



Climate Resilience

Understanding customers in
environments of
severe climate-related weather
events

QUANTITATIVE FINDINGS FROM BANGLADESH

February 2024



This work was conceived and funded by CGAP as input to CGAP research on climate change and financial inclusion. It has not been peer-reviewed or edited by CGAP. Any conclusions or viewpoints expressed are those of the authors and may or may not reflect the views of CGAP.

What is the research about?

MOTIVATION



Interventions to mitigate climate impacts have not focused on developing resilience strategies at the individual and household levels of the most vulnerable communities.

The development of the current research study was motivated by CGAP's fundamental belief that financial services can play a vital role in helping these populations reduce the impact of and adapt to specific climate risks.

PURPOSE



Conduct a demand-side study in Nigeria and Bangladesh –two countries that are prone to severe weather-related climate impacts such as droughts, floods, and cyclones– to thoroughly understand how these climate disasters affect the lives and livelihoods of their most vulnerable communities and learn what financial resilience strategies they implement -if any– to cope with the effects of these events.

POTENTIAL APPLICATION



Provide insights into vulnerable populations' experiences and struggles during climate risk events and provide guidance to stakeholders to help build ad-hoc financial services that strengthen these communities' financial resilience to climate impacts.

This comprehensive research was done in four parts



Nigeria

Qualitative study



Quantitative study



YOU ARE HERE



Qualitative study



Quantitative study



MSC's additional study in Bihar, India

Smallholder farmers' climate-resilience index

Impact of climate change on smallholders and their coping strategies

About Decodis and MSC

Decodis and MSC partnered to complete the different components of this research



Decodis is a social research company that actively gives people the space to express themselves to elevate our understanding of their lived experiences and opinions. We use methods that are high-powered, scalable, and low-cost and have proven to be effective in helping organizations understand and better serve their target populations.



MicroSave Consulting (MSC) is a consulting firm that has pushed the world towards meaningful financial, social, and economic inclusion. With over 300 staff of different nationalities and varied expertise, we are proud to be working in over 68 developing countries. We partner with participants in financial services, enterprise, agriculture, and health ecosystems to achieve sustainable performance improvements and unlock enduring value.



Bangladesh Quantitative Study

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I. Summary of Findings

Key findings (1/2)

1. Responses taken by participants during the cyclone can be **divided into three phases: Preparation**, when the alerts were issued before the cyclone hit the country; **Coping**, during the flooding; and **Recovery**, once the flooding receded.
2. Respondents used a combination of **financial –borrowing, savings, and selling assets– and non-financial –extra work, Govt/NGO support, and remittances– strategies** to fund the actions during all phases of the cyclone, with most participants using 3-5 financial strategies.
3. Most of the fund mobilization occurred during the recovery phase, while smaller amounts of money were needed during the coping phase.
4. **Participants used approximately USD 450 in financial strategies –roughly 5-6 months of income–** to manage through cyclone Amphan, above any money received from working in other jobs, Govt/NGO support, or remittances.
5. **MFIs were the main go-to institutions for borrowing** and, in the case of farmers, for savings as well.
6. However, leveraging informal financial services to cope and recover from the cyclone was very high, **with almost 90%¹ % of farmers and traders resorting to informal sources** such as loans from moneylenders, relatives, or neighbors, savings at home, and selling assets.

Key findings (2/2)

7. Nearly **no respondents put in place advance financial plans in anticipation of the next cyclone**. A third of them mentioned not receiving any warning before the cyclone. And of those who did, several mentioned not anticipating the level of destruction the cyclone would cause.
8. Most respondents would have liked to have had more savings so that they had accessible funds to use during the aftermath and so they were not burdened by debt during the recovery phase. **Participants likely don't build up (more) savings because they prioritize paying back loans**, more so considering that MFIs have rules preventing members from withdrawing savings until they fully repay the loans.
9. **Knowledge and usage of climate risk insurance products were null in the sample**. Participants who talked about this financial strategy referred only to life insurance.
10. While we didn't systematically analyze if participants recovered financially from cyclone Amphan, some respondents **mentioned being unable to repay their loans, and none talked about replacing their sold assets or savings**. Moreover, the continuity of mildly severe cyclones that hit the country afterward² makes it likely that participants resorted to more borrowing. Something that presumably has made it harder for them to recover their level of financial resilience before Amphan.

Key findings

Bangladesh vs Nigeria: how the climate event unfolds matters

Bangladesh	Nigeria
<p>All the money was spent in the aftermath of the cyclone –during the flooding and after it receded</p>	<p>All the money was spent during the drought, and there was little left for the heavy rains</p>
<p>Households used avg of 5 financial strategies*</p>	<p>Households used 1 to 2 financial strategies*</p>
<p>MFIs and borrowing were the main sources of funds</p>	<p>Savings groups and savings were the main sources of funds</p>

VS.

[Read more...](#)
[\[link to published Nigeria deck\]](#)

II. Research Details

Objectives



Understand **how vulnerable communities in Bangladesh are affected by climate change** –particularly weather-related disasters such as cyclones– and how their experiences differ based on different livelihoods.



Learn **what resilience measures they undertake to prepare for and cope during these events** and whether they are effective, sustainable, or neither.



Provide insights into the **role financial strategies can play to help the vulnerable effectively adapt and grow more resilient to climate change**, which constraints impede that role, and what meaningful actions can help overcome those constraints.

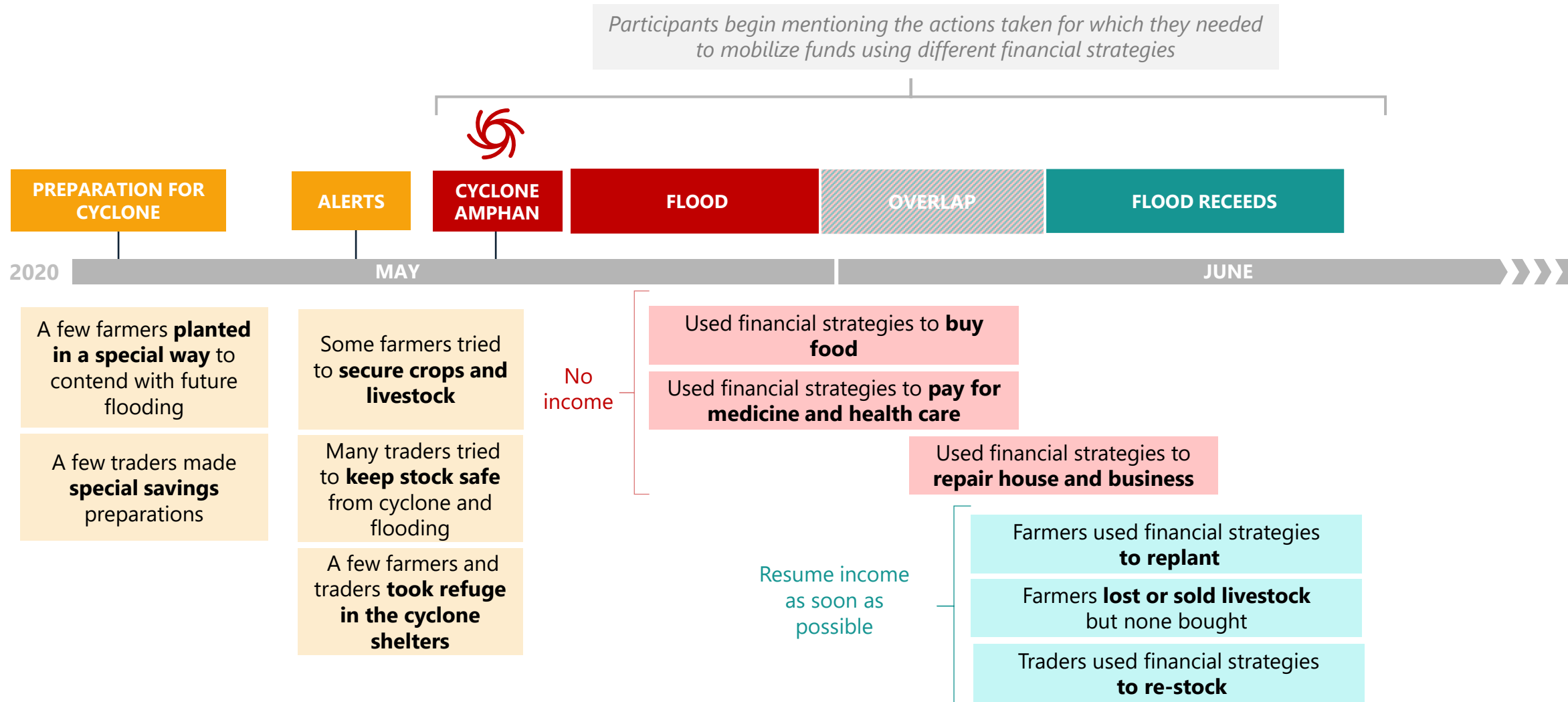
Methodology



- We conducted a **quantitative survey** between July 7 - August 3 of 2023, **with a sample of 238 participants** from vulnerable communities in Bangladesh.
- The sample was comprised of **rural farmers and urban petty traders** –a third of whom were women– who were **severely affected by Cyclone Amphan in 2020**.
- The surveys were **conducted through automated phone calls**.
- We asked **open-ended questions** about the **impacts of the cyclone on participants' lives and livelihoods and the resilience measures taken** –including the financial strategies– in the different phases of the climate disaster.

III. The Phases of Cyclone Amphan

Actions around the onset of Cyclone Amphan overlap between prevention, coping and recovery – no clear “two stages”



IV. Impact on Rural Farmers

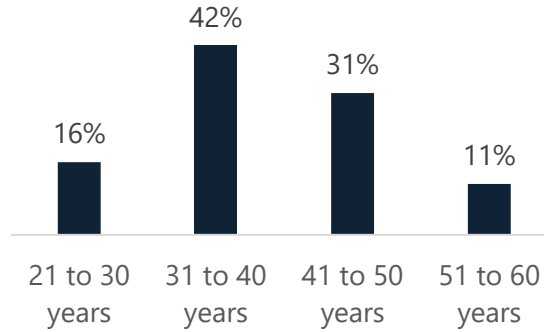
Farmers demographics



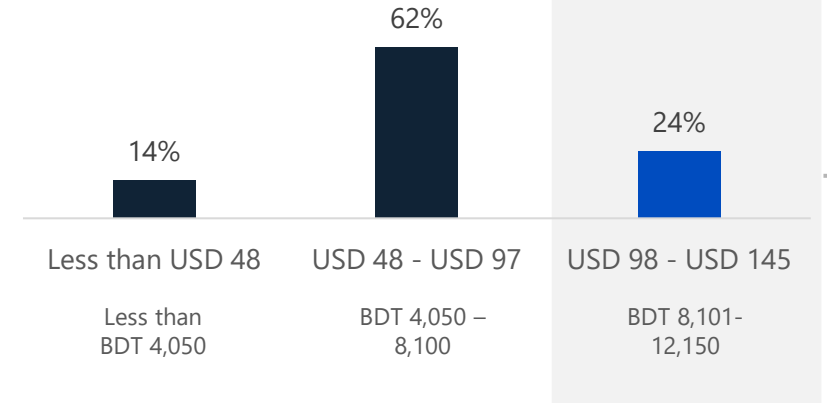
N = 125



Sample distribution by age

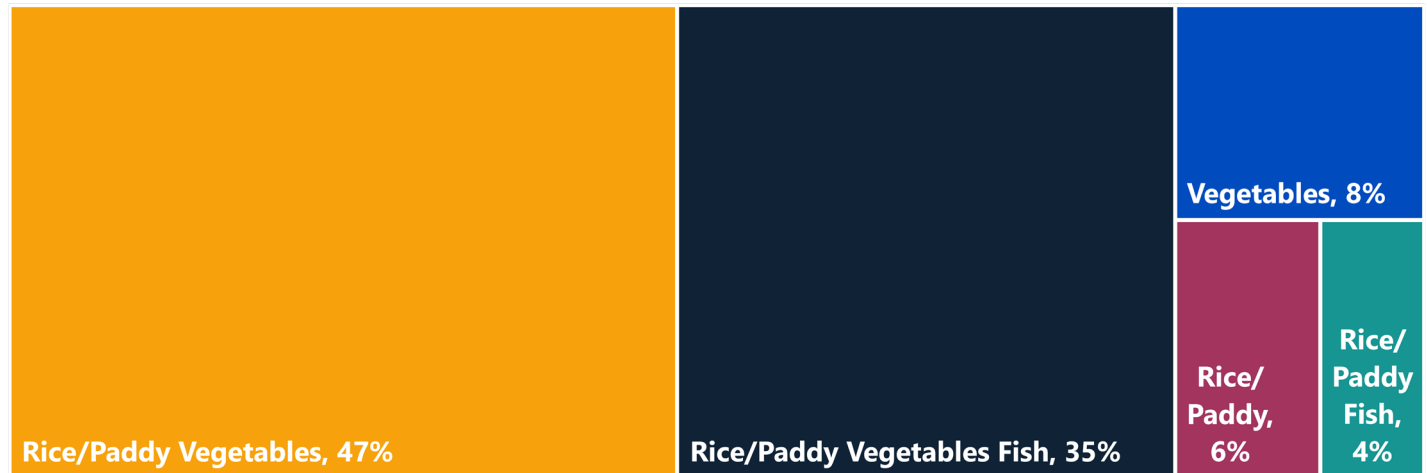


Sample distribution by monthly income level¹



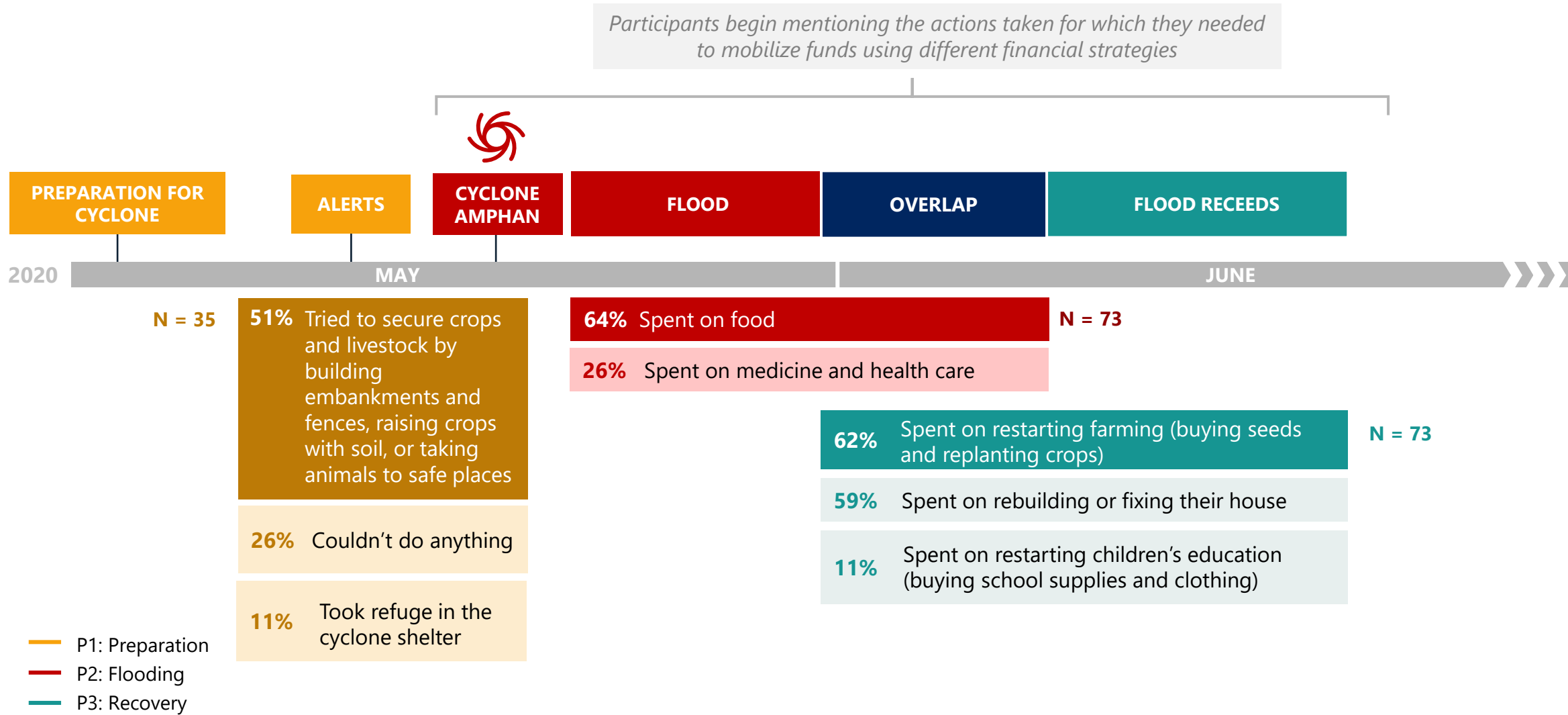
Women's monthly income is similar to men's

Sample distribution by type of agricultural activity



Note: ¹Monthly income has been inflation-adjusted to 2020 amounts. Prices have increased 24% since 2020. USD 1 = BDT 83.4

Timeline of actions taken during each phase of Cyclone Amphan



All strategies discussed in this section were taken after Cyclone Amphas. Only one of the farmers used finance pre-emptively before Amphan

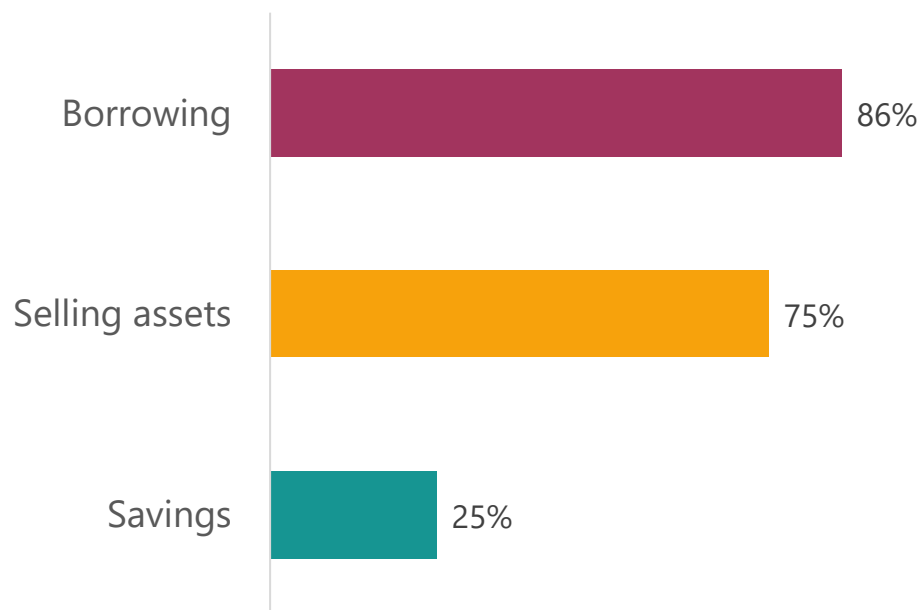
*"We have an association called Gonomukhi Foundation and I borrowed another twenty thousand taka from there. **I took that loan before Amphan because you never know what will happen.** Crops may have to be harvested, machinery may have to be bought."*

Farmer, Man, 41-50, USD 50-97
(Borrowing from a Samiti, Gonomukhi Foundation, formal MFI)
CRB080_s2_q14.mp3.txt

Farmers used a combination of financial and non-financial strategies to fund the actions taken during the cyclone

% of farmers who spoke about each type of financial strategy¹

(N=73)



Most farmers **used combinations of an average of 5 financial strategies, mostly from informal sources².**

They **also used non-financial strategies:**

- **22%** took on **extra work**
- **18%** received **support from Govt/NGOs³**
- **17%** received **remittances** from relatives

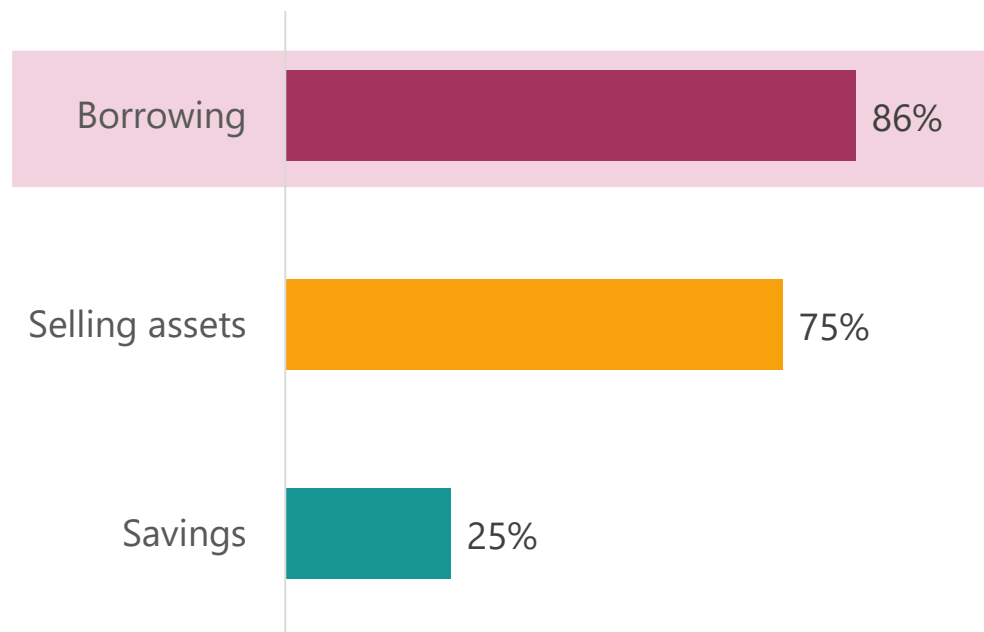
Note about remittances:

Other research⁴ suggests that the patterns of sending remittances tend to be smaller amounts on a regular basis and not one lump sum, as migrants lack the savings tools to save up a lump sum. Participants in this research discussed remittances as small flows of money received as gifts and sometimes loans (ultimately not repaid) from relatives. Hence, they have been considered an income stream, not a financial strategy.

While MFIs were the main source of borrowing for farmers, they still resorted heavily to informal sources of borrowing

% of farmers who spoke about each type of financial strategy

(N=73)



Sources of borrowings ¹ (N=63)	
Microfinance organizations (MFIs) ²	73%
Moneylenders	32%
Relatives ³	29%
Neighbors	16%
Informal Samitis	6%
Banks	3%

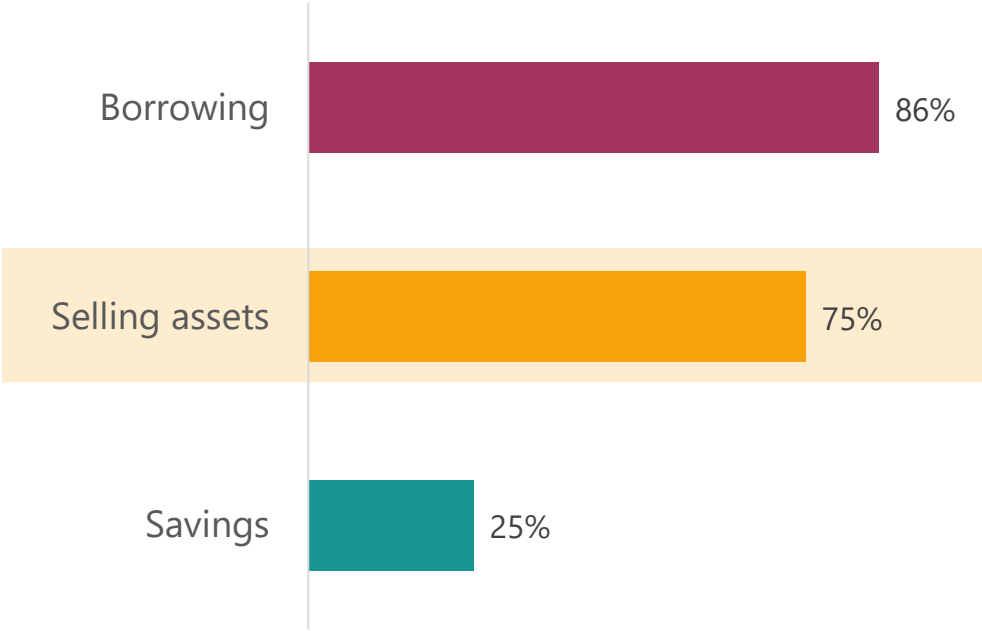
■ Formal ■ Informal

Note: ¹Responses are non-exclusive, so percentages will not add up to 100%, see note in slide 13. ²Some MFI loans are semi-informal. We've considered all of them formal for the sake of simplicity. ³There is a possibility that relatives' loans could become remittances that don't need to be paid back.

Livestock was the main type of asset sold by farmers, followed by jewelry

% of farmers who spoke about each type of financial strategy

(N=73)



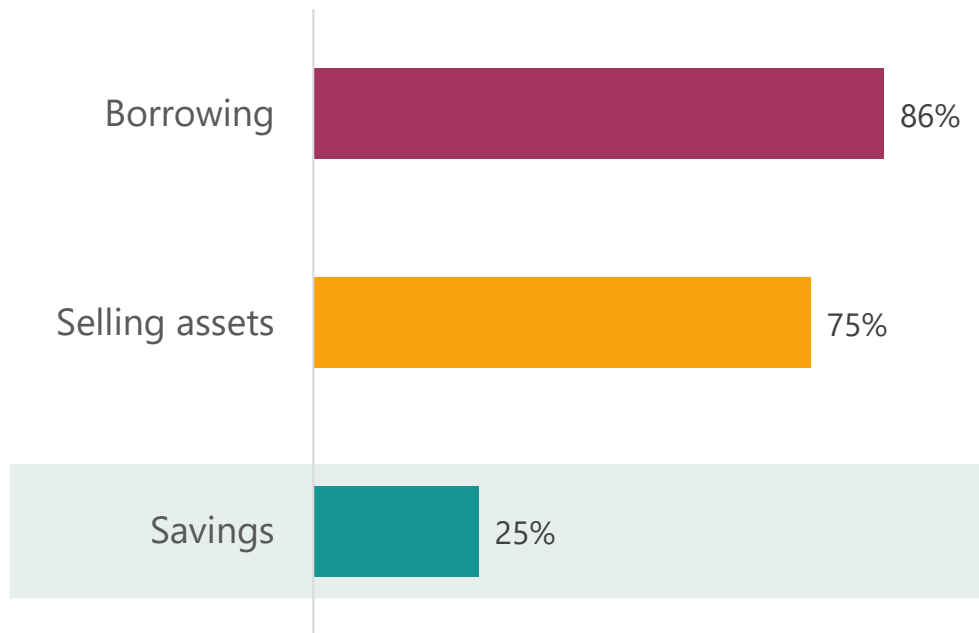
Types of assets sold ¹ (N=55)	
Cows	31%
Goats	23%
Jewelry ²	18%
Poultry	10%
Land ³	5%
Furniture	1%

Note: All are considered informal.

While MFIs were the main savings method used by farmers, informal savings were equally important

% of farmers who spoke about each type of financial strategy

(N=73)



Methods of savings¹

(N=18)

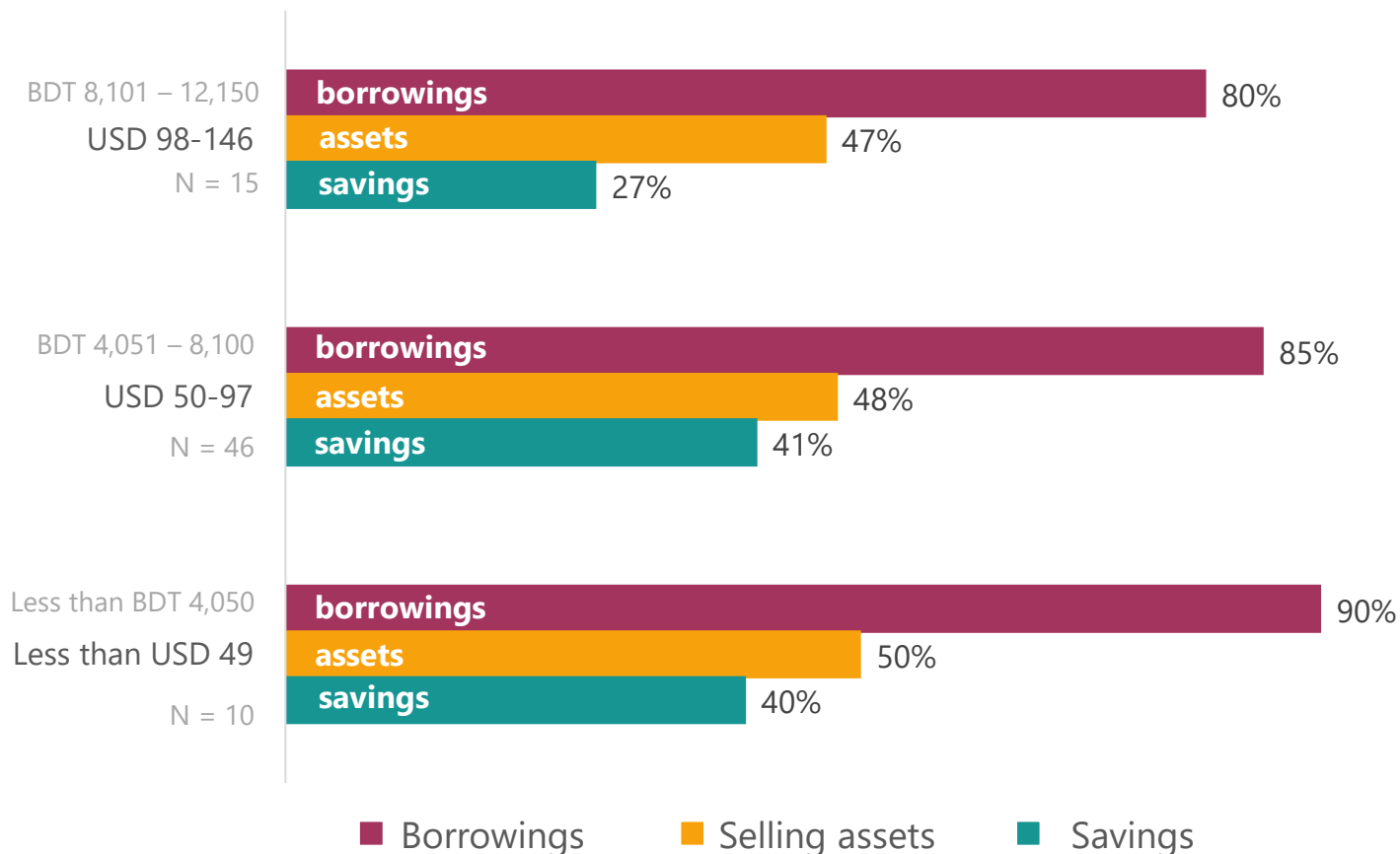
Microfinance organizations (MFIs)	50%
Home	33%
Informal Samitis	22%
Banks	17%

■ Formal ■ Informal

Note: ¹Responses are non-exclusive, so percentages will not add up to 100%, see note in slide 13.

Breakdown of financial strategies used during all phases by income bracket

Across all income brackets, the majority of farmers used borrowings
 (% of N in each income bracket¹)



KEY TAKEAWAY

Even in the higher income bracket, borrowing was the predominant strategy

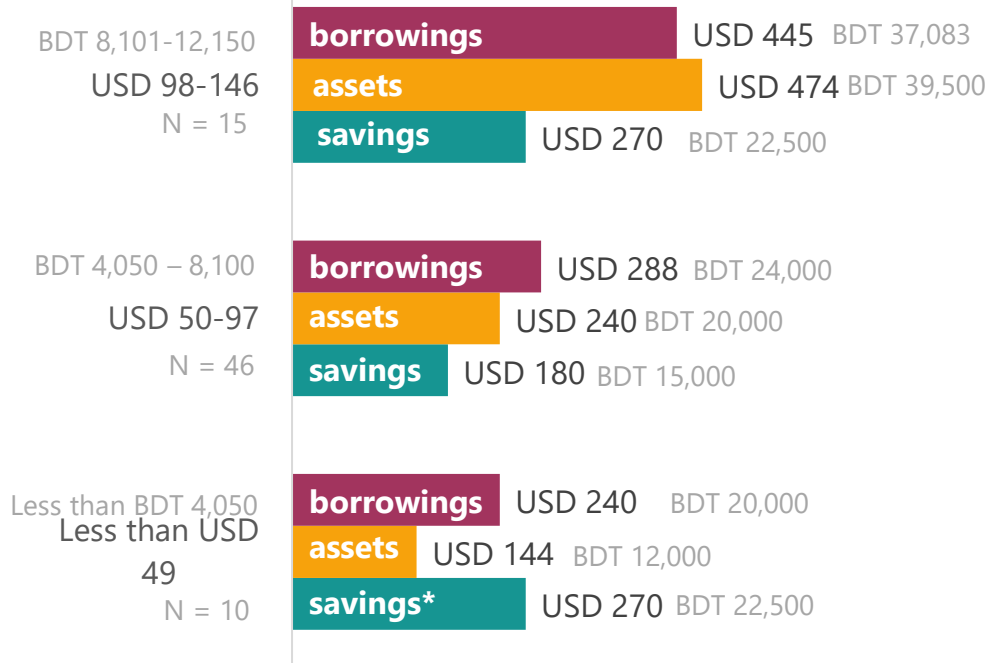
Note:¹Income brackets missing had 1 or 0 respondents. Two farmers in the “Less than USD 49” income bracket mentioned using high amounts of savings (+USD 360 | +BDT 30000) during Amphan. Excluding these participants, the average amount used would be USD 108 (BDT 9000). 1 USD = BDT 83.4. Responses are non-exclusive, so percentages will not add up to 100%, see note in slide 13.

Total amount obtained from the financial strategies used during all phases

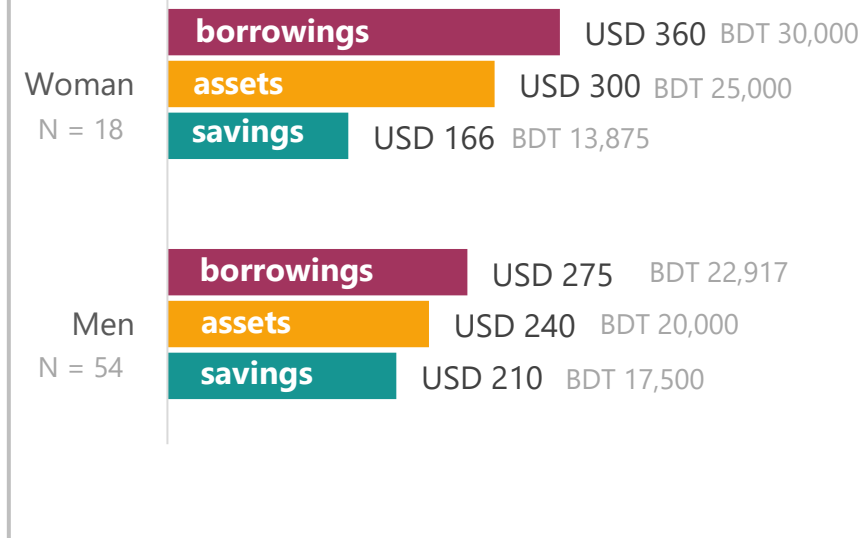
■ Borrowings ■ Selling assets ■ Savings



Higher income farmers used as much savings but sold more assets than lower income farmers¹



Women borrowed more and used less savings than men



A GENDER DIFFERENCE

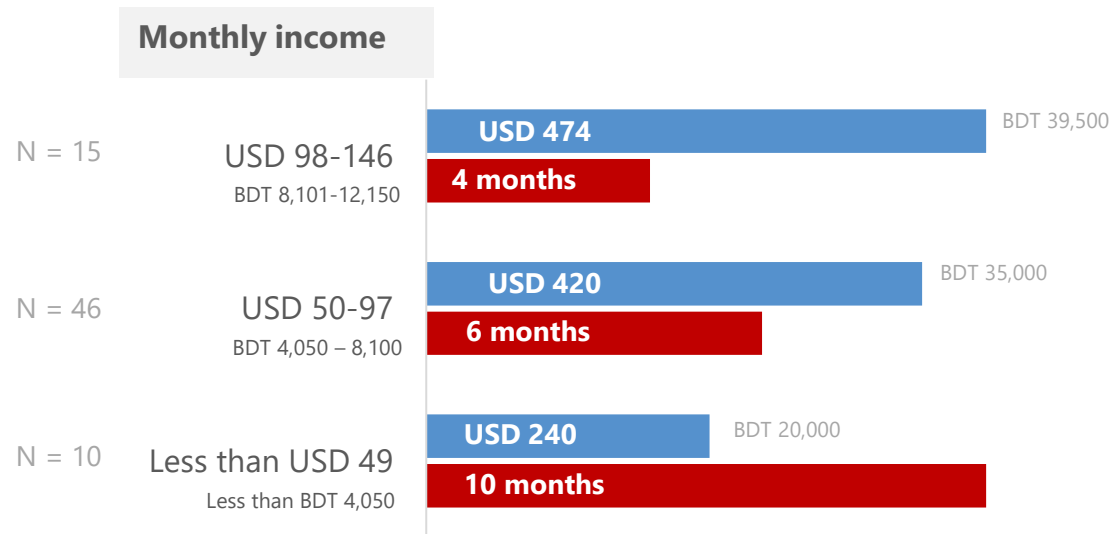
- Women relied more on borrowing and selling assets.
- Most of the borrowing came from MFIs. Research suggests that this type of financial institution tends to cater more to women.

Note:¹Income brackets missing had 1 or 0 respondents. Two farmers in the "Less than USD 49" income bracket mentioned using high amounts of savings (+USD 360 | +BDT 30000) during Amphan. Excluding these participants, the average amount used would be USD 108 (BDT 9000). 1 USD = BDT 83.4. Responses are non-exclusive, so percentages will not add up to 100%, see note in slide 13.

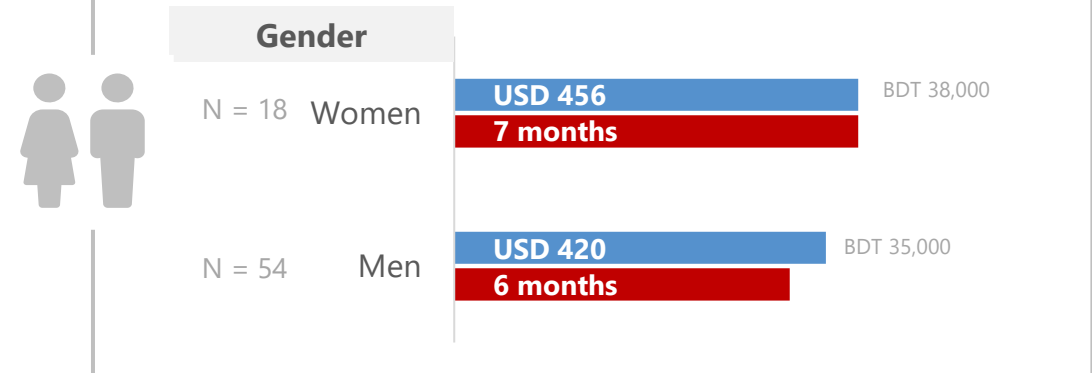
Financial strategies to cope with Amphan over all phases amounted to the equivalent of 6 months of farmers' monthly income

■ Amount of funds obtained¹ ■ # of months of monthly income

Farmers obtained the equivalent of 6 months of their monthly income through financial strategies to cope with Amphan



Despite obtaining a similar amount of funds, this meant one more month of income for women vs men



At the median, farmers used **USD 420 / BDT 35,000**, or the equivalent of **6 months of income**, to finance actions taken to cope with Amphan. The amount used for those with lower income equals 10 months of monthly income. Women used the equivalent of 7 months of income, slightly more than men.

Note: ¹This means the median amount of funds obtained from savings, borrowing, and selling assets. Insurance was asked about, but only life insurance was mentioned. ²Income has been adjusted to 2020 levels. Prices have increased 24% since 2020. USD 1 = BDT 83.4. Responses are non-exclusive, so percentages will not add up to 100%; see note in slide 13.

What financial strategies did farmers use vs. what they wished they had



81% of people who used savings wish they had *more* savings to use.

"If I had more savings and insurance, I would have benefited more."

Farmer, Man, 31-35, USD 50-97
CRB096_s2_q31.mp3.txt

70% of people who used borrowing wish they had used (more) savings

"It would have been beneficial to have saved money. I have to pay the interest on the loan. It is difficult to pay interest on one's behalf."

Farmer, Woman, 36-40, USD 50-97
CRB209_s2_q31.mp3.txt

Savings was by far the financial strategy that **farmers wished they had**.

Even if they used savings, **they wished they had more**.

Note that [in the financial strategies](#), the amount of savings used was the lowest of all financial strategies.

Savings provide immediately available funds and avoid indebtedness

1. NOT BEING ABLE TO PAY BACK

*"If I borrow a large amount of money, it is not possible to repay it because **I am a poor person. How can I repay so much money?** That is why I think that if I had a large amount of money saved, then by God's will, I could have faced this problem."*

Farmer, Man, 41-50, USD 98-146
CRB080

2. NEEDING TO HAVE CASH ON HAND DURING STORM AND DURING FLOODING

*"**It would be better if we had savings** in the hand. Many institutions or **associations were closed** during the storm and flooding."*

Farmer, Woman, 26-30, USD 50 - 97
CRB088

3. NOT TRUSTING INSURANCE¹ TO PAY AT THE TIME OF NEED OR AT ALL

*"Because it was time to get out of the house and buy anything at that moment, if there is no deposit money, **if there is only insurance money somewhere, they would delay paying.** If it didn't pay at that time, or because we were in a bad situation, **they might refused to pay, I think it would have been better to have a deposit.**"*

Farmer, Man, 31-40, USD 50-97
CRB170

*"At that time, it seems that the insurance actually would not pay money in this way, it would have been beneficial if the money had been saved. I think that maybe it means that sometimes, **if we rely on insurance, we cannot buy many things before.** In fact, there is water all around, and we cannot go anywhere. There was no work going on anywhere - everything was broken and full of water. **Now, if you had some money, then you could eat a little at your market.** In that case, **I think maybe two thousand taka would have been better.**"*

Farmer, Man, 31-40, USD 50-97
CRB384

Note:¹ When talking about insurance, respondents referred only to life insurance.

V. Impact on Urban Petty Traders

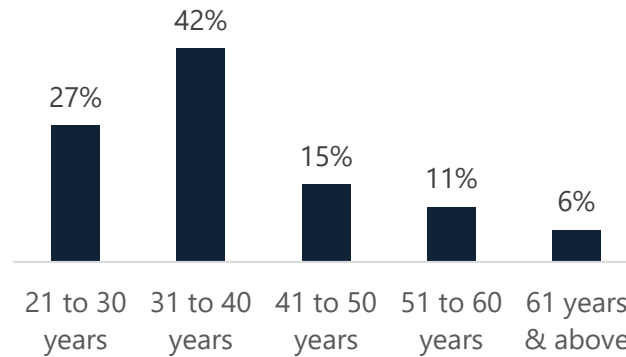
Traders demographics



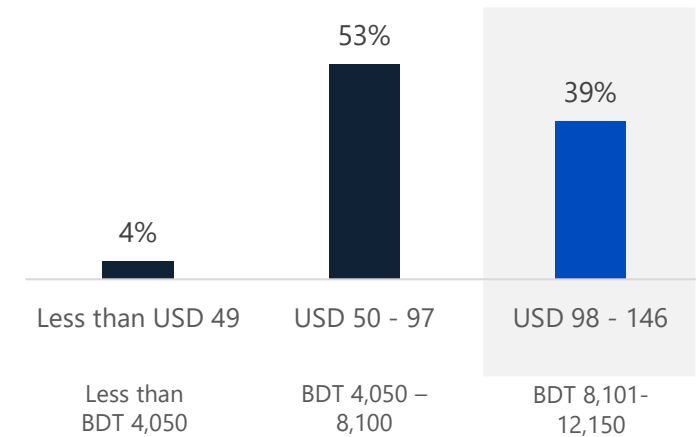
N = 113



Sample distribution by age ranges



Sample distribution by monthly income level¹



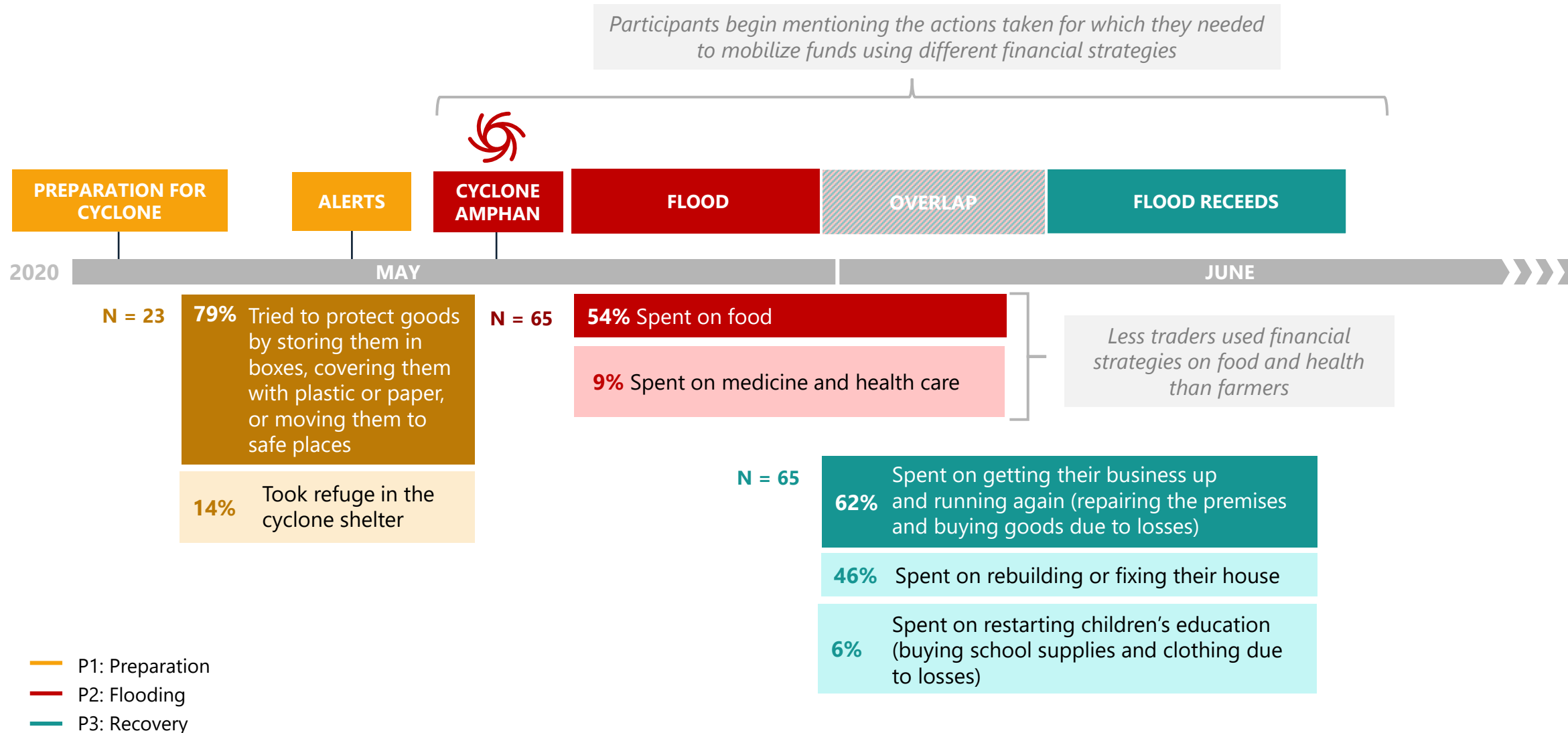
Women's monthly income is similar to men's

Sample distribution by type of business



Note: Difficulties during recruitment resulted in a lower percentage of women traders in the sample vs men. Only 5% of the sample are from Shatkhira district. ¹Monthly income has been inflation-adjusted to 2020 amounts. Prices have increased 24% since 2020. USD 1 = BDT 83.4. Responses are non-exclusive, so percentages will not add up to 100%, see note in slide 13.

Timeline of actions taken during each phase of cyclone Amphan



Note: Responses are non-exclusive, so percentages will not add up to 100%. The N represents the total number of participants who responded to the questions. Variations in the N occur due to the nature of the questions: since they are open-ended, not all participants provide answers nor talk about the same topics. Thus, the topics that are not at the top of mind for each question are not prioritized in the analysis.

One of the traders used finance pre-emptively before Amphan

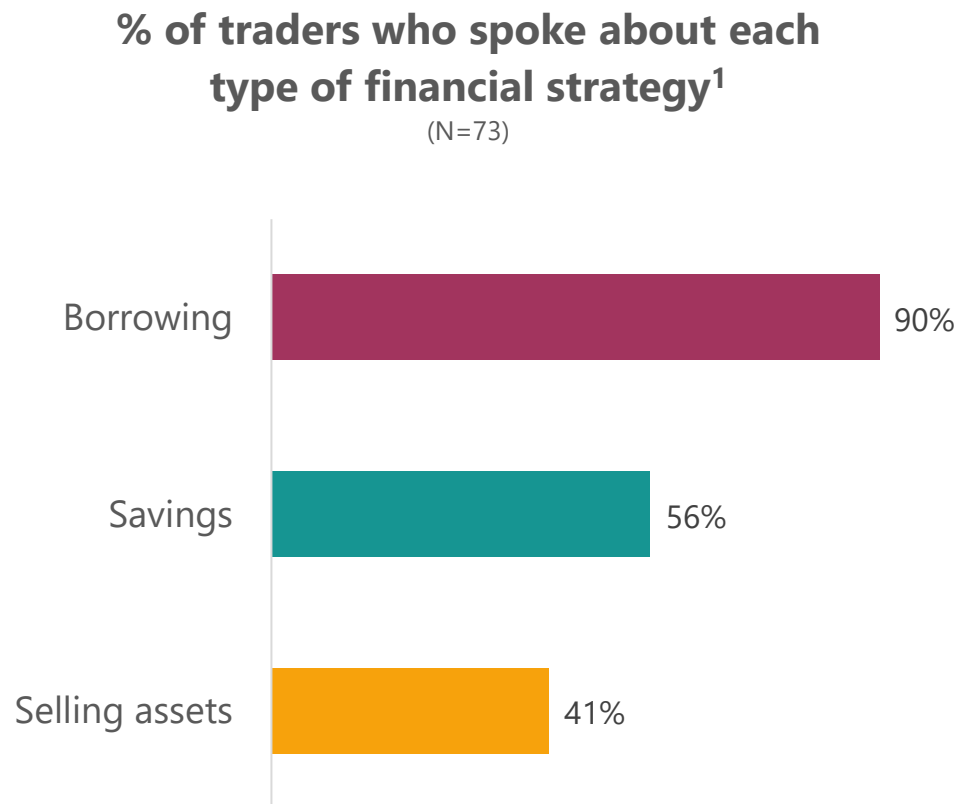
PRE-EMPTIVE INFORMAL MARKET RELIEF SAVINGS

*"Before Cyclone Amphan arrived, **we were already aware that another cyclone might happen. We had formed a committee among ourselves before.** This committee was created by members of our market committee. Each day or every other day, we all contributed a hundred taka, which we pooled together. Those of us who are members collect money once a month. This money, which I collected every month, amounted to around fifteen to twenty thousand taka. In total, we had a significant sum at our disposal, which each of us could use to buy supplies or anything else we needed. **Ten to fifteen days before Amphan, I got fifteen thousand taka. Since I knew Amphan was approaching, I did not spend that money. I saved it to help save my goods from the destruction of the storm.** After the storm hit, we had to make immediate repairs to both our home and shop, which cost around thirteen thousand taka. **The money we collected covered most expenses,** including buying plaster, nuts, and bolts for repairs. The rest of the money went towards fixing our house and shop."*



Trader, Man, 31-40, USD 98-146
CRB451_s2_q12.mp3.txt

Farmers used a combination of financial and non-financial strategies to fund the actions taken in the latest stages of the cyclone



Most traders **used combinations of 3-5 financial strategies, mostly from informal sources².**

They **also used non-financial strategies:**

- **15%** received **support from Govt/NGOs³**
- **5%** received **remittances** from relatives
- **1%** took on **extra work**

Note about remittances:

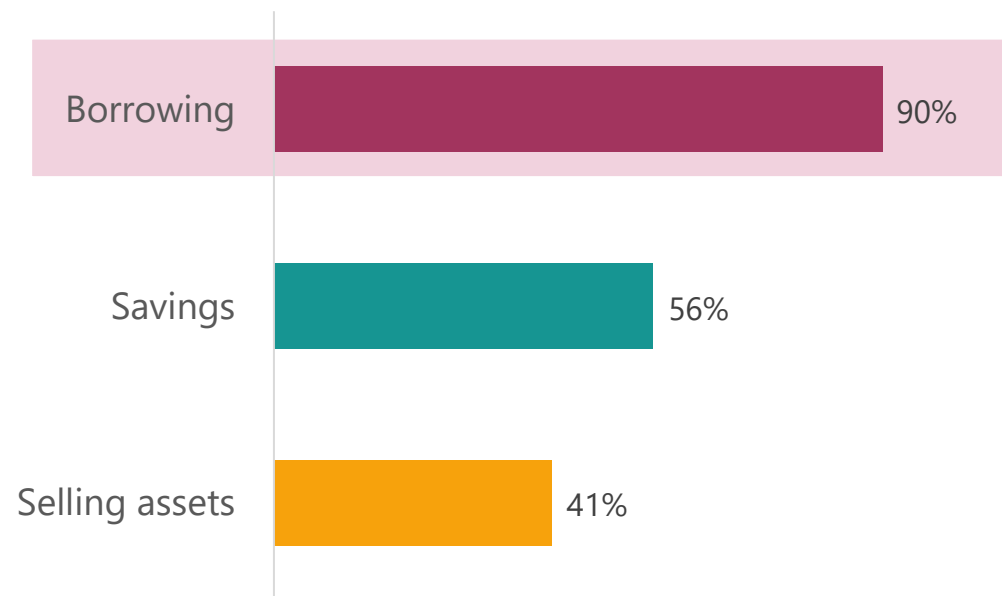
Other research⁴ suggests that the patterns of sending remittances tend to be smaller amounts on a regular basis and not one lump sum, as migrants lack the savings tools to save up a lump sum. Participants in this research discussed remittances as small flows of money sent as gifts and sometimes loans (ultimately not repaid) from relatives. Hence, they were considered an income stream and not a financial strategy.

Note: ¹Some traders mentioned their actions but did not specify the financial strategy tied to those actions. Responses are non-exclusive, so percentages will not add up to 100%, see note in slide 27. ²86% used informal financial strategies, and 61% used formal financial strategies. ³Mostly food and clothing.

While MFIs were the main source of borrowing, traders still resorted heavily to informal borrowing

% of traders who spoke about each type of financial strategy¹

(N=73)



Subtypes of borrowings¹

(N=66)

Microfinance organizations (MFIs) ²	56%
Moneylenders	33%
Relatives ³	26%
Neighbors	20%
Banks	6%
Informal Samitis	5%

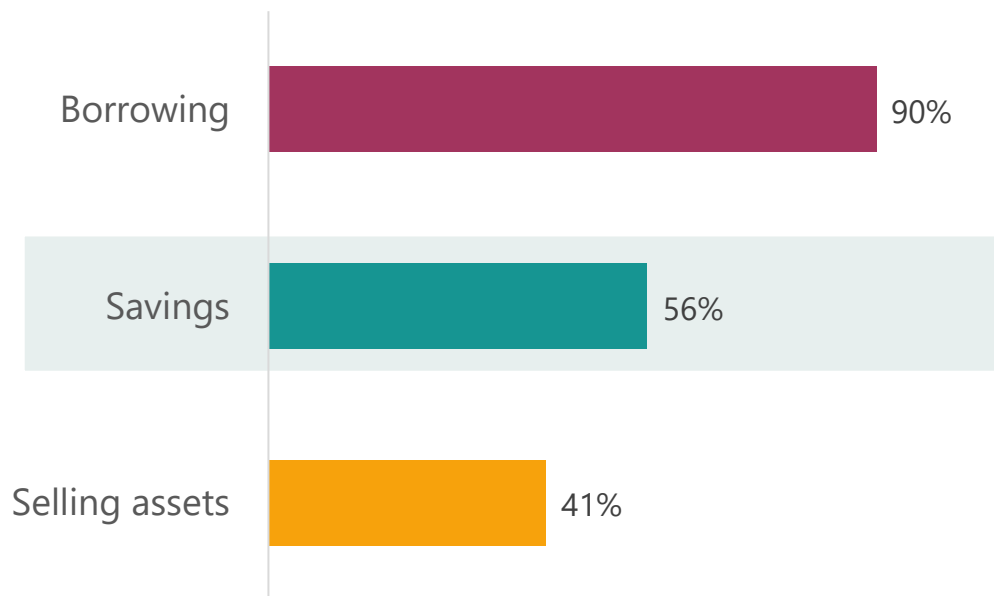
Formal Informal

A similar percentage of traders as farmers (86%) borrowed

Note: ¹Responses are non-exclusive, so percentages will not add up to 100%, see slide 27. ²Some MFI loans are semi-informal. We've considered all of them formal for the sake of simplicity. ³There is a possibility that relatives' loans could become remittances that don't need to be paid back.

Most traders used savings they had in their homes

% of traders who spoke about each type of financial strategy¹
(N=73)



Subtypes of savings¹
(N=41)

Home	34%
Banks	24%
Microfinance organizations (MFIs)	17%
Informal Samitis	2%

■ Formal ■ Informal

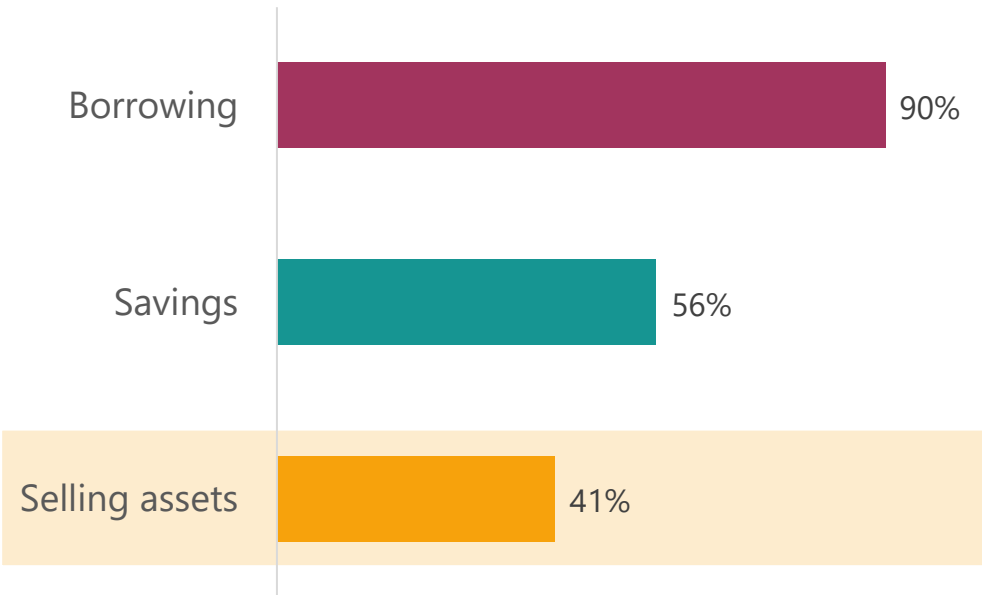
More traders used **savings** than farmers (25%).

Note: ¹Responses are non-exclusive, so percentages will not add up to 100%, see slide 27.

Livestock was the main asset sold by traders, followed up by jewelry

% of traders who spoke about each type of financial strategy¹

(N=73)



Subtypes of selling assets¹

(N=30)

Cows	22%
Jewelry ²	22%
Goats	20%
Land ³	8%
Poultry	8%

Note: All are considered informal.

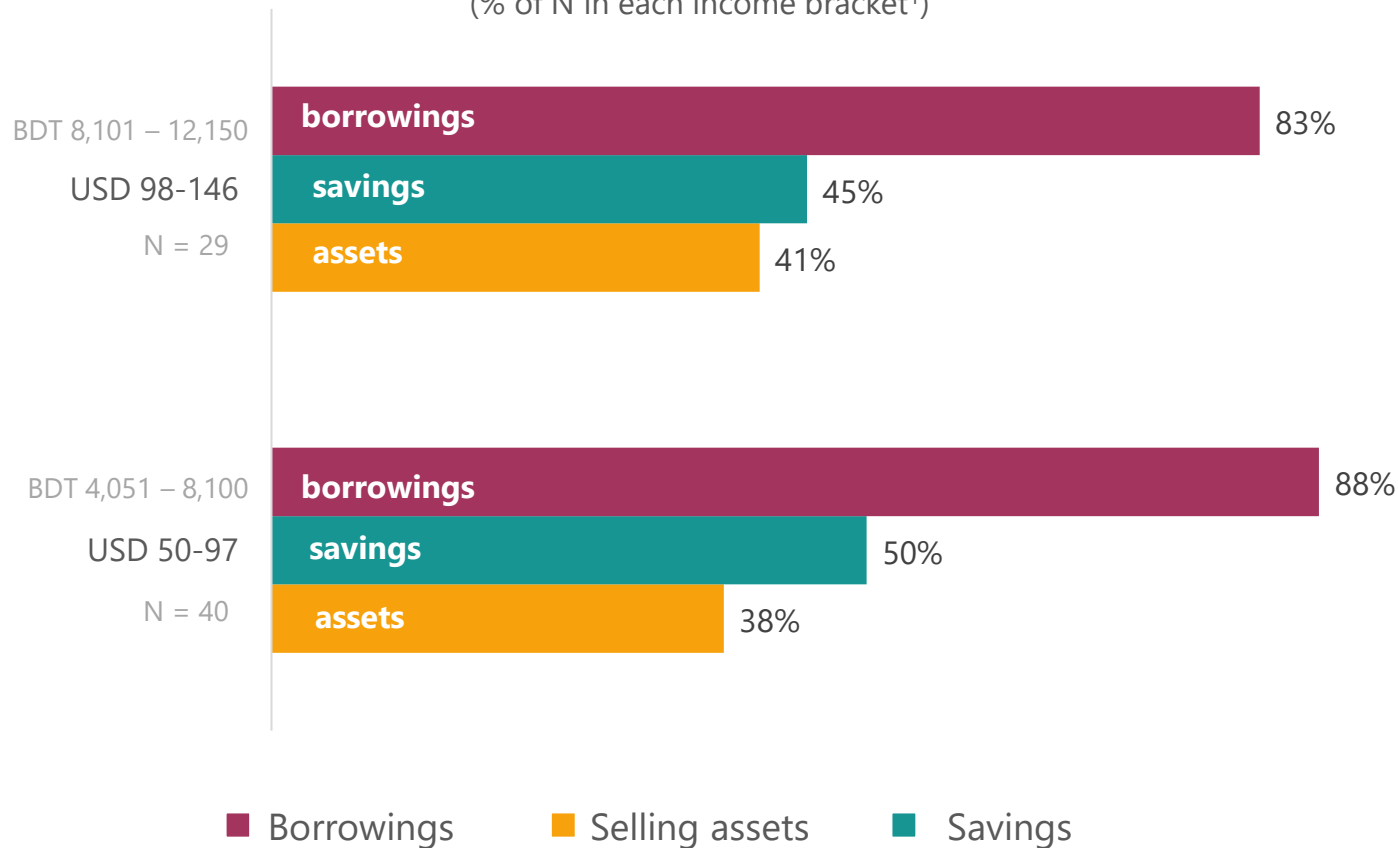
Fewer traders sold assets than farmers (75%).

Note: ¹Responses are non-exclusive, so percentages will not add up to 100%, see slide 27. ²Sometimes described as a pawn. ³Described as a mortgage.

Breakdown of financial strategies over all phases by income bracket

Across all income brackets, traders also used more borrowing than other financial instruments

(% of N in each income bracket¹)



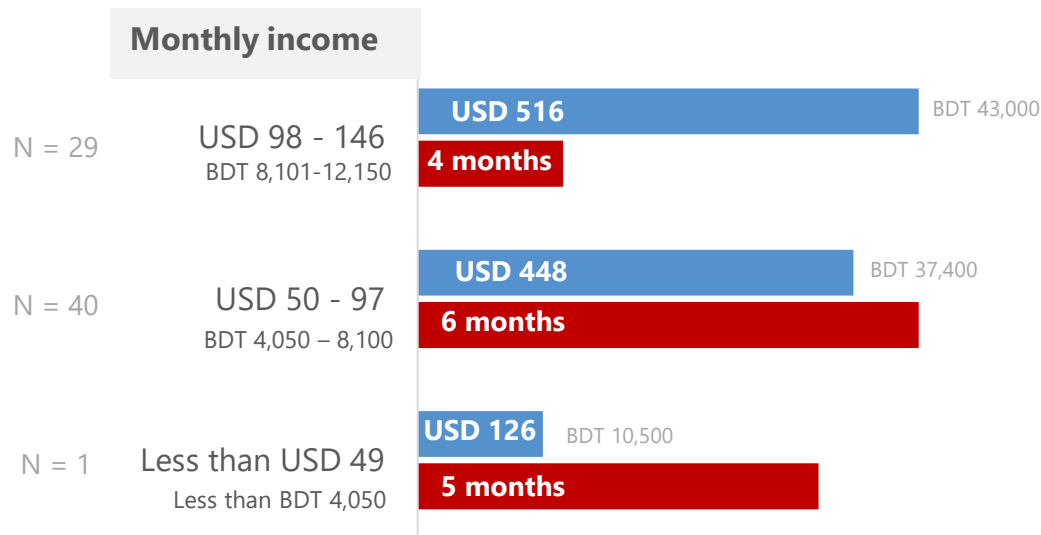
KEY TAKEAWAY

Even in the higher income bracket, borrowing was the predominant strategy

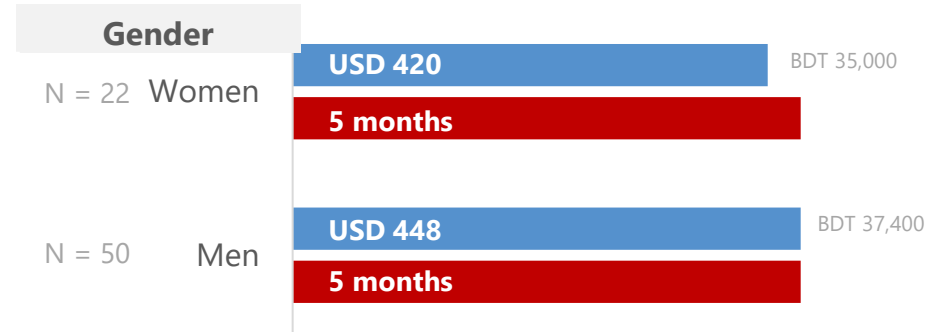
Financial strategies to cope with Amphan over all phases amounted to the equivalent of 5 months of traders' monthly income

■ Amount of funds obtained¹ ■ # of months of monthly income

Traders obtained the equivalent of 5 months of their monthly income through financial strategies to cope with Amphan²



Women and men obtained a similar amount of funds from financial strategies²



At the median, traders used **USD 448 / BDT 37,400**, or the equivalent of **5 months of income**, to finance actions taken to cope with Amphan. In comparison, **farmers had used 6 months of income**.

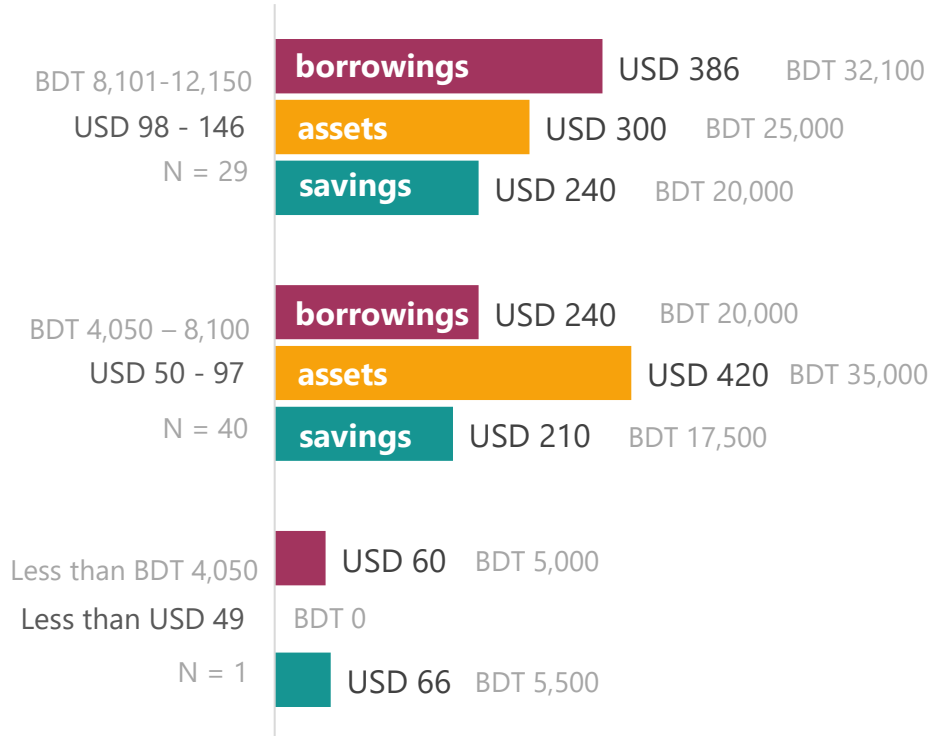
Note: ¹This means the median amount of funds obtained from savings, borrowing, and selling assets. ²Two female respondents in the lowest income bracket mentioned very high sold assets. We believe this could be due to selling land, so we have not included it in these calculations. ³ Income has been adjusted to 2020 levels. Prices have increased 24% since 2020. Responses are non-exclusive, so percentages will not add up to 100%; see note in slide 27.

Total amount obtained from the financial strategies used during all phases

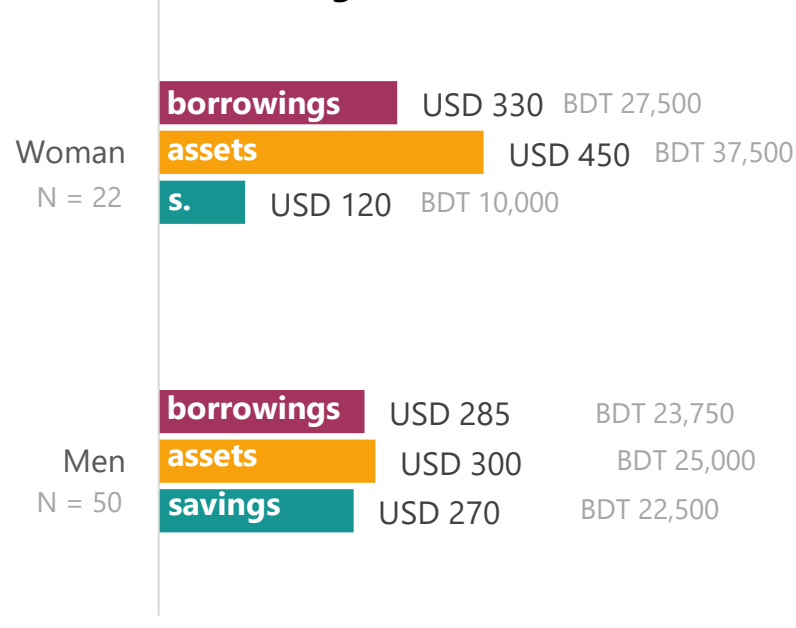
■ Borrowings ■ Selling assets ■ Savings



Higher-income used as much savings but borrowed more than middle-income



Women obtained more through selling assets than men



AN INCOME LEVEL DIFFERENCE

- The highest income relied more on borrowing and less on selling assets than the middle-income bracket.

A GENDER DIFFERENCE

- Women relied more on borrowing and selling assets and much less on savings than men.

Notes: ¹Income brackets that are missing had 1 or 0 respondents who answered these questions; Two women in the lower income bracket had very high amounts for sold assets and we believe they sold land. They have not been considered in these charts.; USD 1 = BDT 83.4. Responses are non-exclusive, so percentages will not add up to 100%, see note in slide 13.

What financial strategies traders used vs. what they wished they had



56% of people who used savings wish they had *more* savings to use.

"It would be better if I had more money, but I had little money. So, I spent it and had to go into debt."

Trader, Man, 51-60, USD 98-146
CRB014_s2_q31.mp3.txt

73% of people who used borrowing wish they had used (more) savings

"I had to take a loan. It would have been great if the money had been saved. Later, it was very difficult to repay the loan."

Trader, Woman, 26-30, USD 98-146
CRB214_s2_q31.mp3.txt

Like farmers,
**most traders wanted
more savings.**

Reasons mentioned why traders would have wanted more savings

1. NEEDING TO HAVE CASH ON HAND DURING STORM AND DURING FLOODING

*“Actually, **having our own savings is preferable**. Who will give when, then take it, withdraw from the organization, transfer the loan, and take it back? If you have saved money on your own, you can spend it quickly in the event of danger. If Allah has mercy on you, you will be kept safe. Having your own savings is preferable rather than taking it from someone.”*

Trader, Woman, 26-30, USD 98–146
CRB404_Q31

*“It would have been better if I had cash resources at that time. After Amphan, houses were destroyed, and trees were damaged, and no one was there to give us courage. No one stood by anyone's side, and no insurance came to our side. **We did not get any financial support**. No chairman member came to our side; no organization came to our side, and we spent the day without food.”*

Trader, Man, 41-50, USD 50-97
CRB063_s2_q31

2. SAVINGS ARE BETTER THAN INSURANCE¹; BORROWING IS ONLY A LAST RESORT

*“**Savings would be best, and after savings, insurance is best**. And the loan is at the last stage when the back is against the wall.”*

Trader, Man, 41-50, USD 50-97
CRB368_s2

3. NOT BEING ABLE TO PAY BACK LOANS

*“I took it from my elder brother's uncle's father-in-law. I took thirty thousand rupees from him, but I still can't pay it; **he asks for money every day**.”*

Trader, Woman, 41-50, USD 50-97
CRB345

Note: ¹ When talking about insurance, respondents referred only to life insurance.



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