Bayer Seminis Seminis 7864

Impact Performance Report



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About This Report

Bayer Seminis partnered with 60 Decibels to speak directly with their hot pepper farmers growing Seminis 7864 about their experience with the seeds and the changes it has brought about on their farms and in their lives.

Seminis 7864 is a high-yielding hot pepper variety. It was introduced into the Punjab and Sindh markets of Pakistan close to 7to 8 years ago. The variety comes with the promise of resistance to pests and climate shocks, along with higher production.

Between August and September of 2024, 60 Decibels' Lean Data researchers conducted phone interviews with 275 farmers who grow Seminis 7864 peppers along with their other crops. 2022 and 2023 were challenging years for farmers, considering flooding and other climate shocks experienced by growers. This report presents insights based on our analyses of the information shared by farmers about their experiences since they <u>first</u> started growing Seminis 7864.

For details about our methodology please refer to page <u>25.</u>

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My chilies somehow survive even in lack of water and don't give me losses. That's why even in such phases, I feel a little more prepared because of Seminis seeds.



Top Insights

Seminis 7864 is doing a good job supporting low-income farmers with improving their production, earnings, and farm practices.

Bayer Seminis is reaching less well-off farmers at par with the national average in Pakistan. Three-quarters of all farmers report higher hot pepper production since adopting Seminis 7864, with a similar proportion witnessing more earnings and an improved quality of life. 7 in 10 farmers also say that their stress levels have decreased and have witnessed an uptick in their confidence to invest in their farms because of Seminis 7864. For nearly half of the farmers, their farming practices have also improved, primarily due to Seminis encouraging the adoption of modern practices. See pages 8 and 11.

Despite high impact, there is room to increase farmer satisfaction in the future.

Seminis 7864 has an NPS of 13, which is fair, with some room for improvement. Promoters of Seminis 7864 primarily talk about the high volume and quality of pepper yield. 7 in 10 farmers find it easier to market their peppers and 41% find the seed to be priced better than other varieties. However, dissatisfied farmers talk about the seed's poor resistance to climate shocks or its quality and authenticity in the market. For similar reasons, 28% of farmers report a challenge with Seminis 7864.

Action: When asked about suggestions for the future, half of the farmers want Bayer Seminis to prioritize seed quality assurance stemming from growing concerns about counterfeit seeds in the market. Consider focusing on distribution to strengthen farmer loyalty. See pages 16, 18 and 19.

Seminis 7864 may have contributed to farmers' recovery from recent climate shocks, but not all feel optimistic about their future preparedness.

Of the 56% of farmers saying that their household was affected by a climate shock in the last two years, flooding was most common. Farmers in Sindh are more likely to have faced climate shocks than those in Punjab (66% vs. 41%). Half of the farmers affected are still recovering from the shock while 57% of those that did recover credit Seminis 9864 for it. However, looking ahead, only a third of farmers believe Seminis 7864 has improved their future preparedness. This is largely driven by farmers perceiving their preparedness to be unrelated to Seminis 7864 or attribute it to the seed's poor resistance to climate shocks. See page 21 and 22.

Action: Trainings or advisory on climate adaptation strategies can go a long way in building farmers' resilience to shocks.

Despite being more susceptible to climate shocks, growers in Sindh are much more satisfied with Seminis 7864 than their counterparts in Punjab.

Growers in Sindh are more likely to report lower stress levels since using Seminis 7864 compared to those in Punjab. Similarly, they fare better across impact metrics such as production, income, quality of life, and confidence levels. Despite 66% of Sindhi farmers being affected by a shock, they feel more prepared for future shocks (39% vs. 17%). This is likely linked to Sindhi farmers being more satisfied with the seed itself (NPS of 22 vs. -1). See pages 14, 21 and 22.

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Performance Snapshot

The Benchmark Performance column showcases how you compare to 60 Decibels' Agriculture Benchmarks in the Farmer as Customer sub-sector globally. The Farmer as Customer benchmark constitutes interventions where the farmer receives a product or service as a customer. This includes equipment, farm inputs (fertilizer, seeds), financial inputs (credit, insurance), livestock input (feed, vaccines, medicines), nutrition-enhancing crops, or training and information.

Performance vs 60dB Benchmarks BOTTOM 20% BOTTOM 40% MIDDLE TOP 40% TOP 20%

Benchmark Overview

Global geographical focus Farmer as Customer sub-sector focus

26 companies included 6,599 voices listened to

Who are you reaching?	Seminis 7864	Benchmark	Benchmark Performance
% of females	0%	31%	•0000
Inclusivity Ratio	1.00	0.86	••••
What impact are you having?			
% 'very much improved' way of farming	25%	52%	•0000
% 'very much increased' production	41%	39%	••••
% 'very much increased' farm earnings	38%	42%	••••
% 'very much improved' quality of life	34%	39%	••000
% 'very much decreased' stress levels	39%	-	-
How satisfied are your farmers?			
Net Promoter Score®	13	46	••000
% experiencing challenges	28%	20%	••••
% saying the price is 'much better'	27%	-	-
% saying marketing to buyers is 'much easier'	48%	-	-

Farmer Voices

Here are some farmer voices that stood out:

A farmer on how his quality of life improved

"[Seminis 7864] has high weather resistance, which ensures a good income, and the chances of loss are very low. With good profits and earnings, the economic condition of my home has significantly improved."

- Male, 45

A farmer on a why his quality of life has improved

"I am now able to provide everything for my family. We have a newly renovated house; I own a car, all thanks to the high production I achieved with Seminis hybrid seeds.

- Male, 34

A farmer on how he changed his way of farming

"The seed [Seminis 7864] thrives in both sandy and solid soils, reducing the need for special land preparation. Additionally, it requires less spraying, which lowers both labor and input costs."

- Male, 75

A farmer on a challenge he faced

"The seed [Seminis 7864] does not perform well in extreme weather and lacks heat resistance.

- Male, 55

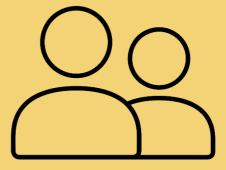
A farmer on why he would recommend Seminis 7864

"[Seminis 7864] seed is very good. The plant grows large, produces fruits in bunches, and its hot peppers grow upwards. It withstands weather effects and sells quickly in the market for a good price."

- Male, 25

A farmer on why they feel prepared for future shocks

"The quality of [Seminis 7864] seeds lies in their resilience to sudden shocks; they don't get damaged quickly by excess water, giving enough time to dig reservoirs and save the crops."



01:

Farmer 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: Who is a typical Seminis 7864 farmer?
- Additional crops: What other crops are Seminis 7864 farmers growing?
- Inclusivity Ratio: Are you reaching less well-off farmers? How representative is your farmer base of the national population of Pakistan?



The typical farmer we spoke to is a 40-year-old male who has been growing Seminis 7864 peppers for 3 years.

About the Farmer (n = 275)



0%

Female farmers*
Male farmers: 100%



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Median engagement with Bayer Seminis (In years)



40

Median age Youngest: 22 Eldest: 75



61%

Sindh Punjab: 39%



Q

Median household size



64%

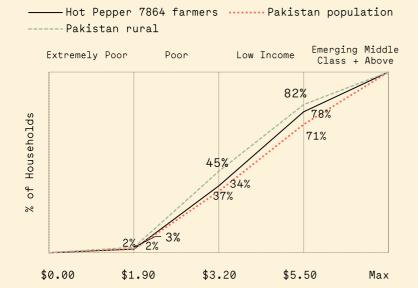
Cotton [other crops grown]
Wheat: 50%; Onion: 46%; Tomato: 40%

*Except one, all farmers in our sample frame (874 farmers) are male. These results are internally valid for this sample frame. We do not have information on the wider group of Bayer Seminis farmers to ascertain representativeness of our sample in relation to the larger population.

37% of Bayer Seminis' farmers live under \$3.20 per day, which is at par with the national average in Pakistan (34%).

Farmers' Income Distribution Relative to Pakistan Average

% living below \$x.xx per person per day (2017 PPP) (n = 273)



Inclusivity Ratio

Degree to which Bayer Seminis is reaching lowincome farmers in Pakistan (n = 273)

1.00

Pakistan (Overall)

0.77

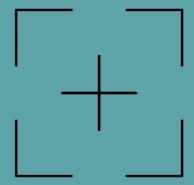
Pakistan (Rural)*

1 = parity with population;
> 1 = over-serving;
< 1 = under-serving.
See Appendix for calculation.</pre>

••••

TOP 40% - 60dB Benchmark

^{*}The rural Inclusivity Ratio estimates the degree to which Bayer Seminis is reaching low-income farmers compared to other rural population across Pakistan.



02:

Impact Performance

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 because of your offering, and if so, how.

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

The key indicators in this section are:

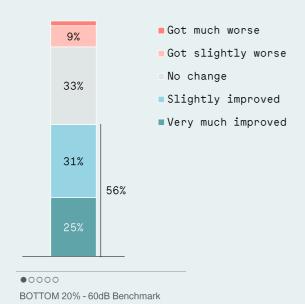
- Way of Farming: Have agronomic practices changed because their interaction with Bayer Seminis?
- Land Under Cultivation: Has the amount of land under cultivation for hot peppers changed because of Seminis 7864?
- Production and Earnings: To what extent are farmers experiencing changes in production and earning because of Seminis 7864?
- Quality of Life Change: To what extent has the quality of life of your farmers changed?
- Stress and Confidence Levels: Are farmers feeling less stressed and more confident since using Seminis 7864?



56% of farmers report an improvement in their farming practices since using Seminis 7864. However, a third witnessed no changes.

Change in Way of Farming

Q: Has your way of farming changed because of Seminis 7864? (n = 274)



Insight

Farmers who report 'no change' in their farming practices (33%) primarily attribute it to their reliance on traditional farming practices (89%) or poor seed performance (12%).

Those reporting worsened practices (11%) talk about the Seminis seed requiring higher input usage, resulting in more costs, along with time demands.

Farmers talk about the adoption of modern farming practices as their top self-reported way of farming improvement.

Improvements in Way of Farming

Q: How has your way of farming improved? (n = 152). Open-ended, coded by 60 Decibels.

pesticides and fertilizers

(17% of all respondents)

talk about using modern 61% farming practices (34% of all respondents) mention reduced use of 30%

- Male, 36 "We no longer struggle with viruses or need to spray pesticides regularly; it is easy to grow and

"I now use hybrid seeds and modern

better results with [Seminis 7864]."

techniques like land leveling for

very effective." - Male, 44

report lower water usage 28% (15% of all respondents)

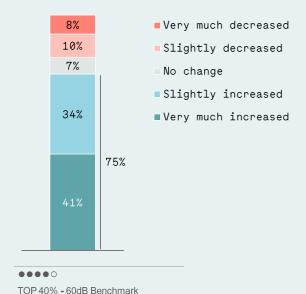
"[Seminis 7864] requires less water, saving me from paying extra labor costs for irrigation."



Three quarters of all farmers report an increase in their pepper production since growing Seminis 7864.

Change in Production

Q: Has the total production from your peppers changed because of Seminis 7864? (n = 275)





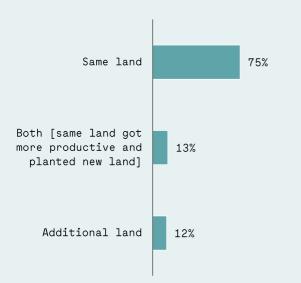
The average yield is good, and the plant doesn't get spoiled quickly. The chillies are larger and longer, which sells quickly.

- Male, 48

Most achieved higher yields with the same land. 44% report increasing their land under pepper cultivation because of Seminis 7864.

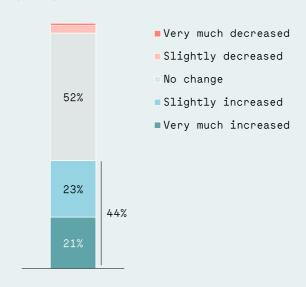
Reasons for Increase in Production

Q: Was this increase because you planted additional land or was it from the same amount of land, or both? (n = 206)



Change in Land under Cultivation

Q: Have you seen any change in the amount of land you have under cultivation for hot peppers because of Seminis 7864? (n = 275)





Three quarters also report increased earnings from peppers since growing Seminis 7864, primarily driven by selling higher volumes.

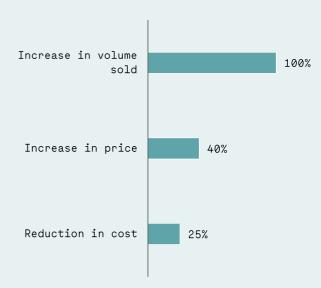
Change in Earnings

Q: Has the money you earn from your peppers changed because of Seminis 7864? (n = 275)

9% 10% Slightly decreased No change Slightly increased Very much increased 74% 38%

Reasons for Increase in Earnings

Q: What were the main reasons for the increase in money earned? (n = 205)







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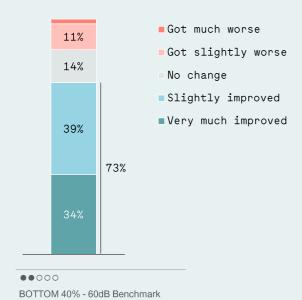
This seed provides good yields, and if the chillies are sold after turning red, they have good weight and bring in higher earnings. This has resulted in substantial profits for me.



7 in 10 farmers say that their quality of life has improved because of Seminis 7864.

Quality of Life Change

Q: Has your quality of life changed because of Seminis 7864? (n = 275)



Insight

Farmers reporting 'no change' in their quality of life (14%) talk about low outputs from peppers, rising farming costs, and poor market rates for their produce.

Those who report a worsened quality of life (13%) primarily attribute it to increased financial strains (due to the seed demanding more inputs) and low pepper yields.

Farmers talk about increased income as the top driver of improved quality of life because of Seminis 7864.

Improvements in Quality of Life

Q: How has your quality of life improved? (n = 200). Open-ended, coded by 60 Decibels.

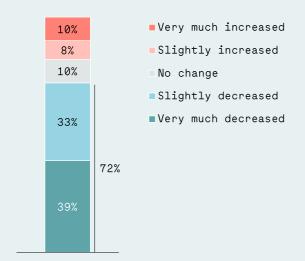
"Seminis [Seminis 7864] seeds has talk about increased income 68% (49% of all respondents) brought financial stability to my family. I've also started my own seed shop business." - Male, 37 mention improved ability to "[Seminis 7864] is profitable, 32% afford household expenses enabling us to have improved (23% of all respondents) living standards, better food, and quality education for my children." - Male, 32 report reduced stress 30% "The durability of the Seminis (22% of all respondents) crop gives me peace of mind and confidence, knowing I won't face any losses." - Male, 50



7 in 10 farmers report decreased stress levels because of Seminis 7864. However, 18% mention increased stress.

Change in Stress Levels

Q: Has your level of stress changed because of Seminis 7864? (n = 275)



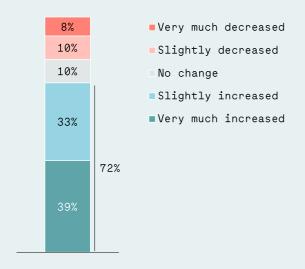
Insight

80% of farmers from Sindh report 'slightly' or 'very much decreased' stress levels, compared to 61% of farmers from Punjab.

A similar proportion of farmers report greater confidence to invest in their farms due to Seminis 7864.

Change in Confidence Levels

Q:Has your level of confidence in investing in your farm changed because of Seminis 7864? (n = 275)



Insight

Similar to the trend with stress levels, farmers in Sindh are much more confident about investing in their farm than those in Punjab (80% vs. 59%).

Sindhi farmers are also more satisfied with the Seminis 7864 seed than their peers in Punjab, which likely aids their confidence to invest further. Find out more about farmer satisfaction in the next section.



03:

Farmer Experience

If your farmers are happy, it's likely they will continue to choose Seminis 7864 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:

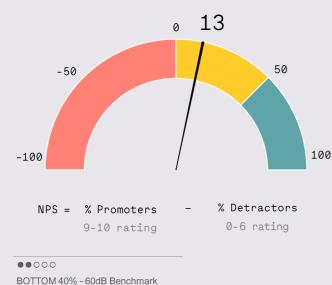
- Net Promoter Score®: How likely are your farmers to recommend Seminis 7864 to others?
- Challenge Experience: What proportion of farmers experience challenges?
- Price Perception: What do your farmers think about the price charged for the seeds?
- Ease of Sales: Has Seminis 7864 made it easier for farmers to market their produce to buyers?



Seminis 7864 has an NPS of 13, which is fair, but it is in the bottom 40% 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 Seminis 7864 to a friend or family member, where 0 is not at all likely and 10 is extremely likely? (n = 275)



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
Sindh	22
Punjab	-1

Promoters of Seminis 7864 praise the seed quality and its yield, while Detractors call for better resilience to weather conditions.

38%

are Promoters (:)



They love:

- 1. Improved pepper quality (64% / 24% of all respondents)
- 2. High pepper yields (59% / 22% of all respondents)
- 3. Climate-resilient seeds (46% / 18% of all respondents)

37%

are Passives (••)



They like:

- 1. High seed performance/vield (79% / 30% of all respondents)
- 2. Better prices for peppers (12% / 4% of all respondents)

But want to see:

Better tolerance to weather conditions (22% / 8% of all respondents)

25%

are Detractors (**)



They want to see:

- 1. Better vield (61% / 15% of all respondents)
- 2. Better tolerance to weather conditions (41% / 10% of all respondents)
- 3. Improved seed quality and authenticity

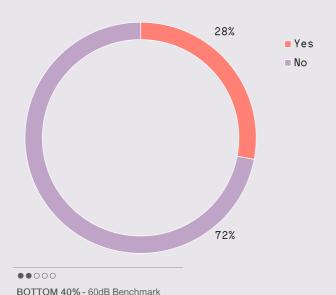
(39% / 10% of all respondents)



28% of farmers report facing a challenge with Seminis 7864.

Challenge Experience

Q: Have you experienced any challenges with Seminis 7864? (n = 275)



Insight

Farmers who report challenges with Seminis 7864 are more likely to have witnessed lower pepper production compared to those reporting no challenges (49% vs. 85%). This is in line with farmers reporting poor yield as one of their top challenges with the seed.

The challenge rate does not vary by farmer tenure or region.

Of those who report challenges, most farmers complain about Seminis 7864's poor resilience to climate shocks and low yields.

Most Common Challenges

Q: Please explain the challenges you have experienced. (n = 76). Open-ended, coded by 60 Decibels.

51% talk about poor climate resilience (14% of all respondents)

"Last year, the 7864 seed underperformed due to sudden cold weather, showing its poor climate resistance." - Male, 24

report poor yield (11% of all respondents)

"Chili yield has dropped significantly, from 200 mounds to just 90." - Male,36

mention poor pest or disease resistance
(4% of all respondents)

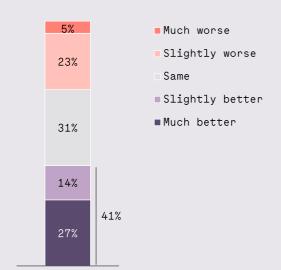
"Last year was disappointing as insects and pests easily attacked the crop." - Male, 56



Seminis 7864 is seen as competitively priced, with 41% finding it better than other pepper varieties and 31% saying it's the 'same'.

Price Perception

Q: Compared to other hot pepper seed varieties, do you think the price charged for Seminis 7864 seeds is: (n = 275)



Insight

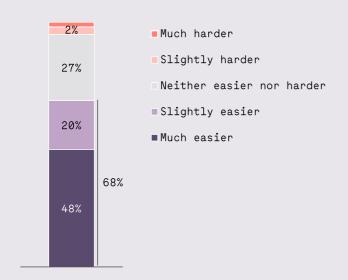
Seminis 7864 growers' satisfaction is highly sensitive to relative seed price:

Price Comparison	NPS
'much better' or 'slightly better'	50
'same' or 'much worse' or 'slightly worse'	-13

7 in 10 farmers say that using Seminis 7864 seeds is making it easier for them to market their peppers to their buyers.

Ease of Sales With Seminis 7864

Q: Did using the Seminis 7864 seeds make it easier or harder for you to market hot peppers to your buyers?(n = 275)



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With the [hot pepper 7864] seed, I'm seeing great returns due to its good weight and yield, increasing overall quantity. These chilies sell quickly and at high prices in the market.

– Male, 432

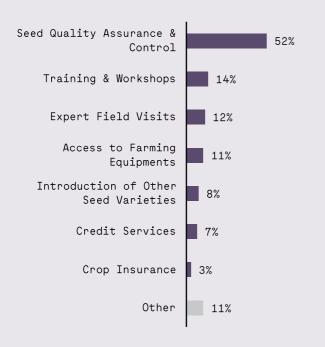
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Looking ahead, farmers want Bayer Seminis to prioritize seed quality assurance and trainings.

Additional Services Desired

Q: What other products or services would you like Seminis 7864's team to offer? (n = 275). Open-ended, coded by 60 Decibels.



Insight

The strong demand for seed quality assurance stems from growing concerns about counterfeit seeds in the market. Farmers are calling for stricter measures to ensure they receive original, high-quality seeds, highlighting the need for better market regulation and seed control.

Significant interest in training, expert support, and better access to farming equipment highlight the need for both quality control and technical assistance.



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I believe there are fake [Seminis 7864] seeds in the market. We are no longer getting the original imported seeds, but local chilli seeds instead. The team should take strict action to ensure we receive the original seeds.



04: Climate Resilience

Farmers who are more resilient to climate shocks are better positioned to sustain their agricultural productivity.

In this section, we focus on farmers' ability to recover from these events and their perception of preparedness in the face of future shocks. Through a series of questions, we assess whether their engagement with Seminis 7864 has enhanced their resilience.

The key indicators in this section are:

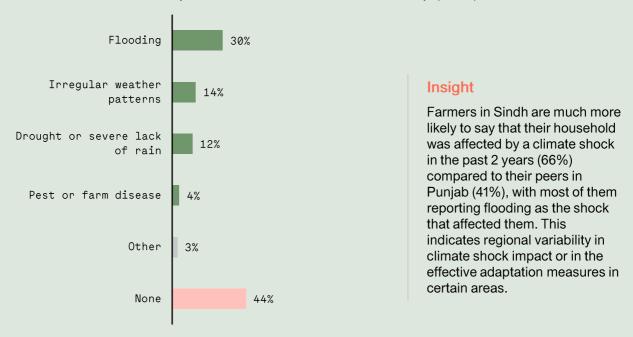
- Shocks Experienced by Households: Which type of shock affected the household the most in the past 24 months?
- Extent of Recovery from Shocks: To what extent was the household able to recover from the most significant shock?
- Impact of Seminis 7864 on Recovery: Did Seminis 7864 positively, negatively, or not affect the household's recovery?
- Preparedness for Future Shocks: Has Seminis 7864 influenced how prepared they feel for future shocks?



Flooding is the most common climate shock reported by 30% of farmers, but 44% report no recent impact on their household.

Shocks Experienced by Households

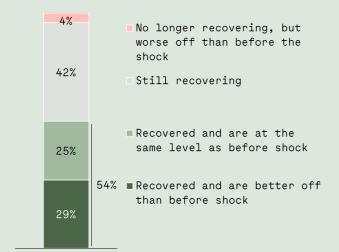
Q: Which of these shocks affected your household the most in the last 24 months, if any? (n = 275)



Half of the impacted households have recovered from the shock, with 58% crediting Seminis 7864 for a positive impact on recovery.

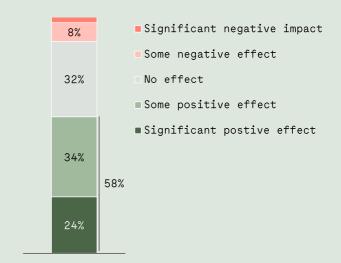
Extent of Recovery from Shocks

Q: To what extent was your household able to recover from this event? (n = 154)



Impact of Seminis 7864 on Recovery

Q: Did your involvement with the Seminis 7864 have a positive, negative, or no effect on your recovery? (n = 154)



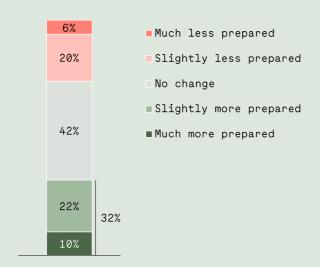
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A third of Seminis 7864 growers feel more prepared for future shocks, while 42% report no change.

Preparedness for Future Shocks

Q: Has Seminis 7864 affected how prepared you feel for such a shock? (n = 152)



Insight

Although a relatively larger proportion of Sindhi farmers report a climate shock affecting their household, they are more optimistic about their preparedness than their Punjabi peers: 39% of farmers in Sindh say that Seminis 7864 makes them feel prepared to face future shocks compared to 14% in Punjab.

Farmers credit resilient seeds for improved preparedness, while those seeing no change rely on existing mitigation strategies.

Top Reasons for Increased Preparedness

Q: [if farmer feels more prepared for a climate shock because of Seminis 7864] Can you please explain your answer? (n = 49). Open-ended, coded by 60 Decibels.

98%

mention climate resilient seeds (17% of all respondents)

Top Reasons for No Change in Preparedness

Q: [if there is no change in preparedness for climate shock] Can you please explain your answer? (n = 64). Open-ended, coded by 60 Decibels.

48%

talk about their preparedness being unrelated to Seminis seeds (11% of all respondents)

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The quality of Seminis [Seminis 7864] seeds lies in their resilience to sudden shocks. - Male, 36

34%

report poor resilience to climate shocks (8% of all respondents)





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The Seminis 7864 seed is very resilient and doesn't deteriorate easily due to weathering. This gives me the confidence to tackle unexpected problems, and I am always mentally prepared for any issues that may arise in the chili crop.



Appendix

Methodology

About the 60 Decibels Methodology

In August - September 2024, 60 Decibels' trained researchers conducted 275 phone interviews with farmers growing Seminis 7864 seeds. The farmers were randomly selected from a sample of Bayer Seminis' farmer database covering the hot peppergrowing regions of Sindh and Punjab. Here is the breakdown of how we collected this data:

Country	Pakistan
Sample Frame	874
Interviews Completed	275
Response Rate	58%
Languages	Sindhi, Punjabi
Average Survey Length	12 mins
Confidence Level	90%
Margin of Error	4%
-	

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

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 \$2.15, \$3.65, and \$6.85 lines. The formula is:

Net Promoter Score®

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 of 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'.

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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
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.

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The 7864 seed has good weight and an excellent average yield. It is strong, disease-resistant, and the crop matures quickly, producing fruit throughout the year.

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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