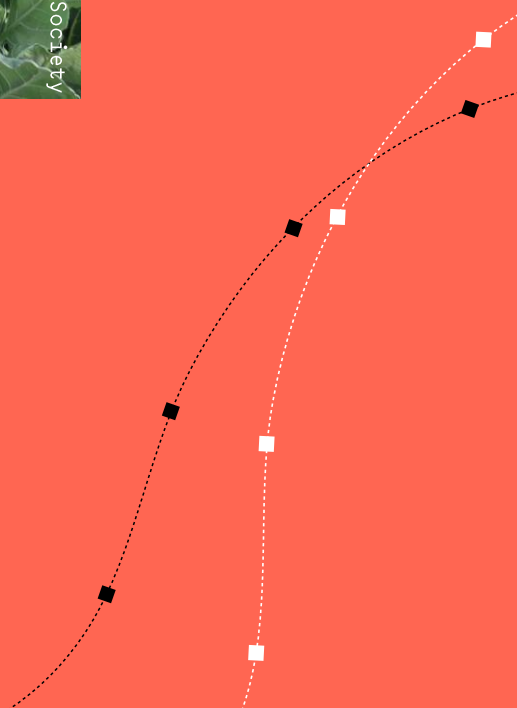


Bayer Seminis Fortaleza

Impact Performance Report



60__decibels



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About This Report

Bayer Seminis partnered with 60 Decibels to speak directly with their farmers growing Fortaleza seeds, about their experience with the seeds and types of changes it has brought about on their farms and in their lives.

Bayer Seminis Fortaleza, as a hybrid cauliflower seed, offers sturdy and protective wrapper leaves, along with climactic adaptability, which makes it well-suited for winter harvest. For a farmer, it aims to minimize wastage and harvest losses during transportation and offer a cauliflower variety that is more attractive to buyers and thereby, lucrative for their livelihood.

60 Decibels' Lean Data researchers conducted phone interviews with 281 farmers who grow Fortaleza cauliflowers across 4 states in India. These surveys were conducted post the harvest season, between March - April of 2024. This report presents insights based on our analyses of the information they shared with us.

For details about our methodology, please refer to page [22](#).

“

My earnings have increased. We get more yield on the same land and at the same cost. With the increase in savings, I could plan my daughter's wedding very well and even saved some money for my future.

- Male, 38, Rajasthan



Source: Haryana, India, 2024

Top Insights

1

Fortaleza growers are realizing better cauliflower yields and lower post-harvest losses.

Farmers typically sold 8,500 kgs of Fortaleza cauliflowers, which is 13% more than what they would have sold with a regular variety (median of 7,500 kgs). 93% also report an increase in their overall production. The higher volumes are supplemented by 83% of farmers reporting that none of their harvest was rejected by buyers due to long transport, and 80% saying that none of their produce was wasted. Around 80% of farmers also say that both rejection and wastage rates are lower with Fortaleza compared to other cauliflower varieties, with more than half saying it is much lower. See pages [10](#) and [12](#).

2

Higher yields, combined with better prices for Fortaleza cauliflowers, are having a positive impact on the overall livelihood of farmers.

Farmers report a higher median price per kg for Fortaleza cauliflowers than regular cauliflowers (INR 19.5 vs. 16.5). Consequently, 9 in 10 farmers report an increase in their money earned, with a median jump of nearly 45% in their earnings compared to regular cauliflower varieties. The majority report an improved quality of life because of Fortaleza, with increased savings and business investments emerging as the top drivers. 9 in 10 farmers also report reduced stress since using Fortaleza seeds. See pages [13](#) – [15](#).

3

Farmers are highly satisfied with the price charged for Fortaleza seeds, the quality of its produce, and find it easy to market Fortaleza to buyers.

Fortaleza's Net Promoter Score is 72, which is excellent and indicates high farmer satisfaction. Fortaleza's NPS does not significantly vary by a farmer's tenure growing Fortaleza, nor their place of residence. Promoters value the good quality of cauliflowers, high yields from Fortaleza seeds, and minimal effort required to grow the hybrid. Additionally, 9 in 10 farmers report that the price charged for Fortaleza seeds is better, and Fortaleza is easier to sell to buyers, compared to other cauliflower varieties. The NPS for farmers who find Fortaleza's price to be 'much better' than other cauliflower varieties is significantly higher compared to other farmers (92 vs 59) indicating the relationship between price perception and satisfaction. See pages [17](#) and [19](#).

4

Although not many farmers report challenges with Fortaleza, there is room to improve their on-ground experiences.

11% of farmers report facing a challenge with Fortaleza. Expectedly, farmers report seed-related challenges— they want to see better quality of cauliflowers (6%) and higher pest resistance (2%). However, 5% of farmers also complain about lack of support from on-ground agents. The NPS of farmers who do not face any challenges with Fortaleza is significantly higher compared to those facing challenges (86 vs -44). See page [18](#).

Action: When farmers were asked about their top way of farming improvements, 2 in 5 talk about access to timely advice as the top driver. Consider evaluating additional ways in which agents can offer timely assistance to Fortaleza growers.

Performance Snapshot

The performance column showcases how you compare to 60 Decibels Farmer Benchmarks in the Farmer as Customer sub-sector globally.

Performance vs 60dB Benchmarks

- ○ ○ ○ ○ BOTTOM 20%
- ● ○ ○ ○ BOTTOM 40%
- ● ● ○ ○ MIDDLE
- ● ● ● ○ TOP 40%
- ● ● ● ● TOP 20%

Benchmark Overview

Global geographical focus Farmer as Customer sub-sector Focus 25 companies included 6,209 voices listened to



Who are you reaching?

	Fortaleza	Benchmark	Benchmark Performance
% of females	0%	28%	● ○ ○ ○ ○
Inclusivity Ratio	0.72	0.86	● ● ○ ○ ○



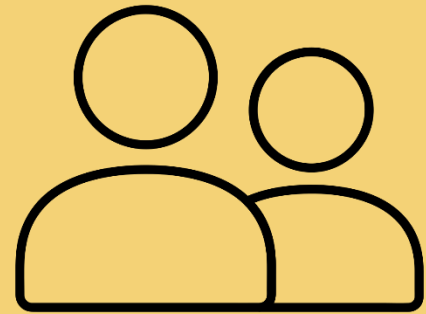
What impact are you having?

% reporting 'very much improved' way of farming	34%	52%	● ○ ○ ○ ○
% reporting 'very much increased' production	42%	39%	● ● ● ● ○
% reporting 'very much increased' farm earnings	39%	33%	● ● ● ● ○
% reporting 'very much improved' quality of life	35%	37%	● ● ● ○ ○



How satisfied are your farmers?

Net Promoter Score®	72	46	● ● ● ● ●
% experiencing challenges	11%	18%	● ● ● ● ●
% saying that the price is 'very good'	37%	-	-

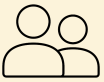


01: Profile

This section helps you understand your farmer base, and if you are reaching a previously underserved population.

The key indicators in this section are:

- **Demographics:** What is a typical farmer using Fortaleza like?
- **Inclusivity Ratio:** Are you reaching less well-off farmers? How representative is your farmer base of the national population of the country you are working in?



The typical farmer we spoke to is a 40-year-old male who has been growing Fortaleza cauliflowers for 2 years.

About the Farmer
(n = 281)



0%
Female farmers*
Male farmers: 100%



2
Median engagement with Fortaleza
(In years)



40
Median age
Youngest: 20
Eldest: 73



57%
Rajasthan
Haryana: 32%
Uttar Pradesh: 9%
Delhi: 2%



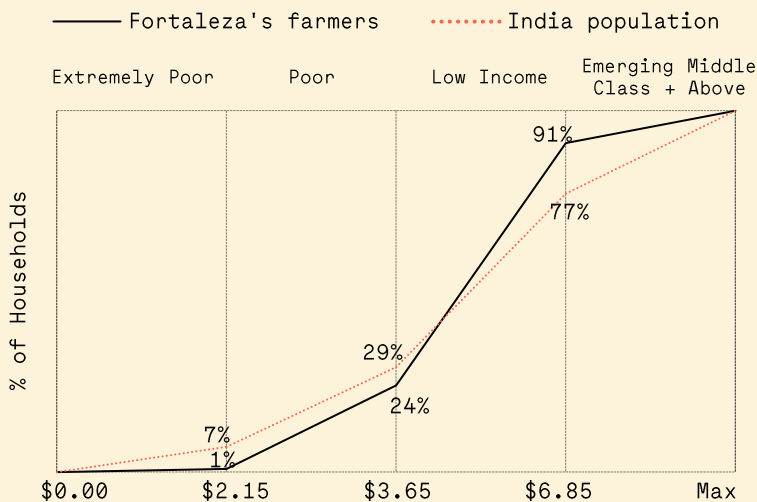
7
Median household size

*All farmers in our sample frame (1,682 farmers) were male. These results are internally valid for this sample frame. We do not have information on the wider group of farmers to ascertain representativeness of our sample of the farmer population.

24% of Fortaleza’s farmers live under \$3.65 per day, which is slightly below than the national average in India (29%).

Farmers’ Income Distribution Relative to India Average

% living below \$x.xx per person per day (2017 PPP) (n = 276)



Inclusivity Ratio

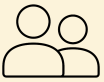
Degree to which Fortaleza is reaching low-income farmers in India (n = 276)

0.72

1 = parity with population;
> 1 = over-serving;
< 1 = under-serving.
See [Appendix](#) for calculation.



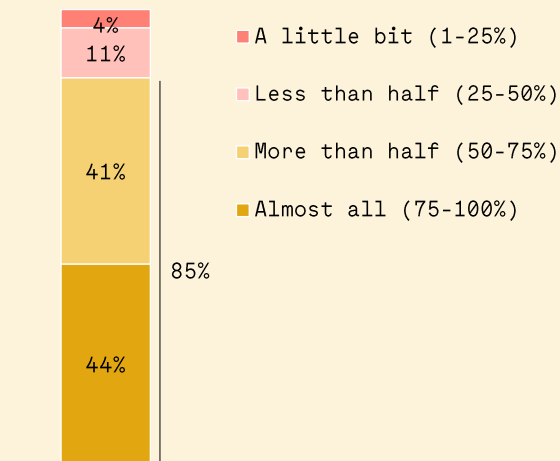
BOTTOM 40% - 60dB Benchmark



For 44% farmers, Fortaleza constitutes ‘almost all’ of their total cauliflower harvest in the last 12 months.

Fortaleza Contribution to Cauliflower Production

Q: In the last 12 months, what proportion of your total cauliflower harvest was Fortaleza? (n = 281)



Insight

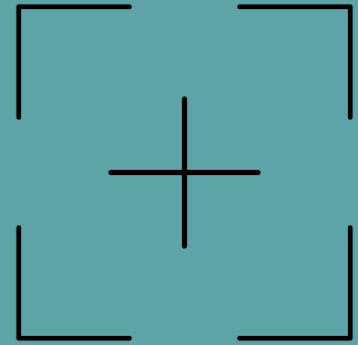
Farmers who report that ‘almost all’ of their cauliflower harvest was Fortaleza are significantly more likely to report that Fortaleza has a ‘much lower’ rejection rate (than regular varieties), compared to those who had a lower share of Fortaleza in their total harvest (63% vs. 45%).



“

The Fortaleza cauliflowers are really heavy, between 1-2 kgs each. The plants are strong and have high demand in the market. They are tasty and stay fresh.

- Male, 48, Rajasthan



02: Impact

We believe that the best way to understand the social impact that you are having, is to simply ask farmers whether their livelihood and farm outcomes have changed as a result of access to your offering, and if so, how.

This section shows the degree to which you are impacting your farmers' farm and their livelihoods.

The key indicators in this section are:

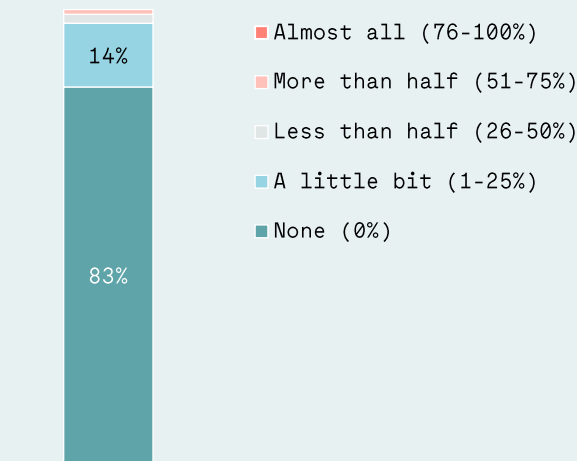
- **Harvest Decay and Wastage:** What proportion of farmers' harvest with Fortaleza was wasted or rejected by the buyer?
- **Way of Farming:** Have farming practices changed because of farmers' interaction with Fortaleza?
- **Production and Earnings:** To what extent are farmers experiencing production and earning changes because of Fortaleza?
- **Quality of Life Change:** To what extent has the quality of life of your farmers changed?



83% of farmers say that none of their Fortaleza harvest was rejected by buyers. This was lower than with regular cauliflowers.

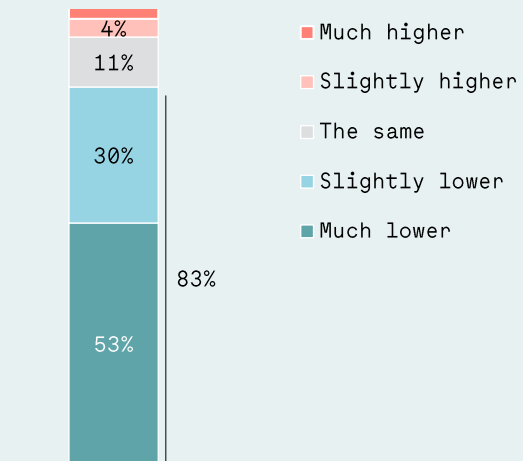
Transport Losses

Q: Think about the last batch of Fortaleza cauliflowers you sold. Roughly what proportion (%) of it were rejected by the buyer, that is, they were not fit for selling due to long distance transportation? (n = 281)



Change in Transport Losses With Fortaleza

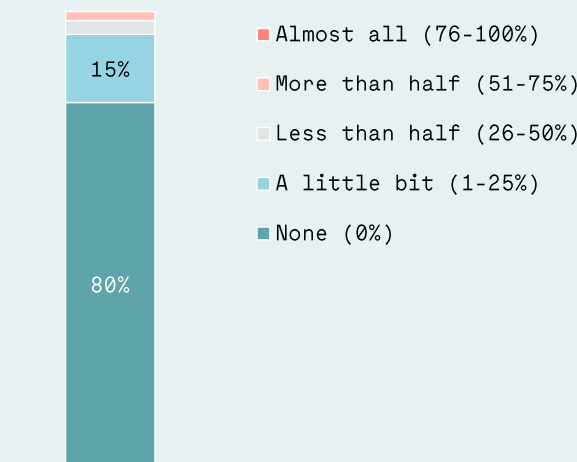
Q: Was this proportion higher, lower, or about the same as what you would have seen if you planted regular cauliflower? (n = 281)



Similarly, 80% of farmers say that none of their Fortaleza harvest was wasted. This was also lower compared to regular cauliflowers.

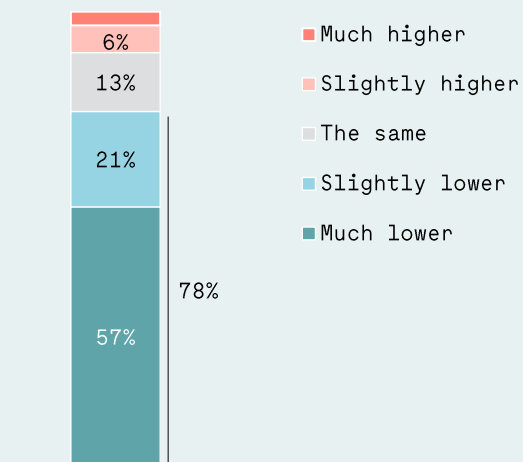
Harvest Wastage

Q: Think about the last batch of Fortaleza cauliflowers you harvested. Roughly what proportion (%) of it was wasted – that is, it could not be sold or consumed? (n = 281)



Change in Harvest Wastage With Fortaleza

Q: Was this proportion higher, lower, or about the same as what you would have seen if you planted regular cauliflower? (n = 281)

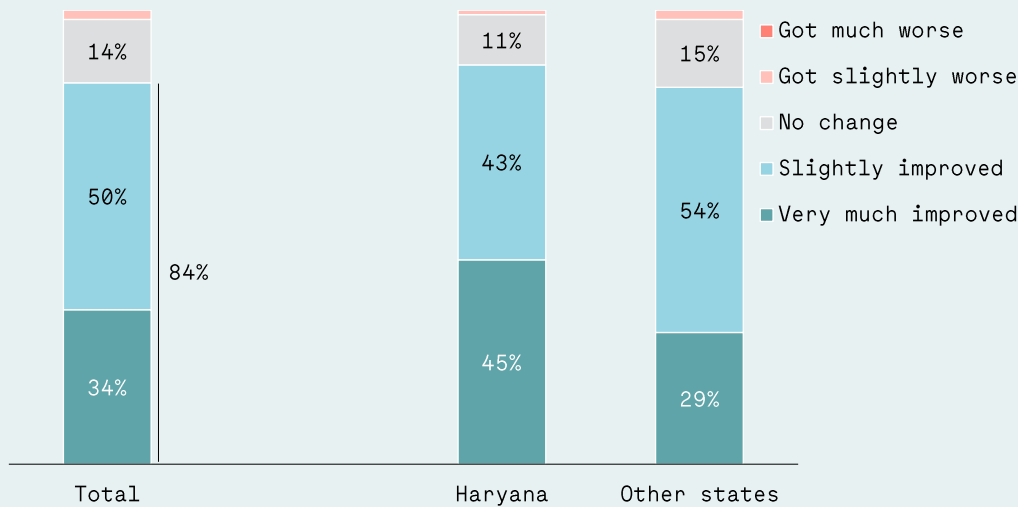




84% of farmers report that their way of farming has improved because of growing Fortaleza seeds.

Change in Way of Farming

Q: Has your way of farming changed because of Fortaleza? (n = 279, Haryana = 89, Other states = 190)



●○○○○

BOTTOM 20% 60dB - Benchmark

Farmers talk about timely access to farm advice as their top self-reported way of farming improvement.

Improvements in Way of Farming

Q: How has your way of farming improved? (n = 236). Open-ended, coded by 60 Decibels.

46%

talk about **timely access to farm advice**

(39% of all respondents)

“Field agents guided us on farming patterns to be followed, such as how much fertilizer and water to be used.” - Male, 56, Rajasthan

18%

mention **better management of crop diseases***

(15% of all respondents)

“With Fortaleza seeds, fewer pests like caterpillars attack, and hence the crop production is very good.” - Male, 35, Haryana

17%

report **reduced fertilizer usage**

(14% of all respondents)

“Fortaleza seeds require less fertilizer and less manure compared to other seed varieties.” - Male, 48, Rajasthan

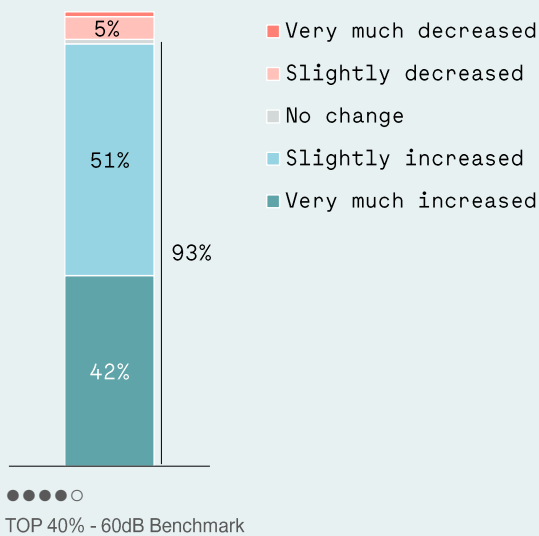
*Responses pertain to both the better management of diseases through advisory from Fortaleza agents as well as because of the inherent quality of Fortaleza seeds.



Nearly all farmers report an increase in production. 57% achieved higher yields from the same land, indicating higher productivity.

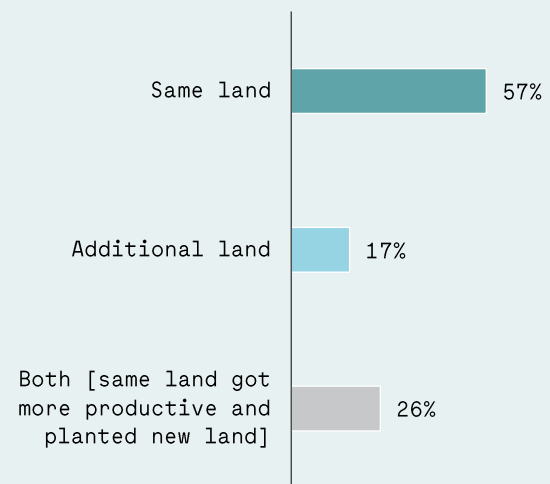
Change in Production

Q: Has the total production from your cauliflowers changed because of Fortaleza? (n = 281)



Reasons for Increase in Production

Q: Was this increase because you planted additional land or was it from the same amount of land? (n = 262)



Farmers typically sold 8,500 kgs of Fortaleza cauliflowers, which is more than the regular variety that they would have sold.

Absolute Production and Price: Fortaleza vs. Regular Cauliflowers*

- Q: In the most recent season, how many [units] of Fortaleza cauliflowers did you sell?
- Q: In a typical season, how many [units] of regular cauliflowers would you have sold, without Fortaleza?
- Q: In the most recent season, what price on average did you receive per [unit] for Fortaleza cauliflowers?
- Q: In a typical season, what price on average would you have received per [unit] for regular cauliflowers, without Fortaleza? (n = 281)



Median Fortaleza cauliflower yield
8,500 kgs

Min: 2,000 kgs
Max: 77,500 kgs



Median regular cauliflower yield
7,500 kgs

Min: 1,750 kgs
Max: 55,000 kgs



Median price/kg of Fortaleza
INR 19.5 / USD 0.23

Min: INR 6.5
Max: INR 34



Median price/kg of regular cauliflower
INR 16.5 / USD 0.20

Min: INR 6
Max: INR 29

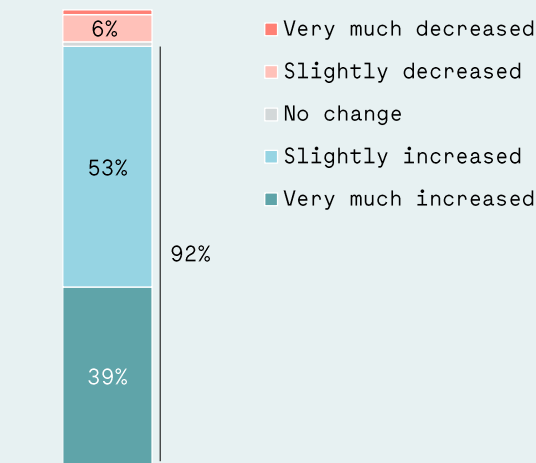
* See [Appendix](#) to learn more about the calculations and conversions.



9 in 10 farmers report an increase in their crop earnings. Overall, we see a 45% uptick in total earnings using Fortaleza.

Changes in Earnings

Q: Has the money you earn from cauliflowers changed because of Fortaleza? (n = 281)



●●●●○
TOP 40% - 60dB Benchmark

Absolute Earnings*

Price per unit x cauliflower yield reported by farmers. (n = 281)



Median income from Fortaleza

INR **1,55,000**

Min: INR 34,874
Max: INR 8,75,000



Median income from regular cauliflowers

INR **1,10,250**

Min: INR 22,500
Max: INR 5,60,000



Median estimated increase in earnings

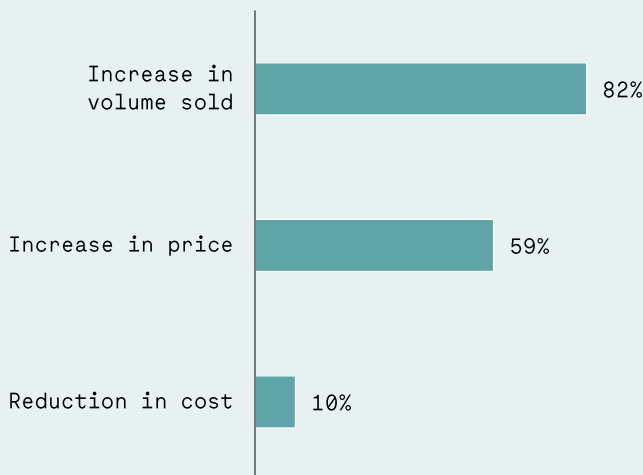
INR **43,750**

(~45% uptick in total median earnings)

82% of farmers with increased earnings cite an increase in volume of cauliflowers sold as the top reason for this change.

Reasons for Increase in Earnings

Q: What were the main reasons for the increase in money earned? (n = 260)



Insight

Farmers who experienced no harvest rejection from buyers (due to long distance transportation, see [page 10](#)) are much more likely to attribute their higher earnings to an increase in volumes sold, in contrast to those who did experience some degree of harvest losses (79% vs. 57%).

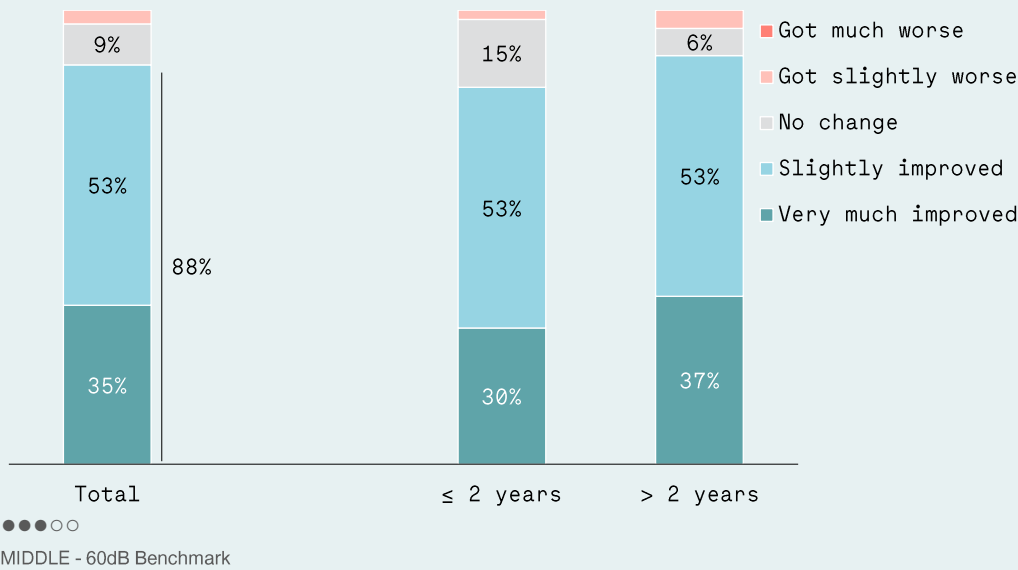
* Income is calculated at the farmer level, after which, we arrive at an aggregate median income. See [Appendix](#) to learn more about the calculations and conversions.



88% of farmers report that their quality of life has improved because of Fortaleza.

Quality of Life Change

Q: Has your quality of life changed because of Fortaleza? (n = 279, ≤ 2 years = 100, > 2 years = 179)



Farmers talk about increased savings because of Fortaleza as the top driver of improved quality of life.

Improvements in Quality of Life

Q: How has your quality of life improved? (n = 244). Open-ended, coded by 60 Decibels.

49%

talk about **increased savings**
(42% of all respondents)

“The profit from Fortaleza was very good. I deposited some money as savings in my bank account.” - Male, 40, Rajasthan

18%

mention **increased business or farm investments**
(16% of all respondents)

“I have purchased additional land for agriculture because of the increased production from Fortaleza.” - Male, 56, Rajasthan

17%

report **being able to afford household assets**
(15% of all respondents)

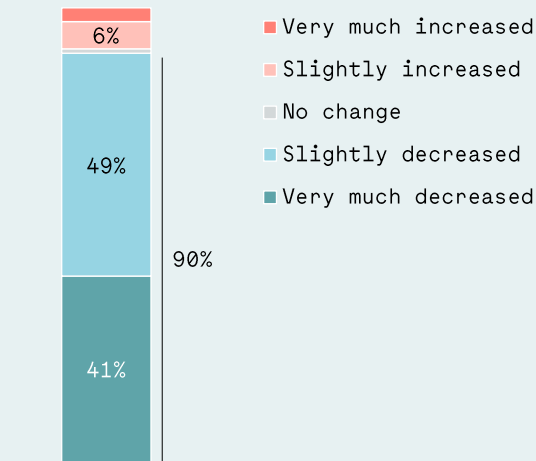
“I bought new LCD for my house using the profits I got from Fortaleza.” - Male, 42, U.P.



9 in 10 farmers report that their stress levels have reduced because of Fortaleza.

Change in Stress Levels

Q: Has your level of stress changed because of Fortaleza? (n = 281)



Insight

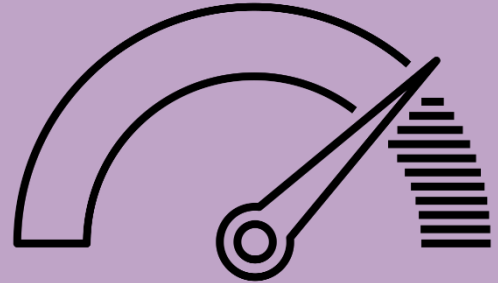
When farmers were asked to describe the top quality of life improvements in their own words, 10% of them talk about 'reduced stress' since using the seeds as their top theme.



“

Life is less stressful after using these seeds because we need to not worry about rejections and wastage.

- Male, 50, Delhi



03:

Satisfaction

If your farmers are happy, it's likely they will continue to choose Fortaleza or recommend it to others.

This section uses the popular Net Promoter Score® to understand the level and drivers of farmer satisfaction and loyalty. Additional insights on challenges and suggestions highlight areas you can improve.

The key indicators in this section are:

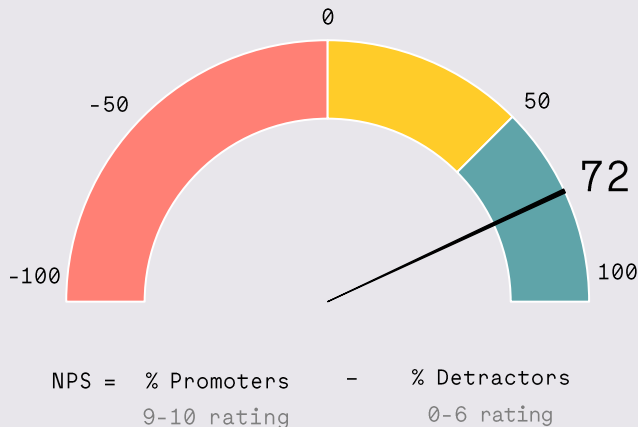
- **Net Promoter Score:** How likely are your farmers to recommend Fortaleza?
- **Challenge Experience:** What proportion of farmers experience challenges?
- **Price Perception:** What do your farmers think about the price charged for the seeds?
- **Ease of Sales:** Has Fortaleza made it easier for farmers to sell cauliflowers?



Fortaleza has an NPS of 72, which is excellent and in the top 20% of the 60dB Farmer Benchmark for similar business models.

Net Promoter Score® (NPS)

Q: On a scale of 0-10, how likely are you to recommend Fortaleza to a friend or family member, where 0 is not at all likely and 10 is extremely likely? (n = 281)



The Net Promoter Score® (NPS) is a gauge of client satisfaction and loyalty. The NPS is the percent of farmers rating 9 or 10 ('Promoters') minus the percent of farmers rating 0 to 6 ('Detractors'). Those rating 7 or 8 are 'Passives'.

The score can range from -100 to 100.

Segments	NPS
<2 years	66
≥2 years	74
Haryana	74
Other states	70

●●●●●
 TOP 20% - 60dB Benchmark

Promoters value the good quality produce and high yield from Fortaleza seeds. Detractors want to see improved pest resistance.

77%
 are Promoters 😊

18%
 are Passives 😐

5%
 are Detractors ☹️

They love:

1. Good quality of produce (62% / 47% of all respondents)
2. High cauliflower yield (41% / 31% of all respondents)
3. Minimal effort in growing (33% / 25% of all respondents)

They like:

1. Good quality of produce (45% / 9% of all respondents)
2. High cauliflower yield (39% / 7% of all respondents)

But want to see:

1. Better quality produce* (43% / 8% of all respondents)

They want to see:

1. Better pest resistance (46% / 3% of all respondents)
2. Improved rate of growth (40% / 2% of all respondents)
3. Better quality produce (40% / 2% of all respondents)

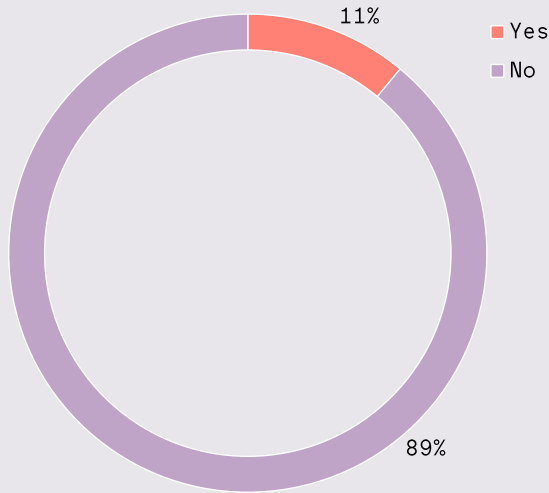
*Farmers typically reference wanting to see whiter cauliflowers.



11% of farmers report facing a challenge with Fortaleza. Challenges negatively affect farmer satisfaction.

Challenge Experience

Q: Have you experienced any challenges with Fortaleza? (n = 281)



Segments	NPS
No challenges	86
Experienced challenges	-44

Segments	% challenge experienced
<2 years	13%
≥2 years	11%
Haryana	8%
Other states	13%

TOP 20% - 60dB Benchmark

Of the 11% who experience a challenge, the most common ones are related to bad produce quality and lack of support from agents.

Most Common Challenges

Q: Please explain these challenges. (n = 32). Open-ended, coded by 60 Decibels..

56% talk about **bad quality of produce**
(6% of all respondents)

“I noticed a yellowish discoloration on my cauliflower while it was still on the plant.”
- Male, 40, Rajasthan

41% mention **lack of support from agents**
(5% of all respondents)

“I contacted the Fortaleza agent about diseases on my crops, but they didn’t respond even after calling.” - Male, 30, Haryana

16% talk about **poor resistance to pests**
(2% of all respondents)

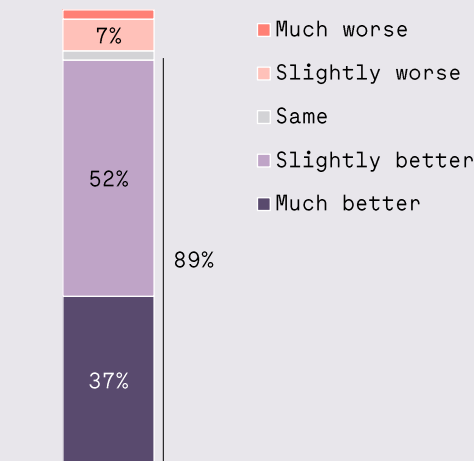
“My crops were attacked by pests and the agents were not able to provide any help.” - Male, 36, Haryana



89% of farmers find prices charged for Fortaleza seeds to be better than alternate cauliflower varieties.

Price Perception

Q: Compared to other cauliflower seed varieties, do you think the price charged for Fortaleza is: (n = 281)



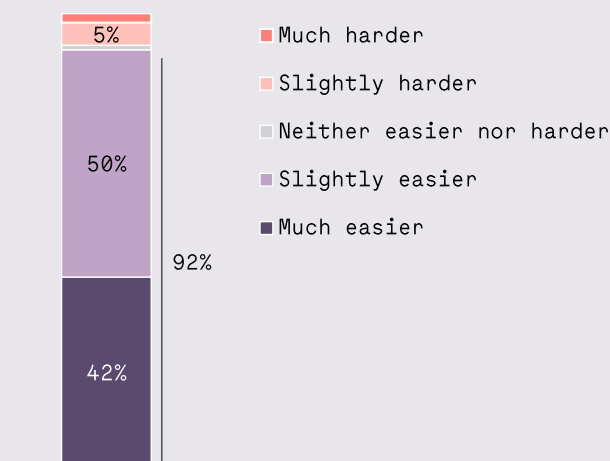
Insight

Although better seed prices does not emerge as a top driver of satisfaction among Fortaleza growers (see [page 17](#)), the NPS of farmers who find the price charged for the seeds to be 'much better' than other cauliflower varieties is significantly higher compared to others (92 vs. 59). This is likely driving farmer loyalty.

For around 9 in 10 farmers, growing Fortaleza has made it easier for them to market their cauliflowers to buyers.

Ease of Sales With Fortaleza

Q: Did using the Fortaleza seeds make it easier or harder for you to market cauliflowers to your buyers? (n = 281)



“

The exceptional crop from Fortaleza seeds gets a better price at the market, which has increased my earnings.

– Male, 45, Rajasthan



“

Cauliflowers are big in size and white in color. The best thing is that they don't need much care as the seeds are effective against pest attack, so we need to use less fertilizers.

- Male, 66, Rajasthan



Appendix

Methodology (1/2)

About the 60 Decibels Methodology

In March-April 2024, 60 Decibels' trained researchers conducted 281 phone interviews with farmers growing Fortaleza seeds. The farmers were randomly selected from a sample of Fortaleza's farmer database. Here is the breakdown of how we collected this data:

Country	India
Farmer Population	1,682
Interviews Completed	281
Response Rate	41%
Languages	Hindi
Average Survey Length	17 mins
Confidence Level	90%
Margin of Error	4%

Interpreting the Results

While the findings of this study are internally valid (hold true for the surveyed farmers), we cannot ascertain external validity (whether findings hold true for the entire population of the company) because:

- **Contacts received:** We received a non-random sample of 1,682 farmers from a larger group that Fortaleza works with. We do not have information on the wider group of farmers to ascertain representativeness of our sample.
- **Applicability of results:** All references to figures, proportions and trends hold true for that sample that we interviewed; these may or may not be extrapolatable to the whole of your population.

Methodology (2/2)

Calculations and Definitions

For those who like to geek out, here's a summary of some of the calculations we used in this report.

Metric	Calculation
Inclusivity Ratio	<p>The Inclusivity Ratio is a metric developed by 60 Decibels to estimate the degree to which an organization is reaching less well-off clients. It is calculated by taking the average of Company % / Country %, at the \$1.90, \$3.20, and \$5.50 lines for low income and low-middle income countries, or at the \$3.20, \$5.50 and \$8.00 lines for middle income countries. The formula is:</p> $\sum_{x=1}^3 \frac{(\text{Company Poverty Line } \$x)}{(\text{India Poverty Line } \$x)} / 3$
Net Promoter Score®	<p>The Net Promoter Score (NPS) is a common gauge of client satisfaction and loyalty. It is measured by asking clients to rate their likelihood to recommend a product/service to a friend or family member on a scale of 0 to 10, where 0 is least likely and 10 is most likely. The NPS is the % of clients rating 9 or 10 out of 10 ('Promoters') minus the % of clients rating 0 to 6 out of 10 ('Detractors'). Those rating 7 or 8 are considered 'Passives'.</p>
Price, Volume and Earnings Calculations	<p>Farmers reported volume of cauliflower sold in kgs, tonnes and local units such as <i>panni</i> and <i>katta</i> (1 <i>panni</i> = ~32.5 kg and 1 <i>katta</i> = ~50 kg). All prices were reported in Indian Rupees. Farmers either reported volumes and prices as an exact number, or in ranges. The mid-point value of ranges was used for all conversions.</p> <p>Earnings were calculated individually at a farmer level, after which, the median earnings at an aggregate level were reported. This was done in order to better reflect individual farmer experience and not diminish any variation with price and volume.</p>

Ideas for How to Use these Results

Here are ideas for ways to engage your team and use these results to fuel discussion and inform decisions.

Review Your Results

- Review your results and qualitative farmer responses. There's a lot of interesting feedback in there!
-

Engage Your Team

- Send the report to your team & invite feedback, questions and ideas. Sometimes the best ideas come from unexpected places!
 - Set up a team meeting & discuss what's most important, celebrate the positives, and identify next steps.
-

Spread The Word

- Reach a wider audience on social media & show you're invested in your farmers.
-

Close The Loop

- We recommend posting on social media/website/blasting an SMS saying a 'thank you to everyone who took part in the recent survey with our research partner 60 Decibels, your feedback is valued, and as a result, we'll be working on XYZ'
 - After reading this report, don't forget to let us know what you thought: [Click Here!](#)
-

Take Action!

- Collate ideas from team into an action plan including responsibilities.
- Keep us updated, we'd love to know what changes you make based on these insights.
- Set up the next Lean Data project – we recommend checking in again in 6 to 12 months.



“

Because of the increase in my income after growing Fortaleza, I can now afford to eat outside with my family once in a while. I never used to be able to do this.

- Male, 50, Delhi

60 _decibels

About 60 Decibels

60 Decibels is a global, tech-enabled impact measurement company that brings speed and repeatability to social impact measurement and customer insights. We provide genuine benchmarks of impact performance, enabling organizations to understand impact relative to peers and set performance targets. We have a network of 2,000+ researchers in 97+ countries, and have worked with more than 800 of the world's leading impact investors, companies, foundations, corporations, NGOs, and public sector organizations. 60 Decibels makes it easy to listen to the people who matter most.

Project Team

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Thank You For Working With Us!

Let's do it again sometime.

We'd love to hear your feedback on working with 60dB; take 5 minutes to fill out our feedback survey [here!](#)

Stay In Touch

Please sign up for [The Volume](#), our monthly collection of things worth reading.

Acknowledgments

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