

# Farmer Voice

supported by Bayer

2023







The Farmer Voice is a survey among 800 farmers equally split between Australia, Brazil, China, Germany, India, Kenya, Ukraine, and the United States. The survey was conducted independently by Kekst CNC, a global strategic communications firm. Farmers were selected randomly from each market. The respondents did not know that the survey was being conducted on behalf of Bayer until it was complete, and Bayer had no input on the sample selection. Interviews took place between April and July 2023.

Additionally, 2,056 smallholder farmers in India were surveyed with a shortened questionnaire. These farmers were associated with the Better Life Farming ecosystem, farmers of Bayer-supported Farmer Producer Organizations, and farmers enrolled in Bayer’s Sustainable Rice Program. These interviews were conducted between May and June 2023.



# FOREWORD

It has undoubtedly become more challenging for the world's farmers to produce the food, feed, and fiber we rely on. A changing climate, geopolitics, and economics are all affecting the day-to-day lives and livelihoods of farmers. We can see this play out everywhere as we hear reports of extreme heat, rain, or drought, volatile markets, and rising inflation.

Agriculture can shape the future of our food and planet, too. Keeping more carbon in the ground, growing sustainably, and nurturing the soil to leave the world in better shape for generations to come.

But what's missing from this story is the voice of the farmers themselves. What are their experiences, concerns, and hopes?

That is why Bayer has initiated the Farmer Voice survey, designed to uncover the opinions of farmers from across eight countries worldwide. The Farmer Voice analyzes, and will continue to track, the challenges faced by farmers today and their hopes for the future.

So, what have farmers told us?

Their fields go from scorched to soaked while incomes are squeezed. They are on the front line of climate change and are already experiencing its severe effects. But they are adapting and are positive about the future. They are closest to the environment and to the soil. Agriculture also has the capacity to curb climate change and farmers know best what a regenerative future for agriculture needs.

No matter where they are, they told us that timely and continued innovation is critical to building future resilience. They said digital farming is a new route for productivity and many are already starting to grow in new ways.

Most importantly, they told us they want their voice to be heard.

These results present a compelling case for optimism for the future of farming alongside a loud and direct call-to-action. Farmers are adaptable and resilient, but they can't do it alone. They need combined action from industry, governments, and everyone worldwide if they are to continue growing and leave the world in better shape for generations to come.

As a farmer in the USA told us:

**"I hope to continue farming until they put me in the ground. My son has all sorts of ideas on ways to take our farm forward. Hopefully, they'll work, and he will be able to pass the farm on to his children one day."**

It is important that we all work together to support this farmer and the millions of others around the world.

**RODRIGO SANTOS,**  
PRESIDENT, CROP SCIENCE  
DIVISION AT BAYER



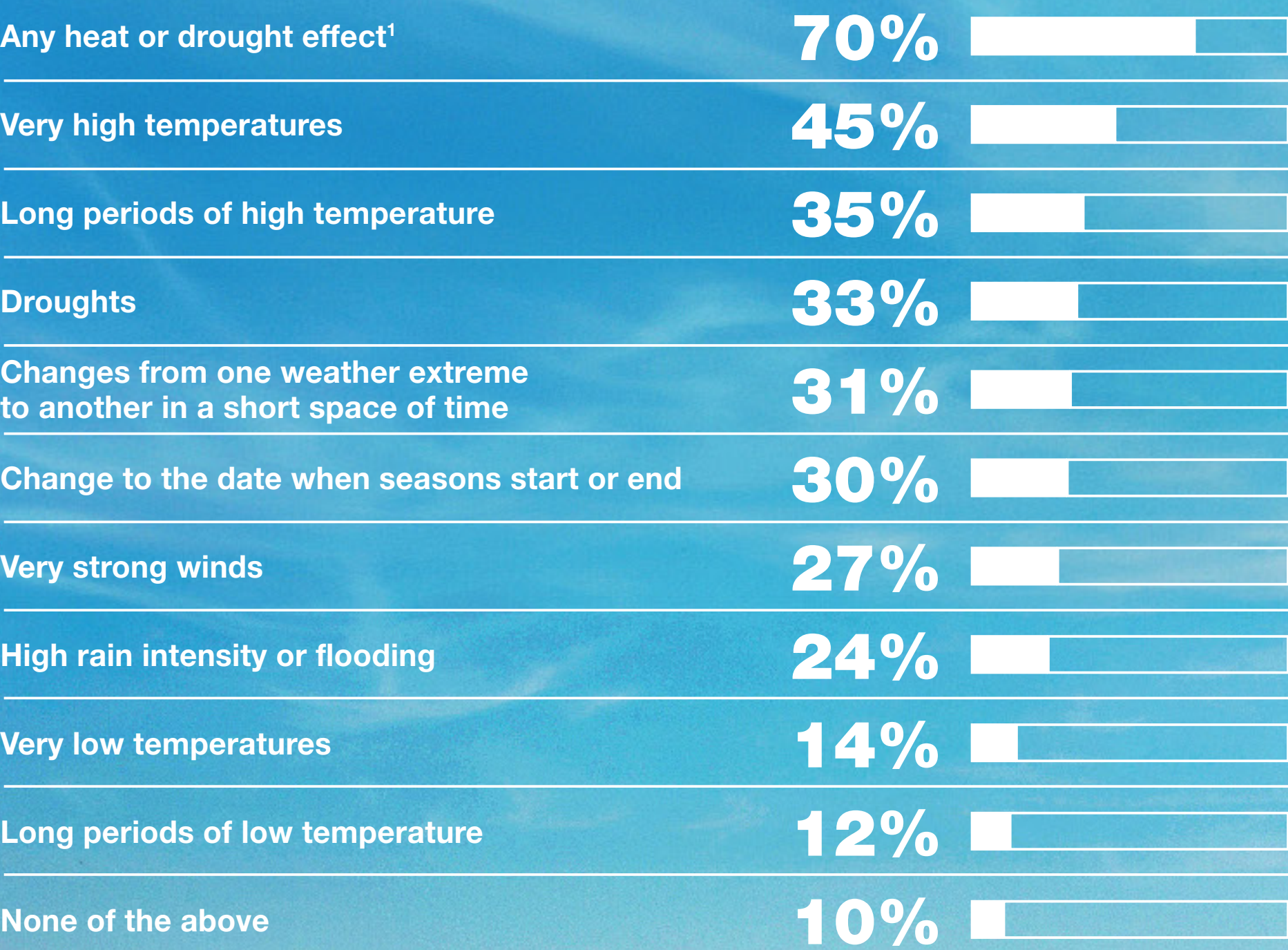


# CLIMATE CHANGE IS CHALLENGING FARMERS WORLDWIDE

Farmers are already facing climate-related headwinds. Rising temperatures are lowering productivity as extreme weather impacts farms and squeezes livelihoods. Nearly all farmers surveyed have reported some change in weather over recent years, with heat effects felt most acutely in India, Kenya, and Brazil. Growers are most worried about high temperatures damaging productivity and profitability – 8 in 10 who have experienced heat effects anticipate reduced yields in the coming years.

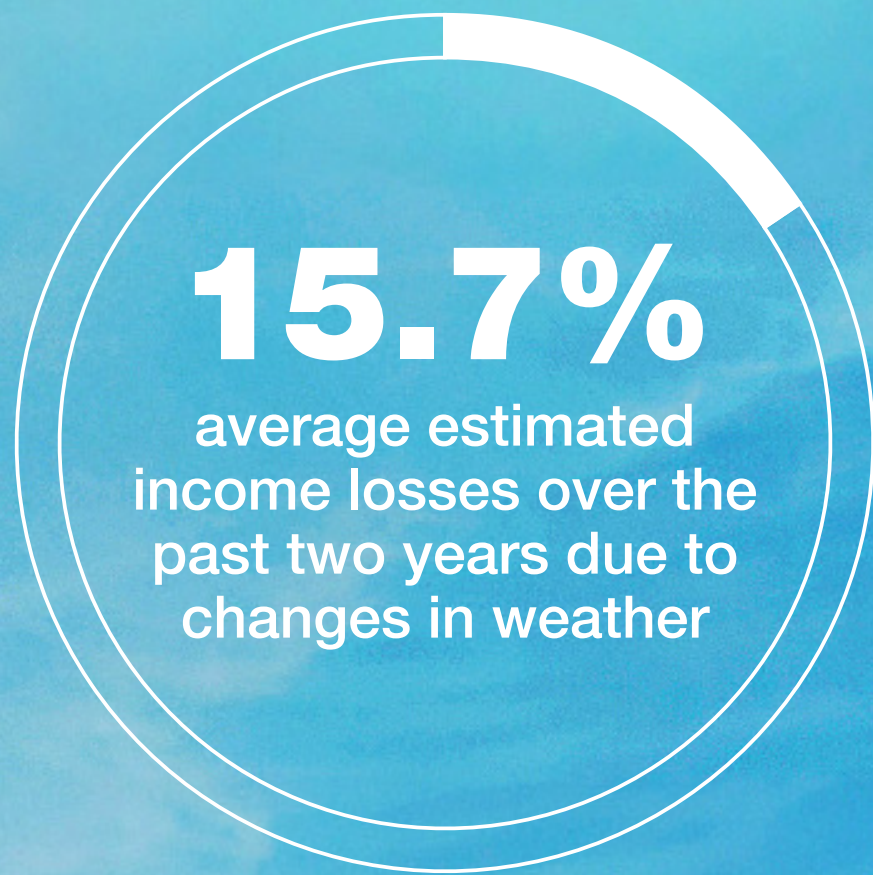
## 90% of farmers say the weather has changed

Farmers have experienced higher temperatures and for longer periods in recent years and almost a third have reported more volatile weather. Respondents indicated any type of extreme weather they have experienced on their farm in recent years.



<sup>1</sup> Combined result for very high temperatures, long periods of high temperatures, and drought





**71%**

Agree

Nearly three-quarters  
of farmers agreed that  
climate change already  
has a large impact  
on their farm

**19%**

Don't know

**10%**

Disagree



“The weather is definitely a constant battle as it has been inconsistent within the past few years as far as length of seasons and varying temperatures.”

**USA**, FEMALE, 31-40 YEARS OLD



“Sometimes I feel like quitting because of loss brought by climate change, like the drought we had some months back.”

**KENYA**, MALE, 41-50 YEARS OLD



# ECONOMIC UNCERTAINTY AND COST CONCERNS DOMINATE

World events and global inflation have propelled cost issues to the top of farmers' near-term concerns. They are grappling with uncertainty – while fertilizer costs are the most pressing challenge, input prices continue to spiral, and incomes remain volatile. The ongoing war in Ukraine placed one of the world's breadbaskets in a precarious position, with the country's farmers surveyed feeling the consequences of conflict as cost pressures mount.

## Farmers view costs and income volatility as the biggest near-term challenges

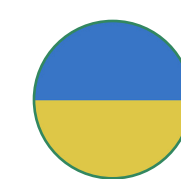
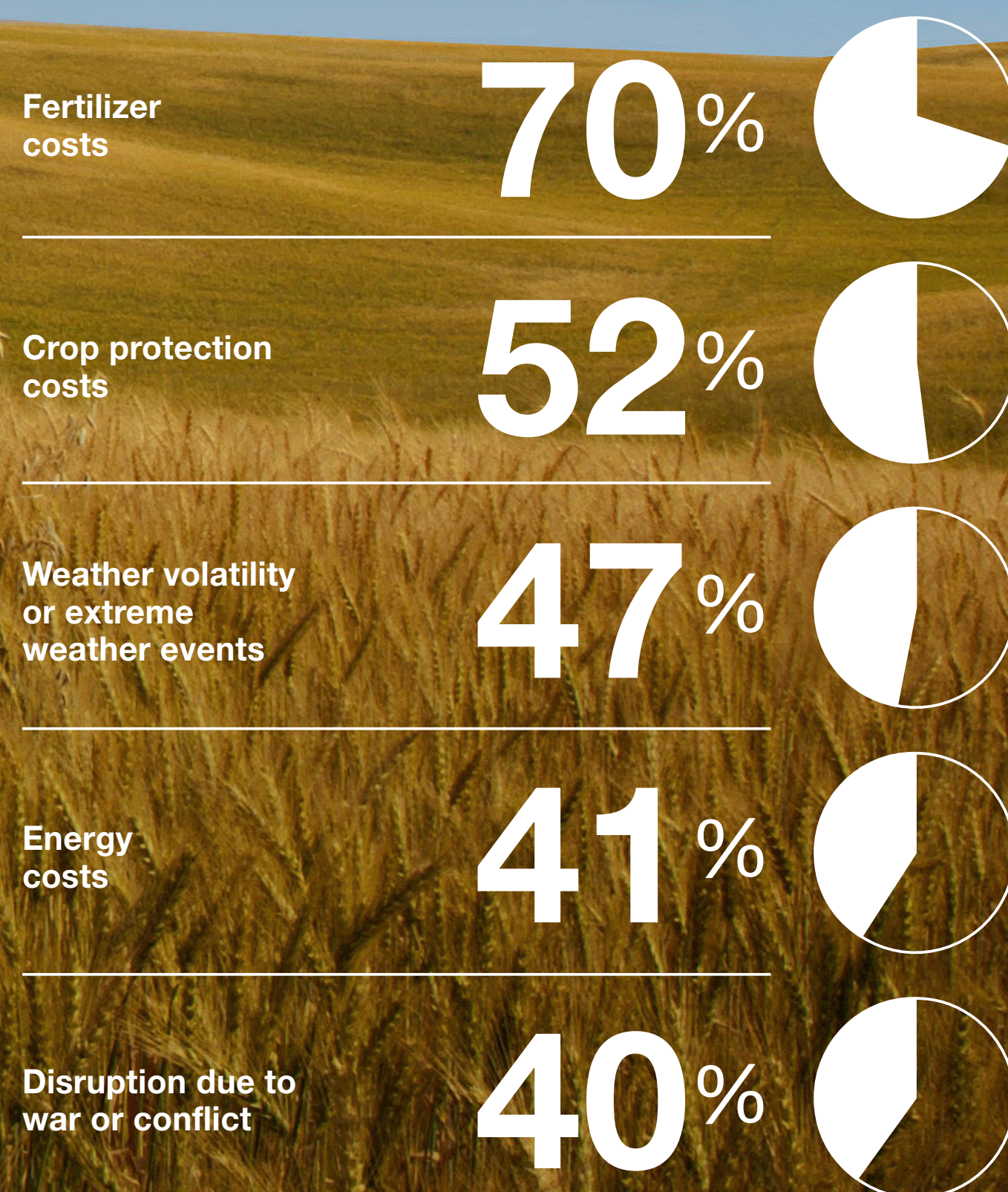
Around half of farmers placed energy and fertilizer costs among the top three challenges to their farm over the next three years.





## War adds pressure on Ukrainian farmers

Ukrainian farmers have similar concerns as their global peers but face additional challenges resulting from the war. 70% placed fertilizer costs, driven up following Russia's invasion, in their top three challenges for the next three years.



“We want to keep learning and try new things to make our farm better. Maybe we can use digital tools to help with watering, soil health, and knowing the weather. We think this can make our farm work better and be more sustainable for the future.”

**UKRAINE**, MALE 18-30 YEARS OLD



“The future of farm is good but the price of farm production like fertilizer materials is getting higher and higher at the moment. Everything is getting expensive.”

**GERMANY**, FEMALE, 31-40 YEARS OLD



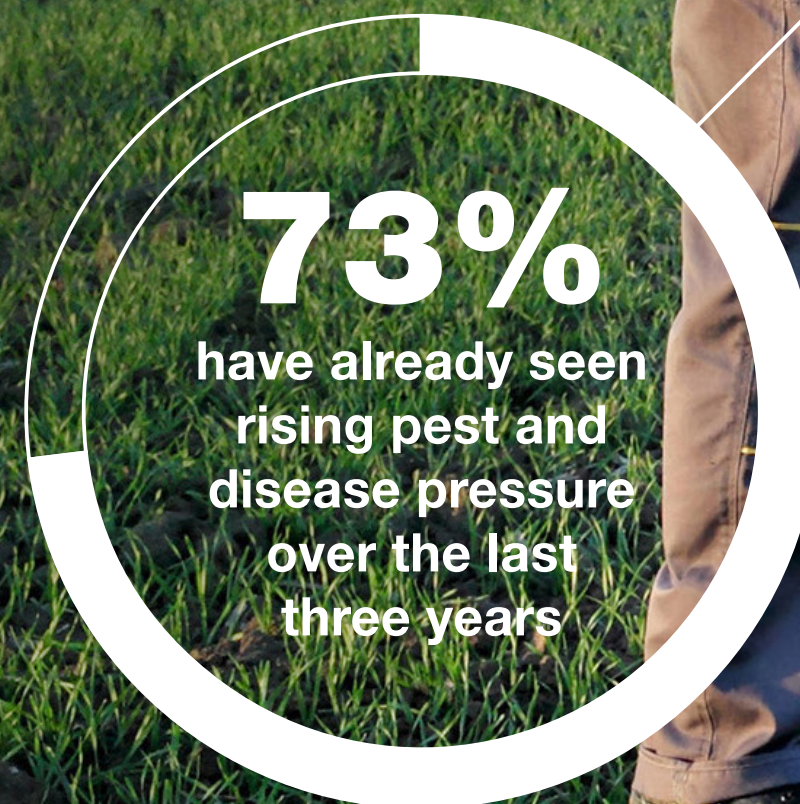
“The future of my farm is not so bright. The cost of farming has skyrocketed out of this world... and no one wants to help.”

**USA**, MALE 61+ YEARS OLD



# FARMERS ARE ADAPTING WITH NEW TECHNOLOGY

For many growers, the problem and solution go hand in hand. They are seeing more uncertainty and pressures in the future and are looking to change and optimize how they grow today. Farmers are predicting reduced yields and more volatility in the next three years due to changing weather, but similar numbers also expect to grow different crops and crops with resilient traits. Pressures from farm economics – monitoring, managing inputs, and measurement – are driving digital adoption.



## Farmers predict more climate uncertainty and want options to cope

Respondents indicated any changes they expect on their farm in future years in response to changing weather patterns.

Growing crops with resilient traits **40%**

Growing different crops **39%**

Reduced yields **37%**

Less planning certainty, more volatile prices **34%**

Increased pest pressure **30%**

Increased crop failure **28%**

Increased income from carbon credits **3%**

Other **2%**



## All farmers see a role for digital

When asked which digital farming practices they either currently use or plan to use in the future, all farmers surveyed said at least one technology.



“By using digital technologies, I can grow more crops and reap more profits. However, I am new to the digital technologies and it’s a barrier for me.”

**INDIA**, FEMALE, 18-30 YEARS OLD



“The future prospects of farming for me will revolve around leveraging digital technologies to increase output and help mitigate risks.”

**GERMANY**, MALE 18-30 YEARS OLD



“Am hoping to plant crop varieties with improved resistance to pests and diseases. Am also hoping to increase hectares to above 100.”

**KENYA**, FEMALE, 31-40 YEARS OLD

<sup>1</sup> Combined number for aerial imagery, such as drones; digital mapping and planning tools; satellite imagery

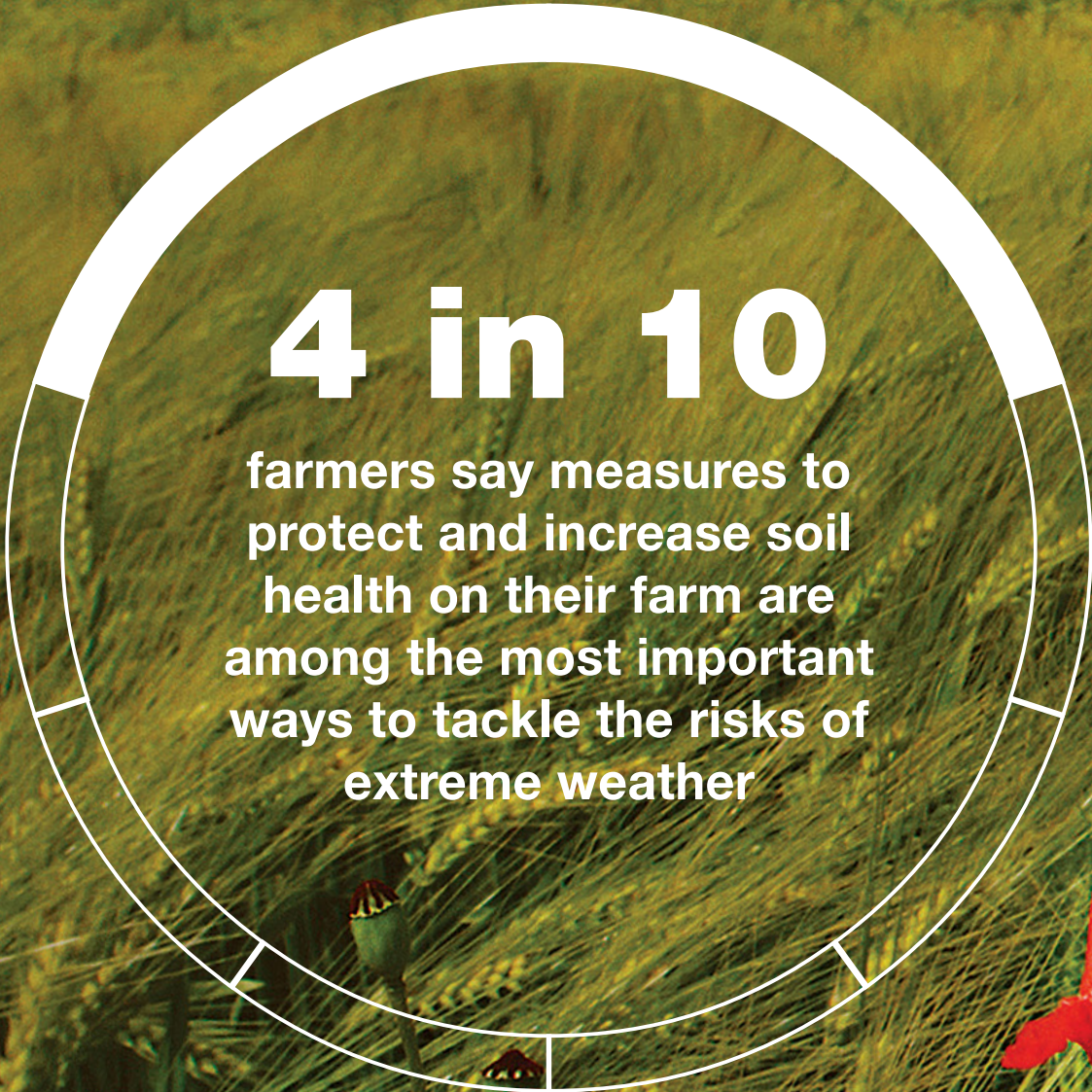
<sup>2</sup> Combined number for measurement tools, such as yield monitoring; digital application devices, such as sensors

<sup>3</sup> Combined number for purchasing inputs online; digital marketing tools to manage farm outputs  
India map source: [United Nations](#)



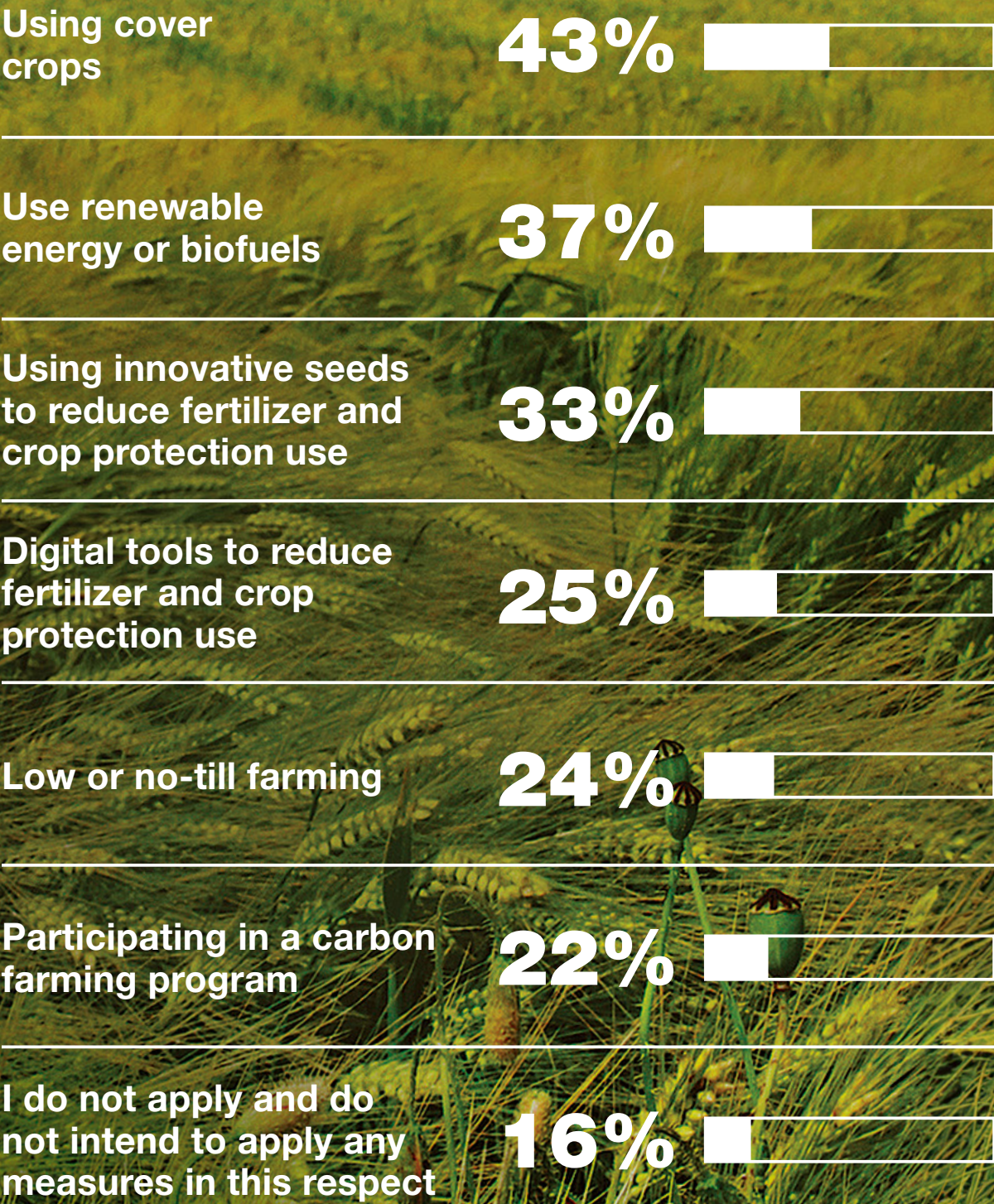
# PRESERVING THE ENVIRONMENT IS PARAMOUNT

Growers are taking critical steps to reduce environmental impacts and restore more of nature. Cover crops are the most prevalent way to reduce greenhouse gas emissions, with 43% saying they plan to implement the practice or already use it, while farmers in Australia are more likely to use no-till farming. Many see soil health as a route to navigating climate impacts and protecting bottom lines. Conserving biodiversity has become a priority for all farmers worldwide.



## 84% of farmers are working to reduce greenhouse gas emissions

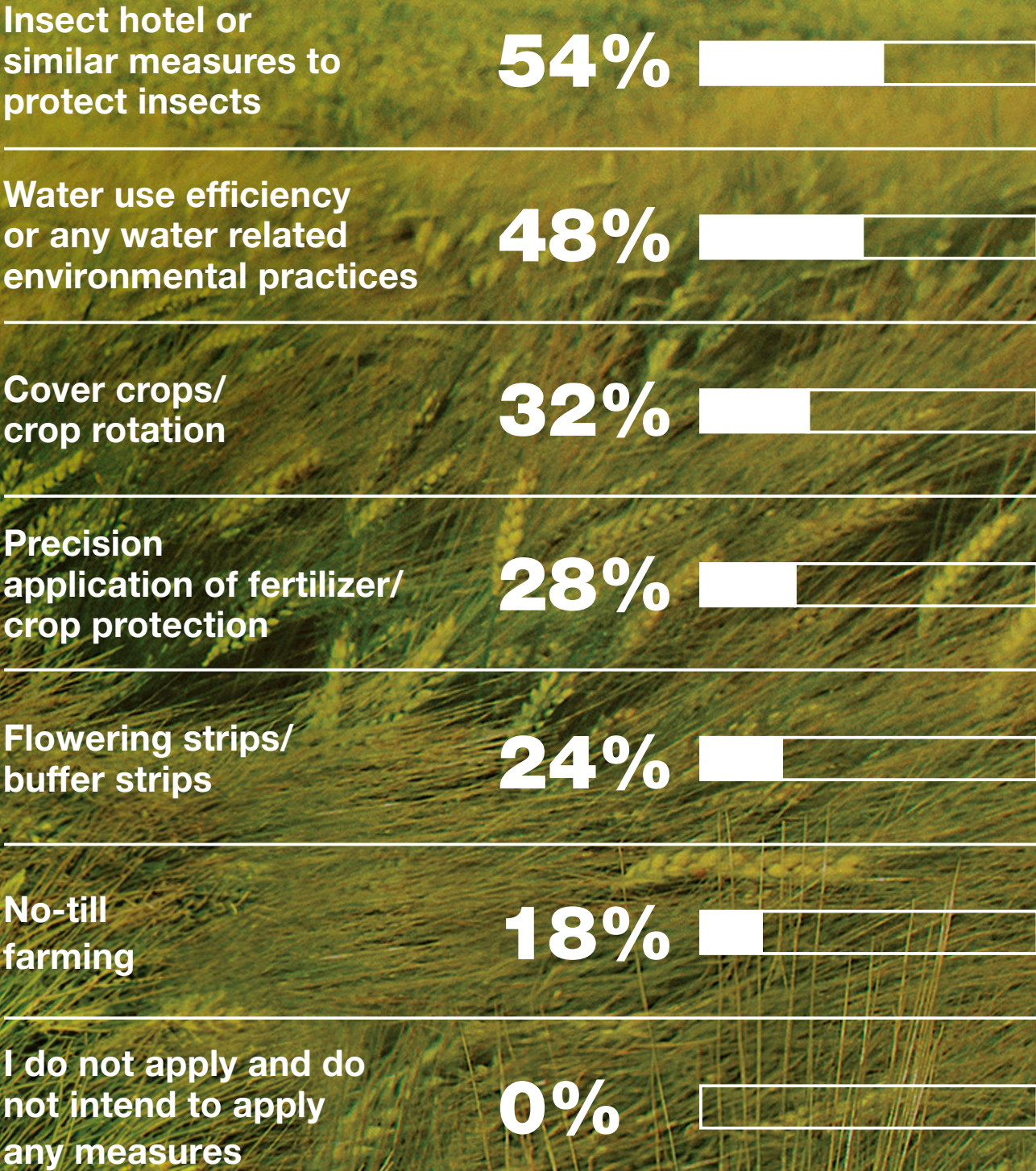
Respondents indicated all practices to reduce greenhouse gas emissions they already apply or plan to apply.





All farmers are planning to help biodiversity

Farmer indicated all the practices to reduce impacts on biodiversity they are applying or planning to apply in the next three years.



“If we cannot save our soil, that will affect food security for many people. We need to get access to new technologies and government should support us.”

INDIA, FEMALE, 31-40 YEARS OLD



“With rising inflation, we have decided to fast forward our green initiative. We’re hoping to be fully solar powered by mid-next year as currently energy prices are already becoming unmanageable.”

AUSTRALIA, FEMALE, 31-40 YEARS OLD



“I plan to reuse water to cultivate without injuring an environment.”

BRAZIL, MALE, 18-30 YEARS OLD



# FARMERS VALUE INNOVATION

Growers of all sizes see similar routes to future success. They are embracing innovations that promote resilience and will help them to shore up their operations. Farmers prioritize seeds and traits designed to better cope with extreme weather. Globally, nearly half of farmers say harvesting more from each hectare is crucial to future success.



**48%**

of farmers say they need to become more efficient on the same land to be successful in the future

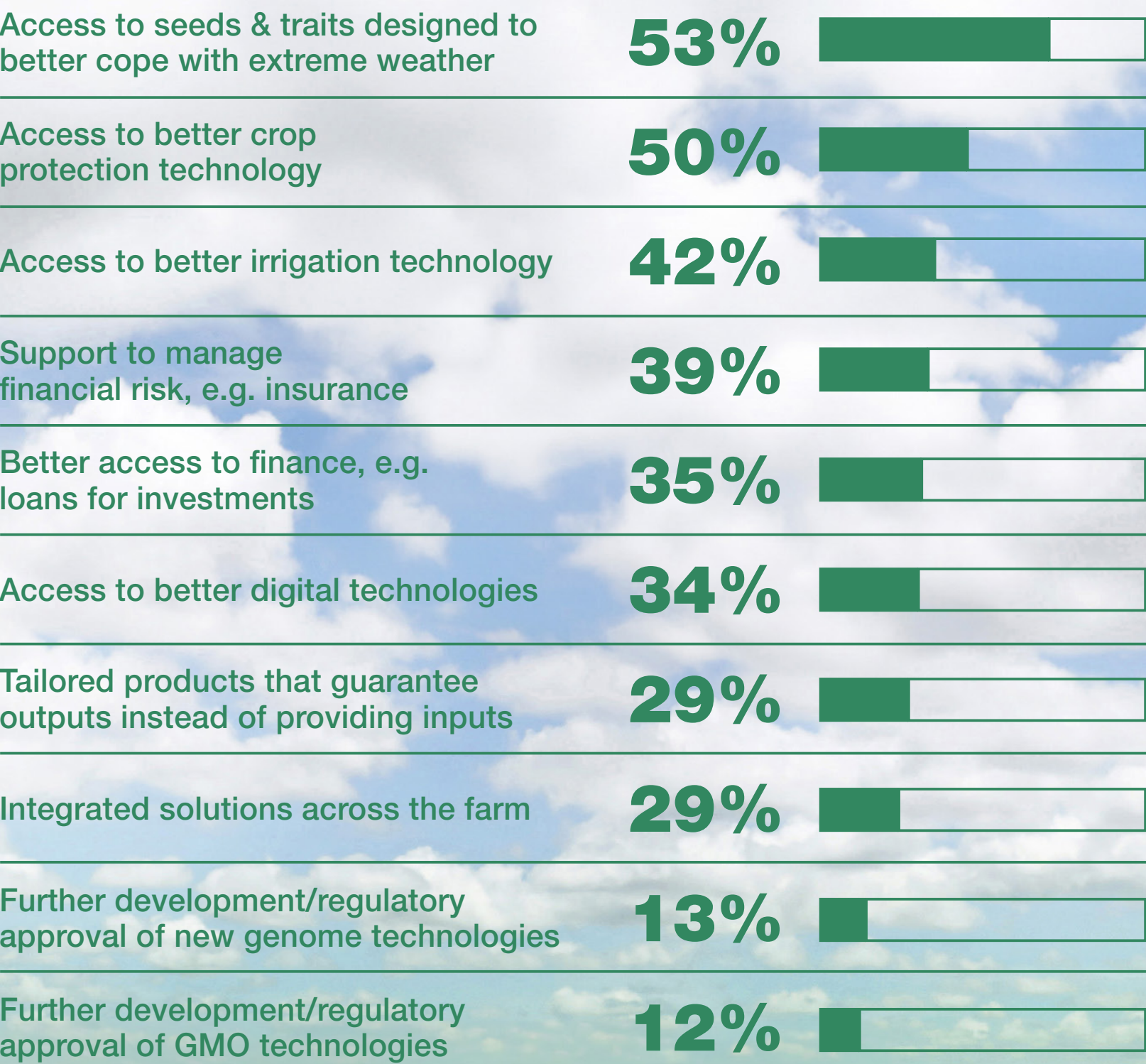
**57%**

say innovation in seeds & traits and crop protection is one of the biggest revenue growth opportunities



Continued innovation is most beneficial

Most farmers placed better seeds and traits, crop protection and irrigation among the three factors that would most benefit their farm.



“It feels more optimistic. With the advancement and continuous renewal of agricultural technology, the production is better increased.”

CHINA, MALE, 31-40 YEARS OLD



“New crop varieties that will enhance the future of agriculture produce is what I am hoping for in the near future.”

GERMANY, MALE, 18-30 YEARS OLD



“We are hopeful of growth going into the future. We have plans to upgrade our property so it can potentially grow crop breeds that aren’t usually in this climate.”

AUSTRALIA, FEMALE, 41-50 YEARS OLD



# THE FARMER VOICE IS HOPEFUL

Most farmers worldwide are optimistic but feel they are not recognized for their role in nourishing the world. Despite significant challenges posed by climate, market, and geopolitical pressures, most remain positive about the future. Planning is fundamental to farming and most growers hope to keep their operations in their family, with a quarter globally already making concrete plans to pass their farm on.







feel positively  
about the future  
of farming in  
their country

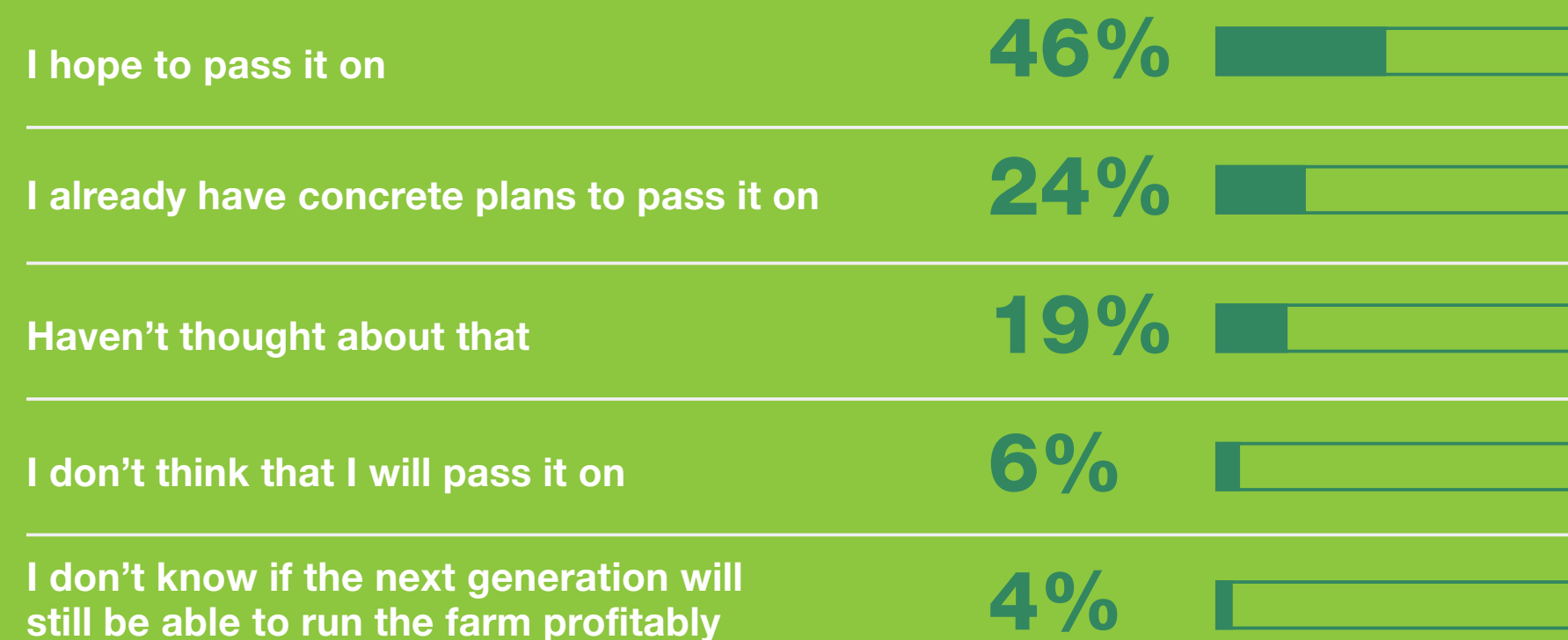


say they are critical to  
ensuring food security  
but don't get the credit  
they deserve



agree that  
people need to  
listen to their  
voices more

### Only 1 in 10 rule out passing their farm on to the next generation in their family



“The future of farming is definitely going to be passed down my generation, so I really see it being positive and also the more my farm grows the more resources to get digital equipment.”

**GERMANY**, FEMALE, 18-30 YEARS OLD



“I think it's (the future is) very promising. With developments in science and technology that are helpful to agriculture, prospects are really good.”

**CHINA**, MALE, 31-40 YEARS OLD



“I hope to expand my farm soon, grow additional crops, and pass it on to my children.”

**USA**, FEMALE, 41-50 YEARS OLD



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# INDIAN SMALLHOLDERS ARE REDUCING RISKS

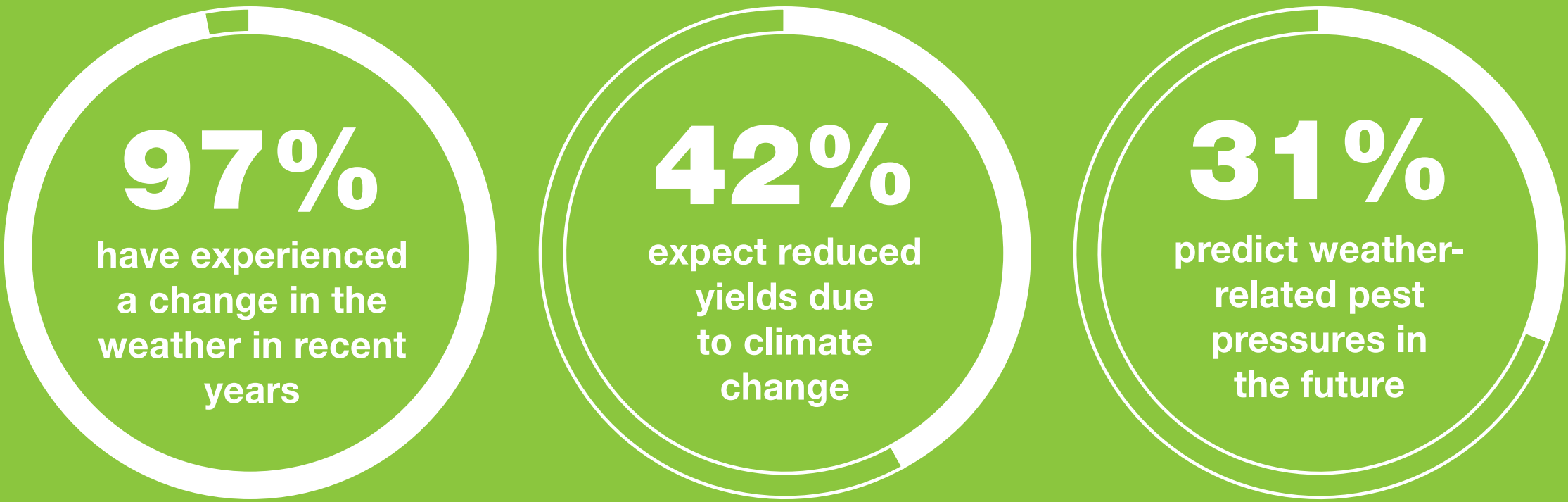
Fertilizer costs and labor worries are among the most pressing day-to-day challenges for smallholders in India. Unlike commercial and large-scale growers, they are prioritizing financial security and risk management as pests and changing weather threatens yields. Insurance, better infrastructure, and modern inputs are top of mind. Yet, Indian smallholders are more positive about the future of farming than the global average. As they look to the future, access to innovation and digital tools are critical to improving their livelihoods.



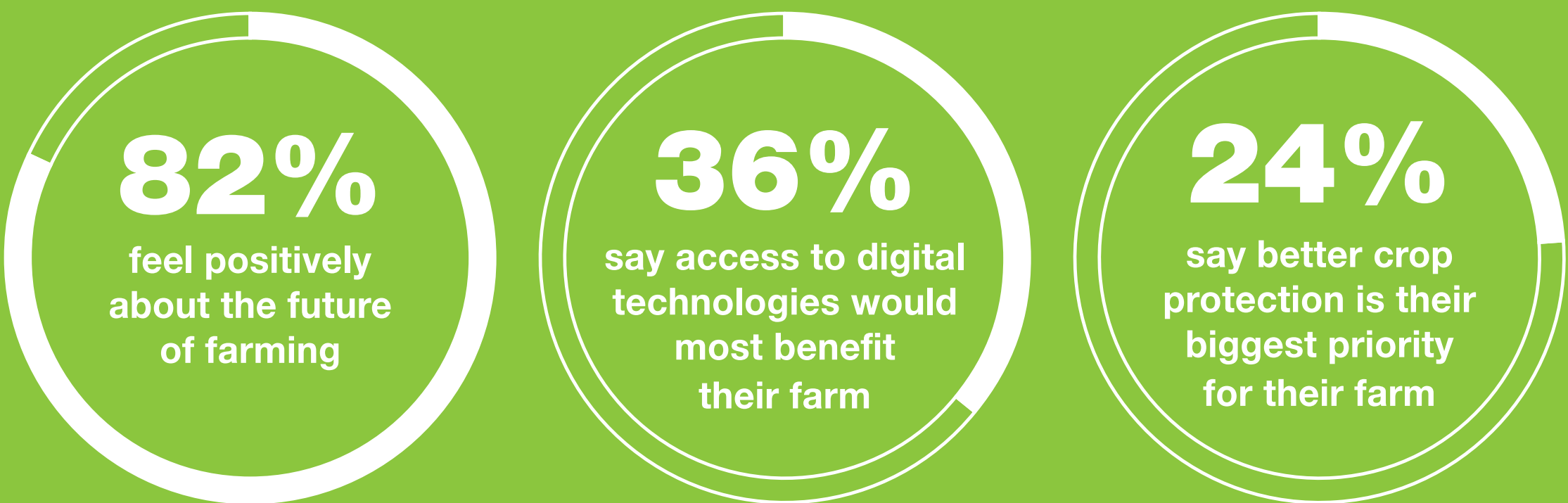
2,056 smallholder farmers in India were surveyed with a shortened questionnaire. These farmers were associated with the Better Life Farming ecosystem, farmers of Bayer-supported Farmer Producer Organizations, and farmers enrolled in Bayer's Sustainable Rice Program.



Almost all smallholders in India have experienced changes in climate and many are anticipating weather-related pressures in the future

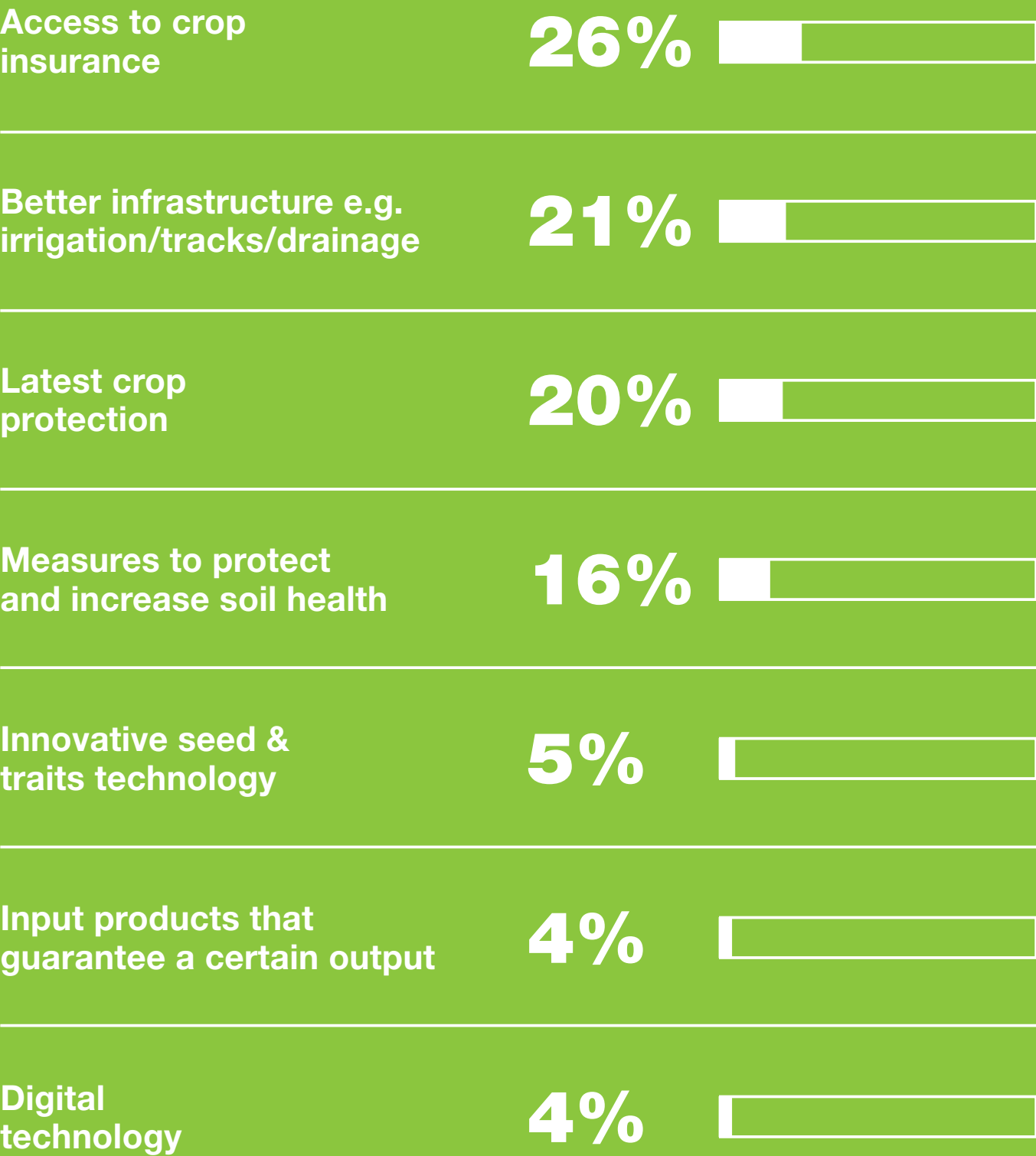


Indian smallholders say access to modern technologies would make the biggest difference to the future of their farms



Smallholders prioritize insurance and better infrastructure

Smallholders indicated the one factor needed most to help tackle the risks of extreme weather and changing conditions on their farm.\*



\*The questionnaire for the smallholder specific survey asked for one answer only to the question: What is needed most to help you to tackle the risks of extreme weather and changing conditions on your farm? The global survey that asked for respondents to indicate all answers that apply for the question: Which of these factors, if any, would benefit your farm? This explains the higher data points in the global survey



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# THE FUTURE OF FARMING IS IN GOOD HANDS

Farmers are withstanding the worst of multiple and related global challenges. Geopolitical unrest, spiralling costs for inputs, and market volatility are putting profits at risk. Yet, for many farmers, climate change poses just as much risk as economic uncertainty. Rising temperatures are already costing yields. Growers must navigate these complex pressures to remain productive.

But farmers remain optimistic. They know agriculture plays a significant role in feeding the world and nourishing the earth. They are adapting and driving innovation in the field. Farmers are finding new ways to grow with diversified crops, hardy traits, and digital tools.

There is a quiet revolution happening in farming. Growers worldwide are taking steps in regenerative agriculture, working to grow more while restoring more to the environment. Measures to reduce emissions, restore the soil, and protect nature are gaining momentum – but farmers feel they do not get the recognition for it. They are looking to industry, policymakers, and society for stronger support, greater innovation, and better technology.







“Future of farming in my farm looking very well. Me and my family work properly and doing well in production and I hope the future is good for our next generation.”

**INDIA**, MALE, 18-30 YEARS OLD

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“(I want) open land where grandkids can see the effort and time it takes to grow the food they love. It is a precious thing, and we all need to help it grow.”

**USA**, MALE, 61+ YEARS OLD

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“I dream that this business is increasing and bringing more harvest and more profit for our family in the future.”

**GERMANY**, FEMALE, 18-30 YEARS OLD



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Read more at:

[www.bayer.com/en/agriculture/farmer-voice](http://www.bayer.com/en/agriculture/farmer-voice)