Farmers and Digitalisation

Insights from Farmers in Europe and Africa

Savanta:

vodafone

Farming is firmly in the spotlight. In both Europe and Africa, the pressures of food security and sustainability are being felt. Farm-level productivity has rarely been more relevant to policymakers. The war in Ukraine, climate change and global hunger are driving the need for urgent action, and digital farming technology offers much-needed solutions.

This report provides much needed insights into the perspectives of farmers. It helps move us closer to understanding how the digital transition can accelerate the green transition, while enhancing productivity and food security – and in doing so, respond to the urgent threat of climate change.

Survey scope

EUROPE: Farmers were surveyed online in Germany, Greece, Hungary, Italy, Netherlands, Portugal, Romania, Spain and Turkey (50 in each market apart from 21 in Romania)

AFRICA: Farmers were surveyed via telephone in Egypt, Kenya, South Africa and Tanzania (50 in each market)

See end for full details of the survey methodology.

Highlights

Vodafone commissioned Savanta ComRes to survey farmers in 13 countries across Europe and Africa. The findings reveal that while farmers face serious threats in the form of climate change (drought), increased input costs and a lack of support from the public sector, most (58% in Africa and 61% in Europe) are optimistic about the future.

Many farmers are already using digital tools to reduce their use of fertiliser, to use water in a smarter way and to improve soil health. However, even though they intend to invest more in the future (94% in Africa and 96% in Europe), they face clear barriers to the future adoption of digital technology on their farms. These barriers include the cost and availability of devices, as well as a lack of access to the internet.

Importantly, farmers are clear on the general support they need to help them adopt more digital solutions and overcome these barriers. In addition to better internet connectivity, they need more training on how to use digital technology and subsidies or incentives to adopt. And for this they need government support. Only a minority believe their governments are doing enough to help them right now.

Digital Farming Definition

Digital farming solutions use data to aid decision making and make farming more accurate and controlled when it comes to growing crops or raising livestock. Digital tools include solutions powered by artificial intelligence, blockchain and Internet of Things systems such as GPS, sensors, robotics, satellites, drones and more. They enable the monitoring of weather and soil conditions, as well as costs and market prices. Smart watering, irrigation and crop feeding solutions can also help drive efficiencies and increase the visibility of key farming data.

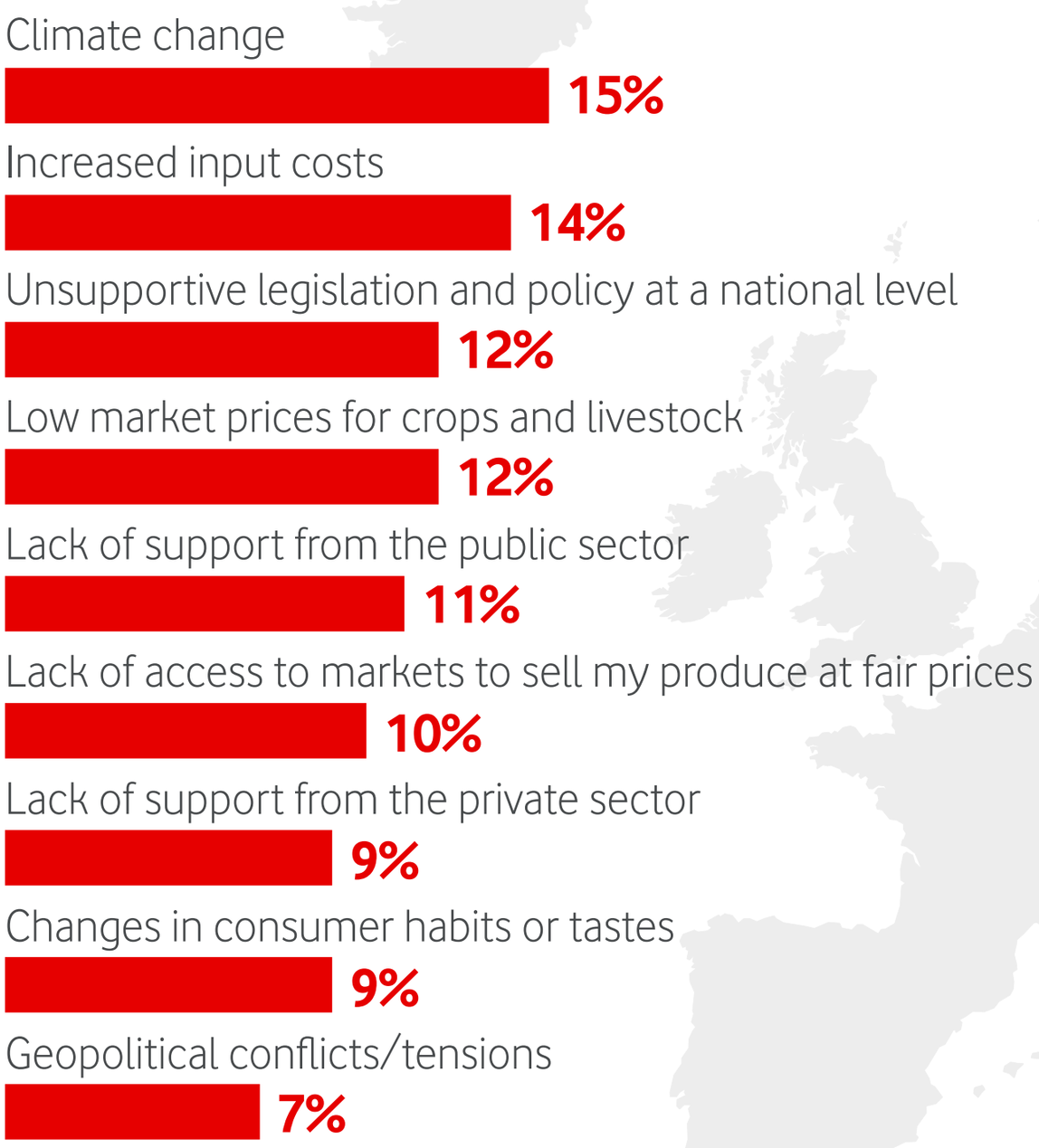
Precision Agriculture Definition

Precision agriculture is a specific type of digital farming and provides better quality information at a much more granular/micro level. For example, analysing one square metre in a field, an individual animal or a tree in an orchard. Actions are identified and treated with precision in an effort to lift the average yield of the farm.

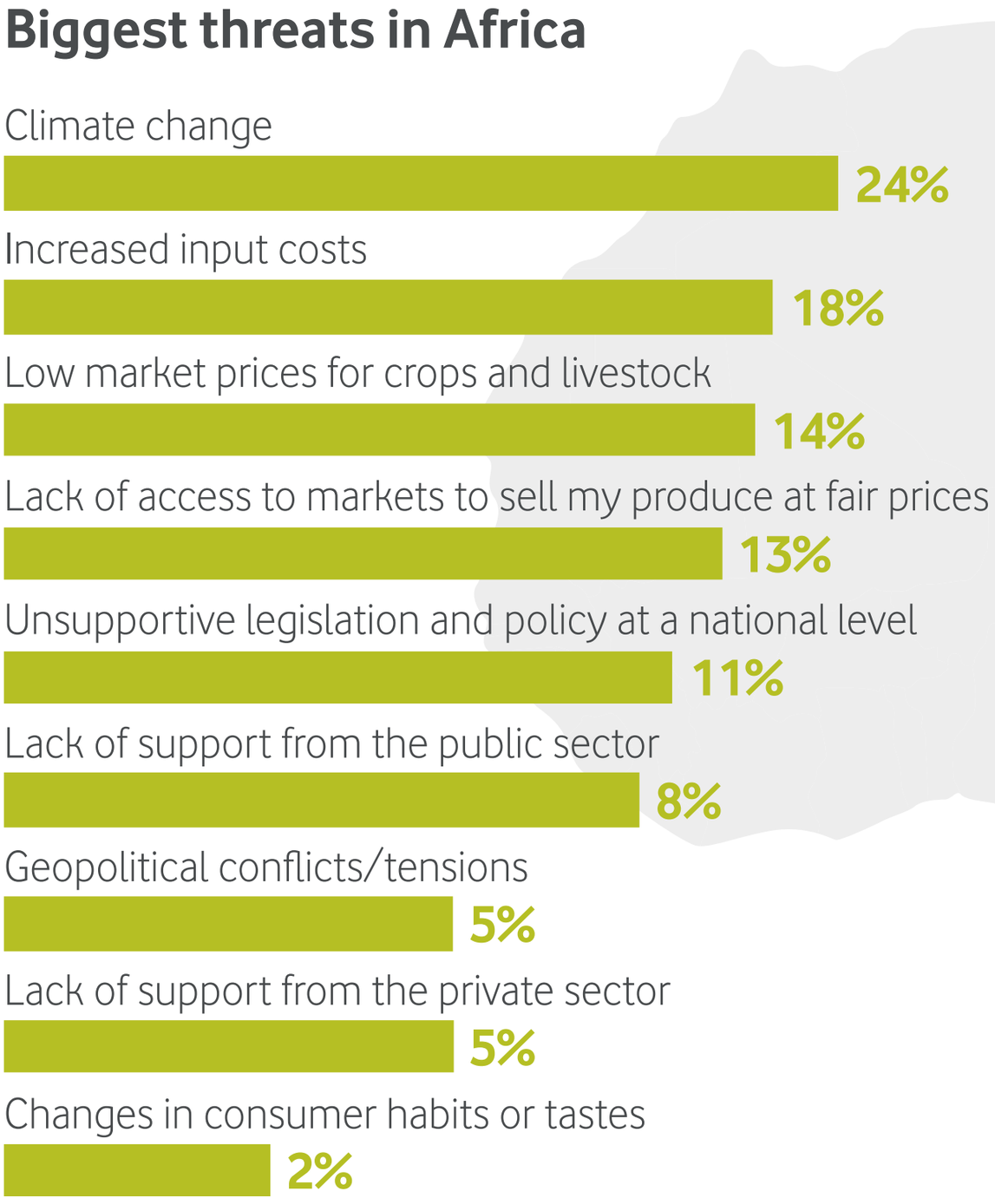
The challenging business of farming

Farmers in Europe and Africa noted the challenges that they believed posed a threat to the future of farming. At the top of the list in both regions was climate change.

Biggest threats in Europe



Biggest threats in Africa



In Europe, lack of public sector support was a particular concern in Turkey (cited by 20%), Greece and Portugal (cited by 14%), and Spain (cited by 12%).

In Africa, climate change was a particular concern in Kenya (cited by 52%).

It's also worth noting that in Europe, the importance of the challenge varied by size of farm, with 26% of small farm respondents mentioning increased input costs as a particular concern, compared to just 11% on large farms.

Climate change is impacting farm financial viability

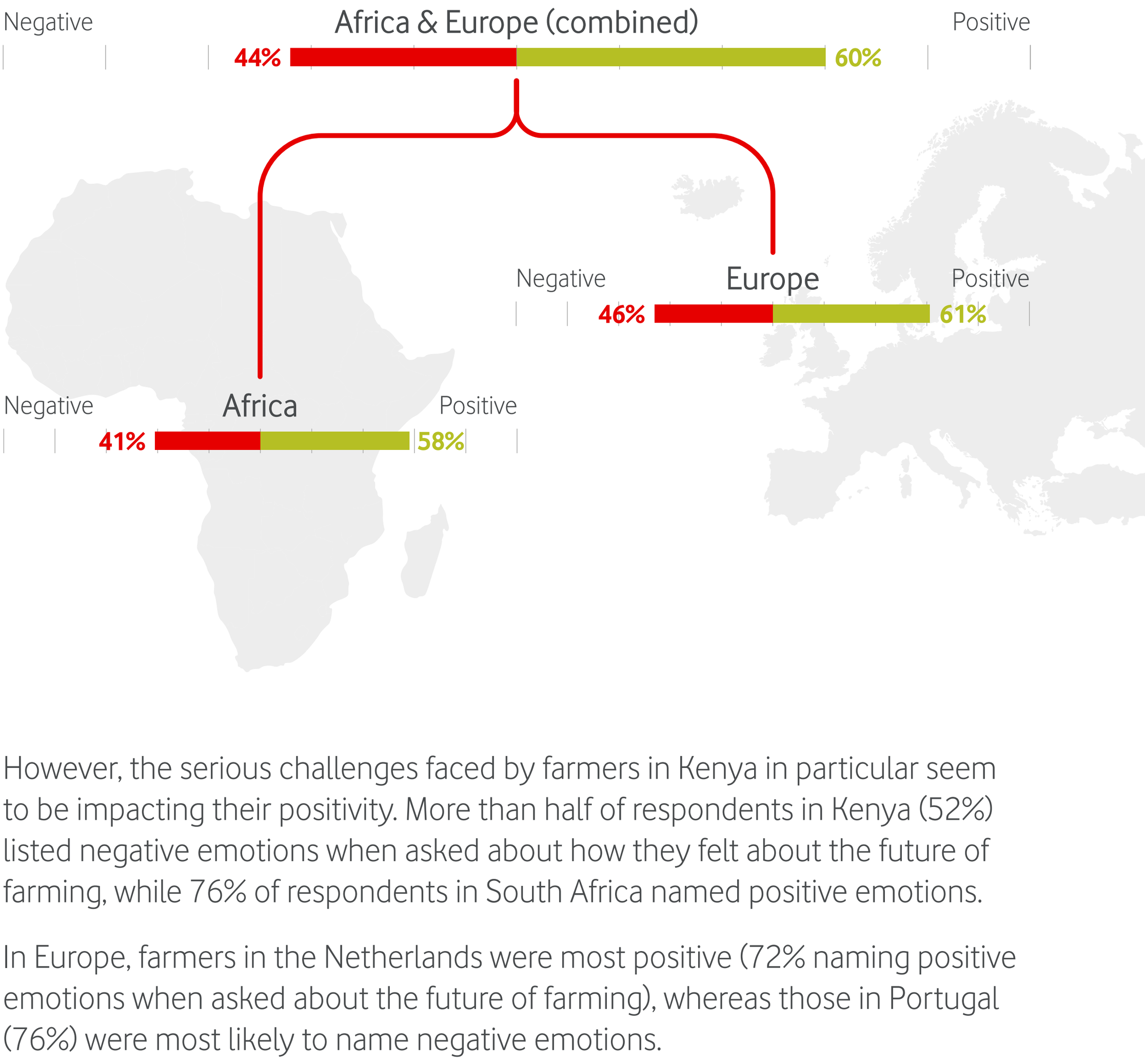
As noted above, climate change is a major concern across both regions. In Europe, 97% of respondents said that climate change is impacting the financial viability of their farm to some or a great extent. Furthermore, 93% say recent droughts have impacted the viability of their farm to at least some extent – 55% say to a great extent.

In Africa, 93% of farmers surveyed said climate change is impacting financial viability of their farm to some or a great extent. However, every respondent (100%) in Egypt and Kenya agreed with this statement. Similarly, 94% of farmers in Africa said that recent droughts have impacted the viability of their farm to at least some extent, but that figure rose to 100% for respondents in Egypt and Kenya.

Attitudes towards the future of farming

Despite the very real concerns felt by almost all farmers surveyed in Europe and Africa, they are optimistic about the future.

How do famers feel about the future of farming as an industry?



However, the serious challenges faced by farmers in Kenya in particular seem to be impacting their positivity. More than half of respondents in Kenya (52%) listed negative emotions when asked about how they felt about the future of farming, while 76% of respondents in South Africa named positive emotions.

In Europe, farmers in the Netherlands were most positive (72% naming positive emotions when asked about the future of farming), whereas those in Portugal (76%) were most likely to name negative emotions.

Furthermore, the smaller the farm size in Europe, the more concerned people are.

Emotions depending on size of farm

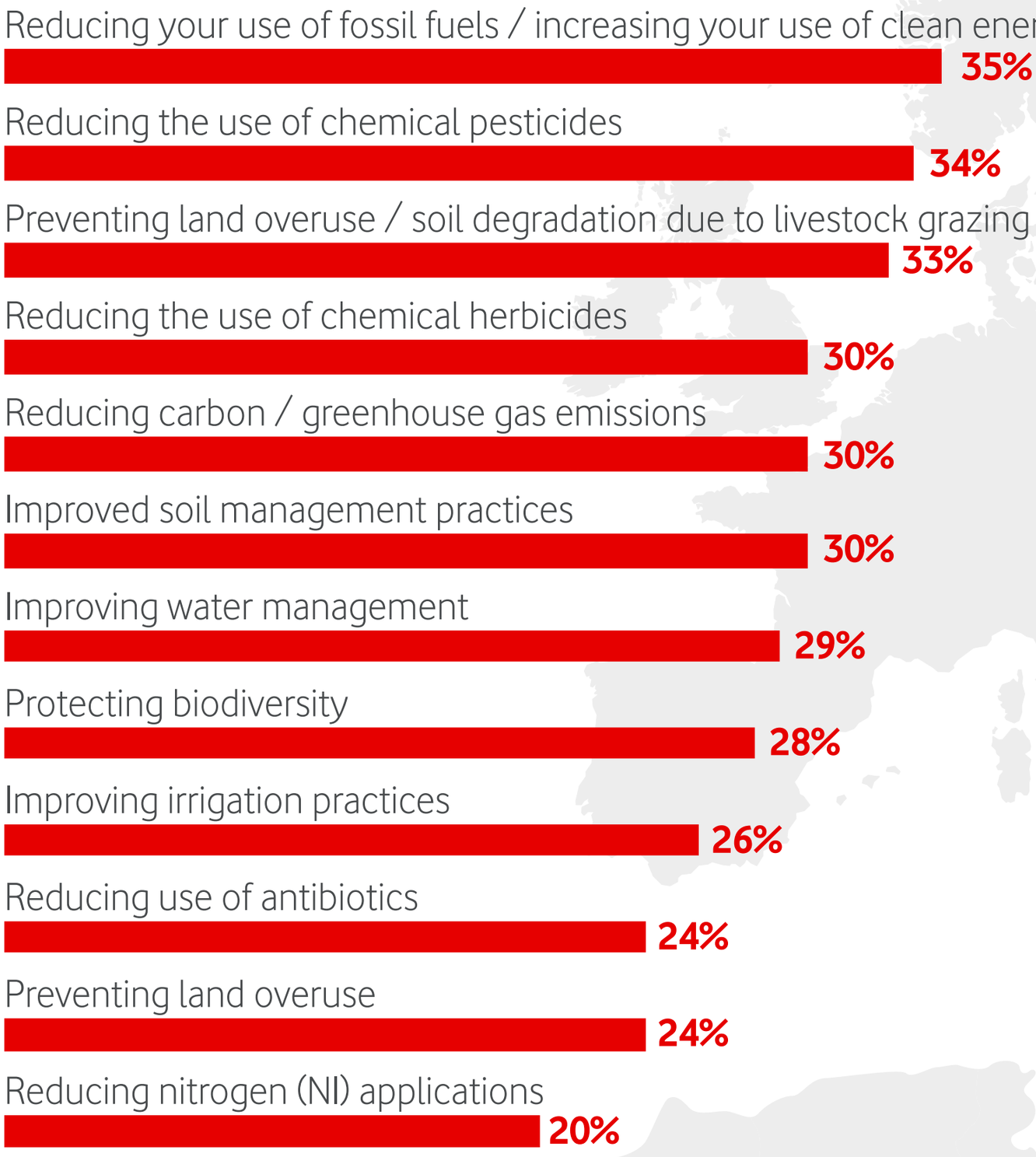
Sustainability remains a priority

Despite the challenges and the associated impact on the financial viability of farms in Europe and Africa, farmers are not giving up on sustainability.

In Europe, 96% of farmers said increasing sustainability practices on their farm is quite or very important (47% said very important).

In Africa, 92% of farmers said increasing sustainability practices on their farm is quite or very important (55% said very important)

Areas of priority for sustainability (Europe)

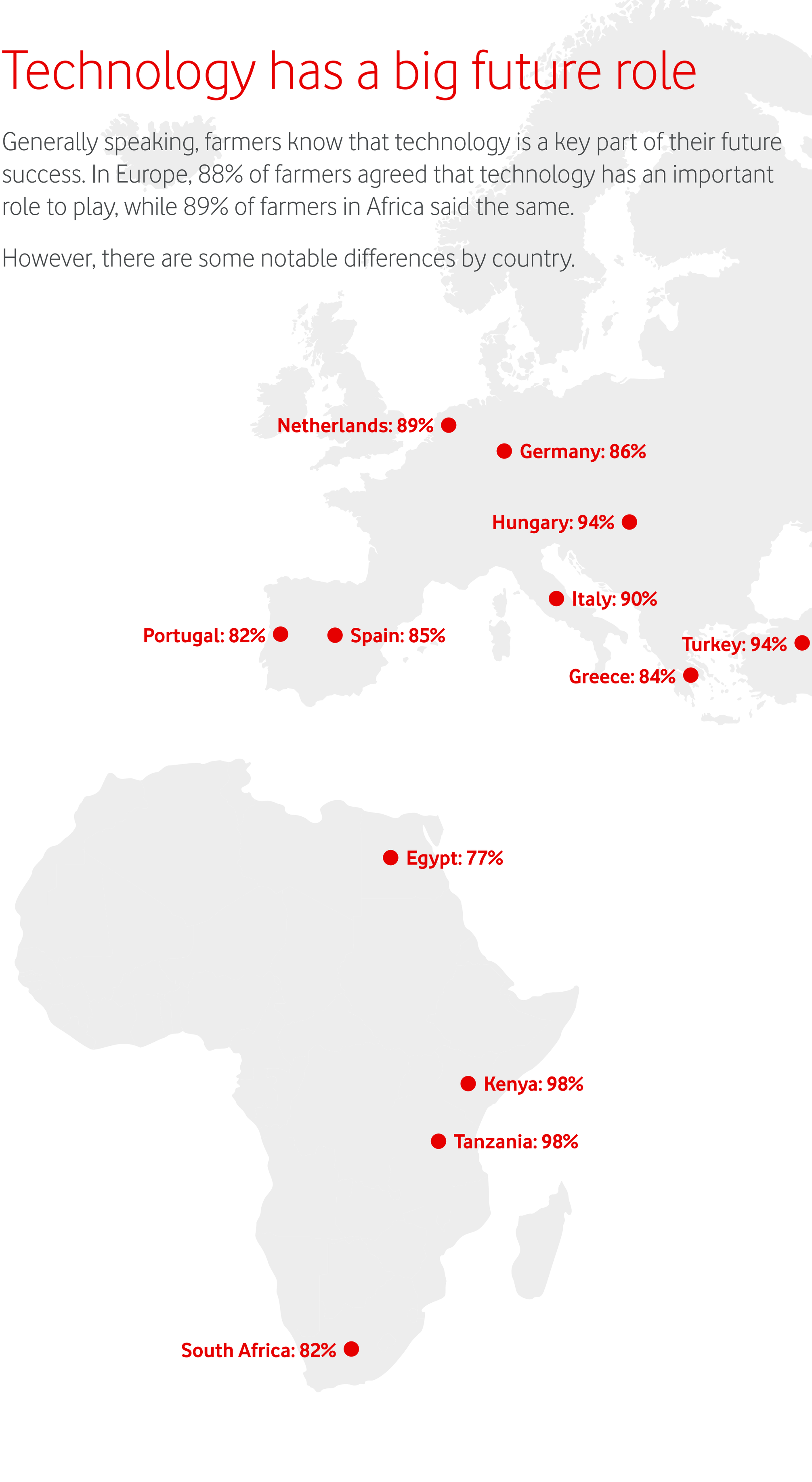


Areas of priority for sustainability (Africa)

Technology has a big future role

Generally speaking, farmers know that technology is a key part of their future success. In Europe, 88% of farmers agreed that technology has an important role to play, while 89% of farmers in Africa said the same.

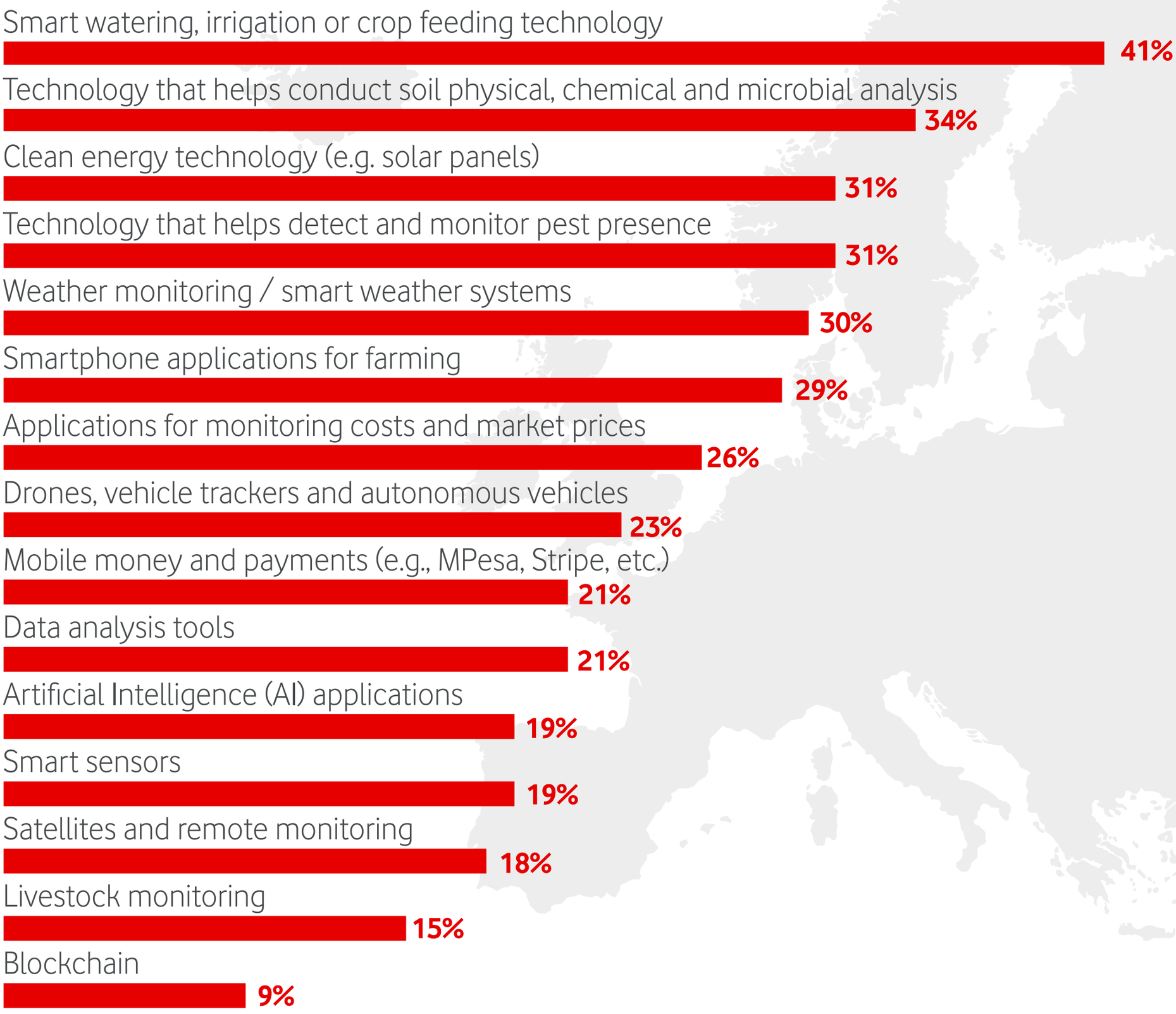
However, there are some notable differences by country.



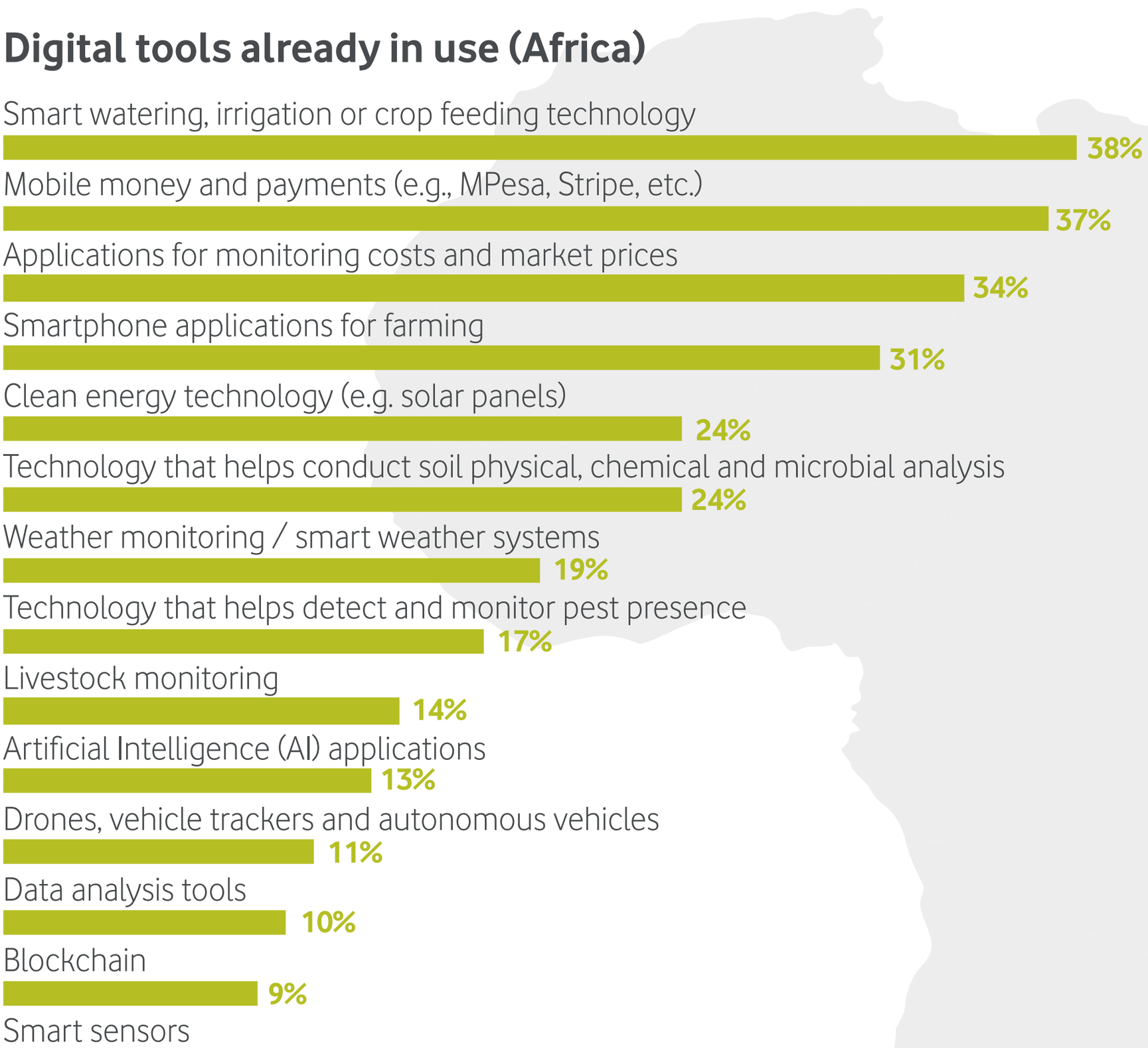
Many farms are already using digital tools

Farms across both Europe and Africa are already embracing digital tools for a wide variety of reasons.

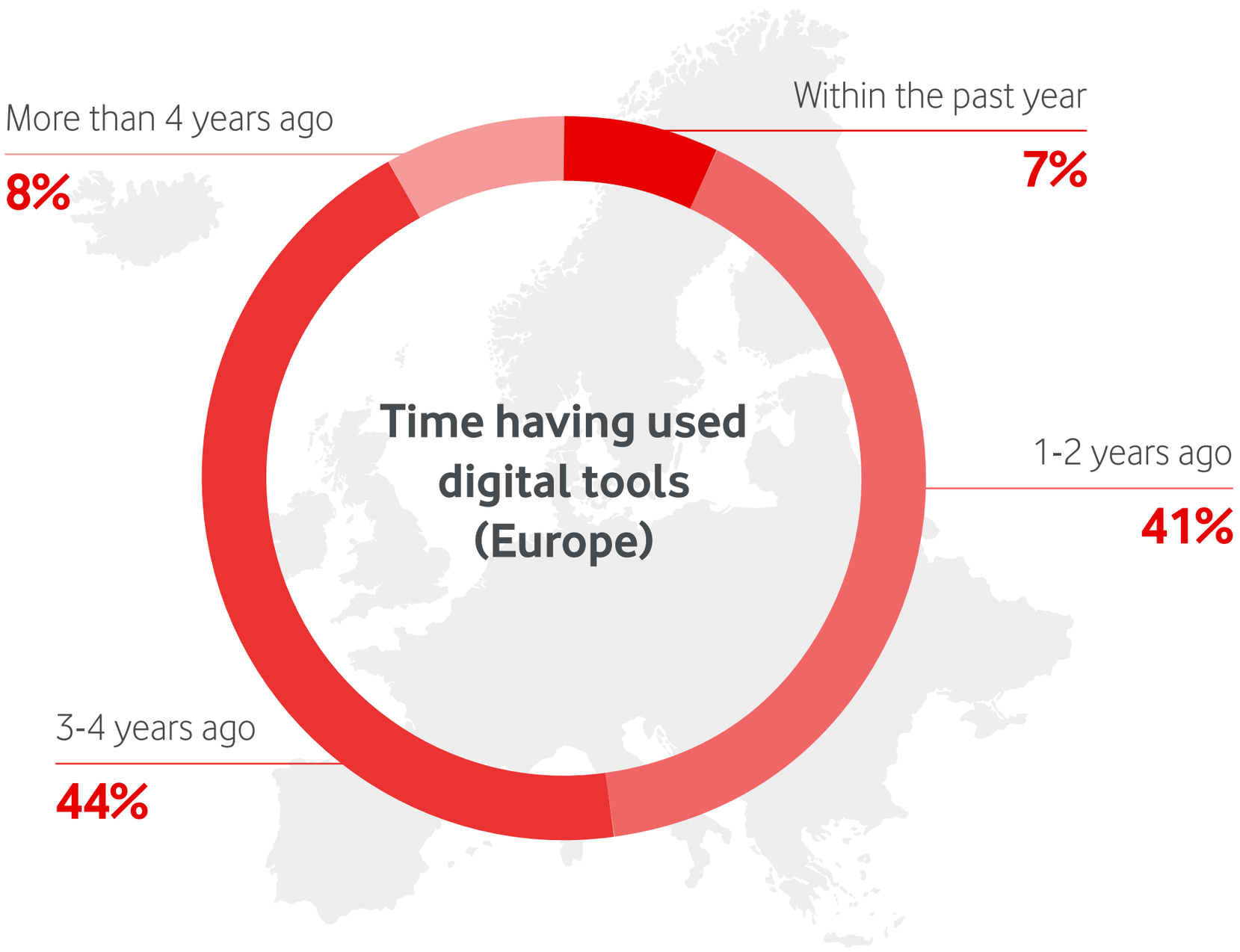
Digital tools already in use (Europe)

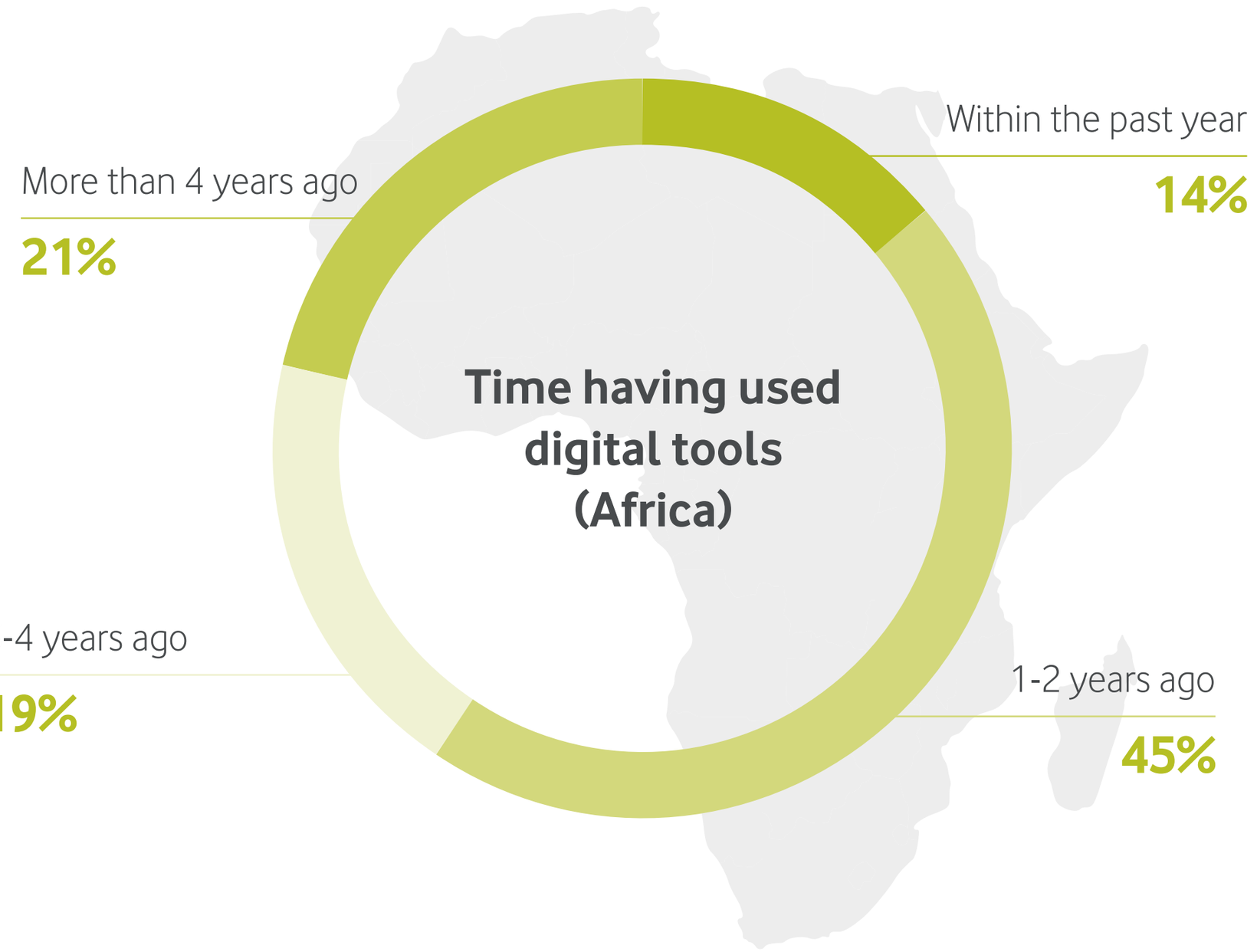


Digital tools already in use (Africa)



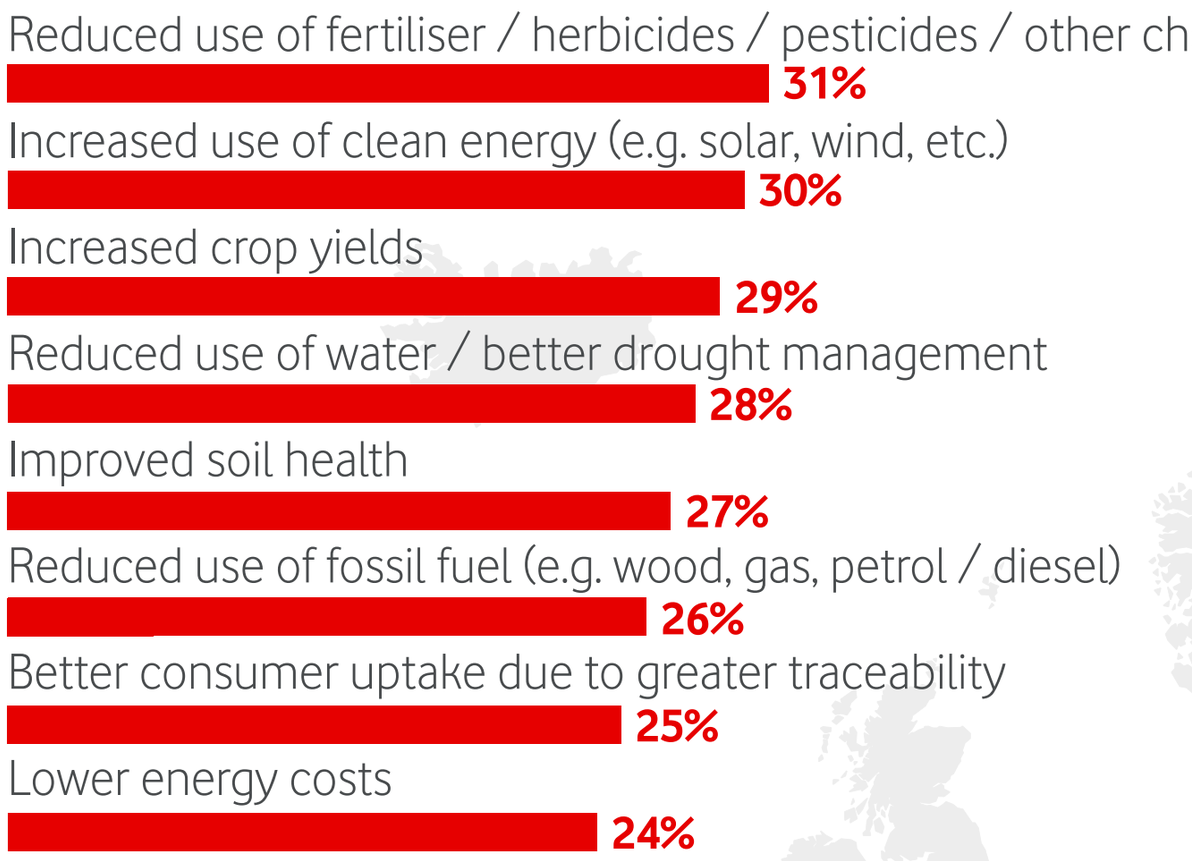
This is not a recent phenomenon either. As the below figure shows, almost half (44%) of respondents in Europe have been using digital tools for three to four years. While in Africa, the adoption has been slightly more recent with 45% of farmers saying they began to use them one or two years ago.



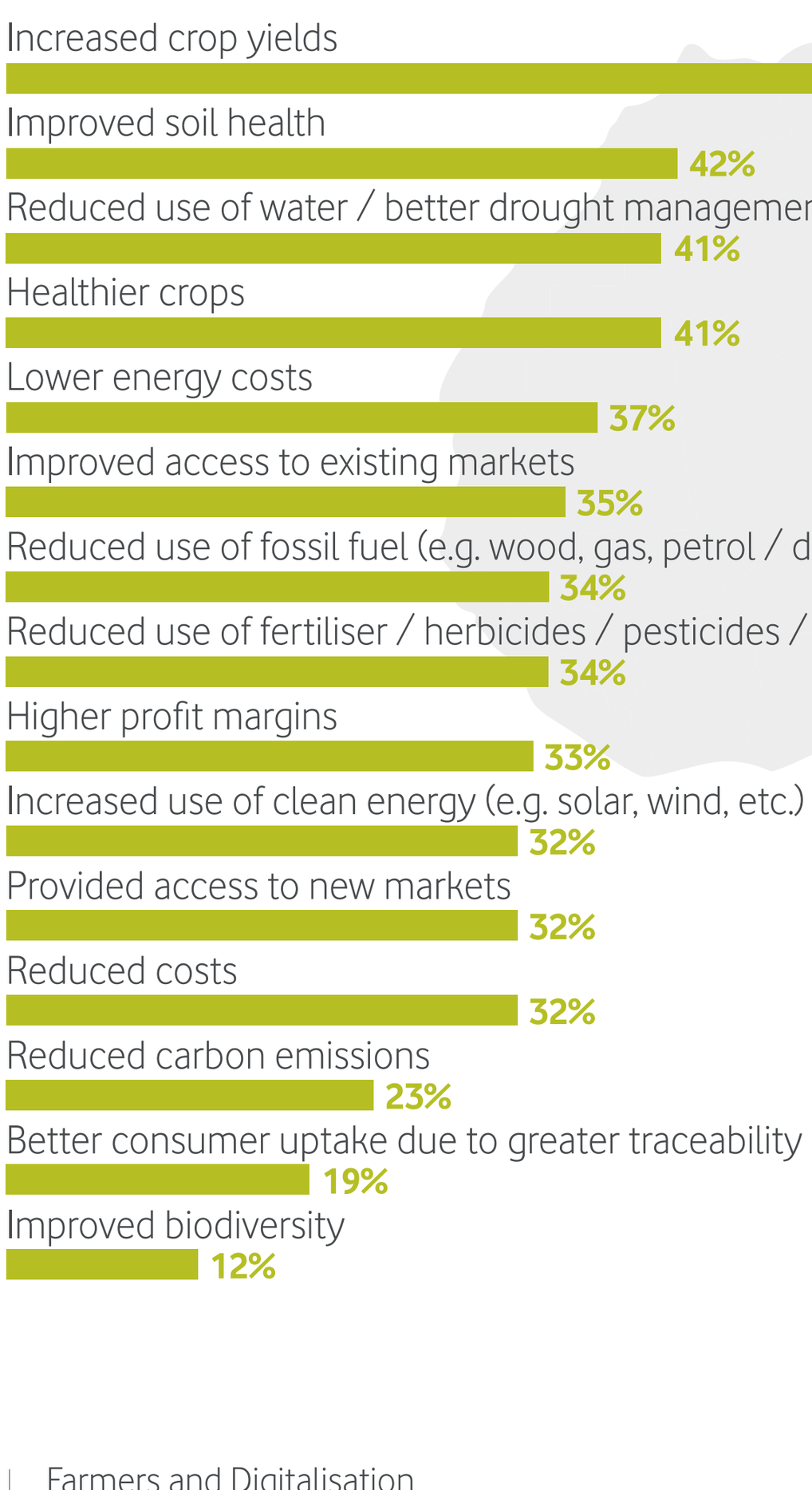


The benefits of digital technology are widespread, ranging from reduced use of fertiliser and lower energy costs to higher profit margins and improved biodiversity.

Benefits of using these tools (Europe)



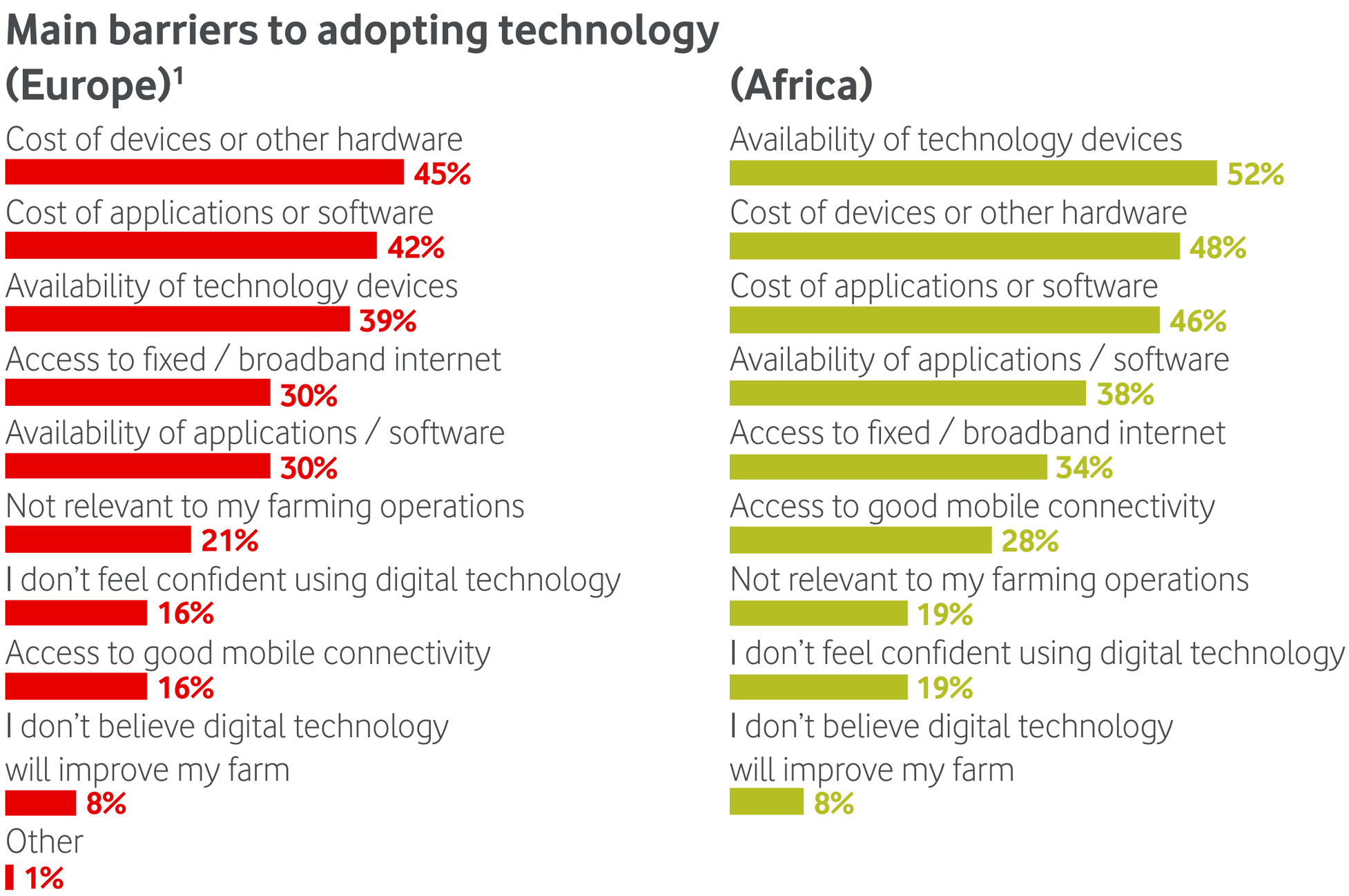
Benefits of using these tools (Africa)



Barriers threaten future progress

The intent is there when it comes to farmers' plans to invest in digital technology in the future, but farmers also see barriers that risk their future progress.

In this survey, farmers in Europe and Africa listed the main barriers they face when it comes to digital technology on their farms (see below figure).



Interestingly, the top three barriers in each region are the same albeit differently ordered. Furthermore, some barriers varied by country. Access to good mobile connectivity (47%) and access to fixed or broadband internet (48%) were particular issues in Kenya.

The top barrier in each country[1] was:

Cost of applications or software	Tanzania[2], Germany, Hungary, Italy[2], Portugal, Turkey
Cost of devices or other hardware	Egypt, Tanzania[2], Greece[2], Netherlands, Italy[2], Spain
Availability of technology devices	Kenya, South Africa
Cost of fixed/broadband internet	Greece[2]

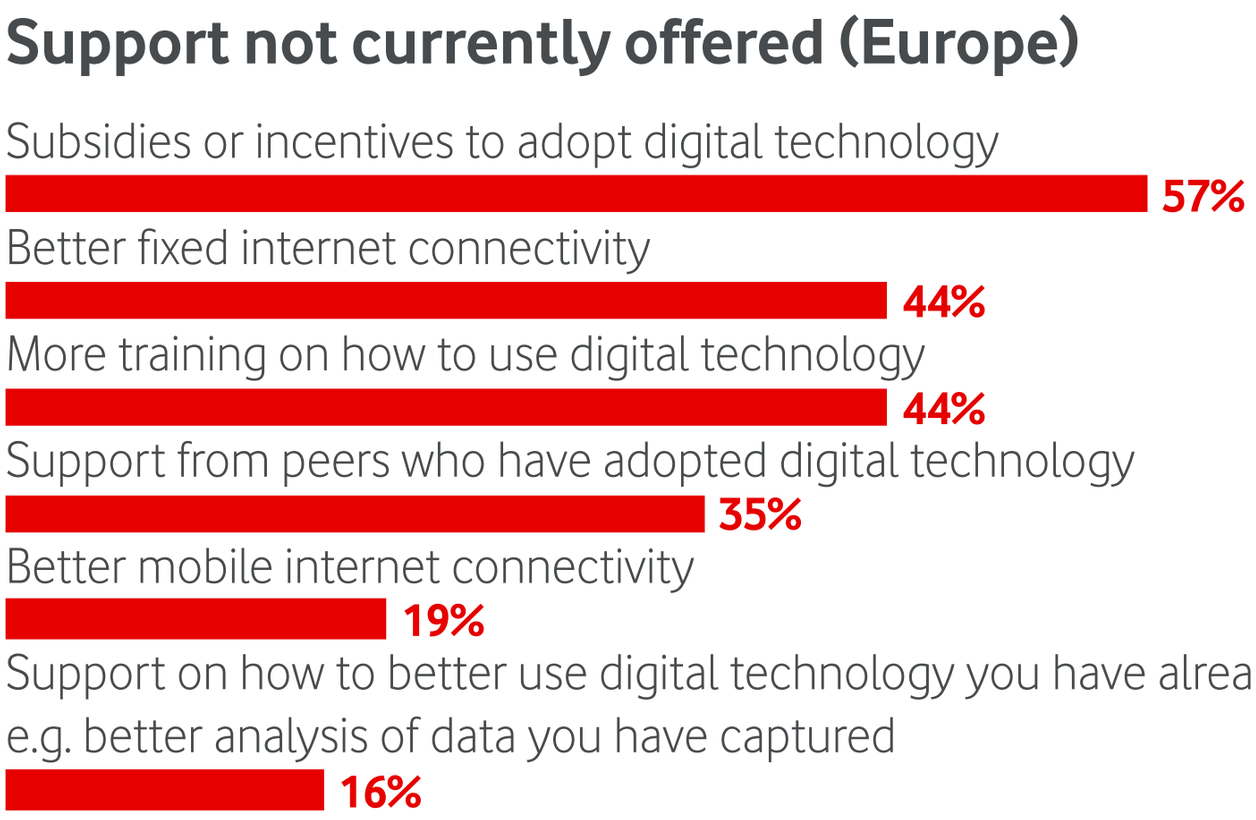
It's also worth noting that access to good mobile connectivity was a particular issue in Greece (cited by 33%) and Turkey (cited by 27%). Access to fixed/ broadband internet was also a particular issue in Spain (cited by 46%), Hungary (cited by 44%) and Greece (cited by 41%).

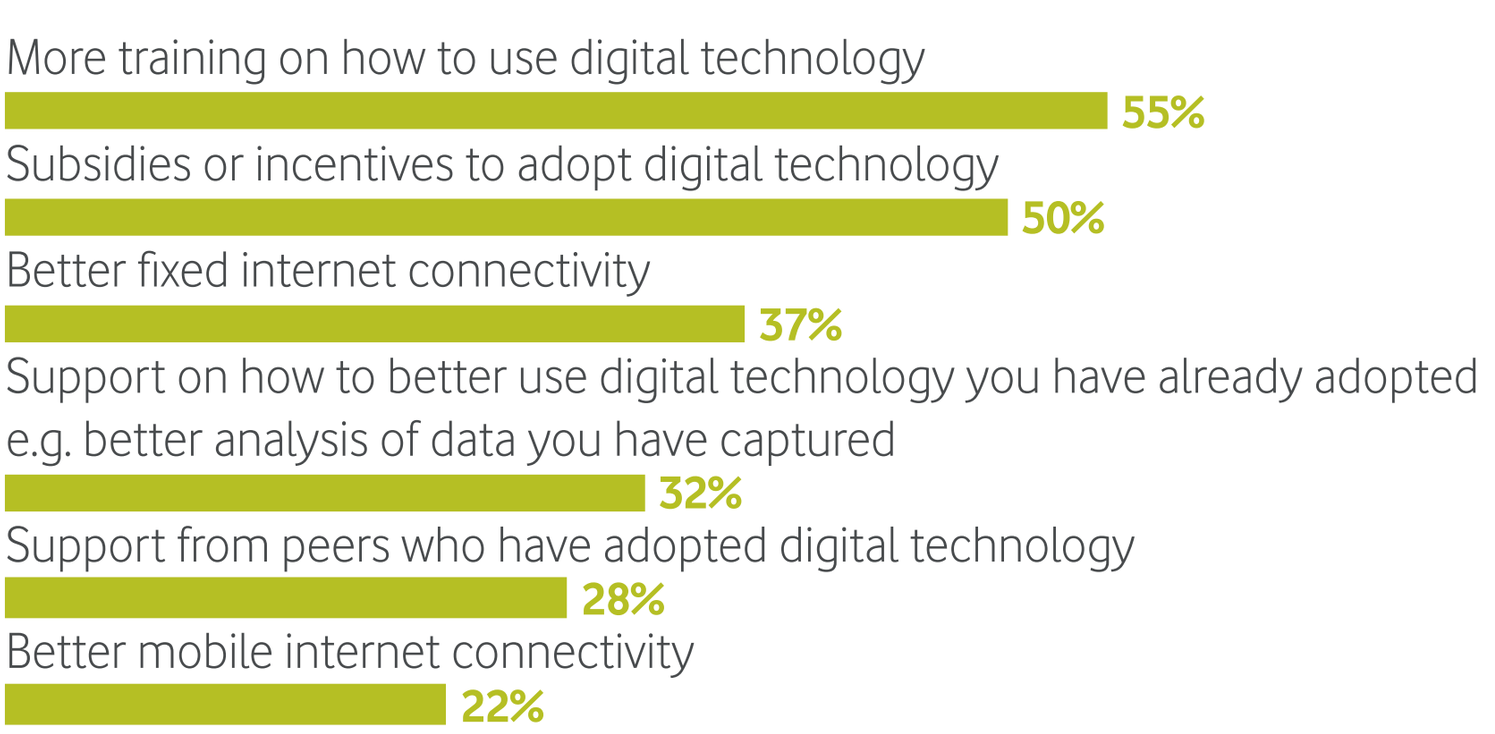
The only significant discrepancy in responses concerning the relevance of digital technology to farming operations was in Egypt. Almost half (43%) of respondents in Egypt said that digital technology was not relevant to their farming operations. Egypt was an outlier in this regard, with only 2% in Kenya and 8% in Tanzania saying the same.

1 Romania excluded due to small sample size
2 Country mentioned in multiple categories due to joint top answers

Consistent picture of preferred support across countries

Across all farmers surveyed in both Europe and Africa, there were some notable similarities in the kinds of support preferred for adopting digital tools. Respondents were asked specifically about the tools that they would like that are not currently being offered.





In eight of the 13 countries surveyed, the top request for digital technology adoption support was the same – subsidies or incentives.

The top request in each country[1] was:

Subsidies or incentives to adopt digital technology	Egypt, South Africa, Greece, Italy, Netherlands, Portugal, Spain, Turkey
More training on how to use digital technology	Kenya, Tanzania, Hungary
Better fixed internet connectivity	Germany

1 Romania excluded due to small sample size

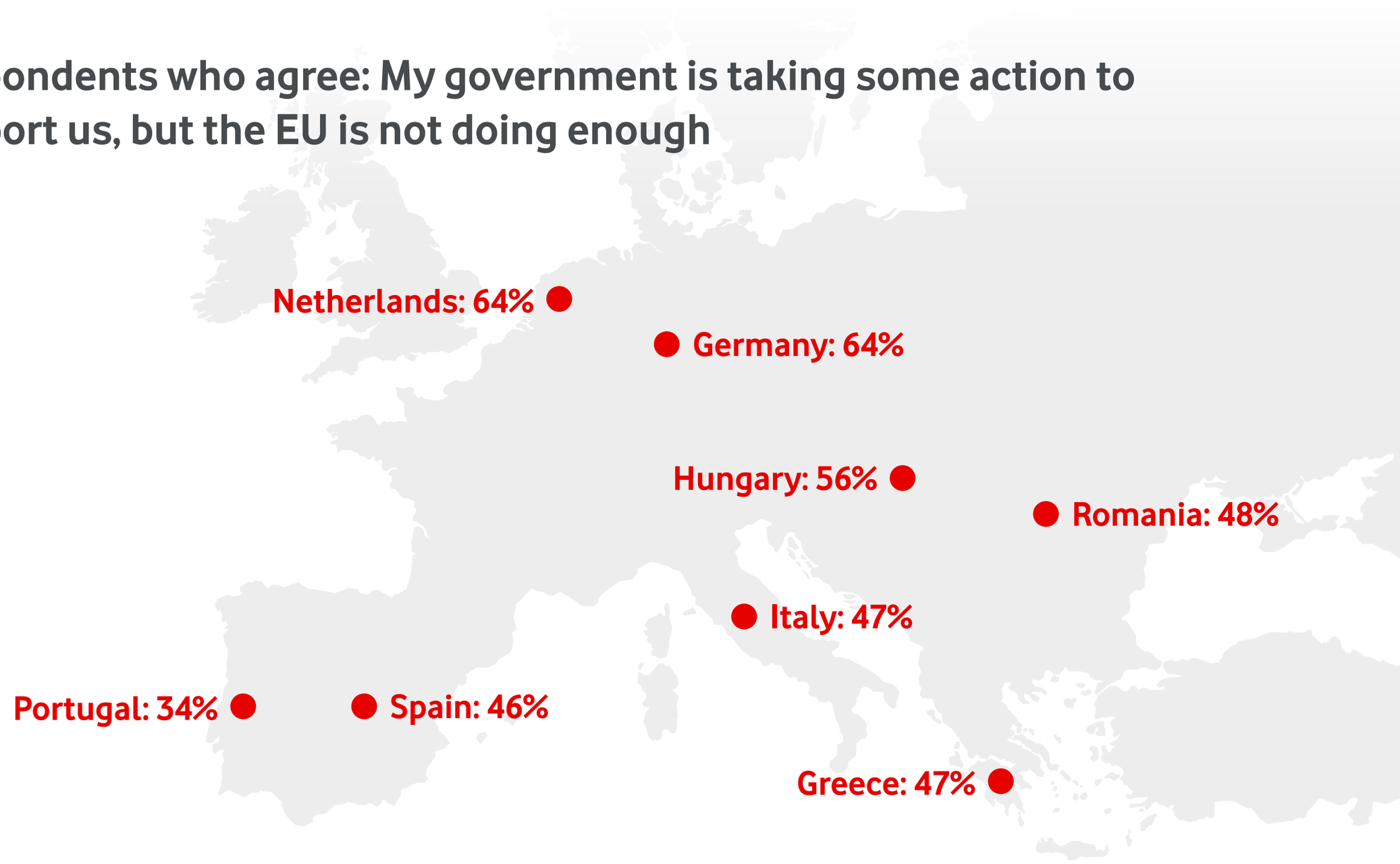
Governments need to provide support

When it comes to who should provide this support for digitisation, farmers are of one voice – 92% in Europe and 87% in Africa say they need government support. Increased adoption of digital technology is not something they can do alone. While we noted above that farmers intend to invest their own money in the next 12 months, they were also clear about the need for government support too.

A significant number (27%) of farmers in Europe say that their national government and the EU are already taking significant action that is having a meaningful effect. Sadly, almost twice as many respondents (51%) say that their government is taking action, but the EU is not doing enough. A much smaller number (11%) say the EU is taking action, but their national government is not doing enough.

In some countries the lack of EU support is notably higher than the averages above. In Germany and the Netherlands, 64% of farmers do not think the EU is doing enough, while their own national government is taking some action to support them.

Respondents who agree: My government is taking some action to support us, but the EU is not doing enough



Countries in Europe most likely to say that neither the EU nor national governments are supporting them include Greece (16%), Italy (16%) and Spain (13%).

In Africa, farmers were asked about how their national governments are addressing the challenges they face. Most (55%) acknowledged that their government was taking some action to help, but not doing enough. More concerningly, a quarter (26%) of farmers said that their government is not supporting them.

How well is their government addressing these challenges?

19%
My government is taking significant action that is having a meaningful effect

55%
My government is taking some action to support me, but is not doing enough

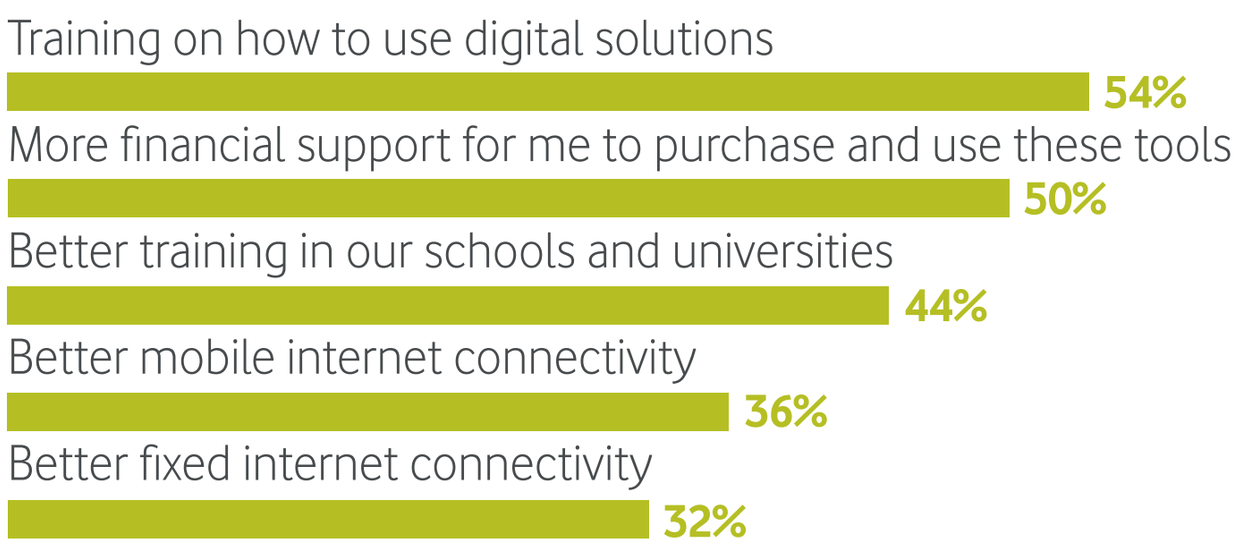
26%
My government is not supporting me

Government action can support greater digitalisation of farming

Governments can capitalise on the positive attitude among farmers and their intent to invest in digital tools in the next 12 months by supporting this critical industry in a number of practical ways.

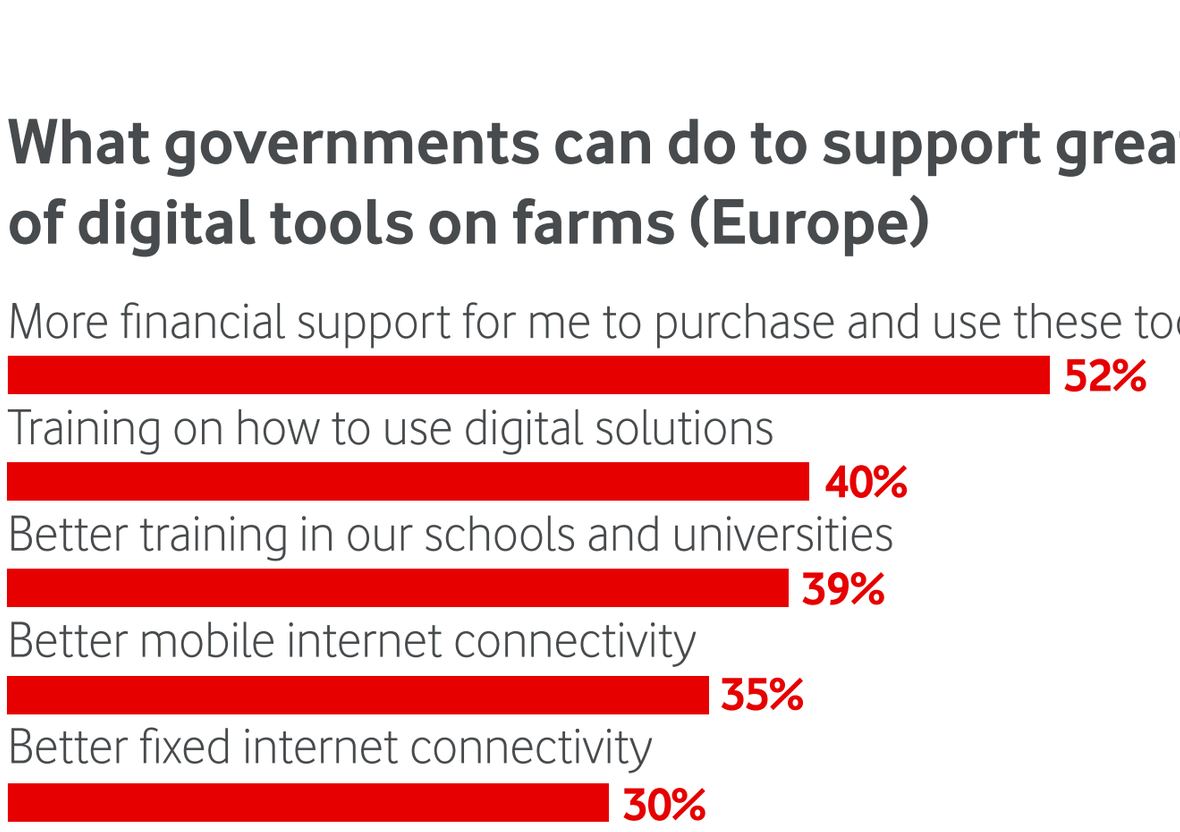
Farmers in Africa were asked what their government could do to encourage greater use of digital tools and solutions on their farm. It was not just about financial support, although 50% did mention that. More than half (54%) said they needed training on how to use digital solutions. More than a third (36%) said they needed better mobile internet connectivity and 32% said better fixed internet connectivity.

What governments can do to support greater use of digital tools on farms (Africa)



Farmers in Europe (52%) do want financial support from their government, more than anything else. However, better mobile internet activity was still wanted by more than a third (35%) of respondents. Similarly, better fixed internet connectivity was cited by 30% of farmers as some their government could do to encourage farmers to use more digital tools and solutions on their farms.

What governments can do to support greater use of digital tools on farms (Europe)



It is worth noting some country discrepancies in what is most wanted by farmers to support their further digitalisation. In Turkey, financial support was mentioned by 80% of respondents, while in Spain training was especially important (cited by 52%). It's also worth noting that in the Netherlands, Germany and Portugal, almost half of all respondents (42%) said that better mobile internet connectivity was what they wanted their government to do.

Top asks of government for each country[1]

More financial support for me to purchase and use these tools	Greece, Hungary, Italy, Portugal, Turkey, Tanzania
Training on how to use digital solutions	Spain, Egypt, Kenya
Better mobile internet connectivity	Germany, Netherlands
Better fixed internet connectivity	South Africa

1 Romania excluded due to small sample size

Summary

This survey reveals strong support from farmers when it comes to digitalising their operations. There's evidence that farmers are in fact already using digital tools to reduce fertiliser use, water use, and to improve soil health, and they're willing to invest more into digital technology in the future. However, in order to accelerate the adoption of such tools, farmers urgently need government support, in addition to training on how to use digital tools.

Barriers to further investment include the cost of devices and applications, as well as mobile and internet access and connectivity. Public and private sectors must work together to stimulate faster connectivity roll-out, and increase the incentives for precision agriculture solutions. In doing so, we can help farmers alleviate their costs, reduce their use of fertiliser, water and energy, and support our planet's biodiversity.

About Vodafone

Unique in its scale as the largest pan-European and African technology communications company, Vodafone transforms the way we live and work through its innovation, technology, connectivity, platforms, products and services.

Vodafone operates mobile and fixed networks in 21 countries, and partners with mobile networks in 47 more. Our purpose is to connect for a better future by using technology to improve lives, digitalise critical sectors and enable inclusive and sustainable digital societies.

We believe in the power of connectivity and digital services to improve society and economies, partnering with governments to digitalise healthcare, education and agriculture and create cleaner, safer cities. Our products and services support the digitalisation of businesses, particularly small and medium enterprises (SMEs).

Our inclusion for all strategy seeks to ensure no-one is left behind through access to connectivity, digital skills and creating relevant products and services such as access to education, healthcare and finance. We are also committed to developing a diverse and inclusive workforce that reflects the customers and societies we serve.

Survey methodology

A combination of an online survey and CATI were used to collect the data across 13 markets. ComRes Savanta spoke to 643 farmers in total. The online survey was completed by respondents in Germany (50), Greece (51), Hungary (50), Italy (51), the Netherlands (53), Portugal (50), Romania (21), Spain (52) and Turkey (51). The CATI methodology was utilised in Egypt (53), Kenya (58), South Africa (50) and Tanzania (53). The fieldwork ran from 12th of September to 3rd of October.

Respondent demographics

The majority of respondents were male (79%), and one in five were female (21%)

The majority held either a high school or college qualifications (41%) or a university degree (or equivalent) (43%). The average age of respondents was 41.8 years old.

Respondent farm produce

Grain crops
45%

Pulses & legumes
29%

Oil seed crops
22%

Sugar beet
6%

Livestock
43%

Tuber crops
24%

Nuts
13%

Coffee
5%

Fruits
37%

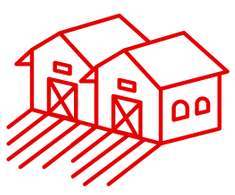
Vegetable crops
22%

Olives
12%

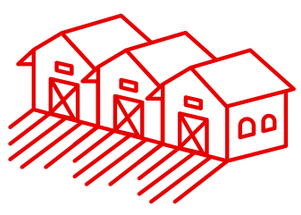
Fibre crops
1%

Respondent farm size

Small
36%



Medium
34%



Large
30%