 shows perception of the respondents about their overall contribution to farming throughout crop season. It was observed that majority of the respondents in both the districts reported that their contribution was more than 50 percent.

Table 4.1: Distribution of Respondents by their Perception about their contribution to Agricultural Activities (In percent)

	Contribution by respondent	Pune	Latur	Overall
1	Below 50	19.17	32.5	25.83
2	50-60	58.33	20	39.17
3	60-70	8.33	18.33	13.33
4	70-80	8.33	14.17	11.25
5	80 and above	5.84	15	10.42
		100	100	100

Source: Field work

4.3 Decision making by the Female Respondents

The table 4.4 shows that the share of women taking various decisions by themselves was very low in Pune. However, 70 – 80 percent of the respondents reported that they took decisions jointly with husband/ other members in the family. As far as the extent of respondents who were not involved in decision making is concerned, it was higher in case of issues relating to purchase of inputs and marketing of produce. A similar pattern was observed in case of Latur. It was also observed that share of female respondents taking decisions by themselves was comparatively higher (for each category) in case of Latur than in case of Pune. Also, the share of respondents not involved in decision making was lower (under different categories) in Latur. This indicated higher share of respondents with capability to take decisions in case of Latur. The respondents who were not involved in decision making were asked to give reasons for the same. Majority of the respondents reported that men in the family took decisions and also that they themselves did not know as to how to take decisions.

Table 4.2: Decision making by Female Respondents

(In Percent)

	Crop to be cultivated	Seeds variety to be used	Fertilisers and their quantity to be used	Type of pesticides to be applied and quantity	Loans to be taken from informal sources and amount	Loans to be taken from institutional sources and amount	Marketing of the crop	No. of labourers to be hired	No. of Family labourers to be used	Machinery/ implements to be used	Type of investments to be made on the farm (purchase of land, implements, machinery, livestock, tractor etc.)	Spending income earned	Education / marriage of children
Pune													
Myself	13.33	10	6.67	4.17	5	5	5	10.83	8.33	5	5.83	4.17	11.67
Jointly with husband	72.5	55.83	51.67	50.83	54.17	53.33	47.5	51.67	54.17	51.67	44.17	57.5	60.83
Jointly with all family members	7.5	19.17	21.67	20	17.5	17.5	24.17	20	20.83	20.83	27.5	23.33	20
Not Involved in decision making	6.67	15	20	25	23.33	24.17	23.33	17.5	16.67	22.5	22.5	15	7.5
Total	100	100	100	100	100	100	100	100	100	100	100	100	100
Latur													
Myself	16.67	17.5	14.17	12.5	13.33	13.33	13.33	14.17	12.5	12.5	11.67	14.17	14.17
Jointly with husband	55.83	42.5	44.17	45	47.5	48.33	45.83	49.17	50	47.5	50	50	50
Jointly with all family members	27.5	23.33	24.17	25.83	22.5	24.17	23.33	19.17	21.67	23.33	20.83	20	20.83
Not Involved in decision making	0	16.67	17.5	16.67	16.67	14.17	17.5	17.5	15.83	16.67	17.5	15.83	15
Total	100	100	100	100	100	100	100	100	100	100	100	100	100

Source: Field work

Table 4.3: Reasons for not Getting involved in Decision Making (In percent)

	Responses	Pune	Latur	Overall
1	Men in the family take decisions	27.5	30.83	29.17
2	Women supposed to be looking after cooking and upbringing children	21.67	11.67	16.67
3	Do not know how to take decisions	9.17	25.83	17.5
4	Not involved in discussions	12.5	10.83	11.67
	Total	100	100	100

Source: Field work

4.4 Knowledge of the Respondents

The guidelines of the various beneficiary oriented schemes of the Department of Agriculture & Cooperation and Farmers Welfare (DAC&FW), Ministry of Agriculture and Farmers Welfare provide that states and other implementing agencies to incur at least 30 percent expenditure on women farmers. These schemes include Support to State Extension Programmes for Extension Reforms, National Food Security Mission, National Mission on Oilseed and Oil Palm, National Mission on Sustainable Agriculture, Sub-Mission for Seed and Planting Material, Sub-Mission on Agricultural Mechanization and Mission for Integrated Development of Horticulture. The Department of Rural Development, Ministry of Rural Development launched a specific scheme namely ‘Mahila Kisan Sashaktikaran Pariyojana (MKSP)’, as a subcomponent of DAY-NRLM (Deendayal Antyodaya Yojana — National Rural Livelihoods Mission). This scheme is being implemented since 2011 with the objective to empower women by making systematic investments to enhance their participation and productivity, as also create sustainable livelihoods of rural women (<https://pib.gov.in/Pressreleaseshare.aspx?PRID=1705506>).

The respondents were asked questions with an objective to observe their awareness and information regarding agricultural sector and various government schemes. Their responses are presented in table 4.6. The table shows that overall, more than 50 percent of the respondents were aware about organic farming and drip irrigation. Around one third of the respondents had knowledge about neem coated urea and soil health card. Majority of the respondents however were not aware about minimum support price, kisan credit cards, agri clinics and agricultural technology management agency. A comparison of the responses shows that on an average, the awareness of respondents in villages of Latur was higher in terms of their positive responses. This again can be attributed to strong interaction between the women in the sample villages with the women agricultural assistants.

Box 4.1 Features of the Latur Villages

It was observed that all four villages in Latur were under Project on Climate Resilient Agriculture (PoCRA), the project undertaken by government of Maharashtra in collaboration with the World Bank. These were also the villages which had women agricultural assistants of the agri department. As a result, there was constant interaction among the women cultivators and the assistants and interaction among women cultivators also. This facilitated flow of information. In three of these villages, women SHGs were found to be active and under the leadership of progressive women farmers. On this background therefore, the responses showed that the extent of women cultivators in Latur who were aware of various government policy initiatives was higher than in case of Pune.

In continuation with the question relating to awareness, the respondents were also asked as to whether they would like to get more information relating to various aspects of farming. This is presented in table 4.7. It can be seen that majority of the women in both the districts responded positively to this question.

The respondents were also asked whether they had attended training programmes or lectures for promoting agriculture or nonagricultural business in the last 2/3 years. It can be observed from table 4.8 that around 71 percent of the overall respondents had not attended any training programme or workshop. This percentage was higher- 80 percent in Latur and 62 percent in Pune. The rest had attended sometimes or many times. The major reason for greater extent of awareness among the respondents of Latur could be informal interaction of the respondents with the agri assistants and among themselves. Table 4.9 shows that overall around 26 percent of the respondents reported that they would like to get more information about schemes and cultivation and marketing of crops from the government officials. More than 40 percent of the respondents reported that they would like to get this information from multiple sources.

Table 4.4: Share of female respondents who have knowledge about various Concepts and Government schemes (In percent)

	Knowledge about	Pune	Latur	Overall
1	Minimum support price	8.33	30	19.17
2	Organic farming	48.33	57.5	52.92
3	Neem coated urea	15.83	57.5	36.67
4	Soil health card	37.5	28.33	32.92
5	Kisan Credit Card	19.17	42.5	30.83
6	Agri Clinics	18.33	10	14.17
7	ATMA	5.83	13.33	9.58
8	Drip irrigation	55.83	60	57.92
9	Farmer Producer companies	15	9.17	12.08
	Various schemes			
1	Pradhan Mantri Krishi Sinchai Yojana	11.67	40	25.83
2	Pradhan Mantri Kisan Samman Nidhi.	25	53.33	39.17
3	PM Kisan Maan Dhan Yojana.	9.17	29.17	19.17
4	Pradhan Mantri Fasal Bima Yojana.	17.5	80	48.75
5	Mission for Integrated Development of Horticulture	10	8.33	9.17
6	Soil Health card scheme	15.83	26.67	21.25
7	Mahila Kisan Sashaktikaran Pariyojana	10	74.17	42.08
8	Awareness about government schemes for women farmers	16.67	14.17	15.42
9	Support to women groups for setting up kitchen garden/ allied activities	10	14.17	12.08
10	Procurement of Agricultural Machinery & Equipment (More Subsidy than men)	13.33	65	39.17
11	Agricultural mechanization training programmes for women farmers –	7.5	10	8.75
12	Selection of women farmers as Farmer Friend	65.83	31.67	48.75
13	Subsidy for storing and marketing of agri produce	9.17	18.33	13.75

Source: Field work

Table 4.5: Proportion of Respondents who thought they should get more information (In percentage)

		Pune	Latur	Overall
1	Seed varieties	95.83	90	92.92
2	Fertilizers and pesticides to be used	96.67	90.83	93.75
3	Crop care	95.83	90.83	93.33
4	Cultivation practices	90.83	90	90.42
5	Implements and machines which can be used on farm to reduce physical work by women farmers	75.83	91.67	83.75
6	Sources and process of getting Credit	88.33	90	89.17
7	Marketing of the produce	86.67	90.83	88.75
8	Dairy/ poultry management	90	89.17	89.58
9	Various government schemes for cultivators	87.5	88.33	87.92

Source: Field work

Table 4.6: Training Programmes/ Workshops Attended by the Respondents

	Frequency of attending	Pune	Latur	Overall
1	Many Times	14.17	5	9.58
2	Sometimes	24.17	14.17	19.17
3	Never	61.67	80.83	71.25
	Total	100	100	100

Source: Field work

Table 4.7: Source of getting Information as reported by the Respondents

		Pune	Latur	Overall
1	Family members	10	17.5	13.75
2	Television	0.83	7.5	4.17
3	Mobile	0.83	1.67	1.25
4	SHGs	-	15	7.5
5	Government officials	23.34	29.17	26.25
6	More than one source	65	29.16	47.08

Source: Field work

It can be seen from table 4.10 that 79 percent of the respondents in Latur and 67.5 percent in Pune were members of SHGs. The table also shows that they were members of active SHGs.

Table 4.8: Membership of SHGs and Activities under SHGs (In percent)

		Pune	Latur	Overall
1	Share of respondents who were member of any SHG	67.5	79.17	73.33
2	Share of respondents who were member of active SHG	57.5	76.67	67.08
3	Involved in production/ processing of agri produce			
	<i>Finance</i>	55.83	54.17	55
	<i>Goat Farming</i>	-	0.83	0.42
	<i>Production or processing and marketing of food products</i>	1.67	20.83	11.25
	<i>Tailoring</i>	-	0.83	0.42
4	Share of respondents who take initiative in arranging various programmes	27.5	59.17	43.33

Source: Field work

Table 4.11 shows extent of digital literacy among the respondents. Most of the respondents reported that they were using mobile for communication and could make and receive a call. However, the percentage of respondents who had downloaded any app for getting information about a crop was very low in Pune and negligible in Latur. In Pune, around 3 percent of the respondents had downloaded app for getting information about soybean crop.

The respondents were asked to report the problems they faced as women cultivators. In all, around 31 percent felt that they did not face any problem. The remaining i.e. around 70 percent of the respondents reported various problems. Table 4.12 shows that scarcity of labour for agricultural activities was one of the important challenges faced. Some of the respondents also reported difficulties in carrying out agricultural operation during menstrual periods. Most of the others reported problems associated with inadequate supply and higher cost of inputs such as water, electricity and credit. The respondents were asked to suggest measures which could be taken. Table 4.13 presents responses of those who

responded. It can be seen that 86 percent and 53 percent of the respondents in Pune and Latur opined that workshops / training programmes should be arranged for providing information and knowledge about various agricultural activities and technology that could be used. Other responses mainly related to provision of inputs such as electricity, irrigation and credit.

Table 4.9: Extent of Digital Literacy among the Respondents.

		Latur	Pune	Overall
1	Do you use mobile for communication	78.33	83.33	80.83
2	Can you make a call	76.67	80.83	78.75
3	Can you receive a call	81.67	90	85.83
4	Have you downloaded any app for getting information relating to the crop?	9.17	1.67	5.42
5	If yes, for which crop? Name			
	Horticulture Crop	2.5	0.83	1.67
	Import and export of goods	0.83	-	0.42
	Insurance app	0.83	-	0.42
	Milk business	0.83	-	0.42
	Onion, Sugarcane, Vegetables	-	0.83	0.42
	Soybean	3.33	-	1.67
	Vegetable	0.83	-	0.42
6	Do you know how to use internet?	28.33	25	26.67
	If yes, do you use it for getting information relating to crop or cultivation?	6.67	0.83	3.75
	Are you able to operate computer?	9.17	12.5	10.83
	If you do not know how to use mobile/ computer, would you like to learn to use?	47.5	35	41.25

Source: Field work

Table 4.10: Responses of the Respondents relating to Problems Faced by them
(In percent)

	Problems	Pune	Latur	Overall
1	Working on the farm very difficult during monsoon for women	3.17	2.94	3.03
2	can't do farm and crop management	4.76	-	1.82
3	Excess rainfall leading to crop damage	-	15.69	9.7
4	Difficulty in carrying out rigorous work on the field during periods/ due to less stamina	6.35	-	2.42
5	Crop damage by animals	4.76	-	1.82
6	Higher and increasing input prices	3.17	4.9	4.24
7	Non availability of continuous supply of electricity for agriculture	6.35	1.96	3.64
8	Less Capital available	11.11	2.94	6.06
9	Scarcity of labor	33.33	32.35	32.73
10	Various difficulties in getting loans due to financial rules	-	6.86	4.24
11	Water Scarcity	6.35	4.9	5.45
12	Others	20.63	27.45	24.85
	Total	100	100	100

Source: Field work

Table 4.11: Responses regarding Measures to be taken to Remove the Problems.

	Responses	Pune	Latur	Overall
1	Arranging training programmes for farm management like use of pesticides, fertilisers, drip irrigation and for relevant information	86.2	53.06	65.38
2	Good Schemes for agricultural sector should be started by government	-	2.04	1.28
3	Provision of uninterrupted electricity supply	3.45	4.08	3.85
4	Provision of financial support for agricultural activities	6.9	40.82	28.21
5	Provision of irrigation facility	3.45	-	1.28
		100	100	100

Source: Field work

When asked about problems faced during corona, 36 percent of the overall respondents reported that they faced financial problems (table 4.14). 25 percent reported that the supply of agri inputs was inadequate and around 12 percent reported that markets remained closed for a number of days and disrupted selling of agri produce. Around 8 percent also reported the problem of labour shortage which disrupted agricultural activities. Most of the respondents felt that for tiding over such problems, markets should have remained open and also, financial assistance should be provided (table 4.15).

Table 4.12: Responses relating to Problems faced by Respondents due to Corona
(In percent)

	Responses	Pune	Latur	Overall
1	Agri Input Prices registered Increase	10.53	-	3.54
2	Inadequate supply / availability of Agri Inputs	18.42	28.95	25.66
3	Decline in the agri product prices deceasing	15.79	-	5.31
4	Agriculture was not possible	5.26	6.58	6.19
5	Financial problems	5.26	51.32	36.28
6	Labor Shortage	15.79	5.27	7.96
7	Market closed for several days	23.68	5.26	11.5
8	Transportation affected in dairy and agriculture	5.26	-	1.77
10	Increase in the wage rate	-	2.63	1.77
		100	100	100

Source: Field work

Table 4.13: Measures Suggested by the Respondents

		Pune	Latur	Overall
1	Agricultural product market should remain open	54.55	18.67	23.26
2	Financial assistance should be provided	45.45	38.67	39.54
4	Agri inputs should be available easily during time	-	6.67	5.81
5	vaccination is needed	-	36	31.4
		100	100	100

Source: Field work

Finally, the respondents were asked whether they would prefer to continue working in the farm sector or work in the nonagricultural sector given a choice. Interestingly, around

53 percent in Pune and 60 percent in Latur reported that they would like to continue working in the farm sector. This can be seen from table 4.16.

Table 4.14 : Occupational Preference of the Respondents (In percent)

		Pune	Latur	Overall
1	Farm	53.33	68.33	60.83
2	Can not say	-	1.67	0.83
3	Non Farm	46.67	30	38.33
		100	100	100

Source: Field work

The preference of overall 60 percent of the respondents for working in the farm sector coupled with their substantial time allocation for agricultural operations shows importance of farming for the respondents.

With Agricultural Assistant and Farmer Friend in the Village



4.5 Developing Women Empowerment Index in Agriculture

The analysis of the data revealed that the respondents were engaged in cultivation of the farm substantially. It also revealed the extent of land ownership, decision making, awareness etc. of the respondents. This data has been used here to develop Women Empowerment Index for the respondent cultivators. The index would not only indicate overall extent of adequacy or empowerment of the women respondents but also relative strength of various areas of inadequacy and adequacy in empowerment and highlight importance of women centric policy measures in the relevant areas.

4.5.1 The Framework

As already discussed, it is felt that empowerment of female cultivators through various ways such as ensuring ownership of resources and capacity building is expected to increase their on farm productivity. It is essential to understand the existing level of their empowerment which would provide a base for further actions. Therefore, based on the responses received from our primary survey, an attempt was made to construct a 'Women Empowerment in Agriculture Index'(WEAI) for the sample districts Pune and Latur separately. Measurement of empowerment and construction of the index for this study is

based on the concept developed by U.S. Agency for International Development (USAID) and used by Alkire et al (2013) in their study. This WEAI was based on a five-domain empowerment (5DE) approach wherein empowerment of women relating to five main domains was considered. These domains were the criteria considered for observing and quantifying empowerment of women. These related to decision making capacity of women with respect to agricultural production, ownership and access to resources, control over income earned, leadership and relative time allocation of women for various activities.

For the present study, the index developed by Alkire et.al (2013) has been the base which is used with some modifications to make it more comprehensive. This is presented in table 4.17. The additional domain areas used in this study are *Digital literacy and Training programmes attended and self-learning by women farmers*. The first three domains are directly related to role of respondents as cultivators. The other domains including those added for this study reflect exposure to knowledge, information and opportunities for learning.

Based on the data collected an attempt is made to find adequacy and the inadequacy of the respondents in each indicator. Whereas adequacy is considered to be leading to empowerment, inadequacy would lead to disempowerment. Table 4.17 presents the domains or the dimensions, the indicators used to represent these domains and weight assigned to each indicator used for calculating the index.

The type of responses of the respondents relating to these indicators would represent the extent of empowerment / disempowerment of each respondent. Appendix 1 presents the methodology for finding inadequacy score and calculating inadequacy index based on which the WEAI is calculated.

Table 4.15: The Domains, Indicators, and Weights used for Calculating Women Empowerment in Agriculture Index.

	Domain	Indicator	Weight
1	Production	Decision relating to purchase of inputs and cultivation production	1/7
2	Ownership of assets	Ownership of land	1/7
3	Resources	Decisions relating to purchase, sale and transfer of asset	1/14
		Access to and decision about credit	1/14
4	Income	Control over use of Income	1/7
5	Community Participation and awareness/knowledge	Group membership (SHG)	1/14
		Awareness on various schemes for farmers and concepts in agriculture	1/14
6	Digital literacy	Usage of mobile, computer and internet	1/7
7	Capacity building	Involvement in self-learning for self improvement	1/14
		Attending workshops / Program for promoting agriculture or non-agriculture business	1/14

Source: Field work

4.5.2 The Domain Areas, Indicators and Proportion of Adequate Respondents

This section explains the domains and indicators considered for calculation of WEAI. These domains relate to decision making by the respondents relating to production, resources used and income earned, ownership of land with the respondents, their participation in activities of SHGs and awareness about various agri sector schemes, digital literacy and training programmes attended and self learning. It is felt that the responses of the respondents relating to these domains would largely indicate their extent of empowerment.

Production

The sub indicator on decision making relating to input usage and production of crops is constructed from respondent participation in decision making relating to crops to be cultivated, seeds, fertilizers and pesticides to be used, marketing of crops, labour to be hired and family labour to be used. The respondent has adequacy in this indicator if she participates alone or jointly in at least four (the median value) of these areas. **Ownership of assets (land)**

Individual or joint ownership of land makes the respondent adequate in this domain.

Resources

The two indicators used for this domain were: 1. Decisions relating to purchase, sale and transfer of assets, 2. Decision about credit. There are two slight modifications from 5 DE index (Ibid) as for this study, decisions relating to asset ownership and availing credit have been to clubbed together.

Under the first indicator, two sub-indicators were used to find out whether the respondent was involved in decision making on: a) machinery and implements to be used and b) type of investments to be made on farm. Involvement of respondent individually or jointly in at least one of the sub-indicators make her adequate for this indicator.

Under the second indicator also, two sub indicators were used i.e. whether the respondent was involved in decision making (individually or jointly) on: a) loans to be taken from formal sources, b) loans to be taken from informal sources. The adequacy requirement is the same as the earlier indicator.

Income

To capture the respondent's control over income and expenditures, only one indicator has been used. Control over use of income was constructed from answers regarding: a. involvement of respondent individually or jointly in the decision regarding spending of earned income, b. involvement of respondent individually or jointly in the decision regarding education and marriage of children. Affirmative reply to at least one of these sub-indicators made the respondent adequate in this domain.

Participation in SHG, Knowledge and Awareness:

This domain aims to capture the respondent's awareness and knowledge about various farm related schemes. Two indicators were used as proxies for the same: membership in community groups and awareness and knowledge of various schemes for farmers in general and women farmers in particular. Under the first indicator, three sub-indicators were used: a. whether the respondent was a member of any SHG group, b. whether the group was active and c. whether the respondent took initiative/lead in arranging various programmes of the SHG. Affirmative answer in at least two made the respondent adequate in this indicator.

Under the second indicator, various question were used to find out whether the respondent was aware of various relevant schemes of the government. Total 23 sub-indicators were used and affirmative answers to at least 50 percent of them was necessary for adequacy in this indicator.

Digital literacy

The single indicator used in this domain was different uses of mobile, computer and internet. Six sub-indicators were taken here a. whether the respondent had mobile for communication b. whether she could make a call; c. whether she could receive a call d. whether she had downloaded any app for getting information on crop e. whether she knew the use of internet and f. whether she knew as to how to use computer. The respondent was

considered to be adequate in digital literacy if she was adequate in at least three of these sub-indicators.

Capacity building

Two indicators used in this domain were a. self-learning (attending course/other self-learning learning). Spending of time for the same made a respondent adequate in this indicator. b. Participation in training program/workshop, farmer school, field visit to other farm, factories, lecture or any other kind of training for promoting agriculture or non-agricultural business since last 2/3 years. Affirmative answer ensuring attending such programs many times or sometimes made the respondent adequate in this indicator.

4.5.3 Computation of Inadequacy Score and 7 Dimension Empowerment Index

After specifying domains and the indicators reflecting the domains, the objective was to find extent of inadequacy among the respondents. Appendix 1 shows the method for calculating the same. Initially total inadequacy score C_i^1 based on weights assigned to each indicator and the corresponding inadequacy score for each respondent was calculated. The value of this indicator ranges between 0 and 1. There was only one respondent in Latur and zero respondents in Pune who were adequate in all the indicators. Therefore, the overall inadequacy score was zero in their case. However, as it is difficult to find prevalence of zero inadequacy, in the next stage, disempowerment cut²off k as mentioned in Alkire (2012) was fixed at 0.20 (a value greater than zero) and then the disempowerment head count ratio Hr, i.e. censored head count ratio of disempowered³ which gives proportion of disempowered respondents (i.e those above the cut off) among total respondents was calculated. Based on this, average inadequacy score (As)⁴ was calculated. This shows the average inadequacy score of disempowered respondents. The value of this indicator will range between 0 and 1. Inadequacy score of 0 indicates complete adequacy and 1 indicates complete inadequacy. Using these two indicators viz. disempowerment head count ratio and average inadequacy score, the extent of disempowerment (M)⁵ was also calculated. This indicates the extent of inadequacy or

¹ Total Individual Inadequacy Score: $C_i = W_{11}I_{11} + W_{21}I_{21} + W_{31}I_{31} + W_{32}I_{32} + W_{41}I_{41} + W_{51}I_{51} + W_{52}I_{52} + W_{61}I_{61} + W_{71}I_{71} + W_{72}I_{72}$ where W_{dj} stands for weight assigned to domain d and indicator j and I_{dj} stands for inadequacy score of the respondent in domain d and indicator j.

² Disempowerment Cut-off (k): all those above (k) are disempowered. $C_i < k, C_i = 0$; $C_i > k, C_i(k) = C_i$

³ Disempowerment head-count ratio: $Hr = q/n$, where q= number of disempowered respondents with score above k, n= number of respondents

⁴ Average inadequacy score: $As = \sum C_i(k)/q$, C_i is the total censored inadequacy score of individual i, $i=1,2,\dots,n$ i.e. average inadequacy score of a disempowered respondent

⁵ Extent of disempowerment $M = Hr * As$

disempowerment among all the respondents. A, higher value of this indicator indicates higher extent of disempowerment. Finally, 7 Dimension Empowerment Index (7DE)⁶ was calculated. This indicates the extent of empowerment among the total respondents.

It was observed that the disempowerment head-count ratio (Hr) which indicates head count of the inadequate respondents was very high- 98 percent for Pune 95 percent for Latur. Overall, the average inadequacy score (As) of the respondents was 0.44 for Pune and 0.42 for Latur and the resulting extent of disempowerment M (which is the product of Hr and As) was 0.43 for Pune and 0.40 for Latur district. Finally 7DE⁶ was obtained which was 0.571 for Pune and 0.596 for Latur. This means that the extent of empowerment was 57 percent in respondents in Pune and 60 percent in Latur and that the extent of inadequacy or disempowerment was 43 percent in Pune and 40 percent in Latur.

4.5.4 Breaking Down M by Domains and Indicators

It is important to understand how women are disempowered in different ways or dimensions. A key feature of M is that once the disempowered have been identified (in other words, once M has been computed), one can decompose M into the different components (i.e. the indicators) to reveal how respondents are disempowered in different indicators or to reveal the composition of inadequacies they experience. To decompose by indicators, computation of the censored headcount ratio in each indicator is essential. The censored headcount ratio for a particular indicator can be obtained by adding up the number of disempowered people who are deprived in case of that indicator and then dividing by the total number of respondents. Once all the censored headcount ratios have been computed, it can be verified that the weighted sum of the censored headcount ratios also generates M. That is, if the M is constructed from all ten indicators, then

$$M = W_{11}C_{11H} + W_{21}C_{21H} + W_{31}C_{31H} + W_{32}C_{32H} + W_{41}C_{41H} + W_{51}C_{51H} + W_{52}C_{52H} + W_{61}C_{61H} + W_{71}C_{71H} + W_{72}C_{72H}$$

C_{djH} is censored headcount ratio (ie proportion of headcount of censored disempowered in domain d and indicator j to total number of respondents). The inadequacies of women who are not identified as disempowered are not included to focus attention on disempowered women. The percentage contribution of each indicator to overall disempowerment is computed as follows,

$$\text{Contribution of indicator } dj \text{ to } M = (W_{dj} C_{djH} / M) * 100$$

⁶ 7DE=1-M

The contributions of all indicators will sum to 100 percent. If the contribution to disempowerment of a certain indicator greatly exceeds its weight, it implies that there is a relatively high inadequacy in this indicator in the sample and that the disempowered are more inadequate in this indicator than in others. Such indicators with high inadequacy need to be addressed. Table 4.19 summarizes the indicator wise inadequacy and the contribution of a particular indicator in total inadequacy for Pune and Latur.

It can be seen that there are no large difference in Pune and Latur with respect to values of majority of the indicators. This is in spite of the fact that villages in Latur belong to backward district. In fact, in case of indicators such as ownership of assets, decisions relating to spending of income, community participation, digital literacy and self learning, the inadequacy in Latur was found to be lower than in case of Pune. As was already mentioned, the villages were part of PoCRA scheme of the government. Also, all the villages had women agricultural assistants. Both these factors seem to have had impact on level of awareness of the women cultivators in Latur.

As a first step to understand dimension wise break up of inadequacy, total head count proportion of all the inadequate respondents among the respondents was calculated. Table 4.18 shows that this proportion was very high in case of asset (land) ownership, awareness about schemes and programmes and capacity building. Next, considering the cut off, censored head count ratio of inadequate respondents was also calculated. This showed similar results. Using these censored head count ratios for each indicator, share of each indicator in inadequacy was calculated. Again, it can be seen that share of indicators relating to ownership of assets and capacity building (self-learning and participation in training programmes and workshops) was very high. This can also be seen from figure 4.1. It can be seen that almost 30 percent of the respondents were inadequate in terms of asset ownership and the combined proportion of inadequate respondents in indicators mentioned above was almost 70 percent. Finally, aggregate censored disempowerment in each indicator was found out. The value of this indicator would range between zero and highest possible weighted inadequacy score of the inadequate respondents. Thus, in extreme cases, disempowerment could be zero or could go up to highest value defined by weighted inadequacy score of the inadequate respondents. It can be seen from the table that aggregate inadequacy is highest in case of land ownership followed by indicators of capacity building and awareness about programmes and schemes.

This domain specific analysis of inadequacy indicates that the women participate in decision making relating to agricultural activities and majority are empowered in that

respect. However, almost 70 percent of the inadequacy arises due to lack of land ownership, inadequate information and awareness about schemes and capacity building. These are the areas where efforts to need to be focused for empowerment of female cultivators in agriculture.

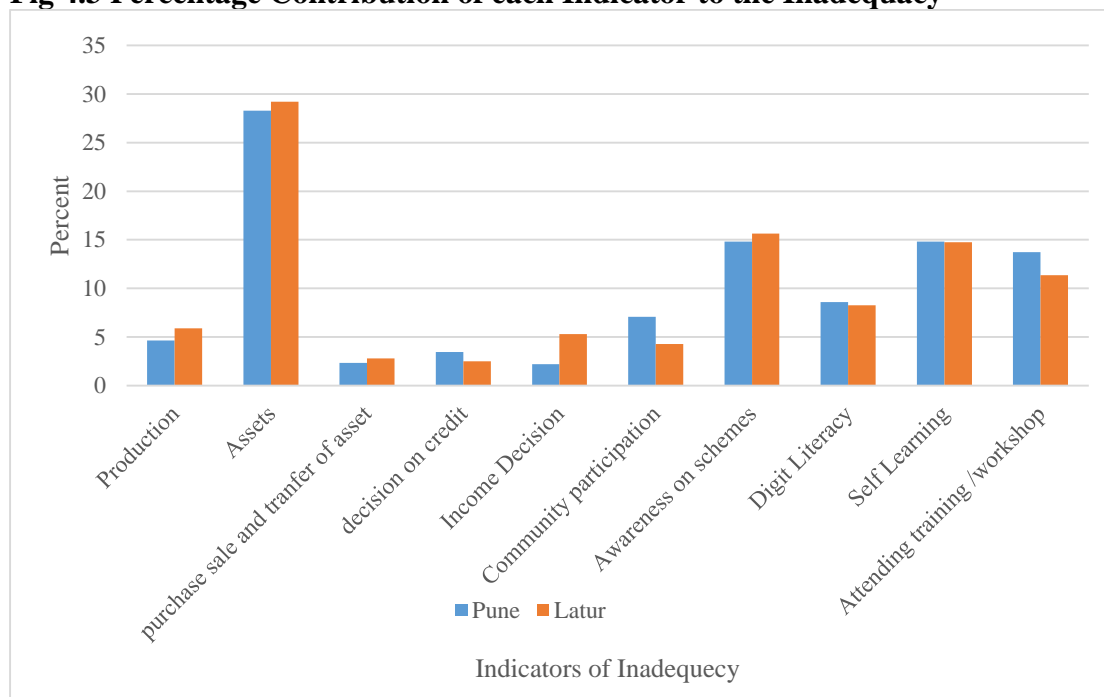
Table 4.16: Inadequacy Contribution under each Dimension

District	Production decisions	Land Ownership	Resources Decision		Income Decision	SHG, Knowledge and awareness		Digital Literacy	Capacity Building	
			Purchase, sale and transfer of asset	Decision on credit		Community participation	Awareness on various programs and schemes		Self learning	Attending workshop/training
Total Head count Ratio of Inadequate Respondents* (%)										
Pune	14.17	85.00	14.17	21	7	43	90.00	26	90.00	83
Latur	17	83	16	14.17	15.00	24.17	90.83	23.33	86.67	64.17
Censored Head Count Ratio of Inadequate Respondents**										
Pune	0.14	0.84	0.14	0.21	0.07	0.43	0.89	0.26	0.89	0.83
Latur	0.17	0.83	0.16	0.14	0.15	0.24	0.88	0.23	0.83	0.64
Share of each dimension/indicator to total Inadequacy (in percentage)***										
Pune	4.72	28.06	2.36	3.47	2.22	7.08	14.86	8.6	14.86	13.75
Latur	5.90	29.20	2.80	2.51	5.31	4.28	15.63	8.26	14.75	11.36
Aggregate censored disempowerment in each indicator****										
Pune	2.43	14.43	1.21	1.79	1.14	3.64	7.64	4.43	7.64	7.07
Latur	2.86	14.14	1.36	1.21	2.57	2.07	7.57	4.00	7.14	5.50

Note: * (Inadequate respondents in each indicator / total respondents) *100 2. ** Number of censored inadequate individuals / total respondents
 3.*** $(W_{dj} C_{djH} / M) *100$, where C_{dj} is censored headcount ratio (total disempowered in domain d and indicator j/total respondents) 4.**** aggregate of weighted inadequacy score in each indicator i.e. $\sum_i (W_{dj} * \text{inadequacy score for domain d and indicator j})$, $i=1,2,\dots,n$ (number of respondents)

Source : Based on field work

Fig 4.3 Percentage Contribution of each Indicator to the Inadequacy



Source: Based on field work

4. 5.5 Correlates of Empowerment Index

The important objective behind measurement of empowerment of women cultivators is framing suitable policies. It is therefore important to investigate into the factors affecting empowerment or correlates of indicators (manifestations) of empowerment. This would provide guideline for framing policies. As mentioned earlier, the review of literature indicates that traditional variables such as education and age have not been significantly correlated with the level of empowerment. The study by Gupta (Gupta et al; 2017) finds a strong correlation of the empowerment level with market orientation of the household.

For this study, an attempt was made to correlate the level of empowerment level with variables such as age, per capita income and land size of the household. It was observed that the correlation coefficient was of lower value and insignificant in case of land size and per capita income. For age, though the coefficient was low, was significant and indicated that younger respondents were more empowered specifically in Pune.

For category variables such as caste and education, the respondents were cross classified according to the level of adequacy / inadequacy and according their caste as well as education status. This can be observed from the following section.

4.5.6 Classification of Respondents according to Caste and Education Status.

The relative social status or position of the household in the caste hierarchy is an important parameter that may impact various aspects of empowerment of the woman cultivator belonging to a particular caste. Therefore, social status wise proportion of adequate respondents under each indicator of all the domains for both the districts was found out. As was already revealed from table 3.4, almost 65 percent of the households belonged to general category, followed by OBC category. Overall combined share of these respondents was around 80 percent. These categories were followed by NT category (8.75 percent) and SC category (around 8 percent). The overall proportion of ST households was only around 2 percent (only 1 and 4 respondents in Pune and Latur respectively, hence they were excluded from the analysis). The observation of this data revealed that proportion of adequate respondents was not directly proportional to the caste hierarchy. This could be due to necessity to participate in various economic / livelihood activities along with male counterparts of the households. On the other hand, comparatively lower proportion of adequate respondents in the general category indicates lesser need for such respondents to participate in various economic activities to the full extent.

Table 4.17: Caste wise Proportion of Adequately / Inadequately Empowered Respondents

		Pune			
	Social class#	Adequate*	Moderately Adequate**	Inadequate***	Total
1	General	1.18	77.65	21.18	100
2	OBC	7.69	76.92	15.38	100
3	SC	0	80	20	100
4	NT	0	63.64	36.36	100
	Total	1.67	76.67	21.66	100
		Latur			
		Adequate	Moderately Adequate	Inadequate	Total
1	General	5.80	68.12	26.09	100
2	OBC	7.14	82.14	10.71	100
3	SC	0	100	0	100
4	NT	0	90	10	100
	Total	5	76.67	18.33	100

Note: * < the cut off k 0.2, ** 0.2-0.5, *** >0.5. #STs are omitted as number was too less (Pune=1, Latur=4)

Source: Field work

Table 4.20 shows education status wise proportion of the respondents. This table shows that most of the respondents were concentrated in the category of moderate empowerment in both the district. It also shows that the proportion of inadequate respondents was relatively higher among the illiterates and lower in higher education categories.

Table 4.18: Education Status wise Proportion of Adequately / Inadequately Empowered Respondents

		Pune			
	Education class	Adequate*	Moderately Adequate**	Inadequate***	Total
1	Illiterate	0	61.9	38.09	100
2	Primary	0	71.43	28.57	100
3	Secondary	1.64	83.61	14.75	100
4	Intermediate	0	72.73	27.27	100
5	Technical	33.33	66.66	0	100
6	Graduate	0	80	20	100
	Total	1.67	76.67	21.66	100
		Latur			
		Adequate	Moderately Adequate	Inadequate	Total
1	Illiterate	0	60.87	39.10	100
2	Primary	0	53.85	46.15	100
3	Secondary	6.15	86.15	7.69	100
4	Intermediate	12.5	75	12.5	100
5	Technical	0	100	0	100
6	Graduate	0	100	0	100
	Total	5	76.67	18.33	100

Note:* < the cut off k 0.2, ** 0.2-0.5, *** >0.5

Source: Field work

The analysis reveals that there is a need for deeper understanding of the empowerment of women and a need to go beyond the traditional correlates or determinants which are mentioned above.

4.6 Concluding remarks

The analysis of the data revealed significant contribution of majority of the respondents in terms of crop wise number of days spent on agricultural activities, share of daily hours spent on cultivation, overall contribution to their family farm and income earned through non farm activities to the household livelihood. However, the exercise carried out for measuring empowerment of the respondents showed a number of areas of inadequacy or disempowerment. The empowerment index was 0.60 for Latur and

0.57 percent for Pune. This indicated that extent of disempowerment was 0.40 and 0.57 in Pune and Latur respectively. It showed that in spite of differences in socio economic conditions of respondents in Pune and Latur, the empowerment index of women in Latur district was marginally higher than in Pune. Participation of the villages of Latur in PoCRA and prevalence of women agri assistants in all these villages was thought to be the major reason for the higher empowerment index. The analysis also showed various areas of higher inadequacies or disempowerment such as ownership of assets, awareness and information about various schemes in case of the respondents. The analysis has therefore underlined the importance of strengthening the outreach of the extension machinery to women cultivators. The observation of the data revealed that proportion of adequate respondents was not directly proportional to the position in the caste hierarchy. In fact, proportion of SC respondents with adequate scores was highest in both the districts. This could be due to necessity to participate in various economic / livelihood activities along with male counterparts of the households. On the other hand, comparatively lower proportion of adequate respondents in the general category indicated lesser need for such respondents to participate in various economic activities to the full extent. Education level wise classification of respondents indicated importance of education as one of the factors that can affect the level of empowerment.

Chapter 5

Summary and Conclusions

This chapter presents major findings of the study based on the secondary as well as field level data collected from women cultivator respondents of Pune and Latur.

Major Findings of the Study

Major findings emerging from the analysis of the secondary data are as follows -

1. The census data for the years 2001 and 2011 shows that though the agricultural workforce of the country has been declining, still a substantial section of the population – around 70 percent of the male and 80 percent of the female workers were engaged in the agricultural sector in 2011.
2. Out of the rural workforce, only around 27 percent were females and the rest were male workers. The share of main workers was lower (63.43 percent) in case of female cultivators as well as agricultural labourers (49.64 percent) as compared to the male counterparts. This revealed lower participation of women in the workforce and greater extent of marginal workers in case of female workers.
3. Among various states, Maharashtra contributed around 15 percent to the pool of total female main workers at all India level and around 19 percent to the rural female main cultivators.
4. Economic activity wise distribution of male and female rural main workers in Maharashtra revealed a rise in the combined share of agricultural female rural workers and a decline in that of male workers in 2011 from the earlier census year 2001. The share of female cultivators in 2011 was 41 percent and that of male cultivators was 42 percent out of all the respective occupational categories.
5. It was observed that district Rantnagiri had the highest share of female main cultivators as per 2011 census and Amravati had the lowest. It was also observed that districts with very high share of cultivators belonged mainly to the developed western region of the state which consists of divisions Konkan, Pune Kolhapur. These districts with relatively higher share of cultivators are also the districts with higher share of non farm workers.
6. The districts with lower share of cultivators and non farm workers are dominated by agricultural labourers and mainly belong to Vidarbha (eastern) and Marathwada (central) region of the state.

7. 15.47 percent of the landholdings were owned by females in Maharashtra and this share was slightly higher than the national average (13.96 percent). Share of females in the total *area* under operational holdings in Maharashtra was 15 percent. This share was also slightly higher than that at the national level (11.72 percent)
11. It was evident from the data that not only the share of females in landholding is very fragile but majority of the female landholders are the owners of marginal and small size landholding . With increase in land size, share of women as landowners and in area under landholdings has declined.

The results emerging from analysis of the primary data collected from the field are as follows

1. The data relating to basic characteristics of the respondents showed that 17.5 percent and around 51 percent of the respondent females in Pune and Latur respectively reported that they were heading their own household. The average age of the respondents was 40 and on an average, the respondents were working as cultivators for 19 years.
2. Around 87 percent of the overall respondents had a bank account and 75 percent could operate it independently. A higher percentage- 65 percent of the respondents in Pune had their own mobile as compared to 35 percent in Latur.
3. On an average around 18 percent of the respondents were illiterate. Also, more than 50 percent of the respondents in both the districts had obtained education up to secondary i.e. 10th standard. The share of respondents taking education above intermediate level was very low – overall around 7 percent. However, it was higher – 10.5 percent in Pune than in Latur wherein only 2.5 percent of the respondents had obtained education beyond intermediate level.
4. Most of the households belonged to Hindu religion. Also, around 71 percent of the households in Pune and 58 percent in Latur belonged to general category followed by the OBC category. The share of SC, ST and NT households was comparatively lower- overall around 20 percent.
5. 93 percent of the of the sample households in Pune and 99 percent of the households in Latur reported cultivation as their main occupation. Around 33 percent and 40 percent of the households in Pune and Latur respectively did not have any other source of income and cultivation was the main and only source of income. Overall, percentage of households with secondary sources of income was 37 percent.

6. All households in Latur and 98 percent of the households in Pune owned land. 1.67 percent of the households in Pune were cultivating leased in land. Share of households without irrigation facility was around 33 percent in Latur and very low-15 percent in Pune.
7. Overall, around 17 percent of the households belonged to the large category and around 55 percent of the households were small and marginal households.
8. The extent of land ownership among women respondents was very low. It was only 13 percent in Pune and 18 percent in case of Latur. Overall, 65.42 percent of the respondents did not have land in their name.
9. Share of illiterate household members was marginally higher in Latur as expected. Around 55 percent of the female members in Pune and 59 percent in Latur were educated only up to secondary level and the share of women with higher education was lower as compared to the male members in both the districts. However, the share of females with education up to graduation and above was higher in Pune than in Latur.
10. Primary occupation of majority of the household members was cultivation in both the districts. Similarly, share of female cultivators was higher than in case of male members. Overall, around 12 percent of the male members and around only around 5 percent of the female household members were engaged as salaried / self-employed / nonagricultural labour. Data relating only to the respondents shows that about 98 percent in Pune and 93 percent in Latur had cultivation as their primary occupation. Data relating to secondary occupation of the respondents shows that around 78 percent in Pune and 63 percent in Latur did not have any secondary occupation.
11. Occupation wise average income and average share of various occupations of sample households showed that households in Pune earned more average income in all types of occupations than Latur. However, the income shares contributed by various occupations in both the districts were similar. Cultivation was the main source contributing around 60 percent to the total income. For Latur, this share was higher-63 percent- than in case of Pune. Non-farm activities contributed around 32 percent to the total income
12. Overall, the average income earned by female members of the households as agricultural labourers and as self-employed persons was lower than the male members. The data for other occupations indicated capacity of women to earn income equal to or higher than that earned by the male members. The data also showed that

given an opportunity and availability of suitable work, women get involved in all types of economic activities besides cultivation.

13. It was found that the average number of days of work of the respondents for 17 crops in Pune and 12 in Latur were higher by 1.4 times and 1.22 times respectively than their male counterparts. However, on an average their notional contribution in terms of imputed total wage income that would be received by them for crops was lower than their male counterparts by 1.4 times in Pune and 1.3 times in Latur due to lower market wage rate for hired women labourers.
14. The daily average time allocation showed that overall, women spent almost 18 percent of their daily time in unpaid domestic activities as against 4 percent spent by the men in the family. On an average 29 percent and 36 percent of the respondents' and male members' daily time was spent on cultivation activity. It is interesting to note that respondents devoted 1.44 percent of their daily time for learning as against 0.36 percent by men.
15. Majority of the respondents in both the districts perceived that their contribution to farming throughout crop season was more than 50 percent.
16. 70 – 80 percent of the respondents reported that they took decisions relating to farming jointly with husband/ other members in the family. Share of female respondents taking decisions by themselves was comparatively higher (for each category) in case of Latur than in case of Pune.
17. Overall, the respondents were aware about organic farming, drip irrigation, neem coated urea and soil health card. Majority of the respondents however were not aware about minimum support price, kisan credit cards, agri clinics and agricultural technology management agency.
18. It was observed that all four villages in Latur were under women agricultural assistants of the agri department. As a result, there was constant interaction among the women cultivators and the assistants and interaction among women cultivators also. This facilitated flow of information. In three of the villages, women SHGs were found to be active and under the leadership of progressive women farmers. On this background therefore, the responses showed that the extent of women cultivators in Latur who were aware of various government policy initiatives was higher than in case of Pune.

19. It was observed that around 71 percent of the overall respondents had not attended any training programme or workshop. This percentage was higher- 80 percent in Latur.
20. 79 percent of the respondents in Latur and 67.5 percent in Pune were members of SHGs.
21. Most of the respondents reported that they were using mobile for communication and could make and receive a call. In Pune, around 3 percent of the respondents had downloaded app for getting information about soybean crop.
22. Around 70 percent of the respondents reported various problems as women cultivators. Scarcity of labour for agricultural activities, difficulties in carrying out agricultural operation during menstrual periods, inadequate supply and higher cost of inputs such as water, electricity and credit were some of the major challenges faced by the respondents.
23. 86 percent and 53 percent of the respondents in Pune and Latur opined that workshops / training programmes should be arranged for providing information and knowledge about various agricultural activities and technology that could be used. Other responses mainly related to provision of inputs such as electricity, irrigation and credit.
24. 63 of the respondents in Latur and 53 percent in Pune said that they would like to continue in the farm sector despite the challenges. Overall, 38 percent felt that given a chance, they would like to continue in the non farm sector.
25. The empowerment index was 0.57 for Pune and 0.60 for Latur. This indicates the scope which is there for reducing the inadequacies and improving empowerment in both the districts. It was observed that the index for Pune was marginally lower than that of Latur in spite of better socio economic status of the respondents of Pune.
26. Breakdown of the empowerment index into various dimensions revealed that absence of joint or single ownership of land for women, inadequacy in knowledge and awareness; lesser opportunities or orientation for self-learning; lesser extent of digital literacy, lack of opportunity to attend training program to enhance farm/ business related knowledge were the main factors behind the inadequacy and resulting disempowerment of women cultivators in both the districts.
27. It was observed that the correlation coefficient between level of inadequacy and land size and per capita income was insignificant. In case of age of the respondents,

though the coefficient was very low, it was significant and indicated that younger respondents were more empowered specifically in Pune.

28. The observation of the data revealed that proportion of adequate respondents was not directly proportional to the position in the caste hierarchy. In fact, proportion of SC respondents with adequate scores was highest for majority of the dimensions in both the districts. This could be due to necessity to participate in various economic / livelihood activities along with male counterparts of the households. On the other hand, comparatively lower proportion of adequate respondents in the general category indicated lesser need for such respondents to participate in various economic activities to the full extent.
29. The distribution of respondents as per their extent of adequacy/ inadequacy under each land size category showed that within each land size category, respondents were concentrated in the category of moderate empowerment in both the districts. Also, the proportion of adequately empowered respondents was very small. The proportion of such respondents was higher however in district Latur than in case of Pune. It was also noted that the proportion of inadequately empowered respondents was comparatively lower for the marginal households. This probably reveals that the respondents belonging to lower land size households need to get engaged into economic activities to a greater extent as compared to those from the larger size

The study underlines necessity of understanding the contribution of women at the household level to the household farming activities in different agro climatic regions of India. An understanding of their contribution as well as the inadequacies and therefore the challenges faced them would be helpful in framing women centric policies for bringing about positive changes at the household level as well as at the sectoral level.

Chapter 6

Policy Implications

The analysis of the data shows that in spite of considerable contribution of the respondents as well as their time allocation for household farms and cultivation, their agricultural empowerment index was 0.60 for Latur and 0.57 for Pune. This also indicated that the extent of inadequacy among the respondents was 0.4 and 0.43. The analysis also revealed various areas of inadequacies in case of the respondents. The policy conclusions that emerge from the analysis are-

1. A large proportion of women were not aware about government schemes especially those for women cultivators such as those relating to support to women groups for setting up kitchen garden/ allied activities and agricultural mechanisation training programmes. Hence, efforts at strengthening the extension activities among farmer households for increasing awareness about such women centric schemes have to be made.
2. The interaction among agricultural assistants and women cultivators was found to be more strong and meaningful in villages where the former were women and also where farmer friends were women. In fact, overall, around 48 percent of the respondents were aware about selection of women as farmer friends. Hence, wherever possible, women agricultural assistants can be appointed by the state agricultural department.
3. 62 percent of the respondents in Pune and 81 percent in Latur had not attended any training programmes relating to information about appropriate cultivation practices, input usage, market for produce etc. and aiming at enhancing productivity of farms. *Hence it is important that such training programmes are arranged for* not only the land owner male member beneficiaries of the household but also the women members of the family who are engaged in various agricultural operations.

4. Most of the respondents could make and receive call. However, they were not equipped to use the mobile and the internet for accessing information relevant to the crops grown on farms. It is felt that *training programmes relating to enhancing the extent of digital literacy among respondents need to be organised* so that the respondents can make use of digital platforms independently for accessing various types of information and for availing online services and for marketing of the produce. E.g. *small informative training modules on relevant information relating to the agricultural activities performed by women cultivators need to be circulated on digital platform among them. Usage of digital tools is important as very often there could be difficulties in organising training programmes for women working on farm.*
5. Around 38 percent of the women felt that given a chance, they would like to work into the non-farm sector. Hence, training programmes / workshops relating to vocational guidance for carrying out employment and income generating agro processing and other activities need to be organized for women in the villages.
6. Depending upon the score of women respondents in terms of extent of empowerment, they were classified as adequately empowered, moderately empowered and inadequately empowered. It was found that the extent of inadequately empowered was higher in case of respondents with lower levels of education. This indicated role of formal education in reinforcing level of empowerment in case of the respondents. Therefore, awareness and importance of formal education needs to be stressed among the cultivator households.
7. When asked about problems they face as women cultivators, around 33 percent of the respondents in both the districts reported that scarcity of labour was the major problem they faced. It is therefore essential that the women cultivators from the land owning households are made aware about the subsidy schemes and training programmes relating to mechanization.

8. Though gradually the extent of land owned by female landowners has been increasing, it is still very low at all India level and for Maharashtra. *Therefore, awareness regarding importance of adding the name of the woman cultivator / wife along with the male cultivator / husband needs to be created to instill confidence in the women cultivators and to enhance their decision making capability.*
9. There has been lack of adequate gender specific information on contribution of women to the household farm. *Therefore, it is important to undertake studies for understanding various agricultural activities performed by women for various crops and in various regions, relative time spent on these/other activities, gender specific challenges faced in carrying these activities, their awareness about various schemes, suitable and effective ways of reaching out to them for improving agricultural productivity and income.*
10. It is felt that construction of region specific inadequacy scores and empowerment index would provide understanding of contribution and challenges faced by women cultivators and would be helpful in framing appropriate policies.

Reference: -

- Adeleke, O A, Adesiyani OI, Olaniyi O A, Adelalu K O, and Matanmi H M. (2008). Gender Differentials in the Productivity of Cereal Crop Farmers: A Case Study of Maize Farmers in Oluyole Local Government Area of Oyo State. *Agricultural Journal* 3 (3): 193–98.
Men & Women in India, 2020; 22nd Issue, NSO India
- Alkire S., Meinzen-Dick R., Peterman A., Quisumbing, A.R., Seymour, G., and Vaz, A. (2013). The Women's Empowerment in Agriculture Index, OPHI Working Paper No. 58.
- Alkire Sabina, Ruth Meinzen-Dick, Amber Peterman, Agnes R. Quisumbing, Greg Seymour and Ana Vaz (2012) The Women's Empowerment in Agriculture Index, OPHI WORKING PAPER NO. 58
- Doss, C. (2015), Women and Agricultural Productivity: What Does the Evidence Tell Us? Economic Growth Center Discussion Paper No. 1051
- FAO (2020). Policy on Gender Equality 2020–2030, United Nations, Rome.
- de la O Campos, Ana Paula, Katia Alejandra Covarrubias and Alberto Prieto Patron. (2016). "How Does the Choice of the Gender Indicator Affect the Analysis of Gender Differences in Agricultural Productivity? Evidence from Uganda." *World Development* 77: 17-33.
- G. Kelkar (2011). 'Gender and Productive Assets: Implication for Women's Economic Security and Productivity', *Economic & Political Weekly*, vol. XLVI,
- Government of India (2019). Agriculture Census 2015-16 - All India Report on Number and Area of Operational Holdings, Agriculture Census Division, Department of Agriculture Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare.
- Government of India (2021), Women and Men in India 2020, Social Statistics Division National Statistical Office Ministry of Statistics and Programme Implementation Government of India
- Government of India (2019), Annual Report – Periodic Labor Force Survey (July 2018 – June 2019), Ministry of Statistics and Programme Implementation, NSO.
- Government of India (--), Gendering Human Development - A Working Paper for Computing HDI, GDI and GII for State of India, NSO, Social Statistic Division, Ministry of Statistics and Programme Implementation Division, Government of India.
- Government of Maharashtra (2021), Economic Survey of Maharashtra 2020-21, Directorate of Economics and Statistics.

- Gupta, S., Pingali, P.L., Andersen, P.P. (2017), Women's empowerment in Indian agriculture: does market orientation of farming systems matter? *Food Sec.* (2017) 9:1447–1463
- Gupta, S., Vemireddy, V., Singh, D., Pingali, P. (2019), Adapting the Women's empowerment in agriculture index to specific country context: Insights and critiques from fieldwork in India, *Global Food Security*, Volume 23, Pages 245-255.
- Guirkinger, Catherine., Platteau, J and Goetghebuer, T. (2015). "Productive Inefficiency in Extended Agricultural Households: Evidence from Mali." *Journal of Development Economics* 116: 17–27.
- Hill, Ruth Vargas, & Vigneri, M. (2011). *Mainstreaming Gender Sensitivity in Cash Crop Market Supply Chains*. ESA Working Paper No. 11-08. Rome: FAO.
- Kazianga, Harounan, and Zaki Wahhaj. (2013). "Gender, Social Norms and Household Production in Burkina Faso." *Economic Development and Cultural Change* 61 (3): 539–76
- Mahajan, K. (2018). "Back to the Plough: Women Managers and Farm Productivity in India." 30th International Conference of Agricultural Economists, July 28-August 2, 2018, VANCOUVER
- Moock, Peter R. (1976). The Efficiency of Women as Farm Managers: Kenya. *American Journal of Agricultural Economics* 58 (5): 831–35.
- Peterman, Amber, Agnes Quisumbing, Julia Behrman, and Ephraim Nkonya. (2011). "Understanding the complexities surrounding gender differences in agricultural productivity in Nigeria and Uganda." *Journal of Development Studies* 47, no. 10: 1482-1509
- Saito, A., Hailu Mekonnen, and Daphne Spurling. (1994). "Raising the Productivity of Women Farmers in Sub-Saharan Africa." *World Bank Discussion Paper No. 230*. Washington D.C.: The World Bank.
- Udry, Christopher. (1996). "Gender, Agricultural Production and Theory of the Household." *Journal of Political Economy* 104 (5): 1010–1046
- World Bank. (2011). *World Development Report 2012: Gender Equality and Development*. Washington, DC.

Web site

- <https://pib.gov.in/Pressreleaseshare.aspx?PRID=1705506>.
- https://censusindia.gov.in/Tables_Published/B-Series/b_series_tables_2001.html
- https://censusindia.gov.in/2011census/population_enumeration.html
- <https://www.fao.org/3/x2950e/x2950e03.htm>
- <https://www.fao.org/3/y3969e/y3969e03.pdf>

Appendix I

Calculation of Inadequacy for Each Indicator

	Indicator	Sub-indicator	Score	Adequacy	Inadequacy score(0 for adequate and 1 for inadequate)	Weight
Production	Input in production decision and Autonomy in Production	1. Crops to be cultivated	0 if not involved,1 otherwise	Total ≥ 4 (adequate) < 4 Inadequate	0 1	1/7
		2. Seeds to be used				
		3. Fertilizers to be used				
		4. Pesticides to be used				
		5. Marketing of crops				
		6. Labour to be hired				
		7. Family labor to be used				
Ownership of assets	Ownership of land)	Ownership of land single or joint	0 if no 1 if yes	0 inadequate 1 adequate	1 0	1/7
Resources	Purchase, sale and transfer of assets (weight :1/14)	1. Machinery and implements to be used	0 if not involved,1 otherwise	< 1 inadequate ≥ 1 adequate	1 0	1/14
		2. Type of investments to be made on farm	0 if not involved,1 otherwise			
	decision about credit (weight :1/14)	1. Loans to be taken from informal sources and amount	0 if not involved,1 otherwise	< 1 inadequate ≥ 1 adequate	1 0	1/14
		2. Loans to be taken from institutional source and amount	0 if not involved,1 otherwise			
Income	Control over use of income	1. Spending the income earned 2. Education and marriage of children	0, if not involved,1 otherwise	< 1 inadequate ≥ 1 adequate	1 0	1/7
Knowledge and awareness	Group membership	1)Are you a member of self-help group	0 if not 1 if yes	≤ 1 inadequate > 1 adequate	1 0	1/14
		2) Is the group active?	0 if not 1 if yes			
		3) Do you take Initiative/lead in arranging various Programmes of the ShHG?	0 if not 1 if yes			
	Awareness on various programmes	Sub indicators total 23 (Tables 4.6 and 4.7 in chapter 4	0 if not 1 if yes	< 12 inadequate ≥ 12 adequate	1 0	1/14
Digital literacy	Use of mobile, computer and internet	1) Mobile for communication?	0 if not or not aware 1 if yes	< 3 inadequate ≥ 3 adequate	1 0	1/7 1/7
		2) Can you make a call?				
		3) Can you receive a call?				
		4) Have you downloaded any app for getting information on crop?				
		5) Do you know how to use internet?				

	Indicator	Sub-indicator	Score	Adequacy	Inadequacy score(0 for adequate and 1 for inadequate)	Weight
		6) Do you know how to use computer?				
Capacity building	Time available for self learning	Learning (Course/other academic) and study	0 if no entry 1 if entry	0 inadequate 1 adequate	1 0	1/14
	Attending training/workshop	Training program/workshop, farmer school, field visit to other farm, factories, lecture or any other kind of training for promoting agriculture or non-agricultural business for last 2/3 years	0 if no entry 1 if entry	0 inadequate 1 adequate	1 0	1/14

Note: The methodology for calculating inadequacy is based on Alkire (2012) . For this study, this methodology was modified slightly to make it more comprehensive.

Appendix II

Comments on the Draft Report received from

Agro-Economic Research Centre,
Sardar Patel University,
Vallabh Vidyanagar 388120, Anand, Gujarat

Comments on draft report

1.	Title of report	'Role of Women in Agricultural Sector: Case of Maharashtra'
2.	Date of receipt of the Draft report	April 6, 2022
3.	Date of dispatch of the comments	April 8, 2022
4.	Comments on the Objectives of the study	The objectives of the study as proposed have been addressed
5.	Comments on the methodology	The study is based on both primary and secondary level data. Adequate material and appropriate methods/ methodology is used.
6.	Comments on analysis, organization, presentation, etc.	The overall presentation is good and all objectives have been satisfied.
7.	References	References are adequate and updated
8.	General remarks:	<p>The study deals with the role of women cultivators in their household-level agricultural activities, their access to various resources, extent of their decision-making, their perceptions and their level of empowerment.</p> <p>The report has come out very well. At a few places, some grammatical errors need to be corrected and corrections/clarifications can be given.</p> <ol style="list-style-type: none"> 1. Check Table 4.1 (share of Male & Female) 2. Label text presented in box with box number (e.g. page 43) as Box 4.1...
9.	Overall view on the acceptability of the report:	
		The report is acceptable after minor editing work of the report.

Appendix III
Action Taken Report

The suggestions made by the Coordinating Centre, Vallabh Vidya Nagar have been included before finalizing the report.

Jayanti Kajale
Atreyee Chakraborty
May 13, 2022



Gopal Krishna Gokhale

**Gokhale Institute
of Politics and
Economics**
(Deemed to be University)
Pune - 411 004

846, Shivajinagar, BMCC Road, Deccan Gymkhana, Pune 411 004.

Ph. No.: 020 - 25683300

Fax No.: 020-25652579

Website: www.gipe.ac.in