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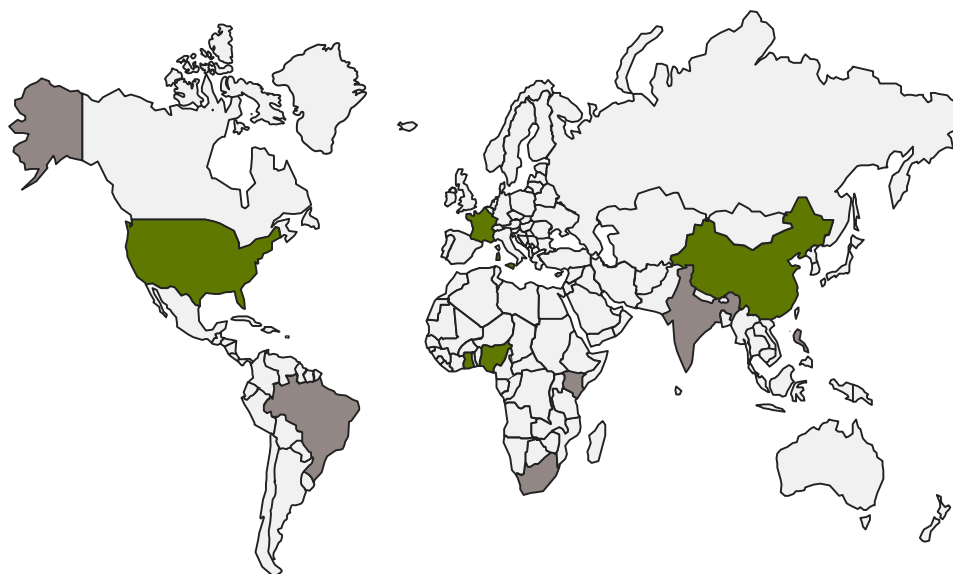


Syngenta Group
China

Climate Change Research Global Farmers

March 2020

A global, quantitative survey among larger farmers to measure opinions and attitudes around the world towards climate change and associated issues



Interpretation: throughout the report the figures quoted are in percentages rather than numbers of respondents. The base size is sometimes filtered and can be small, so results should be interpreted with caution, particularly for subgroups.

Adhering to the international quality standard for market research, ISO 20252:2012

Interviews with farmers across six countries/regions of the world were conducted by telephone and lasted around 13 minutes. Minimum size of farm eligible was a turnover of USD 100,000 in USA, France and China, USD 50,000 in Brazil and India, and USD 25,000 in Africa.

Fieldwork dates: 20th January – 28th February 2020.

Preliminary sample size: Total of 599 interviews, comprising Africa (101), Brazil (100), China (100), France (101), India (97) and USA (100).

Data is weighted so all countries have the same influence on the total figures, and so that livestock-only farms make up a consistent 20% of the total across all countries. Unweighted global proportions were 80% arable or mixed and 20% livestock/dairy only.

Respondents were approached from a sample frame compiled by Ipsos MORI on the basis of agreed definitions. All leads were handled in a way compliant with the GDPR and supplied by compliant sample partners.

Leads generated by Ipsos MORI or through referrals were checked for general eligibility with Syngenta and then screened as a double check, using agreed definitions.

Only respondents who had the responsibility for making budget-related decisions on the farm and/or managing how the land is used were interviewed.

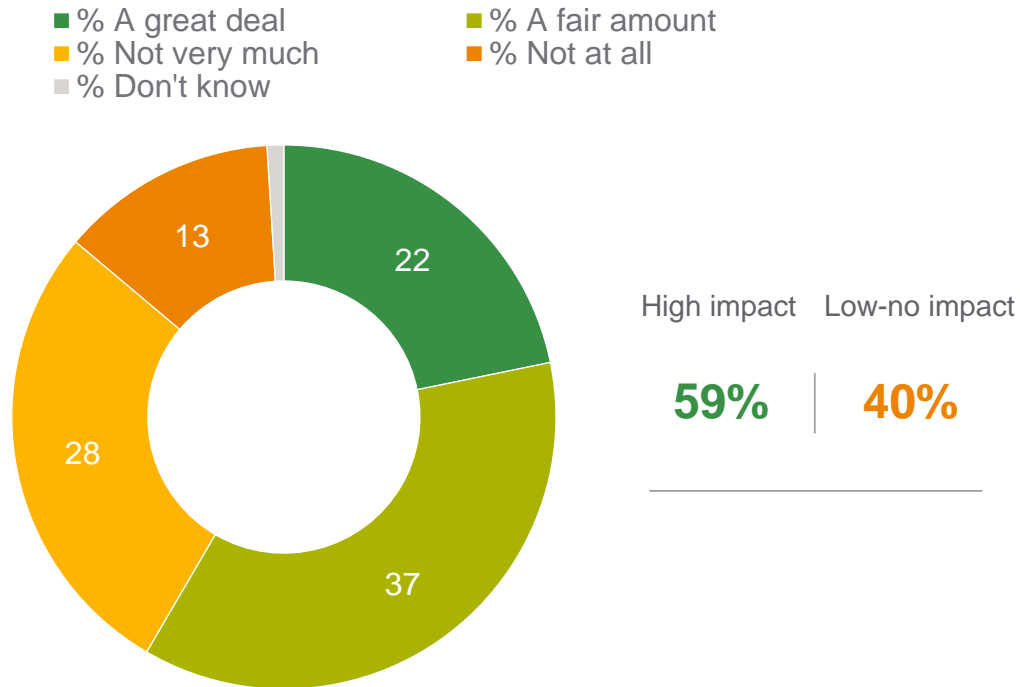
*Africa is comprised of interviews from: South Africa, Kenya, Ghana and Nigeria.

- Large farmers believe anthropogenic climate change is already having an effect on their farms: globally, 87% have experienced at least some impact, and 59% report high impacts. The most common changes seen are volatile weather, droughts, and flooding. 15% have seen impacts on crop yields and 9% are unable to grow their usual crops. Overall, climate-scepticism is low.
- Today, 72% of larger farmers are worried about the impacts climate change will have on crop yields, animal health, and ability to do business over the next 5 years. This figure rises to 90% in India and 86% on the African continent. Farmers producing crops are more concerned about future impacts than those emphasising livestock (and also report experiencing more climate-change impacts to date).
- While some feel taking steps to improve their farms' emissions would make their businesses less profitable, more large farmers believe that taking steps to improve their farms' emissions could be a competitive differentiator (59% to 31%). This positivity is highest in Brazil and India and lowest in advanced economies France and the US.
- Globally, two-thirds (63%) of large farmers have already taken actions to reduce their greenhouse gas emissions – and two-thirds would like to take (more) action in the next 12 months. 17% of those intending to take action are 'New Adopters.'
- There are equally financial and altruistic incentives to update practices, but the number one barrier to adopting climate-friendly practices is cost—over half of farmers interviewed globally cite financial concerns, specifically. New technology and new farming methods are expensive investments, the timeline of returns is uncertain, and the sector is competitive.
- Large farmers see the responsibility to drive the adoption of sustainable methods as being shared between farmers themselves and government. They want support to alleviate the financial costs of adoption and look to the government for incentives and policies that provide cover during the transition, and give confidence they will see a return on investment. Farmers see companies like Syngenta as tertiary to driving change, after the government and NGOs.
- While 65% say they understand agriculture's contribution to global emissions, large farmers are less sure of what they can do about it. Beyond cost concerns, they seek information on how to make changes, best practices to adopt, and there is interest in information-sharing networks between researchers/practitioners and businesses.

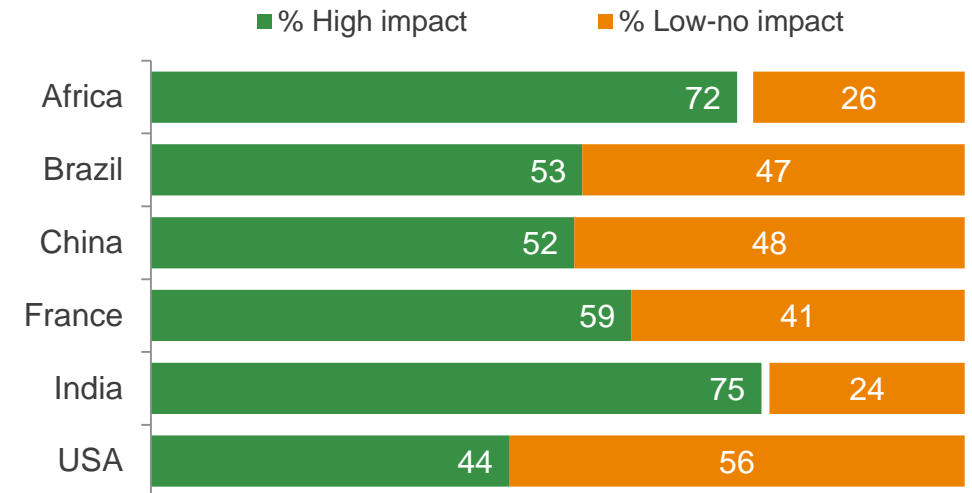
A majority of farmers have felt the impact of climate change

3 in 4 farmers in Africa and India say their farming businesses have been impacted, but under half would say the same in the USA. Just 13% globally do not feel they have been impacted at all.

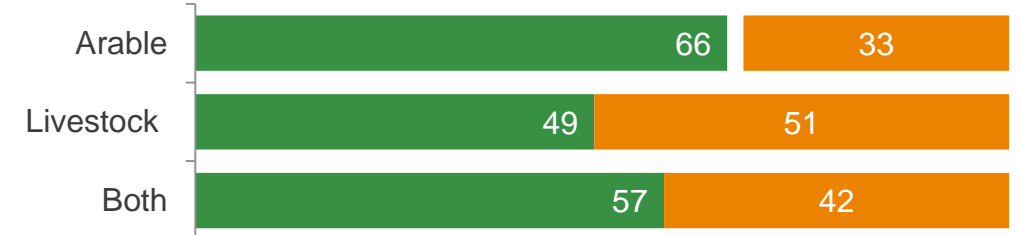
All Farmers



Market

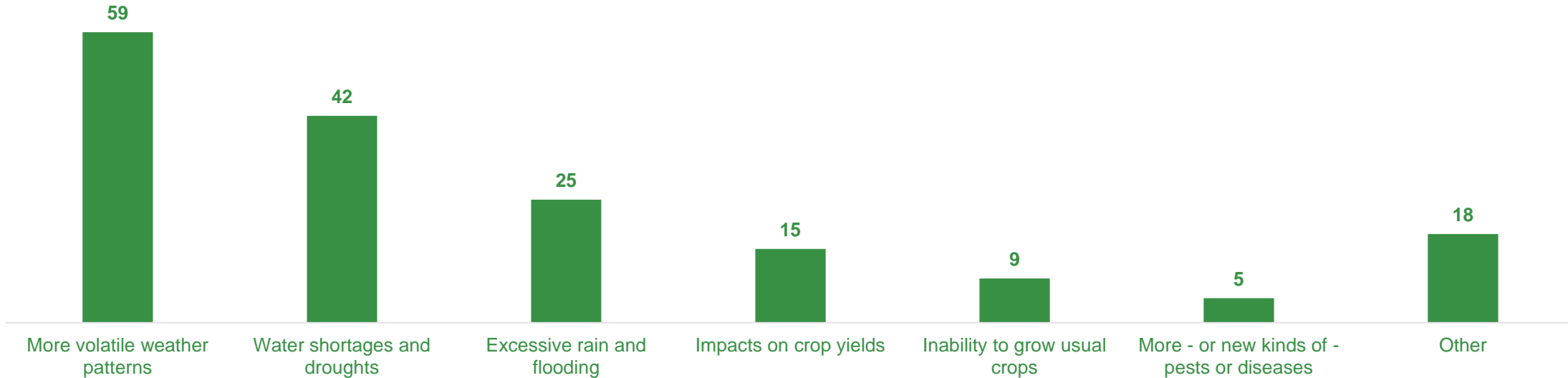


Farm type



More volatile weather patterns and water shortages are the most common changes experienced

■ % Mentions



Perceived climate change effects are globally differentiated

In France and Africa droughts are a particular issue; African and Indian farmers have seen more weather-related effects. In India 1 in 2 farmers has seen negative impacts on yields and/or their ability to grow their usual crops.

Statement	All	Africa	Brazil	China	France	India	USA
More volatile weather patterns	59	75 ▲	45 ▼	44 ▼	48	82 ▲	57
Water shortages and droughts	42	65 ▲	36	24 ▼	70 ▲	39	17 ▼
Excessive rain and flooding	25	19	20	21	22	32	38 ▲
NET: impacts on crop yields/inability to grow usual crops	21	28	3	3	24	49 ▲	11
Impacts on crop yields	15	18	3 ▼	3 ▼	18	34 ▲	8
Inability to grow usual crops	9	14	-	-	7	27 ▲	4
More/new kinds of pests/diseases	5	2	3	5	1	12 ▲	4
Other	18	14	21	10	22	19	25
Changes observed but climate change not driving	4	-	7	12 ▲	1	4	4

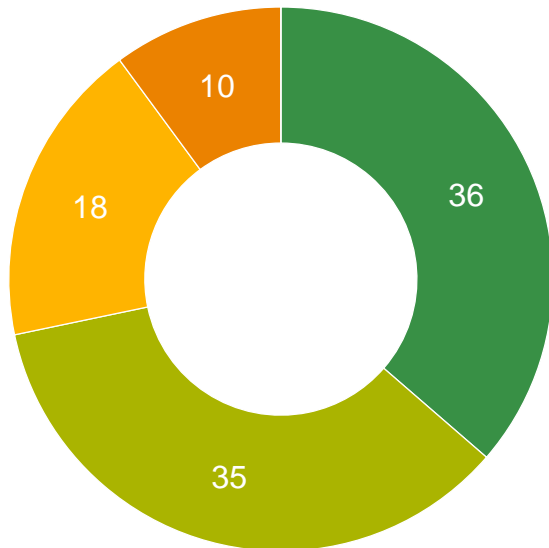
▲▼ Denotes significant difference from overall

Globally, a majority of farmers are concerned about the effects of climate change and extreme weather

Concern is notably lower in China and the USA; but higher in Africa and India.

All Farmers

- % Very concerned about serious effects in the next 5 years
- % Somewhat concerned
- % Not very concerned
- % Not at all concerned about serious effects in the next 5 years
- % Don't know

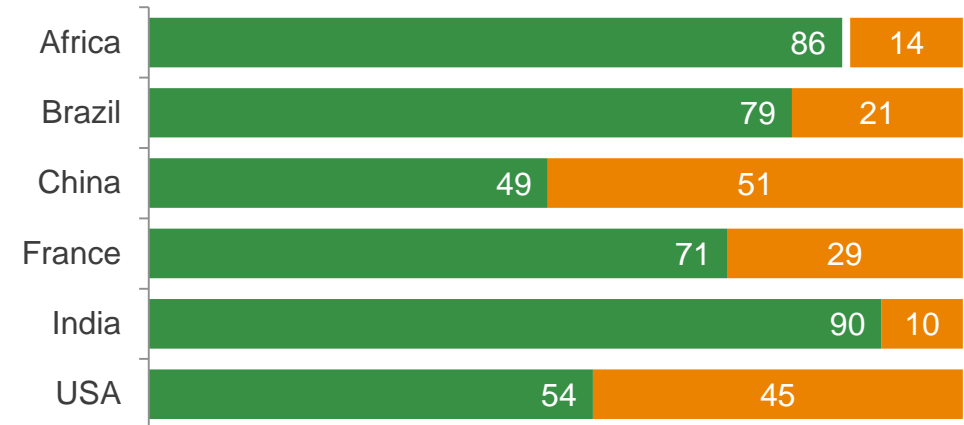


Concerned | Low-no concern

72% | **28%**

By market

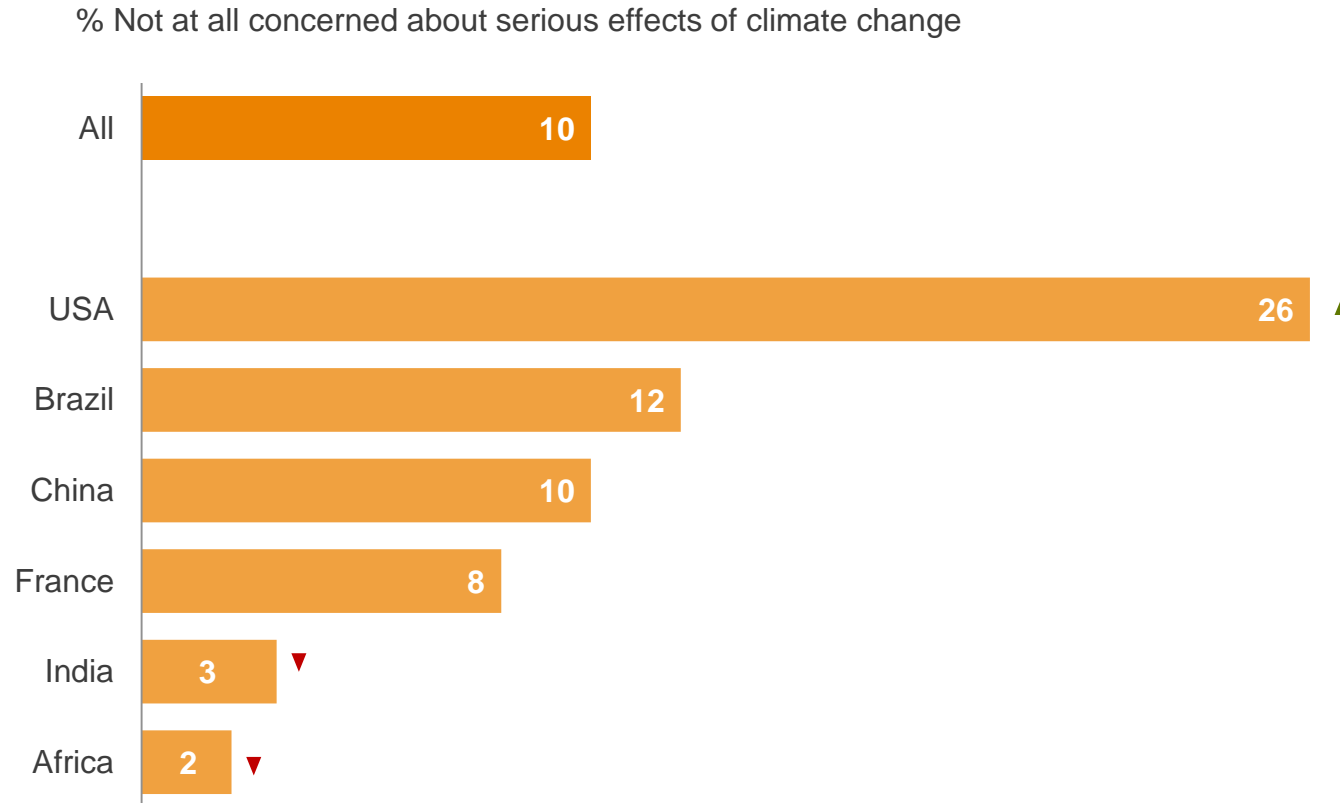
- % Concerned
- % Low-no concern



Farm type



While most farmers report at least some concern, the US is an outlier: 1 in 4 US farmers are “not concerned at all”



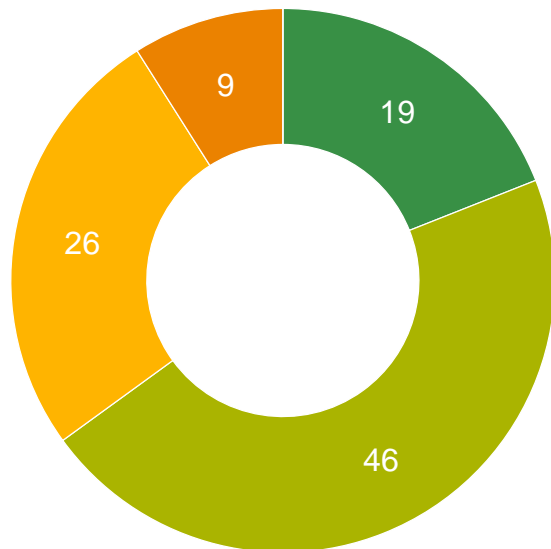
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A majority understand agriculture's contribution

Between two-thirds and three-quarters feel they understand. China is the exception – just one in four feel they understand how agriculture contributes to global greenhouse gas emissions.

All Farmers

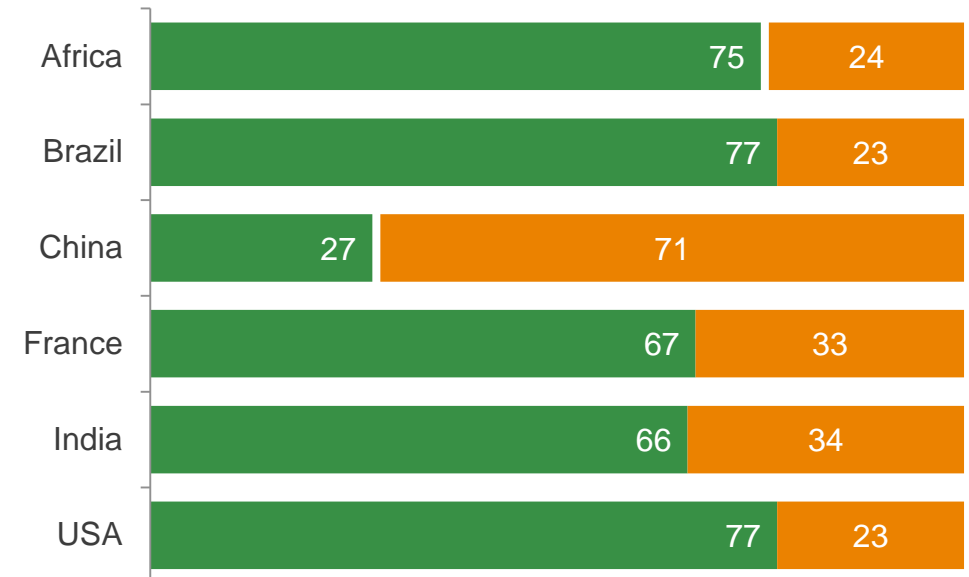
- % A great deal
- % A fair amount
- % Not very much
- % Not at all
- % Don't know



Understand | Low-no understanding
65% | **35%**

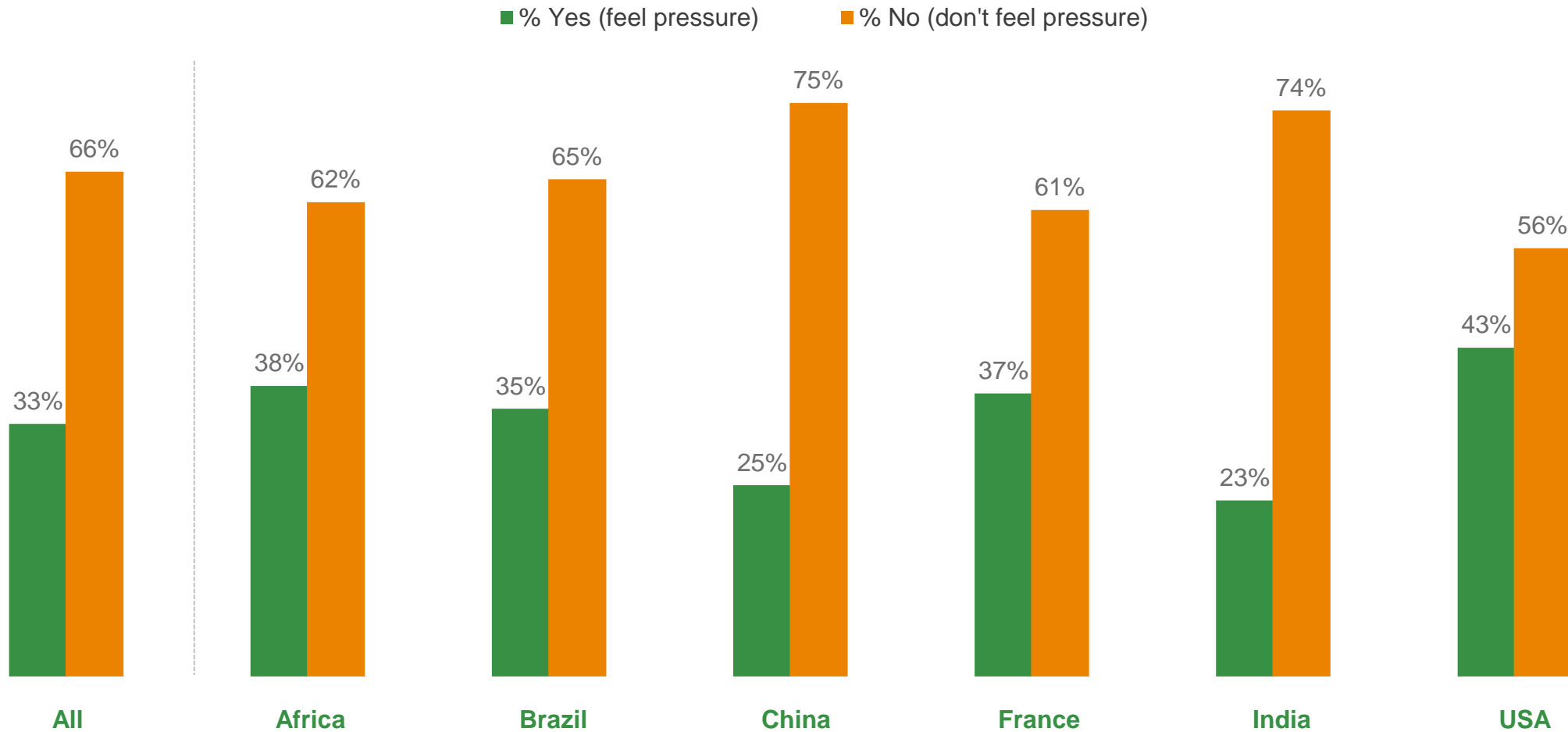
Market

- % Understand
- % Low-no understanding



Most farmers don't feel pressure from outside farming

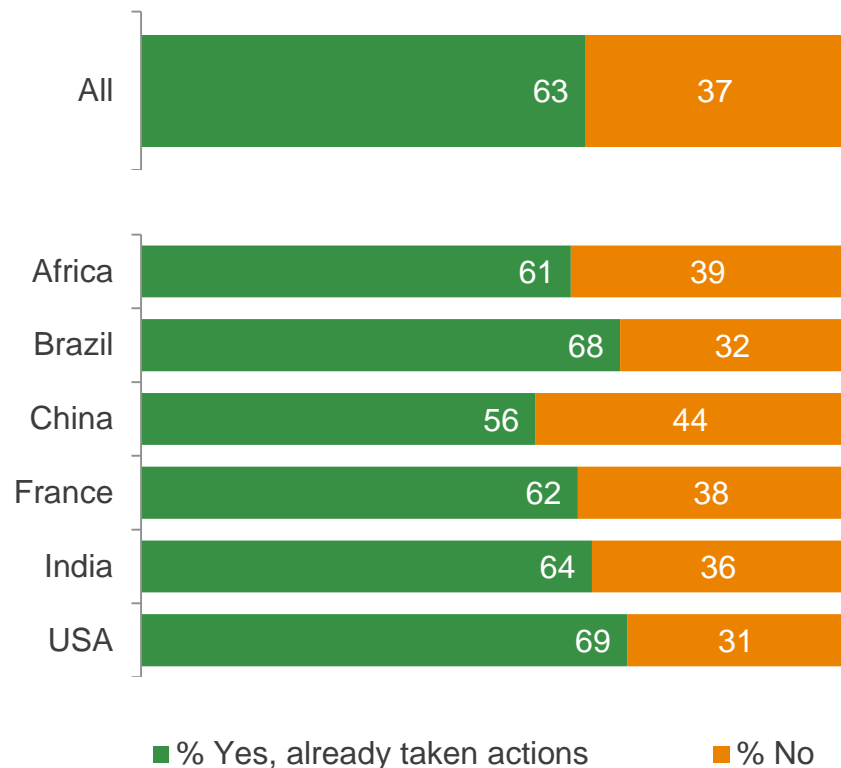
Farmers in the USA feel most external pressure to reduce their own farm's greenhouse gas emissions. By contrast those in China and India feel the least pressure.



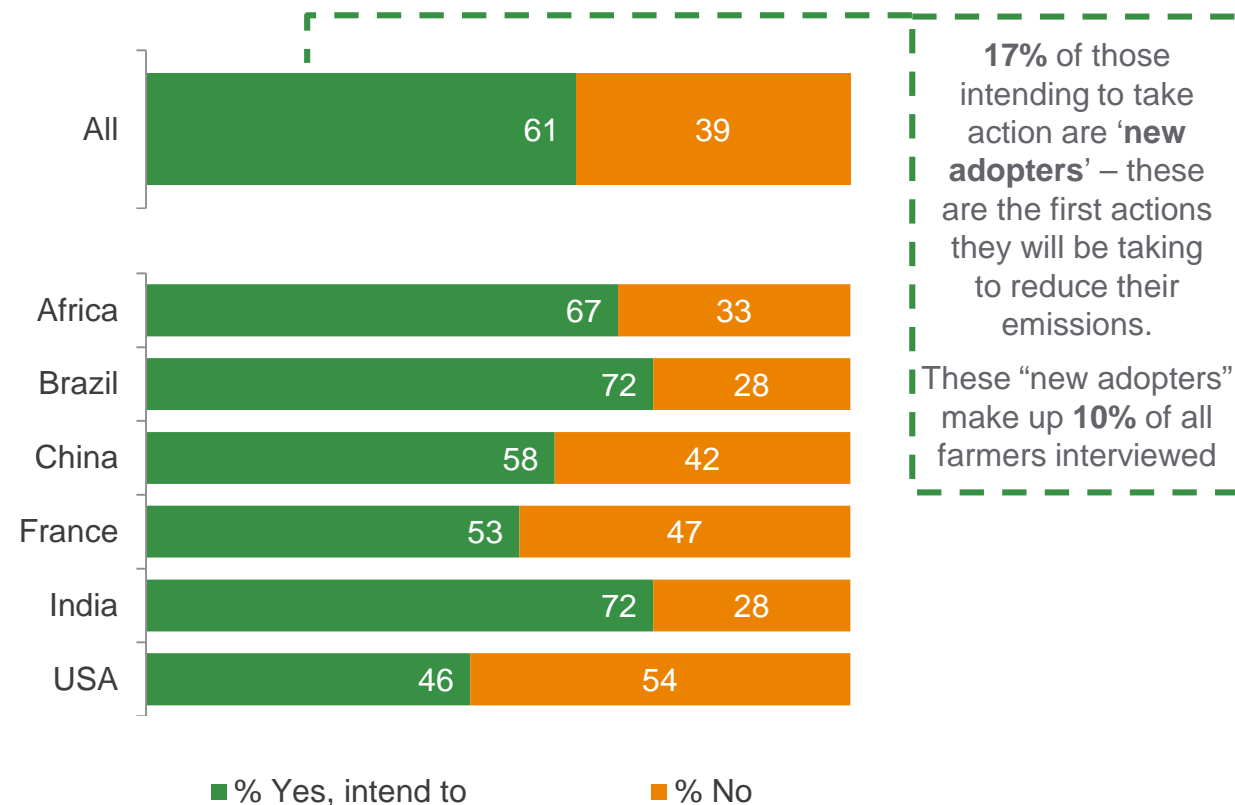
Globally two-thirds have taken action to reduce emissions, and most intend to take (more) action

The key contrast is between the USA, where most have taken action, and China, where the proportion is lowest. Future intentions, however, are greatest in Brazil and India, and lowest in USA.

Have you already taken any actions to reduce greenhouse gas emissions?

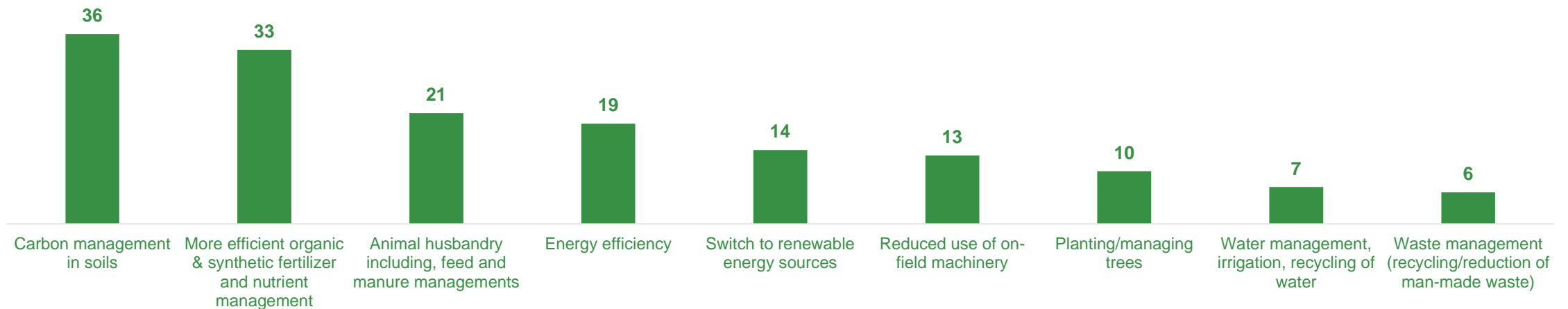


Do you intend to take any actions in next 12 months?



Managing carbon in soil and fertilizer/nutrient usage are the most common actions farmers are taking

■ % Mentions



Some countries prioritise carbon management; others fertilizer management

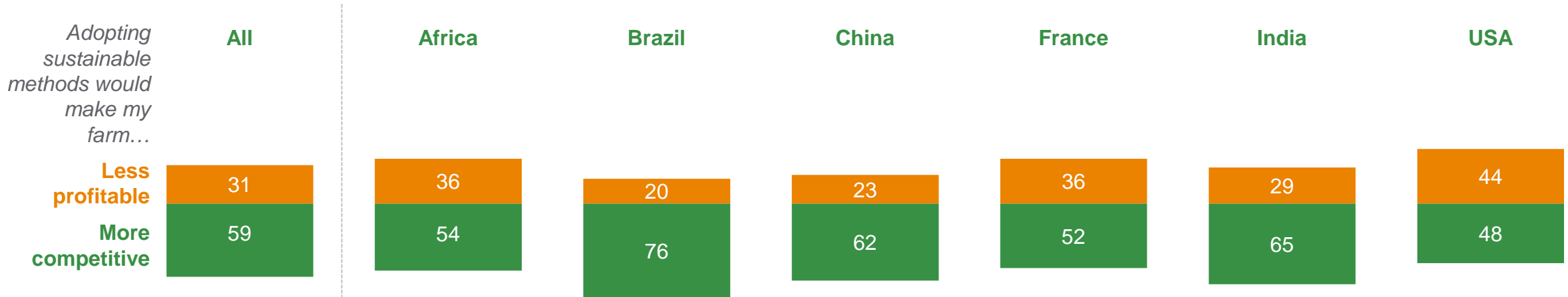
France stands out for the greatest focus on fertilizer management, and also reduced use of machinery. Tree planting is notable in Brazil and India. Farmers in the US and Africa have emphasised energy efficiency.

Statement	All	Africa	Brazil	China	France	India	USA
Carbon management in soils	36	33	38	26	39	30	48 ▲
More efficient organic & synthetic fertilizer and nutrient management	33	23	17 ▼	40	51 ▲	44	26
Animal husbandry including, feed and manure managements	21	15	27	31	18	12	24
Energy efficiency	19	30 ▲	12	10	20	10	30 ▲
Switch to renewable energy sources	14	22	6 ▼	14	7	21	17
Reduced use of on-field machinery	13	9	10	6	28 ▲	7	19
Planting/managing trees	10	3	23 ▲	2 ▼	-	28 ▲	1 ▼
Water management, irrigation, recycling of water	7	11	6	2	5	8	8
Waste management (recycling/reduction of man-made waste)	6	5	11	4	4	6	7

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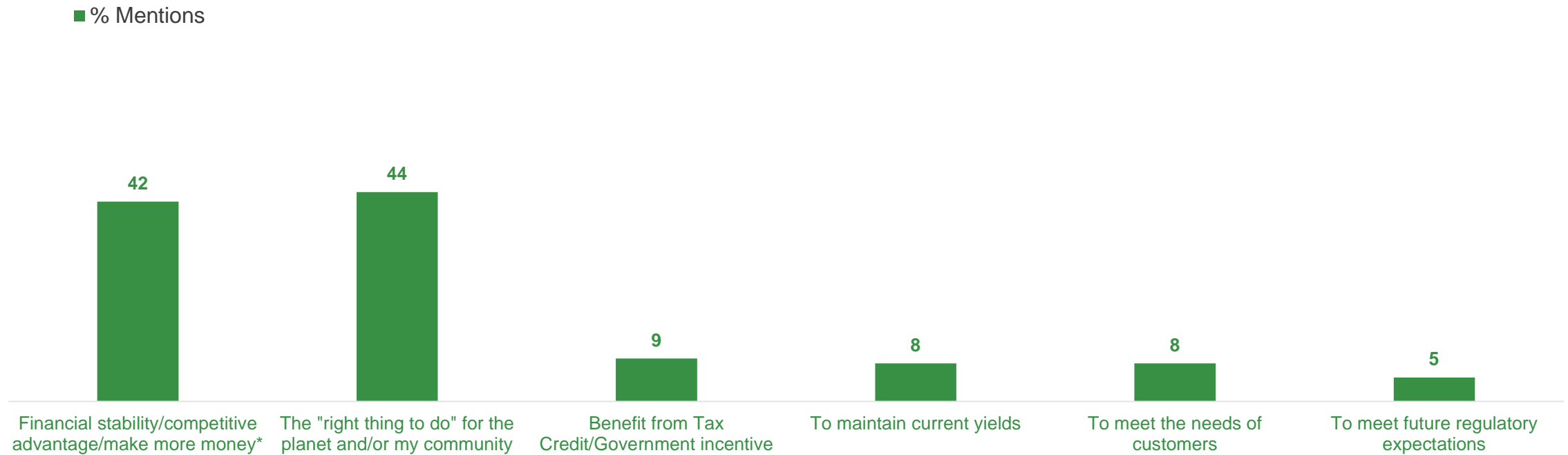
On balance, most farmers believe reducing emissions would make their businesses more competitive

Brazilian farmers are most convinced of the benefits. Farmers in the USA show most concern about the effects on their profitability.



- % farmers that believe that reducing their farm’s greenhouse gas emissions by adopting more sustainable farming methods would make their farming business less profitable
- % farmers that believe that reducing their farm’s greenhouse gas emissions by adopting more sustainable farming methods would give you a competitive advantage over other farms

Motivations for farmers to reduce emissions are mostly split between financial and altruistic incentives



* Net mentions of financial stability, attain competitive edge, sell at higher price, reduce costs and make more money

Financial motives lead in the US, France & Africa; altruism is the dominant motive in China, Brazil & India

The perception that reducing emissions is “the right thing to do” is highest in China. To maintain current yields sees the most mentions in India.

Statement	All	Africa	Brazil	China	France	India	USA
Financial stability/competitive advantage/make more money*	42	47	33	30 ▼	50	44	46
Because it is the “right thing to do” for the planet and/or my community	44	43	41	59 ▲	42	49	33
Benefit from Tax Credit/government incentive	9	11	14	2 ▼	2 ▼	11	13
To maintain current yields	8	6	4	10	8	16 ▲	5
To meet the needs of customers	8	8	5	13	5	13	4
To meet future regulatory expectations	5	4	8	8	5	4	3

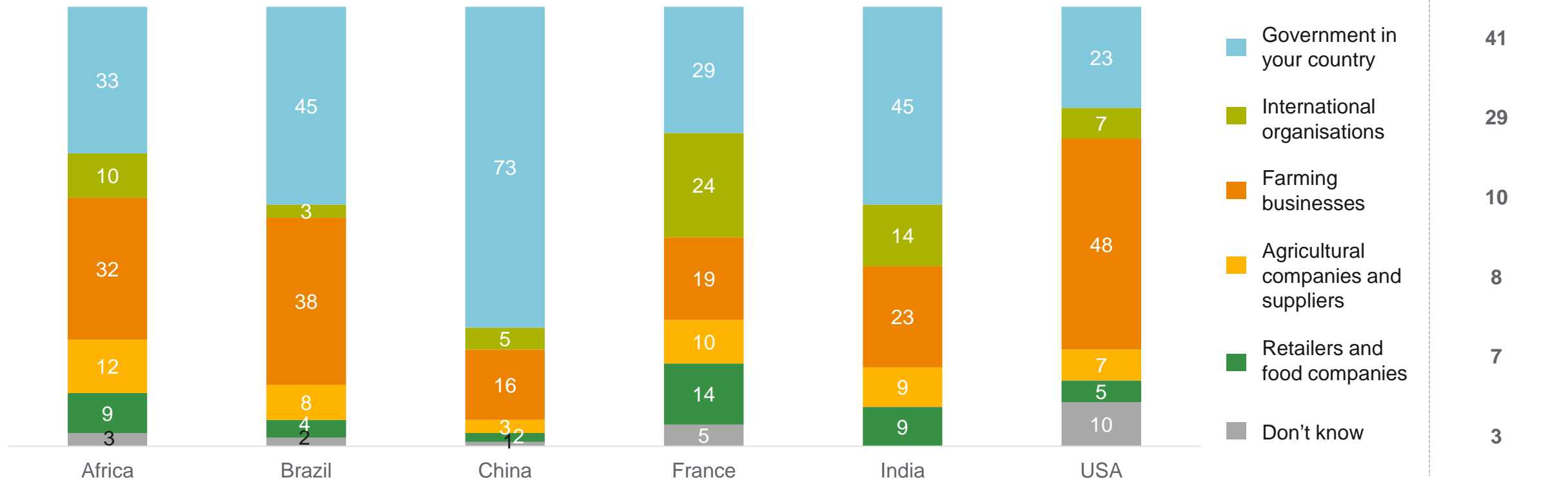
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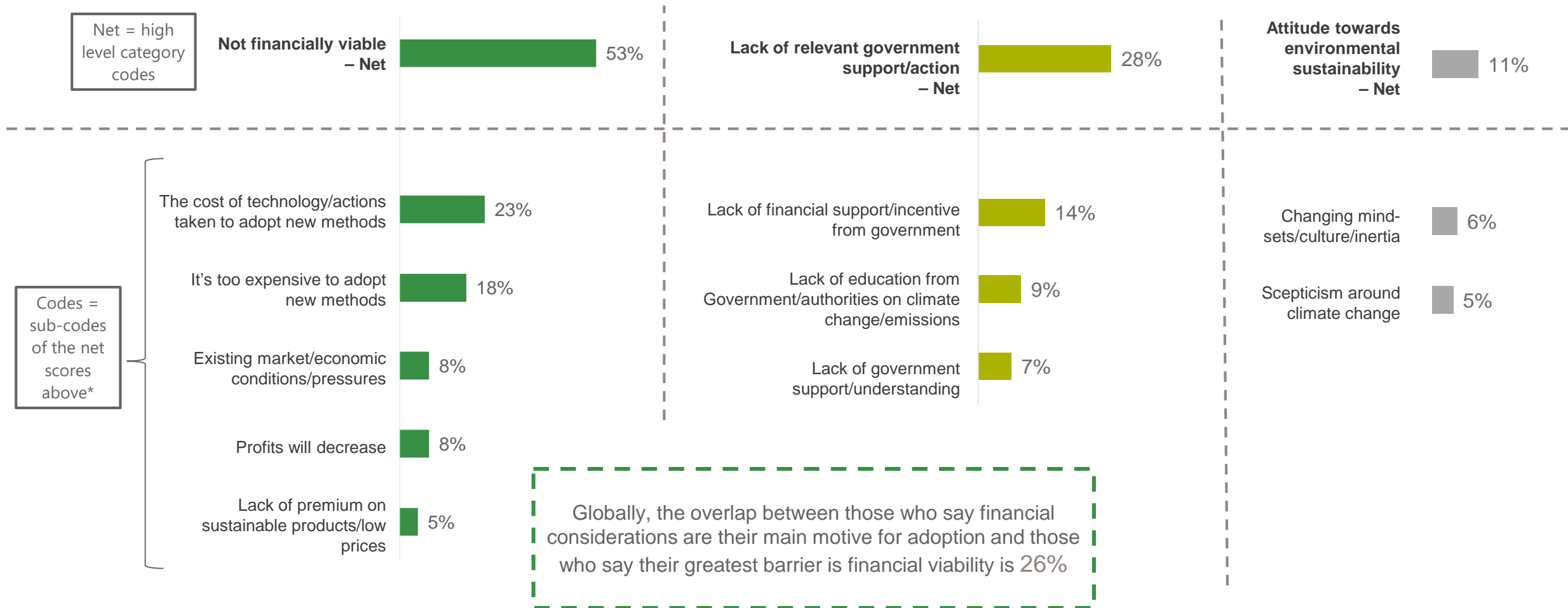
Perceived responsibility to lead is mostly divided between governments and farming businesses

In China, farmers look more to the government; while in the USA it is more the responsibility of the farms. The role of international organisations is most important for France, the only EU country here.

% of those ranking each element as having the number 1 responsibility to lead on promoting the adoption of more sustainable practices in the farming industry



Cost is the number one barrier to implementing more sustainable farming practices, followed by a lack of government support



Farmers mention financial constraints and uncertainty, a lack of government incentives, and limited knowledge as barriers

Financial constraints, primarily. At the moment there's not a whole lot of money lying around to do new investments, when you don't actually understand or you're not fully sure of the outcome. We could do plenty of different things that could help us to have lower emissions, like buying electric tractors. But all these initiatives are currently expensive for farms to do.
Africa

The cost, because these investments are too big. **We will have too much competitiveness** on the cattle market, it will increase speculation and the price of livestock will fall down.
France

One of the main obstacles is a **lack of incentives from the government to put it into practice.** For instance, financing the construction of a bio digester at our farm, which would generate energy for the farm thus reducing our emissions..
Brazil

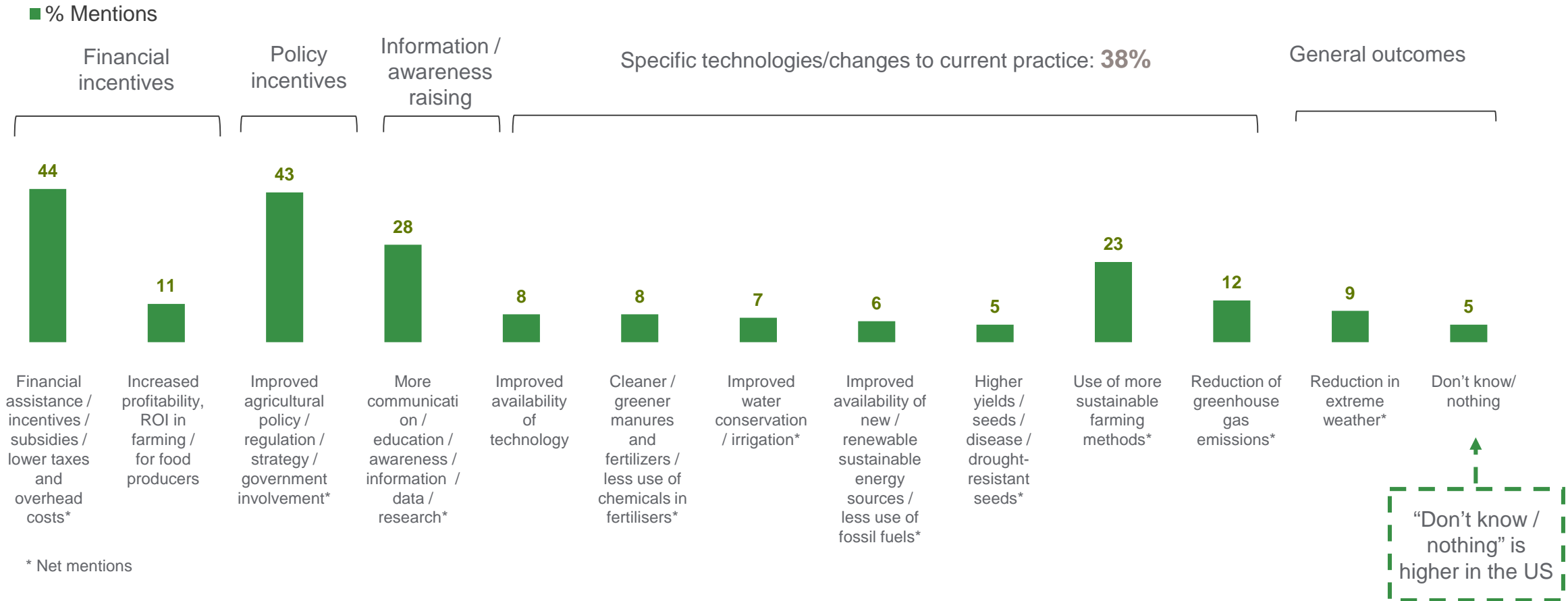
Improving farmers training and awareness. There needs to be some sort of identity of those farmers adopting and producing sustainable crops. **Governments should announce some sort of incentive** for those who are adopting sustainable production methods.
India

Probably, I would say the **lack of education on practices** we could take as farmers overall.
USA

We don't have the necessary technology or the funds in our effort to make our business more environmentally sustainable.
China

I think the **politicians.** In the respect that some countries are not interested to make any large changes, because it hurts the economy. They do not make any difference, they think about short term economy.
France

What do farmers want to see? Financial and policy incentives are top requests



Farmers want new/changed policy to ease the financial burden of transition to sustainable methods, and more institutionalised methods of knowledge-sharing

We **get no support from our government**, so if the government could support us in one way or another that would be great. They need to be speaking to us and researching how we can become more efficient in how we produce, while supporting the environment. I also think there should be some kind of **financial incentive from them**. I don't know what that could be, but a financial incentive for farms **would encourage us to be more environmentally conscious**.
Africa

Fewer taxes to pay: to live with these measures, you have to invest and take out a loan to buy equipment. For young farmers who settle down it's not easy. Therefore, **we have to reduce taxes**, especially the MSA tax (Agricultural Social Mutuality) which takes about 40% of our profit.
France

There should be an big organisation that can support and sponsor the making of a **network between farmers and researchers** in order to help them with the training of, or recommendations of devices needed to carry out their farming in order to reduce the effect their farming has on the climate.
India

I would probably say **governmental support programs, and more science-based technology** would help us improve on what we do. It should all be economical and eco-friendly.
USA

The government should provide some incentive or maybe provide knowledge that we could implement. There are food retailers that have problems with farmers that don't know, so they could maybe help us. **The incentive could be in terms of knowledge as well as monetary**.
India

The **government should pay more attention** to environmental protection, strengthen education and popularisation of environmental protection, and raise people's awareness of environmental protection.
China

There has to be more **profit incentive** in the business and financial return.
Brazil

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