



# **GENDER INCLUSION IN AGRI-ENTREPRENEURSHIP**

**A STUDY ON WOMEN AGRI ENTREPRENEURS (AE)**

Global Alliance for Mass Entrepreneurship  
Syngenta Foundation India

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# Executive Summary



## Executive Summary

Syngenta Foundation India (SFI), established in 2005, is an independent not-for-profit organisation. SFI's mission is to have small and marginal farmers participate in agriculture development by improving their access to better seeds and other inputs, technology, information, credit and market access. In this context, SFI launched its Agri-Entrepreneur (AE) Program in 2014. Under the program a rural youth is trained as an entrepreneur who provides last mile services to a group of 150-200 farmers. Currently there are 1763 AEs under the program who are supporting over 2, 00,000 farmers across India.

Of the total AEs, 265 are women AEs who are currently active across 5 project locations, i.e; Bihar, Jharkhand, Maharashtra, Odisha and Andhra Pradesh. The objective of the study was to understand the performance of women AEs and create an enabling environment to improve income and increase participation. The study methodology is based on the integration of quantitative and qualitative research methods.

It was seen that some of the immediate steps that can be taken to catalyze better performance are providing women centric financial products to promote initial investment, business training for decision makers (spouse), locations selected to have childcare support facilities, exclusive women AE forums to be created, women mentors and trainers should be hired to lead the change.

The program has had a significant impact on women AE incomes. Before joining the program, number of women AEs earning over INR 1,00,000 annually was 10%, however this percentage increased to 19% after the program. Income for more than 22% of the AEs went up by 25% in less than 2 years of being a part of the program.

87% women entrepreneurs have not taken a loan for their enterprises. Investments have a strong correlation with income growth. It is pertinent to collaborate with organisations working on promoting women centric financial products along with financial management training. A separate women portfolio guarantee fund be created to facilitate easier credit access to women AEs.



## WOMEN AE STUDY

93% reported a lack of confidence. 88% of the Women AEs reported operating their business with their husband's help. Specialized trainings in confidence building and business operations are required for the women AE and her spouse respectively.

All but 3 women AEs were a part of an SHG and regularly participated in trainings conducted by government and non-government actors along with SHG trainings. Additionally, the source for training amongst the non-participant women is predominantly SHGs. This could imply a limited exposure, thus impacting awareness and confidence. 97% of the women AEs reported a preference for a residential training, preferring a 30 day or a 10 day span.

It is pertinent that the change in the program be led by women; as mentors, trainers and experienced AEs sharing their experiences with other women AEs and women farmers who can become AEs. 94% women AEs agree that it is easier to understand a subject if it is being taught by a female trainer and also 95% women AEs will find it easier to ask a female trainer their queries. Given these findings, it is important to work on building diversity within the program promoters to enable it to attract female participation. More female peers assure belongingness and also help in boosting confidence. Hence, a balanced ratio of men to women should be maintained in classes incase all women batches are not being conducted.

Allocating time between childcare and business operations not only adds to number of working hours but also reduces efficiency. Over 60% of the women AEs spent 6 hours daily on business operations and 8 hours on childcare. Women AEs who are over 40 are also seen to perform well, perhaps as childcare responsibilities reduce. Over 60% AEs have a total of 3-4 total members in the household (non- participant women 43%), implying that they live in nuclear families. Availability of government authorized crèche in the neighboring areas can be seen as a criterion while assessing area viability for project expansion.

In order to have an inclusive program, the program design must regularly be reviewed to make it easier for women to participate, flourish and break the 'grass ceiling'.





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## INTRODUCTION



## 1. Introduction

Syngenta Foundation for Sustainable Agriculture (Basel) and Syngenta India Limited established Syngenta Foundation India (SFI) as an independent not-for-profit organization in 2005. From the outset, SFI's mission was to have small and marginal farmers participate in agricultural development by improving their access to better seeds and other inputs, increasing their knowledge of agronomic practices, establishing ease of access to credit and providing systematic market linkages. The main objective has remained to educate small and marginal farmers on the latest developments suited to their local needs, and thus ultimately improve their income.

Launched in 2014, the Agri-Entrepreneur (AE) Model is Syngenta Foundation India's (SFI's) flagship initiative. The model follows a decentralized approach in empowering young people in rural areas to play an active role in agriculture development in their region.

An AE brings together services such as credit and market linkage, access to high-quality input and crop advisory for a group of farmers. The model is currently active across 7 States; Andhra Pradesh, Bihar, Jharkhand, Madhya Pradesh, Maharashtra, Odisha and West Bengal. As of April 2019, 1763 AEs were associated with SFI serving over 200,000 farmers.

### AE Model

Each AE works with 150-200 farmers in a cluster of 4-5 villages and acts as a one-stop resource provider for the agricultural needs of small and marginal farmers. To become an AE, candidates have to undergo a highly-selective process.

An AE has four critical functions, i.e. providing better quality inputs, knowledge and crop advisory, linking farmers to markets and facilitating credit. An AE acts as a business correspondent for banks and facilitates agri-credit to small farmers. AEs derive their revenue by providing the above services to farmers. For an AE to be successful, he/she needs to start with an investment of INR 30,000, work with at least 200 farmers/100 acres, earning up to INR 200,000 per year. However, the types of services are

not limited to the above mentioned services. A service portfolio can be selected based on investment capacity and local needs.

SFI provides support to AEs by establishing partnerships with Input companies, Financial Service Providers and Market Off-takers. Aggregated demand brought from AEs helps in transferring benefits in terms of price to the AEs which is eventually passed on to the farmer in terms of discounted products and higher realization for produce.

The AE Enterprise program is taking a focused approach towards bringing more women entrepreneurs under its folds. As on July 2018, it was seen that women participants in the program was low, however, focused attempts have increased participation from 7% of the total entrepreneurs to over 15% of total entrepreneurs as in July 2019.

## Making of an AE

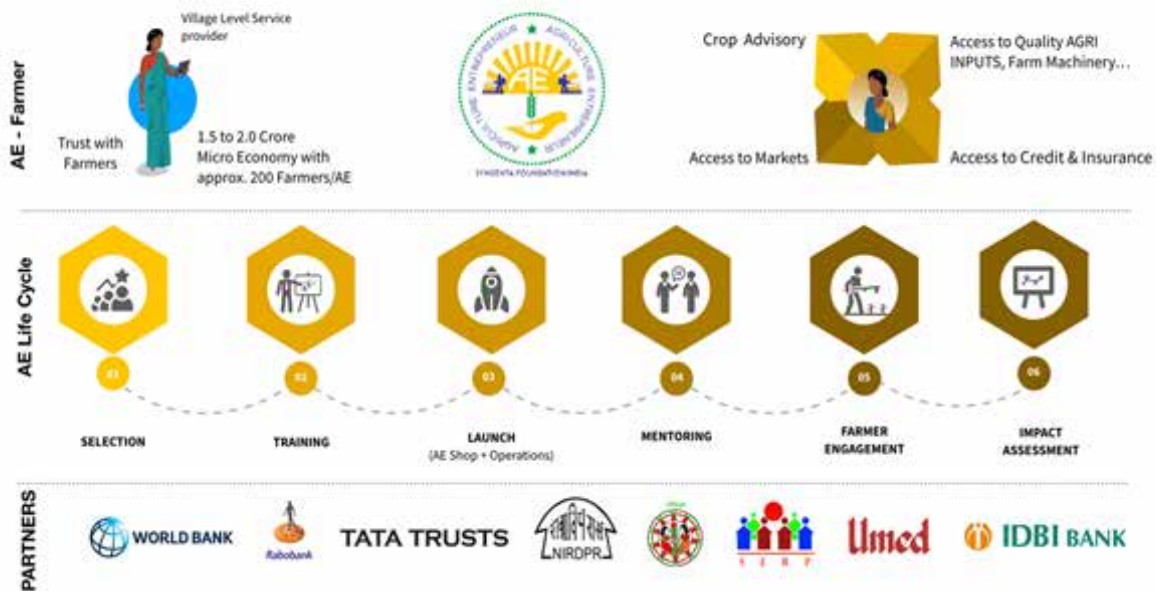
Tapping into unused potential of rural youth and turning them into agri-entrepreneurs sounds simple, but has a complicated process and rigour involved in making them successful. There are at least 5 steps involved in making of an AE

- **Campaigning and Selection:** In the region where AEs are to be deployed, a massive campaign is conducted to identify the unemployed rural youth who are class 12 pass. This is done with help of local organizations and panchayats. Once a set of 100-150 rural youth are identified, they are put through several tests such as basic written test, psychometry test and interviews to identify candidates with right attitude and business aptitude. The selection process also involves talking to their family members and panchayats to understand if the selected candidate has the social bent of mind to help small farmers.
- **Training:** Selected candidates join a 45 day residential training program. The curriculum of the training is a judicious mix of functional knowledge related to crops, basic aspects of agri business management and also on soft skills. The curriculum is prepared in-house by subject matter experts and the training is conducted using digital tools.
- **Launch of AE:** Post training completion, AEs are helped with setting up an agriculture enterprise (input shop, nursery, farm-machinery rental shop or collection center for market linkages). This is also done based on the needs of the region. AE is also helped in preparing a business plan and operationalizing their enterprise.
- **Mentoring:** AE Mentor is a graduate in agriculture who manages 20 AEs on a day to day basis. AE mentor has 4-5 responsibilities and manages each AE for a period of 2 years. The principal job role of an AE is to help AE establish a business and help 150 small farmers. AE mentor helps AEs with access to credit from banks and financial institutions, connect to various partners such as input companies and farm machinery companies. AE mentor also ensures that AE is strictly adhering to processes which will help improve farmer's income. For instance, AE mentor makes sure that AE is only selling inputs which are of the best quality and are suitable to that agro-climatic zone.



## Making of an AE

### Agri Entrepreneurship (AE) program: Overview



## 1.1 Geographical Presence

265 Women AEs are currently active across 5 project locations, i.e; Bihar, Jharkhand, Maharashtra, Odisha and Andhra Pradesh with over 70% of the women AEs being located in Maharashtra. Project Locations of Bihar and Jharkhand also have a significant share of women participants in the AE Program.

**Table 1: Distribution of women AEs across SFI project locations**

S.No.	Location	Number of Active Women AEs
1	Odisha	3
2	Bihar	68
3	Jharkhand	18
4	Maharashtra	182
5	Andhra Pradesh	4
	<b>Total</b>	<b>265</b>

Women candidates face tremendous challenges in overcoming societal pressure to take up their own ventures. In most project locations, women participation is curtailed due to societal pressures which bridle them from stepping out of their homes and leave their household responsibility, primarily of child care.



The program attempts at making a conducive environment for women to take up trainings. All women batches for residential training in Maharashtra helped in promoting more women to join the program. Additionally, in Bihar and Maharashtra where the project is run in partnership with the State Rural Livelihood Mission, women participation is greater.

## 1.2 Synergy with existing ecosystems

Under the State Rural Livelihood Missions, as a part of their existing cadre, women are promoted to participate as Cluster/Village Resource Personnel or Social Extension Workers and they also regularly participate in the community through SHGs. This has encouraged women empowerment in the society and it is easier for women to successfully take up entrepreneurship in such contexts.

## 1.3 Objective of the Study

The aim of the study is to understand how women AEs are faring in their business operations, the factors that can determine success, and changes in the program design which will enable them to increase income and run efficient businesses. There were 5 key probe areas:

1. Demographic Details of Women AEs and non-participant women (Control Group) who did not join the program
2. Understanding the Decision Making Process and Reason-to-believe for joining the AE Program
3. Training Requirements
4. Investment and Financing Patterns
5. ROI and Productivity

# SUMMARY OF FINDINGS



## 2. Summary of Findings

As the program gears for scale-up it should be of utmost importance to ensure adequate participation of women. Promoting more women to participate in the program and enabling existing women AEs to perform at their optimum should be driven through process changes and other considerations.

As per the study at this stage, there are various determinants, both endogenous and exogenous, that are seen to affect a Women AE's performance. Given below are the inferences and insights from the study and the ensuing recommendations.

1. **Education:** Education is seen to be a key factor that increases the probability of success of an entrepreneur. However, in India, women face a disadvantage in participation in education vis a vis men. 53% of women AE have qualified only matriculation examinations whereas as per a cohort study, over 64% of male AEs have qualified senior secondary and more than 28% were graduates. The performance pattern in terms of education also differs as over 70% of the male graduate AEs were in a high performing bracket whereas 64% of the graduate women AEs were in the lowest performance bracket.
2. **Occupation before AE Program:** All but two AEs reported previous employment, the largest section reported being employed in agriculture. Research suggests that previous work experience or wage work is seen as a positive determinant for higher decision making power (Sivasankaran, 2014). However, if that is applicable to agriculture as employment warrants further analysis.
3. **Age:** The relationship between performance and age is different for male AEs and Female AEs. Lowest performing brackets for male AEs see a high presence of male AEs (38%) over 40 years of age whereas for women AEs, only 7% of women above 40 are in the lowest performing bracket. This can be due to the lower number of hours being spent on childcare and also due to more acceptance by the society as an advisor.



4. **Marital Status:** Over 94% of the women AEs and 100% of the non-participant women respondents are married. While 60% women AEs lived in nuclear families this number was 43% for non-participant women. More non-participant women lived in joint families.
5. **Education of Spouse:** It was seen that higher levels of education attained by the spouse positively impacted the AE's business. This is true in the case of both male and female AEs. The largest concentration of graduate spouse (64%) is seen in the section of Women AEs who exhibit highest growth. More number of women spouse are also better educated than spouses of non-participant women.
6. **Land Ownership:** Apart from 24.8% women in Maharashtra all AEs came from landowning families and 90% neither leased in nor leased out their land, thus a majority of the women AEs worked their own lands. However, 44% of the non-participant women either leased in or leased out their land.
7. **Land Holding and Irrigation:** While land sizes remained similar across both women AEs and non-participant women, adoption of technology on the land worked on differed significantly. 80% of the land non-participant women worked on was non-irrigated as compared to 48% being non-irrigated for women AEs. It is important to take note that Government schemes are applicable to land-owners and adoption of technology is limited by public infrastructure such as reach of electricity. However, a higher educated spouse and working on their own land result in better adoption of technology for women AEs.
8. **Capacity Building and Training:** Given the low level of education, additional capacity building and skilling of the women workforce is a key to add to their productive capacity. It was seen that while the SHG cadre remains strong, skill based training has been facilitated by non-government actors. 57% of the AEs received a training from an NGO and this was particularly high in Maharashtra (63%). The source of training amongst the non-participant women was predominantly SHGs.
9. **Points of Appeal towards the program:** Women AEs were seen to look at the program as a solution to provide additional income to the household, non-participant women appreciated the program more for its social appeal. It was seen that 40% of the women AE were inspired by the success stories of other women AEs as opposed to only 18% of non-participant women. Household responsibilities is seen to be the most pressing reason for non-participants to not join the program.
10. **Decision Makers:** 67% of women AE reported that their spouse are the decision makers and 26% reported making independent decisions. However 97% of non-participant women reported their spouse/in-laws being the decision makers. 88% women also reported running their businesses with their husband's help. It is also seen that Net Profit Ratio for women AEs is low. Untrained spouses taking business decisions could be a driver of business inefficiencies.
11. **Training and Mentorship Structure:** Female mentors and teachers as role models can have a strong impact on learning and confidence. 94% women AE reported that it was easier to understand a subject if it is being taught by a female trainer and 95% reported that it was easier to ask queries to a female trainer.



12. **Training Formats:** Interestingly, 97% of the AEs preferred residential training format with 53% preferring to get trained away from home. Lower pressure of household chores and a focused time for learning are seen to be the drivers for this preference. Additionally, a large section of women AEs preferred either a 30 day or a 10 day format.
13. **Total hours spent on domestic work and business operations:** More than 60% of women AEs are spending more than 8 hours in childcare and most women AEs spend about 6 hours on business operations. This is bound to lead to inefficiencies and while the income might see a healthy increase in the first phase of business due to a base effect, it is likely to stagnate or even fall in the future.
14. **Aspirational Archetypes:** It is seen that Agri-Input supply is a remunerative services and 22% percent of women AE aspire to take it up. 23% want to take up small scale processing units and 15% want to start a milk collection center. However, they are constrained by capital and confidence. 96% reported not taking up an enterprise of their choice due to lack of capital and 93% reported a lack of confidence 87% women entrepreneurs did not taken a loan for their enterprise. Higher investments promise better business outcomes and women's aversion to borrowing is seen to be limiting factor for their growth. Contrary to what is assumed, 90% women are not averse to travelling for work and only 10% reported not selecting a trade based on increased demand of travel.

## 2.1 Characteristics of a successful Woman AE

Women in higher income brackets exhibited the following characteristics:

- **Skill Level:** Though they had lower levels of education compared to their male counterparts, they had typically received training by NGOs.
- **Spouse Education:** Their spouses had higher education levels, likely playing a key role in their performance, better decision making and technology adoption such as irrigation on their own farms.
- **Agriculture Background:** They typically worked their own lands, and likely to be keener about learning new techniques. Thus it is critical that women AE come with experience on working on their own land as opposed to leased in land.
- **Total Working Hours and Age:** Older women demonstrated healthy business performance, as compared with their male counterparts. Household responsibilities in addition to business operations have an impact on both profitability and increase in income. Women with older children are likely to have more time at hand that can be put to use in business. While younger mothers also show business success, support systems are key to enable them further.
- **Services:** Women providing Input, Nursery Management and Market Linkage services are most likely to see a high rise in their income. For project locations where animal husbandry is the primary source of livelihood, the most suitable service portfolio is seen to include Goatary, Veterinary Services, Market Linkage and Milk Collection Centers.



- **Investment:** Investment is a driver of business and women with over INR 20,000

## 2.2 Recommendations

Given the above mentioned summary of findings from the study, recommendations for the way forward for the program are provided below:

1. **Promoting women AE financing through women centric products and partners:** Investments and improvement in income are directly and significantly correlated (annex 2). Thus it is pertinent to collaborate with organisations working on promoting women centric financial products along with financial management.
2. **Training for Spouse:** Given that a strong role is played by the spouse in overall business operations and decision making, a training for the spouse on efficient business management should be conducted. As we can see that the profitability of women businesses shows room for improvement, this can be a channel of achieving it.
3. **Training on confidence and business simulations:** With lower levels of confidence being displayed by women AEs, risk taking appetite is likely to be affected thus affecting business operations. It is critical that simulations are carried out (either digitally or in-person) to make women AEs more aware of business scenarios and confident about tackling them. Additionally in-person confidence building exercises must be carried out.
4. **Women AE forum:** While it is seen that male AEs share a strong camaraderie with AEs from different states and also reach out to them frequently through social media groups seeking advice, women AE participation on such forums is negligible. Women AE forums can specially be created to promote this exchange of ideas. The group of women recruited can be connected via social media to form a cohort/peer network group that can offer support for each other.
5. **Hiring more women AEMs and trainers:** All Women AEs reported better learning and interaction with female mentors and trainers. It is pertinent to hire more number of experienced women trainers and mentors across all project locations and centers of excellence.
6. **Collaboration with local NGOs or Anganwadis to reduce burden of childcare:** Local NGOs working towards childcare can be partnered with to facilitate reduction of childcare burden for women AEs who are young mothers. Additionally, age criterion for women AEs must also be revisited. This is not to imply that young mothers should be dissuaded from applying to the program. There can be an upper age limit relaxation that can be provided in case of women AEs.
7. **Focused Campaigning:** Campaigning should clearly highlight the income increase of other women AEs as a reason-to-believe. The core communication for promoting the AE program to women AEs should be the ability to add to the household income as this is seen to be a reason to convince the decision makers. As in the UMED program, a large number of women AEs being selected together has a strong network effect. The best approach will be to have

mass women selection drives as opposed to selecting only a few. It will enable more women to come out together and participate in the program as opposed to selection in silos.

8. **Training format:** A residential training is seen to be the most suitable for all women AEs with 30 days being suggested as the right duration. However all women AE training batches should be aimed for. For an upper age relaxation, the immediate impact will be the increase in number of years from last formal education. Hence modules could be altered to have a higher number of sessions dedicated to exposure visits and demonstrations.
9. **Promote women to take technology adoption decisions:** Women should be made aware about agriculture technology and steps they can take to improve their productivity and reduce labour. This can promote women working on leased in land to also be more open to new ideas, see benefits and develop a keenness to learn. Existing AEs can set up demonstration gardens to promote adoption of ideas.

Based on these initial findings, deeper studies will be conducted to provide gendered process design solutions to the entrepreneurial journey of a woman AE.

3

## METHODOLOGY



### 3. Methodology

This chapter elucidates the study process and design. The sub chapters are presented under the following headlines i) Description of study area, ii) Study-approach (source and nature of data used), iii) Research design and data collection methods

#### 3.1 Study Area

The study covered 5 out of 6 States of SFI's operations; Bihar, Jharkhand, Madhya Pradesh, Maharashtra and Odisha. Details of project locations States are provided in Annex 1.

**Image 1: India Map highlights 5 states where the study was conducted (States covered are, Bihar, Jharkhand, Odisha, Maharashtra and Madhya Pradesh)**





## 3.2 Study Approach

The study was designed to understand the drivers for women participation and factors that contribute towards their profitability as part of the AE Program. It was pertinent to make a comparison with women who are not a part of the program as well. This helps in identifying causal factors towards the difference in choices. Thus detailed interviews were conducted with:

1. Women AEs: Women AEs across different locations were interviewed.
2. Non Participant Women: Detailed interviews were taken for women who are not a part of the program.

The present study is based on the integration of quantitative and qualitative research methods. For quantitative data, prescribed structured questionnaires were designed and used for drawing profiles of AEs and non-participant women. For qualitative data, case studies and discussions with AE mentors were leveraged.

The qualitative understanding of the program gathered from on-ground case studies was instrumental in the hypothesis creation. We used the quantitative data to validate these hypothesis.

## 3.3 Research Design Overview

This section provides an outline of the Study Process. A Non-experimental design methodology following the principals of Pre-Test and Post-Test was utilized for studying the Women AEs. A non-experimental design methodology was utilized for non-participant women with probe areas focusing on environmental, demographic and behavioral factors.

### Process of Study



Primary Data collection was carried out with the help of independent data representatives on meeting with the AEs. This also helped in validating the existing data that was being maintained.

Non-participant women were approached through the help of SHGs and other local partners. The aim was to get a similar group of people for drawing comparisons in order to reduce the impact of other contributing variables and delineating the effect and knowledge of the AE Enterprise Program.

4

## ANALYSIS AND WORKINGS



## 4. Analysis and Workings

Quantitative and Qualitative information was collected from the following three sources.

That is,

1. From Women AEs interviewed
2. From Non-Participant Women
3. Case studies of Women AEs

### 4.1 Overview

A total of 305 interviews were conducted for getting responses from both the study groups, i.e; Women AEs and Non-Participant Women.

Of the 265 Women AEs, 213 AEs (Table 2) were covered as part of the study. Of the 265 AEs, 182 AEs are from Maharashtra and are part of the UMED, Maharashtra State Government Rural Livelihood Mission program.

While women participation from other states is considerably low (6%), the programs run in Maharashtra and Jharkhand serve as good examples for getting insight into increasing participation from women in the area. 94% of the women AE population studied is from Maharashtra and Jharkhand. Correspondingly, the interviews for non-participant women were conducted across Jharkhand and Maharashtra.

The agricultural diversity between Maharashtra and Jharkhand also bring in difference in environmental factors associated with the success and use cases of the AE Program.



**Table 2: Total number of Women AEs respondents across locations**

State	Districts	Number of Women AEs Interviewed
Bihar	Katihar	1
	Muzzaffarpur	1
	Patna	2
	Purnia	4
	<b>Total</b>	<b>8</b>
Jharkhand	Gumla	7
	Khunti	4
	Ramgarh	7
	<b>Total</b>	<b>18</b>
Madhya Pradesh	Dindori	3
Maharashtra	Ahmednagar	1
	Osmanabad	26
	Palghar	50
	Wardha	46
	Yavatmal	58
	<b>Total</b>	<b>181</b>
Odisha	Kalahandi	2
	Raygada	1
	<b>Total</b>	<b>3</b>
	<b>Grand Total</b>	<b>213</b>

**Table 3: Total number of respondents who are not participating in the AE Program**

State	Districts	Number of Respondents
Jharkhand	Gumla	7
	Khunti	1
	Ramgarh	7
	<b>Total</b>	<b>15</b>



State	Districts	Number of Respondents
Maharashtra	Palghar	24
	Wardha	24
	Yavatmal	29
	Total	77
	<b>Total</b>	<b>92</b>

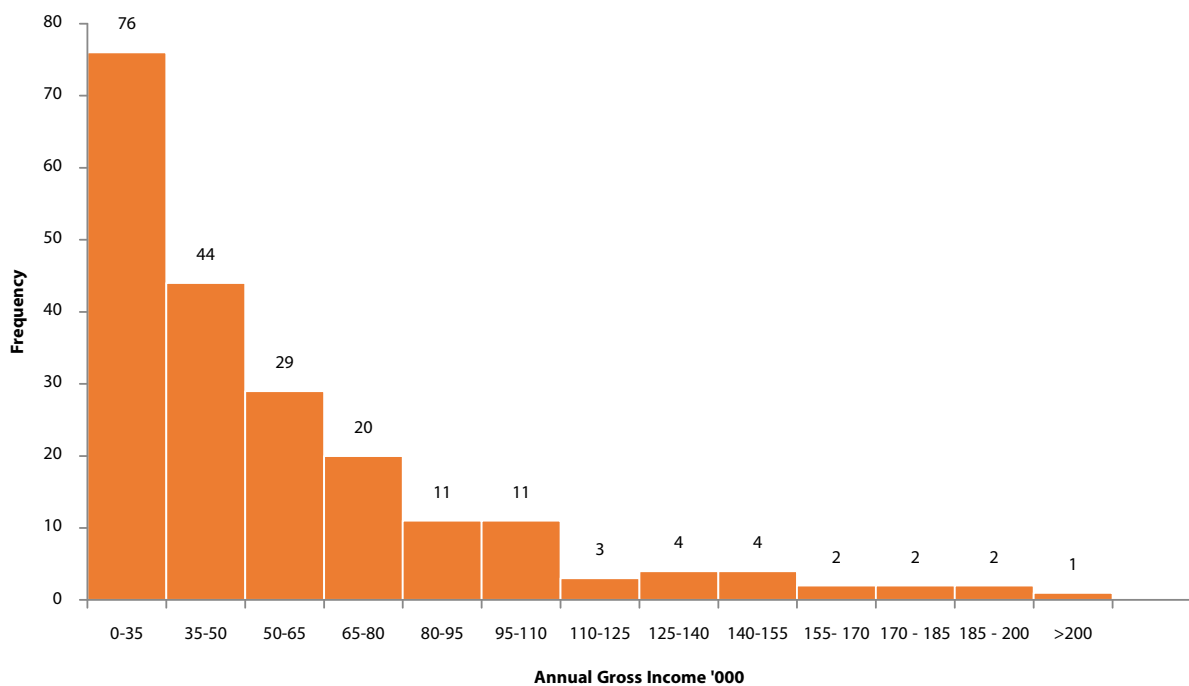
### Women AE Income Distribution

92% of the women AE who are a part of the study are in the first phase of their business tenure.

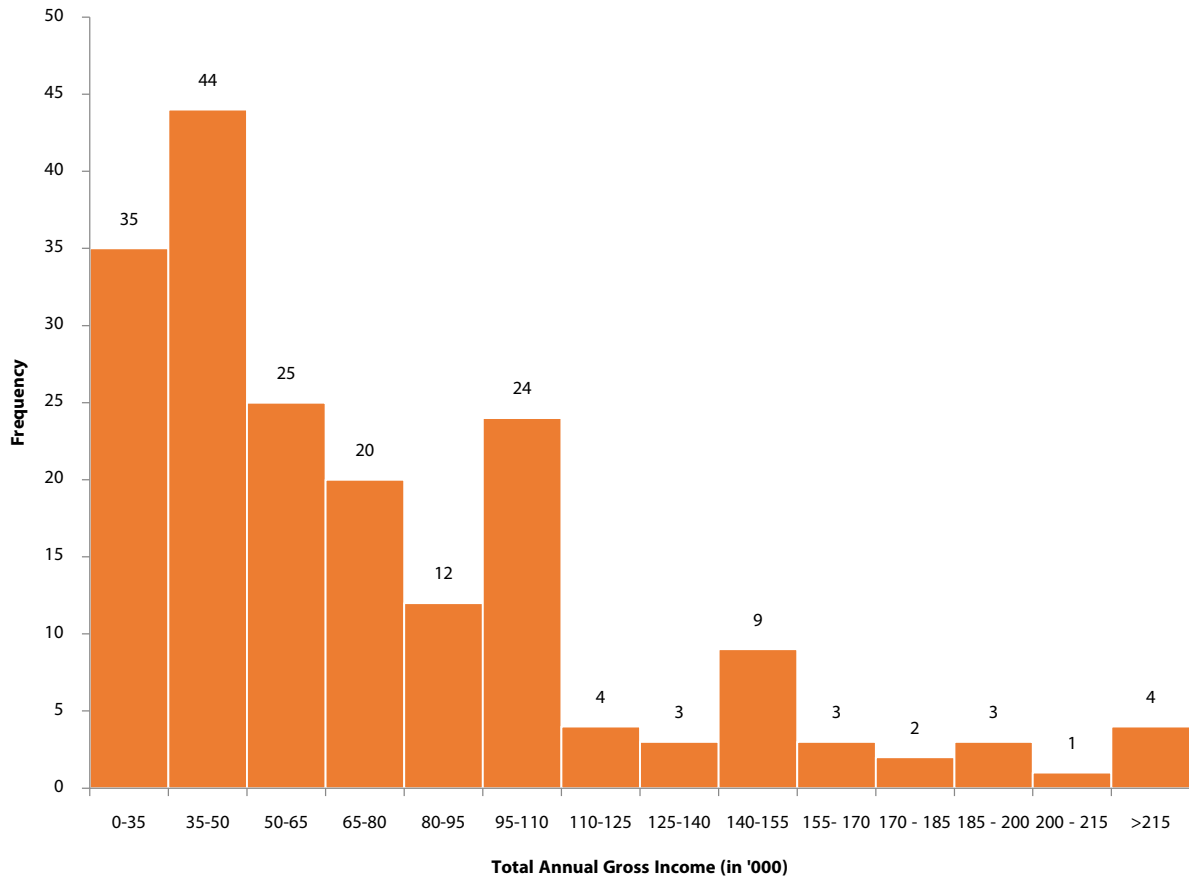
First phase on an average is marked by a slow increase in income as less than three agriculture cycles have been spent in business. The remaining are in the second phase of business tenure, which implies that they have spent 12-18 months in the program or greater than 3 agriculture cycles.

For Women AEs, income before joining the program and current income levels were also seen. Figure 1 and 2 given below give representation of the gross annual income of a women AE before she joined the program and after the program. There has been a marked growth in the income of AEs and a movement was seen from lower income categories to higher income categories (Fig 3). The movement was further analyzed to assess the change in income and categorize the AEs based on percentage of growth, thus dividing them into four categories.

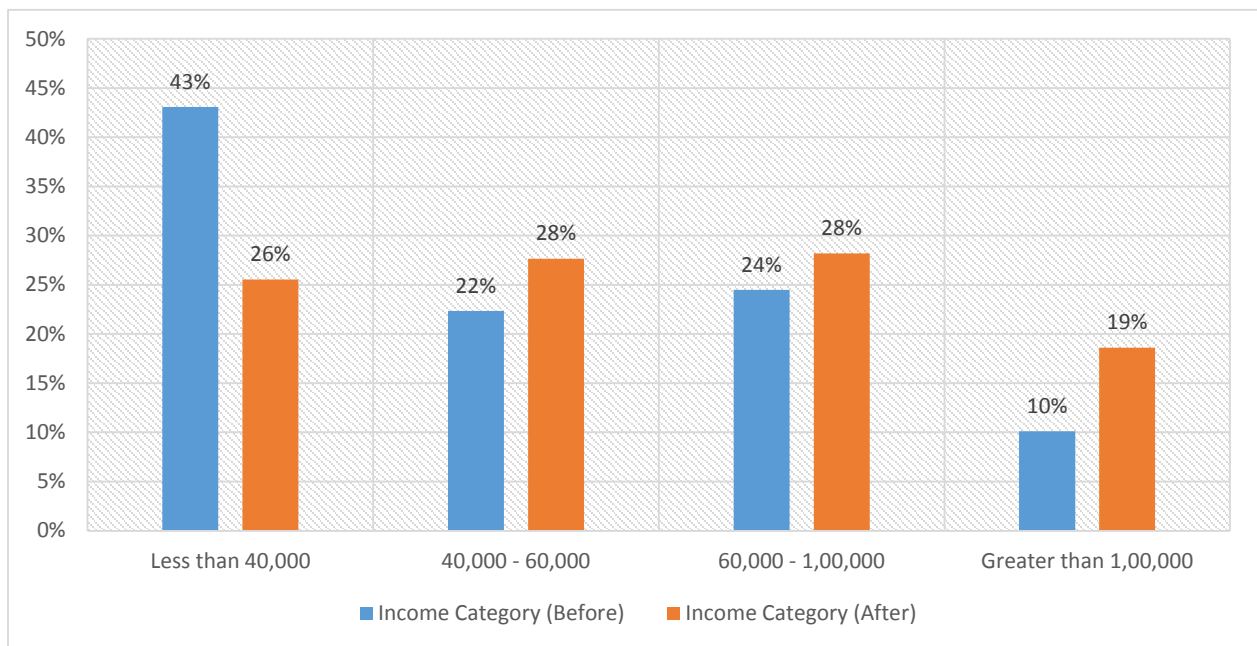
**Fig 1: Annual Gross Income of AEs before joining the program**



**Fig 2: Annual Gross Income of AEs after joining the program**



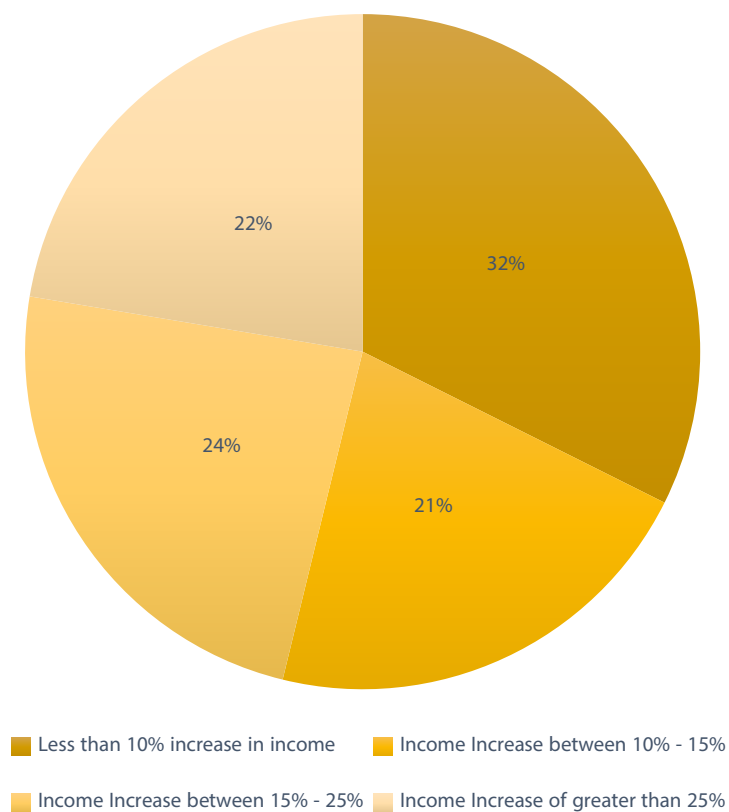
**Fig 3: Distribution of women AE as per income categories before and after the program**





The above given figures give a representation of the movement of AEs to a higher income group. The most significant fall is seen in the number of AEs earning between 0-40,000 as almost 17% of the AEs moved from the lowest range. Before joining the program, number of women AEs earning over INR 100,000 annually was 10%, however this percentage rose to 19% after the program. Figure 4 aims to capture the percentage of growth in income of a woman AE. The report further tries to establish a relationship with variables that resulted in a differentiated growth of income amongst women AEs.

**Fig 4: Percentage Distribution of Women AEs across categories of income growth**



## When tomatoes can transform lives

### Smallholder Rita starts quality seed production

First-hand experience of your customers' problems is a business advantage. Trust comes more easily if your customers know you have lived their lives and faced their struggles, and you can advise on products and processes that work.



Rita Devi battled to feed her family from the proceeds of her quarter-acre farm and her husband's erratic wages from laboring. She understands small farmers in Jharkhand in northeast India.

"There is terrible hardship and anxiety trying to support a family on INR 3,000 (approx. \$50) per month," she says. "We wanted to change our lives, but were limited by lack of opportunities and knowledge."

Rita's circumstances have now altered dramatically, thanks to Syngenta Foundation India's (SFI) Agri-Entrepreneurship program.

Rita was SFI's first female agri-entrepreneur (AE) in Jharkhand. She also chose to do additional training in seed production.

SFI partners with IDBI Bank to offer low-interest credit to AEs and other smallholders. Thanks to the combination of a loan, a buy-back arrangement with SFI, and a contribution from her family, Rita raised the money to begin seed production. With guidance from SFI project officer Satyajit Patil, she earned INR 160,000 (US\$2400) in her first season. A further INR 20,000 came from cultivating vegetables during the rest of the year.

This substantial increase in annual income enabled Rita to repay her loan in only a year. Neighboring farmers quickly noticed her change in fortunes. Rita's farm is now a regular venue for educational visits by farmers, NGOs and other organizations eager to learn from her experience.

Seed production has changed the lives of Rita and her family, and now looks set to change her community, too.

## 4.2 Demographic Profile

### 1. Education

Former Indian Prime Minister Jawaharlal Nehru once said, "You can tell the condition of a nation by looking at the status of its women." Several schemes have been launched by the government to boost women's education with focused measures. However we have a long way to go.



Education is seen to be a key factor that increases the probability of success of an Entrepreneur. Structurally, Indian women face a disadvantage in participation as compared with men. Nationally, as per census 2001, women enrollment in education sees a high dropout after matriculation. The table given below, gives a brief of the gender gap in education nationally.

**Table 4. 3: 10 Per 1000 distribution of persons (aged 5 years and above) by completed level of education**

Level of Education	Rural		Urban		Rural + Urban	
	Male	Female	Male	Female	Male	Female
Not Literate	198	376	90	190	165	320
Literate						
Without Schooling	8	6	5	6	7	6
Up to Primary	377	336	285	280	349	319
Upper Primary	173	130	157	143	168	134
Secondary	118	80	150	133	128	96
Higher Secondary	71	45	114	102	85	62
Diploma	11	5	30	14	17	8
Graduation	37	18	126	96	64	42
Post-graduation and above	8	4	43	35	18	14
<b>AB (incl. N.R.)</b>	<b>1000</b>	<b>1000</b>	<b>1000</b>	<b>1000</b>	<b>1000</b>	<b>1000</b>

Source: NSS 71<sup>st</sup> Round 2014

N.R. stands for not reported

As per Table 4 and 5 it can be seen that a large population of women AEs have attained a low level of education. Most women AEs (53%) have qualified only Matriculation Examinations. This is also in deep contrast with the Male AEs as over 64% of male AEs have qualified senior secondary education levels and more than 28% of the respondents in the cohort study conducted for AEs were graduates. As per Figure 5 given below, only 6% of the women AEs were Graduates. Furthermore, as the level of education rises, the probability of being self-employed and casual labour decreases.<sup>1</sup>

Education level of respondents who are not a part of the program follow a similar pattern of education. This also implies that education might not be a primary factor to determine participation of women in the program.

<sup>1</sup>[https://www.ilo.org/wcmsp5/groups/public/@asia/@ro-bangkok/@sro-new\\_delhi/documents/publication/wcms\\_324621.pdf](https://www.ilo.org/wcmsp5/groups/public/@asia/@ro-bangkok/@sro-new_delhi/documents/publication/wcms_324621.pdf)

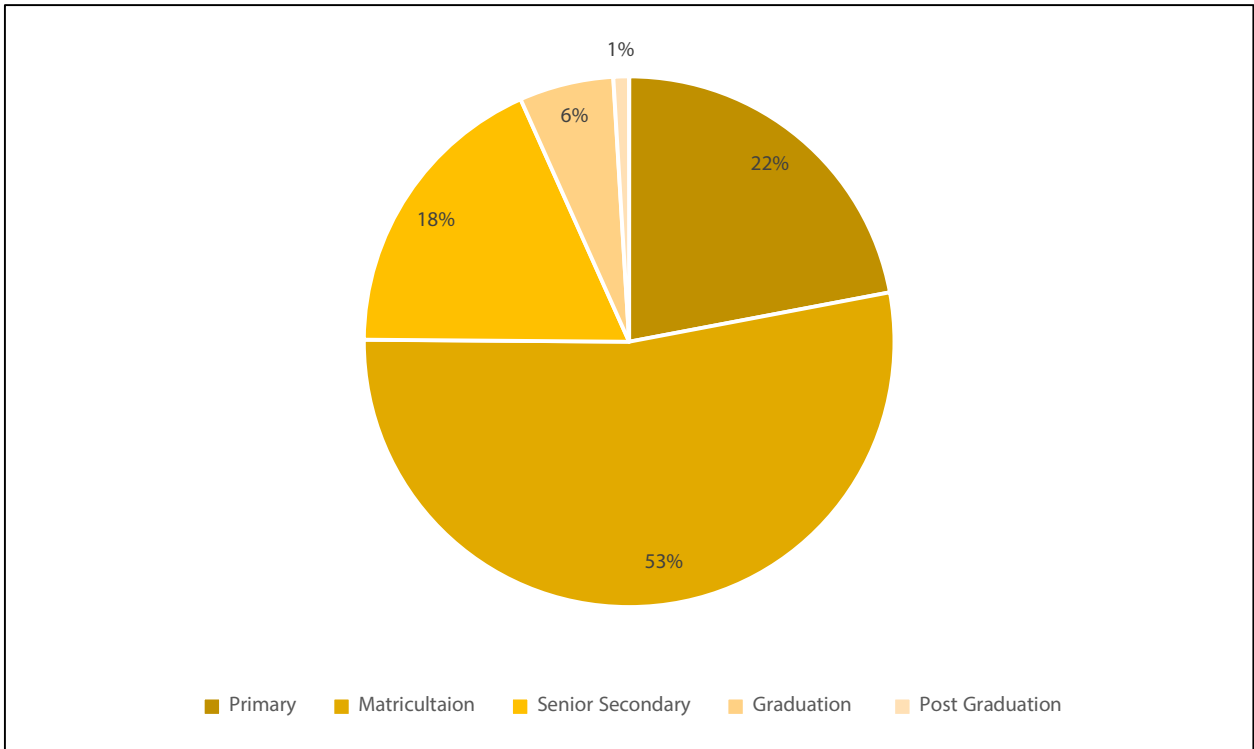


**Table 4: Distribution of Women AEs across districts as per educational qualification**

States	Project Locations	Primary	Matriculation	Senior Secondary	Graduation	Post-Graduation	Grand Total
Madhya Pradesh	Dindori	-	-	1	2	-	3
Jharkhand	Gumla	1	5	-	1	-	7
Odisha	Kalahandi	1	-	1	-	-	2
Bihar	Katihar	-	-	1	-	-	1
Jharkhand	Khunti	2	2	-	-	-	4
Bihar	Muzzaffarpur	-	-	-	1	-	1
Maharashtra	Osmanabad	5	13	4	3	1	26
Maharashtra	Palghar	5	34	4	4	1	48
Bihar	Patna	-	1	1	-	-	2
Bihar	Purnia	1	-	2	1	-	4
Jharkhand	Ramgarh	-	4	3	-	-	7
Odisha	Rayagada	-	1	-	-	-	1
Maharashtra	Wardha	17	20	9	-	-	46
Maharashtra	Yavatmal	14	31	12	-	1	58
(Blank)							2
	<b>Grand Total</b>	<b>46</b>	<b>111</b>	<b>38</b>	<b>12</b>	<b>2</b>	<b>213</b>



**Fig 5: Distribution of Women AEs across different Education Qualifications**



**Table 5: Distribution of Non-Participant Women across Educational Qualifications and State**

State	Primary	Matriculation	Senior Secondary	Illiterate
Jharkhand	7	6	-	2
Maharashtra	23	38	16	-

Performance patterns of Women AEs across Educational Qualifications is different from that of other AEs in the program. While a larger section (70%) of Graduate male AEs are seen to be in the high performing bracket, As per Table 6 below it can be seen that over 64% of the female AEs who are graduates show the lowest rate of business growth. The reason for this is seen to be a strong preference for salaried jobs such as primary or secondary school teaching jobs.



**Table 6: Distribution of AEs across States, Educational Qualifications and Performance Groups**

State	Less than 10% Increase in income					Income Increase between 10% - 15%				Income Increase between 16% - 25%				Income Increase above 25%				
	P	M	SS	G	PG	P	M	SS	G	P	M	SS	PG	P	M	SS	G	PG
Bihar	-	-	-	1	-	-	-	-	-	-	-	-	-	1	1	4	1	-
Jharkhand	-	1	-	-	-	1	-	-	-	1	2	-	-	1	8	3	1	-
Madhya Pradesh	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maharashtra	8	41	8	4	1	16	18	8	1	12	24	10	1	5	15	3	2	1
Odisha	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-

P	Primary
M	Matriculation
SS	Senior Secondary
G	Graduation
PG	Post-Graduation

## 2. Occupation before AE Program, Age and Marital Status

**Occupation before AE Program:** From an individual woman’s perspective, wage work delays age of marriage and age at first childbirth (Sivasankaran, 2014), increases her decision-making power in the household (Qian, 2008). Hence it is understood that for Women AEs, it is important to look at Occupation before the AE Program, their Age and Marital Status in tandem as each of these factors are enmeshed together, impacting decision making and participation.

As can be seen apart from 2 AEs reporting of previous unemployment, the largest section of the AEs were employed in Agriculture (Table 7). All women who are non-participants also reported being actively employed in either agriculture (73%) or agriculture labour (19%). Hence, we can assume that decision making power for both groups would not differ based on their previous occupation.

**Table 7: Distribution of Women AEs across types of Occupation before the AE Program**

Occupation Before AE Program	Number of AEs
Bihar	8
SEW	1
Unemployed	1
VRP	6
Jharkhand	18
Agriculture	15



Occupation Before AE Program	Number of AEs
Labour	1
NGO	1
Non-Agri related business	1
Madhya Pradesh	3
NGO	2
Non-Agri related business	1
Maharashtra	181
Agri-related business	1
Agriculture	130
Labour	32
Non-Agri related business	9
Self employed	5
Unemployed	1
(blank)	3
Odisha	3
Agriculture	3
<b>Grand Total</b>	<b>213</b>

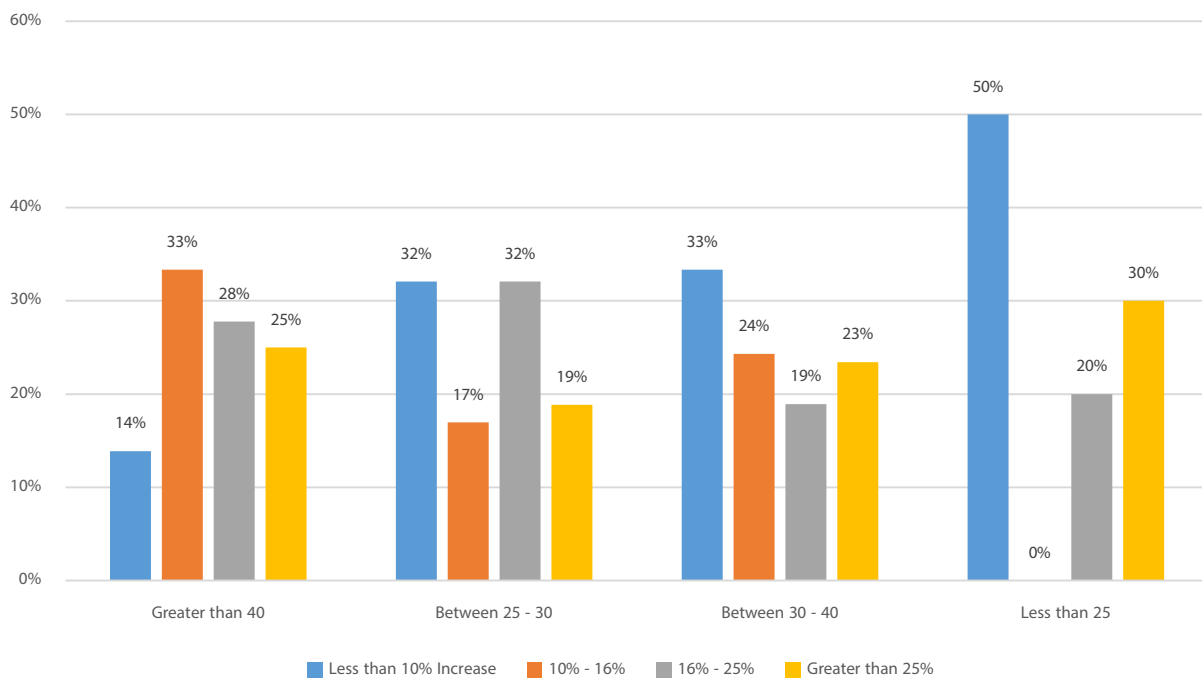
Age: As per the selection criteria of the AE program, rural youth in the age group of 25 – 40 are selected for the program. The age distribution given below (Table 8) suggests that age criterion of the program is maintained in the hiring of women AEs.

Figure 6 represents the distribution of women AE age groups across income growth, the trend here is in contrast with that of other male AEs for the age group of above 40. It can be seen that in the age group of 40 and above, the number of women AEs in the lowest bracket of income growth are the least in comparison with both within the group and other age-groups, whereas in the case of male AEs this is not seen to be the case. This can be due to lower number of hours being spent on childcare as children of older women AEs would be older and more independent.

**Table 8: Average age of women AEs across different Districts**

States	District	Average Age of Women AEs
Madhya Pradesh	Dindori	27
Jharkhand	Gumla	41
Odisha	Kalahandi	35
Bihar	Katihar	33
Jharkhand	Khunti	31
Bihar	Muzaffarpur	32
Maharashtra	Osmanabad	33
Maharashtra	Palghar	29
Bihar	Patna	40
Bihar	Purnia	28
Jharkhand	Ramgarh	32
Odisha	Raygada	30
Maharashtra	Wardha	34
Maharashtra	Yavatmal	35

**Fig 6: Distribution of women AEs as per performance and Age categories**





Marital Status: Marital Status is seen to be an important factor determining employment and type of employment taken up by women. Over 94% of the women AEs and 100% of the non-participant women respondents are married. This is an important figure to note as this makes it pertinent to study the role of spouses in decision making and performance of Women AEs.

Of the married women 65% have two children and 15.5% and 12.5% have 1 and 3 children respectively. Similar pattern in Non-Participant Women. Over 60% AEs have a total of 3-4 total members in the household (non-participant women 43%), implying that they live in nuclear families. 34% have a total of 5-6 members in the family, living in joint families with in-laws. For non-participant women 43% live in families of 5-6 members and 12% live in families with 7-8 members as opposed to only 5% in Women AE household.

As per a study conducted for the International Journal of Social Science, in a nuclear family, the involvement in decision making of both nonworking and working women was higher in comparison to the joint family.<sup>2</sup> The family structure thus could be a strong determinant of Women participation in Entrepreneurship.

### 3. Educational Qualification of Spouse

To understand the active participation of Women AEs as compared with non-participant women, it is critical to understand the educational background and occupation of the spouse. A limitation of the study is that the educational background and skill levels of all members of the household (in-laws, parents, relatives and children) were not studied to assess their impact on women participation in entrepreneurial activity, however, given that a majority of families are nuclear, developing an understanding about the spouse's demographics will be of value. Table 9 given below provides a distribution of education status of women AE's spouse. It can be seen that while predominantly they have not undergone higher education, approximately 10% of them are graduates.

**Table 5: Distribution of Non-Participant Women across Educational Qualifications and State**

States	Primary	Matriculation	Senior Secondary	Graduation	Illiterate	N/A
Bihar	2	2	3	1		
Jharkhand	2	3	4	7		
Madhya Pradesh	1		2			
Maharashtra	40	69	36	14	4	8
Odisha			1		2	
Grand Total	45	74	46	22	6	8

<sup>2</sup>Maral, Priyaranjan & Kumar, Vipul. (2017). Family structure and decision making power among working and non-working women.



**Table 10: Distribution of AE Spouse's Educational qualification and their performance based on their project location**

State	Less than 10% increase in income						Income Increase between 10% - 15%						Income Increase between 15% - 25%						Income Increase of greater than 25%						
	P	M	SS	G	I	NA	P	M	SS	G	I	(bl- nk)	P	M	SS	G	I	N/A	(bla- nk)	P	M	SS	G	NA	(bla- nk)
Bihar	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	3	1	-	-
Jharkhand	1	-	-	-	-	-	1	-	-	-	-	-	-	2	1	-	-	-	-	-	1	3	7	-	2
Madhya Pradesh	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maharashtra	10	33	9	6	-	4	15	10	15	1	-	2	13	14	9	1	4	1	5	2	12	3	6	3	-
Odisha	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Grand Total	12	34	11	6	1	4	16	10	15	1	1	2	13	16	10	1	4	1	5	4	14	10	14	3	2

P	Primary
M	Matriculation
SS	Senior Secondary
G	Graduation
PG	Post-Graduation
I	Illiterate

As per Table 10 it can be seen that largest number of graduate spouse population (64%) is seen in the section of Women AEs who have seen highest growth, implying that a higher educated spouse will increase the probability of success of a business enterprise. The same is also true in the case of male AEs.

**Table 11: Comparison of Education Qualification of Spouse of Women AEs and Non-Participant Women**

Education Qualifications of Spouse	Non-Participant Spouse Jharkhand	Women AE Spouse in Jharkhand	Non-Participant Spouse Maharashtra	Women AEs Spouse in Maharashtra
Primary	0%	11.11%	45%	22.47%
Matriculation	60%	16.67%	43%	38.76%
Senior Secondary	27%	22.22%	12%	20.22%
Graduation	7%	40%	0%	7.87%
Illiterate	7%	12%	0%	2.25%
Grand Total	45	74	46	22

As per Table 11 it can be seen that in both Maharashtra and Jharkhand, more number of women spouse are better educated than their peers in the non-participant women category.



Variations were seen in the occupation of spouses across the two groups. For both, Women AEs and Non-Participant women, majority of the spouses were engaged in agriculture, i.e; 68% and 80% respectively. While 10% of Women AE spouses were self-employed, the percentage was 7% for Non-Participant. Occupation in Agriculture labour was only prevalent across Maharashtra amidst both groups and was approximately 22% for Non-Participant and 15% for Women AE spouse.

## 4. Land Ownership and Size of Landholding

### Land Ownership

Economic Survey 2017-18 says that with growing rural to urban migration by men, there is 'feminisation' of agriculture sector, with increasing number of women in multiple roles as cultivators, entrepreneurs, and labourers. However, land rights remain a far-cry for women. In India, 85% of rural women are engaged in agriculture, yet only about 13% own land.<sup>3</sup> According to the National Sample Survey Office (NSSO), women lead almost 18% agricultural households and there is not a single area of agriculture in which they are not involved.

The current inheritance laws keep women out of line in the succession of agricultural land on the argument that it would lead to fragmentation of landholdings. Women land rights in India are mediated through various personal laws. The Hindu personal law allows women the right to own land and independently manage its affairs, includes ownership of agricultural land.<sup>4</sup>

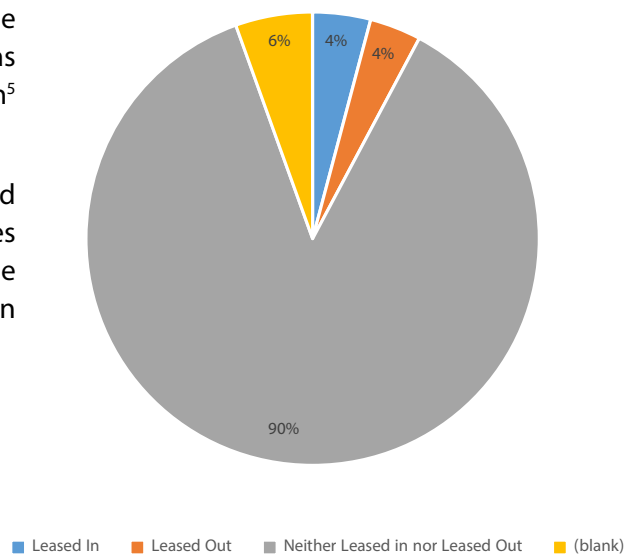
But many states like Uttar Pradesh and a few others do not follow it. On the other hand, Muslim personal law does not allow for women's share in agricultural land, except in a few states.

The study here attempted at understanding land ownership, but given the socio context in India,

women shared details of family land ownership and not as an individual. Apart from 53 Women AEs (24.8%) in Maharashtra, all women AEs came from land owning families. Additionally it was also seen if women AE families worked leased-in<sup>5</sup> or leased-out<sup>6</sup> their land.

As is seen in Figure 7, 90% AEs neither leased in nor leased out their lands. This corroborates the fact that more number of women AEs came from land holding families and worked their own lands.

**Fig 7: Distribution of Land Leased in or Leased Out amongst women AEs**



<sup>3</sup><https://www.oxfamindia.org/women-empowerment-india-farmers>

<sup>4</sup><https://www.news18.com/news/immersive/women-farmers-of-india.html>

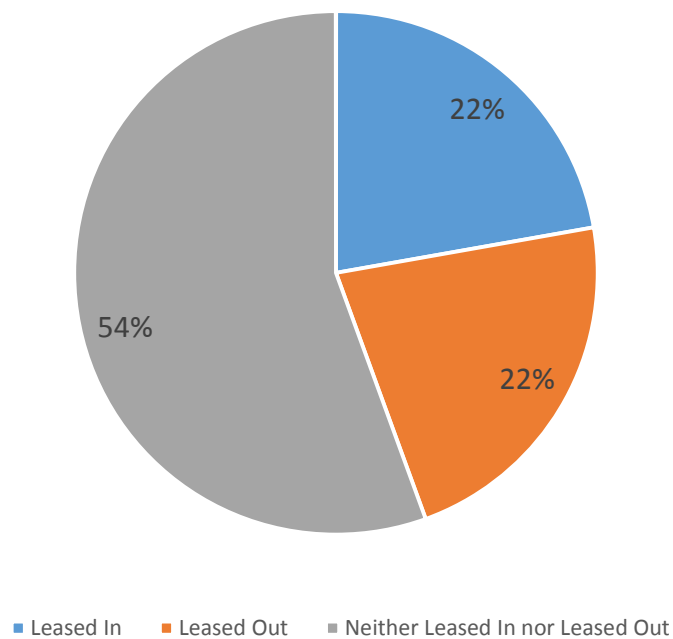
<sup>5</sup>Leased in – Land taken on rent

<sup>6</sup>Leased out – Land given on rent



However, for Non-participant women (Fig 8), 44% either leased in or leased out land. It is seen that working on your own land is a strong motivator to learn more advanced techniques of agriculture and also increases one's interest in agriculture. This therefore marks a crucial difference between non-participant women and women AEs.

**Fig 8: Distribution of non-participant women across Land Leased In or Leased Out**



## Land Holding

There are five kinds of Landholdings in India, depending on various sizes as follows:

- Marginal Holdings: Size 1 Hectare of Less
- Small Holdings: Size 1 -2 Hectares
- Semi-Medium Holdings: Size 2-4 Hectares
- Medium Holdings: Size 4 – 10 Hectares
- Large Holdings: Size above 10 Hectares

The number of small and marginal agricultural land holdings in the country (known as operational holdings) has registered a marginal increase in 2015-16 compared to 2010-11, according to the tenth agricultural census. This means that there are more people who now own smaller parcels of agricultural land.<sup>7</sup>

The average size of the Indian farmland shrank by over six per cent between 2010-11 and 2015-16, with operational holding in the country dropping to 1.08 hectares from 1.15 hectares in 2010-11.<sup>8</sup> Small

<sup>7</sup><https://www.thehindu.com/sci-tech/agriculture/indian-farms-getting-smaller/article25113177.ece>

<sup>8</sup>[https://www.business-standard.com/article/economy-policy/indian-farm-size-shrank-further-by-6-in-5-years-to-2015-16-census-shows-118100101057\\_1.html](https://www.business-standard.com/article/economy-policy/indian-farm-size-shrank-further-by-6-in-5-years-to-2015-16-census-shows-118100101057_1.html)

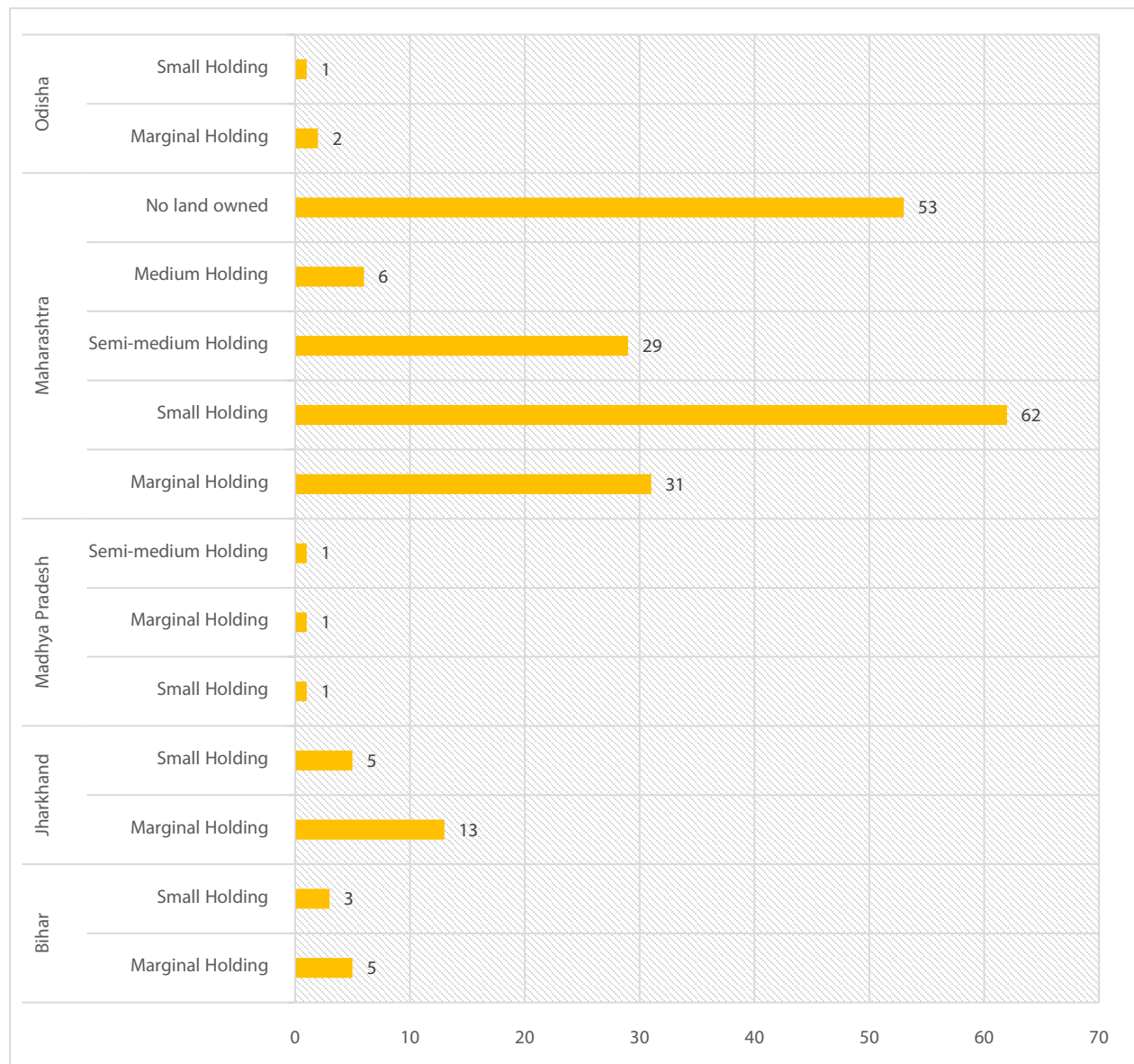


## WOMEN AE STUDY

holdings in the country has grown in five years, due to fragmentation of land. It is important to note that **average annual earning of a small and marginal farmer household** was INR 79,779 in 2015-16.<sup>9</sup>

As per Figure 8, it is evident that this pattern is visible amongst our respondents. More than 59% of the AEs have land holding of less than 2 hectares. 48% of Non-Participant women had small holdings, 3% medium and 7% semi-medium, whereas over 16% had marginal land holdings.

**Fig 8: Distribution of Women AEs across size of lanholding and states**

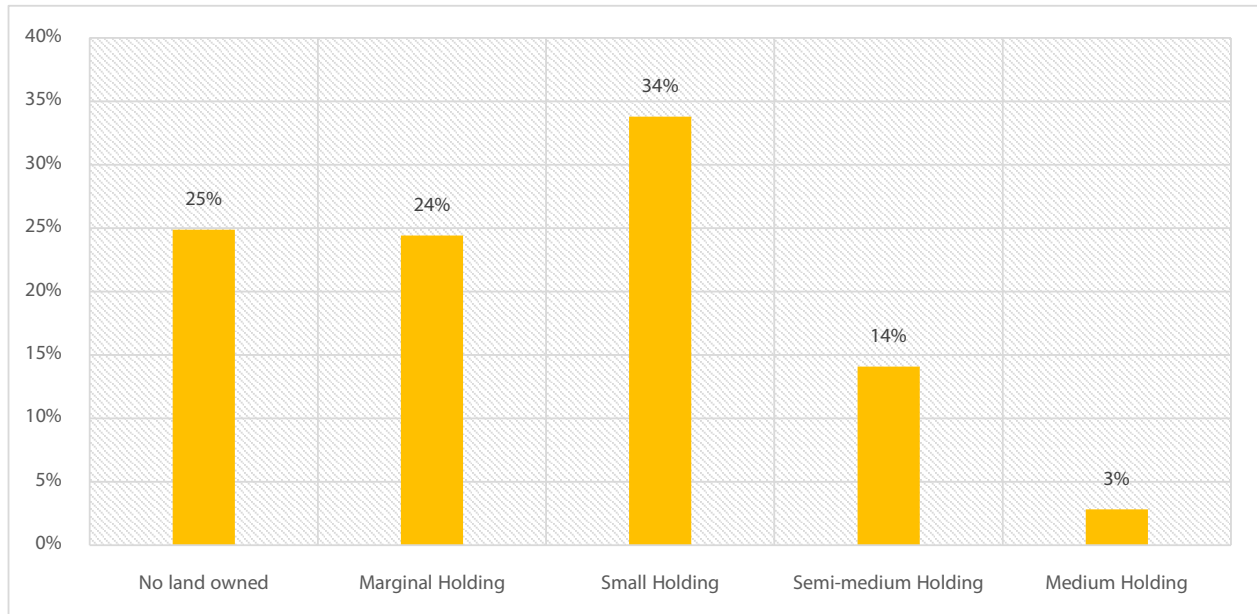


<sup>9</sup><https://www.downtoearth.org.in/news/agriculture/only-15-landholders-earn-91-of-total-national-income-59505>

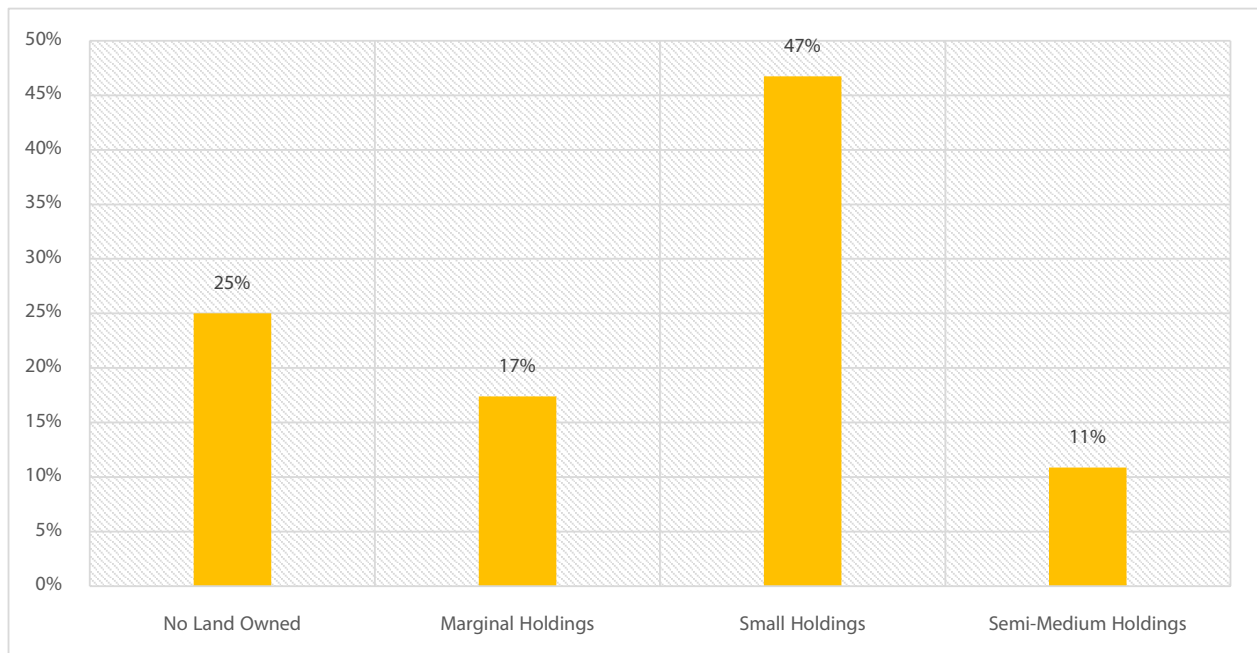




**Fig 9: Percentage of women AEs across size of landholding**



**Fig 10: Percentage of non-participant women across size of landholding**



### ***Irrigation***

60% of Indian Agriculture continues to be rainfed and access to water is a primary concern and challenge for many rural households. There are many schemes that have been deployed by the Indian Government to boost the adoption of irrigation, specifically micro irrigation.



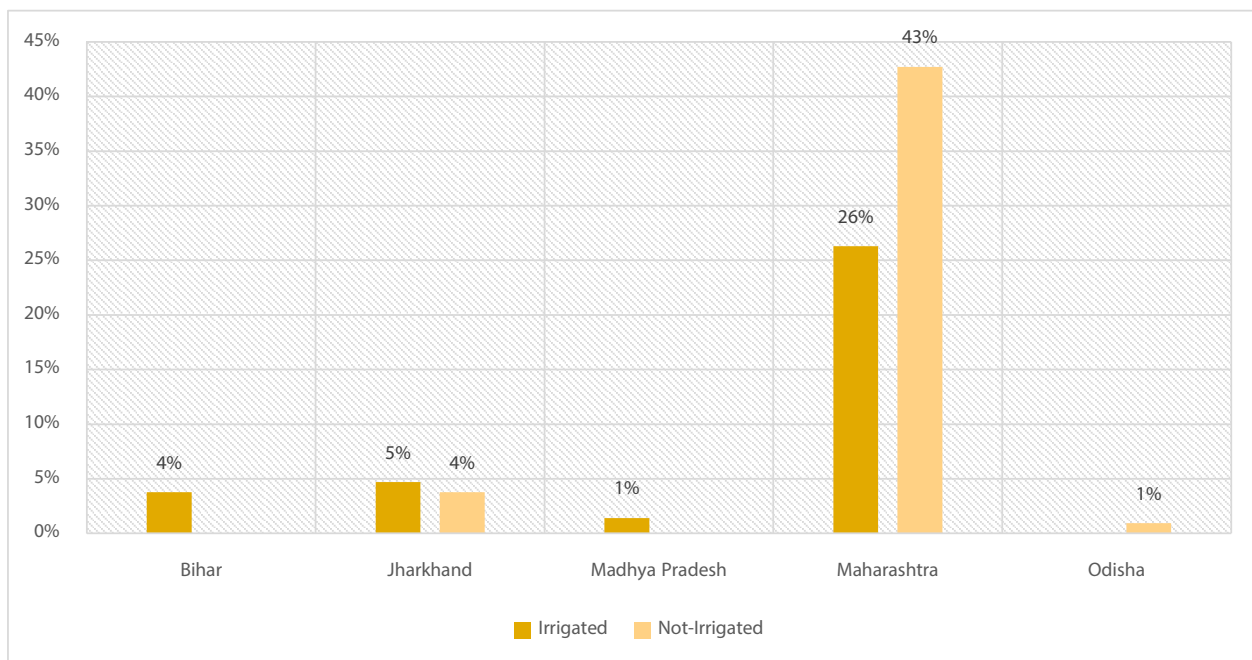
While women perform more number of tasks on field than men, it is seen that the benefits of irrigation accrue more to men and women are seen to be left out of the picture.<sup>10</sup>

The small size of landholdings also impacts farm incomes and farm income is closely associated with the capability of the farmer to adopt expensive micro-irrigation systems. The meager farm income from declining landholdings challenges the sustainability of expensive micro-irrigation on Indian farms because farmers now have to invest further to replace obsolete components of drip/sprinkler systems such as filters, clogged pipe network, electrical/electronic components, pumps, silted water bodies etc., all of which are not covered in any of the governments' financial schemes.<sup>11</sup> It is also important to note that the impact of Government Schemes is again constrained by its eligibility for only land owners. Reach of electricity is yet another concern that causes low adoption of irrigation as steps for taking approval for electricity for is farmer-led.

In this context, it is noteworthy that (Fig 12) 80% of the land non-participants worked on is non-irrigated as compared with 48% (Fig 11) of Women AE's land. However, the state of irrigation is specific to States. It follows from the fact that more number of women AEs work their own land, have higher educated spouses and thus are eager to adopt technology.

Additionally, it could also imply the advantage from availability of better infrastructure (a govt, sanctioned well close-by). Irrigated lands also imply that women AEs are not relying on more labour intensive manual irrigation work such as hauling water with buckets and are free to take up other activities.

**Fig 11: Percentage of Irrigated and Non-Irrigated land of Women AEs as per States**

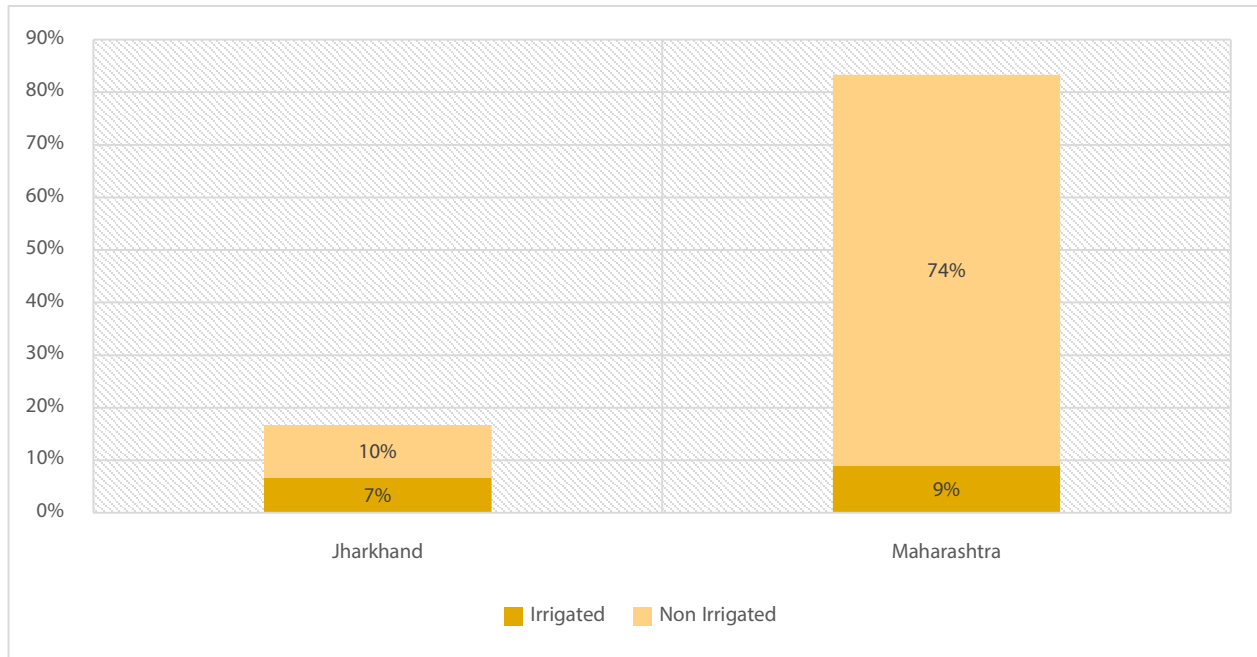


<sup>10</sup><http://www.ifpri.org/blog/considering-gender-irrigation-meeting-challenges-women-farmers-face-technology-adoption>

<sup>11</sup><http://www.globalwaterforum.org/2017/06/13/micro-irrigation-in-india-an-assessment-of-bottlenecks-and-realities/>



**Fig 12: Percentage of Irrigated and Non-irrigated land across states and non-participant women**



## 5. Capacity Building and Training

Given the low education level, additional capacity building and skilling of the women workforce is key to add to their productive capacity. There has been a significant thrust on skilling of women under various programs and schemes. Under the Skill India mission, through long term and short term skill development goals, an increasing number of women are being trained.

There is nearly 97% increase in admissions in 2018 as compared to 2014 to reach 173,105 women trainees from 87,799.<sup>12</sup>

NSDC, through its training partners such as Mann Deshi Foundation in Maharashtra are working exclusively on skill development of women, especially in rural areas. The training constitutes imparting digital, accounting and entrepreneurial skills so as to facilitate the possibility of setting up their own business.

Recently, more than 6000 training targets have been allocated to train women in 4 PMMKs. The crèche facility is also available at these centers so as to facilitate the new mothers to take up skill training.

Only 2 out of the total 213 respondents were not a part of any SHG group/Social Inclusion Group. There are a total of 55,97,719 SHGs<sup>13</sup> with more than 5 members each in India, thus reaching out to more than 50 million members. This wide network of social groups marks a key entry point for the rural value chain.

<sup>12</sup><http://pib.nic.in/newsite/PrintRelease.aspx?relid=189350>

<sup>13</sup><https://nrlm.gov.in/shgReport.do?methodName=showIntensiveStateWiseReport>



While SHGs remain a strong cadre, skill based training on-ground has been facilitated with an ecosystem of NGOs (other than SFI) and the SRLM cadre (Table 12). As per an internal study conducted in 2018, even with a lower educational background than their male counterparts, it was seen that Women AEs are well represented in the top performing AEs of SFI. 57% of the Women AEs have reported receiving a training through a NGO. Even in the presence of a strong government led livelihood mission, it can be seen that NGOs play a strong lead in skilling women. As per the respondents from Maharashtra, 63% of Women AEs were trained through a NGO. This showcases the importance and a need for non-government actors to support Government ecosystems in providing Skill Based Trainings.

**Table 12: Distribution of Income Increase of Women AEs as per the source of training received**

States	Training Providers	Less than 10%	10% - 16%	16% - 25%	>25%
Bihar	Through SHG	1			2
	Through an NGO			5	
Jharkhand	Through SHG			3	6
	Through an NGO	1			7
	Not trained		1		
Madhya Pradesh	Through SHG	3			
	Through an NGO	1			
	Not trained	1			
Maharashtra	Through SHG	17	21	18	6
	Through an NGO	41	20	27	16
	Through a local private institute		1		
	Not Trained	3	2	2	3
Odisha	Through SHG	1			1
	Through an NGO	1			

**Table 13: Non-Participant Women Distribution across States and Source of Trainings**

State	SHGs	SHGs and NGOs	NGOs
Jharkhand	1		2
Maharashtra	48	5	24



As is given in Table 13, the source for training in amongst the Non-Participant women is predominantly SHGs. This could imply a limited exposure, thus impacting awareness and confidence.

### 4.3 Decision Making

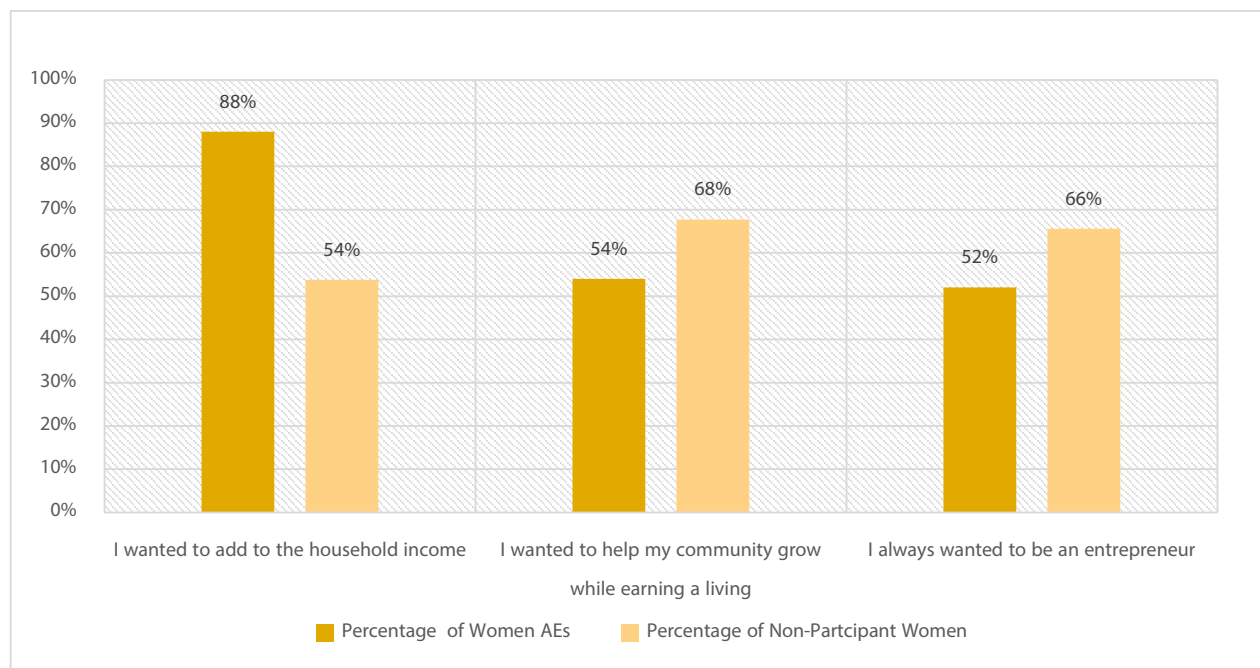
For breaking down the decision making process, it is important to understand why the program is appealing to its users and also who is making the decision for its uptake. This section highlights the reasons to join the program and the final influencers or decision makers.

#### 1. Points of Appeal

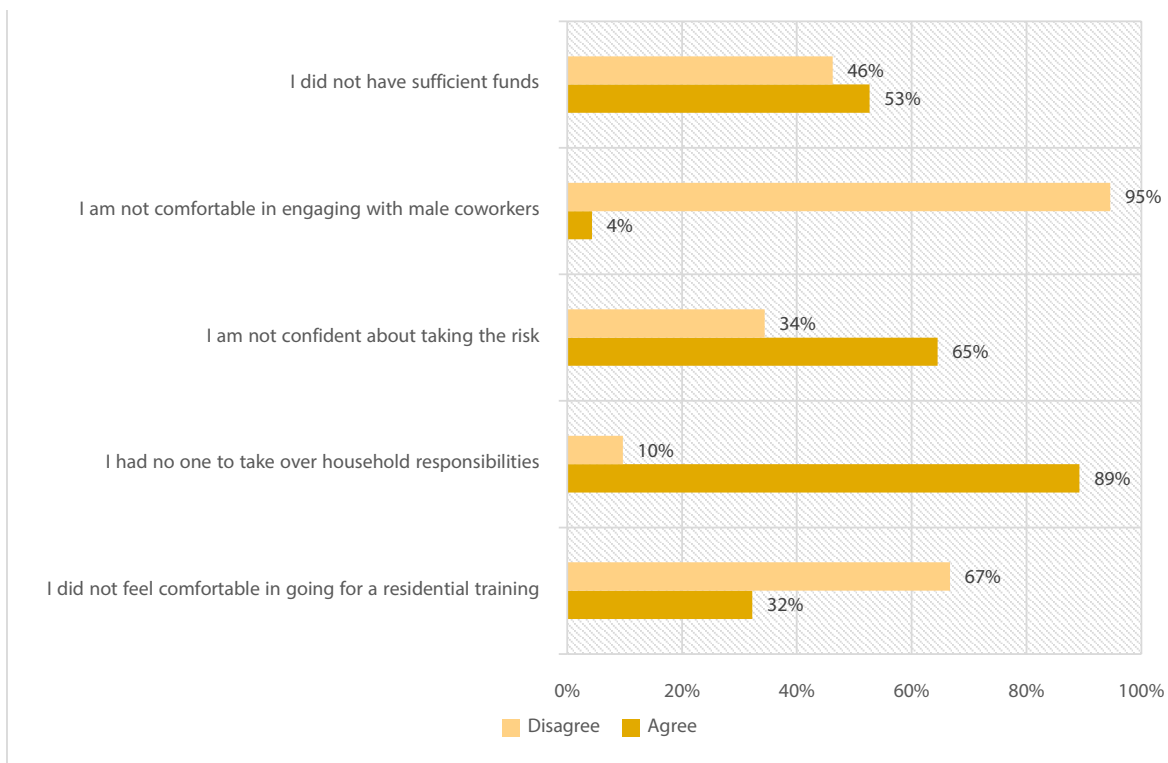
The top three reasons that attracted both the groups to the AE Enterprise program remain same. However, there is a difference in the popularity of choice (Fig 13). While Women AE are looking at the AE program as a more definitive solution to add to their household income, this clarity and motivation is not seen the non-participant AEs.

On looking beyond top 3 reasons, it was seen that 40% of the women AEs were inspired by case studies of other women who have done well as AEs. In comparison, this percentage is 18% amongst the non-participant wome. However, a very small percentage (16%) of women AEs were attracted to the program with the promise of continuous mentoring.

**Fig 13: Top three reasons for being attracted to the AE Program**



**Fig 14: Reasons for not joining the AE Program**



Household responsibilities is seen to be the strongest reason that’s pulling back women participation (Figure 14). However, this can be due to various factors such as lower level of spouse’s education or additional work on field translating to lesser time to perform household chores efficiently.

## 2. Decision Makers

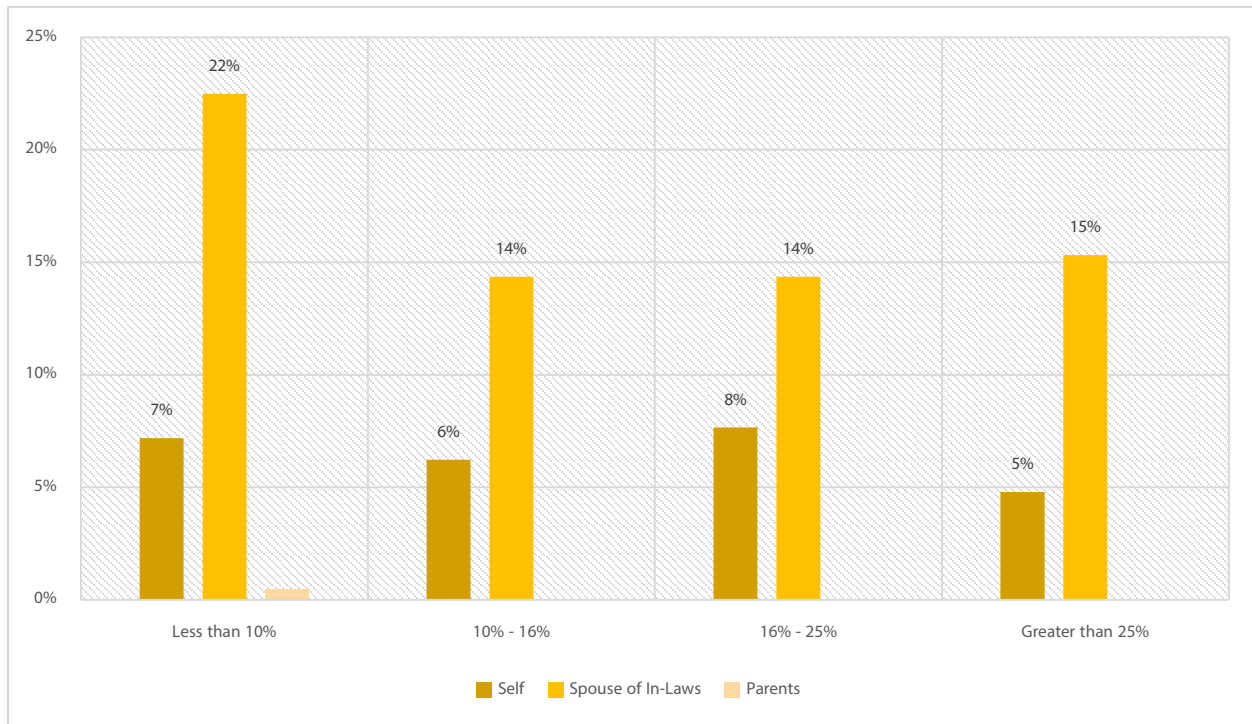
Given the number of members in the household, it has been seen in section 3.2 that women AEs are better poised for a say in the decision making as compared with Non-Participant women. However, the number of independent decision making (26%) is markedly lower than the decision making carried out with Spouse and In-Laws (67%).

97% non-participant women reported decision-making being carried out by Spouses/In-Laws. This makes it important to target spouse/in-laws while campaigning to increase women participation.

**Table 14: Decision Makers for Women AEs**

Decision Makers	Total Number of Women AEs	Percentage of Women AEs
Self	55	26%
Spouse or In-Laws	142	67%
Parents	1	0.4%
(blank)	15	7%
<b>Grand Total</b>	<b>213</b>	

**Fig 15: Distribution of AE decision makers across income growth**



The presence of the highest percentage of spouse as decision makers and low performance, indicates that business decision making might be controlled by spouse or in-laws as well. Their skill levels (if lower than women AE) could negatively affect the growth of business.

Combining our understanding from point 1 of Points of Appeal and the decision makers primarily being spouses/in-laws, it suggests that 'adding to the household income' along with inspiring stories of successful women AEs to serve as a reason to believe, will serve as the best positioning for the influencing greater participation.

## 4.4 Training Participation Dynamics

### 1. Mentor and Peer Structures

Cognitive aspects, motivational factors, teaching methodology and classroom-contextual factors exercise a significant influence on Achievement of students. Cognitive factors including cognitive capabilities, previous knowledge, and, to some extent, subject-specific self-concept are important for achievement (Von et. al, 1998). The economic activity in the region also affects education and learning. The major economic activity carried around AEs is pastoralist in nature, with many of the communities being in tribal areas.

Apart from these factors, Female mentors and teachers as role models can have a significant impact on learning and confidence building. As per Table 14, 94% women AE agree that it is easier to understand a subject if it is being taught by a female trainer and also 95% women AEs will find it easier to ask a female trainer their queries. It is important to work on building diversity within the program to enable it to attract female participation.



More female peers assure belongingness and also help in boosting confidence. Hence, a good ratio of men to women should be maintained in classes. While the table here provides that 73.2% of the candidates were comfortable with the composition of the class, it is important to note that 181 of them received training in 'all women' batches.

**Table 15: Understanding importance of female trainers, peers and composition of class**

Particulars	Total number of Women AEs	Percentage
<b>It is easier to follow the subject if a female trainer is teaching</b>		
Agree	202	94%
Disagree	11	6%
<b>It is easier to ask questions to a female trainer</b>		
Agree	203	95%
Disagree	10	5%
<b>It is easier to participate in class if there are more female peers</b>		
Agree	198	93%
Disagree	15	7%
<b>The composition of the class does not matter to me/ I am comfortable with the existing structure</b>		
Agree	156*	73.2%
Disagree	57	26.7%

## 2. Mode of training delivery

All women respondents were in favour of residential trainings for the program. 53% preferred trainings away from home while 44% preferred residential training close to home. Only 1% of the respondents preferred webinars as a mode of training delivery. It can be assumed that staying away from domestic responsibilities helps in providing Women AEs a more conducive environment for learning which promotes the preference for residential training.

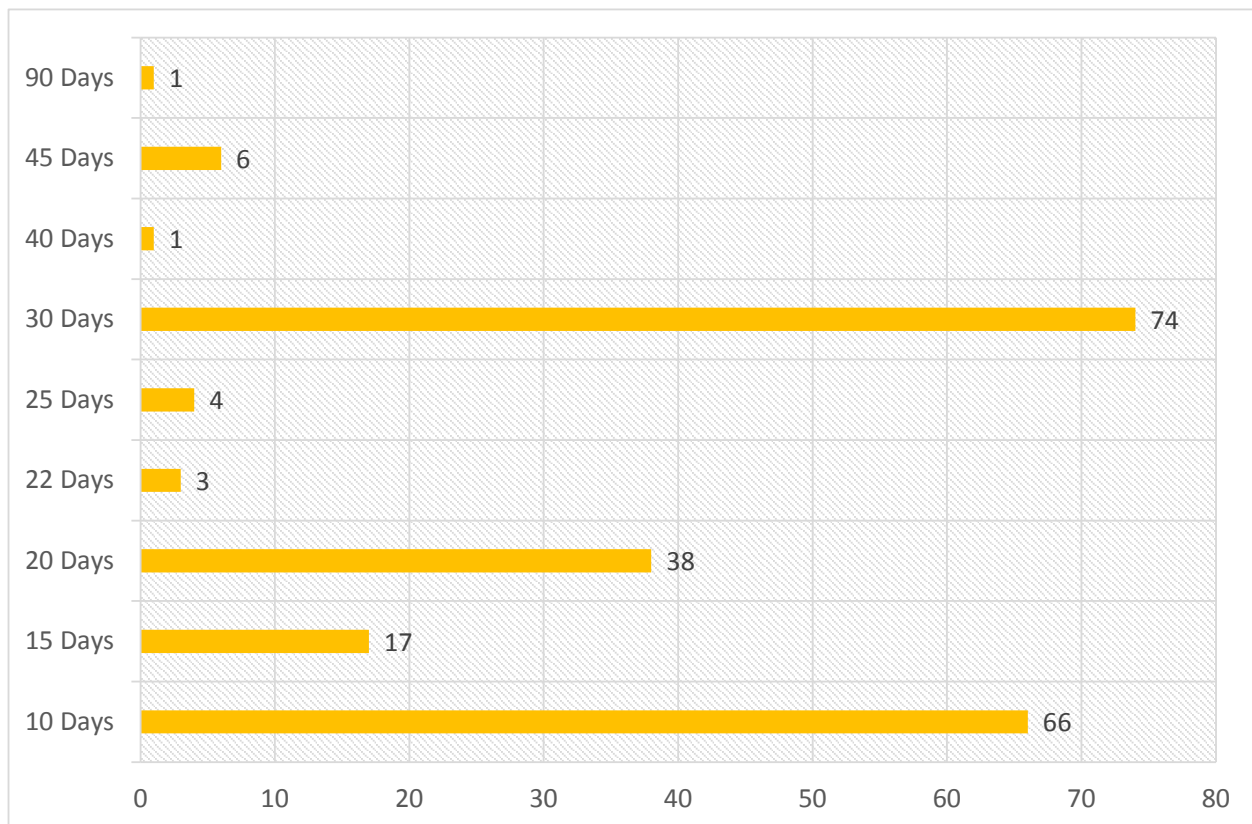
### Duration of training

Majority (34.7%) of women AEs preferred a 30-day and 31% preferred a 10 day training over the standard 45-day schedule.





**Fig 16: Distribution of women AEs as per the days of training preferred**



## 4.5 Investment and Financing

In recent years, support programs for women entrepreneurs have gained traction and prominence as a means to create jobs and boost productivity at the national and regional levels. However, disparities in initial resource endowments of male—and female-led firms, sector sorting into low productivity activities, social norms, and institutional arrangements, constrain the growth of female-led enterprises.<sup>14</sup>

Attanasio et al. (2011b) find that financing through group borrowing has a positive impact on the creation and survivability of women-led microenterprises in Mongolia. Studies on microenterprises however, suggest that access to finance alone has a limited impact on productivity and that, when combined with other training programs, outcomes are stronger when provided in the form of in-kind assistance rather than cash grants or group borrowing.<sup>15</sup>

To overcome challenges of financing, it is the aim of the AE program to help AEs set-up low cost businesses and provide a bouquet of services to farmers. Women AEs provide multiple services to farmers. Fig 17 given below lists the number of services provided by women AEs. Small Scale processing units is a unique archetype to women AEs and is provided by very few male AEs.

<sup>14</sup><http://documents.worldbank.org/curated/en/301891468327585460/pdf/92210-REPLACEMENT-Supporting-Growth-Oriented-Women-Entrepreneurs-A-Review-of-the-Evidence-and-Key-Challenge.pdf>

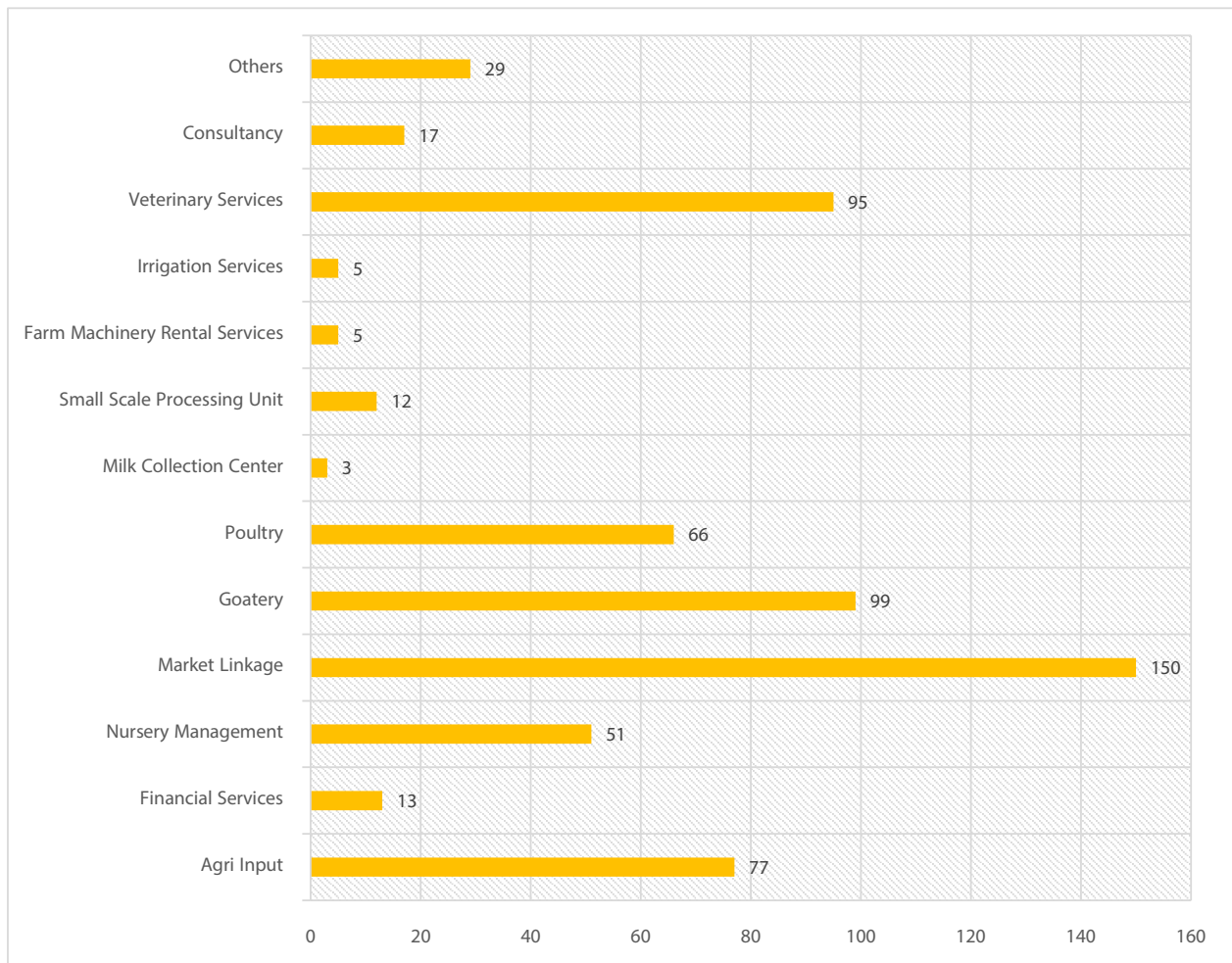
<sup>15</sup><http://documents.worldbank.org/curated/en/301891468327585460/pdf/92210-REPLACEMENT-Supporting-Growth-Oriented-Women-Entrepreneurs-A-Review-of-the-Evidence-and-Key-Challenge.pdf>



It is also seen that there are two distinct portfolio of services that are being provided by the women AEs based on the type of agriculture and allied activities followed at their locations:

1. **In Agriculture dominated locations:** Agri Input Services, Market Linkage, Nursery Management and Farm Machinery Rental Services
2. **In Animal Husbandry dominated locations:** Goatery, Poultry, Veterinary Services, Milk Collection Center

**Fig 17: Services Provided by Women AEs**



## Young entrepreneur empowers her village

Sangeeta Kumari is an Agri-Entrepreneur (AE) in a remote area of Bihar. She is 26 years old and a mother of two. Sangeeta started her enterprise in August 2018. By March 2019, she had already earned over 54,000 rupees. 200 local farmers now have easy access to banking services and high-quality inputs.



Sangeeta's village is over 7 km from the nearest town. Poor roads and little access to transport put the farmers at a significant disadvantage. They were forced to pay unfair prices for inputs in town, or do without. They also found it hard to access banking services. After the 7km trek, long queues would prevent them from being served. Farmers would often return empty-handed.

Now, however, Sangeeta Kumari is providing financial services through Spice Money and runs an input store in her village. She trained on the AE

Enterprise Program run by Jeevika (the Bihar Rural Livelihoods Promotion Society) and Syngenta Foundation India (SFI). This program has created a network of over 165 AEs across five districts in Bihar.

Before the AE program, Sangeeta worked as a Skill Extension Worker (SEW) with Jeevika. She earned a monthly allowance of INR 3,500 plus INR 30,000 annually from her farm. However, it was difficult to make ends meet. Soon after training, Sangeeta started her two enterprises. She provides inputs at a lower price than retailers in town and has carried out transactions of over INR 4,000,000 for the farmers through Spice Money.

Sangeeta is the only woman entrepreneur in her village and has made a mark for herself. Her income has doubled in the last six months and is poised to increase further through expansion into other services.

"When she applied for the AE program, Sangeeta did not even know how to use a smartphone. Now she has bought a laptop and is independently running her business", reports Chandramani, an Agri-Entrepreneur Mentor at SFI. "For future growth, we want to strengthen her financial business with value-added services such as debit card withdrawals and a POS machine. We are also exploring ways for her to start a nursery." Sangeeta's success is based on an established relationship with farmers. She first developed this trust as a Jeevika SEW. The AE training and regular guidance from SFI help her use this good basis to the full, supporting farmers and her family. Her increase in income has enabled Sangeeta to invest in better education, including for herself. "Before, it was very difficult to send my son to school", she says. "Now he is enrolled in a private residential school, where the education is better."



## Aspirational Archetypes and Satisfaction

Women AEs aspire to take up other enterprises as well. 23% want to take up small scale processing units, 22% want to open Agri-Input Stores and 15% would like to start Milk Collection Centers and Poultry Units. On being asked as to why they did not select these enterprises of their choice at the time of business operationalization, 96% reported lack of capital and 93% reported a lack of confidence. Only 10% reported not selecting a particular archetype based on travel required.

65% of Women AEs reported a strong satisfaction with their performance. While looking at this figure in comparison with the profitability, it could be assumed that even small additions to income (INR 1,500 – 3,500 monthly) leave women AEs satisfied.

### 1. Access to Finance

87% women entrepreneurs have not taken a loan for their enterprises. Of the women AEs who took a loan, 59% accessed it through a Bank and 37% took it through the SHG/VO. Women centric financial products and financial management training can promote faster adoption of credit, resulting in sustainable businesses.

### 2. Investment Pattern and Performance

Women AEs were studied based on their investments and the performance group they fall under. This is to understand the efficient use of capital and also the amount invested by the AEs. As per Table 15 given below, 63% of the women AEs have started with a small investment of less than 10,000. This corroborates with the fact that no loans were taken by them.

**Table 15: Distribution of Women AEs across investment range**

States	Investment Less than INR 10,000	Investment between 10,000 – 20,000	Investment Greater than 20,000
Bihar	-	-	8
Jharkhand	3	5	10
Madhya Pradesh	3	-	-
Maharashtra	134	29	15
Odisha	1	-	2

**Table 16: Distribution of Women AEs across investment ranges and change in income**

Investment Range	Range of Income Change	Percentage of Women AEs
Investment less than 10000	Less than 10% increase in income	39%
	Income Increase between 10% - 16%	18%
	Income Increase between 16% - 25%	25%
	Income increase of greater than 25%	18%

Investment Range	Range of Income Change	Percentage of Women AEs
Investment between 10000 - 20000	Less than 10% increase in income	24%
	Income Increase between 10% - 16%	38%
	Income Increase between 16% - 25%	21%
	Income increase of greater than 25%	18%
Investment Greater than 20000	Less than 10% increase in income	14%
	Income Increase between 10% - 16%	17%
	Income Increase between 16% - 25%	23%
	Income increase of greater than 25%	46%

The profitability numbers for women AEs are not impressive. There is a presence of strong operational in-efficiencies, it can be seen that inefficiencies increase with the size of business. However there approximately 5% women AEs who are earning a profit of more than 10,000 in a month with a Net Profit Ratio of over 0.31.

**Table 17: Profitability and Net Profit Ratios of Women AEs**

Quartiles	Profitability	Transactions	Net Profit Ratio
First Quartile	1325	5000	0.26
Second Quartile	2200	10000	0.22
Third Quartile	3375	20000	0.16

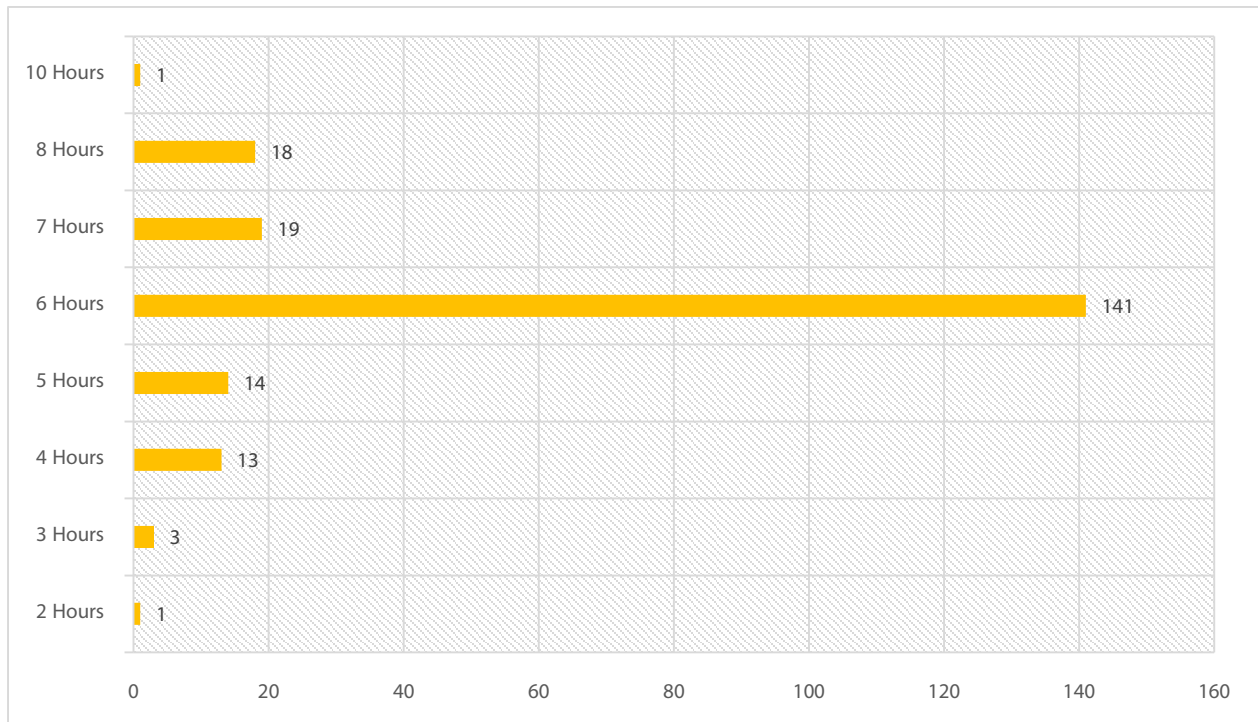
### 3. Time Spent on Business Operations and Domestic Chores

88% of the Women AEs reported operating their business with their husband's help. When seen in relation with the Net Profit Ratio and the number of hours being spent by women AEs (Fig 18) on their business (6 hours), this further enhances the inefficiency of operations as a higher number of man hours are being spent on the business.



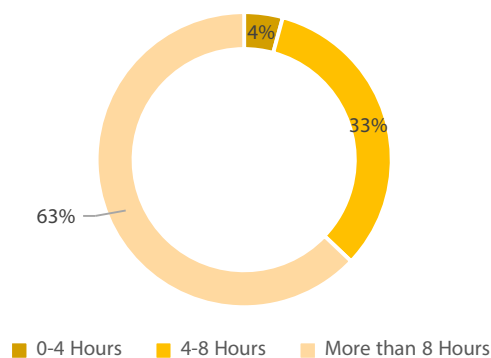


**Fig 18: Number of hours spent by Women AEs on operating business**



More than 60% of women AEs are spending more than 8 hours in childcare and this combined with hours spent in business operations is bound to lead to inefficiencies.

**Fig 19: Hours spent on Childcare and Domestic Duties**



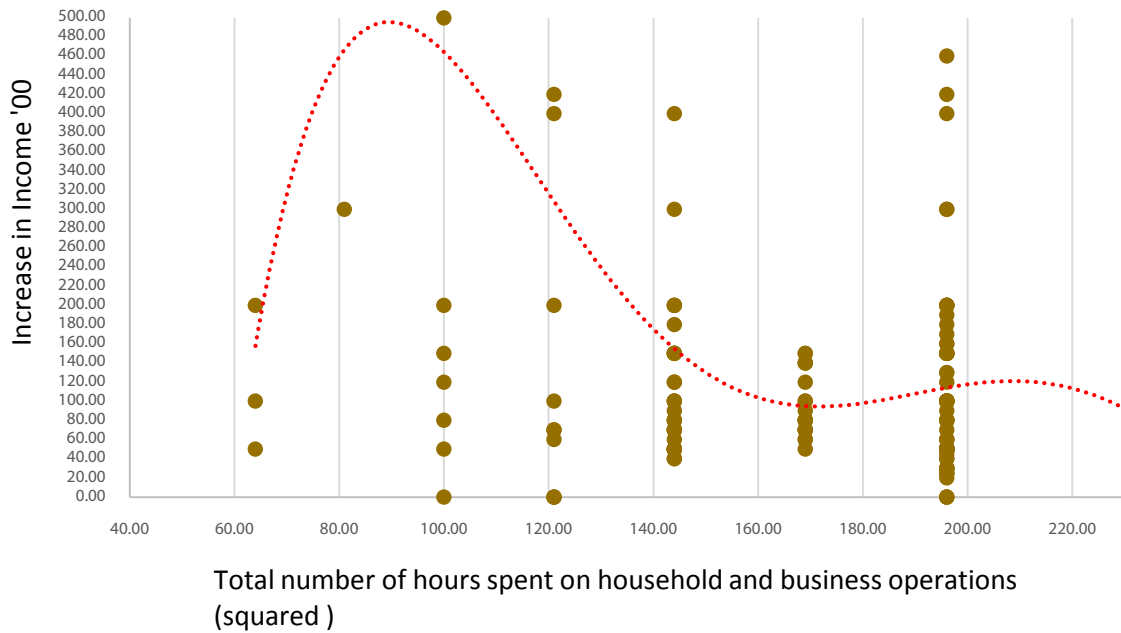
### **Profitability and Increase in Income in relation with working hours**

It is seen that relationship of number of hours spent on household chores, business operations, total working hours have different relationships with increase in income. These are summarized below:

- An increase in total working hours has a negative impact on increase in income (Fig 20)

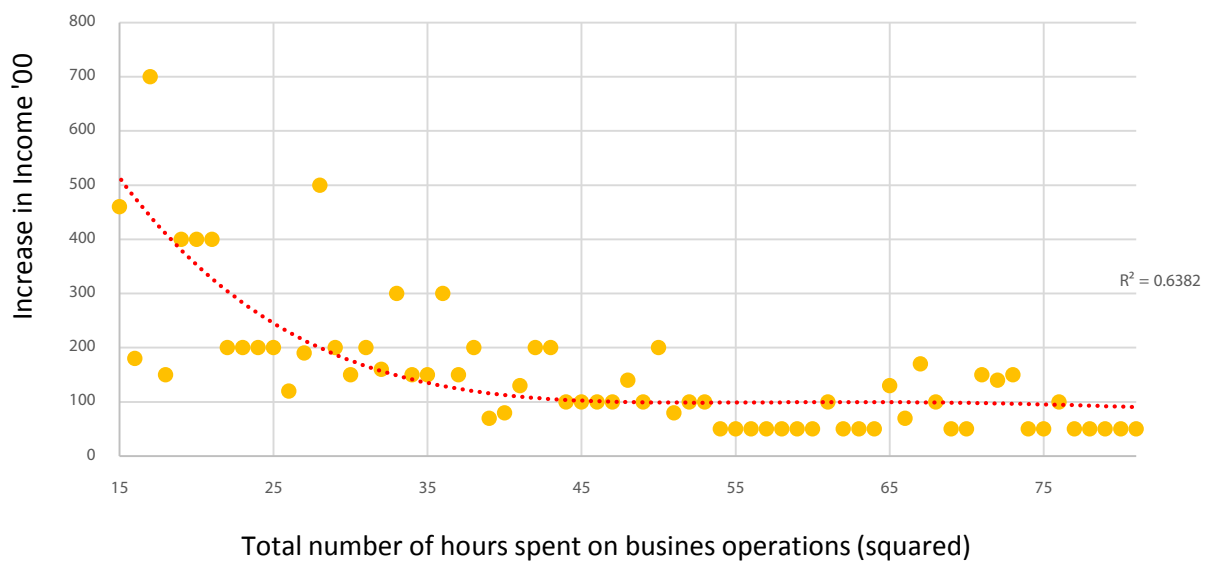


**Fig: 20 Plot Line for Increase in income with total number of working hours squared**



- An increase in number of hours spent on household chores and on business operations negatively impacts the increase in income however the impact of increasing hours spent on household chores is higher than that of increasing hours on business operations (Annex 3). However, the fall stagnates after 6 hours being spent on business and income increase will stagnate (Fig 21). Most women AEs are working for 4-8 hours on business and more than 8 hours on household chores (Table 18). While there has been an increase in income so far, it is far from optimum working hours and the rise in income is likely to stagnate due to inefficiencies. The ideal time spent should be a total of 10-12 working hours in a day (3:2 ratio between business and household working hours).

**Fig 21: Number of hours on business and increase in income**





**Table 18: Distribution of Total Working hours of women AEs as per income growth**

Hours spent on Household duties	Hours spent on business operations										
	Less than 4 Hours			4 - 8 hours				More than 8 hours			
	Less than 10%	16% - 25%	Greater than 25%	Less than 10%	10% - 16%	16% - 25%	Greater than 25%	Less than 10%	10% - 16%	16% - 25%	Greater than 25%
Less than 4 hours				1			6	1			1
4 - 8 hours				12	22	8	15	7	2	2	1
More than 8	1	2	1	44	20	37	21	2			1



5

**ANNEXURE**



## 5. Annexure

## Annex 1

### Maharashtra

Agriculture is the mainstay of the state of Maharashtra. Maharashtra's economy is predominantly agrarian. It is the main occupation of the people. Both food crops and cash crops are grown in the state. Principal crops include rice, jowar, bajra, wheat, pulses, turmeric, onions, cotton, sugarcane and several oil seeds including groundnut, sunflower and soybean.

The state has large areas, under fruit cultivation of which mangoes, bananas, grapes, and oranges are the main fruits. However, the state agriculture is predominantly rain-fed agriculture (only 18% of Gross Cropped Area is irrigated) and scattered rainfall across regions with one-third area receiving scanty rainfall – State has 24% of drought-prone area of the country.

The study was undertaken across Ahmednagar, Beed, Palgarh, Nashik and Nanded Districts from Maharashtra.



## Odisha

Odisha is an agrarian state with Agriculture and Animal Husbandry sector contributing 21.11% to Net State Domestic Product (NSDP) in 2007-08 (Q) at 1999-2000 prices and providing employment directly or indirectly to 70% of total work force as per 2001 Census. The share of Gross State Domestic Product (GSDP) from Agriculture and Animal Husbandry during 2007-08(Q) at constant price (1999-2000) is 19.51%. Evidently, Agriculture plays a critical role in the economy of the state and livelihood of majority of its populace.

The State has cultivated area of 61.80 lakh ha out of which 29.14 lakh ha. is high land, 17.55 lakh ha medium land and 15.11 lakh ha low land. The coverage under Paddy during Kharif is about 41.24 lakh & during Rabi 3.31 lakh ha.

In the present agricultural scenario, the marginal farmers, constituting more than 50 % of the farmers, either own or rent a piece of land for cultivation. Because of the endemic poverty, they generally cultivate their crops with little inputs and hence crop production is low. In this backdrop, besides enhancing their capacity, increase in productivity per unit land area and cropping intensity hold the key to agricultural development.

Three Districts of Odisha, Kalahandi Nabrangpura and Rayagada were a part of the study.

**Image 3: Odisha Map (Districts covered in the study;Kalahandi, Nabrangpura and Rayagada)**



## Andhra Pradesh

Agriculture has been the chief source of income and main occupation for the state with 60% of population engaged in agriculture and related activities. Rice is the major food crop and staple food of the state. Other important crops are sugarcane, cotton, mango, tobacco, Maize, pulses etc. Four important rivers of India, the Godavari, Krishna, Penna, and Tungabhadra flow through the state, providing irrigation. Recently, crops used for vegetable oil production such as sunflower and peanuts have gained favour. There are many multi-state irrigation projects in development, including Godavari River Basin Irrigation Projects and Nagarjuna Sagar Dam.

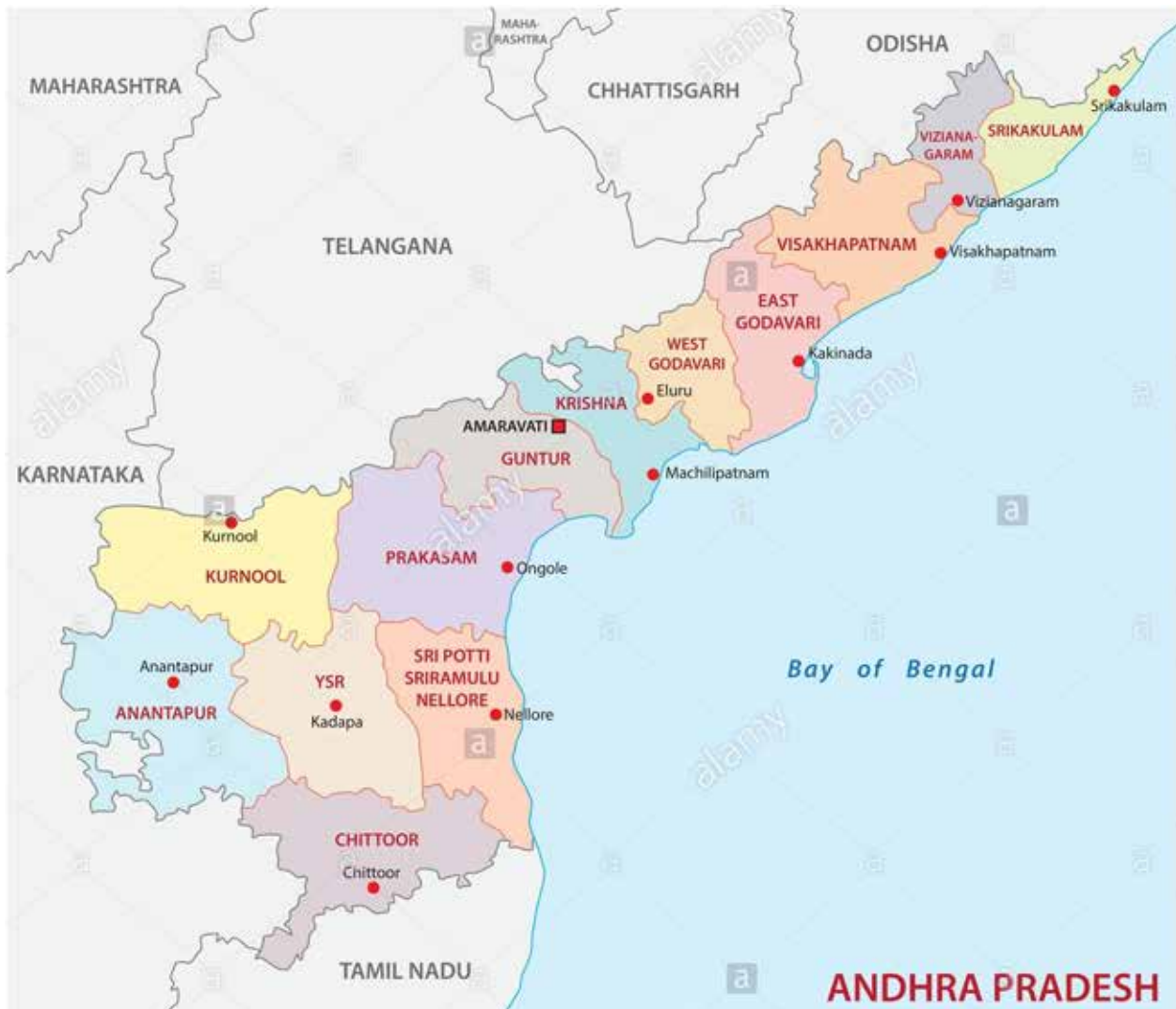
Andhra Pradesh was among the very few states in the country which went in for the Green Revolution in rice cultivation in the 1970s. Agricultural income in the state was 54.599 billion (US\$790 million) at constant prices (2012–13).

However, Continuous dependence on old varieties has pushed the farmers into a tough situation of stagnant yields and increasing cost, ultimately cutting into their income.



Three districts were covered as a part of the study; Chittoor, Ananthapuramu and Visakhapatnam.

**Image 4: Andhra Pradesh Map (Districts covered in the study; Ananthapuramu, Chittoor and Visakhapatnam)**



## Madhya Pradesh

Madhya Pradesh, with its large area, enjoys diverse climatic and soil conditions suitable for a broad range of agricultural products. Agriculture sector in Madhya Pradesh forms the backbone of its economy. It contributes almost one-fourth of the Gross State Domestic Product (GSDP) and is the main source of employment for over 65 percent of the population and constitutes about 60- 75 percent of the rural income.

Agricultural GDP, over eight years to 2015, increased, on average, 10.9% per annum, the highest in India and higher than the national average of 4.3%. Despite the growth, the state has been plagued by farmers' protests. The trigger for the unrest was bumper crops in 2017, which led to a 30-50% drop in prices of cash crops like onion, green peas, potato and garlic that farmers were encouraged to cultivate under crop diversification.

Inequality in incomes — agricultural income in MP (Rs 6,210) lagged national income (Rs 6,426) from 2002 to 2012 despite increase in farm earnings, suggesting other earnings from farm labour and non-farm earnings did not rise fast enough, Mint reported on June 16, 2017.

SFI operations in Madhya Pradesh are at a nascent stage. District Sagar was covered under the Study.

**Image 5: Madhya Pradesh Map (Districts covered in the study; Sagar)**



## Bihar

Agriculture is the key to the overall development of the State economy. Agriculture is the backbone of Bihar's economy 77% of workforce and generating nearly 24.84% of the State Domestic Product. The percentage of population employed in agriculture production system in Bihar is estimated to 77%, which is much higher than the national average. Nearly 24.84% of GDP of the state (2011-12) has been from agriculture sector (including forestry and fishing).

Barring maize and pulses productivity of various farm produce in Bihar is much below the national average. Though the area under cultivation is shrinking, there is tremendous scope for income generation, by improving productivity. decreasing products.



**Image 6: Bihar Map (Districts covered in the study; Patna, Muzaffarpur, E.Champaran, Katihar and Purnia)**



The Agriculture production can only be increased through enhanced cropping intensity, change in cropping pattern, improvement in seeds of high yielding varieties, cultivation practices and with the availability of better post-harvest technology etc.

SFI is working with the State Rural Livelihood Mission in Bihar across Patna, Muzaffarpur, E.Champaran, Purnia and Katihar, all of which are covered under the study.

## Jharkhand

In the field of agriculture, the Jharkhand government is doing a lot of important work in the interest of the farmers. Despite the Ranchi plateau region, the land here is suitable for agriculture. Here mainly people are dependent on rain in the form of Sichanai, but the river, the river is used. Many programs are being run by the government to promote agriculture.

**Image 7: Jharkhand Map (Districts covered in the study; Khunti, Ramgarh, Ranchi and Gumla)**



The lower area provides suitable conditions for paddy cultivation. Provides high altitude gardens, millet and vegetable gardens and conditions for cultivation. The forest cover of the total area of the forest is 20.99%. The main crops grown in the district are rice and pulses. Only 8.30 percent of agricultural use has irrigation facilities and major sources of irrigation are good and canal.

Despite good rainfall, the cropped area and cropping intensity are low. The level of technology adaptation is also poor leading to lower productivity. The cultivable area is estimated around 3.8 million ha but the net sown area is 2.56 million ha and only 12% of cropped area is under irrigation.

The total cultivable land in the State is 52% as compared with 55% of the country, but only 43% area of this is under net sown area compared to national average of 76%. The State as a whole suffers from several critical gaps in agriculture and allied sectors though a number of opportunities exists to make the state self-sufficient in agricultural production.

Districts covered under the study from Jharkhand are, Khunti, Ranchi, Ramgarh and Gumla.



## Annex 2

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.207679914							
R Square	0.043130947							
Adjusted R Square	0.038552626							
Standard Error	28457.85584							
Observations	211							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	1	8E+09	8E+09	9.421	0.00243			
Residual	209	2E+11	8E+08					
Total	210	2E+11						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	12206.50533	2113	5.777	3E-08	8041.24	16371.77	8041.241	16372
Investment	0.157027358	0.051	3.069	0.002	0.05617	0.257884	0.056171	0.258



## Annex 3

SUMMARY OUTPUT								
Regression Statistics								
Regression Statistics								
Multiple R	0.201392352							
R Square	0.04055888							
Adjusted R Square	0.030186543							
Standard Error	29678.56576							
Observations	188							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	2	6.89E+09	3444254015	3.910293	0.021711775			
Residual	185	1.63E+11	880817265.4					
Total	187	1.7E+11						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	64318.85308	19131.77	3.361886863	0.000941	26574.35501	102063.4	26574.36	102063.4
Hours spent on Business Operations	-1770.457729	1748.912	-1.012319398	0.312708	-5220.834017	1679.919	-5220.83	1679.919
Hours spent on household	-5306.859084	1909.378	-2.779365688	0.006009	-9073.81312	-1539.91	-9073.81	-1539.91



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