



LAYERING AND TAILORING FINANCIAL SERVICES FOR RESILIENCE

INSIGHTS, OPPORTUNITIES AND CHALLENGES
FROM BRACED PROJECTS IN ETHIOPIA, KENYA,
NEPAL AND SENEGAL

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Working paper



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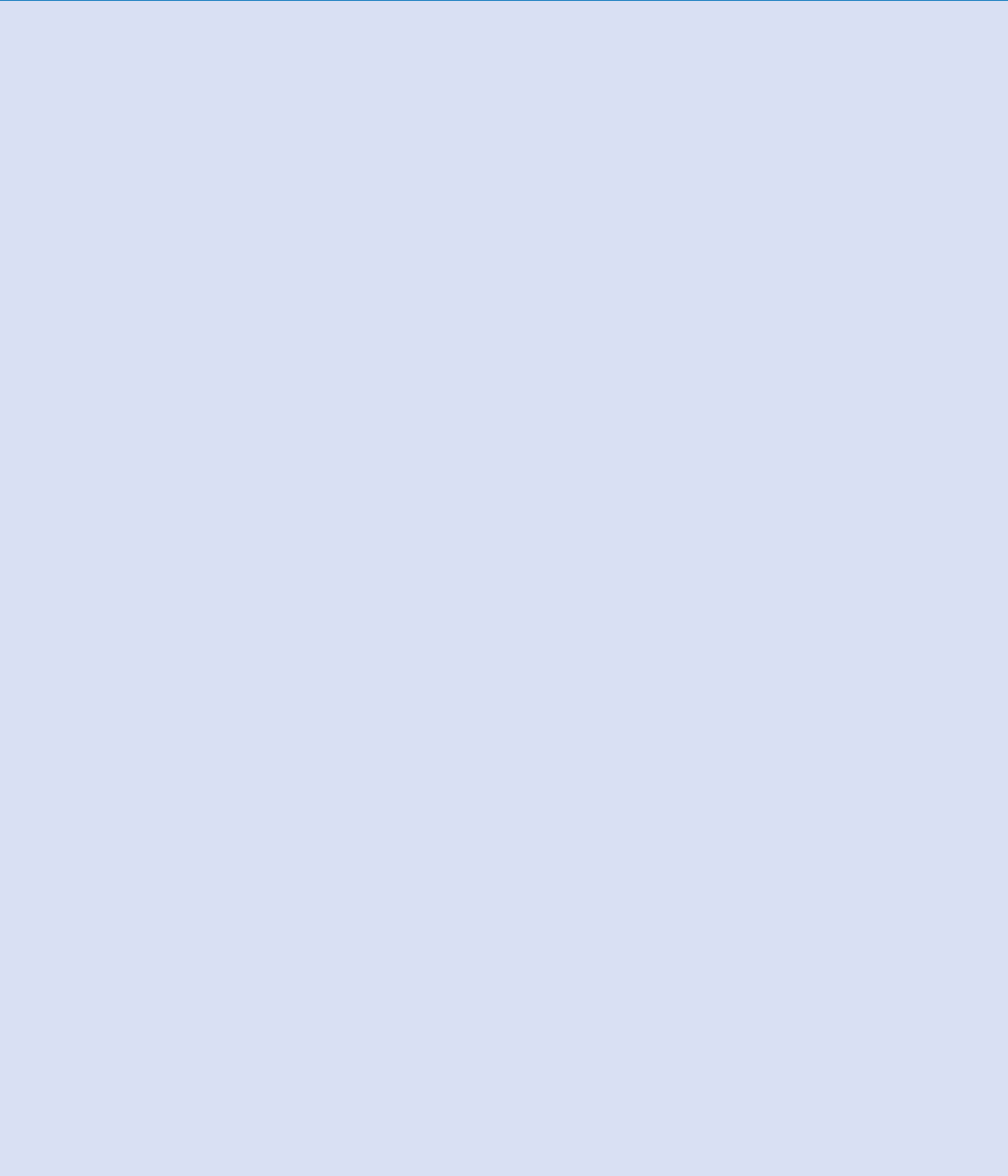
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Acronyms

| | |
|------------------|--|
| ADB | Agriculture Development Bank |
| AEMFI | Association of Ethiopian Microfinance Institutions |
| ARC | African Risk Capacity |
| ASCA | Accumulating Savings and Credit Associations |
| ASE/RBM | Réseau Billital Maroobe |
| BRACED | Building Resilience and Adaptation to Climate Extremes and Disasters |
| CBF | Community Business Facilitator |
| CCA | Climate Change Adaptation |
| CIMA | Conférence Interafricaine des Marchés d' Assurances (Inter-African Conference on Insurance Markets) |
| CNAAS | Compagnie Nationale d'Assurance Agricole du Sénégal (Senegalese National Agricultural Insurance Company) |
| CSA | Climate-Smart Agriculture |
| CTS | Crescent Takaful SACCO |
| DRM | Disaster Risk Management |
| DRR | Disaster Risk Reduction |
| GDP | Gross Domestic Product |
| GPFI | Global Partnership for Financial Inclusion |
| HDI | Human Development Index |
| HSNP | Hunger Safety Net Programme |
| IBLI | Index-Based Livestock Insurance |
| ICRM | Integrated Climate Risk Management and Transfer |
| ILRI | International Livestock Research Institute |
| IPs | Implementing Partners |
| ISRA/BAME | Institut Sénégalais de Recherches Agricoles / Bureau d'Analyses Macro-Economiques (Senegalese Institute of Agricultural Research / Office of Macroeconomic Analysis) |
| IVR | Interactive Voice Response |
| KI | Key Informant |

| | |
|--------------|---|
| KLIP | Kenya Livestock Insurance Programme |
| LDC | Least Developed Country |
| MAR | Market Approaches to Resilience |
| MFI | Microfinance Institution |
| MKK | Mifugo Kash Kash |
| MPC | Marketing and Planning Committee |
| MUS | Multiple Use water System |
| NGO | Non-Governmental Organisation |
| OSS | One-Stop Service |
| PSNP | Productive Safety Net Programme |
| PSP | Private Service Provider |
| ROSCA | Rotating Savings and Credit Associations (Community-based savings and loans) |
| SACCO | Savings And Credit Cooperative |
| SDG | Sustainable Development Goal |
| SHG | Self-Help Group |
| SME | Small and Medium Enterprises |
| SNNPR | Southern Nations, Nationalities, and People's Region |
| ToC | Theory of Change |
| USSD | Unstructured Supplementary Service Data |
| VSLA | Village Savings and Loans Associations |

Introduction

The role of financial services in supporting resilience and adaptation to climate change is frequently discussed in policy and practitioner forums and increasingly assessed in research studies. Financial services, both formal and informal, have been recognised as crucial for managing livelihood risks, preparing for and recovering from shocks, and increasing productive investments; thus reducing poverty and promoting economic development.¹ At the same time the importance of considering medium and long term climate impacts in financial service interventions and the potential of some products, such as microcredit or agricultural insurance, to increase vulnerabilities by introducing debt burdens or incentivising maladaptation in farming practices have been highlighted.

Generally, people with low incomes have little access to formal financial services, and products on offer are not necessarily adequate or tailored to their specific needs. Informal, community-based financial services along with self-insurance through savings can help poor households in developing countries grapple with some of the lower impact, idiosyncratic shocks they face and therefore provide important contributions to resilience. Yet, these mechanisms only offer limited protection for higher impact events, especially when entire communities or social networks are affected (Dercon, 2002). Increasing (formal) financial inclusion²

- 1 For reviews of the literature on links between financial services and resilience see Carter et al. (2014), Jensen et al. (2014), Moore et al. (2019), and Haworth et al. (2016).
- 2 Financial inclusion 'means that individuals and businesses have access to useful and affordable financial products and services that meet their needs – transactions, payments, savings, credit and insurance – delivered in a responsible and sustainable way' (World Bank, 2018; see Box 1 for more detailed definitions).

in these contexts is considered as critical for strengthening resilience to climate-related shocks in developing countries (Moore et al., 2019; Haworth et al., 2016). At the same time, public safety nets can play a complementary role in targeting lower-income populations and providing protection against impacts from shocks that are beyond the coping capacity of individuals, households and communities.

To date, low levels of financial inclusion remain a global challenge despite the G20 underscoring the importance of its contribution to enabling the achievement of numerous Sustainable Development Goals (SDGs), including: eliminating extreme poverty (SDG1), reducing hunger and promoting food security (SDG2), achieving good health and well-being (SDG3), promoting gender equality (SDG5), promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work (SDG 8), building resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation (SDG 9), and reducing income inequality within and among countries (SDG 10) (GPFI, 2017). To support progress on financial inclusion, the World Bank's Universal Financial Access initiative (UFA2020) has been working with governments and the private sector towards increasing access to transaction accounts, with a target of reaching 1 billion accounts by 2020. The initiative focuses on the 25 countries that are home to almost 70% of the world's financially excluded population³ (World Bank, 2019).

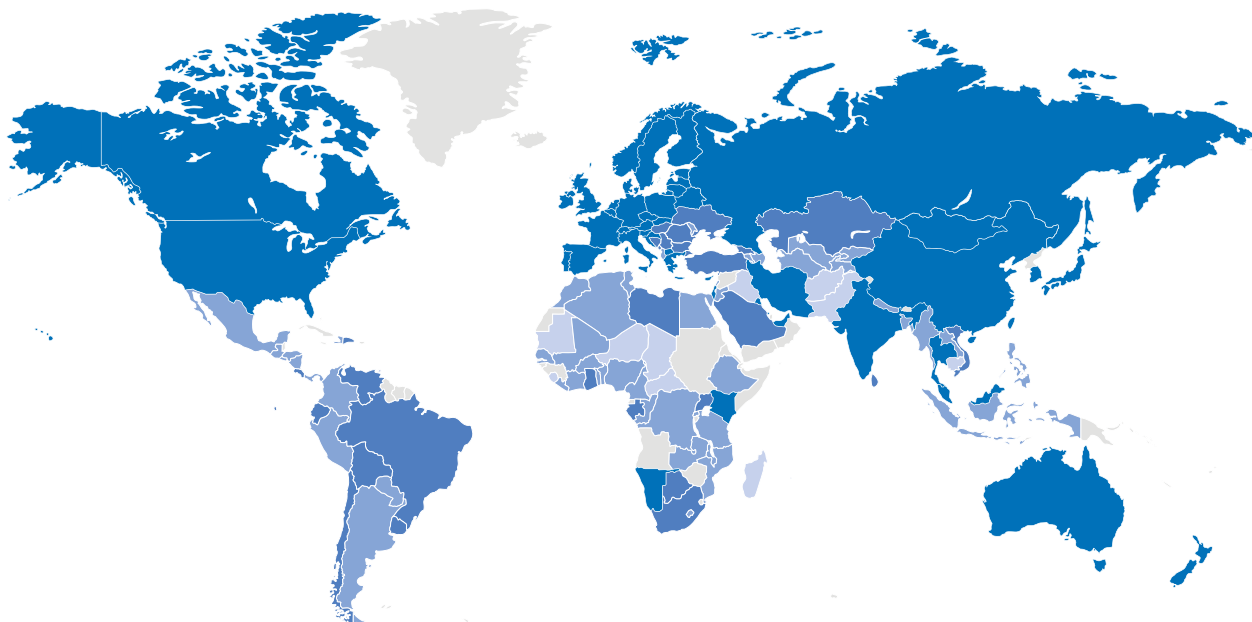
³ These countries are: Bangladesh, Brazil, China, Colombia, Cote d'Ivoire, DRC, Egypt, Ethiopia, India, Indonesia, Kenya, Mexico, Morocco, Mozambique, Myanmar, Nigeria, Pakistan, Peru, Philippines, Rwanda, South Africa, Vietnam, Tanzania, Turkey and Zambia.

While the number of banked adults has grown since 2011, Figure 1 shows that levels of financial inclusion still vary greatly between countries and are highly correlated with economic development (Demirgüç-Kunt et al., 2018).

Figure 1: Level of financial inclusion in 2017, by country

% of population over 15 years with account at bank, other type of financial institution or using mobile money service in the past 12 months

0–25 25–50 50–75 75–100



Source: Author's calculation based on Global Findex database 2017 (Demirgüç-Kunt et al., 2018).⁴

Financial services are expected to support resilience through various pathways, including: savings acting as a form of self-insurance; asset accumulation, microcredit and productive investments that can help address poverty and reduce inherent

⁴ Detailed glossary, methodology, and translations can be found at: www.globalfindex.worldbank.org

vulnerability; time-saving through ease of access that can be translated into financial savings; and enhanced preparedness and coping capacity through rapid availability of emergency resources from transfers, microcredit, insurance or pooled emergency funds (Demirgüç-Kunt et al., 2017a; Clarke and Dercon, 2009).

A recent review of evidence on building resilience through financial inclusion concludes that, overall, research indicates 'that improved access to formal financial services can help people become more resilient' (Moore et al., 2019). More specifically, the benefits of financial inclusion for resilience are related to mitigating impacts from shocks, supporting people to be better prepared and helping them smooth consumption while avoiding negative coping strategies. This is particularly well demonstrated for small-scale and idiosyncratic shocks.

Therefore, governments, donors and practitioners are looking at the provision of financial services within their resilience-building and development interventions. This includes projects operating under the Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED) programme in the Sahel, East Africa and Asia. Several of the BRACED projects have recognised the potential of financial services in strengthening resilience and actively engage in the development and delivery of different types of services. Some BRACED projects have also contributed to identifying needs for different types of financial services based on local contexts, vulnerabilities and livelihoods; supported policy dialogues around adequate financial services; or supported the development of products. Past experiences underscore the need to tailor financial services to the economic, social and ecological contexts of users in order to make services fit for purpose and to support transformation (Moore et al., 2019; Demirgüç-Kunt et al., 2017a). Furthermore, it has been suggested through various frameworks that access to a portfolio

of financial services (including various types of services), along with other emergency resources (for instance delivered through social protection programmes) can be beneficial for addressing different types of risk at the individual, household and business levels. Services at various degrees of formality and volume – from informal groups with small amounts of savings gained through a semi-formal savings cooperative and microfinance to formal banking with larger credit sums – need to be available to cater to people with different capacities, and linking these services in an intelligent way can allow people to transition from informal services towards more formal systems when they have the capacity, capability and need to do so.

In this report, we explore how BRACED projects support the development and delivery of tailored-to-context financial services. We also assess to what extent these projects are integrated within existing financial service systems, risk financing structures and wider resilience-building projects. More specifically, the report considers two factors:

- Firstly, whether and how BRACED activities are following a **layered approach to financial service provision**. The term layering, as used in this paper, refers to an approach where different types of financial services are targeted at various tiers, or layers, of the intensity and frequency of events (e.g. low, medium, high intensity or frequency events); target groups (e.g. low-, middle- or high-income); and time scales (e.g. resources become available before, during or after an event; instruments are put in place ex ante or use ex post in an ad hoc way). Additional relevant factors that influence the choice of financial services delivered through resilience interventions include: rationales (e.g. humanitarian, disaster risk reduction, development); intended positive outcomes (type of expected outcomes and short, medium

or long term); and avoided negative impacts from the event (see more details on these various dimensions of layering financial services in Box 2, Section 1 and an overview for existing frameworks covering some of these dimensions in Annex 2). The aim of a layered approach is thus to finance risks comprehensively through a portfolio of financial instruments that address the different layers (either by delivering a portfolio or by covering existing gaps). Relevant considerations for resilience programming entail the variety and characteristics of hazards beneficiaries are exposed to, people's vulnerability, as well as the different financial services and resources people access to manage risks. Such resources and services include formal, semi-formal and informal financial services along with cash transfers through public safety nets or remittances. A layered approach to financial service provision at project level, consequently, would mean that projects view their financial service interventions within a wider context of available risk financing options and emergency resources people have at their disposal to address a variety of idiosyncratic and covariate risks; and aim to support existing approaches or fill the major gaps through their activities.

- Secondly, the report sheds light on how projects are **tailoring services such as savings accounts, loans or insurance products to the socioeconomic and environmental contexts in which they operate**. This entails looking at the ways in which financial services and products are adjusted, for instance to reflect specific risk environments, cater to social or religious needs, or are embedded in economic and sectoral structures. While some BRACED projects directly engage in financial service development and delivery, others contribute to wider policy debates, research and reflections on how to tailor financial services to local needs and contexts.

We consider here a broad definition of financial services (see Table 1) that reaches beyond ownership of a formal bank account and includes different kinds of formal, semi-formal and informal financial services. The focus in this report is first and foremost on resilience, climate-related shocks, and longer-term stresses. This includes, for example, droughts and floods, which have had immense social and economic impacts across BRACED countries in the past decades (Simonet et al., 2017). At the same time it is recognised that other types of covariate and idiosyncratic shocks and stresses may compound the impacts from such events on individuals, households and businesses.⁵ Furthermore, some of the instruments discussed, and conclusions emerging from the research, could have wider implications on other covariate events, such as price shocks or pandemics.

Table 1: Typology of financial services

| | |
|--------------------|---|
| FORMAL | Banks, insurance companies, post banks, building societies |
| SEMI-FORMAL | Savings and Credit Cooperatives (SACCOs), Microfinance Institutions (MFIs) |
| INFORMAL | Rotating Savings and Credit Associations (community-based savings and loans) (ROSCAs), Village Savings and Loans Associations (VSLAs), Accumulating Savings and Credit Associations (ASCAs), savings clubs or groups (tontines, merry-go-rounds, etc.); groups/individuals/clubs other than family and friends (e.g. employer, moneylender, hire purchase/shop/buyer) |

Source: Adapted from Johnson and Niño-Zarazúa (2011).

⁵ 'Idiosyncratic shocks affect individual households or household members, for example job loss or the death of a breadwinner... Covariate shocks affect large numbers of people and/or communities at once. Such shocks are often concurrent. Covariate shocks may be natural, economic or political' (O'Brien et al., 2018).

Methodology

This paper brings together evidence from financial services literature and four case studies, drawing on experience generated by four consortia under the BRACED programme.

Section 1: Review of literature and existing frameworks.

The first part of the study discusses existing financial services research, as well as a review and synthesis of conceptual frameworks on comprehensive or layered approaches to financing risk from the development, disaster risk management and climate change literature. This includes frameworks targeted at decision-makers in governments, international organisations and NGOs, aiming to guide the implementation and integration of different types of financial services that can be made available to households or individuals to support resilience. This aims to gather evidence on:

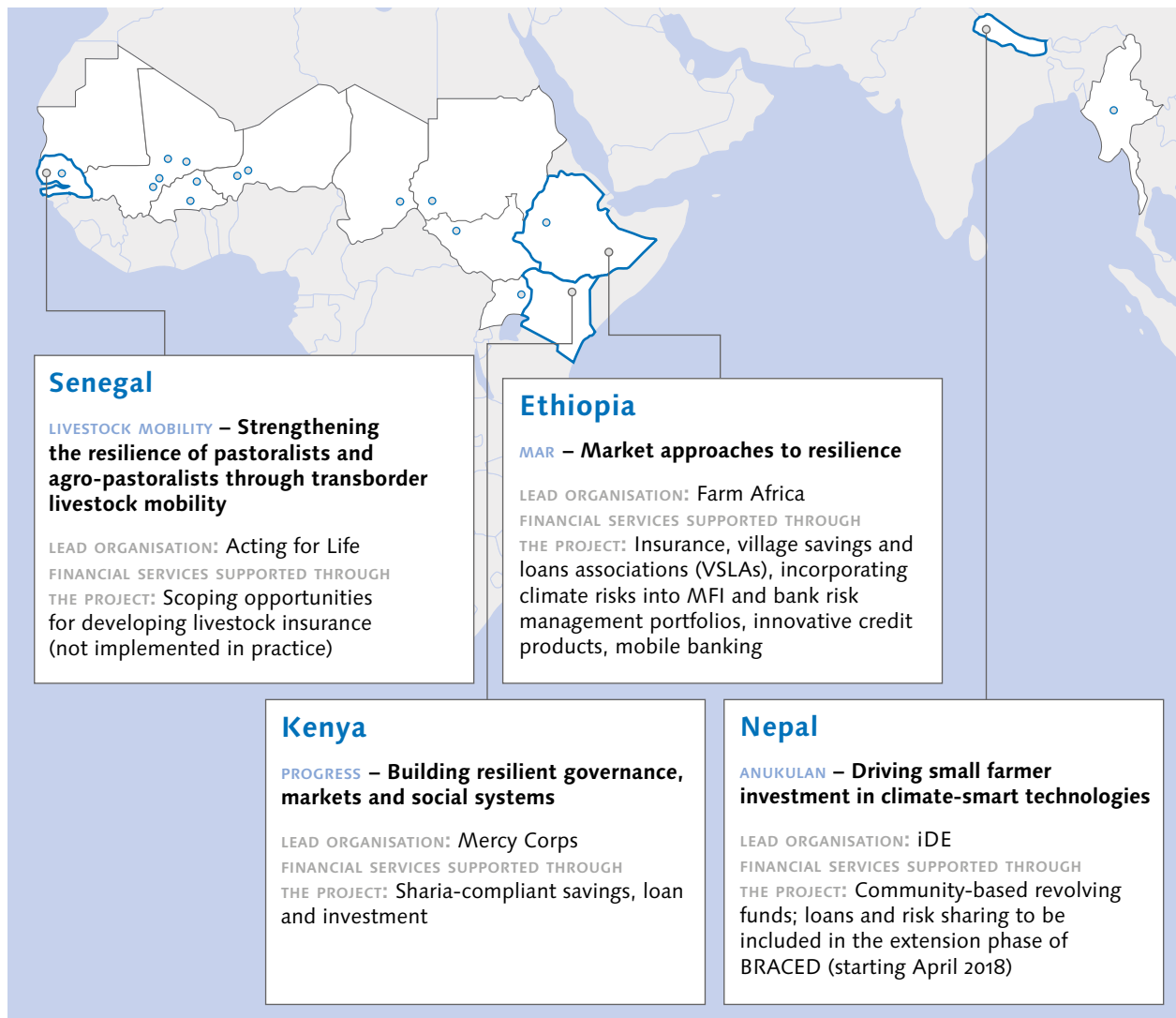
- the role of financial services in resilience-building;
- the relevance of a layered approach to designing and implementing financial service interventions in supporting resilience-building and the role of resilience programmes;
- the role of specific and tailored-to-context financial services.

Our analysis relies on papers that provide theoretical frameworks or empirical evidence about how various types of financial services can complement each other, or be complemented by other activities, to cover a broad range of needs and diverse risks. We consider papers that focus on financial services with an aim of poverty reduction, resilience-building or strengthening climate change adaptation.

Section 2: Case studies. Four country case studies from the BRACED programme were chosen to assess projects' experiences with layering and tailoring financial services to support resilience under BRACED. Case studies draw on project documents, monitoring and evaluation reports, project proposals and interviews with implementing organisations, financial service providers and other key stakeholders. All interviews were administered either via phone, skype or in person by the authors. The selection of case studies was based on a consideration of consortia that include, or are considering including, support to financial service design or implementation and market-based approaches to climate- and disaster-resilient economic development as part of their project activities. Figure 2 shows the four case study projects and countries. Though some of the consortia operate in more than one country, the research focused on a specific country context for each project.

Research informing this study was conducted between December 2017 and December 2018.


Figure 2: Map of BRACED project areas and countries included in this study



Source: www.braced.org/about/about-the-projects/

Note: The map only refers to countries that are included as case studies in this working paper, even though some projects mentioned are active across several countries.⁶

⁶ More detailed information about these and the remaining BRACED projects can be found on the BRACED programme site: www.braced.org/about/about-the-projects/



1. CONCEPTS, FRAMEWORKS AND EXISTING EVIDENCE

IMAGE:
AMISOM PUBLIC
INFORMATION /
FLICKR

The role of financial services in strengthening resilience to climate-related shocks, stresses and disasters

The relationship between disasters and poverty is closely interlinked: natural hazard-related disasters have a larger, direct impact on populations of lower-income countries than those of upper-middle and high-income countries. Over the last 40 years, the share of the population directly affected by climate-related disasters⁷ has been significantly higher in developing countries, especially in Least Developed Countries (LDCs) (Simonet et al., 2017). Negative indirect and long-term

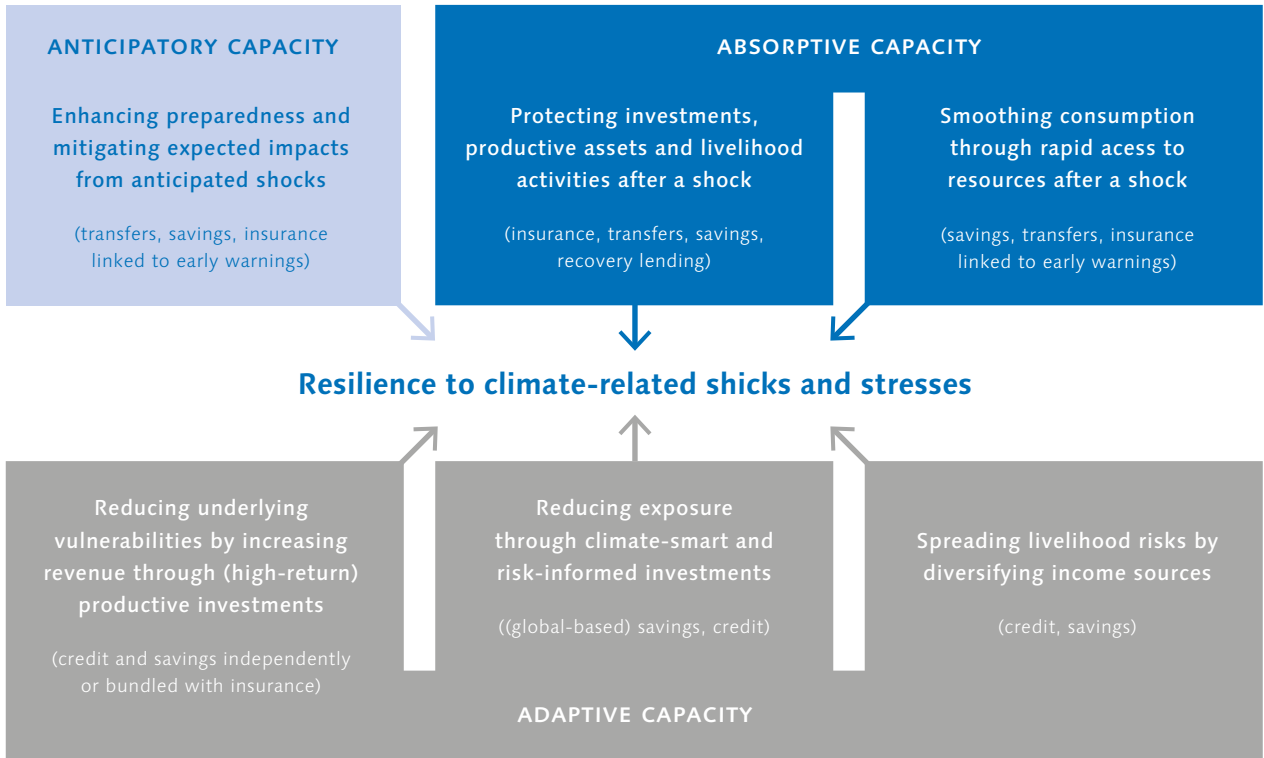
⁷ In absolute and relative terms (i.e. share of the population affected).

impacts of disasters on key socioeconomic dimensions, such as human capital, are a further barrier to economic development (Mechler, 2004; Baez et al., 2010; Rodriguez-Oreggia, 2013; Noy 2009). While disasters affect the poor disproportionately (Wilkinson et al., 2015), many of the underlying determinants of poverty are also drivers of greater risk. Poverty and low levels of human development leave people more vulnerable and less able to respond, thus amplifying the impacts from disasters and hampering effective risk management and response (Skoufias, 2003). Due to this mutually reinforcing bond, impacts from extreme events and disasters can 'trap' low-income countries and the poorest populations in poverty (Carter et al., 2007). Whereas the macroeconomic picture clearly shows the correlation between poverty and disasters in terms of numbers and shares of people affected (though not in terms of economic impacts due to larger exposure of high-value assets and infrastructure in upper-middle income and high-income countries), this relationship is more difficult to disentangle at the micro level.⁸

Strengthening financial inclusion is regarded as one of the solutions to help address these inter-dependency issues posed by disasters and economic development (for definitions and challenges related to financial inclusion, see Box 1). Enhanced access to, and use of, financial services are expected to support economic development and resilience to climate-related shocks and stresses through various pathways (Demirgüç-Kunt et al., 2017a; Karlan et al., 2016; Collier, 2013). These are summarised in Figure 3.

⁸ See chapter 1 in Wilkinson et al. (2015) for a review of evidence.

Figure 3: The potential contributions of financial services for building resilience to climate-related shocks and stresses at the household level



Source: Author's figure, based on Moore et al. (2019); Demirgüç-Kunt et al. (2017a); Haworth et al. (2016).

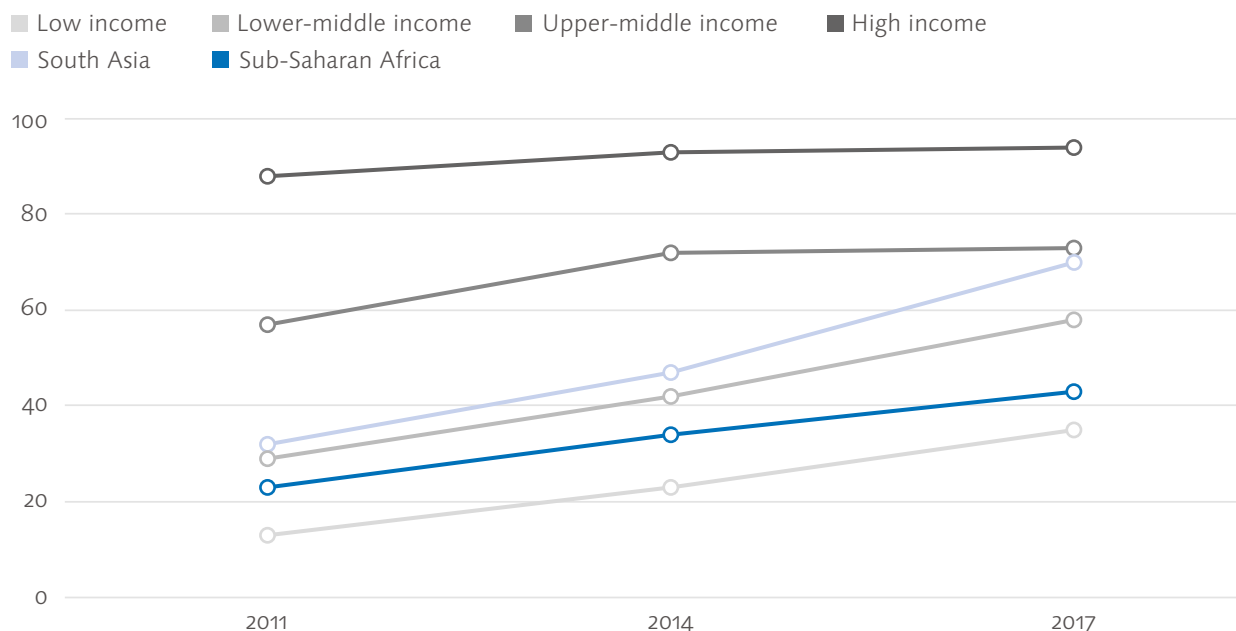
Note: The figure shows conceptual links between financial services and resilience. Some of these links have been demonstrated by empirical evidence while others remain to be tested. For an overview of evidence, see Moore et al. (2019).

Recent trends confirm that low-income and lower-middle income countries (including LDCs) have been experiencing extensive and rapid financial inclusion. This is exemplified by a rising share of the population holding a bank account (Figure 4). Mobile banking has also grown rapidly in sub-Saharan Africa, opening various development opportunities (Demirgüç-Kunt et al., 2018). Despite this dynamic, the level of financial inclusion in low-income countries remains lower

than in high- and middle-income countries. Sources of credit are mainly informal in low- and lower-middle income countries, and the unbanked population is still large where income per capita is low (Demirgüç-Kunt et al., 2018).

Figure 4: Trend of financial inclusion (share of the population with a bank account, as a percentage of those aged 15 and older)

Share of the population with a bank account, as a percentage of those aged 15 and older



Source: Authors' calculation Based on World Bank (2017) Global Findex Database.

As such, governments, donors and practitioners are looking at financial inclusion and the provision of financial services within their resilience-building and development interventions. They have also explored the key factors that are necessary for building a holistic portfolio of financial products, services and resources that would help households and small businesses increase their resilience to climate-related shocks and stresses. Often, the provision of such services is

further linked with other disaster risk management (DRM) or development activities, recognising that financial services cannot act as stand-alone instruments to achieve a multi-dimensional goal of poverty reduction and resilience-building to climate extremes (Collier, 2013). This is reflected in a growing pool of literature in the DRM field that embeds financial inclusion in a broader classification of disaster risk reduction (DRR) or DRM activities (Kellett et al., 2014; OECD, 2017; Twigg, 2015; Warner et al., 2007).

Box 1: Financial inclusion – definitions and challenges

Financial inclusion can be defined as a state where: 'individuals and businesses have access to useful and affordable financial products and services that meet their needs [and that these products and services are] delivered in a responsible and sustainable way'. Products and services entail transactions, payments, savings, credit and insurance (World Bank, 2018).

'At its most basic level, formal financial inclusion starts with having a deposit or transaction account at a bank or other financial institution or through a mobile money service provider. The account can be used to make and receive payments and to store or save money. Financial inclusion also involves access to appropriate credit from formal financial institutions, as well as the use of insurance products that allow people to better manage financial risks such as crop damage' (Demirgüç-Kunt et al., 2017b).

The G20 group, through the Global Partnership for Financial Inclusion (GPFI), committed in 2017 to promote and support global financial inclusion (GPFI, 2017). While financial inclusion has accelerated over the recent period, countries

are facing new challenges to increasing the positive impact of financial inclusion on development (Demirgüç-Kunt et al., 2018). These challenges are essential to overcome in order to maintain positive impacts from financial services:

- securing the access of economically and socially marginalised people (including women, poor and remote populations) in order to prevent aggravation of inequalities;
- designing relevant and economically viable financial products that are fit for purpose in order to achieve positive impact and prevent negative effects;
- designing financial services that are tailored to consumer needs in order to support uptake and relevance of the services.

Financial inclusion is often defined through the use of formal financial services supplied by banks. Nonetheless, semi-formal or informal institutions such as SACCOs, MFIs, VSLAs or SHGs can play an important role in providing financial services that are better suited for the needs and preferences of populations who would otherwise be excluded, for instance due to limited financial resources, low literacy levels, marginalisation or remote location. Strengthening financial capacity, business skills and financial literacy through informal and semi-formal financial systems may also be a stepping stone towards accessing formal services in the longer run.

Evidence on the role of financial services for resilience and the importance of tailoring financial services to needs, preferences and contexts

Generally, empirical studies, especially at the microfinance level, have generated mixed evidence about the impact of financial services on development and resilience metrics. Effects on relevant outcomes, such as income, poverty, health, or food security, have been found to vary depending on socioeconomic institutional contexts, exposure, needs and preferences of customers, and the characteristics of services and products (Moore et al., 2019).

While many early studies conclude that microfinance can have a positive effect on the lives of the poor, later studies have an understanding that microfinance is more complex. In a study of Bolivia, Mosley(2001) found that whereas microfinance had positive impacts on income and asset levels, it could increase the poor's vulnerability if the debt-service ratios were too high, and their coping strategies were limited, thus ultimately forcing borrowers out of the microfinance system further impoverished. In an impact-evaluation from Bangladesh, Khandker (2005) concluded that microfinance has a significant positive and sustained impact on the poorest, along with positive impacts on the wider economy. The author also suggests that microfinance should be bundled with other services to improve the skills of poor borrowers. Other papers highlight the secondary effects of microfinance, such as DeLoach & Lamanna's (2011) study of microfinance services in Indonesia. The authors find that the mere presence of microfinance institutions in communities has a significant positive impact on the health of children. However,

recent papers such as Banerjee et al. (2015) demonstrate the limited impact of microfinance on key socioeconomic outcomes (except expenditure profiles). The authors mostly explain the mixed evidence and contradictions in existing studies as a result of the context and the design of the services, which is not always comparable across cases. For instance, Banerjee et al. (2015) highlight the low uptake of financial services and the size of the businesses run by beneficiaries as a critical factor explaining the low level of impact found in their evaluation.

Overall, literature on the impact of financial services on development provides a body of evidence indicating positive effects from access to savings accounts, whereas the 'evidence from the microfinance literature on the development impact of access to credit is mixed at best' (Demirgüç-Kunt et al., 2017a). Though scholarship on microfinance does not speak with a single voice, it points to how varied the positive (and potential negative) impacts can be. Microfinance in and of itself can be positive, but how programmes are delivered (and to whom) has a bearing on the diverse outcomes that are cited in the literature. Impact studies and reviews on various types of financial services underline the importance of tailoring such services to the needs and preferences of specific target groups as well as to economic, social and ecological contexts in order to adequately address livelihood risks and support people's resilience (Moore et al., 2019).⁹

The mixed evidence from microeconomic studies echoes the difficulties projects face in providing financial services that produce impact at scale. There are a variety of different risk

⁹ For examples of impact studies highlighting the need for more tailored savings, loans and insurance products see, Delavallade et al. (2015), Brune et al. (2016), Dupas and Robinson (2013), Dupas et al. (2016), Karlan et al. (2014) or Karlan et al. (2011).

financing options along the development and disaster risk management spectrums and the extent to which these are applicable and cost-effective will depend on the specific case and context, including for instance financial structures already in place, risk profiles, needs, preferences and capacities of decision-makers. The importance of financial infrastructure and a regulatory environment that provides a 'safe, stable, and reliable financial system' (Demirgüç-Kunt et al., 2017a) is also essential to support the positive impact of financial services.

Layering financial services to manage risks more comprehensively

Where people are faced by a variety of risks – including from threats related to climate and weather, financial markets, health or politics – it is not only important to tailor products to context and local needs, but also to finance and manage risks comprehensively. In this context, and as used in this paper, **layering refers to an approach where different types of financial services are targeted at various tiers, or layers, of the intensity and frequency of events** (e.g. low, medium, high intensity or frequency); **target groups** (e.g. low-, middle- or high-income); **and time scales** (resources become available before, during or after an event; instruments are put in place ex ante or use ex post in an ad hoc way). Additional relevant factors that influence the choice of financial services to be delivered through resilience interventions include: rationales (e.g. humanitarian, disaster risk reduction, development); intended positive outcomes (type of expected outcomes and whether they are short-, medium- or long-term); and avoided negative impacts from the event (see more details on these various dimensions of layering financial services in Box 2, and an overview of existing frameworks covering some of these dimensions in Annex 2).

Layering various types of financial instruments along one or several of these dimensions has been advocated as a way to support resilience more holistically than it would be possible through reliance on a single instrument. This is because a portfolio of financial instruments and resources can increase the effectiveness with which risks of different natures, frequencies and intensities are addressed. For instance, while people may put some savings aside for emergencies or share risks within their neighbourhood, formal insurance contracts could provide coverage for impacts from more extreme events or those that affect the entire community, where informal systems are often insufficient (Demirgüç-Kunt et al., 2017a). For people on lower incomes who may be unable or unwilling to pay insurance premiums, government subsidies or direct cash transfers through social protection systems could provide a financial safety net (Dercon, 2002).

A number of frameworks have been developed to support such layered approaches to financing risk (see Annex 2). These frameworks aim to guide decision-makers in assessing risk financing options at their disposal and in selecting a bespoke portfolio of instruments. They focus on different purposes and are embedded in a variety of contexts, spanning across disaster risk management, climate change adaptation and development fields. Furthermore, they revolve around actors at different scales: while some of the frameworks are guided towards decision-makers in government, for instance those in finance ministries, others focus on different financial service options available to households or small businesses and the question of how to best bundle or integrate these to support resilience. The various dimensions considered across frameworks in layering financial services or instruments are summarised in Box 2.

Box 2: Dimensions for consideration in layering financial services for resilience

Common dimensions along which financial services are conceptualised and layered in existing frameworks from the disaster, climate change adaptation and development literature include:

RISK CHARACTERISTICS – What types of hazards are being considered? What is the expected frequency and intensity of events? Are long-term trends and processes being considered?

TARGET GROUPS – Who makes decisions about financial service portfolios? Who benefits from them? What are the characteristics of the target groups that need to be considered in identifying adequate financial services and instruments (e.g. income or wealth levels, mobility, geographical remoteness, land ownership, subsistence versus commercial livelihoods, gender, religion, social or economic marginalisation, etc.)?

TIME SCALES – At what point are financial resources required to enhance anticipatory and absorptive capacity? At what time (before or after a shock) do decisions about accessing finance need to be taken to meet these needs? When can adaptive investments be made and, consequently, when does access to financial services need to be ensured?

OUTCOMES – What are the specific intended outcomes or impacts for which the use of financial services and instruments are considered? Are these short-, medium- or long-term outcomes?

AVOIDED IMPACTS – What negative impacts from climate-related shocks and stresses (e.g. macroeconomic losses,

household income or asset loss, reduction in food security, yield shortfalls, etc.) are to be addressed through the financial services or instruments?

RATIONALE – What is the rationale for financial services delivery? Is it a humanitarian perspective, is it focused on (economic) development, or does it span across both?

While the frameworks reviewed differ across many of these dimensions, they share a common thread: the idea of layering various financial services or instruments to manage the risk of climate-related shocks and stresses, or natural hazard-related disasters, at different intensities or frequencies, and catering to various capacities, needs and preferences of the target group (be it households, governments, or others).

Drawing on such frameworks can provide guidance for what aspects to consider when developing financial inclusion or financial service interventions as part of resilience-building programmes, for instance by governments and donors or by development organisations and their partners, through projects such as those operating under BRACED. A range of frameworks put the resilience financing needs of individuals or households at their focus and are particularly useful for this purpose (examples include frameworks proposed in Hallegatte et al., 2017; Clarke and Dercon, 2009).

At the same time, many of those frameworks revolve mainly around extreme events and disasters, thus primarily addressing anticipatory and absorptive resilience capacities as outcomes. Considering climate-related shocks and stresses, risk management and financing needs over the long term can help identify financial services and products that are adequate for strengthening

adaptive capacity and reducing risk where this strategy is most cost-effective. Linnerooth-Bayer and Hochrainer-Stigler (2015) suggest that this is particularly the case for frequent, low-intensity events and longer-term climate trends.

A solid understanding of the nature of risk in relation to different types of hazard and potential impacts – from shorter-term variability, shocks, and longer-term stressors – is crucial to defining both how financial services can be layered into a comprehensive resilience financing portfolio and how they need to be tailored to context. A good understanding of risk profiles, including rates of return, will thus not only support a sustainable financial 'eco-system' design but also support economically sustainable financial tools (Demirgüç-Kunt et al., 2018).

A photograph of a person herding sheep on a rocky, hilly landscape. The person is in the foreground, wearing a yellow shirt and a backpack, looking towards the sheep. The sheep are scattered across the rocky terrain. The background shows a clear blue sky and more rocky hills.

2. CASE STUDIES FROM BRACED PROJECT IMPLEMENTATION IN ETHIOPIA, KENYA, NEPAL AND SENEGAL

IMAGE:
INTERNATIONAL
FEDERATION OF
RED CROSS AND
RED CRESCENT
SOCIETIES/FLICKR

Building on existing concepts and experiences discussed in the earlier parts of this paper, the following section present case studies from BRACED project activities in four different countries. This aims to (1) outline the roles that resilience projects and the various types of partners involved in BRACED consortia have taken on in strengthening provision and use of financial services, as well as (2) draw lessons from their experiences in tailoring services to target group needs and contexts, and layering financial services with other risk financing instruments already in place at various scales.

LIVESTOCK MOBILITY: strengthening the resilience of pastoralists and agro-pastoralists through transborder livestock mobility in Senegal

The Livestock Mobility project is active across several West African countries – Burkina Faso, Mali, Mauritania, Niger and Senegal – to facilitate internal transborder livestock movement through corridors. This enables pastoralists and agro-pastoralists in the Sahel to manage climate variability or extreme drought and ensures their market access. One of the focal areas of the project is to provide adequate services for pastoralists and agro-pastoralists along the length of the corridors, and to test innovative services for mobile herders through action research. In Senegal, one component of the project was to explore the potential of indemnity and index-based livestock insurance (IBLI) to support resilience to climate-related shocks.

Financial service environment in Senegal

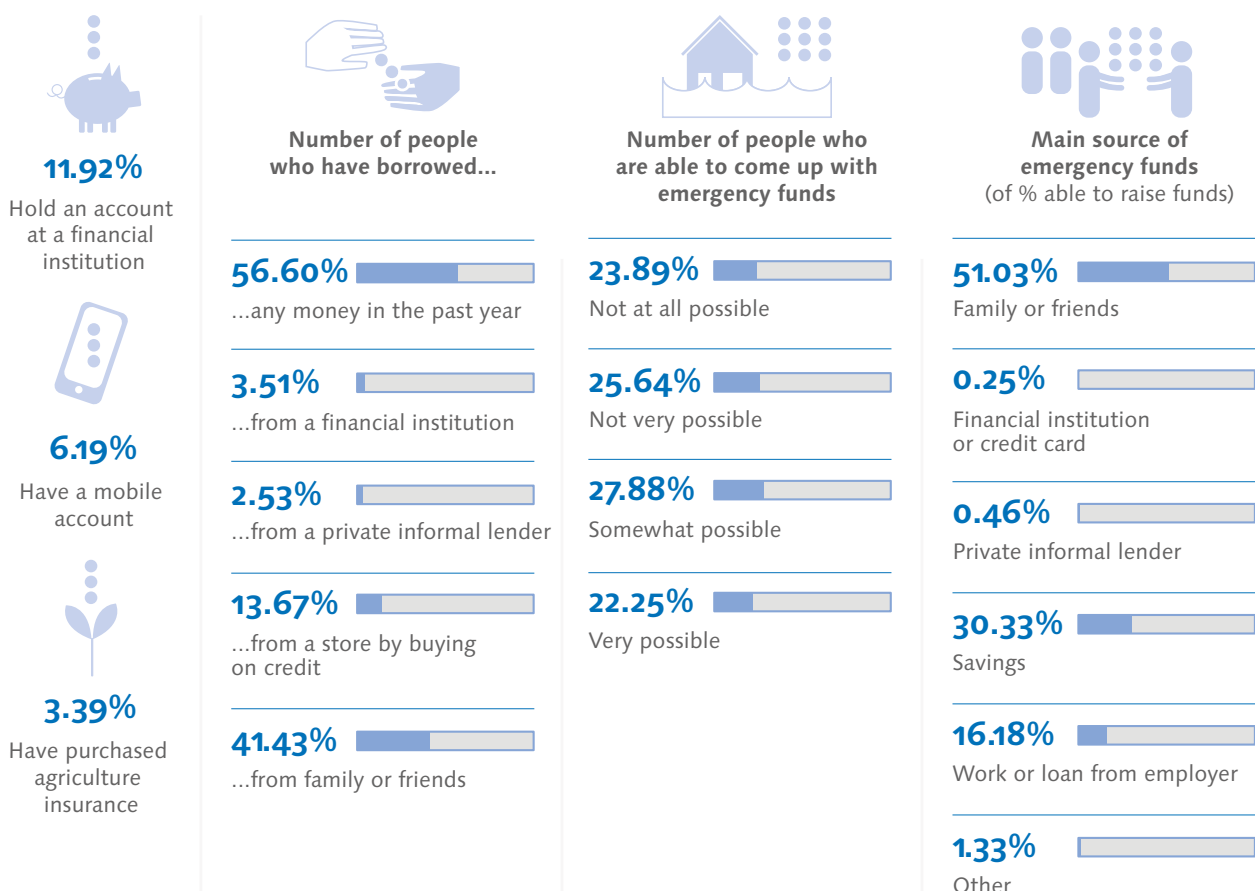
The Senegalese banking sector is fairly concentrated in a few large banks with relatively low user rates. Among the four case studies included in this paper, Senegal has the lowest percentage of the population with an account at a formal financial institution at 11.92% (World Bank, 2017; Making Finance Work for Africa, n.d.).

The microfinance sector in the country, on the other hand, is dynamic. This is reflected in higher rates of saving and borrowing compared with Ethiopia despite a lower share of the population holding a bank account. Nonetheless, '[a]ccess to finance for small and medium enterprises (SMEs) remains a challenge, with an estimated 80% of bank credit applications being denied because of insufficient collateral' (Making Finance Work for Africa, n.d.). The capacity of microfinance institutions (MFIs)

reaches from large, sound and profitable to small and fragile (ibid.). Overall, access to financial services has increased in recent years, as reflected in the rising number of access points per 10,000 population across regions (Microfinance Information Exchange, 2017). See Figures 5 and 6.

Figure 5: Financial inclusion and access to emergency finance in Senegal

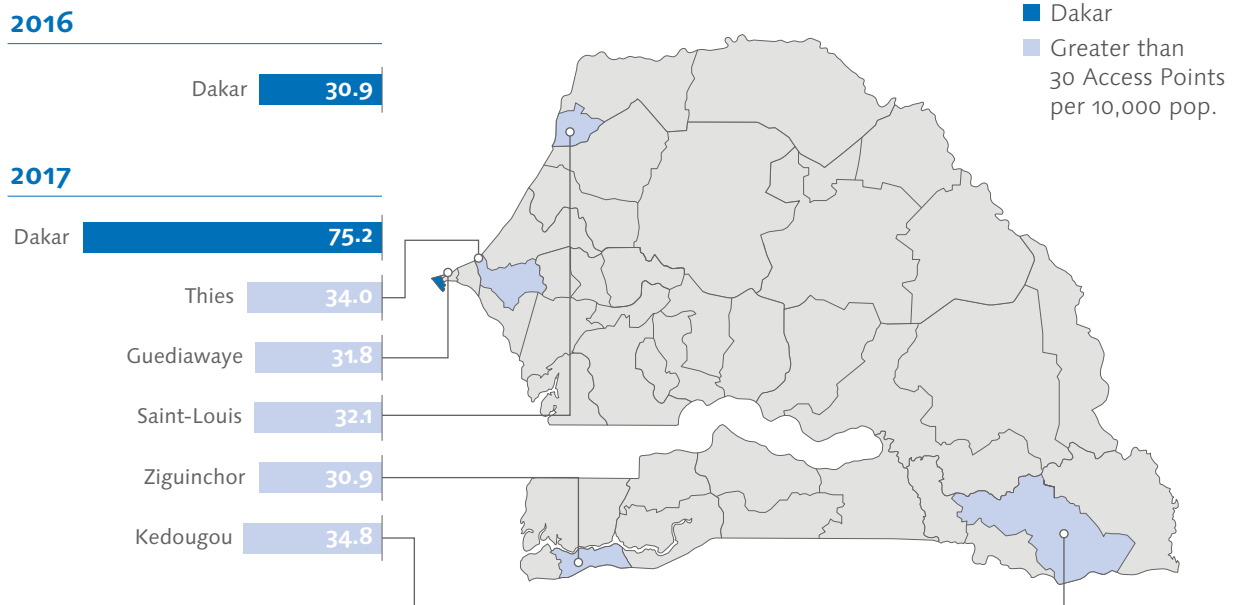
SENEGAL



(% of those aged 15+)

Source: World Bank (2017) Global Findex Database.

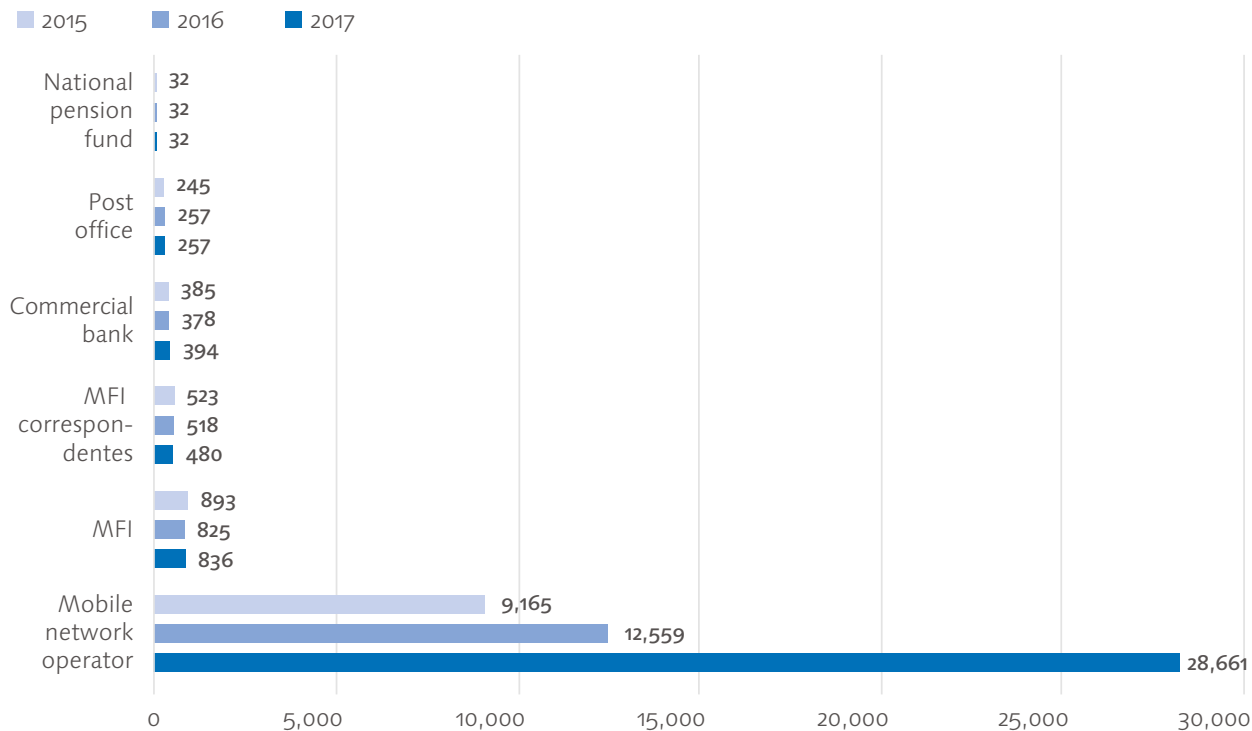
Figure 6: Access to financial service points per 10,000 population



Source: Microfinance Information Exchange (2017).

Following this trend, mobile finance has experienced a surge in Senegal in recent years. Between 2016 and 2017, the number and reach of operators has significantly increased, and the size of their combined agent network has more than doubled in this time. Those regions with the lowest number of agents in 2016 even tripled their mobile banking agents during the same period (Microfinance Information Exchange, 2017). The number of mobile banking access points has by far outperformed other types of financial institutions, such as MFIs or banks, and growth in the number of agents was far greater in the mobile finance sector (see Figure 7).

Figure 7: Financial service access point by type of institution



Source: Microfinance Information Exchange (2017).

The insurance industry in Senegal only makes up a small part of the country's financial system and penetration rates are low. Life insurance products have been used increasingly over the past years (Making Finance Work for Africa, n.d.), but coverage against climate- and weather-related risks in livestock and agriculture sectors remains behind, with 3.39% of the adult population having purchased a product in 2017 (World Bank, 2017). The crop and livestock insurance sector in Senegal operates entirely through one insurance company – the Compagnie Nationale d'Assurance Agricole du Sénégal (CNAAS) – which is a public private partnership that includes the Senegalese national government, private insurers and producer organisations.

Livestock Mobility portfolio of financial service provision

The Livestock Mobility project, unlike the other three case studies included in this paper, has not directly engaged in supporting the provision of financial services as part of its BRACED activities. Instead, it has focused on assessing the main hazards to which mobile herders in the Sahel are exposed and to exploring what role indemnity insurance and IBLI could play in supporting their management.¹⁰ Additional BRACED research and a policy dialogue were also carried out in Senegal to assess the relevance of IBLI in country and to explore how products could be tailored to local needs and context.

The provision of indemnity livestock insurance products through CNAAS in Senegal, to date, has mainly focused on larger scale sedentary breeders. Two types of coverage have been on offer: (1) an accident product paying out in case of road accidents, drowning, wild fire and poisoning and (2) an 'all risk' insurance including the above listed accidents as well as natural death and authorised slaughter. For the provision of products and sales process, CNAAS works with a network of livestock extension agents (including veterinaries, livestock engineers and technicians). This has the advantage of reaching a large number of potential clients through a pre-existing structure, and the advantage of being able to monitor claims and identify animals through the livestock extension agents with which pastoralists are registered. Both have helped CNAAS to increase outreach and lower operational costs of their livestock products [KI12]. The livestock insurance products have been received well, according to CNAAS, and are mainly taken up

¹⁰ A summary of research and workshop activities can be found in Thebaud (2017).

by modern, entrepreneurial livestock producers [K112]. However, the Government of Senegal also subsidises insurance coverage and the Ministry of Livestock incentivises CNAAS to target less finance savvy, lower income herders that are vulnerable to the different types of shocks covered by the insurance policy. This is part of the government policy programme for better managing and financing risks to agriculture and livestock production set out under its Vision 2030 plan (Republic of Senegal, 2014).

In collaboration with a development project by the Senegalese branch of the Réseau Billital Maroobe (ASE/RBM), CNAAS engaged in efforts to make indemnity livestock insurance accessible to mobile herders in 2014. The product was marketed in combination with sales of livestock fodder through mills and again relied on a network of livestock extension agents to support product provision, identify animals and monitor claims. Though these activities were not implemented under the BRACED umbrella, the BRACED/Livestock Mobility project has supported efforts to assess this pilot phase experience.

Additionally, the Livestock Mobility project has commissioned work to learn from experiences with IBLI in Mongolia and Kenya and to explore its applicability in the economic, social and environmental context of pastoralism of the Sahel. This was in response to an increasing interest from practitioners and donors in replicating IBLI experiences from East Africa in other regions. Livestock Mobility, in this context, has highlighted the need to better understand major risks as an entry point to identifying options for managing them and assessing the value of insurance in this context, rather than pursuing a supply-side driven approach to the provision of livestock insurance.

Layering financial services in the Livestock Mobility project

The Livestock Mobility project has undertaken research and stakeholder consultations to assess the types and diversity of risks that mobile herders are confronted with in the Sahel region. Through this work, the project highlighted the need to approach financial service provision, specifically insurance, with a comprehensive vision of pastoral livelihood risks and strategies, such as mobility, already in place to manage these livelihood risks. For this purpose, it was suggested that any livestock insurance product developed in Senegal and the wider region should be complementary to government and to more comprehensive strategies in the household to manage risks and protect assets in the livestock sector (Thebaud, 2016). Furthermore, the sequencing of different services over time is important as livestock death can take years from which to recover. An indemnity product can provide reimbursement for mortality cases, but where possible, it is preferable to prevent death from the outset. Index-based insurance (microinsurance, or through safety nets linked to sovereign insurance such as provided through the African Risk Capacity drought risk pooling mechanism) could help to prevent livestock deaths in relation to drought if they pay out early enough. Nonetheless, they are very difficult to implement effectively and the reliability of products transferred from Mongolia or East Africa in the West African context was judged as poor due to far-reaching mobility, microclimates and transboundary movements.

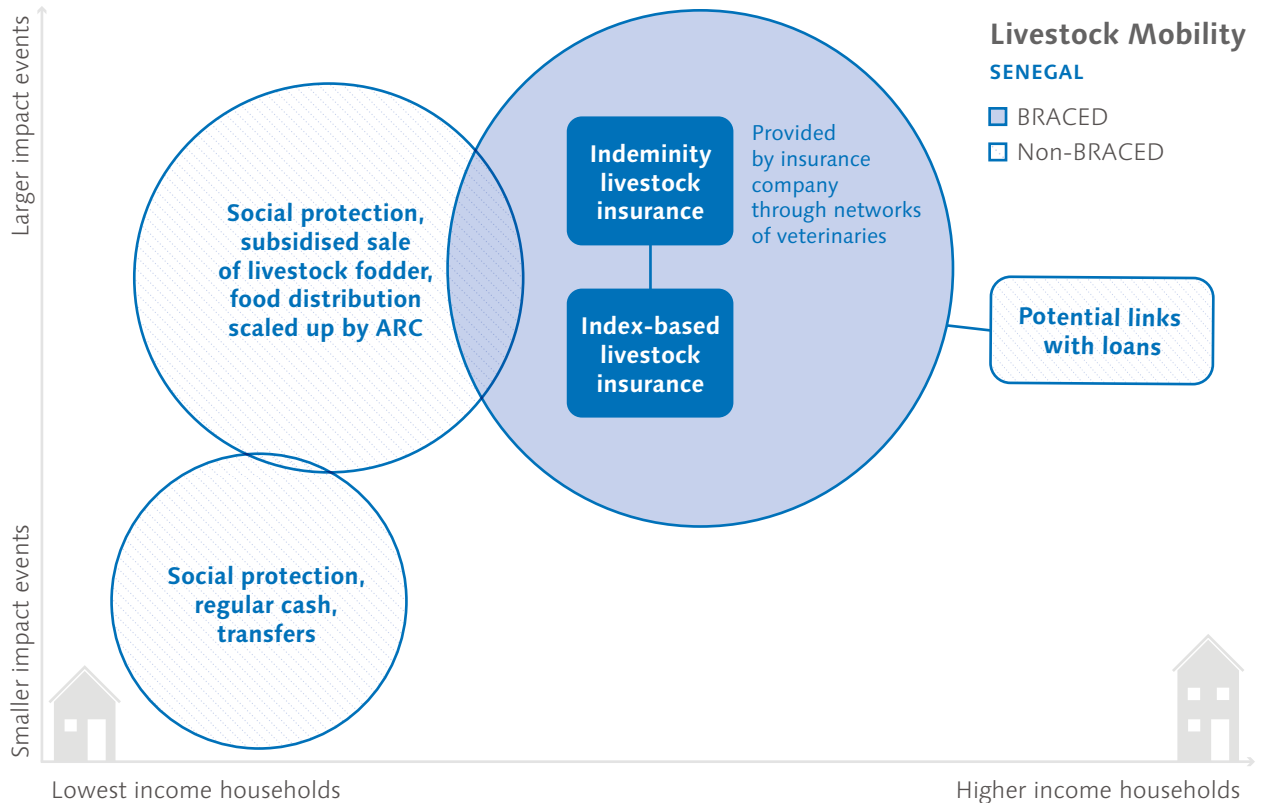
In Mongolia, the insurance product protects livestock owners not only from climate-related risks, but covers any type of mortality. This is because the index is based on historical mortality rather than climate or vegetation data. Mongolia has documented mortality rates for all animals since the 1920s, which allows this index to be calculated. However, without such animal census data it is not possible to build an index that tracks all mortality risks.

Another challenge in effectively layering IBLI at micro level with sovereign risk pooling through ARC at macro level is the limited coordination and integration of strategies within government and among partners. In Mongolia, for instance, a more comprehensive system aims at covering risks related to medium-frequency and -intensity events with private livestock insurance where a share of the risk is transferred to a third party. Risks of infrequent, high impact events are owned by government and require state intervention for risk management and disaster response. The 'Government Catastrophic Coverage' developed for this specific high-risk layer is a safety net programme only available to those herders that have also purchased basic livestock insurance coverage (Thebaud, 2017; Luxbacher et al., 2011).

A similar system may be imaginable in Senegal, especially given that premiums for the standard livestock microinsurance are already partially subsidised by the government and that the government has a stake in CNAAS. Next to its involvement with microinsurance, the Senegalese Government has also joined the African Risk Capacity's risk pool every year since 2014 and received a pay-out from the facility in 2015. One of the activities funded through this pay-out – as per the government's contingency plan – was subsidised sale of livestock fodder for pastoralists in drought-affected regions of the country. Starting in 2019, ARC is also trialling 'ARC Replica' coverage in Senegal, where United Nations (UN) agencies and NGOs can match government insurance policies and align planning to enhance coordination and timely availability of funding. This means, there is potential for a layered approach – considering different levels of intensity and frequency, as well as target groups for commercial and public intervention – to transferring risks in the Senegalese livestock sector. However, in practice, coordination between livestock microinsurance initiatives and ARC or ARC Replica, to date, is

limited. To implement a more comprehensive approach, closer alignment of public safety nets, humanitarian interventions and microinsurance mechanisms would be required in relation to product design, provision, targeting and contingency planning under ARC. Furthermore, an enhanced strategy for targeting lower-income livestock producers that are vulnerable to climate extremes, while maintaining financial viability of operations under CNAAS, is needed and could be facilitated through better coordination across the mechanisms already in existence at different scales.

Figure 8: Layering financial services in the Livestock Mobility project



Note: This is a simplified depiction of financial services and social protection systems, which aims to roughly outline the role of BRACED projects in financial service provision. We recognise that this figure is not comprehensive and may omit other relevant support systems and financial services. Design inspired by Hallegatte et al. (2017).

The Senegalese Ministry of Livestock has been driving the development of livestock insurance through CNAAS in Senegal within a wider policy strategy of intensification in the livestock sector. This also entails efforts to enhance access to other financial services, such as loans, in order to facilitate investments. CNAAS has entered into collaboration with banks, MFIs and the Ministry of Livestock to introduce mandatory bundling of insurance with credit in the livestock sector via a range of institutions [K112]. Insurance then is regarded as a key component in managing risks related to livestock production in a sedentary breeder setting, where livestock insurance would, to some extent, function as an alternative to mobility as a strategy to cope with depressed rainfalls and insufficient biomass availability, provided that the mechanisms pay out swiftly and are of a high enough amount. However, this 'replacement' will remain imperfect because mobility contributes to the management of a variety of risks, not exclusively those that are also covered under an IBLI contract (Thebaud, 2017). Alternatives could be to integrate a rainfall and fodder component within the 'all risk' product to make coverage more comprehensive, allow herders to combine these different products in a simple and affordable way, or to link the IBLI product with additional mechanisms that can provide access to finance and further support for other emergencies. A building-block model of base coverage and add-ons to cover further risks (though not currently climate-related) has been trialled by CNAAS since 2016 on its 'all risk' product to include coverage of livestock theft through a guarantee extension [K112].

Though the Livestock Mobility project in its assessments and trials has been considering different types of insurance, it has placed less emphasis on a broader portfolio of financial instruments available to pastoralists and the question of how

indemnity or index-based insurance could address needs for (financial) resources to cope with different types of shocks at various points in time. A layered or 'tiered' approach to financing risk, following the example of IBLI in Mongolia (with different products for various risk levels), has been discussed by the project. However, the emphasis placed by the Livestock Mobility project in Senegal was on commercial insurance and complementary non-financial strategies, such as transhumance, rather than on financing different risk layers through insurance and public safety nets, or on access to other financial services and resources for resilience.

Tailoring financial services to context

RISK ENVIRONMENT AND PATHWAYS TO IMPACT

IBLI has already been implemented in other developing country contexts, including Ethiopia, Kenya and Mongolia, and initial research has demonstrated its role in supporting pastoralists in coping with rainfall- and vegetation-related shocks. However, assessments under the Livestock Mobility project have also shown the variety of non-climate risks pastoralists are faced with [K110; K114]. These include, first and foremost, livestock theft [K112] – one of the major concerns for Senegalese pastoralists – and also injuries, illness, road accidents, predators, excessive rains or off-season rains, drowning, broken boreholes, bush fires and snake bites (Thebaud, 2016). This has raised questions about whether index-based livestock insurance, in isolation, is the most relevant product to meet pastoralists' need for risk financing, whether traditional insurance could provide better value to address a larger proportion of risks that Senegalese pastoralists are faced with, or whether government safety nets could be an effective alternative to protect those most vulnerable to various types of shocks and stresses [K110; K114].

Nonetheless a more recent study, conducted as part of an ongoing BRACED policy dialogue on livestock insurance involving representatives of pastoralist organisations, concluded that rainfall deficit remains the primary threat that pastoralists in Senegal are facing. Asking a representative group of pastoralists and agro-pastoralists randomly selected from five departments in the Senegalese pastoralist zones, the study finds that herder households prioritise risk of rainfall deficit as the preferred risk to insure, followed by cattle theft and animal illness (Syll et al., 2019). Climatic patterns differ between East Africa, with two rainy seasons, and West Africa, with one rainy season, which requires a modification of indices. Key informants also pointed towards a need to reassess and test whether the relationship between rainfall, pasture availability and livestock mortality at the core of IBLI products in Ethiopia and Kenya would equally apply in Senegal [KI12]. The recent BRACED research and policy dialogue confirm these considerations, along with the need to assess how mobility of herders would impact IBLI implementation. One of the main conclusions emerging from this process is that IBLI should not replace livestock mobility as a strategy to adapt to climate-related shocks and stresses but, instead, should complement mobility, allowing herders to better manage drought-related risks. This position is strongly supported by herders' associations. Insurance has become increasingly relevant due to wider changes in the sector, including an increasing restriction of livestock mobility because of the extension of agricultural lands, along with patterns of demography and mobility, which means that herders from the same region often head towards the same destination in the case of drought (Syll et al., 2019). Efforts to test the feasibility of IBLI in the Sahel are more widely underway, for instance by the International Livestock Research Institute (ILRI) in Niger. Key aspects under consideration in assessing suitability and

tailoring IBLI to context include condition and use of land, drought history, as well as livestock migration and grazing patterns. Overall, the study concludes that there is strong potential for IBLI in Niger, though substantive socioeconomic and institutional challenges remain to be addressed to support uptake and impact (Fava et al., 2018).

To our knowledge, no (pre-)feasibility study with a similar level of detail had yet been undertaken for IBLI in Senegal at the time of writing. However CNAAS, in collaboration with the African Development Bank and the World Food Programme, is currently setting up a feasibility study that includes an IBLI pilot. While some stakeholders, particularly the Senegalese Government, Ministry of Livestock and CNAAS, are convinced that IBLI is critical to manage climate-related risks in livestock production and to support intensification in the sector, others are more sceptical of this approach and its rationale, arguing that the case for IBLI in Senegal remains to be demonstrated and that products need to be tailored to local contexts and be compatible with existing adaptation strategies, including mobility.

IMPLICATIONS OF HERD MOBILITY ON PRODUCT REACH AND DESIGN

The mobility of many pastoralists in the Sahel has posed a further challenge to the design and contracting of a potential IBLI product. Since movement over long distances and across borders is a key adaptation strategy employed by mobile herders in the region to increase productivity through more diversified fodder and to find pasture in times of drought, it can be difficult to tie the parametric product to a specific location that adequately reflects correlation of rainfall or vegetation indices with actual livestock mortality or increased financial needs to protect livestock. This is the case due to high spatial variability of rainfall and pasture production, which could mean that pastoralists without sufficient resources in their home location, to which

the insurance index is tied, may not need to travel far to find sufficient fodder in some cases, while they may be required to migrate across the region in others. In addition, the specific path taken for transhumance can have implications for the severity of impacts felt by a herd and its owner, and can change the nature of risks to which both are exposed.

As remarked by several key informants, previous experience with indemnity contracts designed for sedentary breeders has demonstrated that these are not aligned well with the reality of mobile herders and their movements. Additional capacity is required within the insurance company and its partners to better understand mobile pastoralist livelihoods and adequately tailor insurance products to related needs [K15; K10; K114].

Finally, as part of their seasonal migration, many Senegalese herders move within the country in search of pasture. Some cross-national borders through neighbouring countries such as Mauritania and Mali, or travel through Gambia to reach the more rain-prone Casamance region in southern Senegal. This means they are no longer within reach of the network of Senegalese livestock extension agents working with CNAAS to support provision and claims handling of livestock insurance for the indemnity product. Therefore, herders could, in practice, not be compensated for livestock mortality due to causes that would otherwise technically be covered under their policy because the cause of death could not be verified due to their cross-border location; there is a question around the legal validity of livestock insurance contracts outside the country where they were signed [K112]. These constraints may be circumvented in the case of IBLI products, which do not require claims assessments by livestock extension agents and where pay-out are tied to geographic areas within Senegal irrespective of where someone decides to migrate.

However, regulation around index-based insurance in West Africa generally, and related to these questions in particular, remains somewhat unclear and would require engagement of national government and the regional insurance regulation body – *Conférence Interafricaine des Marchés d' Assurances (CIMA)* – to address.

Further potential options for integrating mobility into the design of IBLI in Senegal include: (1) creating indices along the mobility corridors, (2) using mobile phone data of herders to follow animal movement, or (3) giving herders the choice of splitting annual contracts into periodical contracts tied to different locations they visit at different times throughout the year. These suggestions emerged from a BRACED workshop on the topic, which took place in Dakar in May 2019. The importance of local expertise in Senegal about the livestock sector and index design was also highlighted during the workshop as critical for tailoring IBLI to context instead of directly copying what is being done in East Africa or Mongolia (Syll, 2019).

LOW LEVELS OF FINANCIAL SERVICE MARKET DEVELOPMENT

As highlighted by key informants, the market for financial services, including insurance, targeted specifically at mobile herders in Senegal is very small, and there is currently no livestock insurance product available to meet their specific needs [K110; K114] (Syll et al., 2019). Prior experience with indemnity livestock insurance products offered through CNAAS has pointed towards the limited understanding many livestock producers have of insurance. Though the prior sale of insurance policies coupled with fodder has bolstered take-up in the pilot (which has since been discontinued), many pastoralists were unaware that they had obtained coverage or had only a rudimentary understanding of the product.

This points to an information asymmetry between the insurer and the herders, and raises serious concerns about a lack of information and limited consumer protection in the provision of livestock insurance. Though working with intermediaries such as mills, veterinaries and producer organisations, as already pursued by CNAAS, can help facilitate information flows, there remains a need to better inform (potential) customers about the details of the products to increase their effectiveness and to enhance consumer protection. In the ongoing policy dialogue around livestock insurance in Senegal, herders' associations are strongly advocating for enhanced transparency, communication and consumer education about the products on offer. Vice versa: closer engagement with mobile livestock producers, producer organisations and experts is vital in order for the insurance company and its partners to get a better grasp of pastoralist livelihoods, practices and risk environments, so as to facilitate the development of adequate products.

MAR: Market Approaches to Resilience in Ethiopia

The MAR project, led by Farm Africa working with Mercy Corps as key project implementer, aims to support resilience of pastoralists and agro-pastoralists through a market-based approach in the Afar, SNNP and Somali regions of Ethiopia.¹¹ Among the BRACED projects included in this study, this one directly supports the greatest variety of financial services. For this purpose, it has established official partnerships with several public and private sector microfinance institutions, mobile banking providers and service platforms. These include Afar MFI, Omo MFI and Somali MFI, offering savings and loans products to their clients; Nyala Insurance, which is working on developing insurance products relevant to MAR areas and target groups; and Belcash and MBirr, which collaborate with MFIs and Nyala Insurance to provide mobile platforms for savings, loans and money transfers.

Financial service environment in Ethiopia

In a regional and global comparison, financial service coverage in Ethiopia is relatively low (Haworth et al., 2016). Only about 22% of the adult population have an account at a financial institution. See Figure 9.

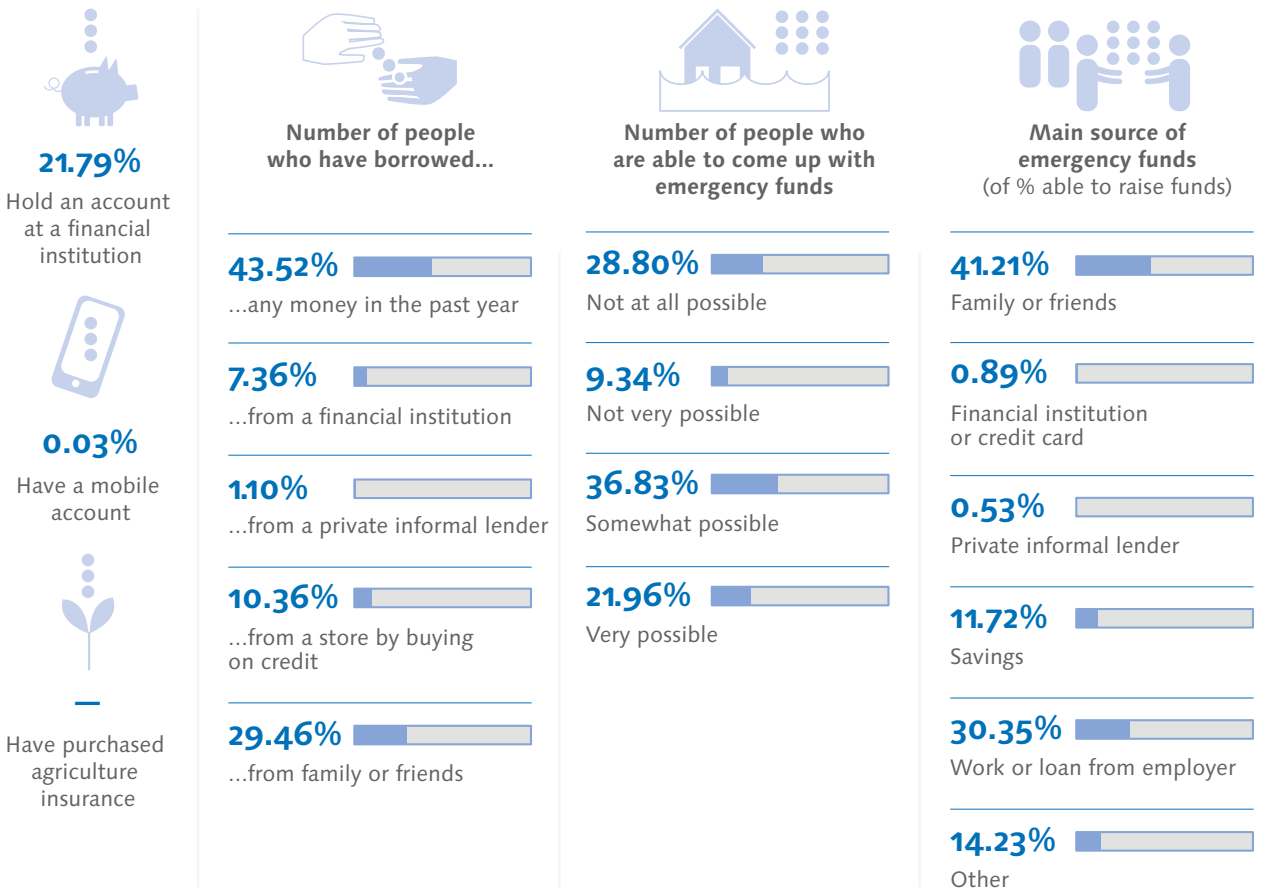
Despite an almost fourfold increase in the number of bank branches between 2000 and 2012, physical access to services remains a challenge (Zwendu, 2014). This is especially the case in remote rural areas. In addition, the Ethiopian financial sector

¹¹ www.braced.org/about/about-the-projects/project/?id=93c57ed1-dd52-4e5e-a9c6-1711e03a6e4a

is highly regulated, closed to foreign companies and lacks diversity in financial products and the institutions delivering them (Haworth et al., 2016). This is reflected in the MAR intervention areas, where the public Omo MFI, Afar MFI and Somali MFI are the only microfinance institutions offering financial services to project beneficiaries [KI2].

Figure 9: Access to emergency finance and financial inclusion in Ethiopia

ETHIOPIA



(% of those aged 15+)

Source: World Bank (2017) Global Findex Database.

The rapid expansion of MFIs and SACCOs (Savings and Credit Cooperatives) has increased access to microfinance in recent years. The number of member-based SACCOs, for example, rose from 495 in 1992 to 10,270 in 2012 (Tesfamariam and Tesfay, 2013). Nevertheless, a significant share of the population remains unserved or underserved. Almost half of all 31 MFIs registered in Ethiopia in 2014 are operating in Addis Ababa and although there are 1,385 MFI branches across the country, the ratio of branches to clients remains low (Amha and Kifle, 2013; Haworth et al., 2016).

The Ethiopian insurance sector touches only a small proportion of the population: 16 insurance companies operate around 190 branches countrywide (Making Finance Work for Africa, 2018a). Microinsurance targeting small-scale farmers and pastoralists to transfer weather-related risks has experienced a recent surge with the introduction of index-based insurance in the country. However, most insurance products remain focused on crops, not on livestock [K12]. So far, international donors are largely driving the development of this sector (Haworth et al., 2016) as part of wider risk management or social protection efforts, while reaching scale and economic viability remain major challenges.

In 2014, less than 1% of Ethiopian adults had a mobile money account. This remains well below the sub-Saharan average of 12% (World Bank, 2017) and is far less than mobile money account rates in neighbouring Kenya. Mobile banking in Ethiopia has, so far, mostly been an 'urban affair' [K12]. Fast, recent growth in mobile subscribers and rapid expansion of mobile infrastructure and networks, however, have opened up new opportunities for mobile banking (Making Finance Work for Africa, 2018a).

The Islamic banking sector is growing in Ethiopia. In 2008, the Ethiopian Central Bank introduced interest-free banking, and formal directives on Sharia-compliant finance in 2011 (Byrne and

Anderson, 2015). Somali MFI was the first provider in the country and has since expanded its clientele, though interest-free banking has not been able to keep up with increasing market demand (ibid.). Partially, this is due to gaps in knowledge around product design and legislation, for instance the settlement of disputes arising from interest-free finance (Haworth et al., 2016).¹²

MAR portfolio of financial service provision

Since the beginning of the project, MAR has placed an emphasis on the importance of financial services in strengthening resilience. It has facilitated the provision of a range of different services to beneficiaries, including savings and credit through Village Savings and Loans Associations (VSLAs) or MFIs, livestock insurance and financial education and training. MAR also works with mobile banking platforms to increase the reach of financial services. See Figure 10.

VSLAS

Village Savings and Loans Association (VSLA) and Self-Help Group (SHG) models have rapidly spread and efforts have been underway to take these to scale by international and local NGOs in Ethiopia in recent years (Lawson-McDowall et al., 2016). They are groups of usually around 15 to 25 members (BRACED / MAR, 2017) who contribute regular savings to a communal savings box or bank account. Members can take out loans against a predefined interest rate, service charge or voluntary contribution. Some groups also maintain social or emergency funds, which provide grants or loans to members, free of interest or other charges, in case of emergency. These, and other terms, are set and recorded by members in group by-laws, which govern the VSLA. The MAR project does not provide seed capital to VSLAs, but supports their

¹² For an overview of Islamic microfinance products and principles, see Annex 3 and Karim et al. (2008).

set-up and operation through training on the VSLA approach and capacity-building on financial literacy, accounting and business [K12]. VSLAs supported by MAR usually share out all their savings and earned interest or other contributions to their members at least once a year. The groups can then re-form and build savings up again to continue operations.¹³

The large majority of VSLA members are women (over 90%), especially in Somali and Afar. To support financial literacy and capacity-building in the groups, MAR has adopted the Private Service Provider (PSP) approach from Catholic Relief Services. PSPs are educated community members who can train VSLA members on a range of different skills. Each of them works with around 5-10 groups and are initially paid by BRACED for their services in the first nine months. The hope is that PSPs will contribute to the longer-term sustainability of VSLAs, because they remain in the communities and can continue group support beyond the project earning small fees they charge VSLAs for this service [K12]. However, whether this model is self-sustaining in the longer run and after the end of the project remains to be demonstrated. Initial experience in South Omo indicates that communities led by traditional elders challenge this approach of paying members within their own community for their support. MAR project field staff observed that most PSPs moved on to become primary school teachers or work for local government after the first round of VSLA creation and agent training (Yaron et al., 2018).

¹³ Though this seems to be the standard model in the MAR project context, other VSLAs and SHGs operate on an ongoing basis, continually building up savings and income over time without sharing out regularly. Some groups also have separate emergency or social funds in addition to the savings and loans account. Members contribute to these funds on a voluntary basis and they can be shared out according to need without depleting all group savings (Weingärtner et al., 2017; Lawson-McDowall et al., 2016).

In total, the MAR VSLA work has benefitted 6,642 households in 342 groups. Together, VSLA members under the MAR project have saved 3,080,577 ETB, close to 80,000 GBP, over the three years of the project. Almost 2 million ETB, or just over 51,000 GBP, has been disbursed as loans to VSLA members. This makes an average of around 12 GBP savings and 7.50 GBP loans per member (MAR BRACED Year 3 reporting). The maximum amounts of loans available to MAR VSLA members per lending cycle often remains well below 100 GBP (Gebreselassie, 2017). Interest rates are around 5–10%, or a voluntary contribution to the group savings in some of the Islamic groups in Afar and Somali, where interest is not allowed. For larger credit needs, the MAR project also facilitates individual or group access to MFI loans.

MICROFINANCE

In the MAR intervention areas, the bank and formal microfinance landscape is limited to a few public MFIs, most of which are still young. Afar MFI, for example, had only been established in 2014 and was so far constrained in capital and the types of services it could provide. Afar MFI, Omo MFI and Somali MFI have serviced 5,807 BRACED beneficiary households. Between the second and third year of BRACED, loan amounts rose by over 50%, reflecting the increasing interest of MAR beneficiaries in savings and credit services provided by the MFIs. Loans are provided by the MFIs for the duration of one year [K18] and incur a maximum of 15% interest, as set by the Central Bank. For Islamic finance products in Afar and Somali, MFIs charge around 13% mark-up. Two collateral arrangements are offered under the project. The first is based on a solidarity model in group loans, where members guarantee for each other. With the Somali MFI, for example, each group consists of three to five individual members [K11]. The second, for individual loans, requires collateral in the form of compulsory savings of 10–20% of the loan value in a dedicated account with the MFI.

The size of loans made available to BRACED beneficiaries varies between MFIs, ranging from 2,500 ETB in Afar to over 4,500 ETB on average in Omo to between 7,000 and 50,000 ETB in Somali [K11; K13; K18]. In some cases, the amounts disbursed under BRACED are much smaller compared to the standard amounts given out by the institutions. In Afar MFI, for example, the minimum loan size is otherwise 5,000 ETB [K18].

Loans taken out through MFIs under the BRACED project have mainly been used for the purchase of animals and animal fattening, though some beneficiaries are also engaging in petty trading and different types of services [K13; K18]. So far, the repayment of loans given out by MFIs has not been satisfactory in all cases. For instance, in Afar, people have not always kept up with the monthly repayment schedule [K18]. Nonetheless, rates of complete credit default have been relatively low overall, and MFIs are engaging closely with community elders and institutions to enforce repayment. This also includes discussions with Kebele and Woreda officials about the importance of paying back loans and the negative consequences of failing to do so [K18].

INSURANCE

To help protect livestock assets from drought-related shocks, the MAR project accompanied the Ethiopian private company Nyala Insurance in designing and delivering insurance products for pastoralists in MAR intervention areas. With ongoing support from Pula Advisors, a consultancy specialised in agricultural microinsurance, two products have been developed: a livestock mortality indemnity insurance aimed at asset replacement in the North Omo agro-pastoralist zone, and an IBLI product to support asset protection in Afar and Somali [K12]. The indemnity product allows herders to insure animals against a range of risks (including from accident, illness and disease, smoke, fire and lightning,

windstorm, snake bites, electrocution, calving and flooding) (Zegeye, 2017), while the IBLI product is triggered by thresholds in the availability of pasture (Pula Advisors, n.d.).

Based on observed low product take-up rates and limited willingness to pay for insurance premiums of similar products elsewhere, MAR decided to subsidise the indemnity insurance premiums at 50% and to completely subsidise IBLI premiums for project beneficiaries [K12; K116]. While the indemnity product is coupled with loans and offered to clients of Omo MFI, veterinary service providers were chosen as suitable channels for IBLI product subscriptions (Pula Advisors, n.d.). The indemnity insurance product was released in 2017 and served 163 clients in its first year (MAR BRACED Year 3 Reporting). It charges a premium relative to the loan value and usually processes claims within seven days. At the time of writing, 118 cows had been insured and two policyholders received pay-outs, which are directly transferred to the MFI for full repayment of the loan [K116; K12] (Zegeye, 2017).

Though introduction of the IBLI product had also been planned for 2017, its development and implementation proved challenging. The need for extensive data collection, stakeholder engagement, capacity-building in the insurance company, awareness-raising at local level, delays in payment of project partners, training insurance agents, and conversations with veterinary shops and doctors turned out to be crucial bottlenecks and slowed down the process. As a result, the launch of IBLI was delayed several times throughout the project period [K12; K117].

MOBILE BANKING

Together with MBirr and Belcash, two operating mobile money platforms, MAR has driven the provision of services from Omo MFI, Somali MFI and Nyala Insurance company in remote project locations, with otherwise limited access to bank and MFI

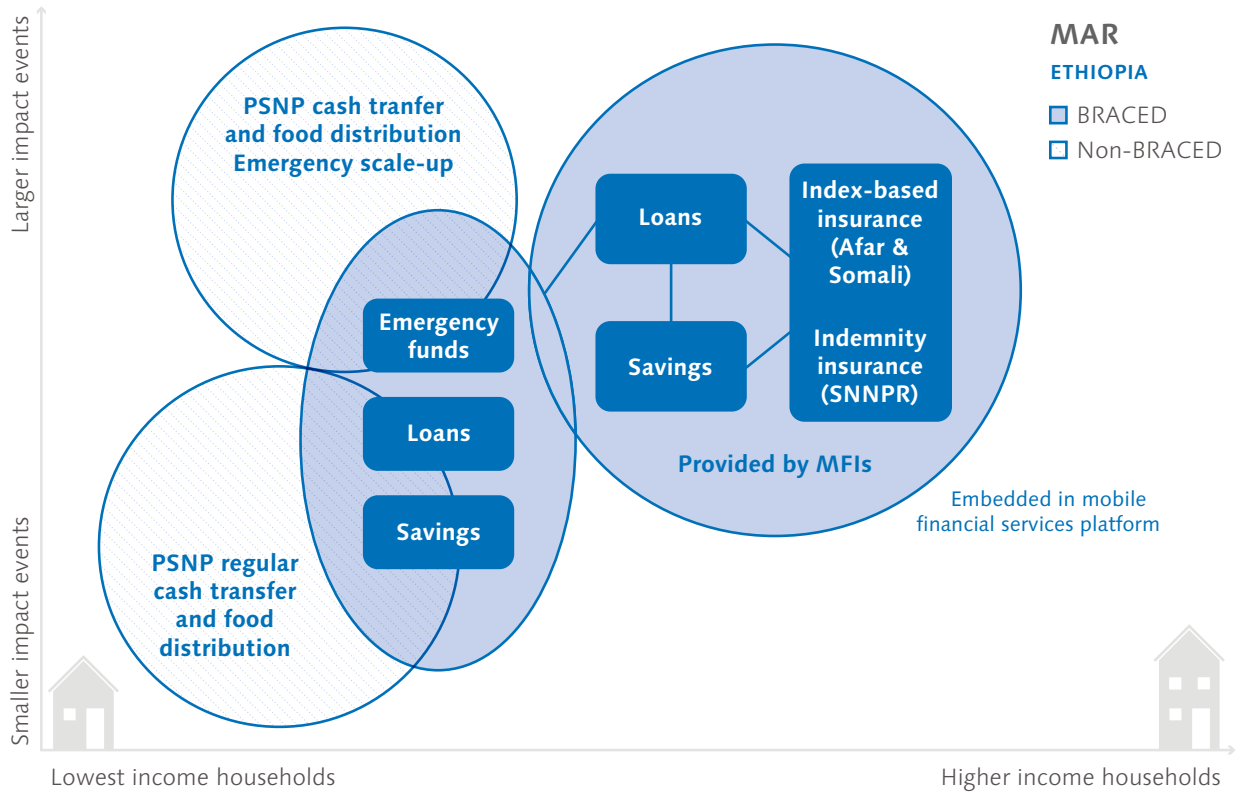
branches. While mobile banking platforms have already existed in these areas, MAR has helped to establish new partnerships with financial service providers and accelerated coverage expansion by supporting the recruitment of new agents [K113]. At the time of writing, the National Bank of Ethiopia had not (yet) approved Afar MFI for mobile banking, thus far preventing the provision of mobile banking services to Afar. Nonetheless, 6,422 MAR beneficiary households used mobile banking services in the Somali and SNNPR project areas (MAR BRACED Year 3 Reporting). The main feature of the MBirr collaboration with Omo MFI is a mobile wallet and the option of two types of savings accounts on which users can earn interest: an open account and an account that they cannot access for six months but offers slightly higher interest. Accounts can be opened using a simple push phone [K115] and are managed through Unstructured Supplementary Service Data (USSD) menus or the interactive voice response (IVR) option [K113].

TRAINING AND EDUCATION

Complementing the provision of financial services, the MAR project emphasises the importance of enhancing financial literacy and strengthening business skills, which have been major barriers for financial service use in the project areas [K116]. Training and capacity-building are supported to familiarise people with new concepts, such as livestock insurance, and to ensure that beneficiaries can make effective use of savings, loans and insurance products. Under its Small and Medium Enterprises Development Strategy, the Government of Ethiopia has set up One-Stop Service (OSS) centres for community outreach. MAR helped build capacity in weak and new OSS centres, and set up new centres where they did not exist, reaching a total of 10,347 households that now have financial management support, business development services, entrepreneurship training and audits (MAR BRACED Year 3 report, 2018).

Layering financial services in the MAR project

Figure 10: Layering financial services in the MAR project



Note: This is a simplified depiction of financial services and social protection systems, which aims to roughly outline the role of BRACED projects in financial service provision. We recognise that this figure is not comprehensive and may omit other relevant support systems and financial services. Design inspired by Hallegatte et al. (2017).

Partnering with a wide range of institutions has allowed the MAR project to support a number of different types of financial services in its intervention areas. By establishing continued engagement and trust with various partners, the delivery of multiple products, such as savings, loans, insurance and mobile banking services, has become more cost and time efficient. It has also allowed for the better integration of products, because these are supplied through the same channels and available on the same mobile money platforms.

In contrast, reliance on a few specific partner institutions has also resulted in dependencies. Firstly, in some cases, this has presented a challenge due to staff turnover as well as pressure from government to prioritise other activities for public partner institutions (MAR BRACED Year 3 report, 2018). Secondly, it can limit the breadth and outreach of interventions, focusing many services on fewer beneficiaries. This has become evident with the insurance component. For example, Omo MFI offers livestock mortality insurance to agro-pastoralists who take out a loan to purchase livestock from the institution, yet the insurance product, though technically independent of the loan, is not available to pastoralists without credit from the MFI. Broadening access to the insurance product is currently under consideration by MAR, and offering insurance to the wider client network of the MFIs and a distribution through alternative channels, such as veterinary services or mobile banking platforms, could facilitate it [K12; K116]. Mobile accounts cannot yet be used to pay for insurance premiums of the indemnity product, but Nyala Insurance and MBirr are collaborating to offer this option in order to facilitate product provision to pastoralists [K115; K116]. Finally, reliance on a few providers and integration of insurance and loan products has meant that delays in the provision of one service can also slow down others. Omo MFI, for example, has experienced delays in loan disbursements. This meant pastoralists could not get their loan or insurance contract on time. Additionally high value dairy cows, which are the main asset to be covered by the insurance product, are not easily available in the local market, reducing the effectiveness of both loan and insurance for incentivising economic investments and strengthening resilience [K116]. This example highlights the importance of considering financial service development and provision within a wider context of resilience-building and in combination with other market-based and structural interventions. Furthermore,

it points to a potential trade-off between product simplicity and comprehensiveness; while integrating insurance with loans or other lead products can result in added benefits, it can also complicate effective product provision.

Support to VSLAs for providing savings and loans is targeted specifically at low-income MAR beneficiaries, many of them women. Though the project does not collect systematic data on this overlap, anecdotal evidence implies that a share of VSLA members are also beneficiaries of the Ethiopian Public Safety Net Programme (PSNP) or recent graduates thereof. Credit, savings and insurance products provided by MFIs in Ethiopia are generally directed towards a slightly higher income tier with needs for more credit and the capacity to save and invest larger amounts of money. Incentivising MFIs to offer smaller loan amounts than they usually would has helped the MAR project to service slightly lower-income clients than the usual customer base of the MFIs. MAR has also established deliberate links between VSLAs and MFIs, referring successful groups to the semi-formal financial institutions, allowing them to continually increase loan amounts. This appears to be an effective way of layering the different services for increasing investments and livelihood diversification by building initial business and financial capacities, as well as creating a conducive environment to enhance mentalities around saving and lending through community groups and subsequently improving access to larger capital. Loan default rates of BRACED beneficiaries who accessed funds through Omo MFI, Afar MFI or Somali MFI have been low, which may be related to linking services along with financial education and business training efforts.

However, challenges of market access remain a barrier to the use of financial services in the BRACED context. Loans present an opportunity to strengthen resilience by investing

in business intensification or diversify economic activities, but this is challenging when access to markets is generally low, as is the case in pastoralist project communities in Afar. Although financial services are a key component to address this, they alone cannot create diversified market opportunities [KI8]. Furthermore, it seems unlikely that MFIs would continue to offer small loan amounts to low-income clients after the end of BRACED, unless this strategy has proven profitable to them during the course of the programme. Whether this is the case is, at this point, uncertain.

Links between VSLAs and MFIs also help to close a gap in risk financing. VSLAs and similar groups have been shown to help members cope better in times of drought by reducing vulnerabilities and making small amounts of money available when shocks and stresses occur. In the MAR context, VSLAs have shared out funds more frequently as a response to recurrent drought (MAR BRACED Year 3 reporting). This can help members cope, and it also reduces the amount of funds groups are able to build up and can then lend out for re-investment. A key strength of VSLAs lies in buffering smaller and more frequent idiosyncratic shocks, such as injury of a household member or asset destruction due to small fires. These usually do not affect all group members at the same time, meaning emergency savings, loans and grants are more readily available (Weingärtner et al., 2017).

Through insurance, remittances or external lending, formal financial service providers could then help VSLA members address less frequent, higher impact covariate events. As IBLI premiums are going to be fully subsidised by MAR, this protection will also be accessible to lower-income, livestock-owning target beneficiaries. However, if a full subsidy can be maintained in the long run, and whether government or

veterinary service providers will be willing and able to take over premium funding once the BRACED programme has ended, remains to be established. If not, the target group, as well as the potential for scaling up the product, may shift substantially in the future, depending on commercial premium rates among other factors. In addition, as research in comparable northern Kenyan pastoralist contexts has indicated, IBLI does not eliminate nor transfer all relevant risks, as pastoralist policyholders, on average, were left with 69% of original risk they faced from high-loss events (Jensen et al., 2016). This highlights the importance of strengthening and layering different financial services to address livelihoods more comprehensively in pastoralist areas in eastern Africa.

Within the Ethiopian insurance landscape, indemnity and IBLI products developed and introduced under the BRACED project reach new areas and shares of the population that previously had no access to market-based risk transfer. Livestock insurance products had simply not previously existed in the intervention regions [KI16]. Furthermore, the new indemnity and IBLI schemes target more commercially-oriented (agro-)pastoralists compared with other approaches, such as the R4 Rural Resilience Initiative for farmers or the Ethiopian PSNP (Pula Advisors, n.d.). In the wider context of available safety nets and financial services in Ethiopia, it supports smallholder livestock producers with few to very few assets and some access to smaller amounts of credit. Mobile banking platforms can help to increase the reach of financial services, but possession of a mobile phone and ownership of an identification card are prerequisites for signing up to the service, which can present a challenge particularly to the poorest, older people and otherwise marginalised populations.

Tailoring financial services to context

LIMITED MARKET DEVELOPMENT

In the Ethiopian pastoralist areas, financial market development is much lower than in urban areas, where more private microfinance providers are active. In most MAR pastoralist project zones, the public Afar, Omo and Somali MFIs are the only present formal financial institutions, as they are obligated by the government to serve rural communities. This means, options for collaboration with MFIs were limited in the MAR project. Based on different levels of capacity and experience in MFIs, and concerns around Omo MFI's negative reputation and how this may reflect on the project, MAR negotiated terms with each MFI, starting out with the most well-established Somali MFI. To incentivise MFIs to extend operations to previously unserved or underserved project regions and beneficiaries, MAR supported the opening of new branches both technically and financially by establishing revolving loan guarantee funds. This takes some of the risk related to branching into new regions off the shoulders of the MFI and makes expansion more attractive to them. In the case of Omo and Somali MFI, MAR's financial contributions to the facility were matched one-to-one by the MFIs. In the case of the younger and less capitalised Afar MFI, the MAR project provided 100% of the funding for the revolving loan guarantee fund. This means MFIs and MAR mutually agree on the loan sizes, the number of clients, and the number of turnarounds under the guarantee funds. To address gaps in technical capacity and high staff turnover, MAR supports MFIs through capacity-building in collaboration with the Ethiopian Inclusive Finance Training and Research Institute, the knowledge and research centre of the Association of Ethiopian Microfinance Institutions (AEMFI) [KI2]. These preparatory steps,

in combination with drought, slowed down the loan process, which means less turnarounds than planned could be realised by the project.

Similarly, the development and implementation of the insurance component has taken more time than expected. This was partially related to the limited breadth of the Ethiopian insurance sector, which meant that no 'ready-made' IBLI products were available that could be easily replicated in MAR intervention areas and pastoralist target communities (MAR BRACED Year 3 report, 2018; KI3). Instead of using existing livestock insurance products from other contexts as blueprints for application in Ethiopia, MAR initiated a participatory product design process, which was appreciated by local insurance stakeholders [KI16]. This process built on in-country experience, with crop insurance by Nyala Insurance and external consultancy Pula Advisors contributing experience and technical support.

Starting out from a risk assessment with pastoralist communities, the team explored options for a range of different insurance products suitable to project aims and contexts (Figure 11; KI16). Five different products were identified for the various project locations based on: different risk profiles; the importance of drought risk; varying levels of commercial orientation; access to credit; access to markets; access to inputs and data quality in the MAR pastoralist and agro-pastoralist intervention regions of Afar, SNNP and Somali (Pula Advisors, n.d.; KI16). Long-listed options were considered in a multi-stakeholder consultation, involving community representatives, government, MAR implementing partners and the National Bank of Ethiopia, the country's regulatory insurance body. Based on this assessment, the project decided to work with Nyala and Pula in the development and implementation of indemnity insurance in SNNPR and IBLI in Afar and Somali [KI2].

Figure 11: Assessment of risk profiles and contexts in MAR intervention areas

| REGION | KEY RISK | DROUGHT RISK | COMMERCIAL ORIENTATION | ACCESS TO CREDIT | ACCESS TO MARKETS | ACCESS TO INPUTS | DATA QUALITY |
|-----------------------|-----------------------------|----------------|------------------------|------------------|-------------------|------------------|--------------|
| Somalia | Drought/ Flooding | HIGH | PROMISING | PROMISING | PROMISING | PROMISING | PROMISING |
| Afar | Drought | EXTREMELY HIGH | LOW | LOW | LOW | LOW | LOW |
| SNNPR – Pastoral | Drought, Animal diseases | AVERAGE | LOW | LOW | LOW | LOW | LOW |
| SNNPR – Agro pastoral | Disease, Crop failure | AVERAGE | PROMISING | PROMISING | LOW | PROMISING | LOW |

Source: Pula Advisors (n.d.).

The indemnity product covers risks related to accident, illness and disease; smoke fire and lightning; windstorm, snake bite, electrocution, flooding and calving (Zegeye, 2017), thus catering to the variety of risks with which (agro-)pastoralists in the area are faced. In the Somali and Afar regions, where drought risk is high to extremely high and represents a critical risk to pastoralist livelihoods, IBLI was identified as the preferable option [K116]. The MAR project expects IBLI to protect livestock assets by paying out earlier, i.e. before livestock dies from a shortage of fodder and water, based on a satellite index. This would provide additional means to pastoralists to increase survival of their herd and support consumption expenditures in times of crisis. However, as access to markets and inputs is low in MAR intervention areas in Afar (Figure 11), the extent to which IBLI pay-outs can help pastoralists procure fodder or water during a drought remains a critical question. If this is not guaranteed, in-kind provision through public safety nets or other channels may be a preferable option for the poorest and most remote pastoralists.

FINANCIAL SERVICE REGULATIONS AND NATIONAL POLICY

The MAR project is working closely with the Central Bank of Ethiopia in developing and implementing the financial service portfolio. This is to ensure support of project activities and coherence with national policies and regulations, and also to inform government strategy and decisions around financial services [K12]. In the Afar region, where network coverage is at 80% and therefore above some other regions in the country, the potential for mobile banking is high. However, the National Bank has, so far, not granted the young Afar MFI permission to branch into mobile financial services, which has impeded the introduction of mobile banking in the region [K12].

A further regulatory challenge to MAR's financial service activities has been limited legal recognition of VSLAs or similar savings groups by the Ethiopian Government. While this does not currently inhibit VSLA activities, there is a risk to the stability of such groups because they have no legal basis for existence nor financial operations. MAR, along with other projects, has supported an approach to incentivise the transformation of VSLAs into SACCOs to enhance legal registration of the groups in Ethiopia.

REMOTENESS AND THE MOBILITY OF PASTORALIST COMMUNITIES

Remoteness and the mobility of pastoralist communities has meant that they often have limited access to financial services, because infrastructure in the areas where they live is limited and repayment schedules or other requirements are often not easy to adhere to for herders on the move (Haworth et al., 2016). To address this challenge, the MAR project encourages the integration of the savings, loans and insurance products it supports into mobile banking platforms. In addition, mobile wallet accounts allow users to buy and sell using their mobile balance. However, even in mobile banking, agents or service

points are required to allow users to retrieve or deposit funds as needed. For this purpose, Belcash and MBirr are training traditional shop keepers as mobile banking agents, thus increasing the density of their agent networks in more remote locations [K12]. In this context, continuous electricity interruptions presented a problem to mobile banking, prompting the project to supply 100 agents with solar panels so that both agents and customers could charge their phones to undertake transactions [K13].

Mobile banking may also become a game changer for loan repayment in contexts where this has been challenging due, in part, to a mismatch between locations or movements of pastoralists and loan repayment schedules. Someone taking out a loan from an MFI branch in town who lives about 50km away, for example, would usually be required to travel to the branch on a monthly basis to deposit repayments. This imposes a burden on people's time and resources. In another instance, a group of pastoralists who had taken out a loan through the project moved out of the area for six months in search of livestock fodder and water following an immense drought [K16]. This led MAR to promote the expansion of mobile banking to remote project contexts and mobile communities in order to address the challenge of repayment and to facilitate the use of financial services to support resilience in pastoralist contexts. Though signing people up in the first place can still be difficult in remote and mobile communities [K13], once established, the mobile account can be accessed via any agent or Omo MFI branch across the region [K15]. In the MAR mobile pastoralist areas specifically, Belcash has adjusted its marketing strategy to increase user rates by organising events or doing door-to-door visits [K13].

FINANCIAL BEHAVIOUR

Previous engagement of Omo MFI in channelling government emergency cash loans to beneficiaries in response to drought

has established a culture of dependency and non-repayment in some of the project intervention areas. Repayments of these loans were not enforced by the government, which 'backfired' on Omo MFI because it incentivised people to take out higher loan amounts without paying them back. This mentality created a challenge for the MFI and its collaboration with the MAR project, because people in areas that had benefitted from the government programme were not interested in taking out loans once they realised these needed to be paid back. As one interviewee put it, 'this has not only killed the clientele for the MFIs, but it has also killed the entrepreneurship of the people' [K12]. To address this issue, negotiations with Omo MFI on the terms of the partnership and close community engagement have been project strategies, but the context remains challenging. MAR regards VSLAs as the most crucial project component in this regard, because they are seen as having 'created a huge appetite and a change, a transformation in many cases, to lend and to save money' [K12].

SOCIAL AND RELIGIOUS ACCEPTANCE

In terms of microfinance product development, MFIs could rely on their prior experience in the Afar, SNNP and Somali regions, though some 'tweaks' were required to make them work in the specific intervention contexts. In parts of the Afar and Somali regions, this specifically entailed ensuring that MFI loan products, livestock insurance and VSLA by-laws are Sharia-compliant [K12]. Somali MFI, for example, offers Murabaha, a financing instrument where the MFI procures a good requested by a client, and it then sells it on to the client on the basis of deferred payments and with an agreed mark-up¹⁴ [K11]. Afar MFI offers Qard al-Hassan

¹⁴ For more details on Murabaha and other Islamic finance products, see Annex 3.

loans, a type of product where the amount of the loan is repaid without the addition of any interest or mark-up (Negusse, 2017). Similarly, innovations in the design of IBLI were introduced that helped to make it fit more appropriately for the context. Ground data from the government Disaster Prevention and Preparedness Bureau is used to validate satellite measures underlying the index. This simultaneously enhances the technical quality of the index, reduces basis risk¹⁵ and supports Sharia-compliance of the product (Pula Advisors, n.d.).

¹⁵ 'Basis risk in index insurance arises when the index measurements do not match an individual insured's actual losses. There are two major sources of basis risk in index insurance. One source of basis risk stems from poorly designed products and the other from geographical elements. Product design basis risk is minimized through robust product design and backed by testing of contract parameters. Geographical basis risk is a factor of the distance between the index measurement location and the production field. The greater the distance between the measurement instrument and the field, the greater the basis risk. Some households that experience loss may not receive compensation while others that experience no loss may receive payments. This basis risk is reduced when the area covered by the index is homogeneous both in terms of weather and in terms of farming techniques. Therefore, as the density of weather stations and satellite pixels is increased basis risk is minimized' (Global Index Insurance Facility, 2019).

PROGRESS: building resilient governance, markets and social systems in Kenya

The PROGRESS project works in Karamoja in north-eastern Uganda and Wajir County in north-eastern Kenya, with a focus on three integrated areas: market systems development, natural resource management and governance, and gender mainstreaming (Figure 12). A crucial component of the market development component is increasing community engagement with the private sector to enhance their access to financial and non-financial services, supplies and quality inputs.¹⁶ For this purpose, the project has partnered with Crescent Takaful SACCO (CTS), the first Sharia-compliant SACCO in Kenya. The PROGRESS project aims to build resilience against major shocks and stresses that include drought, desertification, floods, soil erosion, and deforestation.

Financial service environment in Kenya

In a regional comparison, Kenya's financial sector is larger, more diversified, further developed and more efficient than that of other countries with similar income levels (Making Finance Work for Africa, 2018b). Relative to the other countries included as case studies in this report, Kenya also has a higher level of financial inclusion. Around 55% of the country's adult population hold an account at a financial institution (World Bank, 2017).

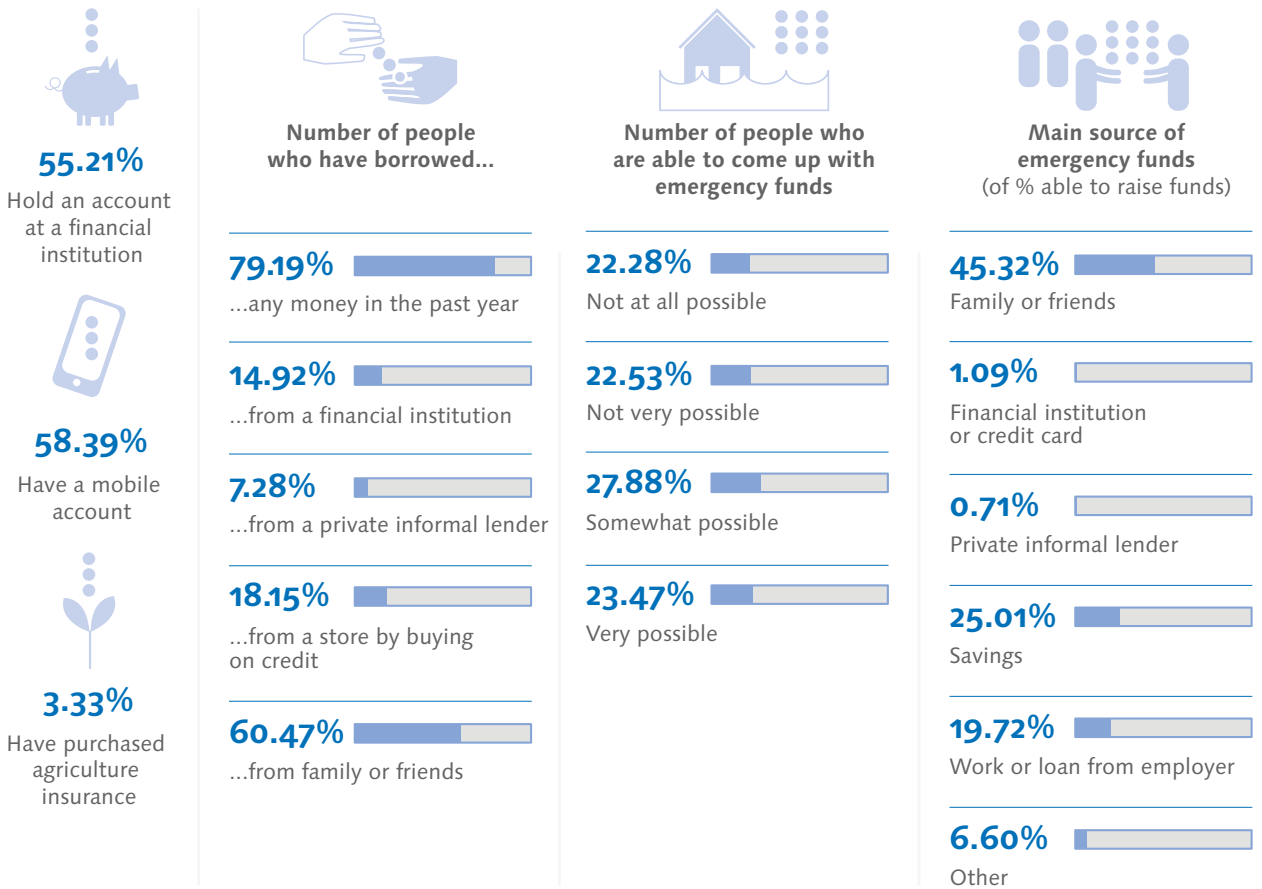
MFIs and SACCOs reach a smaller percentage of adults in Kenya than banks, and membership in SACCOs and the use of MFIs have both stagnated or increased slightly in Kenya over the past

¹⁶ www.braced.org/about/about-the-projects/project/?id=b34bef40-1170-4503-b51b-1bb2c1fd179d

decade (Figure 13). Much larger gains were made in access to banks, which rose from 14% of Kenyan adults in 2006 to 38.4% in 2016 (FSD Kenya, 2017).

Figure 12: Access to emergency finance and financial inclusion in Kenya

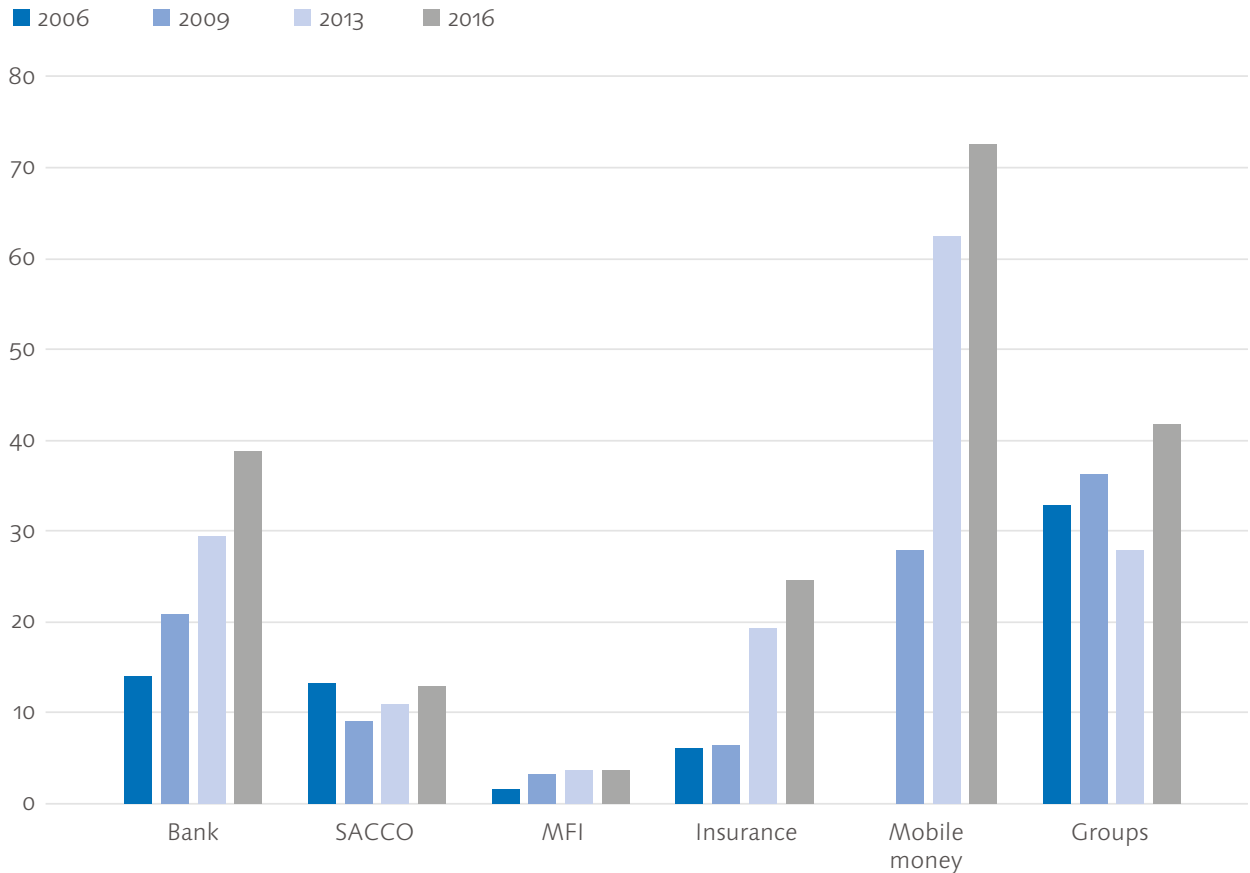
KENYA



(% of those aged 15+)

Source: World Bank (2017) Global Findex Database.

Figure 13: Access to formal and informal financial services in Kenya



Source: FSD Kenya (2017).

Mobile money services have experienced a massive surge in Kenya. Non-existent in 2006, close to 60% of Kenyans over 15 years old had a mobile banking account in 2014 (World Bank, 2017). By 2016, this figure had grown to over 70% of Kenyan adults (FSD Kenya, 2017). The rise in customers has been accompanied by an increase in the number and value of transactions, as well as by an expansion of the mobile banking agent network (Central Bank of Kenya, 2015). Recent impacts of Kenya's largest mobile money system, M-Pesa, on increasing

per capita levels of consumption and contributing to poverty reduction in the country seem to be partially driven by labour market outcomes such as people diversifying or moving their income sources away from agriculture, as well as changes in financial behaviour. This includes, for example, increased saving and higher levels of financial resilience facilitated by mobile money (Suri and Jack, 2016).

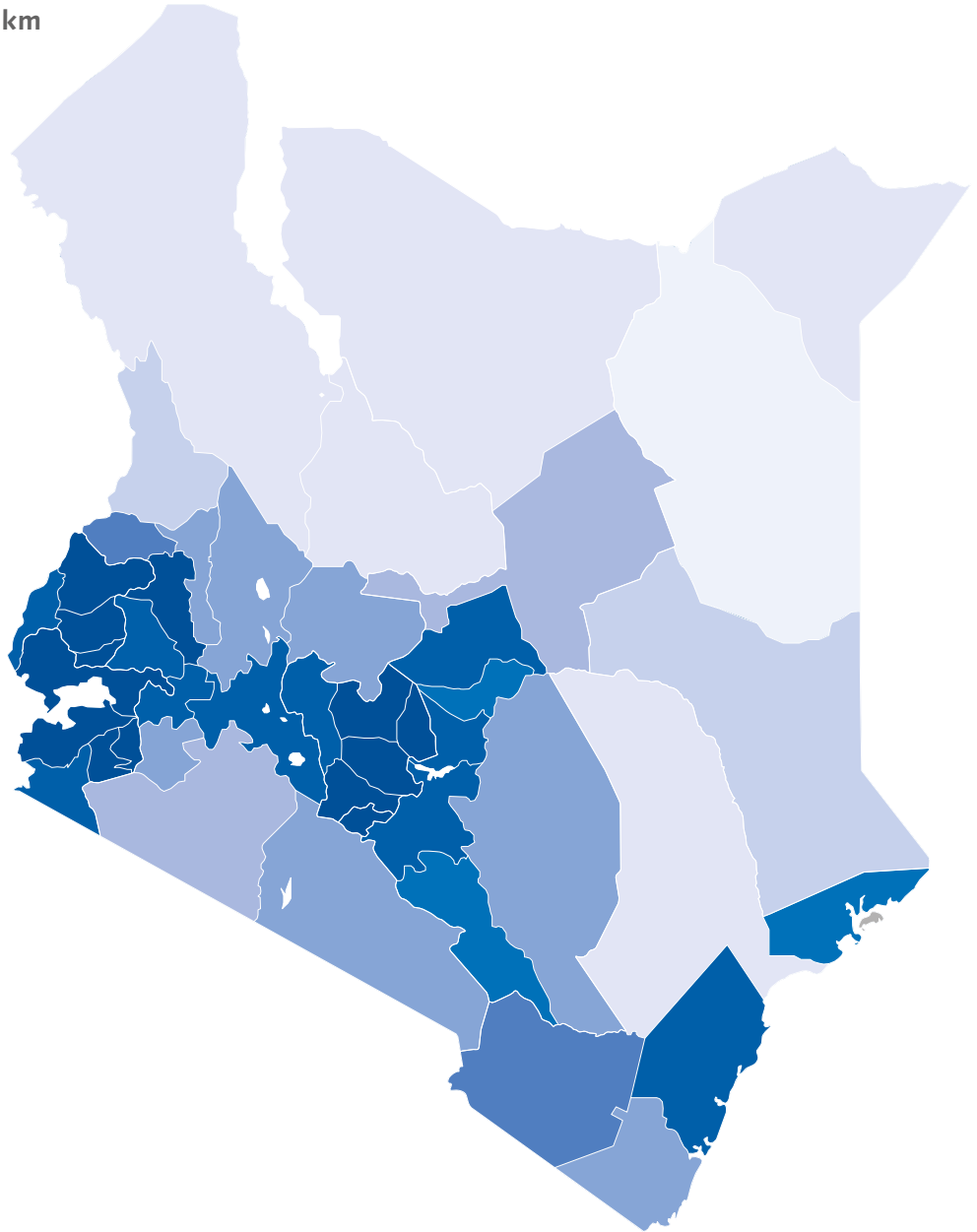
Though Kenya has about a decade of experience with Islamic finance, the industry 'remains in an embryonic stage' (International Monetary Fund, 2017). In 2017, it included two Islamic banks, 11 conventional banks with Islamic banking windows, one Islamic investment fund, two investment companies, one Takaful company, one Re-Takaful company and two SACCOs. Though the number of operators offering Islamic banking products has risen, their market share remains very small, and an appropriate regulatory framework is lacking to date (International Monetary Fund, 2017; Dahir, 2017).

An intra-country comparison shows that the population in Wajir County, the PROGRESS area of intervention, still faces tremendous barriers in accessing financial services. In 2013, less than 20% of the population lived within 5km of a financial service location (Figure 14). Though points of financial service provision – including commercial banks, bank agents, mobile money service providers, ATMs, post offices, money transfer services and insurance service providers – have increased in Wajir in recent years (from 154 in 2013 to 234 in 2016), the rate of financial service points to population is behind other counties (Bill and Melinda Gates Foundation, Central Bank of Kenya and FSD Kenya, 2016; Bill and Melinda Gates Foundation, Central Bank of Kenya and FSD Kenya, 2014).

**Figure 14: Access to financial service locations
(population within 5km)**

Population within 5 km

- 20% or less
- 21% – 30%
- 31% – 40%
- 41% – 50%
- 51% – 60%
- 61% – 70%
- 71% – 80%
- 81% – 90%
- > 90%



Source: Bill & Melinda Gates Foundation (2013).

PROGRESS portfolio of financial service provision

The PROGRESS project has placed an emphasis on the provision of financial services as part of its efforts towards market systems development in livestock markets, agriculture and clean energy in northern Kenya. Through cash savings and access to financing, the project aims to strengthen people's absorptive and adaptive capacities and contribute to transformative growth (Hujale and Mutisya, n.d.). For this purpose, PROGRESS has been working with VSLAs and supported the establishment of an Islamic financial service provider, CTS, in Wajir.

VSLAS

Similar to the MAR project in Ethiopia, PROGRESS has been supporting VSLAs formation and training, through, for example, record keeping or business management, and by helping VSLA groups establish links with formal financial service providers in Kenya. This was done through awareness-raising on microfinance and, more specifically, the availability of Sharia-compliant formal financial services [KI4]. In Kenya, 3,090 men and women benefitted from access to financial services through VLSAs under the BRACED project.

SACCOS

The penetration of formal and semi-formal financial services across northern and eastern Kenya is relatively low compared to other parts of the country (FSD Kenya, 2016). Prior to the PROGRESS project, no fully Sharia-compliant formal financial institution had been operating in Wajir, which limit the availability of adequate services in the predominantly Muslim county. With technical and financial support, the PROGRESS project has supported the development and delivery of Sharia-compliant microfinance products for the northern Kenyan market through CTS. Given the low levels of overall Islamic finance

market development and regulation, this has also required institutional capacity-building within CTS [K16]. Though two fully-fledged Islamic banks were operating in Kenya at the time, the project aimed to address the identified lack of Islamic financial services in the microfinance sector that targeted low income shares of the population, who are unable to access banks due to higher fees and larger loan volumes. In 2016, CTS opened an office in Wajir Town and in 2017 a second one in Habaswein, in southern Wajir County.

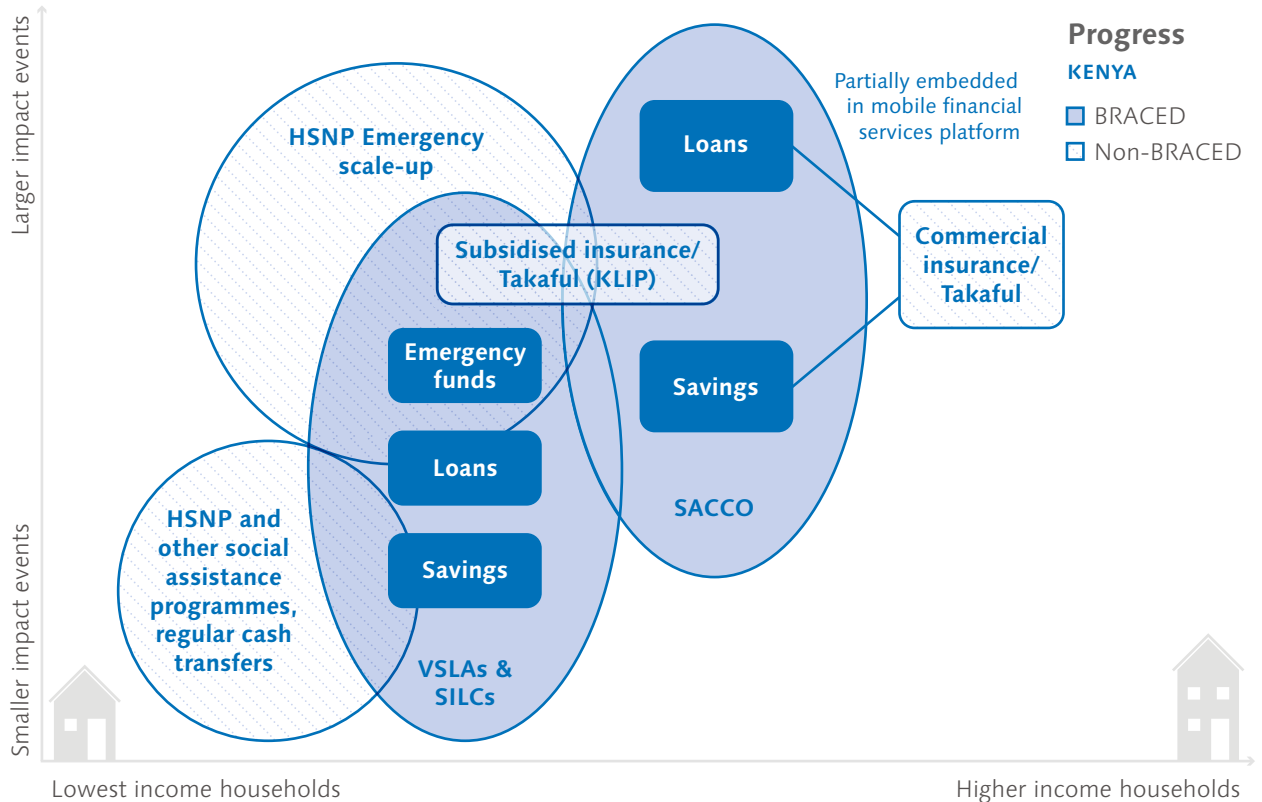
In early 2018, over 1,500 people had started saving through CTS in Wajir and just over 100 people had taken out loans as individuals or as groups. A total of 34 individual clients, by that point, had accessed 42 loans of around KES 26,000, or close to GBP 2,000 each, on average, while ten groups with an average of 7 members had taken out almost KES 29,000, or just over GBP 2,200.¹⁷

Layering financial services in the PROGRESS project

An emphasis of the PROGRESS project has been to support people's access to different levels of savings and credit through VSLAs and SACCOs. The rationale for these activities within the project context was to enhance people's capacities to respond to shocks and to incentivise investments in livestock markets and climate-smart agricultural practices. See Figure 15.

¹⁷ In comparison, VisionFund International, under other NGO-led projects aiming to reach low-income populations with financial services, has experienced an average loan size of USD 498 or roughly GBP 385 through their microfinance initiative in Kenya, see www.visionfund.org/2127/average-loan-size/impact/

Figure 15: Layering financial services in the PROGRESS project



Note: This is a simplified depiction of financial services and social protection systems, which aims to roughly outline the role of BRACED projects in financial service provision. We recognise that this figure is not comprehensive and may omit other relevant support systems and financial services. Design inspired by Hallegatte et al. (2017).

However, at project level, there has been some uncertainty around the use of financial services provided through CTS to enhance climate-resilient economic development and help people cope with shocks. For example, this includes the question to what extent loan use supports climate-smart agriculture and livestock production. From interviews and loan user data, it appears that business loans made available through CTS dominate in urban or semi-urban areas and are much more difficult to access in more remote locations. The majority of investments

undertaken with CTS loans are in sectors not directly related to agriculture and livestock. This entails, for instance, capital for smaller grocery shops and bakeries, spare parts, or transport businesses in town. Whether these loans support a trend of diversification away from pastoralist and agricultural income towards less rainfall-reliant livelihoods, or whether the majority of clients are traditionally traders and business people, is not entirely clear. In either case, it seems that the standard CTS loan products predominantly support urban livelihoods with overall lower exposure to climate- and weather-related risks. However, as CTS lending has only started in 2017, there has not yet been a 'test' of the system, or how well it is able to cope with a larger share of consumption lending and potential defaults during longer, more intensive drought periods.

The fairly high average loan amounts (and the collateral that would be required to access finance) also implies that the economic status of individual CTS loan users is fairly high and well above the average target populations of public safety nets or VSLAs, though groups as a whole might be able to access loans through CTS at these rates nonetheless. Working with VSLAs at village level, linking them up with (semi-)formal financial services, sharing risks across the group and providing loans in more economically integrated urban locations can thus present an opportunity for economic advancement, albeit in small steps. Similar entry points exist for linking people under the public safety nets of the Government of Kenya – such as the Hunger Safety Net Programme (HSNP) – with access to informal or semi-formal financial services, particularly at the upper end of the safety net beneficiary income spectrum.¹⁸

¹⁸ For a more detailed discussion of these particular links, as well as insights into loan use of CTS clients, see Weingärtner et al. (2019).

To cater particularly to livestock traders, Mercy Corps (through another project running parallel to BRACED) has supported CTS in developing a specific product – Mifugo Kash Kash (MKK) or 'livestock cashing'. The aim of the product is to enhance traders' access to larger livestock markets, thus increasing their income opportunities and allowing them to better manage their stocks by reducing income vulnerabilities and market risks. Over the pilot phase, 45 livestock traders accessed a total of 12,494,000 KES to trade 3,000 shoats within a four-month period. However, the product trial revealed a need for more action from local and national governments in establishing a policy environment conducive to livestock production and trading (Hujale and Mutisya, n.d.), as well as a limited understanding within financial institutions, such as CTS, of livestock trading and its implications on financial needs.

CTS appears to fill a gap in the northern Kenyan microfinance market by providing Islamic banking products. This enhances accessibility of semi-formal financial services to populations in the PROGRESS area of intervention in Wajir, particularly in urban areas, and therefore increases the pool of financial products available to many households and small businesses. Nonetheless, there is additional potential to deepen the integration of various risk financing instruments, for instance by linking savings or loans held by livestock herders with livestock insurance to enhance their risk management options. On a global level, northern Kenya is at the forefront of index-based livestock Takaful development, and both commercial products sold through Takaful Africa and subsidised insurance under the Kenyan Livestock Insurance Programme (KLIP) are available to livestock owners in parts of Wajir. However, so far, reaching a large enough scale for financial viability has been a major challenge to the insurer. Currently, there are no formal links between CTS services and the index-

based livestock Takaful product. This means, Takaful is not made available through CTS to its regular clients or bundled with loans used to purchase heads of livestock. Thus, there is some unexplored potential in better integrating different types of services provided directly through BRACED – and beyond – to better protect loans taken out for livestock rearing and, consequently, to enhance financial viability of both loan and Takaful provision.

Tailoring financial services to context

LOW LEVELS OF MARKET DEVELOPMENT AND COMPETITION

Traditional social and financial support structures are developed well in the PROGRESS intervention areas in Wajir, but many people are without or with limited access to (semi-)formal financial services, especially in rural areas. Though the number of financial service providers has increased in Wajir County over the past years, competition is low and market development is limited. To help overcome some of the main challenges that have prohibited financial institutions from establishing presences in Wajir (which include: limited capacity, the need for intensive awareness-raising and marketing among local populations, investment in product development, and financial risk to SACCOs), the PROGRESS project has provided capacity-building and financial support to CTS.

SOCIAL AND RELIGIOUS ACCEPTANCE

To address a gap in supply of Islamic microfinance in northern Kenya, the PROGRESS project has supported the development of Sharia-compliant financial services to increase access to suitable savings and loan products in Wajir County. According to the 2009 Kenyan Census, about 11% of the country's total

population were Muslim,¹⁹ with Islamic shares of the population above this national average in the northern counties. The development and provision of suitable products has been met with interest among local populations, though some scepticism remains about the legitimacy and compliance of products provided through CTS. Furthermore, CTS has been experiencing challenges with regards to establishing community trust in products, as well as trust of CTS officers in customers. Working with local community leaders and religious scholars in verifying and promoting products has been a key strategy that helped to reduce people's concerns and to generate acceptance of the 'new' financial institution and the products it offers in the area.

REMOTENESS AND MOBILITY OF PASTORALIST COMMUNITIES AND LIVESTOCK SAVING

As outlined above, a limited number of livestock herders or traders are accessing the standard CTS loan products on offer. This may, to some extent, be linked to the specific product design being less suited to the livestock business (though this could be changing with the introduction of the MKK product). In addition, the remoteness and mobility of pastoralists were highlighted as a challenge to accessing (semi-)formal financial services because customers would need to travel to town regularly in order to apply for a loan and go through the repayment process.

Some of CTS's own experience has led this SACCO to concentrate on geographic areas close to their branches, which means that the penetration of more remote locations, at least for now, is limited. When the first CTS branch was initially set up in Wajir Town, the SACCO also accepted customers from more distant locations within Wajir, but the emphasis now is to draw on

¹⁹ www.knbs.or.ke/religious-affiliation/

a customer base located in a 30-50km radius around the branch to reduce operational costs. To a certain extent mobile banking could help bridge this, but CTS products thus far are not available through M-Pesa or similar platforms.

Finally, the common pastoralist practice of saving in the form of livestock, as opposed to saving cash at home or in accounts at the bank, may inhibit the take-up of financial services by one of the PROGRESS project's main target groups. Focusing specifically on financing for livestock traders, again, has been an interesting entry point for the PROGRESS project, but further product innovation may be needed to make CTS services more relevant to the client base and the specific context of pastoralist communities in northern Kenya.

ANUKULAN: Driving small farmer investment in climate-smart technologies

Anukulan (meaning adaptation in Nepalese) is a project implemented by iDE along with a consortium of 10 different local and international partners. The project aims to improve the well-being of the rural poor – especially women and children – by over £140 per year per household for more than 100,000 households, or around 500,000 people, coping with climate change-related shocks and stresses. In its first phase, Anukulan used a private sector model to develop 'Commercial Pockets'. This involves the development of sustainable rural farmers' organisations around collection centres to amalgamate vegetables and crops. Under the Anukulan project, over 50 collection centres, which have between 100 and 2,000 members, were formed in the project areas. Each of the collection centres are organised in sub-groups of around 15 to 25 people.

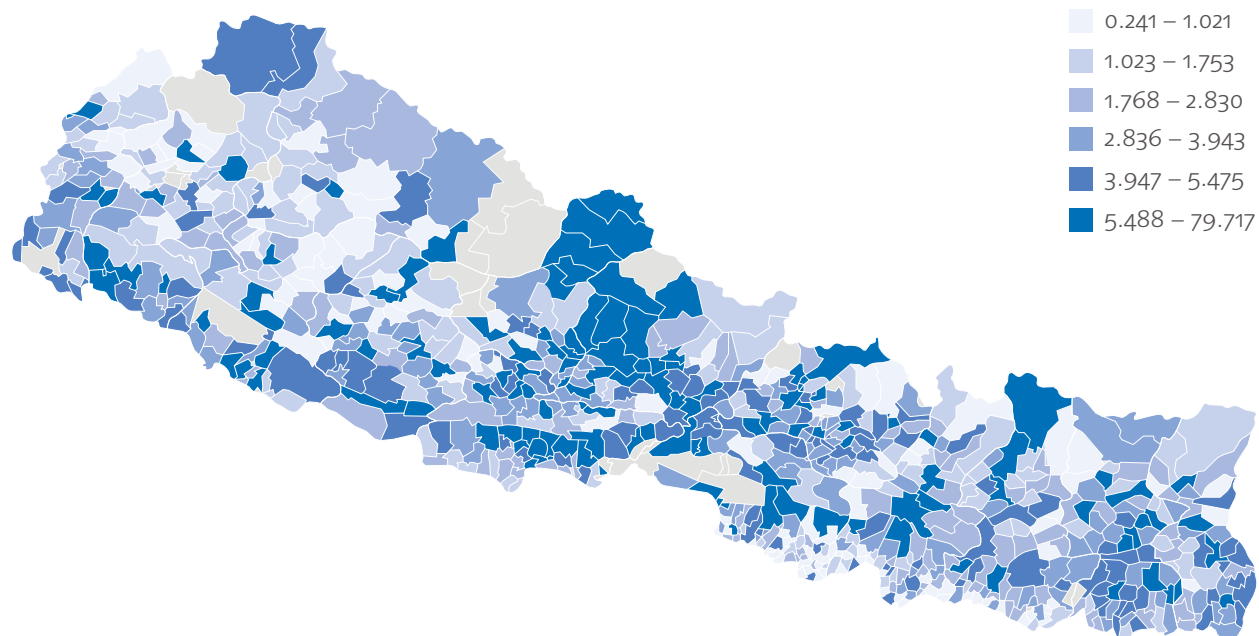
The project also helps farmers connect with markets, provides training and access to climate-smart economic opportunities in agriculture, water resource management, and community forestry. It facilitates the harmonisation of DRR planning and climate change adaptation (CCA) strategies, and intends to empower women and disadvantaged communities to take leading roles in rural institutions and contribute to economic opportunities. Project activities were extended under Anukulan-X to scale these efforts to reach an additional 100,000 people, for an average increase of £110 per year more than during Anukulan. Another key aspect of the commercial pocket approach is the use of Community Business Facilitators (CBFs). These are last-mile input suppliers. They receive training from

the project on climate-smart agricultural products and basic plant and agricultural approaches, and subsequently use such training to recommend specific products.

While Anukulan is focused on market linkages and private sector approaches, for the extension, the project is engaging with Muktinath Bikas Bank to support microfinance loans for farmers to purchase more climate-smart agricultural products. Small loans were available through farmer groups, but in some cases were found to be too small. Crop insurance has also been trialled in the extension, to provide coverage against severe rains and hail storms. The loan component was added with the objective to help farmers purchase higher quality and more durable products (e.g. poly tarps for greenhouses) and larger drip irrigation systems. The insurance component is meant to protect these investments and increase farmers' financial security as they expand their operations.

Financial service environment in Nepal

About one third of Nepalese over the age of 15 have an account at a financial institution. This share is mainly driven by men, of which almost 50% hold active savings account, while women are at 26%. Though the share of overall account ownership is in the mid-field of the case studies included in this report, mobile banking penetration is relatively low, with less than 1% of people holding an account. Spatial disaggregation also reveals that access to financial service points greatly varies between locations (Figure 16). The Nepalese Central Bank classifies financial institutions into four different categories: commercial banks, development banks, finance companies and MFIs. As of mid-July 2016, development banks had the largest number of branches in the country.

Figure 16: Density of financial service access points in Nepal

Source: Nepal Rastra Bank – Development Bank of Nepal (2018).

Note: Total number of access points divided by total population of the same locality, multiplied by 10,000.

Low financial literacy, limited technology-based facilities and inadequate infrastructure remain among the major challenges for achieving greater financial inclusion in Nepal (Pant, n.d.). See Figure 17.

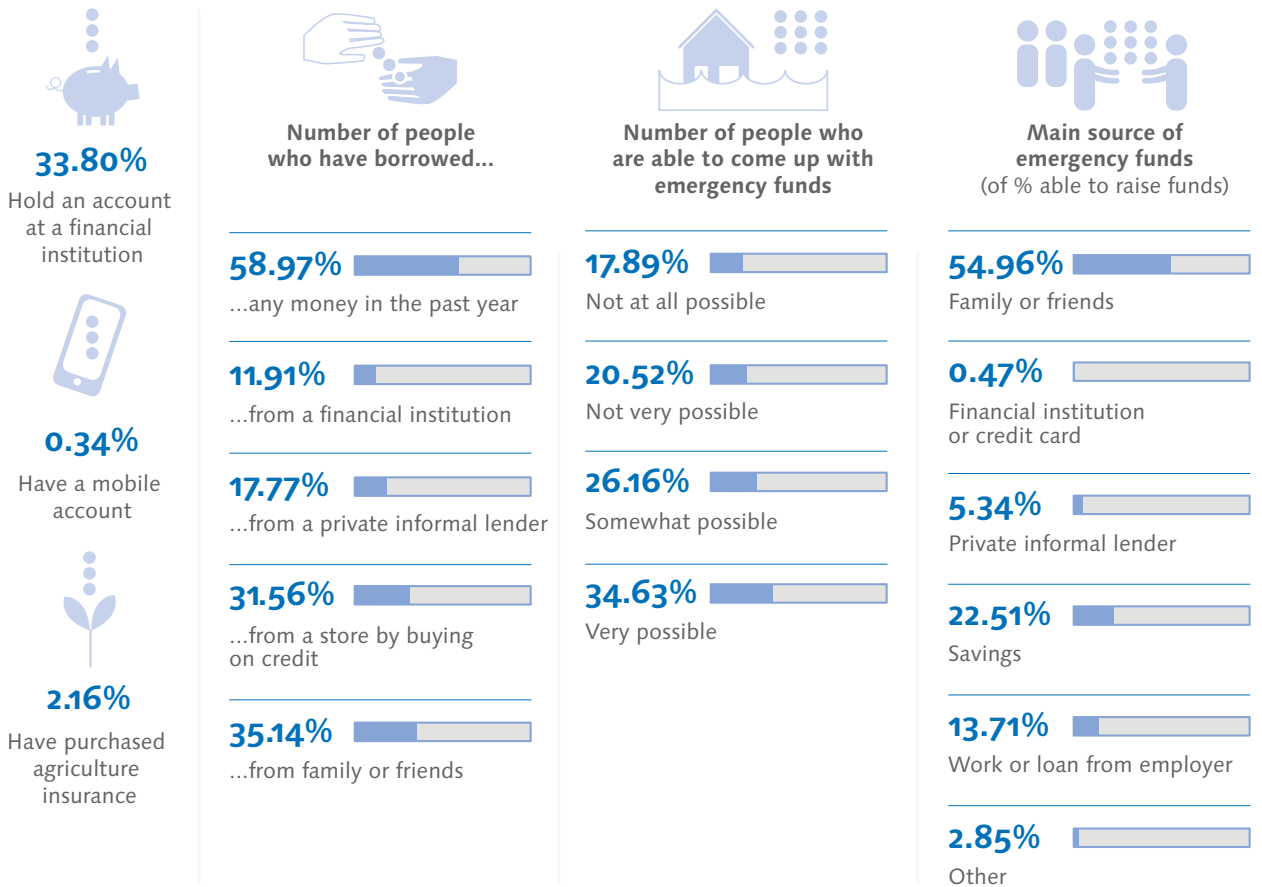
Nepal is a predominantly agricultural country, in which about two thirds of the population are dependent on agriculture for their livelihoods. While the poverty level has been declining gradually over the last two and half decades, more than one fifth of the population (21.6%) still lives below the national poverty line and the country as a whole has a Human Development Index (HDI) of 149 (National Planning Commission, 2016).²⁰ Agriculture

²⁰ <http://hdr.undp.org/en/countries/profiles/NPL>

contributes approximately 29% to the total gross domestic product (GDP) of Nepal and is seen as an important and strategic area for attempts to increase incomes and improve livelihoods at the national level, through government policies (IIDS, 2019).

Figure 17: Access to emergency finance and financial inclusion in Nepal

NEPAL



(% of those aged 15+)

Source: World Bank (2017) Global Findex Database.

Anukulan portfolio of financial service provision

While Anukulan did not include a formal financial service component under BRACED, informal group lending among farmers was already common practice in the project areas and via sub-groups within the collection centres. The project also supported the installation of revolving funds as part of the management committees at collection centres. It also established management and user committees to ensure that infrastructure is maintained. This includes Multiple Use water Systems (MUS) user committees that collect fees to cover operational and maintenance expenses, such as plumbing and larger infrastructural repairs. Marketing and Planning Committees (MPCs) coordinate cropping calendars, assess which markets to access, share market prices and government information (pests, climate, etc.), weigh produce, store produce and organise transport to market. CBFs and MPCs also provide informal loans to farmers to purchase their products once they have established strong relationships.

Project-level monitoring and evaluation has shown that the commercial pocket approach is effective in that farmers were using their increased incomes to purchase climate-smart agricultural (CSA) products, further increasing those incomes, and therefore building resilience. This was facilitated through relevant training on CSA products and practices [K19] (Villanueva et al., 2018). During implementation of Anukulan, however, it also became clear that due to a lack of access to adequate financial services there was a natural limit to how much farmers could advance. Some could not afford more sophisticated and durable products that would further increase their resilience and where investments did increase, farmers now had more to lose when severe storms or rains occurred.

Through the BRACED extension phase, Anukulan has aimed to address some of these challenges by enhancing access to credit and insurance. The project directly targets smallholder farmers with less than 1ha of land who are vulnerable to climate-related shocks and stresses and other natural hazard-related disasters in the mid and far west of Nepal. The proposed microfinance activity bridges the existing gap that smallholders face in accessing capital for purchasing more expensive climate-smart technologies, such as solar pumps, MUS, and conservation agriculture machineries and equipment. Currently, private sector agricultural input suppliers (agrovets) provide credit on an informal basis to their known customers, but most smallholders are far from the agrovets and not trusted to purchase inputs on credit without such longstanding relationships. To facilitate and somewhat formalise access to credit, Anukulan has started to pilot microfinance loans at the individual and collection centre level for 3,000 farmers. The loans are provided via 12 MFIs across the six project districts. They carry 15% interest and do not require collateral in the form of savings or assets but instead build on group-based guarantees and social structures in the Nepalese highlands. Because people are afraid of losing their name and do not want to be publicly shamed as a result of loan default, repayment rates tend to be high in the area. Anukulan microfinance interventions build on previous activities of iDE Nepal in other areas of the country, where the organisation had partnered with Muktinath Bikas Bank to tailor and deliver financial services to smallholder farmers.

Next to credit, the Anukulan project supports existing crop insurance schemes implemented by the Government of Nepal to cover farmers against crop losses related to climatic hazards, pests and diseases. Two thousand farmers are being targeted by the project for activities related to insurance.

Anukulan is also piloting small-scale portable weather stations to improve weather forecasting for farmers and to potentially contribute to future index-based insurance development. In combination with insurance products, information from weather forecasts – if communicated well – could further enhance anticipatory capacity of farmers. Anukulan has conducted exchange visits with both PROGRESS and MAR projects to share lessons on financial services and private sector engagement.

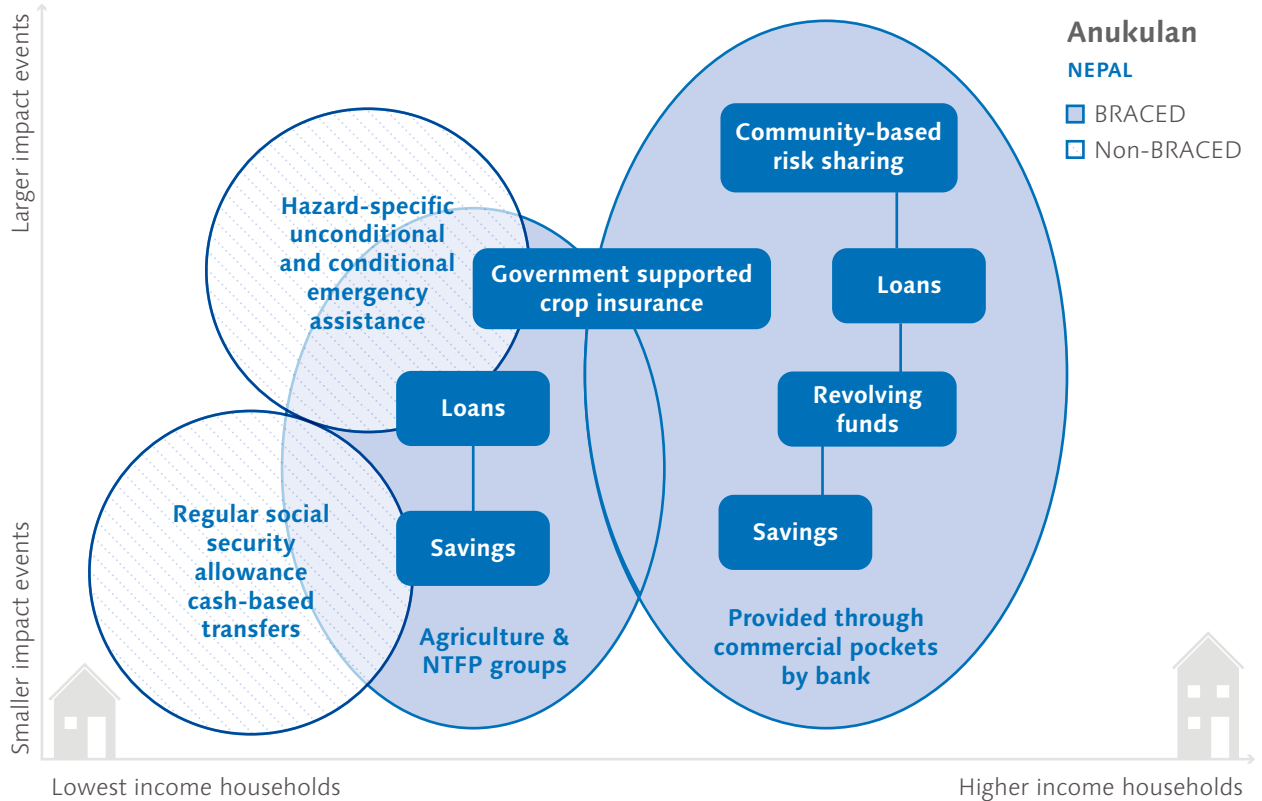
Layering financial services in the Anukulan project

The loan and insurance products fit into existing activities and complement the commercial pocket approach by allowing more advanced farmers to continue to further build their resilience to climate change. While access to loans is expected to increase investments and earning potential, insurance is used to protect these investments from certain hazards. However, implementation is at an early stage and how well the two products work together in practice in the Nepalese highland context remains to be demonstrated. See Figure 18.

The project has also recognised challenges in reaching low-income households with financial services. Low levels of financial literacy and overall financial capacity have meant that people struggle to access and use services effectively. Furthermore, banks and MFIs are hesitant to service smallholders, particularly in the rural, hilly areas of Nepal, because the transaction costs are high [K19]. Despite these challenges, building on the collection centre structure as intermediaries that can aggregate demand and facilitate the supply of loans and insurance products has, so far, appeared promising for enhancing access to services for formerly underserved clients. This group system promoted through Anukulan is different from the VSLA approach supported by MAR or PROGRESS projects because it is built around production and

commerce rather than financial services, per se. Nonetheless, similar to VSLAs, the collection centre groups provide a platform for financial literacy and business training and aggregate demand, which can help connect smallholders with access to financial services.

Figure 18: Layering financial services in the Anukulan project



Note: This is a simplified depiction of financial services and social protection systems, which aims to roughly outline the role of BRACED projects in financial service provision. We recognise that this figure is not comprehensive and may omit other relevant support systems and financial services. Design inspired by Hallegatte et al. (2017).

The Anukulan insurance pilot builds on efforts by the Nepalese Government to promote crop across the country. The government works through two different distribution channels: private

insurance companies and community-based risk pooling facilitated by the Agriculture Development Bank (ADB). For the private insurance model, premiums are calibrated based on estimated sales value of the insured crop (7% of total estimated value). Individual farmers hold the contracts, pay premiums, and are compensated for losses by the insurance company. However, this process requires strong documentation from farmers and the bank to assess claims. The ADB model is implemented on a group basis. Insured value and premiums are calculated from cost of production based on land area (premium at 8% of total cost of production) and compensation is assessed and decided upon within the group. In case no losses have occurred and no pay-outs are made, premiums remain in the community pool. In both cases, premiums are subsidised at 75% by the Nepalese government, while the remaining 25% are contributed by the farmers [K19].

Eventually, the second risk pooling model could work through cooperatives or collection centres, such as those established by the Anukulan project, and be integrated with loans and commercial activities at this level. However, it has proven difficult to raise awareness and develop capacity amongst farmers to access these insurance pools and banks have shown preference to work on the commercial model.

Rather than developing and implementing an alternative insurance scheme, Anukulan promotes government-led efforts to increase the use of crop insurance during the BRACED extension phase. Project staff were trained on both insurance models to help farmers better understand the importance and function of products, and encourage them to take out crop insurance [K19]. While the project thus has the potential to accelerate access to and the use of insurance, the schemes themselves are already embedded within public and commercial institutions in Nepal.

Tailoring financial services to context

LACK OF ADEQUATE PRODUCTS FOR REMOTE SMALLHOLDERS AND LOW LEVELS OF FINANCIAL LITERACY

Anukulan is working with a range of MFIs to support the provision of loans in remote communities in Province 5, Karnali Province and Sudurpaschim Province. Access to financial services are very limited in the rural areas of the country, and farmers must travel long distances (usually several hours each way) to reach markets and formal shops. Along with MFI partners, Muktinath Bikas Bank – a financial institution iDE had already worked with in other districts to develop and deliver adequate financial services for its smallholder target group – is expanding coverage to 32 districts with 95 branches across Nepal and into Anukulan project areas.

In order to better cater to the smallholder target groups of iDE projects, Muktinath Bank's usual loan products were adjusted in collaboration with Anukulan. This includes offering a 50% smaller loan size than usual, different lengths of repayment cycles, and a slightly reduced interest rate. Muktinath has stated that working with Anukulan significantly improved loan provisions due to the financial literacy training provided by the project. The further training on off-season vegetable farming, climate-smart agricultural practices, and connections with markets improves the farmers' ability to earn larger incomes and repay loans, which makes such types of collaborations attractive to the private bank. To date, Muktinath has struggled to enter new markets, however once established, they have become strongly embedded in the region.

REGULATION OF FINANCIAL INTERMEDIARIES

Under current regulations in Nepal, there is no legal basis for collection centres to act as financial service institutions or

formal financial intermediaries offering loans to their members. Anukulan is therefore exploring how collection centres can turn into multi-purpose or savings and credit cooperatives. In this situation, a bank or an MFI would loan to the collection centre rather than directly to each farmer. The collection centre would then organise with the farmers to distribute loans. This is expected to result in more targeted lending due to the more in-depth knowledge of farmers at the collection centre level, and would reduce the transaction costs for the financial service provider in administering the loans. With Anukulan, Muktinath Bank has also explored using mobile banking for smallholder farmers (something that it does for larger loans elsewhere). However, currently, it prefers face-to-face interactions with farmers as there are secondary benefits from the existing structures, including social pressure to repay loans.



3. SYNTHESIS AND DISCUSSION

IMAGE: CARSTEN
TEN BRINK / FLICKR

Lessons on the role of resilience projects in enhancing access to financial services for resilience

This chapter summarises key challenges for better access to financial services from the four case study countries and outlines the roles BRACED projects have taken on in addressing these.

Enabling environment and market development

Low levels of financial market development and a lack of adequate products have been identified as a key challenge for BRACED projects in aiming to sustainably support households and small businesses with financial services that would help

enhance their resilience to climate-related shocks and stresses. In an effort to overcome a challenging financial market environment, BRACED projects (e.g. MAR and PROGRESS) have partnered with financial service providers and are contributing funding and capacity-building to support (1) the development of adequate, tailored-to-context financial products and (2) the expansion of financial service providers. This has helped incentivise the engagement of independent public and private financial service providers – for whom it would otherwise be less attractive or too risky to engage in the agro-pastoralist and pastoralist contexts [K13] – to expand into underserved areas and develop new products for these contexts. In these cases, BRACED projects have played a critical role in sharing some of the risks financial service providers face in the short term in delivering products to a climate-vulnerable and low-income target group.

In other instances, government policies and preferences shifting towards better climate risk management and financing are increasingly contributing towards an environment that enables resilience projects, such as those under BRACED, to engage and shape the design and delivery of financial services in a way that is cognisant of the needs and preferences of local populations, as well as of diverse risk environments and of pre-existing strategies in place that manage them. This has been the case, for example, for the Livestock Mobility project in Senegal, where the Ministry of Livestock has been a driving force advocating for IBLI product development, provision and subsidy.

Financial sector regulation has been a further challenge to the BRACED projects engaging in financial service development and provision. In particular, this concerns: (1) legal limitations for community-based organisations, such as VSLAs or collection centres, to act as financial intermediaries; (2) unclarity around regulation of Islamic finance; and (3) a lack of regulation of

index-based insurance – a relatively new type of product in most countries. Most BRACED projects did not directly engage with regulators on these aspects, but pursued a strategy of reshaping VSLAs and collection centres into savings and credit cooperatives to formalise their roles as financial intermediaries.

Sustainability of financial service interventions

Across projects, the sustainability of financial services beyond BRACED interventions has presented a challenge. The PROGRESS consortium, for example, has helped CTS set up offices in Wajir Town and in the Habaswein sub-province, and, to increase access to financial services in the area, a third branch is in the planning process for Wajir North. However, the existing offices thus far have not achieved financial independence and viability, and are limited in capital size. Even though CTS has seen opportunities for further investments towards developing their business in Wajir, servicing a sufficient number of customers to reach a sustainable scale presents a challenge. This is particularly difficult when targeting low-income clients with smaller loan amounts, reduced servicing fees and relatively high transaction costs, which requires a larger number of customers to reach financial viability.

Similarly, the MAR project has been providing premium subsidies and loan guarantee facilities to incentivise Ethiopian MFIs to branch out into new geographic areas and service low-income customers. Engagement with local governments and livestock input providers is ongoing to identify a longer-term solution for financing premiums and loan guarantees, but no agreement has been reached yet. In addition, the MAR project is relying on a 'Private Service Provider' approach. This aims to ensure continuation of training and other support offered to VSLAs after the end of the project, but it has already experienced some challenges to reaching financial independence (Yaron et al., 2018).

Across projects, sustainability seems most promising where financial service providers have identified an economic interest in further developing and delivering the services which BRACED helped support, and where farmers and pastoralists see a value in these services.

Though this is not always an option (see previous limitation on low market development and enabling environment). Where possible, building on existing financial services already provided through commercial financial institutions, or on public social protection programmes, can be another way to ensure activities are embedded into more sustainable structures from the start. Anukulan, for instance, supports the Nepalese Government's crop insurance pilot programme through awareness-raising and capacity-building, aiming to strengthen consumer education and incentivise product take-up. While the project thus helps boost outreach in the early stages of crop insurance in Nepal, service provision will continue under the government programme after the end of BRACED. Projects are also striving for collaboration with local and national governments to take on some of the financial support to service delivery or link services with public safety nets once established, but these options are as yet less developed.

Layered approaches to financial service provision under BRACED projects

BRACED projects have mainly highlighted economic rationales for supporting the development and delivery of financial services as part of their activities. This is particularly the case for MAR, PROGRESS and Anukulan, which have embedded their financial services component within a wider logic of strengthening access to markets and economic development. This entry point also means that for some projects, addressing particular livelihood risks rather than a holistic approach to financing a variety of risks is the main focus.

The Livestock Mobility project is somewhat of an exception to this; it undertakes a deeper assessment of a diverse range of risks to mobile pastoralists, analyses existing adaptation strategies and engages in intensive stakeholder consultation to validate risk assessments and explore risk financing options. Livestock Mobility, more clearly than the other three case studies, places an emphasis on a holistic and layered approach to managing pastoralist livelihood risks of different natures, frequencies and intensities. The project has highlighted the importance of embedding any livestock insurance product within the strategies already employed by pastoralists and agro-pastoralists to manage livelihood risks. On the other hand, considerations of how livestock insurance interacts with other types of informal or formal financial services used by pastoralists, and how it fits within a portfolio of financing resilience, is limited.

Financial services supported under BRACED cover a wide spectrum of approaches to financing livelihood risks and incentivising adaptation, including risk reduction, risk retention, risk pooling and risk transfer, though the projects have different emphases on these components. Some are covering a variety of instruments along the spectrum (e.g. MAR), while others focus on specific components (e.g. PROGRESS). They have also engaged with existing government social protection and risk financing initiatives to a varying degree. Anukulan, for instance, has been building on and promoting government crop insurance pilots in Nepal. In other cases, projects have designed and delivered financial services from the ground up, in part because similar pilots did not yet exist in the areas of intervention.

Irrespective of their specific entry points and rationale, all four case studies have revealed a potential to link the provision of formal and informal financial services through resilience programmes, such as BRACED, more closely with activities in the humanitarian

and social protection fields. This includes social safety nets such as the HSNP in Kenya or the PSNP in Ethiopia, as well as publicly subsidised crop or livestock insurance in Kenya, Nepal and Senegal. Linking could mean, for instance, piggybacking on financial infrastructure (e.g. bank account provision and mobile money agent networks) built through social assistance programmes to deliver additional financial services; or informing the provision of formal financial services by private sector providers through the grassroots knowledge on financial service needs generated through BRACED. This would help cover a greater variety of risks, reach specific target groups in line with aims and theories of change of the projects, and eventually enhance the potential for activities to scale up and increase sustainability in the longer run. Nonetheless, there is also room to be more strategic about developing and delivering financial services in a way that is complementary to larger government programmes to ensure critical gaps in access to such services can be filled.

BRACED projects have largely considered gaps in access to financial services for specific target groups as a main factor to inform their interventions. The MAR and PROGRESS projects, for instance, have a focus on reaching different socioeconomic groups of people by supporting a variety of informal and formal financial services, and actively driving the vertical integration of various types of services. Both support VSLAs through training and complementary activities, and link them with formal and semi-formal financial services provided through MFIs or SACCOs. However, projects also expressed a need to better understand how people use the financial services they help provide, especially formal loans. In the PROGRESS project, for example, it was unclear to what extent financial institutions, such as CTS, were supporting low-income households versus providing larger-scale financing to businesswomen and -men, who already had

a certain level of assets and savings accumulated that they could use as collateral (the latter seems to be the case). Furthermore, the IPs strive to better understand whether loans are used as a way to cope in times of crises, or to invest in new business opportunities when times are good. Research undertaken through BRACED helped fill some of these knowledge gaps in Kenya and Senegal (Weingärtner et al., 2019; Syll et al. 2019).

Similarly, at project level, there was limited understanding of the overlaps of beneficiaries reached by financial service interventions and those targeted by governments' regular or emergency cash transfer programmes and other social protection measures, such as publicly subsidised insurance. Though some project target populations, especially lower-income groups vulnerable to climate-related shocks and stresses benefiting from support to VSLAs, may also be beneficiaries of these public safety nets. There seems to be limited strategic engagement with social assistance mechanisms of the national government at project level, in the sense of aligning targeting or actively making use of complementarities between the two.²¹ Taking these considerations into account would be important for ensuring that financial services supported through resilience projects are truly driven by the demands of the most vulnerable.

Figure 19 summarises how BRACED projects analysed in this study have covered different parts of the spectrum along the various components that make up a layered approach to financing resilience as identified in Section 1.²² A similar analysis of existing

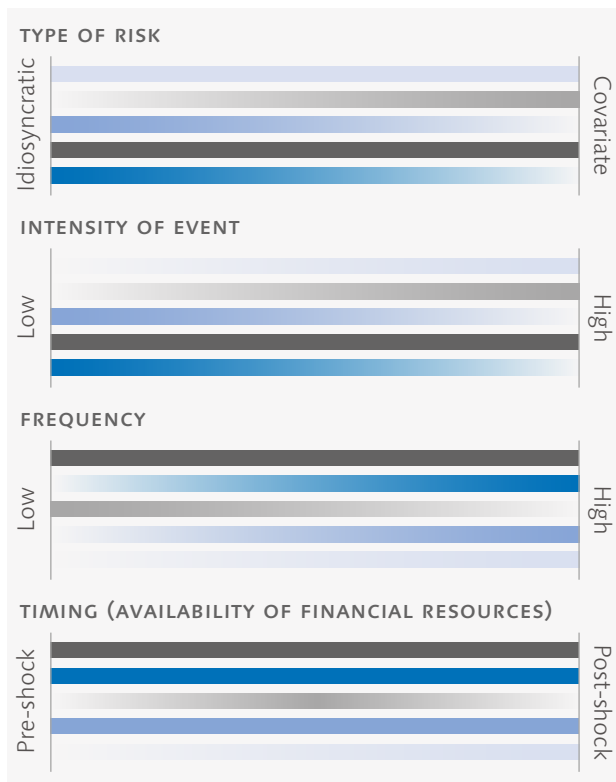
²¹ For a closer investigation of linking financial services with social protection in Kenya, see Weingärtner et al. (2019).

²² Note that other types of services might be available to BRACED beneficiaries in the respective study areas, but these are not reflected in Figure 19.

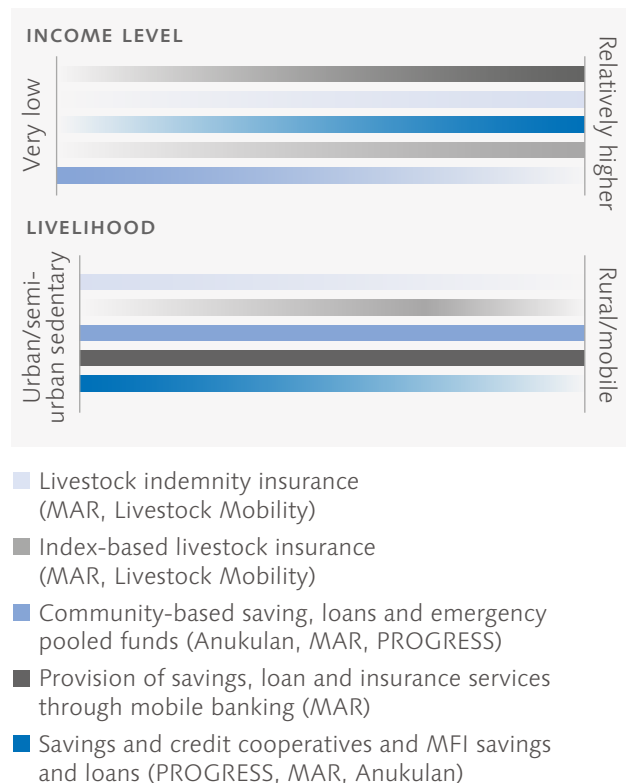
instruments that facilitate access to financial resources – through informal community-based mechanisms, formal financial services, public safety nets and other channels – could help inform future resilience programming and strengthen a more comprehensive approach to financing resilience by identifying critical gaps in financial service provision. The first step in such a process would be to assess financial resources available to individuals, households and businesses to support various resilience capacities (i.e. to start with analysing the status quo in the financial architecture) then to assess gaps and needs for financial services, and then to identify adequate mechanisms based on the dimensions shown in Figure 19.

Figure 19: A layered approach to financial service provision in BRACED projects

Risk-related considerations



Target group and its characteristics



Note: Income level indications for insurance are under the assumption the premiums are not, or not fully, subsidised.

Tailoring financial services to context

Developing new financial products and tailoring financial services to context has been required in all projects due to the specific characteristics of BRACED project intervention areas. Common challenges and needs for adjustments were related to the remoteness of project locations, for instance in the scarcely populated arid and semi-arid zones in Ethiopia, Kenya, Nepal and Senegal. Another common barrier requiring product tailoring and integration with technical support and training was related to culture. This includes financial behaviour as well as the need for specific products related to faith or preference based on past experiences. Limited market development and country or region-specific policy and regulatory environments required further innovation or adaptation of financial services to work in BRACED project contexts in all four countries.

Across projects, partnerships between private sector financial service providers, governments, communities and civil society organisations, and experts in financial product development and specific sectors has proven vital for ensuring financial services are tailored to context and fit for purpose in building resilience and strengthening adaptation to climate-related shocks and stresses. Furthermore, in the case of Senegal, a policy dialogue process carried out over several months has helped engage various stakeholders (e.g. representatives of pastoralist organisations, researchers, government, insurance companies, NGOs and donors) in identifying whether and how to tailor services already operational in other countries to local contexts.

Conclusions and ways forward

Evidence on the role of financial services and financial inclusion in strengthening resilience to climate-related shocks and stresses is growing. The pathways through which these services contribute to resilience are also increasingly well understood. However, in what way resilience programmes are engaging with financial service development and delivery, and where their strengths are and where major challenges lie, is less established. Therefore, this paper assessed the ways in which resilience programmes under BRACED have engaged in financial service development and delivery based on original data from project documents and key informant interviews. In particular, the research focused on whether and how BRACED projects have supported a layered and tailored approach to financial service provision, which (1) addresses various types of hazards, frequency and intensity of events, target groups and time scales (layering) and (2) caters to local context and needs (tailoring) based on four case studies from Ethiopia, Kenya, Nepal and Senegal. The following paragraphs summarise main findings.

Summary of findings and areas for further research

Existing evidence shows that well-designed and tailored-to-context formal, semi-formal and informal financial services can strengthen the resilience of individuals, households and business to climate-related shocks and stresses through various pathways. This includes mitigating impacts from shocks, supporting people to be better prepared and helping them smooth consumption while avoiding negative coping strategies (Moore et al., 2019; Demirgüç-Kunt et al., 2017a). Nonetheless, individual services are also limited in the scope of risks they can help address and the resilience capacities they can support.

A layered approach to financing resilience through a variety of instruments – including financial services such as savings, credit, transfers and insurance, as well as (adaptive) public safety nets backed by budget allocations, emergency funds, risk pools or contingent finance – can strengthen the resilience of households and small businesses by addressing risks of different natures and events of diverse frequency and intensity. They also help reach different target groups at various timescales and cater to different rationales and expected positive outcomes, and avoided negative impacts from climate-related shocks and stresses. Resilience projects have a role to play in helping fill some of the gaps in financial service provision to support resilience by generating a better understanding of local needs and preferences and incentivising the development of adequate, tailored-to-context financial services in partnership with financial institutions, technical experts and governments. Under BRACED, this has been done by driving financial literacy and consumer education, engaging in financial product innovation, establishing links between informal and formal financial institutions (for example connecting VSLAs with MFIs and SACCOs), or partnering with financial institutions to share some of the risk of venturing into underserved geographic areas. This is as much about strengthening institutions and markets in different contexts as it is about tailoring products to the needs of individuals.

However, scaling activities to reach financial viability and ensuring sustainability of service provision have been major challenges to financial service delivery through BRACED projects. This is not new to resilience programming, but has previously been a major challenge for financial service provisions by NGOs. Though it will only be possible to assess long-term sustainability sometime after the end of the programme, at this point, strategies that integrate services with existing financial markets, link with government social protection and financial inclusion initiatives, build on local

institutional frameworks, and entail clear incentives for continued engagement of governments or private financial service providers appear most promising.

Among BRACED project case studies, the rationale for engaging in the development and provision of financial services is primarily one of climate-resilient economic development. Better access to such services is expected to have a positive impact on: access to markets for households or individuals engaged in farming, livestock and other small businesses; increased productive investments; livelihood diversification; and the uptake of climate-smart agriculture. The various potential impacts of financial services are well perceived by projects. In some cases, specific pathways to resilience outcomes, and how they materialise in practice in the project contexts (e.g. looking into what loans are used for, which kinds of investments are prioritised and how climate- and weather-related risks are taken into account in financial decision-making), were also considered. In other cases, these remain to be assessed in greater detail, in part owing to the time required for developing and delivering financial services, which meant that in some cases services were only up and running in the last year of implementation.

Further evidence is also required on the role of financial services for resilience in relation to the 'leaving no one behind' pledge of the 2030 Sustainable Development Agenda. As reflected in the four case studies of this report, formal financial services usually 'do not reach the poorest of the poor' nor those most vulnerable to climate-related shocks and stresses (Hammill et al., 2008). Even when they do, for example through public subsidies, the poorest can not necessarily use these services to their full potential, and care should be taken to not treat financial services as a replacement to public safety nets for those who need additional support, (e.g. due to age or disability).

Nonetheless, linking formal financial services with social protection programmes and informal community-based financial institutions such as savings groups – as done by some BRACED projects in this study – can be a way to facilitate access to more advanced financial services where these are needed. Experience from BRACED has shown the importance of complementing such activities with training on financial literacy and business skills.

To this end, there is an important need to understand and make use of complementarities between different financial services and social protection systems in resilience programming.

Putting financial capacities of households at the centre of such an analysis could help identify critical gaps in financing resilience along two dimensions. Firstly, the nature, intensity and frequency of events people struggle to prepare for, cope with and adapt to; and secondly, the way in which households with diverging socioeconomic characteristics can have access to and benefit from different types of services.

Recommendations for financial service interventions in resilience programming

Based on findings from existing literature and lessons from the four BRACED case studies, this paper presents a range of recommendations for future resilience programming with a financial service component. These are directed at donors and practitioners.

Originally, the BRACED programme provided a laboratory for resilience-building through the development of multiple initiatives in the Sahel, Horn of Africa and Asia. This paper strongly advocates for a critical reflection on evidence and uncertainties about the impact of financial services on climate resilience and economic development. In particular, the conditions required to reach sustainability and impact at scale must be addressed.

EMBED FINANCIAL SERVICE DEVELOPMENT AND DELIVERY WITHIN EXISTING FINANCIAL MARKETS, SOCIAL PROTECTION PROGRAMMES AND FINANCIAL CAPACITIES OF TARGET HOUSEHOLDS

This paper has argued that existing frameworks advocating for a layered approach to risk financing can assist resilience programming in the choice of suitable entry points for financial service development and provision that can strengthen resilience to climate-related shocks and stresses more comprehensively in different contexts. Figure 19 outlines the different dimensions of layering financial services that can provide guidance in this process. They include the type of hazard, expected intensity and frequency of events, timing for the availability of financial resources, as well as target groups and their characteristics (e.g. income, livelihoods, geographic location, etc.).

The first step of such a process would be to assess financial resources available to individuals, households and businesses to support various resilience capacities, (i.e. to start with analysing and illustrating the status quo in the financial architecture and service delivery), then to assess gaps and needs for financial services, and then to identify adequate mechanisms to fill these gaps. Developing clear criteria for targeting services and comparing them with existing programmes directed towards expected beneficiaries – including social protection programmes – can help to prevent overlap and determine complementarities with other initiatives.

CONDUCT DETAILED ANALYSIS OF THE ENABLING INSTITUTIONAL AND REGULATORY ENVIRONMENT BEFORE IMPLEMENTING FINANCIAL SERVICE INTERVENTIONS

BRACED activities have been implemented in a context of limited financial market development and very low levels of financial inclusion, often in marginalised and remote places. As such, it is essential to calibrate the level of programme

effort and intervention to this context. Servicing remote areas and stemming some of the initial market development requires significant levels of investment to support financial service pilots. While publicly funded programmes and NGOs may have a role to play in providing initial short-term support (e.g. by incentivising expansion of financial service providers, strengthening financial literacy or informing product development based on local knowledge), the efficacy of NGO engagement is clearly an important question, especially in the longer term. Though financial services may eventually produce high return on investment by driving future development, the risks associated with engaging in such kinds of activities should be assessed through feasibility studies and market analysis, rigorously undertaken in advance of developing financial service interventions. This is also essential to reduce information asymmetries between financial institutions and programme actors, or donors, willing to invest.

DESIGN FINANCIAL SERVICE ACTIVITIES BASED ON A DETAILED THEORY OF CHANGE (TOC) FOR PATHWAYS TO RESILIENCE IMPACTS

Recent reviews of empirical research have shown mixed impacts of financial services and highlighted the importance of tailoring services to context (Moore et al., 2019; Demirgüç-Kunt et al., 2017a). This should include considerations of the existing financial markets, production systems, livelihood practices, risk environments, adaptation strategies and the needs and preferences of the target group. In designing financial service activities, there should be a clear understanding among all partners involved about the expected contribution of any such service towards resilience outcomes. Developing a detailed ToC in advance of design and implementation is crucial in establishing this understanding, and can help identify synergies between different types of services. It also serves as a basis for

monitoring and reviewing activities, as well as for assessing the impacts of financial services in a robust way. Any ToC should consider the demand side as well as the supply side of financial services. This will ensure a reasonable level of uptake. Moreover, conducting market analyses, including for informal financial services, would help prevent the development of services that are not fit for purpose.

COMPLEMENT FINANCIAL SERVICES WITH TRAINING, CLIMATE AND WEATHER INFORMATION, AND OTHER RESILIENCE-BUILDING MEASURES

Enhancing access to financial services alone does not automatically lead to any expected resilience outcomes. Operating in underserved contexts, all BRACED case study projects have experienced challenges with low levels of financial literacy, a lack of business skills, and limited access to supporting services or structures, such as high-quality agricultural inputs or weather forecasts. Delivering training on financial literacy, business skills and resilience practices can help better protect individuals, households and businesses from taking on unsustainable financial burdens. It is also greatly appreciated by financial institution partners because it brings down transaction costs and increases the capacity of clients to manage their finances and repay on time.

Finally, resilience programmes should further explore incentives for using financial services to enhance adaptive capacity. While some projects have emphasised the importance of loans in facilitating investments in climate-smart technologies, other instruments, such as goal-based savings, remain underutilised despite promising results.²³

²³ For an overview of studies on this aspect, see Moore et al. (2019).

BUILD SUSTAINABILITY AND MECHANISMS FOR SCALING UP SERVICES INTO PILOTS FROM THE START

To enhance the potential for sustainable financial service provision, resilience programmes aiming to engage in the design and provision of services should set up partnerships with financial service providers and engage with relevant national or local governments. This is critical to ensure buy-in and increase the potential for the continuation of activities post-project. Projects may consider subsidising bank accounts or insurance premiums in a pilot stage to demonstrate the impact of financial services for resilience, with the aim of enhancing engagement from the government and private sectors. In such cases, rigorous mechanisms for evaluating and demonstrating impact to key stakeholders, as well as a realistic exit strategy, should be put in place before the start of implementation. Identifying (economic) interests and incentives for various actors to engage in financial service-related activities at the beginning of the programme, for instance through stakeholder mapping and the development of a business case, is recommended to identify suitable partners that have the capacity to operate and scale services. Where possible, to support sustainability, activities should build on existing in-country financial inclusion and resilience initiatives, and link with financial services already provided through commercial financial institutions or on public social protection programmes.

References

- Amha, W. and Kifle, A. (2013). AEMFI performance analysis report. *Bulletin 9*. Available at: www.aemfi-ethiopia.org/performance-report/90-performance-analysis-report-bulletins
- Baez, J., de la Fuente, A. and Santos, I. (2010). *Do Natural Disasters Affect Human Capital? An Assessment Based on Existing Empirical Evidence*. Bonn, Germany: IZA (Institute for the Study of Labor), Discussion Paper Series, September, No. 5164.
- Banerjee, A., Duflo, E., Glennester, R. and Kinnan, C. (2015). 'The Miracle of Microfinance? Evidence from a Randomized Evaluation'. *American Economic Journal: Applied Economics*, 7(1): pp. 22–53. Bill and Melinda Gates Foundation, Central Bank of Kenya and FSD Kenya (2016). FinAccess geospatial mapping 2015. Harvard Dataverse, V1. <http://dx.doi.org/10.7910/DVN/SG589T>
- BRACED/MAR (2017). *Improving Financial Access through VSLAs*. Presentation at the National Resilience Forum, given in December in Hawassa Ethiopia.
- Brune, L., Gine, X., Goldberg, J. and Yang, D. (2016). 'Facilitating Savings for Agriculture: Field Experimental Evidence from Malawi'. *Economic Development and Cultural Change*, University of Chicago Press, 64(2): pp. 187–220.
- Byrne, K.G. and Anderson, T. (2015). 'Religion and money: Is Islamic banking the way forward for Ethiopians?' *The Guardian*. Published on 19 March. Available at: www.theguardian.com/global-development-professionals-network/2015/mar/19/religion-money-is-islamic-banking-the-way-forward-for-ethiopians
- Carter, M., de Janvry, A., Sadoulet, E., and Sarris, A. (2014). 'Index-based weather insurance for developing countries: A review of evidence and a set of propositions for up-scaling'.

Working Paper. Available at: https://basis.ucdavis.edu/sites/g/files/dgvnsk466/files/2017-02/Carter%20et%20al%20review_o.pdf

Carter, M., Little, P.D., Mogues, T. and Negatu, W. (2007). 'Poverty Traps and Natural Disasters in Ethiopia and Honduras'. *World Development*, 35(5): pp. 835–856.

Central Bank of Kenya (2015). *Mobile Payments*. Rates and Statistics. Available at: www.centralbank.go.ke/index.php/retail-payments-2/mobile-payments

Clarke, D. and Dercon S. (2009). *Insurance, Credit and Safety Nets for the Poor in a World of Risk*. Working Paper No. 81, New York: United Nations Department of Economics and Social Affairs (UN/DESA). Available at: <https://doi.org/10.18356/f51c597d-en>

Clarke D. and Dercon S. (2016). *Dull Disasters? How Planning Ahead Will Make a Difference*. New York: Oxford University Press.

Collier, B. (2013). 'Financial Inclusion and Natural Disasters'. *Theses and Dissertations—Agricultural Economics*. 14. University of Kentucky. https://uknowledge.uky.edu/agecon_etds/14/

Dahir, A.L. (2017). 'Kenya aims to become the next global centre of Islamic finance'. *Quartz Africa*. Published on 13 April. Available at: <https://qz.com/africa/956641/kenya-aims-to-become-the-next-global-center-of-islamic-finance/>

De Janvry, A. and Sadoulet, E. (2016). 'Risk reduction for smallholder farmers: Making weather index insurance work'. Presentation at IFPRI Workshop on *Opportunities for the new PMFBY Agricultural Insurance Program*. New Delhi, 21 December 2016. Available at: www.slideshare.net/southasia-ifpri/ifpriindex-insurance-in-a-context-of-broader-risk-management-strategiesalain-de-janvry

Delavallade, C., Dizon, F., Hill, R. and Petraud, J.P. (2015). *Managing Risk with Insurance and Savings: Experimental Evidence for Male and Female Farm Managers in the Sahel*, SALDRU Working Papers 142. Cape Town, South Africa: Southern Africa Labour and Development Research Unit, University of Cape Town. Available at: http://opensaldru.uct.ac.za/bitstream/handle/11090/775/2015_142_Saldruwp.pdf?sequence=1

DeLoach, S.B. and Lamanna, E. (2011). 'Measuring the Impact of Microfinance on Child Health Outcomes in Indonesia'. *World Development*, 39(10): pp. 1808–1819.

Demirgüç-Kunt, A., Klapper, L. and Singer, D. (2017a). *Financial Inclusion and Inclusive Growth: A Review of Recent Empirical Evidence*. Policy Research Working Paper No. WPS 8040. Washington, D.C.: World Bank Group. Available at: <http://documents.worldbank.org/curated/en/403611493134249446/Financial-inclusion-and-inclusive-growth-a-review-of-recent-empirical-evidence>

Demirgüç-Kunt, A., Klapper, L. and Singer, D. (2017b). 'What do we know about the link between financial inclusion and inclusive growth?' [Blog] *All About Finance*. World Bank Group. Published on 6 June. Available at: <http://blogs.worldbank.org/allaboutfinance/what-do-we-know-about-link-between-financial-inclusion-and-inclusive-growth>

Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S. and Hess, J. (2018). *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*. Washington, D.C.: World Bank Group. Available at: <http://documents.worldbank.org/curated/en/332881525873182837/The-Global-Findex-Database-2017-Measuring-Financial-Inclusion-and-the-Fintech-Revolution>

Dercon, S. (2002). 'Income risk, coping strategies, and safety nets'. *World Bank Research Observer*, 17(2): pp. 141–166.

Dupas, P. and Robinson, J. (2013). 'Savings Constraints and Microenterprise Development: Evidence from a Field Experiment in Kenya'. *American Economic Journal: Applied Economics*, 5(1): pp. 163–92.

Dupas, P., Karlan, D., Robinson, J. and Ubfal, D. (2016). *Banking the Unbanked? Evidence from Three Countries*. Working Papers, No. 22463. Cambridge, U.S.A.: National Bureau of Economic Research (NBER) Inc.

Fava, F., Upton, J., Banerjee, R., Taye, M. and Mude, A. (2018). *Pre-feasibility study for Index-Based Livestock Insurance in Niger*. ILRI Research Report 51. Nairobi: International Livestock Research Institute (ILRI).

Federal Ministry for Economic Cooperation and Development (BMZ) (2015). *Disaster Risk Management: Approach and Contributions of German Development Cooperation*. Berlin & Bonn, Germany: Federal Ministry for Economic Cooperation and Development.

Bill and Melinda Gates Foundation, Central Bank of Kenya, FSD Kenya (2014). Mapping financial inclusion: Kenya geospatial data launch. Nairobi, Kenya: FSD Kenya. [Presentation given on 13 March 2014.]

FSD Kenya (2016). Data on financial service provision. Nairobi: FSD Kenya. Available at: <https://fsdkenya.org/knowledge-hub/dataset/>

FSD Kenya (2017). *Annual Report 2016*. Nairobi: FSD Kenya. Available at: <http://s3-eu-central-1.amazonaws.com/fsd-circle/wp-content/uploads/2017/06/05112253/17-07-05-FSD-Annual-report-final-web-version.pdf>

Gebreselassie, E. (2017) 'As wild weather hits crops, Ethiopian women turn to savings'. [Blog] News as found on the *BRACED*

website. Published on: 19 December. Available at:

www.braced.org/news/i/?id=66258d03-e559-4cc8-94e4-64c7344e2cfb

GFDRR (Global Facility for Disaster Reduction and Recovery), World Bank Group and Swiss Confederation (2014). *Financial protection against natural disasters: An Operational Framework for Disaster Risk Financing and Insurance*. Washington D.C.: International Bank for Reconstruction and Development/ International Development Association or The World Bank. Available at: www.gfdr.org/sites/default/files/documents/Financial%20Protection.pdf

Ghesquiere, F. and Mahul, O. (2010). *Financial protection of the state against natural disasters: a primer*. Policy Research working paper, No. WPS 5429. Washington D.C.: World Bank.

GIZ and MCII (2017). 'Advancing Climate Risk Insurance Plus (ACRIplus). Extreme Weather Events and Risk Transfer'. Bonn and Eschborn: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

Global Index Insurance Facility (2019). *What is basis risk?* [Online] Index Insurance Forum. Available at: <https://indexinsuranceforum.org/faq/what-basis-risk>

Global Partnership for Financial Inclusion (GPFI) (2017). *G20 Financial Inclusion Action Plan (FIAP)*. July 2017. Available at: www.gpfi.org/publications/g20-financial-inclusion-action-plan-fiap-2017

Hallegatte, S., Vogt-Schilb, A., Bangalore, M. and Rozenberg, J. (2017). *Unbreakable: Building the Resilience of the Poor in the Face of Natural Disasters*. Climate Change and Development. Washington D.C.: World Bank.

Hammill, A., Matthew, R. and McCarter, E. (2008). 'Microfinance and Climate Change Adaptation'. *IDS Bulletin*, 39(4): pp. 113–122.

Haworth, A., Frandon-Martinez, C., Fayolle, V. and Simonet, C. (2016). *Climate resilience and financial services*. BRACED Working Paper. London: Overseas Development Institute (ODI).

Hujale, D. and Mutisya, G. (n.d.) *People on the move: Islamic Finance for Pastoralists in Northern Kenya*. Presentation at the National Stakeholder Conference for Resilience. Nairobi: Mercy Corps and Crescent Takaful SACCO.

IIDS (Institute for Integrated Development Studies) (2019). *Nepal Economic Outlook 2018–19*. Kathmandu, Nepal: IIDS, pp. 4. Available at: www.iids.org.np/publication/nepal-economic-outlook-2018-19

International Monetary Fund (IMF) (2017). *Multi-Country Report: Ensuring financial stability in countries with Islamic Banking – case studies*. Country Report No. 17/145. Washington, D.C.: International Monetary Fund.

IPCC (Intergovernmental Panel on Climate Change) (2012). *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation*. A Special Report of Working Groups I and II of the IPCC [Field, C.B., Barros, V., Stocker, T.F., Qin, D., Dokken, D.J., Ebi, K.L., Mastrandrea, M.D., Mach, K.J. Plattner, G.K., Allen, S.K., Tignor, M., and Midgley, P.M. (Eds.)]. Cambridge, U.K. and New York U.S.A.: Cambridge University Press.

Jensen, N.D., Barrett, C.B. and Mude, A.G. (2016). 'Index Insurance Quality and Basis Risk: Evidence from Northern Kenya'. *American Journal of Agricultural Economics*, Agricultural and Applied Economics Association, 98(5): pp. 1450–1469.

- Johnson, S. and Niño-Zarazúa, M. (2011) 'Financial Access and Exclusion in Kenya and Uganda'. *The Journal of Development Studies*, 47(3): pp. 475–496.
- Karim, N., Tarazi, M. and Reille, X. (2008). *Islamic Microfinance: An Emerging Market Niche*. CGAP (Consultative Group to Assist the Poor) Focus Note No. 49. Washington D.C.: CGAP. Available at: www.cgap.org/sites/default/files/CGAP-Focus-Note-Islamic-Microfinance-An-Emerging-Market-Niche-Aug-2008.pdf
- Karlan, D., Kutsoati, E., McMillan, M. and Udry, C. (2011). 'Crop Price Indemnified Loans for Farmers: A Pilot Experiment in Rural Ghana'. *Journal of Risk and Insurance*, 78(1): pp. 37–55.
- Karlan, D., Ratan, A.L. and Zinman, J. (2014). 'Savings By and For the Poor: A Research Review and Agenda'. *The Review of Income and Wealth*, 60(1): pp. 36–78.
- Karlan, D., Kendall, J., Mann, R., Pande, R., Suri, T. and Zinman, J. (2016). *Research and Impacts of Digital Financial Services*. NBER Working Paper 22633, Cambridge, U.S.A.: National Bureau of Economic Research.
- Kellett, J., Caravani, A. and Pichon, F. (2014). *Financing Disaster Risk Reduction: Towards a coherent and comprehensive approach*. London: Overseas Development Institute. Available at: www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/9027.pdf
- Khandker, S. (2005). 'Microfinance and Poverty: Evidence Using Panel Data from Bangladesh'. *The World Bank Economic Review*, 19(2), pp. 263–286.
- Lawson-McDowall, J., Bekele, T. and Presler-Marshall, E. with Berhanu, K., Gebre, B., Perezniето, P. and Jones, N. (2016). *Savings and Self Help Groups in Ethiopia: A review*

of programming by five NGOs. London: Overseas Development Institute. Available at: https://learn.tearfund.org/~/_/media/files/tilz/churches/self_help_groups/2016-odi-savings-and-self-help-groups-in-ethiopia-en.pdf?la=en

Le Quesne, F., Tollman, J., Range, M., Balogun, K., Zissener, M., Bohl, D., Souvignet, M., Schuster, S., Zwick, S., Phillips, J., Wehnert, B. and Kreft, S. (2017). *The Role of Insurance in Integrated Disaster and Climate Risk Management: Evidence and Lessons Learned*. Report No. 22. Bonn, Germany: UNU-EHS.

Linnerooth-Bayer, J. and Hochrainer-Stigler, S. (2015). 'Financial instruments for disaster risk management and climate change adaptation'. *Climatic Change*. 133(1): pp.1–16. DOI: 10.1007/s10584-013-1035-6.

Luxbacher, K. and Goodland, A. (2011) 'World Resources Report Case Study. Building Resilience to Extreme Weather: Index-Based Livestock Insurance in Mongolia'. *World Resources Report*. Washington, D.C.: World Resources Institute.

Making Finance Work for Africa (2018a). Ethiopia: Financial Sector Profile. Accessed March 2018. Available at: www.mfw4a.org/ethiopia/financial-sector-profile.html

Making Finance Work for Africa (2018b). Kenya: Financial Sector Profile. Accessed March 2018. Available at: www.mfw4a.org/kenya/financial-sector-profile.html

Making Finance Work for Africa (n.d.). Country Profile Ethiopia. Accessed August 2018. Available at: www.mfw4a.org/index.php?id=101

Making Finance Work for Africa (n.d.). Country Profile Senegal. Accessed August 2018. Available at: www.mfw4a.org/index.php?id=496#c11225

Mechler, R. (2004). *Natural Disaster Risk Management and Financing Disaster Losses in Developing Countries*. Karlsruhe: Verlag Versicherungswirtschaft.

Microfinance Information Exchange (2017). *Interactive Dashboard Senegal*. www.themix.org/finclusionlab/senegal

Moore, D., Niazi, Z., Rouse, R. and Kramer, B. (2019). *Building resilience through financial inclusion. A review of existing evidence and knowledge gaps*. New Haven: Innovations for Poverty Action.

Mosley, P. (2001). 'Microfinance and Poverty in Bolivia'. *The Journal of Development Studies*, 37(4): pp. 101–132.

National Planning Commission (2016). *14th National Plan Approach Paper* (Draft, May 2016). Government of Nepal.

Negusse, Y. (2017). *Afar MFI presentation*, at the National Resilience Forum. December, Hawassa, Ethiopia.

Nepal Rastra Bank – Development Bank of Nepal (2018). *Nepal Financial Inclusion Portal*. Available at: <https://emap.nrb.org.np/>

Noy, I, (2009). 'The macroeconomic consequences of disasters'. *Journal of Development Economics*, 88(2): pp. 221–231.

O'Brien, C., Holmes, R. and Scott, Z., with Barca, V. (2018). *Shock-Responsive Social Protection Systems Research: literature review*. 2nd edition. Oxford, U.K.: Oxford Policy Management.

OECD (Organisation for Economic Co-operation and Development) (2017). *OECD Recommendation on Disaster Risk Financing Strategies*. Paris: OECD. Accessed at: www.oecd.org/daf/fn/insurance/OECD-Recommendation-Disaster-Risk-Financing-Strategies.pdf

Pant, B. (n.d.). *Financial inclusion in Nepal: Policy Review and Prescriptions*. Nepal Rastra Bank. Available at: <https://nrb.org.np/ecorev/articles/2.pdf>

Pula Advisors (n.d.) *Climate Insurance Options for Ethiopia: Opportunities for reaching scale*. Presentation to BRACED/MAR project partners.

Republic of Senegal, Ministère de l'Agriculture et de l'Équipement Rural (2014). *Programme d'Accélération de la Cadence de l'Agriculture Sénégalaise (PRACAS)*. Volet agricole du Plan Senegal Emergent (PSE). www.ipar.sn/IMG/pdf/pracas_version_finale_officiele.pdf

Rodriguez-Oreggia, E., De La Fuente, A., De La Torre, R. and Moreno, H.A. (2013). 'Natural Disasters, Human Development and Poverty at the Municipal Level in Mexico'. *The Journal of Development Studies*, 49(3): pp.442–455.

Simonet, C., Comba, E. and Wilkinson, E. (2017). *Disasters and national economic resilience: an analysis of BRACED countries*. BRACED Working Paper. London: Overseas Development Institute. www.odi.org/sites/odi.org.uk/files/resource-documents/11323.pdf

Skoufias, E. (2003). 'Economic Crises and Natural Disasters: Coping Strategies and Policy Implications'. *World Development*, 31(7): pp. 1087–1102.

Suri, T. and Jack, W. (2016). 'The long-run poverty and gender impacts of mobile money'. *Science*, 354(6317): pp.1288–1292.

Syll, M.M.A. (2019). *Rapport de l'atelier national de partage et de réflexion sur l'assurance indicielle bétail au Sénégal*. Workshop Report. London: BRACED.

- Syll, M.M.A., Faye, C., Pouye, O. and Fadiga, M. (2019). *Perception des éleveurs pastoraux sur l'assurance indicielle bétail au bétail au Sénégal*. Dakar and London: IPAR and BRACED.
- Tesfamariam, K. and Tesfay, H. (2013). *Relative efficiency of rural saving and credit cooperatives: An application of data envelopment analysis*. Proceedings of a conference on Loan and Saving: The Role in Ethiopian Socio-economic Development in Haramaya, Ethiopia on 15–16 February.
- Thebaud, B. (2017). *Livestock insurance for mobile herders in West Africa: Workshop Proceedings*. Acting for Life.
- Thebaud, B. (2016). *The Feasibility of Index-Based Livestock Insurance (IBLI) in the West African Sahel*. Acting for Life.
- Twigg, J. (2015). *Disaster Risk Reduction, Good Practice Review 9*. Humanitarian Policy Group. London: Overseas Development Institute.
- Villanueva, P.S., Phillips, R. and Sword-Daniels, V. (2018) *Routes to Resilience: Insights from BRACED final year*. Brighton: Itad.
- Warner, K., Bouwer, L. M. and Ammann, W. (2007). 'Financial services and disaster risk finance: Examples from the community level'. *Environmental Hazards*, 7(1): pp. 32–39.
- Warner, K., Yuzva, K., Zissener, M., Gille, S., Voss, J. and Wanczeck, S. (2013). *Innovative Insurance Solutions for Climate Change: How to integrate climate risk insurance into a comprehensive climate risk management approach*. Report No. 12. Bonn: United Nations University Institute for Environment and Human Security (UNU-EHS).
- Weingärtner, L. and Pichon, F. with Simonet, C. (2017). *How self-help groups strengthen resilience. A study of Tearfund's approach*

to tackling food insecurity in protracted crises in Ethiopia. London: Overseas Development Institute.

Weingärtner, L., Ulrichs, M., Costella, C., Kohnstamm, S. and Nyukuri, E. (2019). *Linking financial services and social protection for resilience in Kenya*. BRACED Working Paper. London: Overseas Development Institute.

Wilkinson, E., Tanner, T., Simonet, C. and Pichon, F. (2015) 'The geography of poverty and climate extremes'. In: Wilkinson, E. and Peters, K. (eds.) *Climate extremes and resilient poverty reduction: development designed with uncertainty in mind*. London: Overseas Development Institute. Available at: www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/10130.pdf

World Bank (2019). *Universal Financial Access 2020*. Accessed September 2019. Available at: <https://ufa.worldbank.org/en/ufa>

World Bank (2018). *Financial Inclusion At-A-Glance*. Accessed December 2018. Available at: www.worldbank.org/en/topic/financialinclusion/overview

World Bank (2017). *Global Findex Database 2017*. Available at: <https://globalfindex.worldbank.org/>

World Bank (2015). *Toward a National Crop and Livestock Insurance Program*. Background Report. Washington, D.C.: The World Bank. Available at: <https://openknowledge.worldbank.org/bitstream/handle/10986/24444/Kenya000Toward000backgroundreporto.pdf?sequence=1&isAllowed=y>

Yaron, G. and Dutu, A. and Wilson, D. (2018). *The market-based approach to resilience in Ethiopia: qualitative evidence from South Omo*. BRACED Report. London: Overseas Development Institute. Available at: www.itad.com/wp-content/uploads/2018/09/The-market-based-approach-to-resilience-in-Ethiopia-qualitative-evidence-from-South-Omo_Final-for-Web.pdf

Zegeye, S. (2017). *Somali MFI presentation* at the National Resilience Forum in Hawassa, Ethiopia in December 2017.

Zwendu, G.A. (2014). *Financial inclusion, regulation and inclusive growth in Ethiopia*. Working Paper 408. London: Overseas Development Institute.

Annex 1: Key informants (KI)

Table A1: List of key informants interviewed

| LAST NAME | FIRST NAME | AFFILIATION | TYPE OF INSTITUTION | BRACED CONSORTIUM |
|----------------|------------|--|------------------------------|--------------------|
| Bahadur Gurung | Til | Muktinath Bank | Financial service provider | Anukulan |
| Pariyar | Madan | iDE | IP | Anukulan |
| Camara | Astou Diao | Institut Sénégalais de Recherches Agricoles Bureau d'Analyses Macro-Economiques (ISRA/BAME) | Research | Livestock Mobility |
| Powell | Annabelle | Acting for Life | IP | Livestock Mobility |
| Sow | Omar Cissé | Compagnie National d'Assurance Agricole du Sénégal (CNAAS) | Financial service provider | Livestock Mobility |
| Teillard | Sarah | Acting for Life | IP | Livestock Mobility |
| Ahmed | Kedir | Somali MFI | Financial service provider | MAR |
| Aklilu | Negusu | Farm Africa | IP | MAR |
| Alemo | Yeshiwas | Omo MFI | Financial service provider | MAR |
| Negusse | Esayas | Afar MFI | Financial service provider | MAR |
| Tasew | Tewodros | Belcash | Financial service provider | MAR |
| Tesfaye | Endasahw | Moss ICT, Mbirr | Financial service provider | MAR |
| Zegeye | Solomon | Nyala Insurance | Financial service provider | MAR |
| Burns | John | Mercy Corps | IP | PROGRESS |
| Hujale | Diyad | Mercy Corps | IP | PROGRESS |
| Mutisya | Gladys | CTS | Financial service provider | PROGRESS |
| Barno | Jaobeth | Pula Advisors | Financial service consultant | MAR |

Annex 2: Reviewed frameworks

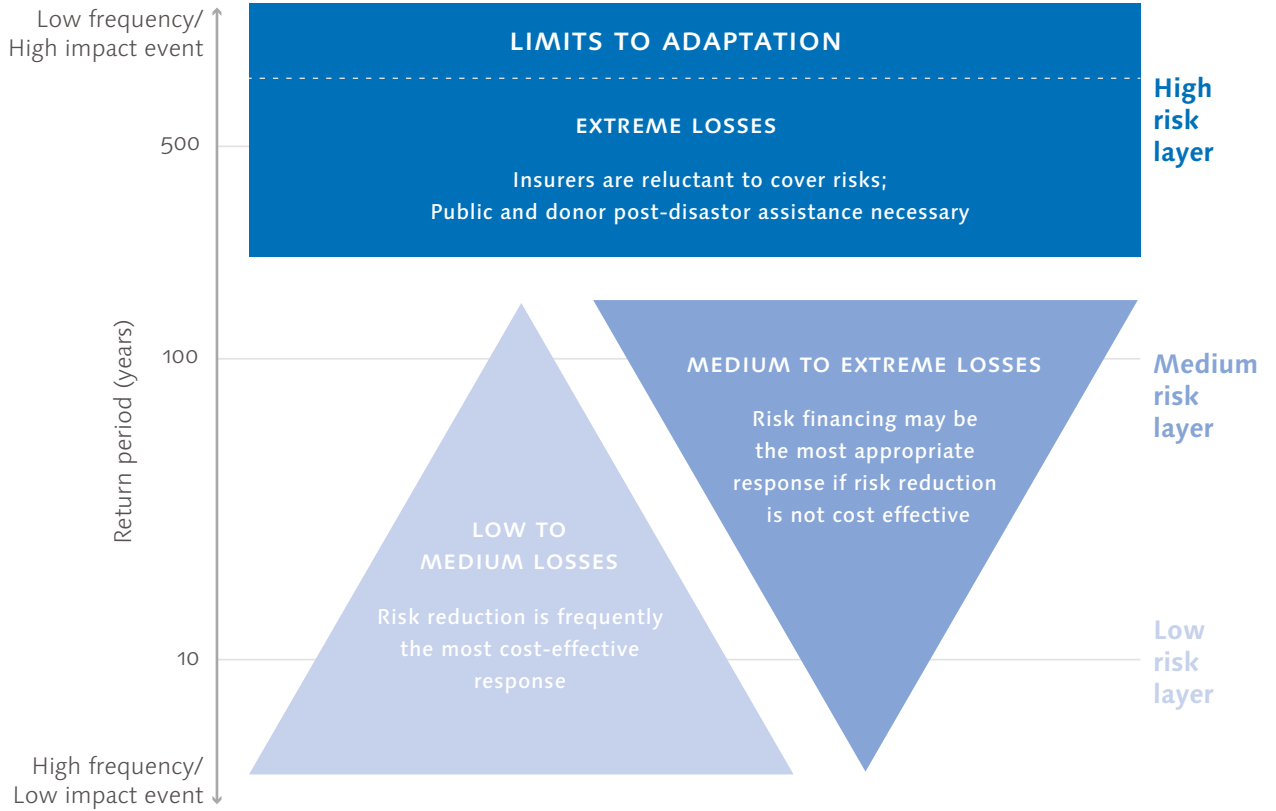
Table A2: A detailed list of reviewed frameworks

| NO. | AUTHOR | TITLE | UNIT OF ANALYSIS | RATIONALE FOR LAYERED APPROACH | OUTCOMES | RISK CHARACTERISTICS | | TYPES OF FINANCIAL SERVICES OR INSTRUMENTS CONSIDERED | TIME SCALE | OTHER DIMENSIONS CONSIDERED |
|-----|--|--|--|---|--|---|---|---|-----------------------------|------------------------------------|
| | | | | | | Type of risk considered | Frequency/intensity of event | | | |
| 1 | Linnerooth-Bayer and Hochrainer-Stigler (2015) | Financial instruments for Disaster Risk Reduction and Climate Change Adaptation | Financial services providers (private or public) | Disaster Risk reduction/humanitarian | Cost effectiveness | Disaster risk | Intensity: low/high/medium | Financial services | Time: Return period | |
| 2 | GIZ and MCII (2017) | Advancing Climate Risk Insurance Plus (ACRIplus). Extreme Weather Events and Risk Transfer | Households (but framework is flexible to be applied at different levels/community/country/regions/programme) | Disaster risk reduction/climate risk management: humanitarian | Resilience to climate risk and disasters | Disasters and climate risk | N/A | Insurance with other risk management activities | Time before and after event | |
| 3 | Le Quesne et al. (2017) | The role of insurance in integrated disaster and climate risk management (originally from Warner et al. 2013) | Country (but framework is flexible to apply at different level: community) | Risk reduction/risk financing | Resilience to climate risk and disasters | Disasters and climate risk | Frequency, intensity Probability of occurrence | Risk transfer and risk financing mechanisms (including insurance) with other risks, management activities | | Losses in proportion of GDP |
| 4 | Ghesquière and Mahul (2010) | Financial Protection of the State against Natural Disasters. A Primer | Country | Disaster Risk management/humanitarian | Resilience | Disasters | Intensity, frequency | Disaster risk financing instruments | N/A | Transfer vs. Retention |
| 5 | Clarke and Dercon (2016) | Dull Disasters? How Planning Ahead Will Make a Difference | Country | Disaster Risk management/humanitarian | Tools and accountability | Disasters | N/A | Tools for risk management (economic and financial tools) | Yes: ex ante/ex post | Transfer vs. Retention |
| 6 | Hallegatte et al. (2017) | Unbreakable (for financing residual risks) | Household and government and local authorities | Humanitarian and development | Resilience to disasters | Disasters | Intensity | Risk financing strategy | None | Poverty (poor and rich households) |
| 7 | de Janvry and Sadoulet (2016) | Risk reduction for smallholder farmers: Making weather index insurance work (based on concepts from Clarke and Dercon (2016) and Mahul (2016)) | Households | Development | Resilience to weather shocks | Weather risks | Frequency, intensity | Financial products for managing risks in agricultural production | Yes: ex post/ex ante | Risk transfer and risk retention |
| 8 | de Janvry and Sadoulet (2016) | Risk reduction for smallholder farmers: Making weather index insurance work | Households | Resilience/development | Resilience/poverty reduction | Could be any kind of risk – focus on losses | N/A | Financial products for managing risks in agricultural production | None | Gross income Economic losses |

Table A2: A detailed list of reviewed frameworks (continued)

| NO. | AUTHOR | TITLE | UNIT OF ANALYSIS | RATIONALE FOR LAYERED APPROACH | OUTCOMES | RISK CHARACTERISTICS | | TYPES OF FINANCIAL SERVICES OR INSTRUMENTS CONSIDERED | TIME SCALE | OTHER DIMENSIONS CONSIDERED |
|-----|---|---|---|-----------------------------------|-----------------------------------|---|------------------------------|---|--|--|
| | | | | | | Type of risk considered | Frequency/intensity of event | | | |
| 9 | IPCC (2012) | Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change | Programme/country can inform households | Humanitarian and development | Resilience | Climate-related risks | N/A | Disaster risk financing instruments | Yes: ex post/ ex ante | Risk reduction and residual risk management |
| 10 | Kellett, Caravani and Pichon (2014) | Financing Disaster Risk Reduction: Towards a coherent and comprehensive approach | Country but can inform sub-national and household level | Humanitarian and development | Resilience | Disasters | N/A | Financing for disaster risk reduction | None | Budget organisation: fund, budget line, development planning Risk reduction vs. risk-related activities |
| 11 | Clarke and Dercon (2009) | Insurance, credit, and safety nets for the poor in a world of risk | Households | Development with and without risk | Poverty | Any kind of risks Focus on vulnerability | N/A | Financial tools | N/A | Poverty/vulnerability |
| 12 | GFDRR, World Bank and Swiss ConfederationWB/ Swiss Confederation (2014) | Financial protection against natural disasters | Country/local government or households | Humanitarian | Protection 'natural to disasters' | Disasters (geophysical and climate-related) | Frequency intensity | Risk financing tools | Yes: post disaster/ emergency funding vs. reconstruction | Risk transfer and risk retention |
| 13 | World Bank (2015) | Toward a National Crop and Livestock Insurance Program | Crop and livestock producers | Development | N/A | Risks to crop and livestock production | N/A | Risk financing instruments and programmes | N/A | Economic activities: subsistence/ commercial/ semi-commercial |

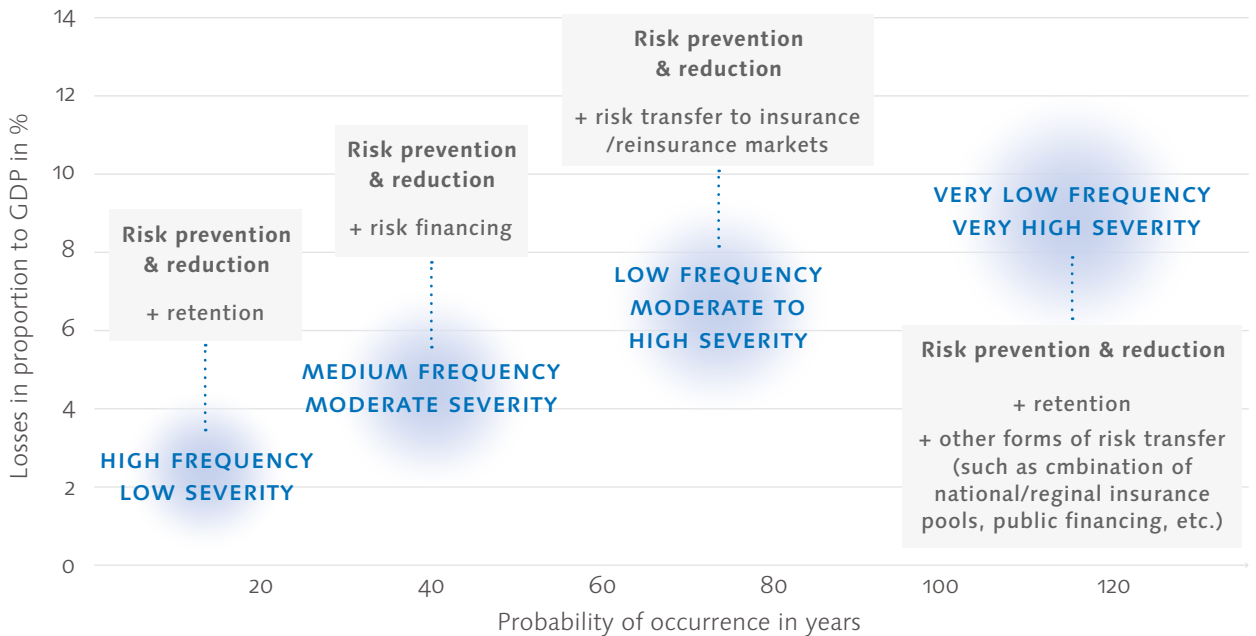
Framework 1



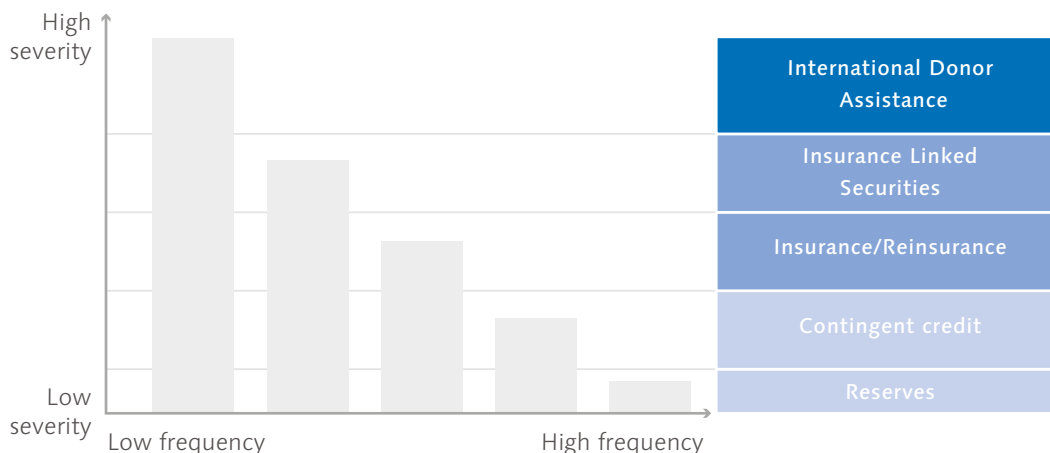
Framework 2



Framework 3



Framework 4

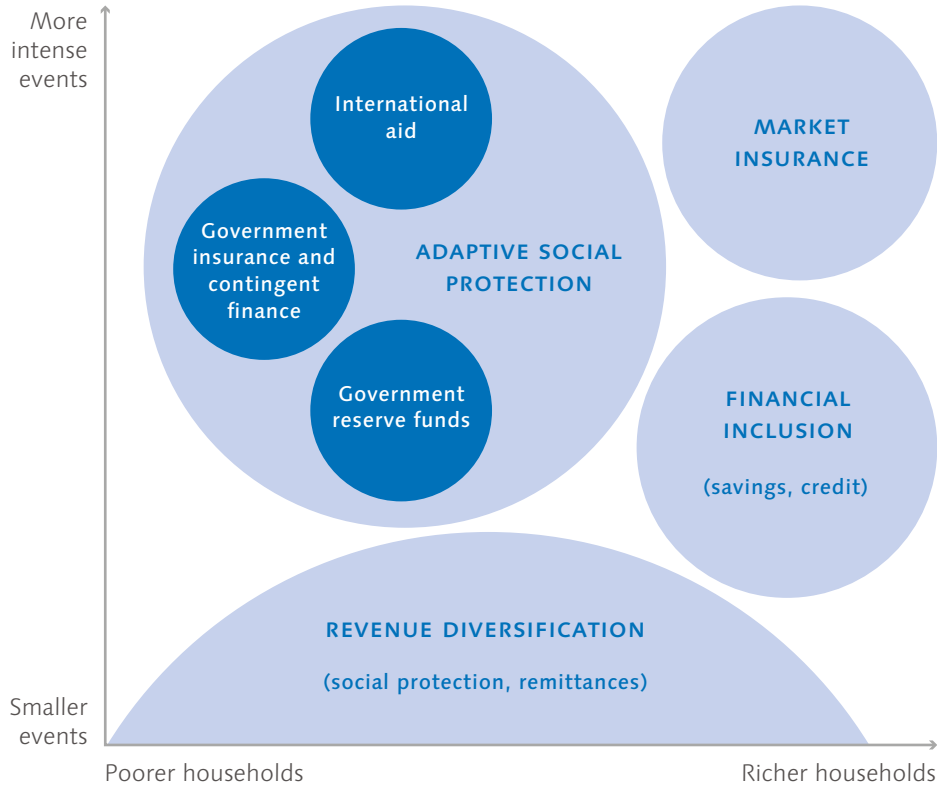


Framework 5

| | EX ANTE (ARRANGED BEFORE A DISASTER) | EX POST (ARRANGED AFTER A DISASTER) |
|--|--|--|
| Risk retention | Contingency fund or budget allocation ^a | Budget reallocation |
| (changing how or when one pays) | Line of contingent credit ^b | Tax increase. Post-disaster credit |
| Risk transfer | Traditional insurance or reinsurance ^c | Discretionary post-disaster aid (begging bowl) |
| (removing risk from the balance sheet) | Indexed insurance, reinsurance, or derivatives. ^d Capital market instruments ^e | |

- a. A pre-funded pot of money that can be used for specific purposes, such as responding to a large natural event. Resemble a current account in a bank.
- b. A pre-agreed loan that can only be drawn down in specific pre-agreed circumstances, such as the onset of a large natural event or a declaration of national emergency by government. Slightly resembles an overdraft facility, but one with rules for when the loan can drawn down.
- c. A contract whereby the insurer or reinsurer is paid a premium and the rules for claim payments are based on the losses incurred, as measured by independent loss adjustors.
- d. A contract whereby the rules for the net transfer to the insurer, reinsurer, or counterparty the index. For insurance and reinsurance, payment of the premium is followed by indexed claim payments. For an indexed derivative, the timings of payments may differ.
- e. Capital market instruments such as catastrophe bonds and catastrophe swaps are financial contracts that can be structured to act in the same way as insurance, but investors, not necessarily reinsurers, provide the protection. A catastrophe bond is an insurance-linked security in which payment of interest and/or principal is suspended or cancelled in the event of a specified catastrophe, such as an earthquake. A catastrophe swap is a contract used by investors to exchange (swap) a fixed payment for a certain portion of the difference between insurance and claims.

Framework 6

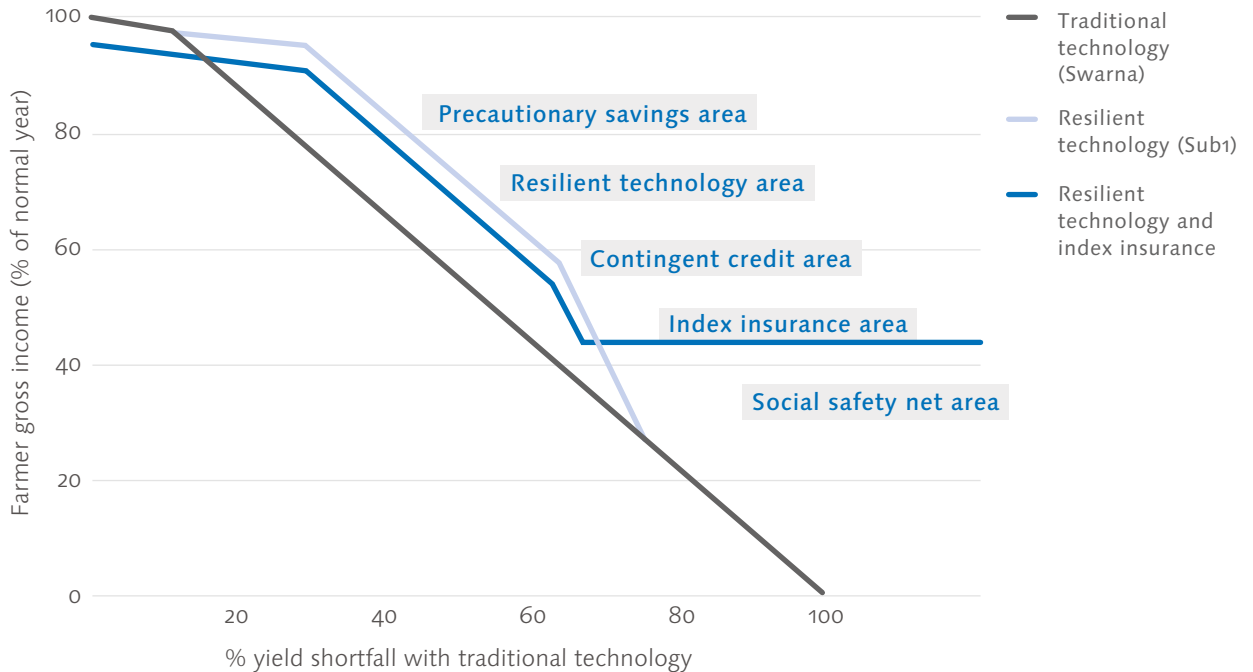


Note: Instruments in light blue target households; instruments in dark blue protect governments' or local authorities' budgets.

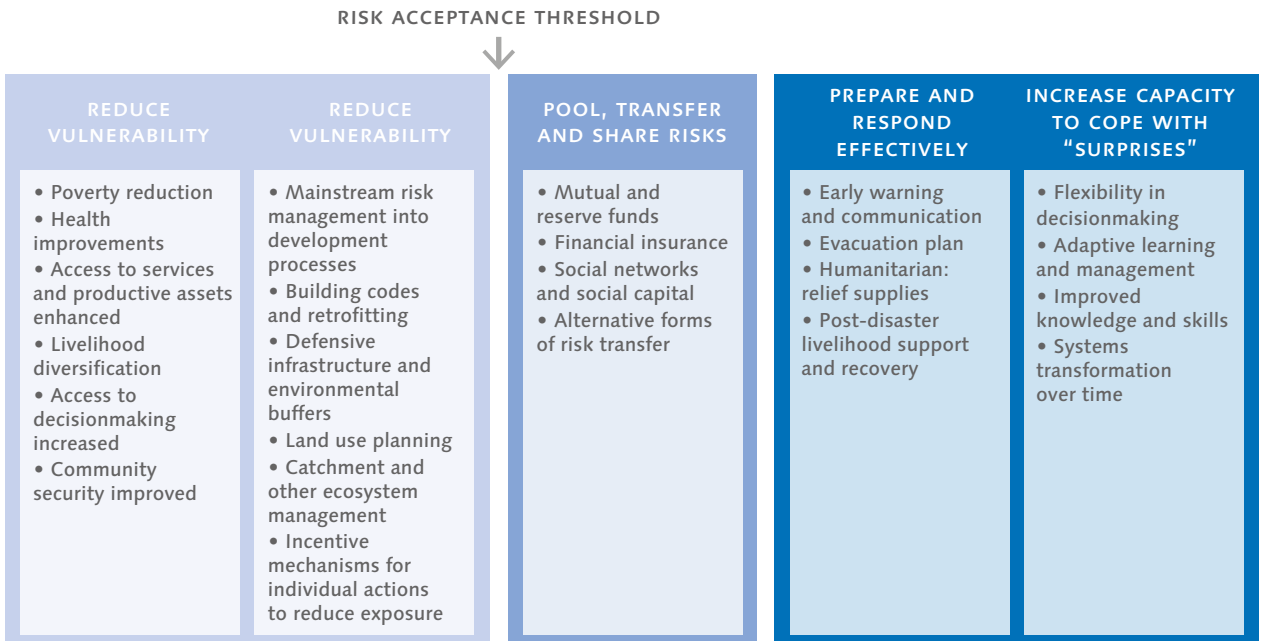
Framework 7

| RISK LAYERS | | RISK FINANCING STRATEGY | EX-ANTE RISK MANAGEMENT (ARRANGED BEFORE A DISASTER) | EX-POST SHOCK COPING (ARRANGED AFTER A DISASTER) |
|---------------------|--------------------|-------------------------|--|--|
| Frequency of events | Severity of impact | | | |
| Low | Major | Risk transfer | Social safety net | Discretionary aid |
| | | | Index insurance | |
| High | Minor | Risk retention | Contingent pre-approved credit line | Emergency credit |
| | | | Resilient technology | Adjusted income strategy |
| | | | Precautionary savings | Expenditure reallocation |

Framework 8



Framework 9

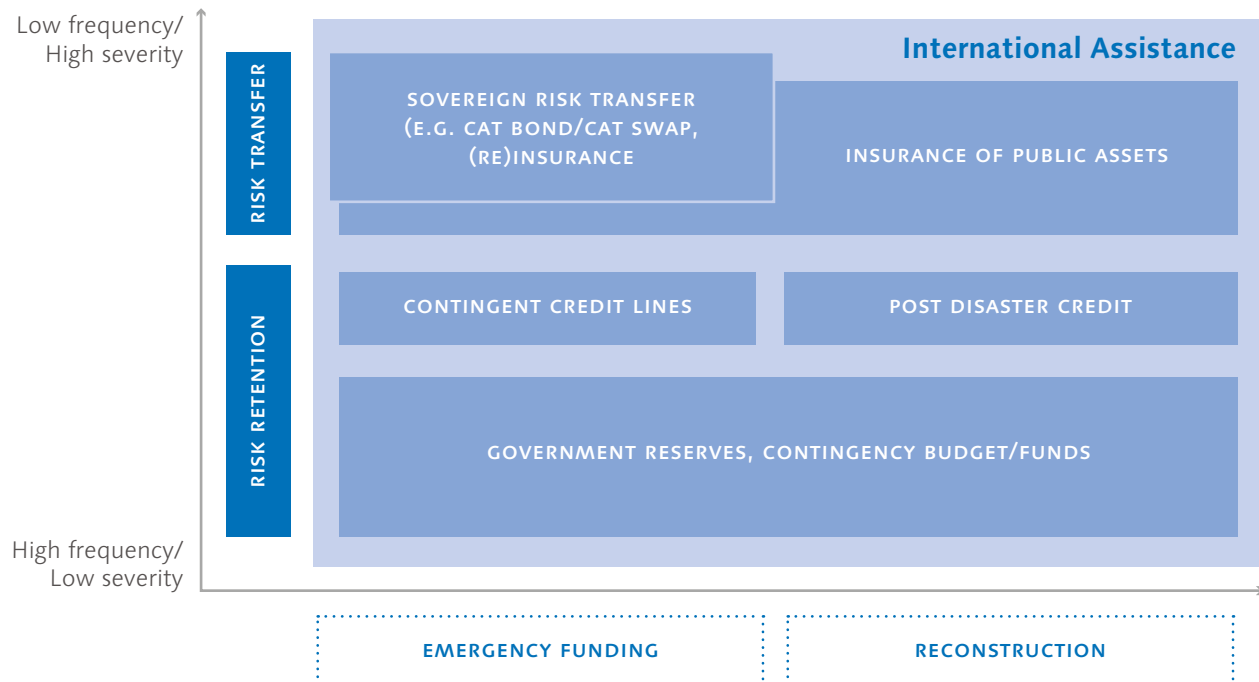


Framework 10

| DRR AS PART OF A DRM BUDGET | DRR AS BUDGET LINE OR SPECIAL FUND | DRR INTEGRATED INTO DEVELOPMENT PLANNING AND MANAGEMENT |
|--|--|--|
| Early warning systems | National disaster management agency | Land use planning and management |
| Climate and risk monitoring | Early warning systems | Transport infrastructure |
| Evacuation facilities | Climate and risk monitoring | Water resource planning and infrastructure |
| National disaster management agency | National risk reduction frameworks and plans | Retrofitting schools and hospitals |
| National risk reduction frameworks and plans | Probabilistic risk assessments | Risk-targeted social protection |
| Risk and vulnerability assessments | Targeted risk reduction infrastructure, e.g. dykes, tsunami defences | Targeted risk reduction infrastructure, e.g. dykes, tsunami defences |
| Disaster response | | Environmental protection |
| Stockpiling | | Biodiversity |
| Catastrophic risk insurance | | <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: #e0e0e0; margin-right: 5px;"></div> Risk reduction activities </div> |
| Micro-insurance | | <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: #808080; margin-right: 5px;"></div> Risk-related activities, but not specifically targeted to reduction </div> |

Note: This does not respond to scale, but a similar breakdown of financing approaches and activities could be imagined at a local level.

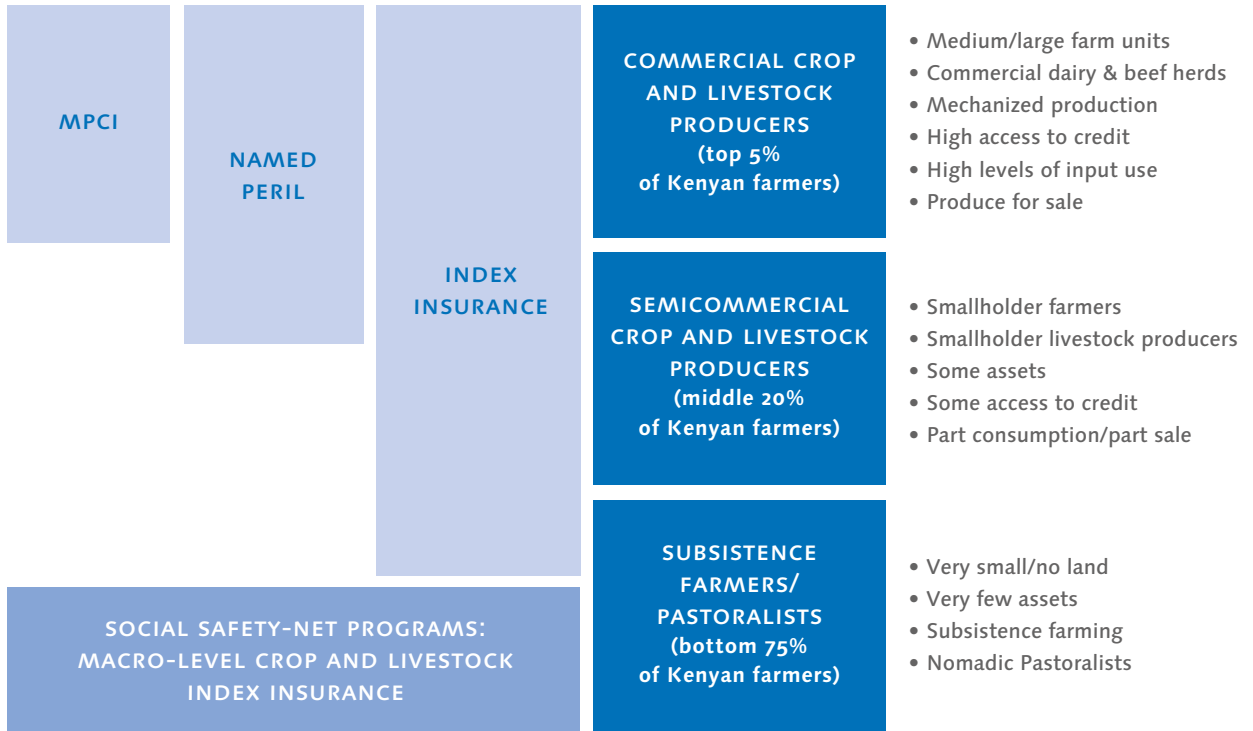
Framework 11



Framework 12

| | POVERTY | VULNERABILITY |
|--------------------------|--|--|
| | Asset-focus, in a world without risk | Risk-focus in a world focusing on protection |
| RESPONSES | | |
| Self-based | Accumulation (savings for investment into productive assets, including physical and human capital) | Self-insurance (savings via liquid assets) and other risk management and coping mechanisms |
| Intervention-based | Asset creation programmes (targeted by wealth); transfers as gifts or gifts conditional on work or action (e.g. conditional cash transfers with education objective) | Safety net (responsive to crisis) |
| Market-based or inspired | Microcredit, focusing on physical capital | Microcredit, focusing on consumption smoothing. Microinsurance |

Framework 13



Annex 3: Basic Islamic microfinance contracts^a

The following are the most widely available types of Islamic microfinance contracts.

Each can either operate individually or be combined with other contracts to create hybrid instruments.

- **Murabaha Sale (cost plus markup sale contract).** The most widely offered Sharia-compliant contract is murabaha, an asset-based sale transaction used to finance goods needed as working capital. Typically, the client requests a specific commodity for purchase, which the financier procures directly from the market and subsequently resells to the client, after adding a fixed "mark-up" for the service provided. It is permissible for the financial institution to appoint the client as an "agent" on its behalf (by means of a contract) to directly procure the commodity from the market. However, ownership of the commodity (and the risk inherent thereto) strictly lies with the financier until the client has fully paid the financier. In most cases, clients repay in equal installments. The markup is distinct from interest because it remains fixed at the initial amount, even if the client repays past the due date. Among the primary conditions for a murabaha sale to remain Sharia-compliant are (i) the financier must own the commodity before selling it, (ii) the commodity must be tangible, and (iii) the client must agree to the purchase and resale prices.^b
- **Ijarah (leasing contract).** Ijarah is a leasing contract typically used for financing equipment, such as small machinery. Duration of the lease and related payments must be determined in advance to avoid any speculation. For the transaction to be considered Islamic (and not a sale with camouflaged interest), the ijarah contract must specify that the ownership of the asset, and responsibility for its maintenance, remains with the financier. An ijarah contract may be followed by a sale contract, in which event the ownership of the commodity is transferred to the lessee.

a. There is only one type of permissible "loan" according to Sharia, the Qard-Hassan (or Benevolent) Loan, which is interest-free and often considered a form of charity because it is typically forgiven in the event of default. All other mechanisms are better termed financing agreements, or contracts. However, for the purposes of this Focus Note, the term "loan" may be used to denote financing arrangements within the Sharia context.

b. Adapted from Khan (2008).

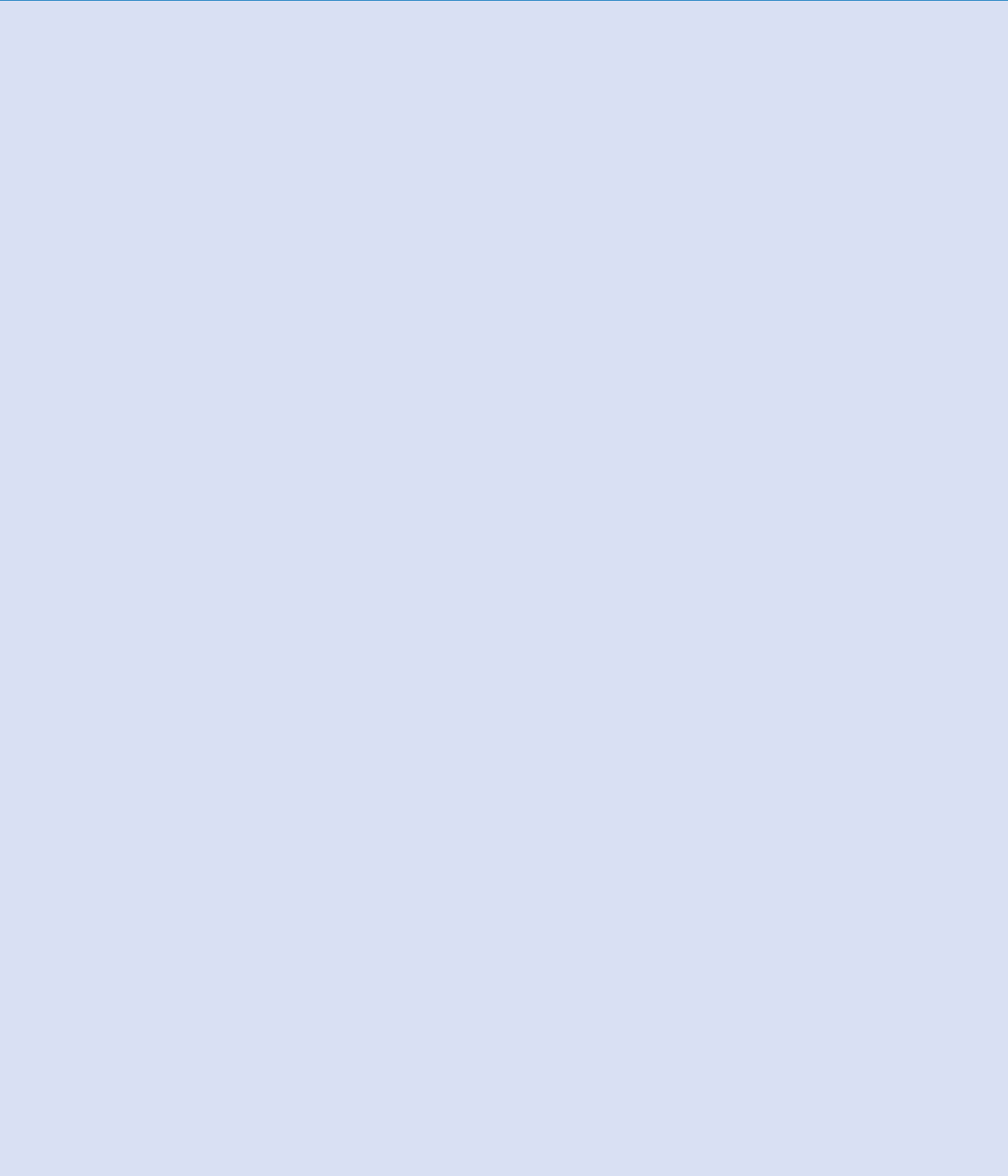
c. For a detailed discussion of takaful, see Maysami and Kwon.

- **Musharaka and Mudaraba (profit and loss sharing).** The profit and loss sharing (PLS) schemes are the Islamic financial contracts most encouraged by Sharia scholars. **Musharaka** is equity participation in a business venture, in which the parties share the profits or losses according to a predetermined ratio. Musharaka can be used for assets or for working capital. **Mudaraba** denotes trustee financing, in which one party acts as financier by providing the funds, while the other party provides the managerial expertise in executing the project. In mudaraba, profits are shared according to a predetermined ratio; any losses are borne entirely by the financier. If the mudaraba joint venture results in a loss, the financier loses the contributed capital and the manager loses time and effort.

Both PLS schemes require particularly vigilant reporting and a high level of transparency for profits and losses to be distributed justly. Consequently, though promoted strongly by Sharia, they result in substantial operating costs particularly for micro and small enterprises that are not accustomed to formal accounting.

- **Takaful (mutual insurance).^c** The equivalent of Islamic insurance, takaful is a mutual insurance scheme. The word originates from the Arabic word "kafala," which means guaranteeing each other or joint guarantee. Each participant contributes to a fund that is used to support the group in times of need, such as death, crop loss, or accidents. Paid premiums are invested in a Sharia-compliant manner to avoid interest.

Source: Direct citation from Karim et al. (2008).



BRACED aims to build the resilience of up to 5 million vulnerable people against climate extremes and disasters. It does so through a three year, UK Government funded programme, which supports 15 consortiums, working across 13 countries in East Africa, the Sahel and Southeast Asia. Uniquely, BRACED also has a Knowledge Manager consortium.

The Knowledge Manager consortium is led by the Overseas Development Institute and includes the Red Cross Red Crescent Climate Centre, the Asian Disaster Preparedness Centre, ENDA Energie, Itad and Thomson Reuters Foundation.

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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.

For more information on the Rapid Response Research and to access to real-time data and visualisations from the surveys, please visit the Resilience Dashboard:

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