

# CREATING AGRARIAN PROSPERITY: IMPACT ASSESSMENT AE ENTERPRISE MODEL



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## IMPACT ASSESSMENT AE ENTERPRISE MODEL

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### INDIAN AGRICULTURE LANDSCAPE

With a population of 1.27 billion, India is the world's second most populous country. Of the total holdings, 85 percent are in marginal and small farm categories of less than two hectares and the average size of landholding has been estimated as 1.15 hectares. During the last five decades, agricultural production has increased at an average annual rate of 2.5–3 percent. The slow-down in agricultural growth has become a major cause for concern. The uncertainties in growth in agriculture are explained further by the fact that more than 50 percent of agriculture in India is rainfall dependent which aggravates the production risks. Technology and extension are the key determinants of productivity in agriculture. The challenge, however, lies in improving farmers' access to the right kind of timely information and then ensuring that farmers adopt the proposed package of practices.



### AE ENTERPRISE MODEL

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 150 - 200 farmers. The model is currently active across Andhra Pradesh, Bihar, Jharkhand, Madhya Pradesh, Maharashtra, Odisha and West Bengal. As of March 2019, the total number of AEs associated with SFI was 970, serving over 100,000 farmers.



## WHAT ARE THE RESULTS?

132 farmers were studied in the two districts; Palgarh (Jawhar) and Ahmednagar with an aim to assess the impact of the AE model on farmers' livelihood and their satisfaction with market access, inputs' price, credit, farm machinery and crop management training.

The study assesses the impact of the AE program after three years (in Jawhar) and one year (in Ahmednagar) time frame from its implementation. The control group formed about 50% of the total samples collected. The farmers participating in the AE program are overall 65, the control group accounts for 67 cases.

### KEY FINDINGS:

The AE program has a direct positive impact on farmers' income and profits through the 1) AEs' shops (quality and right price of the inputs), 2) AEs' agronomy advisory, 3) Market Linkages facilitation. The positive effect has evidence on a) the economic and income perception indicator, b) the income and profit distributions, c) the profits usage patterns, d) the satisfaction with the services assessed, e) the assets owned and f) the weekly calories intake.



There are a few indicators impacting farmer's livelihood that are affected by factors beyond the AE scope of work. These are household source of water, access to electricity, source of cooking fuel and other facilities. Indeed, other exogenous variables are playing a more relevant role (e.g., government-sponsored development policies, the presence of irrigation facilities and infrastructures).



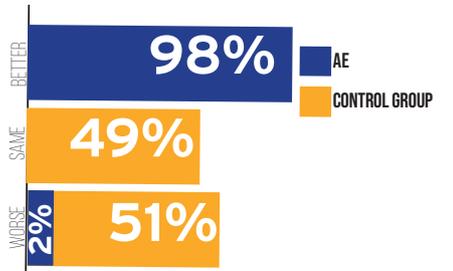
The positive impact on farmer income is seen to be applicable after three years and one year from the AE program implementation and both in the context of worse-off and better-off farmers. Moreover, while comparing the AE group and control group in Jawhar (characterised by worse-off farmers in terms of literacy levels and irrigation facilities access), it has emerged that the differences between the two sets are higher in Jawhar than Ahmednagar (characterised by farmers with higher literacy levels and better access to irrigation facilities). Consequently, it is possible to infer that:

In the less advanced areas with low irrigation facilities and marginal farmers with low educational levels, the impact of the AE model is considerable. The reason is that the AE program provides some necessary basic information (e.g., market prices, inputs prices, weather information) and a reliable and sustainable market network for the farmers. The reduction of the information asymmetries and the formalisation of market linkages are accelerating the farmers' income capacity. Finally, in Ahmednagar the consumption patterns for the profits are slightly different. Indeed, while health and education are still a priority as for Jawhar, farmers in Ahmednagar do not consider any longer food as an urgency. Their consumption patterns moved to farm expenditures and it reveals that better-off farmers have enough income stability to invest more in new crop solutions. Consequently: Interventions in economically better-off areas will require actions on the introduction of more advanced technological solutions to scale the production.



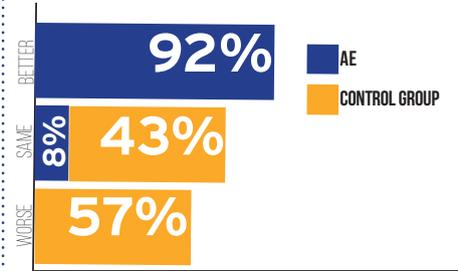
# JAWAHAR

## ECONOMIC SITUATION PERCEPTION



98% of the AE sample claimed that the household economic situation is improved in the last three years, while 51% of the control group declared a deterioration and none of the interviewed perceived improvements.

## AGRICULTURE INCOME PERCEPTION



92% of the AE members announced an increase in their agricultural income in the last three years. In the control group, 57% reported decreasing agricultural income. There are no cases of better income perception in the control group.

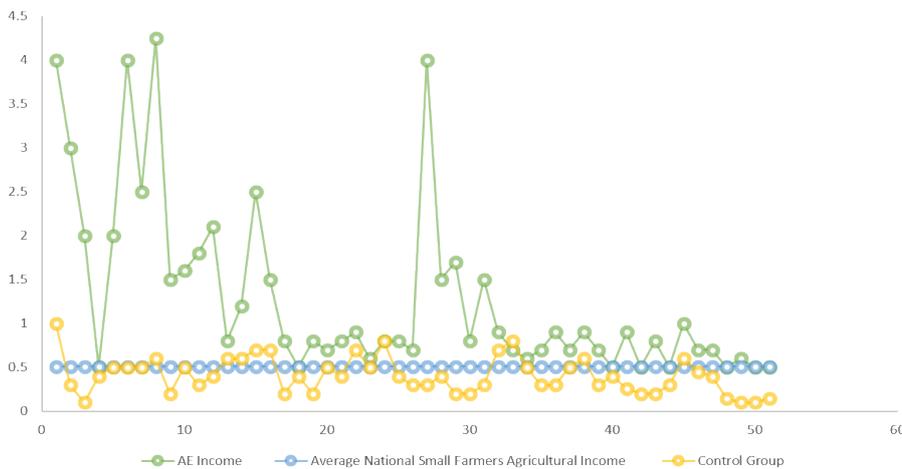
## PROFIT DISTRIBUTION

Jawhar: Profit Distribution (in Lakh)	AE	Control Group
Minimum	0.3	0
Maximum	2.75	0.8
5%	Below 0.3	0
50%	0.4 - 1.1	0.01 - 0.2
25%	0.5 - 1.1	0.2 - 0.3

It is possible to claim that the Agri-inputs' prices, their better quality, the lower planting material purchasing time and the easy access to farm machinery are increasing farmers' profit capacity.

## INCOME DISTRIBUTION

Jawhar: AE and Control Group Income Distribution Compared to the National Average Small Farmers Agriculture Income (0.51 Lakh per year)

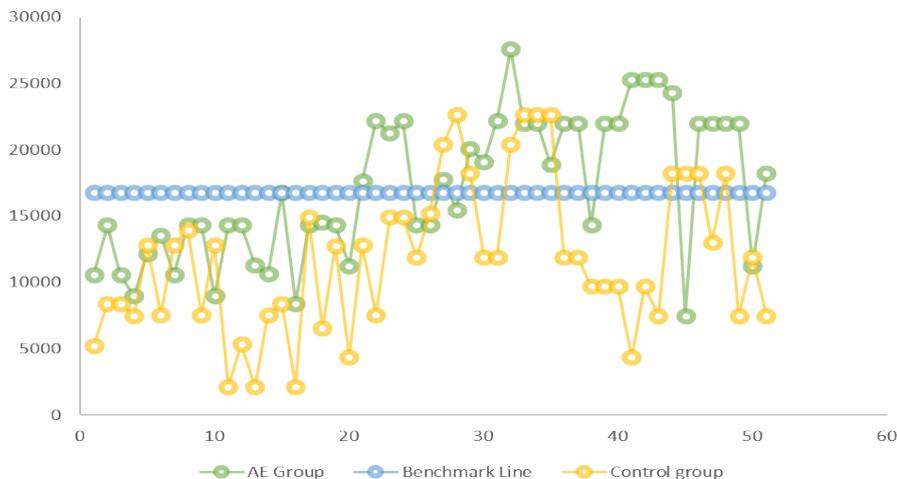


50% of the farmers in the AE program registered in the last year an average agriculture income of 0.8 Lakh. 75% of them has an income between 0.8 and 1.6 Lakh, and only 5% of the sample reported an agriculture income below 0.5 Lakh. 50% of the interviewed part of the control group have an average agriculture income of 0.4 Lakh for the last year. 75% of the farmers outside the program decl ed an income between 0.4 and 0.5 Lakh. Finally, 25% of the questioned collocated

their income below 0.26 Lakh. Compared to the NSSO estimation for small farmers (1-2 ha) annual average agricultural income (0.51Lakh), 84% of the AE group is collocated above the benchmark line. 16% of them reported income for 0.5 Lakh and none of them has revenues lower than the benchmark line. 61% of the control group has income below the national average, 16% has income equal to 0.5 Lakh and 24% of them reported an income above the line.

## CONSUMPTION OF CALORIES DISTRIBUTION

Jawhar: Weekly Calories Assumption compared to ICMR-NIN Norms (16800 kcla per week)



49% of farmers in the AE group and 22% of the control group is above the national poverty line. The majority of the interviewed in the control group assumes calories between 5000 and 15000 calories per week (approximately between 714 and 2143 calories per day).

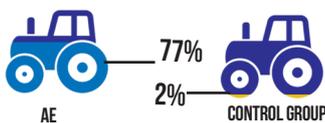
## PROFIT USAGE PATTERNS

The findings show two clear and different usage patterns. The AE group made by farmers experiencing growing income moved its consumption preferences to goods of social and work investment (health, education, crop investments and savings). On the contrary, the control group characterised by farmers undergoing a negative income flow, cut on education to give space to farm equipment. There are no cases of future investments and only 12% of the sample reports savings.

## TRAINING SATISFACTION

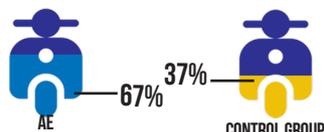
The advisory taken up under the program helps in overcoming a gap in knowledge transfer that is felt at the ground level. The study shows that over 67% of the farmers associated with the AE program are now receiving high quality training on a weekly basis (only 33% of the farmers in the control group report having been trained on a weekly basis). A significant section of the farmers (96%) associated with the program also suggested that the training is always about new and better methods. The result of the training reflects in the quick adoption of the new practices. 96% of the farmers working with the AE group reported always applying new methods.

### FARM MACHINERY SATISFACTION



77% of the interviewed in the AE group declared that farm machinery is always available when requested. Only 2% of the control group has always access to the machineries.

### ASSETS OWNED



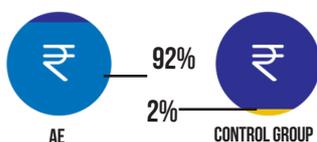
67% of the AE farmers has a two-wheeler compared to 37% of the control group.

### INPUTS' PRICE SATISFACTION



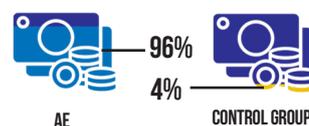
82% of the AE group is "very satisfied" with the price of the inputs. No one from the control group is "very satisfied". 51% of the control group is "not at all satisfied".

### CREDIT ACCESS



92% of the AE group is "very satisfied" with the help received from the Agri-entrepreneurs in getting credits to invest in their crops. Only 2% of the control group is "very satisfied". The loan interests and bureaucratic practices are considered barriers in access to credit, together with the risk of repayment default.

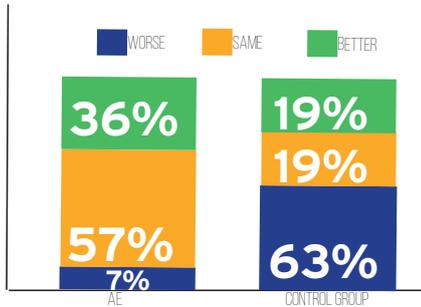
### MARKET PRICE SATISFACTION



96% of the AE farmers are satisfied with the price they received for the crop last year and only 4% of the control group is "very satisfied".

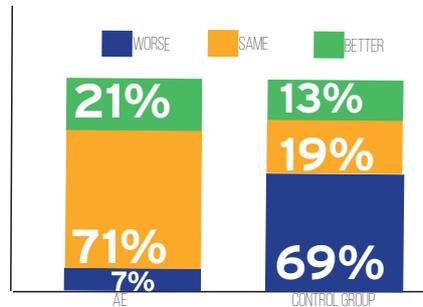
# AHMEDNAGAR

## ECONOMIC SITUATION PERCEPTION



36% of the AE sample claimed that the household economic situation is improved in the last three years, while 63% of the control group declared a deterioration and 19% of the interviewed perceived improvements. For 57% of the AE farmers interviewed the economic situation did not change.

## AGRICULTURE INCOME PERCEPTION



In the AE group, the farmers that registered a stable income is higher than those who declared its growth (71% against 21%). In the control group, the percentage of people that are experiencing a decreasing income is higher compared to the other two categories (for 69% it is worse, for 19% same and for 13% better).

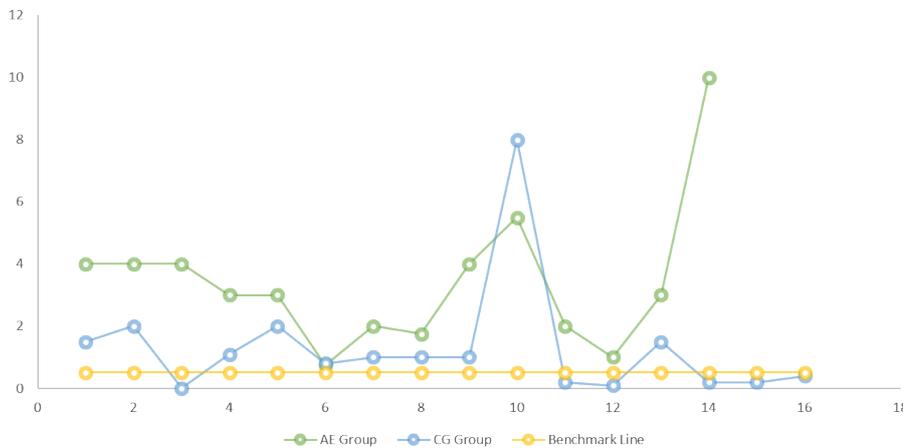
## PROFIT DISTRIBUTION

Ahmadnagar: Profit Distribution (in Lakh)	AE	Control Group
Minimum	0	0
Maximum	6	6
5%	0	0
50%	0.4 - 1.45	0.0 - 0.15
25%	1.45 - 2.0	0.15 - 0.5

It is possible to claim that the Agri-inputs' prices, their better quality and the easy access to farm machinery are increasing farmers' profit capacity.

## INCOME DISTRIBUTION

Ahmednagar: AE and Control Group Income Distribution Compared to the National Average Small Farmers Agriculture Income (0.51 Lakh per year)



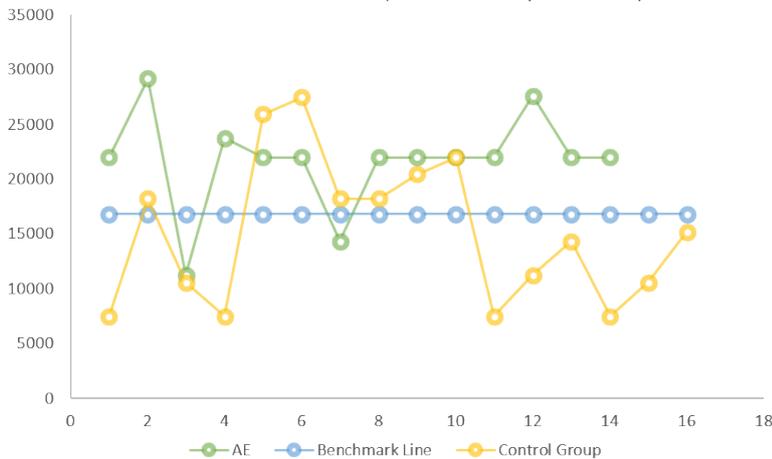
The income distribution for the AE group has a minimum value of 0.7 Lakh and a maximum of 10 Lakh. On the contrary, the control group distribution includes most of the values between 0.2 and 1.5 Lakh, with a maximum income of 8 Lakh.

Compared to the NSSO estimation for small farmers (1-2 ha) annual average agricultural income (0.51 Lakh), all the farmers in the AE group registered an income above the benchmark line. 63% of the control group has in-

come above the national average, none of them has income equal to 0.51 Lakh and 38% of them reported an income below the line.

## CONSUMPTION OF CALORIES DISTRIBUTION

Ahmednagar: Weekly Calories Assumption compared to ICMR-NIN Norms (16800 kcla per week)



86% of farmers in the AE group and 44% of the control group is above the national poverty line. The majority of the interviewed in the control group assumes calories between 5000 and 15000 calories per week (approximately between 714 and 2143 calories per day).

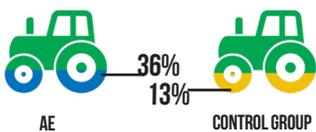
## PROFIT USAGE PATTERNS

Even if composed by better-off farmers, the usage patterns in Ahmednagar are similar to Jawhar. For the AE group, health and education are part of the first block of choices. As in Jawhar, education moved to the second block of choices in the control group accounting for 38% of the sample. It is interesting to notice that food provision ends to be a priority for the AE group and that “farm equipment” took its place on the primary block of choices. The purchasing of food represents a secondary choice for 14% of the AE group. Finally, saving appears as the third choice for 43% of the AE group and 25% of the control group. Again, the analysis reveals two different profit usage patterns. The AE group moved its preferences to social investments (e.g., health and education); on the contrary, the control group preferred crop investments on education.

## TRAINING SATISFACTION

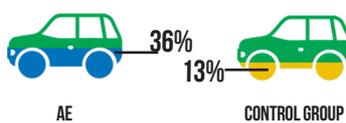
79% of the AE group has weekly agronomy trainings against 6% of the control group. The training is “always” motivating for 21% of AE group and 13% of the control group. For 36% of the AE group and 31% of the control group it is “always” about new and better practices. 64% of the AE group and 25% of the control group applies “most of the time” the notions learned.

### FARM MACHINERY SATISFACTION



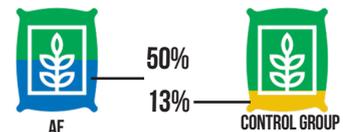
36% of the AE group has “always” access to farm machinery against 13% of the control group.

### ASSETS OWNED



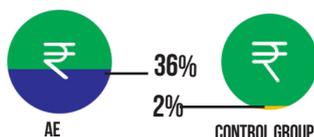
36% of the AE group declared to possess a four-wheelers against 13% of the control group. There are no cases of households with no vehicles in the AE group, while there are two cases in the control group that do not possess bicycle, motorcycle or car.

### INPUTS' PRICE SATISFACTION



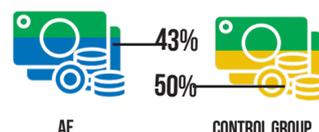
50% of the AE group is “very satisfied” with the inputs’ prices against 13% of the control group.

### CREDIT ACCESS

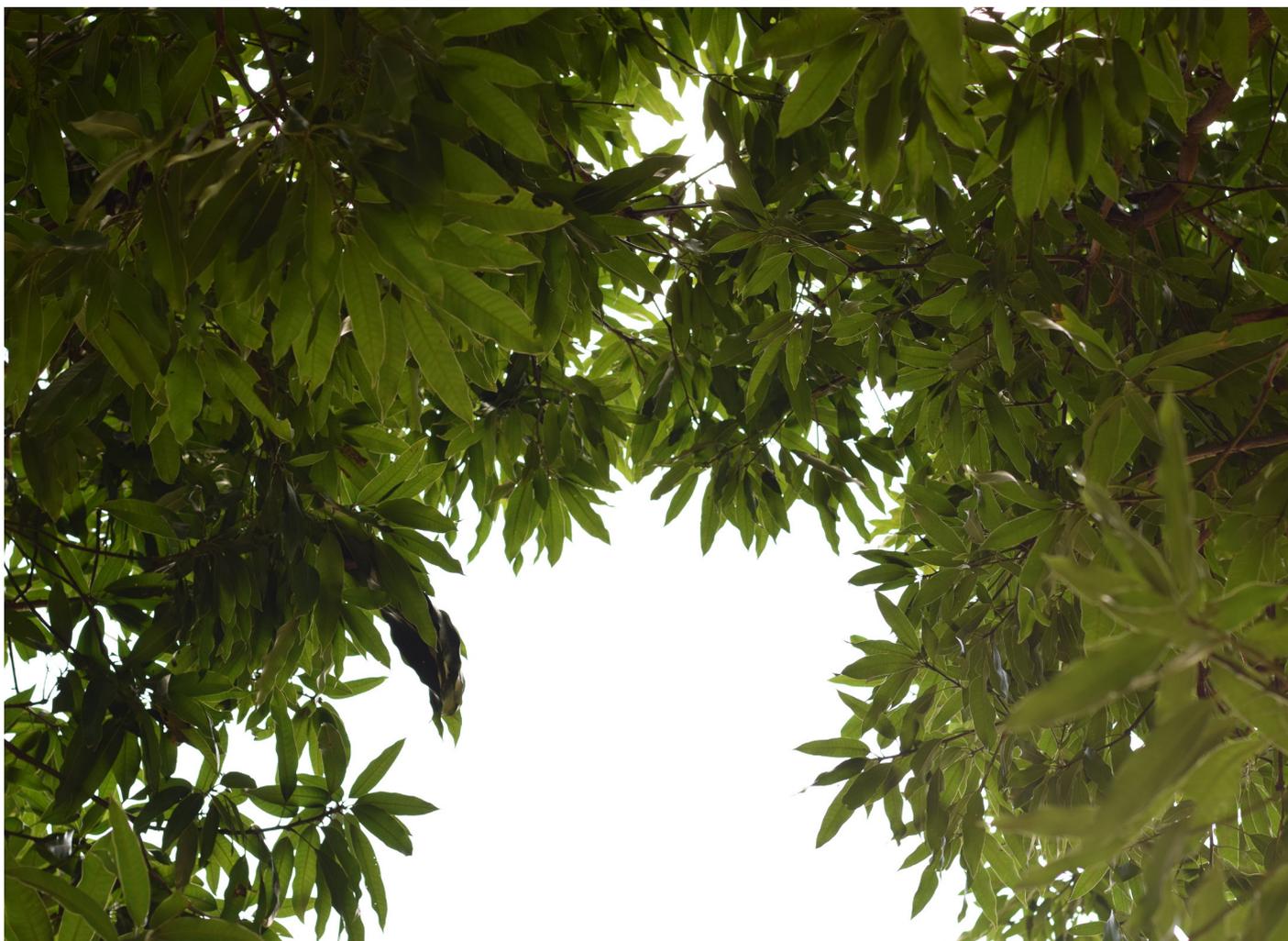


36% of the AE group is “very satisfied” with the advisory received on loan practices compared to 2% of the control group.

### MARKET PRICE SATISFACTION



43% of the AE group “is not at all satisfied” with the price received for the crop in the last year. The result is due to the adverse market price of the papaya and onion crops. 50% of the control group is also “not at all satisfied”.



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