



Exploring links between financial services and climate resilience: evidence from Myanmar

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The Rapid Response Research project seeks to gather information on households' resilience to climate extremes and its determinants. Under the wider Building Resilience and Adaptation to Climate Extremes and Disasters programme, a series of mobile phone surveys were conducted in Hpa-An township, eastern Myanmar.¹ This report lays out early findings from the analysis of survey answers, focusing on access to financial services and emergency funds.

Key messages

- Access to emergency cash is associated with greater levels of resilience for households in Hpa-An, Myanmar.
- While access to emergency funds is possible for a majority of households surveyed, most of this is through existing 'social capital' (family/relatives) or 'hard capital' (farm assets). Poorer and more vulnerable household either cannot access cash or resort to informal money-lenders.
- Use of informal loans for emergency cash can threaten the resilience of people in need. In Hpa-An, getting cash from informal money-lenders is strongly associated with lower resilience scores (at equal socio-economic and geographical characteristics).
- Alternative financial services for poorer households are gradually being offered in Hpa-An, where a quarter of the surveyed population are members of village savings and loans associations or self-help groups. These alternatives have the potential to enhance resilience if further extended.

¹ For more information on the project and its methods, see <http://www.braced.org/resources/i/resilience-dashboard/>

Background and context

The contribution of financial services to climate resilience in developing countries

Financial services have increasingly been touted as an effective way of enhancing resilience (IPCC, 2012; Linnerooth-Bayer and Hochrainer-Stigler, 2015). Services such as loans, insurance and saving accounts are expected to partially buffer the negative impacts of external threats and support households to cope with and adapt to changes in their surrounding environment.

In developing countries, semi-formal financial institutions² targeted at lower-income populations, including micro-finance institutions (MFIs) or savings and credit cooperatives, provide loan products and asset management solutions for households and small businesses. Such services can act as financial safety nets against climate extremes and disasters, which can also contribute to households' absorptive capacity³ (Haworth et al., 2016). Increasing access to loans and saving facilities enables communities and individuals to resort to tangible assets to face and manage the adverse impacts of extreme events (ibid.). Evidence has shown that access to loan services and saving accounts could substantially enhance disaster resilience by increasing coping capacity and decreasing recovery time after a climate shock (Hudner and Kurtz, 2015).

It has also been shown that financial services have the potential to improve disaster preparedness and adaptive capacity to gradual changes in the environment, such as sea level rise or desertification (Haworth et al., 2016). MFIs in various countries already support investments in activities that directly contribute to climate change resilience in the fields of water management, housing, agriculture, fishery and forestry. For instance, in Bangladesh, MFIs have provided micro-loans to support households in building houses that are better able to withstand floods and strong winds (Agrawala and Carraro, 2010). Another common investment MFIs have enabled has been the introduction of crop varieties that are more resistant to soil salinisation and droughts.

The impacts of climate shocks on the livelihoods of vulnerable population can also be mitigated through insurance instruments. In particular, index-based insurance⁴ is often promoted as a tool to enhance anticipatory or absorptive capacity, by paying out before a threat unfolds into a fully fledged disaster, making it possible to undertake preparedness activities (Schaefer and Waters, 2016). Insurance more often comes as post-disaster liquidity, which can help protect or recover livelihoods affected by shocks (Linnerooth-Bayer and Hochrainer-Stigler, 2015).

The impact of increased access to financial services on resilience to climate change is complex. Given the wide variety of financial products and the intricate challenges of poverty, development and resilience, significant limitations to the use of financial services as resilience-building tools remain.

Improving access to financial services does not necessarily enhance climate resilience. For instance, informal sources of financial services, such as money-lending, can have an ambiguous impact on households' capacity to absorb and adapt to change. Here, high interest rates often threaten long-term resilience by increasing the debt burden and discouraging adaptive activities (Hoff et al., 2005; Haworth et al., 2016). MFIs focusing on poverty relief may support short-term practices by developing income-generating activities that are environmentally unsustainable, or in hazard-prone areas, therefore increasing clients' vulnerability to climate change (Agrawala and Carraro, 2010). Some types of financial services, such as community-based savings and loans groups, may also be unsuitable to the kind of covariate risks that climate shocks present. Shocks affecting the entire community can put these community-based associations at risk since they seldom have the liquidity to pay out benefits for all members at once.

² Semi-formal is to be differentiated from formal services – which reflect the national financial market, working on market rates – and from informal services – which include all activities that are not legally registered.

³ Absorptive capacity is one of the 'three A' capacities to assess resilience presented in Bahadur et al. (2015) and used by the Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED) programme. It corresponds to 'the ability of social systems, using available skills and resources, to face and manage adverse conditions, emergencies or disasters' (Haworth et al., 2016, p. 88).

⁴ Index-based insurance pays out benefits on the basis of a predetermined index (e.g. rainfall level) for loss of assets and investments resulting from weather and catastrophic events, without requiring the traditional services of insurance claims assessors.

Moreover, to successfully support resilience-building activities, the development of financial services not only must be targeted at resilience-enhancing activities but also need to overcome substantial socio-cultural, technical and institutional barriers that prevent services from reaching the groups of people most vulnerable to climate extremes and disasters. Financial services are often hard to introduce in underserved areas, owing to inappropriate regulatory and institutional environments at the national or regional level, as well as trust issues and low financial literacy at the local level (Haworth et al., 2016). Ultimately, a wide range of services are targeting relatively wealthier households and are out of reach of the poorest and most vulnerable parts of the population (Pierro and Desai, 2008; Agrawala and Carraro, 2010).

As a response to these numerous pitfalls, the introduction of financial services has increasingly been combined with technical support or social network development activities to ensure their effectiveness in enhancing household resilience. Village savings and loans associations (VSLAs), for instance, are being put forward as a means of promoting both financial and social capital, thereby supporting communities to better cope with climate change (VSLA Associates, 2017). These initiatives often come with training on savings and investments and usually target groups of people, such as women, with particular vulnerabilities to climate extremes and disasters. Some MFIs are also providing specialised services that target climate-related vulnerabilities, including training modules on disaster preparedness, or promoting adaptation investments (Agrawala and Carraro, 2010). The effectiveness of these alternative sources and types of financial services in enhancing resilience widely varies. Evidence from Ethiopia has shown that micro-finance self-help groups can act as social protections, and reinforce existing informal social networks (Weingärtner et al., 2017). However, further examination and documentation is needed to provide insights on the role of financial solutions for resilience-building.

It is here where the Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED) programme aims to shed some light. Using survey information from the Rapid Response Research (RRR) initiative, this report assesses the relationship and role of financial services in strengthening resilience in eastern Myanmar. The report builds on other RRR thematic analyses (see Perche, 2018) and seeks to uncover preliminary insights from the project's post-disaster panel survey. Full details on the RRR's methods and approach are elaborated in Jones et al. (2018) as well as follow-up documentation on the BRACED website.

Investigating financial services and subjective resilience in Hpa-An, Myanmar

Methodology

BRACED's RRR project collects data from 1,203 households in Hpa-An township in Kayin state, mid-eastern Myanmar. It covers eight villages that are located next to the Thanlyin River and frequently affected by flooding. Each village received disaster risk reduction support from the BRACED Myanmar Alliance between 2015 and 2017. The RRR initiative uses mobile phones to collect data on various topics related to a household's subjective resilience to climate change, at different points in time.⁵ It provides an opportunity to explore factors of resilience at the local level based on rural populations' own assessment of their capacities. The following analysis uses the RRR data to investigate which kind of financial services are used in Hpa-An and how they affect people's resilience to climate-related shocks.

Context

Formal financial services in Myanmar remain largely underdeveloped, with only a quarter of the population having a bank account in 2017 and a market still dominated by state-owned companies (World Bank, 2017). Personal saving practices are limited with just above a third of the population declaring having saved money in 2017 (ibid.). However, almost two thirds of the population has access to emergency funds. These funds mostly come from relatives, work or informal sources (ibid.). The informal sector therefore remains the main source of financial services in the country, presenting clear threats through high rates of interest and/or risks of co-variate shocks to relatives (Haworth et al., 2016). While demand for micro-finance services has increased substantially in the past decade, supply of services is still largely inferior to needs. Informal money-

⁵ For more information on subjective evaluations of resilience, see Jones et al. (2018).

lenders in Myanmar are filling this gap with a large client base of very poor households – often borrowing amounts that are too small for traditional MFIs. However, they are known to charge higher interest rates in return for flexibility. It is also common for money-lenders to put public pressure on households to repay (Gilmore, 2016; Htoo Thant, 2018). Finally, insurance markets are particularly underdeveloped, reaching only the wealthiest share of the population (Haworth et al., 2016).

In rural areas such as Hpa-An township where the RRR survey is run, most of the access to financial services has been enabled through semi-formal or informal mechanisms such as micro-finance and savings associations. Of the households surveyed in Hpa-An, 20% are under the national poverty line, more than a third of household heads have never received any formal education and only a fifth have attended secondary school. Farmers or casual workers represent two thirds of the population. Although numerous traditional banks and MFIs, such as Easy Microfinance,⁶ are located in the township capital city of Hpa-An, the majority of the population living in the township is scattered in remote villages and has limited access to these services. The Myanmar Alliance, in partnership with Vision Fund International, has supported the development of VSLAs, self-help groups and micro-finance activities in 10 communities across the township. Project results show that in rural areas, newly accessible micro-loans have been used to invest in assets such as livestock, or to help improve housing (Stewart Gee Consulting, 2018). These activities have been found to contribute to building greater economic resilience to shocks. The data collected through the RRR allows us to view these evaluation results with a broad perspective. It reveals valuable insights into the extent of access to various sources of financial services in Hpa-An and their links with climate resilience.

This report uses the data collected through the RRR to present an overview of the different sources and use of financial services available in Hpa-An. It further analyses the relationship between access to cash and subjectively evaluated resilience, shedding light on the disparity of resilience capacities between groups accessing different sources of financial services.

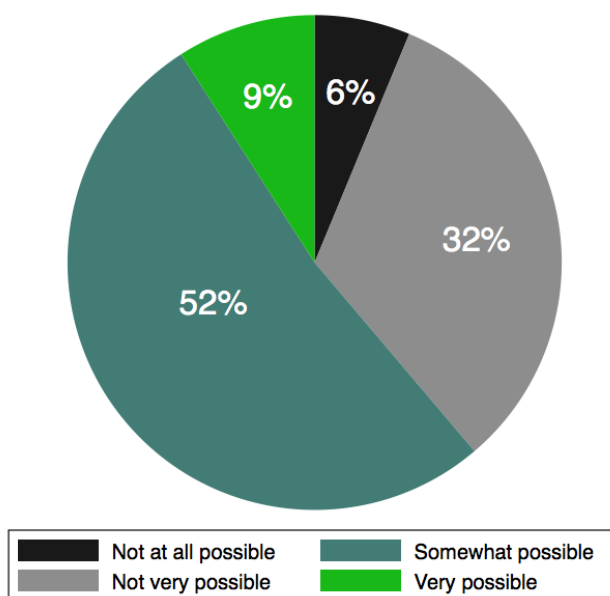
⁶ <http://www.easy.com.mm/grouploans.html>

Findings from the Rapid Response Research

Access to financial services in Hpa-An

The situation in Hpa-An appears quite similar to what is seen in national-level observations, with most people able to access emergency funds and financial services through informal channels. A large majority of respondents (61%) asserted that, if needed, it was possible or somewhat possible for them to gather KKM 300,000 – £145 – in the next month. Nine percent stated that it was not possible at all. A third declared that it would be difficult.

Figure 1: How possible is it that you could come up with KKM 300,000 within the next month?



The capacity to raise emergency funds seems to be unequal between socio-economic groups, with certain groups having much less difficulty than others. For instance, households whose heads have attained higher levels of education appear more likely to be able to raise cash (see Figure 2). More than three quarters (77%) of households whose heads have attained high school or higher levels declared that raising funds was possible or somewhat possible, whereas only a half (51%) said so for those with no education.

Strong disparities also emerge between linguistic groups – a reflection of ethnic disparities. Almost two thirds of households speaking Hindi answered that it would be not very possible or not possible at all for them to access emergency funds within a month. This is more than twice the size of the share of Burmese-speaking households that answered similarly. This may be linked to numerous underlying inequalities between these groups, starting with a difference in average level of poverty and levels of education between ethnic groups. It could also reflect difficulties in accessing information and services on financial management for non-Burmese-speaking households.

Figure 2: Capacity to raise emergency cash, by household heads' education level

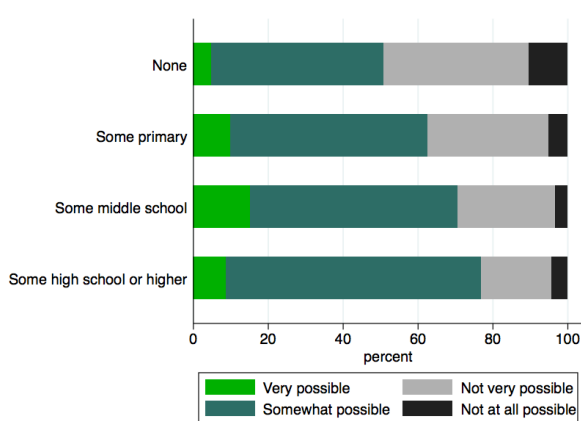
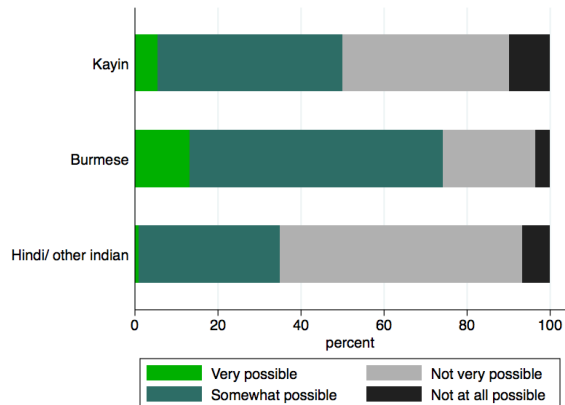
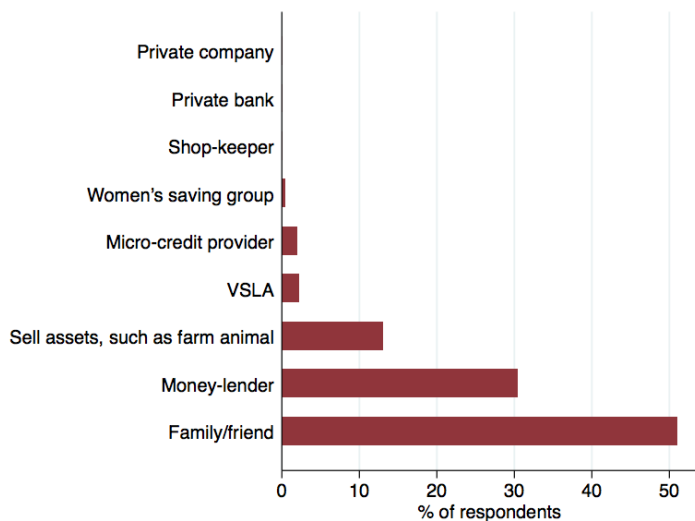


Figure 3: Capacity to raise emergency cash, by households' main spoken language



These disparities highlight the importance of social networks and social capital to ensure access to financial capital in Hpa-An. As a matter of fact, more than half of respondents said their main source of emergency cash would be their family or friends. 'Hard' capital, such as land or animals, is also an important source of financial emergency relief in Hpa-An: 13% of respondents declared that they would resort to selling these assets in case of emergency.

Figure 4: Main source of emergency cash



It appears from Figure 4 that emergency funds are mostly raised from informal sources. Private financial services providers (banks and MFIs), as well as community-based sources of financial services, represent the first resort for only 5% of respondents, whereas a third of them resort to informal money-lenders for emergency cash. This suggests that access to financial services, private or community-based, is limited in Hpa-An. Households that cannot rely on social or hard capital have, in most cases, no better option than resorting to an informal money-lender.

As expected, people who cannot rely on their own capital tend to be poorer and less educated. As Figure 5 suggests, households with a lower likelihood of being poor resort to relatives or selling assets to get emergency cash, whereas a larger share of poorer households resort to informal money-lenders. Similarly, 41% of families whose head has had no education resort to money-lenders, whereas only 15% of household with a highly educated head do so.

Figure 5: Main source of emergency cash by likelihood of being under the poverty line

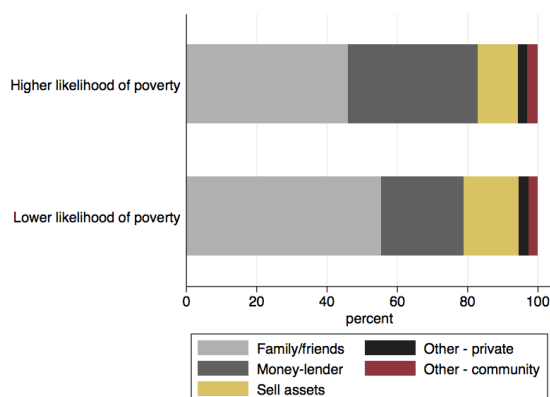
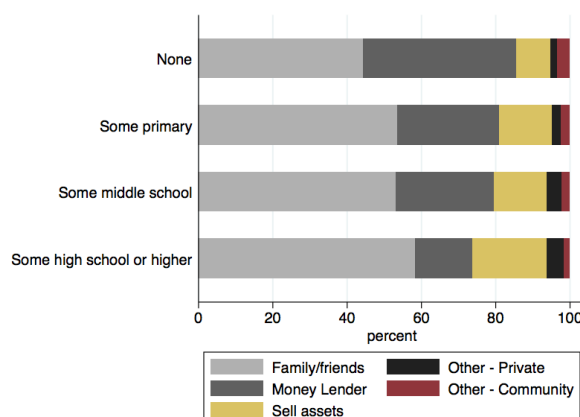


Figure 6: Main source of emergency cash by household head education level



Statistical tests using the Progress Out of Poverty score (POPscore)⁷ show that, on average, households that resort to money-lenders have a higher likelihood of being in poverty (a lower POPscore), with high confidence.⁸ This supports the view that the households that are most vulnerable often have very little options for financial emergency relief. This is partly because of the low level of development of formal or semi-formal financial services in Hpa-An.

Only 5% of respondents said they had an account in a private bank or an MFI. None of the respondents declared having an insurance policy. This suggests that existing formal and semi-formal institutions in the region do not offer services that are targeted specifically to the needs and capacities of poorer people. However, community-based financial services have started to grow, with the support of the BRACED programme among others.⁹ A quarter of respondents are currently in VSLAs or are self-help group members.

Table 1: Respondents accessing formal financial services in Hpa-An

VSLA or self-help group members	25%
Account in private bank or MFI	5%
Insurance policy	0%

This limited access to formal financial services in Hpa-An could be a substantial barrier to households' resilience to climate change and extreme events, especially for the most vulnerable population. The reliance on informal sources seems to have a mixed impact on households' resilience in Hpa-An. The following section provides some insights on this issue.

Financial services and resilience in Hpa-An: positive and negative relationships

As described earlier, the relationship between resilience to climate change and access to financial services is not straightforward. The data collected in Hpa-An allows us to explore the correlation between access to financial services and each respondent's subjectively evaluated resilience score. The subjective resilience

⁷ The POPscore reflects the likelihood of household poverty, with lower scores reflecting a higher likelihood of being under the national poverty line (see Desiere et al., 2015 and Jones, 2018 for further details on the methodology).

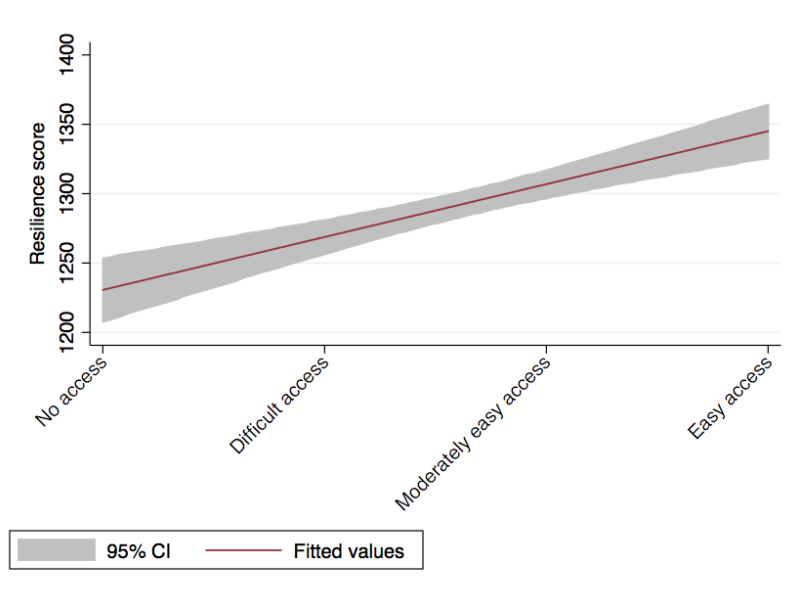
⁸ There is a 95% confidence level that the difference in mean POPscore between the groups lies between 3.6 and 7 points.

⁹ BRACED has supported existing groups and association through training and technical support to develop or enhance their capacity to provide financial services. It has also increased knowledge on the use of financial services to cope with climate-related vulnerabilities. The final evaluation report points out that the project has not only supported existing institutions but also incentivised the creation of more loan associations and MFIs in the targeted areas. See Stewart Gee Consulting (2018).

measure used in the RRR reflects a household’s resilience as perceived by themselves. This indicator is based on people’s own measure of their capacity to deal with various shocks. The indicator uses a set of questions reflecting households’ absorptive, adaptive and transformative capacity (for more details see Jones and Tanner, 2017; Jones, 2018). To reflect the fact that information on resilience is collected over the course of multiple surveys, the indicator used in this report reflects households’ resilience score over time.¹⁰ It represents the total level of resilience across the 10 months (7 waves) of data collected represented by an Area Under the Curve analysis – herein referred to as a ‘resilience score’.

As Figure 7 shows, having access to emergency cash is associated with a higher resilience score. Further analysis controlling for the effects of poverty and other socio-economic or geographical factors confirms that there is a positive relationship between the possibility of accessing emergency funds and the resilience score.¹¹ This corresponds with the view that financial relief is a central component of one’s ability to cope with climate-related shocks such as floods.

Figure 7: Positive relationship between access to emergency cash and over time resilience score



In this sense, improving access to financial services that provide critical cash resources in cases of emergency could play a key role in increasing people’s resilience in Hpa-An.

However, the positive link between resilience levels and access to finance does not hold up for all sources of emergency cash. In particular, resorting to informal money-lenders for financial relief appears to have a negative relationship with resilience in Hpa-An. Generally, one might expect that people who use the services of money-lenders have lower resilience levels because they tend to be poorer and less educated.¹² However, the negative relationship between resilience and reliance on money-lenders persists even when keeping socio-economic characteristics equal.

Figure 8 shows the marginal effect of resorting to a money-lender on the over time resilience score, when other socio-economic, cultural and geographical characteristics are kept equal.¹³ On the left, the effect is compared with all other sources of emergency cash. It is below 0 (left of the dotted line), which means that resorting to a money-lender is expected to reduce a household’s resilience score. On the right, the effect of resorting to relatives is set as the baseline and compared with the effect of other sources of emergency cash. The effects of all sources except money-lenders are above 0, which would mean they have a positive relationship with resilience. However, these estimates are not statistically significant (their confidence

¹⁰ This indicator was calculated as the total area under the curve over the seven waves of the RRR. For more details on how resilience changes over time, see Jones et al. (2018).

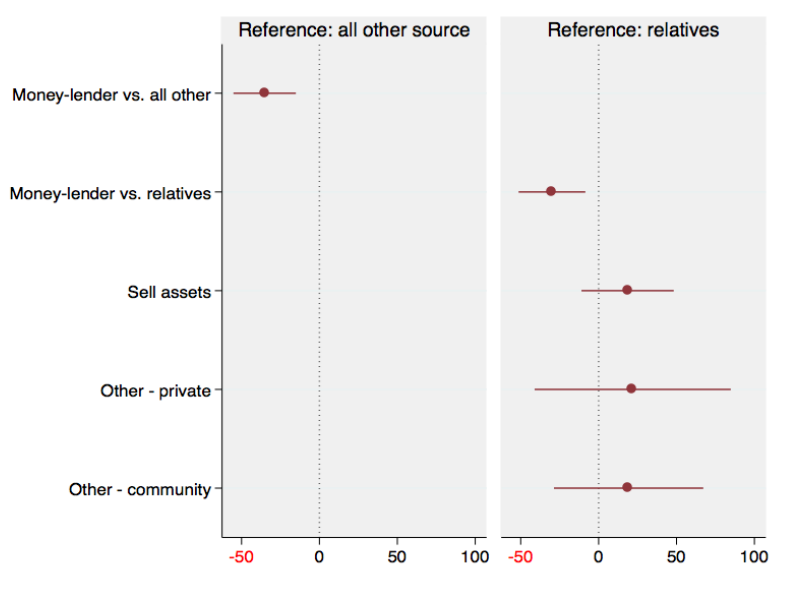
¹¹ Appendix A.1 presents a detailed results table.

¹² As presented in the previous section.

¹³ This includes potential variations in resilience score owing to poverty, education, location (village), language, household head gender, being a farmer, age, average income and number of occupants in the households. See Appendix for a detailed list of variables.

intervals include 0, the dotted line). The estimate for money-lender, however, remains negative and significant.

Figure 8: Marginal effect of emergency cash source on over time resilience score, varying baseline¹⁴



This provides a meaningful initial insight into the potentially detrimental relationship between money-lender practices and resilience for households in Hpa-An. More advanced statistical analysis could further test the robustness of these results and reduce the risk of reverse causality.¹⁵

Evaluations from activities implemented under the BRACED programme have shown that VSLAs and self-help groups have the potential to enhance climate resilience for the most vulnerable households in the township. However, the data collected through the RRR does not show a difference in resilience score between VSLA members and the rest of the population. This could owe to a wide range of factors, such as limited financial capacity within associations and groups or a lack of knowledge on how to use financial services to buffer climate-related risks and adverse impacts. A more thorough analysis would require more detailed information on the functioning of VSLAs and self-help groups in targeted villages.

The number of people using financial services via formal financial institutions in our sample is too small to draw any conclusion on their relationship with resilience in Hpa-An. However, the behaviour of respondents who use these services, as well as members of associations and self-help groups, seems encouraging.

Behaviours and space for further development of financial services in Hpa-An

Although financial services remain underdeveloped in Hpa-An, the small proportion of the population who have access to these services generally make notable use of savings and loans facilities. Most VSLA members (57%) have taken out a loan once in the past year, and 32% have taken a loan twice. This suggests that the associations are actively used (Figure 9). Yet, the frequency of payments remains low, with only a quarter paying money to the association once a month or more, and two thirds paying from one to three times in the past year (Figure 10).

¹⁴ Appendix A.2 presents the results table.

¹⁵ Reverse causality here would mean that it is because of their low resilience that households resort to informal money-lenders.

Figure 9: Number of times members get a loan from VSLA/self-help group, every year

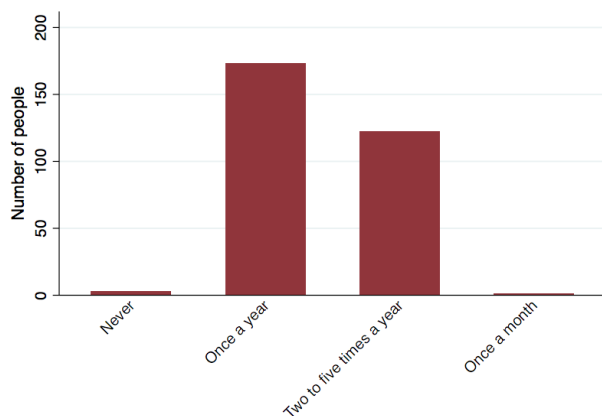
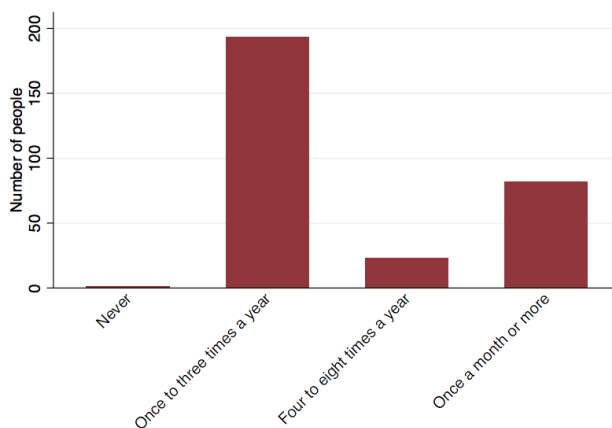


Figure 10: Number of times members pay money to VSLA/self-help group, every year



Of the 5% of respondents who have an account in a bank or an MFI, 10% declared they had not deposited any money in their account during the previous year (Figure 11), and 39% stated that they had not taken any loan from a private institution (Figure 12). However, more than half of them have put money in their account between two and ten times during the past year.

Figure 11: Number of times respondents put money in their bank/MFI account, every year

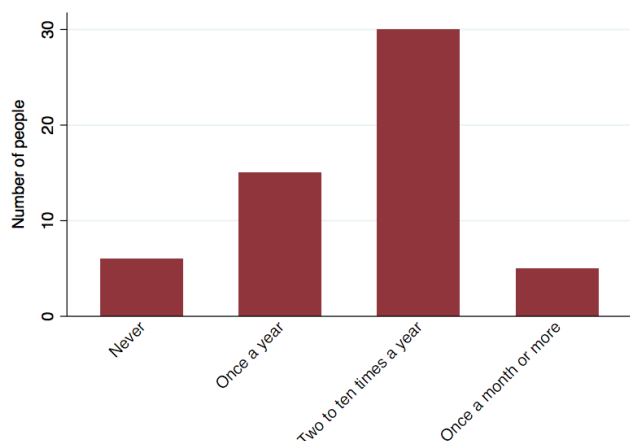
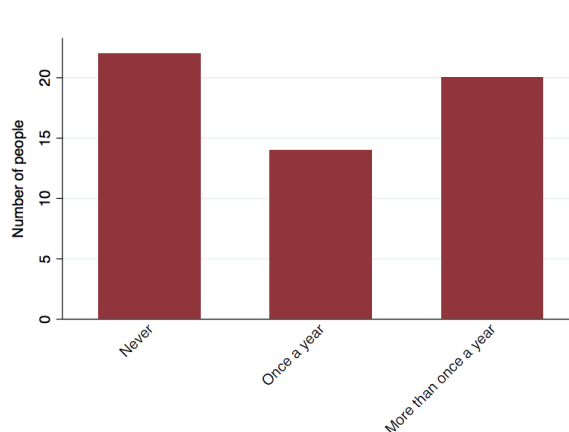


Figure 12: Number of times respondents get a loan from a bank/MFI, every year



Such regular use of financial facilities by those who can access them, and the prevalence of informal money-lenders, underlines the presence of a strong demand for financial services. At the same time, it underscores the importance of further developing financial services or other types of emergency support, for instance through social protection programmes, in forms that are accessible and tailored to the needs of those most vulnerable to climate extremes and disasters.

This also means there is a wide range of opportunities to support access to financial services for specific target groups. Women's associations, for example, could provide a platform to enhance access to finance for women and female-headed households. Currently, only 0.8% of female-headed households declared that women-based associations were their main source of emergency cash. Targeting women to increase their access to financial services through these associations presents a wide number of potential benefits for the resilience of their households and should be further investigated.

However, numerous barriers still hamper the development, provision and use of adequate financial services in the township. These include the limited breadth of products available and low levels of financial literacy. For instance, 80% of respondents declared that they did not know what an insurance policy was or how it worked. This underlines the challenges of expanding financial services, such as weather index-based insurance and micro-insurance, in places like Hpa-An over the short term. Overcoming basic issues of low trust and limited existing infrastructure for the development of financial services seems to be a priority.

Conclusion

The development of financial services and financial inclusion in developing countries is often presented as a means of enhancing resilience to climate and weather-related shocks. The relationship between access to financial services and climate resilience has been widely studied but appears complex and context-specific.

The RRR database developed through the BRACED programme has provided numerous insights on the state of access to financial services in Hpa-An, Myanmar, and its relationship with household resilience. Although a majority of people surveyed can access emergency funds if needed, most of this would come from informal sources. Households rely on their social capital (51%) or their hard capital (13%) or resort to informal money-lenders (30%). The latter appear to put households' resilience at risk. Simple regression analyses show there seems to be a positive and significant relationship between access to emergency funds and resilience to climate-related shocks. However, this is not true for people resorting to money-lenders as a source of emergency cash. This suggests that such practices in Hpa-An could be detrimental to people's resilience – though further causal analysis is needed before we can draw firm conclusions.

The development of formal financial services, including through micro-finance, is still very limited in Hpa-An, but community-based approaches such as VSLAs and self-help groups have reached a quarter of the surveyed population that make significant use of loans and savings. This is encouraging for the prospect of expansion of such alternative sources of financial services. However, the introduction of more complex financial products for resilience, such as weather index-based insurance, seems difficult in Hpa-An in the shorter term. Awareness and knowledge about financial services is limited, with 80% of respondents not knowing what insurance is. Further support will therefore be needed to meet the demand for financial services and to ensure these contribute to the climate resilience of people in Hpa-An.

Appendix

Statistical methods

The dependent variable in regressions A.1 and A.2 below is an over time resilience score, calculated as the area under the curve of resilience score over 10 months and 7 waves of data collection for each respondent. This indicator was built by Lindsey Jones.

The coefficients were estimated using is multivariate Ordinary Least Squares (OLS), with heteroskedasticity robust standard errors.

Variable of interest A1: Categorical variable compiling answers to the question ‘Imagine you have an emergency and you need to pay KKM 300,000. How possible is it that you could come up with KKM 300,000 within the next month?’

Variable of interest A2: Categorical variable compiling answers to the question ‘What would be your main source of cash in case of emergency?’

Socio-economic control variables are detailed in the table below:

Variable	Description
POPscore	Continuous variable. An indicator of the likelihood of a household being under the national poverty line. Controls for the effect of poverty on resilience score.
Household head education	Categorical variable. Level of education of the head of household. Controls for the effect of education on resilience score.
Village	Categorical variable. Village of the respondent. Controls for spatial differences in resilience.
Language	Categorical variable. Main language spoken in the household. Controls for potential cultural, ethnicity effect on resilience score.
Household head gender	Dummy variable. Gender of the head of household. Controls for gender differences in resilience score.
Farmer	Dummy variable. Controls for the effect of being a farmer on resilience score.
Age	Continuous variable. Age of the respondent. Controls for potential differences in resilience score between different age groups.
Average income	Categorical variable. Average income of the household in kyat, as declared by respondent. Controls for potential effect of income on resilience score.
Household occupants	Continuous variable. Number of occupants in the household. Controls for potential socio-economic differences. With households with fewer occupants expected to be wealthier.

A.1 Regression results for the effect of access to emergency cash on resilience score

	Resilience score			
No access	b.	-29.6 (20.6)	-77.7*** (20.2)	-82.6*** (26.5)
Difficult access	29.6 (20.6)	b.	-48.1*** (10.2)	-53.0*** (19.1)
Moderately easy access	77.7*** (20.2)	48.1** (10.2)	b.	-4.9 (18.5)
Easy access	82.6*** (26.5)	53.0*** (19.1)	4.9 (18.5)	b.
POPscore	33.3*** (10.4)	.	.	.
HH-head education	1.5 (1.1)	.	.	.
Village	-5.5*** (1.6)	.	.	.
Language	-25.5*** (7.7)	.	.	.
HH-head gender	37.2*** (11.1)	.	.	.
Farmer	37.9*** (10.0)	.	.	.
Age	1.0*** (0.4)	.	.	.
Average income	6.2** (2.4)	.	.	.
HH occupants	6.0** (2.7)	.	.	.
Constant	1020.0*** (45.5)	1049.6*** (43.2)	1097.7*** (43.8)	1102.6*** (49.4)
Observations

Note: *p-value < 0.10, ** p-value < 0.05, *** p-value < 0.01, standard errors in parenthesis.

b. stands for "Baseline". Coefficients are not standardized.

Control variable coefficients are presented only once as a change of baseline does not affect estimates for these variables, they remain identical.

A.2 Regression results for the effect of different sources of emergency cash on resilience score

	Resilience score				
Money-lender	-35.0*** (10.3)	-30.2*** (11.0)	-47.3*** (15.7)	-47.1 (32.5)	-48.3* (24.9)
Family/friends		b.	-17.1 (15.1)	-16.9 (32.2)	-18.1 (24.4)
Sell assets		17.1 (15.1)	b.	0.2 (33.9)	-1.0 (26.9)
Other - private		16.9 (32.2)	-0.2 (33.9)	b.	-1.2 (39.4)
Other - community		18.1 (24.4)	1.0 (26.9)	1.2 (39.4)	b.
POPscore	30.5*** (10.9)	30.4*** (10.9)	.	.	.
HH-head education	0.7 (1.2)	0.8 (1.2)	.	.	.
Village	-5.7*** (1.6)	-5.8*** (1.6)	.	.	.
Language	-21.4*** (7.9)	-22.2*** (8.0)	.	.	.
HH-Head Gender	38.5*** (11.6)	37.7*** (11.6)	.	.	.
Farmer	40.0*** (10.5)	40.8*** (10.5)	.	.	.
Age	1.1*** (0.4)	1.1*** (0.4)	.	.	.
Average income	6.1** (2.5)	6.1** (2.5)	.	.	.
HH occupants	7.4** (2.9)	7.1** (2.9)	.	.	.
Constant	1082.4*** (45.2)	1081.1*** (45.5)	1098.2*** (48.4)	1098.0*** (58.1)	1099.2*** (49.6)
Observations	788	788	.	.	.

Note: *p-value < 0.10, ** p-value < 0.05, *** p-value < 0.01, standard errors in parenthesis.

b. stands for "Baseline".

Control variable coefficients are presented only once as a change of baseline does not affect estimates for these variables, they remain identical.

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The BRACED Knowledge Manager generates evidence and learning on resilience and adaptation in partnership with the BRACED projects and the wider resilience community. It gathers robust evidence of what works to strengthen resilience to climate extremes and disasters, and initiates and supports processes to ensure that evidence is put into use in policy and programmes. The Knowledge Manager also fosters partnerships to amplify the impact of new evidence and learning, in order to significantly improve levels of resilience in poor and vulnerable countries and communities around the world.

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