CybageAsha
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Assessing the Economic and Social Impact of CybageAsha's Livelihoods/ Agricultural Interventions in 19 Villages in Maharashtra

Conducted by Symbiosis School of Economics

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'23

CONTENTS

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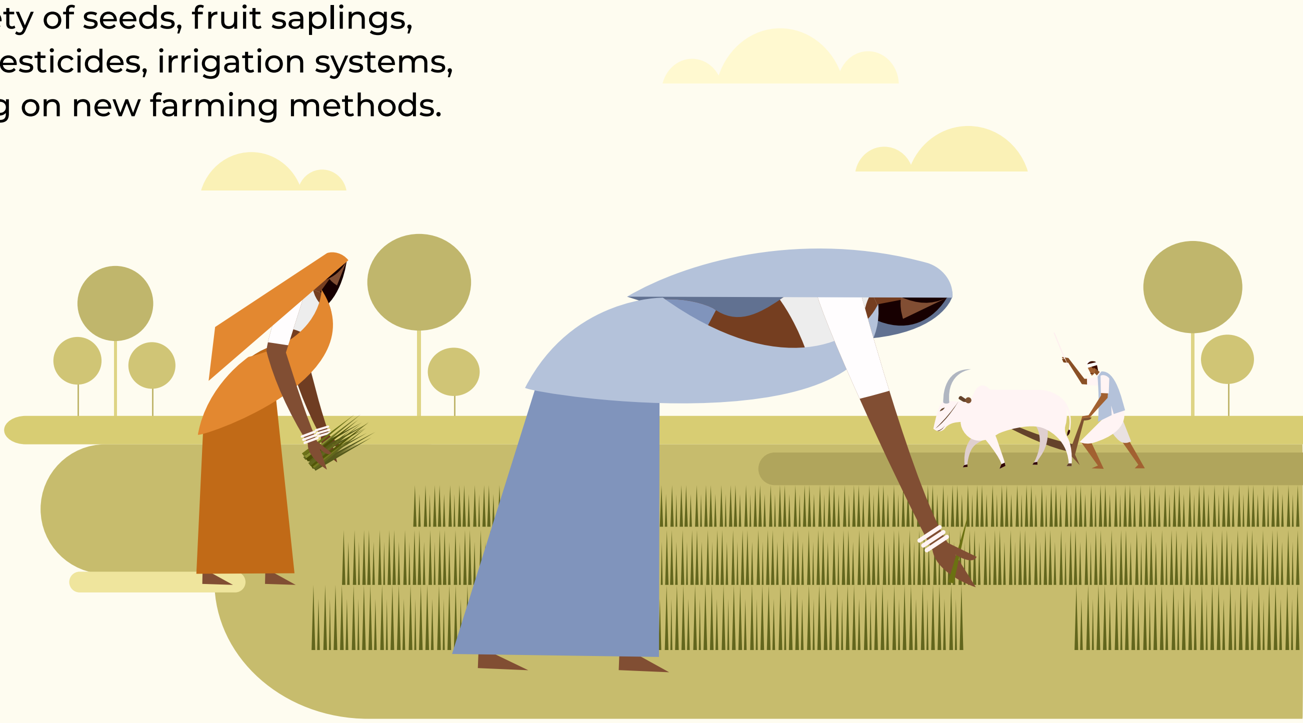
Introduction

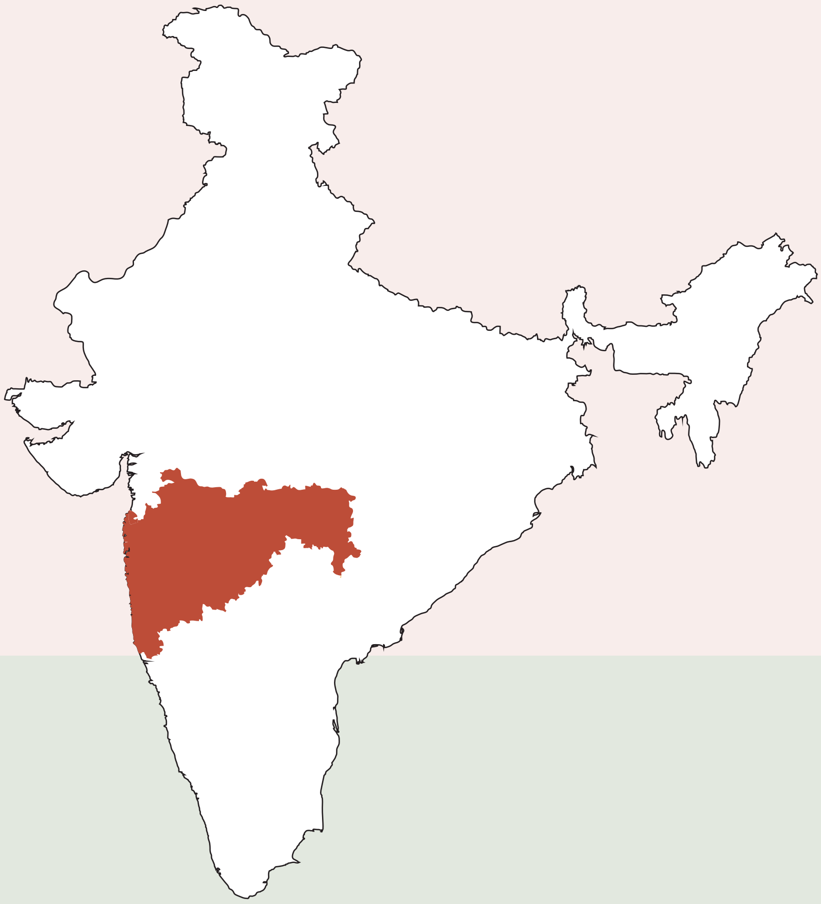
CybageAsha, a public charitable trust, has undertaken several projects with the objective of uplifting rural communities with the help of sustainable interventions at the grassroots level. The projects include infrastructural development, watershed management, and agricultural interventions such as paddy cultivation, wadi development, vegetable farming, and income generation for farmers through modern sustainable agricultural techniques.

The Trust has adopted 19 villages in the Bhor and Velhe Taluka of Pune District, Maharashtra. The interventions began in 2017 and have since helped farmers yield a variety of seeds, fruit saplings, fertilizers, pesticides, irrigation systems, and training on new farming methods.

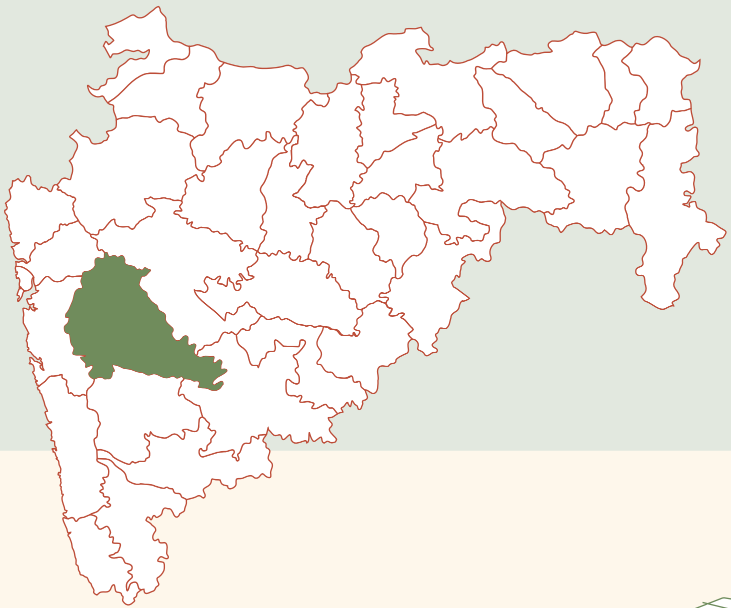


The findings and analysis have helped us highlight the impact of CybageAsha's agricultural interventions on the livelihoods of farmers and provide meaningful recommendations for more interventions in the future.

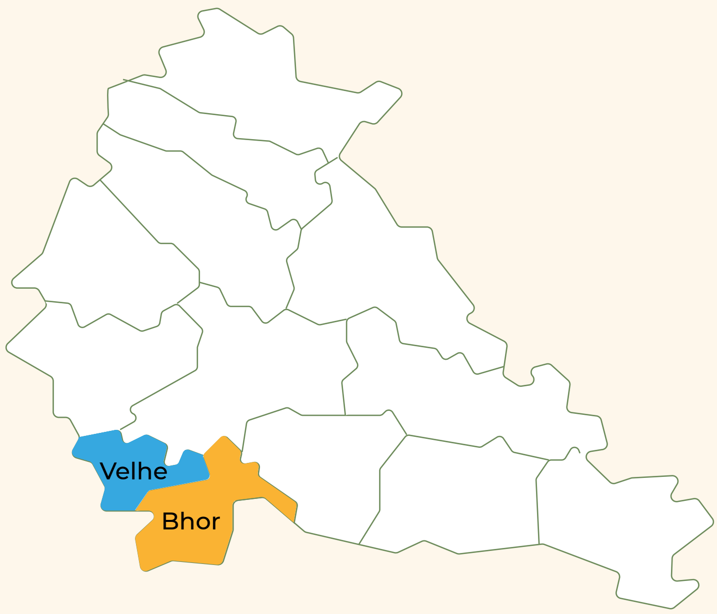
Location of
Maharashtra
in India



Location of
Pune
in Maharashtra



Pune
District showing
Bhor and **Velhe** Talukas



Bhor

Bhor Taluka has 195 villages with 39,007 households, of which 34948 households belong to the rural region and 4059 belong to the urban region.

The villages selected from Bhor Taluka are as mentioned below:

Selected Villages in Bhor Taluka and Year of Adoption

Sr. No.	Village	Cluster	Adopted Year	Distance from Mumbai (KM)	Distance from Pune (KM)
1	Bare Kh.	Bhor Old	2017	199.5	56.4
2	Bare Bk	Bhor Old	2017	200.7	57.6
3	Mhalwadi	Bhor Old	2017		
4	Karnwadi	Bhor Old	2017	208.2	65.2
5	Kiwat	Bhor Old	2017	198.9	55.8
6	**Gawadi**	**Bhor New**	**2020**	**200.8**	**57.7**
7	**Shind**	**Bhor New**	**2020**	**202.7**	**59.7**
8	**Nand**	**Bhor New**	**2020**		
9	**Bramhanghar**	**Bhor New**	**2020**	**192.2**	**49.4**
10	**Malewadi**	**Bhor New**	**2020**		
11	**Mahude Kurd**	**Bhor New**	**2020**	**207**	**63.9**

Velhe

Velhe Taluka has 124 villages in the rural sector. This taluka occupies an area of 569.13 sq. km with a total population of 54516, and 11,248 households in the rural areas.

The villages selected from Velhe Taluka are as mentioned below:

Selected Villages in Velhe and Year of Adoption

Sr. No.	Village	Cluster	Adopted Year	Distance from Mumbai (KM)	Distance from Pune (KM)
1	Sonde Mathana	Velhe Old	2017	191.1	48.1
2	Vadgaon Zanje	Velhe Old	2017		
3	Surwad	Velhe Old	2017	193.2	50.2
4	Bhaginghar	Velhe Old	2017	196.8	53.8
5	**Sonde Sarpale**	**Velhe New**	**2017**		
6	**Sonde Karla**	**Velhe New**	**2020**	**191.3**	**48.3**
7	**Sonde Hiroji**	**Velhe New**	**2020**		

The 2030 Sustainable Development Agenda pledges to “leave no one behind” and brings forth the scope of CybageAsha to make a significant social impact by inducting the entire family as beneficiaries. The marginalized group of women farmers is prioritized, empowering them and closing the gender gap in agriculture.

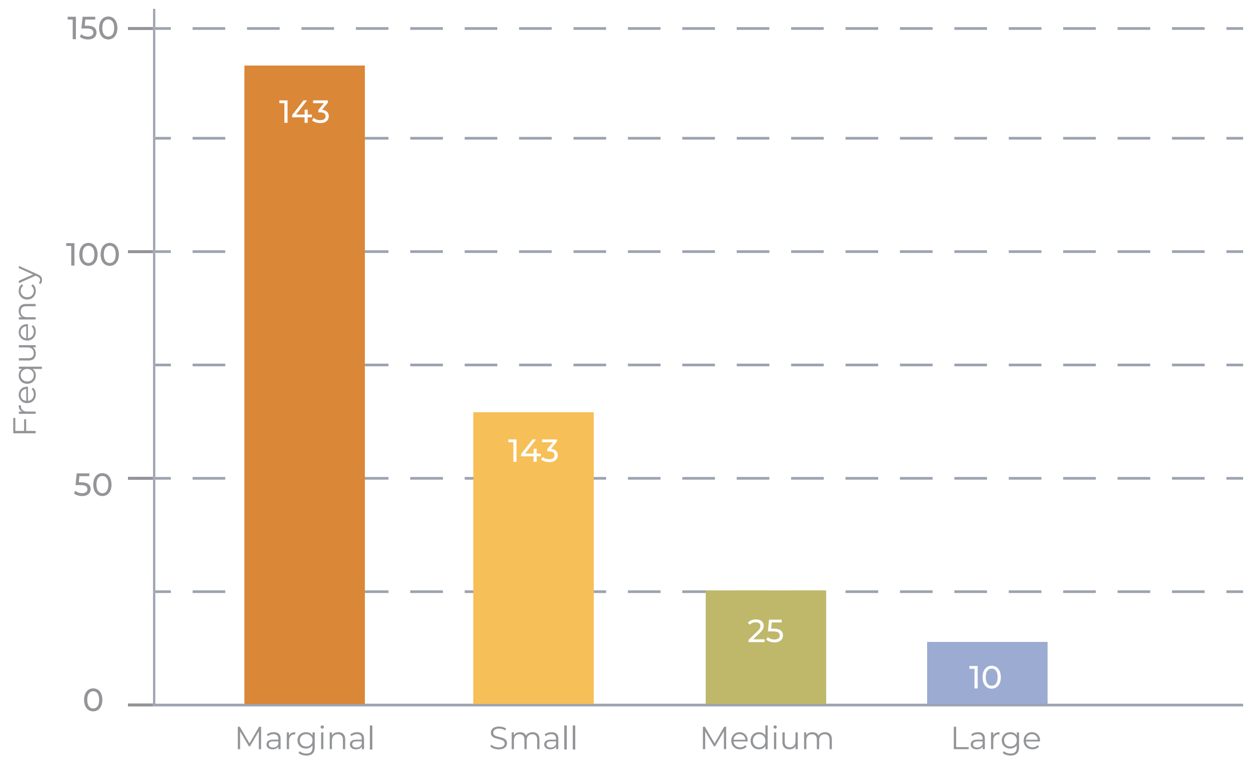
Operational Land (in acres)

Figure 2. represents the ‘Distribution of operational land of respondents’.

- 59.3% of the respondents were marginal farmers (0-2.471 acres of operational land).
- 26.1% of the respondents were small farmers (2.5-4.4 acres of operational land).

There were more number of small and marginal farmers and the average operational holding is 1.1 hectares.

Distribution of Operational Land (in acres) of respondents



Source: Primary Survey

Reasons For Joining As Beneficiaries

- Reap higher profits through increased productivity
- Get better services in agriculture, leading to higher incomes
- Get free inputs, sapling support, and access to resources, such as seeds and farming tools.
- Reduce costs through improved agricultural practices
- Learn about new crop patterns and improved modern farming techniques to help diversify the farm output.
- Ensure steady and reliable earnings throughout the year to enhance the standard of living
- Motivate other beneficiaries to join
- Get support, guidance, motivation, and encouragement from CybageAsha volunteers.

Agricultural Interventions By CybageAsha

Paddy Cultivation

One of CybageAsha's notable interventions was the Paddy Cultivation Project, which helped 139 beneficiaries. These interventions helped enhance agricultural practices, increase food security, and improve the livelihood of beneficiaries. Farmers continued to use inputs, such as hybrid seeds of paddy tag seed cultivation, plant protection chemical spray, and urea briquettes
.

Interventions received as a package of practices under paddy cultivation

interventions received and continued

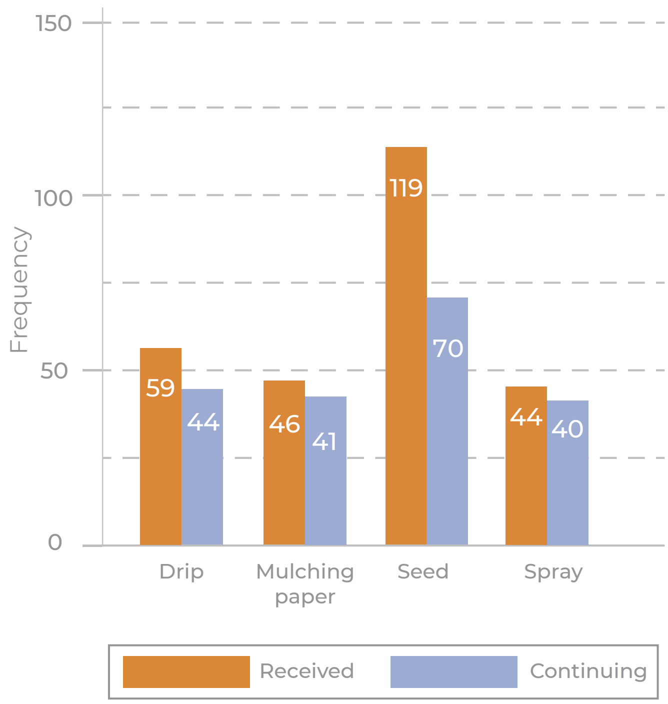
Source: Primary Survey

Vegetable Cultivation & Horticulture

The other direct interventions included vegetable cultivation and horticulture, which impacted 126 individuals. Seeds, drip lines, micro-nutrients, and mulching paper (polyethylene) were distributed for vegetable and wadi cultivation. The majority of farmers have continued using to use such inputs.

Interventions received as a package of practices under vegetable cultivation

interventions received and continued, vegetable cultivation



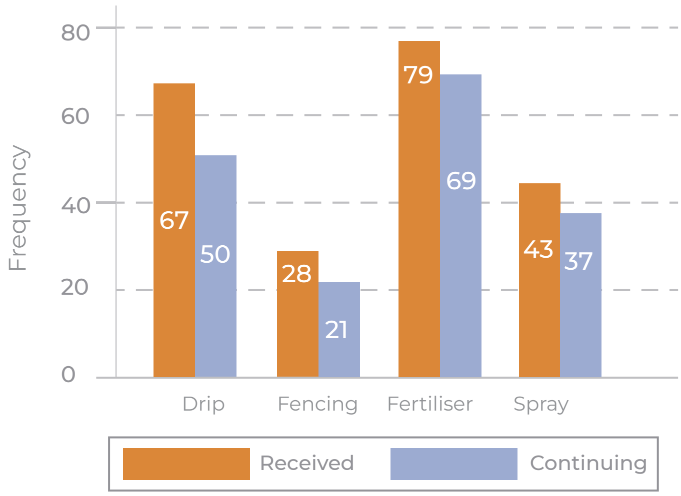
Source: Primary Survey

Wadi Development Project

CybageAsha's Wadi Development Project positively impacted 96 beneficiaries. It involved cultivating fruit crops, such as mango and jamun, and helped support a sustainable livelihood for local communities. The Trust provided saplings, drip lines, fertilizers, and fencing wires to farmers. The majority of farmers continue to use these inputs.

Interventions received as a package of practices under Wadi Cultivation

interventions received and continued, Wadi Cultivation



Source: Primary Survey

Vermicompost Project

Earthworms were used to decompose organic waste and produce nutrient-rich compost. This project contributed to waste management and sustainable farming practices, providing income-generating opportunities for 48 beneficiaries.

Others

The “Others” category encompasses projects not mentioned but are nonetheless significant. Around 300 women benefitted from diverse work, such as sewing, papad-making, and chikki-making, enabling them to generate income and improve their living conditions. Nearly 88.4% of villagers benefitted from multiple interventions.

Survey of 250 Farmers

	Paddy Cultivation	Vegetable Cultivation	Wadi Development	Vermi compost	Others
Project Beneficiary	139	126	96	48	5

Drip lines and mulching paper (polyethylene) used for vegetable and Wadi cultivation

Paddy Cultivation

CybageAsha's interventions helped the farmers improve their cultivation methods remarkably. The intervention led to farmers sowing seeds systematically with proper spacing so that each seedling received sufficient resources. Training on how to use urea briquettes helped increase paddy productivity by 31.3% with a marginal increase in crop acreage.

Farmers reported a significant decrease in the use of chemical fertilizers due to the use of taag seeds before transplanting the paddy on the land. The taag seeds helped decrease the total seed costs required for sowing. With increased yields, net returns increased by 50% per acre.

Average Costs and Profit Analysis of Paddy Cultivation

	Before Intervention	After Intervention	Percentage Change
Crop acreage (acres)	2.0	2.1	5.0
Productivity (kg per acre)	839.7 kg/acre	1102.2 kg/acre	31.3
Total Costs (per acre)	Rs. 13,598.50	Rs. 14,140.60	4.0
Selling Price (Rs. 40 per kg)	Rs. 33,588.00	Rs. 44,088.00	31.3
Net Profits (per acre)	**Rs. 19,989.50**	**Rs. 29,947.40**	**49.8**

Vegetable Cultivation

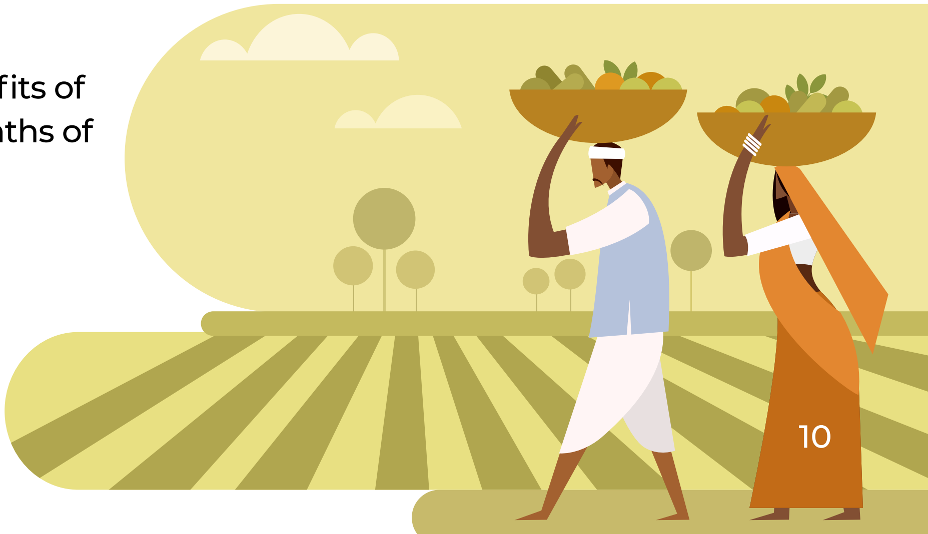
CybageAsha introduced vegetables and fruits, such as cucumber, okra, brinjal, tomato, onion, watermelon, and muskmelon. After intervention, the number of farmers undertaking vegetable cultivation in the villages almost doubled, and the villagers began to undertake multiple-crop farming.

Table shows the difference in costs and net returns per acre of the land.

Farmers could reap average net profits of Rs. 36,326 per acre within 2 to 3 months of cultivation.

Average Costs and Profit Analysis of Vegetable Cultivation

	Before Intervention	After Intervention	Percentage Change
Crop acreage (acres)	0.6	0.9	50.0
Total Costs (per acre)	Rs. 34,865.9	Rs. 34,271.6	-1.7
Net Profits (per acre)	**Rs. 27,510.9**	**Rs. 36,326.1**	**32.0**



Cropping Pattern

CybageAsha's interventions helped increase the vegetable and orchards plantations in both the talukas.

Table shows the cropping pattern of farmers pre and post CybageAsha's program intervention.

Cropping Pattern

Crops	Bhor (n=153)		Velhe (n=97)		Total (n=250)	
	Before	After	Before	After	Before	After
Kharif						
Paddy	95.7	95.5	96.3	96.3	95.9	95.8
Pulses	0.7	1.3	2.1	3.1	1.2	2.0
Oilseed	0.7	3.9	1.0	2.1	0.8	3.2
Millet	7.8	9.2	1.0	0.0	5.2	5.6
Rabi						
Vegetables	8.5	19.6	24.7	41.2	14.8	28.0
Oilseed	4.6	9.2	5.2	9.3	4.8	9.2
Pulses	3.3	4.6	9.3	13.4	5.6	8.0
Maize	0.0	1.3	4.1	3.1	1.6	2.0
Wheat	5.2	5.9	25.8	29.9	13.2	15.2
Millets	12.4	11.8	14.4	15.5	13.2	13.2
Melon	0.7	1.3	3.1	5.2	1.6	2.8
Flower	0.7	0.7	9.3	12.4	4.0	5.2
Perennial						
Fruits/Wadi	1.3	14.4	23.7	57.7	10.0	31.2

Source: Primary Survey
Note: 'n' is the sample size. Units are in percentage.

Wadi Development

The wadi intervention benefitted over 97 farmers. In 2021, 89 farmers received 160 mango saplings, and 71 farmers received 105 jamun saplings. The Trust provided fencing wires, fertilizer sprays, drip sets, and training sessions. The crop survival rate was around 90%. These programs will start bearing fruit from the agricultural year 2024 – 25 onwards.

Ownership of Household Assets

Table shows an increase in household assets after the interventions by CybageAsha. Acquisition of cars and refrigerators increased from 14 to 21 and from 98 to 119 respectively.

There was a moderate increase observed in the number of motorcycles, televisions, mobiles, and gas cylinders.

Ownership of Household Assets before and after Intervention

	Before Intervention	After Intervention	Difference	Percentage Change
Motorcycle	140 (56)	151 (60.4)	11	7.8
Car	14 (5.6)	21 (8.4)	7	50.0
House	238 (95.2)	238 (95.2)	0	0
Television	159 (63.6)	169 (67.6)	10	6.3
Mobile	210 (84)	220 (88)	10	4.8
Refrigerator	98 (39.2)	119 (47.6)	21	21.4
Gas Cylinder	204 (81.6)	213 (85.2)	9	4.4
Bank Account	220 (88)	220 (88)	0	0

(Figures in brackets are in percentage)

Field visits and interaction with the beneficiaries

Ownership of Agricultural Assets

The ownership of agricultural assets, such as weed removal machines, mulching paper, electric motor/lift irrigation, and drip sets increased significantly after the intervention. There was also an increase in the ownership of tractors, wells, and cattle sheds.

Ownership of Agricultural Assets Before and After Intervention

	Before Intervention	After Intervention	Difference	Percentage Change
Bullock Cart	43 (17.2)	16 (6.4)	-27	-62.8
Open Well	26 (10.4)	41(16.4)	15	57.7
Tube Well/Bore Well	19 (7.6)	24 (9.6)	5	26.3
Electric Motor/Lift Irrigation	48 (19.2)	113 (45.2)	65	135.0
Tractor	17 (6.8)	29 (11.6)	12	70.6
Drip Set	0	49 (19.6)	49	
Cattle Shed	90 (36)	104 (41.6)	14	15.6
Weed Removal Machine	2 (0.8)	27 (10.8)	25	1250.0
Mulching Paper	6 (2.4)	54 (21.6)	48	800.0

(Figures in brackets are in percentage)

Field Visits and Agricultural Assets

Change in Income

After the interventions, nearly 86.8% of beneficiaries reported an increase in their income. Only 0.8% of farmers reported a decrease in their income, and about 12.4% of farmers reported no change in their income.

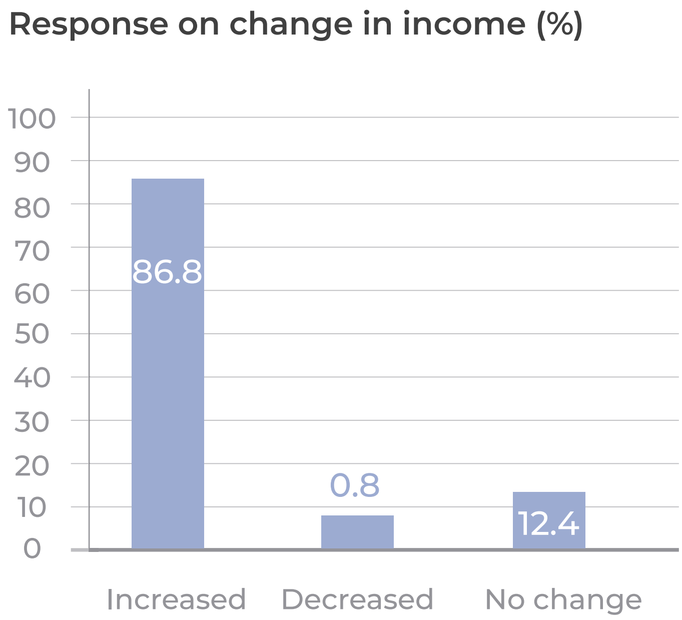


Table shows that post-intervention, the mean net income increased from Rs. 17,831 to Rs. 27,732, with a remarkable increase of 55.5% in the income levels of an average beneficiary farmer.

Hypothesis Testing for the Impact of CybageAsha's Intervention on Farmers'

	Net Income Before Intervention	Net Income After Intervention
Mean	17830.6	27732
Standard Deviation	80789.13	105810.63
Frequency	250	250
t-value	-4.0776	
p-Value	0.000	

Change in Income

After the interventions, the mean yield of paddy increased from 869 kg per acre to 1122 kg per acre. This shows 29.1% growth in the yield levels of an average beneficiary farmer.

Comparison of Production of Paddy: Control vs. Beneficiary

The mean production of beneficiaries was 2029.56 kg, i.e., 879.76 kg greater than the control group.

Hypothesis Testing for Impact of CybageAsha's Intervention on Paddy Production

	Control Group	Beneficiary
Mean	1149.80	2029.56
Standard Deviation	1441.27	2011.28
Frequency	60	139
t-value	-3.69	
P-Value	0.000	

Change in Net Profit

The net profit of farmers went up from Rs. 10,646 to Rs. 17,935 after the intervention of CybageAsha.

Comparison of Net Profit per Acre Control vs. Beneficiary

The net profit of beneficiaries per acre was Rs. 15,397—which means that the total profit of Rs. 5,518.30 was more than the control group.

Advantages of being beneficiaries of CybageAsha

The report shows a significant increase in skill development, increased incomes, enhanced decision-making capabilities, and self-confidence. The other benefits included increased awareness of the importance of education, health, sanitation, and improved quality of life.

Benefits of being a Beneficiary of CybageAsha

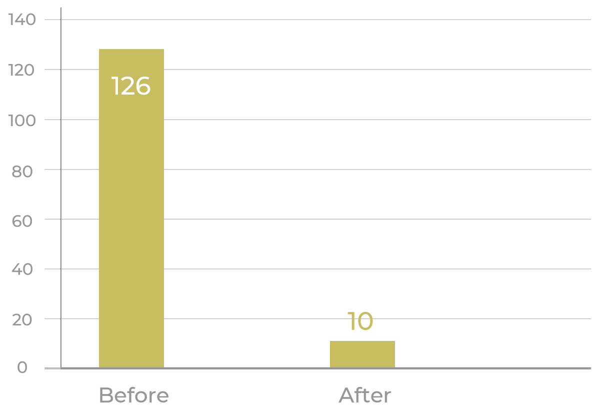
Benefits of being Beneficiary	Frequency
Skill development	198
Improved income	185
Self-confidence	145
Other	11
No Response	9

Migration Trends

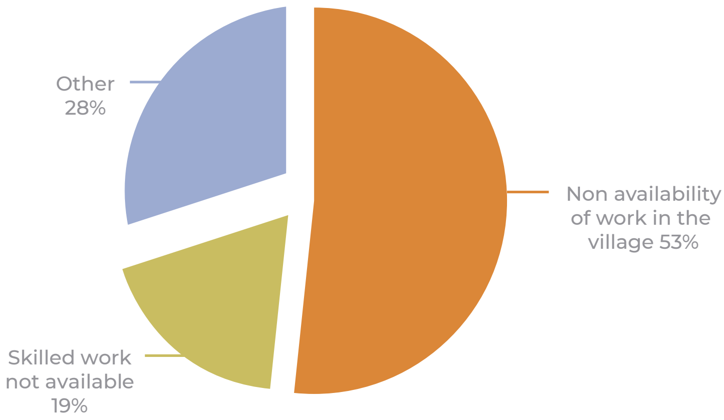
Of the 250 beneficiary households, 126 (93%) members migrated before the intervention, while only 10 (7%) members migrated after the intervention.

CybageAsha's intervention helped the villagers diversify into vegetable and wadi cultivation, thus enhancing livelihoods.

Migration of people before and after intervention



Reasons for migration



Quality of Life

Water and Sanitation

Villagers who did not have access to water facilities had to travel up to 2 km to get water. Due to CybageAsha's intervention program, 229 to 240 families could have access to drinking water facilities. Around 185 to 210 farmers shifted to tap water facility.

Drinking Water and Sanitation Facility

	Before Intervention	After Intervention	Difference	Percentage Change
Drinking Water				
Drinking Water	229	240	11	4.8
Tap Water	185	210	25	13.5
Other sources of water	5	17	12	240.0
Sanitation Facility				
Toilet	235	238	3	1.3

Education

Out of 250 beneficiaries, children from only 112 households were going to schools.

Number of school dropouts in the last five years and those who availed

Education	Frequency
Households with children going to school	112
Children dropped out in the last five years	5
Children in households that availed scholarships	17

In the last five years, almost 97% of the beneficiary households reported zero school dropouts. The beneficiaries were happy with the overall quality of education and the midday meals provided by the schools in the villages, which contributed to the lower dropouts in both the talukas.

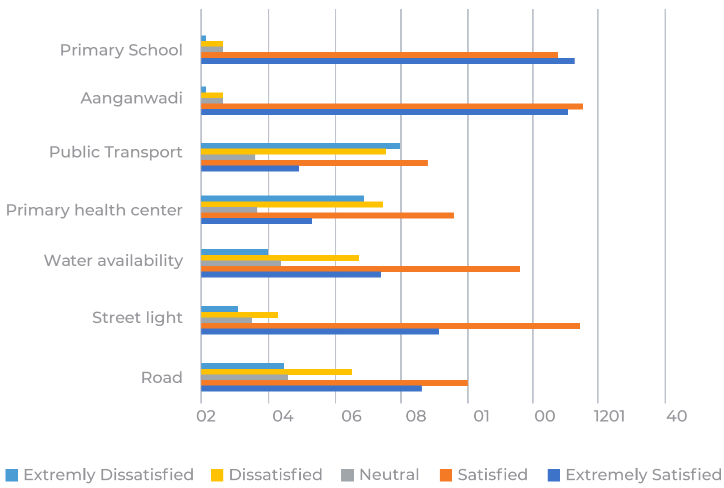
Village Infrastructure

After CybageAsha's intervention, 19 villages could get access to primary schools and Aanganwadis.

- 94% of beneficiaries are satisfied with the Aanganwadi and the primary schools.
- 48% of farmers are happy with the primary health centers.
- 61% and 79% of farmers find the condition of roads and street lights satisfactory.

Note: The infrastructure included connectivity through roads, streetlights, water availability, primary health centers, primary schools, and Aanganwadis.

Number of people satisfied with the village infrastructure



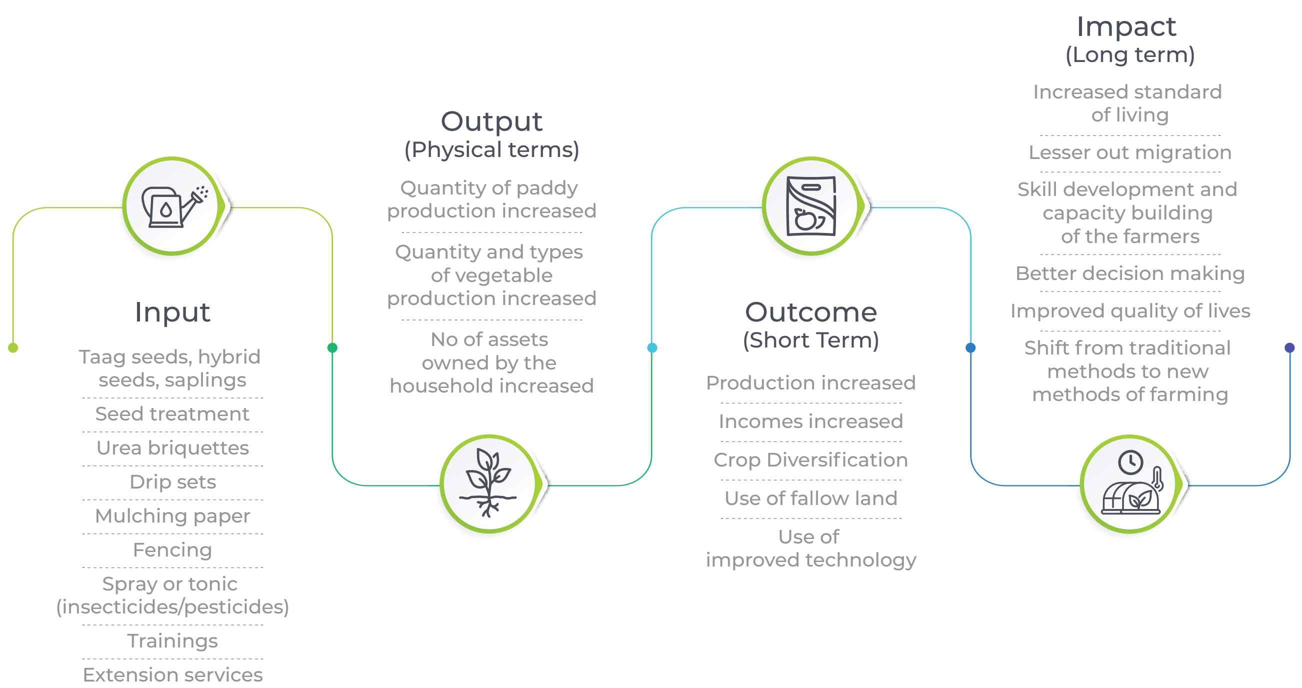
Selling Options

- 51% of farmers sold their produce in the markets in the neighboring villages.
- 29% of farmers sold their produce in the markets in the city.
- 16% of farmers preferred to sell their produce in the APMC Mandi.
- 4% of farmers sold their produce among neighboring households.

Selling Options

Selling options	Percentage
Markets in nearby villages	51.0
Send to market in cities	29.0
APMC Mandi	16.0
Among neighboring households	4.0

Theory Of Change



Strength Weakness Opportunity Challenges

Strength

- Active participation from the farmers
- Eagerness to learn new agricultural techniques
- Forthcoming and approachable supervisors
- Regular trainings and supervision by the authorities

Weakness

- Lesser women participation
- SHG's not very active

Opportunity

- Crop diversification
- Bamboo cultivation
- More women engagement
- Capacity building of women through SHGs
- Close proximity to pune city-for livelihood and market access
- Spillover effect by sharing videos of best practices

Opportunity

- Storage
- Transportation for selling the produce
- Enhancing market access for the increased produce (institutional infrastructure)
- Water issues in remote villages of bhor taluka
- Use of barren and fallow land on the hills
- Access to public transport facilities, especially in velhe taluka

Sustainable Development Goals Linkage

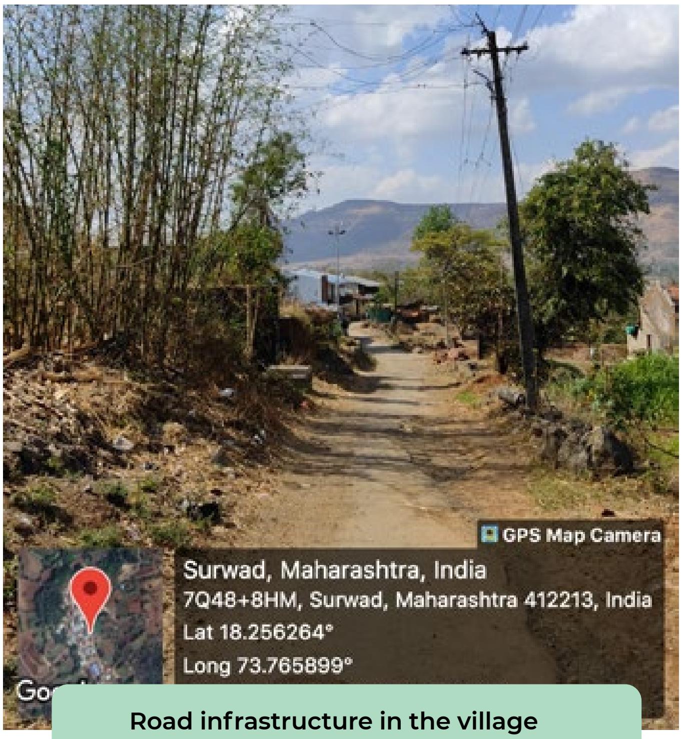
Mapping with the SDGs

SDGs	Observations
GOAL 1 - No Poverty	Enhanced awareness of sustainable means of agriculture increased the monthly income of the members. Diversification into vegetable cultivation and horticulture created alternative sources of income for the beneficiaries.
GOAL 2 - Zero Hunger	Training and support in growing vegetables in the non-paddy season on the same land led to alternative sources of income for those farmers who wanted to sell the produce but had to do subsistence farming.
GOAL 3 - Good Health and Well-Being	Awareness of healthcare facilities among villagers.
GOAL 4 - Quality Education	Awareness of the importance of education among beneficiaries after joining the program. Reduction in the number of school dropouts.
GOAL 5 - Clean, Water, and Sanitation	All surveyed members had access to safe drinking water from varied sources, such as tap water, filter water, and water ATMs. CybageAsha provided the means for toilet construction in rural areas and access to proper toilets.

Village Infrastructure

School in Sonde Horoji village

House in the village

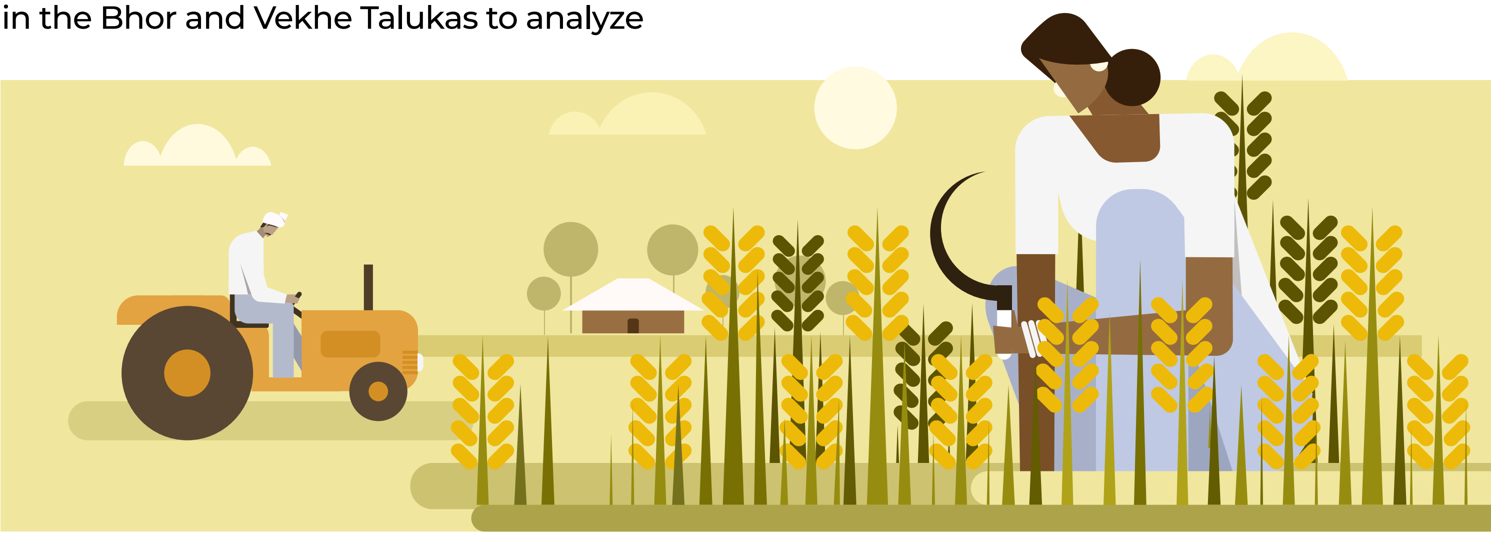


Road infrastructure in the village

Barren land transformed in to a fertile land

CybageAsha has taken the initiative to improve the lives of the needy and underprivileged farmers and villagers of the rural areas of Bhor and Velhe Talukas. The aim is to provide infrastructural support by providing sanitation facilities, safe drinking water, constructing internal roads and building schools, among many others.

The survey was carried out in 19 villages in the Bhor and Vekhe Talukas to analyze the work done by CybageAsha and the impact on the beneficiaries and non-beneficiaries from these villages. Several factors that contributed to the overall improvement in productivity, income, and net profits after adopting new technologies in paddy cultivation, wadi project, vegetable cultivation, and vermicomposting were studied as a part of the Impact Analysis.



Agriculture

Advanced agricultural practices were promoted to support **'Paddy Cultivation.'** It helped increase productivity, improve food security, and increase the livelihood of the beneficiaries. Many farmers were willing to adopt the use of taag seeds and urea briquettes.

The **Wadi Development Project**, however, faced some challenges due to the discontinuation of support by some households. For implementing the long-term benefits of the study, the reasons for the discontinuation of the program need to be studied.

The **Vermicompost project** contributed to sustainable farming practices and waste management, providing significant income-generating opportunities for the beneficiaries.

CybageAsha focused on vegetable cultivation, watermelon, and flowers, providing the farmers with vegetable seeds and flower saplings along with insect traps. The farmers realized the importance of these resources in increasing production and continued their usage.

The adoption of new farming methods improved livelihoods and encouraged non-beneficiaries to be a part of the projects. The agricultural initiatives succeeded in lowering the cost of cultivation and resulted in higher profits.

Women's Empowerment

CybageAsha also provided opportunities to women, such as sewing and papad-making, to help women generate income and improve their living conditions.

Education

Farmers needed knowledge, awareness, training, and support to implement new farming methods. Some of the villagers attained technical education or higher education with CybageAsha's support. Thus, the initiatives implemented by CybageAsha have helped increase the income of households due to successful crop diversification.

Healthcare and Transport

Although the provisions of basic amenities, such as sanitation and drinking water were satisfactory, there was an urgent need for concrete roads in the villages. The quality of services provided at the Primary Health Care Center also needed improvement.

The interventions of CybageAsha have positively impacted the income of farmers' income and has encouraged farmers to adopt new technologies and crops. However, there is a need for continuous support and improvement in sustaining the benefits for farmers. Addressing the challenges and concerns identified in the data analysis will further enhance the effectiveness of rural uplifting initiatives.

A beneficiary showing his farm

Focus group discussion with women

Beneficiary—a member of Farmer Producer Company selling watermelons

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Acknowledgement

We thank CybageAsha for the opportunity to conduct the Impact Assessment for the Agricultural Interventions in 19 Villages in Bhor and Velhe Taluka of Maharashtra. We thank the CSR team for the cooperation and support throughout the Impact Assessment Program.

We are grateful to Mr. Prashant Mahamuni for providing us with logistic support at all times. We also thank Mr. Sagar Sahane for his tireless efforts.

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