Policy Guide No. 6

Financial Inclusion Policy Guide

Enhanced Resilience through Savings and Insurance via Linkages and Digital Technology

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Chronic Poverty Advisory Network

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Preface

The Chronic Poverty Advisory Network (CPAN) is producing a portfolio of sector and thematic policy guides to help policymakers and programme designers use evidence about chronic poverty and poverty dynamics in designing policies and programmes to:

- Contribute to addressing the causes of chronic poverty;
- Assist the poorest households to escape poverty;
- Prevent impoverishment.

This guide is one of a series on 'pro-poorest economic growth' (PP²G). Others in this series focus on agriculture, employment, energy, Middle Income Countries, and in future Private Sector Development, and Macro-economic Policy.

The guides are aimed primarily at policymakers and practitioners in developing countries, working for government, civil society, the private sector and external development agencies. This includes organisations working directly with and for the poor. They are also intended for the intergovernmental, bilateral and non-governmental international agencies that support those domestic actors.

Financial inclusion is a hot topic: many countries have now set targets for 100% inclusion by 2025. This is an ambitious target, but phone mobile technology in particular creates the potential for much more rapid inclusion than in the past. This guide identifies avenues for inclusion which will best include the poorest people – linking savings groups and social protection systems with formal financial services, developing weather-indexed insurance, and extending the coverage of mobile based financial services. It is these changes which will best enhance the resilience of the poorest people to economic and other shocks.

CPAN is happy to work with policymakers on the 'how to' question: please contact us if you would like to adapt the ideas in this guide to a particular context, or to get into more detail on how to design and implement or evaluate policies and programmes. You can reach us at chronicpoverty@odi.org.uk.

This guide has been written by Lucy Scott, William Smith and Andrew Shepherd. The realisation of this guide has been possible thanks to the financial support of the UK Department for International Development. A revised version of this guide will follow in the near future, as a result of CPAN's partnership with The MasterCard Foundation.

The responsibility for the contents of course lies solely with the authors.

Picture credit: A bank representative helps customers in Fiji manage their electronic bank accounts. (Photo: Jeff Liew/UNCDF)

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List of Acronyms

ACRE	Agriculture and Climate Risk Enterprise
ASCA	Accumulating Savings and Credit Association
BFA	Bankable Frontier Associates
BISP	Benazir Income Support Programme
CGAP	Consultative Group to Assist the Poor
CLP	Chars Livelihoods Programme
DFID	Department for International Development
DRC	Democratic Republic of Congo
ENSO	El Niño Southern Oscillation
G2P	Government-to-Person
GAFIS	Gateway Financial Innovations for Savings
GDP	Gross Domestic Product
GSMA	Groupe Spécial Mobile Association
IBLI	Index-based Livestock Insurance
IBLIP	Index-Based Livestock Insurance Project
IFC	International Finance Corporation
KYC	Know Your Customer
MFI	Microfinance Institution
MNO	Mobile Network Operator
NAIS	National Agricultural Insurance Scheme
NBS	Nigeria Bureau of Statistics
NCAER	National Council of Applied Economic Research
NGO	Non-Governmental Organisation
P2P	Person-to-Person
ROSCA	Rotating Savings and Credit Association
SACCO	Savings and Credit Co-operative
SAGE	Social Assistance Grants for Empowerment
SASSA	South African Social Security Agency
SHG	Self-Help Group

UBoS Uganda Bureau of Statistics

VSLA Village Savings and Loans Association

WFP World Food Programme

Summary

The objective of this policy guide is to provide policymakers and programme designers with an up-to-date view of what needs to be done to include the poorest people in financial services, and by doing so make a dent in their poverty. It does not attempt to be a comprehensive guide to pro-poor financial services; rather, it selects savings and insurance as two aspects of financial services that are most likely to build poor people's resilience in the face of the multiple risks they face – a necessary precursor to any investments they might make to get out of poverty. The guide highlights four promising ways forward for policies and interventions that aim to include the poorest faster than would otherwise be the case – by linking informal and formal financial services, linking social protection with financial services, making maximum use of the digital revolution and promoting weather-based insurance. The guide does not cover credit and microfinance, on which there is already an ample literature, and where the evidence on impacts on the poor is mixed.

A brief analysis of panel household survey and other data tells us formal financial services (savings and insurance) – other than mobile phone-based payments – do not feature strongly in escaping poverty, or sustaining escapes. The overwhelming result is that chronically poor people and other poor or vulnerable people either do not have access to or do not use these formal financial services. There is thus a long way to go to financial inclusion that makes a direct impact on the eradication of poverty. The poor are increasingly making use of mobile phone-based payments systems to send and receive remittances, on the other hand, and this has a positive impact on resilience. Microfinance has taught us that credit can help people escape poverty or prevent them falling into poverty, but does not always do so – and that credit can also 'kill'. And that specific measures are needed to bring the poorest people to a position where they can make good use of credit. These mixed findings have led to today's much more rounded policy interest in financial services as a whole.

The guide highlights four promising avenues for financial services initiatives to include the poorest people. The evidence on the first three of these suggests the promise is real; on the fourth there is potential but still much to prove.

1. **Linking formal and informal financial systems** is a way of potentially strengthening the informal provision of savings and credit through local-level collective action. While this is often pursued by formal providers in order to extend their credit outreach – with variable results – in today's world the really important resilience-building is accomplished by linking savings groups with the banking system, because membership in savings clubs is so widespread.
2. **Linking social protection with financial services** offers service providers a reason to expand their branch and agent network to reach people who would otherwise not be attractive because they have so little money. The social transfer provides a regular flow of money into an account, and, if a mainstream account is established under these favourable circumstances, offers the recipient the possibility of accessing other bank services, such as savings.
3. **Harvesting the digital revolution for the poorest** is a must. There are already rapidly growing systems operating in Kenya and Tanzania (among other countries), which allow poor customers to receive electronic money transfers, open bank accounts and access financial services. India's recent regulatory change will open up the same possibility there. With access to mobile phones expanding exponentially, and agent banking spreading dramatically, this combined with social transfers and formal–informal links offers the greatest scope for financial inclusion in future.
4. **Scaling up weather index-based insurance** pilot projects offers real possibilities for sustainable contributions to the resilience of poor and near-poor farm households, especially those vulnerable to falling into or back into extreme poverty. Weather index-based insurance is one way of managing the major risks affecting smallholder farmers of drought, floods and temperature excesses.

At the policy level, there are then a number of key enabling factors that will help realise the potential of each of these measures. Making the risk environment more manageable for the poorest people is a key objective, accomplished through investments in agriculture, health services, infrastructure, disaster risk management and sensible macroeconomic policies. Policies and regulations that encourage links between formal and informal service providers and permit the maximum of competition to provide digital financial services are particularly important. Expanding digital access is key to achieving these objectives, and regulation that permits mobile operators to provide financial services in competition with the banks will create the best platform for financial inclusion.

Key findings and recommendations are as follows:

On the inclusion of the poorest:

The poorest people (even the moderately poor) still rarely have accounts with formal financial institutions; on the other hand, many save in informal savings groups. It is therefore important to include informal savings groups and clubs in plans for financial inclusion, if the poorest are to be included in the near future.

Both savings and insurance can play a significant role for poor people in managing their often extraordinarily high-risk burden. Savings provide a general boost to resilience; insurance can underwrite risky activities like farming in the risk-prone environments poor people often inhabit. Informal savings can also play a role in escaping extreme poverty.

Women are still significantly behind men in terms of financial inclusion in many societies: this means there is still a substantial gender equality aspect to financial inclusion, and much to be done in terms of financial literacy, mobile phone ownership and how Know Your Customer (KYC) rules are implemented in practice.

On linking savings groups and formal financial services:

Savings groups are a springboard to financial inclusion, and should be a key part of national financial inclusion policies, since they are a (or the) preferred savings instrument for millions of poor households.

It is surprising the microfinance industry, which has grown up dedicated to poverty reduction, has neglected savings. One explanation is that regulators have been reluctant to give microfinance providers deposit-taking licences. However, this is now changing, and key microfinance institutions (MFIs) are rapidly opening deposit accounts for customers.

Savings groups reduce the costs of transacting with poor individuals for financial service organisations – reducing the KYC burden substantially, for example. Combined with social transfer payments and digital platforms, there is nothing short of a revolution in terms of potential for financial inclusion in the coming decade.

Digital platforms will enable groups to access formal accounts ‘near the doorstep’, reducing the substantial geographical disincentive to make use of formal financial services.

Experience to date with linking savings groups and formal financial service providers is enough to know it can be done, that there are distinct advantages both to savings group members and to financial services organisations, but not enough to know what works best, especially for the poorest.

The involvement of digital platforms is critical for serving savings groups in the poorest, most remote communities.

Having non-governmental organisations (NGOs) as facilitating agencies remains critical to safeguard savings groups’ sustainability, and for the financial institutions’ risk assessment, but this constrains scaling-up.

On linking social protection with financial services:

For governments and donors:

Linking social protection with financial services offers significant potential for greater inclusion in financial services. It provides significant incentives to financial service providers to develop products suited to poor people.

It is not desirable or necessary to impose savings conditionalities on social transfer recipients. They need to be free to manage the savings–consumption trade-off and in many cases will save as well as increase consumption.

Enabling digital payments of transfers has many advantages, but requires government to regulate in favour of branchless banking and reduced KYC requirements for basic accounts.

A major challenge ahead is to extend the infrastructure required for digital platforms. Governments can help the financial services and telecoms industries overcome market failures by subsidising extension of mobile networks through infrastructure investment, even if it can then subsequently be recouped by the industry.

The investment costs for using digital platforms for social protection payments are substantial. This acts as a barrier to linking with financial services.

Some advocate a role for government in promoting financial literacy through the school curriculum.

For financial service providers:

Banks are increasingly seeing government-to-person (G2P) payments as a basis for extending their agent networks and their outreach to the poor, attracted by a dependable recurring source of income in the form of fees.

Agents have to have large liquidity reserves to make social protection payments – this can be problematic. Social transfers could be phased over a period of time.

Poor customers need financial education on using the accounts opened to receive the transfers. This will reduce the amount of accounts that are dormant. The receipt of a transfer is a good moment to provide such training.

For social protection programme managers:

Social protection administrators would need to stop telling their beneficiaries to ‘dump and pull’ – take their money out of their accounts immediately – if a link between the grants they receive and savings is to be created.

Making payments electronically has distinct advantages and offers the potential to access other financial services. It reduces costs and increases effectiveness too where the infrastructure is available.

On weather-indexed insurance:

Weather-indexed insurance has significant potential to help low-income farm households manage the risks of flooding, drought and extreme temperatures – the major environmental hazards they are regularly exposed to.

There are several pilot programmes from which lessons can now be learnt for scaling-up.

Examples of scale-up do exist, but overall coverage of index-based weather insurance remains relatively low. Governments and projects have tried to use premium subsidies to expand coverage.

However, it is innovation to address underlying obstacles, for example through customer education, effective delivery channels, reducing basis risk and bundling with other services, which are having a more sustainable impact on scale of coverage.

In terms of willingness to pay, insurance is more attractive to wealthier farm households, so it may be that weather insurance will help prevent impoverishment more than it will address chronic poverty.

Weather-indexed insurance can also be bought by government and other 'aggregators' (e.g. companies providing farm households with services) in order to pre-finance disaster relief or to protect their businesses, which are vital for the poor farm-households they service.

On mobile money:

Mobile payments systems can become rapidly inclusive – from very little coverage in 2008 Tanzania's coverage has shot to 48%, and experience in Kenya tells us this plays a role in capacity to withstand shocks.

Mobile money makes transfers easier – remittances and social transfers – both of which can play pivotal roles in poverty reduction. And mobile accounts are increasingly a channel to a range of financial services. They make financial transactions more convenient and safer, even if costs are sometimes higher.

The spread and uptake of mobile money requires a favourable regulatory environment. A number of regulatory authorities, such as India and Nigeria, have shown caution in allowing mobile network operators to take the lead in providing mobile money services that allow users both to cash-in and cash-out. With the payment banks legislation passed in India at the end of 2014, the government is relaxing this position and hopes are high for a major increase in mobile money networks as a result. Similar regulatory reform elsewhere will be crucial to the growth of mobile money both as a payment system and as a delivery channel for financial services.

In the longer term, interoperability between mobile money networks is likely to be a key determinant of expansion in use and in transaction volumes. Currently, account holders cannot make or receive transfers from other mobile money networks. Particularly in more competitive markets, interoperability would increase the convenience and range of services, increase volumes and thereby also reduce average user costs.

1. Inclusion of the Poorest

Key points

The poorest people (even the moderately poor) still rarely have accounts with formal financial institutions; many save in informal savings groups.

Both savings and insurance can play a significant role for poor people in managing risk. Informal savings can play a role in escaping extreme poverty.

Policymakers are increasingly placing financial inclusion on the agenda. There are ambitious national financial inclusion strategies across the globe, as well as international organisations promoting an ideal of Financial Inclusion for All by 2020 (Center for Financial Inclusion, 2013). The rationale is that a lack of access to financial services prevents consumption smoothing and investments in health, education and income-generating activities. Having access to financial services, then, has the potential to break the cycle of poverty by building resilience and contributing to people escaping it (Pande et al., 2012).

It could be thought that, as nations get richer, so more people are included within the financial system. However, gross domestic product (GDP) per capita explains only 22% of account penetration in the poorest 50% of economies (Demirguc-Kunt and Klapper, 2012), showing there is clearly a role for policies to accelerate the reach of formal financial services to the poorest people.

This guide acknowledges that full financial inclusion is much more than 'banking the unbanked', and indeed involves people having the choice of a wide range of appropriate financial services. Currently, though, 2.5 billion people lack even a basic bank account (Demirguc-Kunt and Klapper 2012); the poorest people are overrepresented among those without access. A bank account, meanwhile, can both provide a safe place to save and be a gateway for access to a range of other financial services (including insurance and credit).

Box 1: The evidence on credit and poverty reduction

There is no clear evidence that microfinance programmes have positive impacts, despite four major reviews examining impacts. These reviews show that, while anecdotes and case studies purport to illustrate that microfinance can make a real difference to the lives of particular individuals, rigorous, quantitative evidence on the nature, magnitude and balance of impacts of microfinance remains scarce and is inconclusive. Overall, it is widely acknowledged that no well-known study robustly shows any strong impacts of microfinance (Armendáriz de Aghion and Morduch, 2005: 199-230).

A recent systematic review, which revisits the evidence on the impacts of microfinance, also finds that almost all impact evaluations suffer from data limitations or weak methodologies. The review concludes weak evidence has resulted in common misconceptions about the impact of microfinance, which may be diverting attention from potentially more pro-poor interventions.

Source: Duvendack et al. (2011).

Most research into financial services for the poorest has focused on credit, particularly that offered by microfinance institutions (MFIs). Here, the evidence about its effectiveness at reducing poverty and helping the poorest people manage shocks is mixed (see Box 1 and Duvendack et al., 2011). They need special services (training and asset transfers in the BRAC model) to bring them into a position where they can participate productively in credit relationships. Without this, credit may 'kill'.

In this guide, the focus is on savings and insurance (particularly agricultural) and how they can build resilience in the face of a range of shocks. While the primary objective of insurance is precisely to help

households manage risk, there is now increasing evidence that having access to savings can also play the same role (see Karlan et al., 2014a), while also providing a starting point for wider inclusion in financial services (Martin, 2013). The guide discusses four potential approaches that may be promising avenues for including the poorest people within the formal financial system:

1. Mobile money, providing both a safe place to store cash and access to a wider range of financial products when linked to a bank account;
2. Linking informal savings groups with formal financial institutions;
3. Making payments for cash transfer programmes, and other forms of social protection, through bank accounts;
4. Providing index-based weather insurance through groups or companies to farmers.

This introductory analysis focuses on what needs the poorest people have for financial services, and how those needs can best be met in principle, and the particular role of savings and insurance in building resilience. It also looks at trends in access and the role of financial services (or lack of it) in escaping poverty and preventing impoverishment.

1.1 The financial behaviour and practices of poor people

It might be assumed that people live from hand to mouth and so do not actively manage their finances or plan for the future. However, detailed financial diaries reveal that poor people do actively manage their money to meet their short- and medium-term needs (Box 2; Collins et al., 2009). When incomes are small, tools to manage them become vitally important; without them, a relatively small shock can trigger a crisis (Collins et al., 2009). These shocks, big and small, mean poor people have to cope with not knowing whether they will be able to put food on the table or pay school or medical fees, and with the possibility of failed harvests. Even the most simple of savings groups (Chapter 2) can help reduce the stress they experience, so increasing mental wellbeing.[1]

While it could also be assumed that poor people do not have the resources to save, there is increasing evidence that they can, and do, save. Analysis of household surveys shows many poor people do have a small amount of surplus they can, and do, put aside for non-essential expenditures (Banerjee and Duflo, 2007). However, poor people frequently do not have access to formal financial services and so have to manage their money in other ways, including by saving under mattresses or in informal groups and/or in livestock. This suggests there is latent demand for formal savings products from poor people (Collins et al., 2009; Karlan et al., 2014a).

Box 2: Situations where poor people need financial tools

1. Generating useful lump sums of cash for productive assets, preventative health care, school fees or major life events such as weddings;
2. Weathering bad times, including the costs of health care, or to cover loss of income owing to sickness or crop failure; or
3. Funding day-to-day expenses: the need to store irregular income such as from farming or trading for basic day-to-day needs.

These three needs can be met through a variety of financial tools including credit, insurance and savings.

Despite poor people actively managing their finances, they are still very much overrepresented among the ‘unbanked’, managing their finances outside the formal financial system. The World Bank’s Global Findex (Financial Inclusion) Database shows that, globally, just 23% of adults living on under $2 a day have an account at a formal financial institution. This proportion is 27% in South Asia, East Asia and

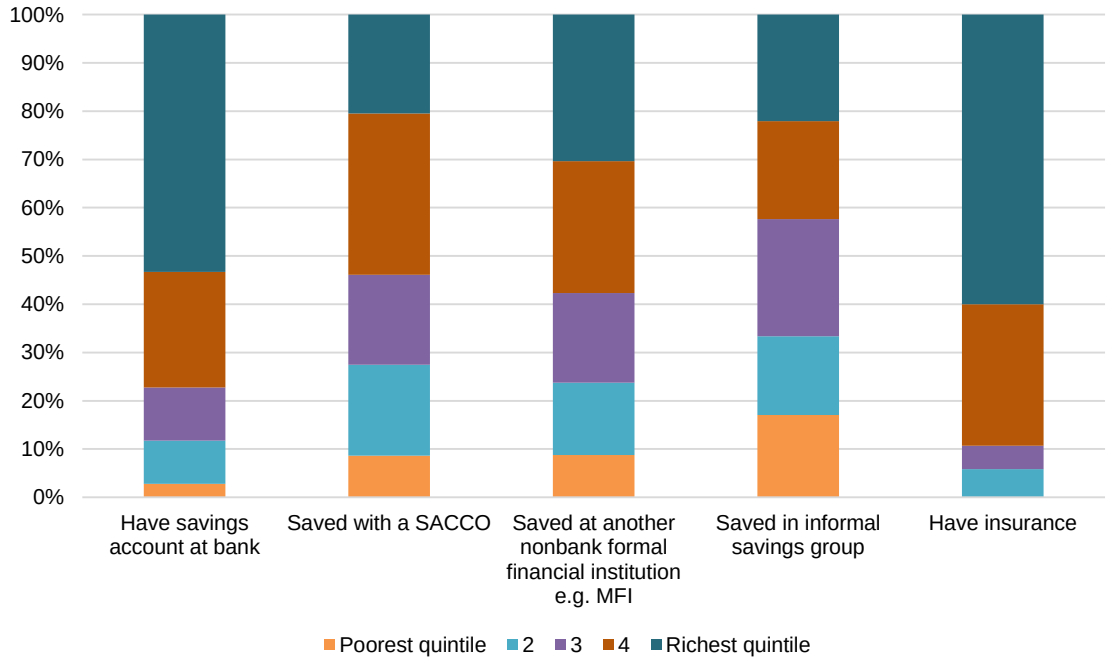
[1] Thanks to Amy Parker, Children in Crisis, for this insight.

the Pacific and just 6% in the Middle East and North Africa (Demirguc-Kunt and Klapper, 2012). Meanwhile, among people living in the poorest quintile in Sub-Saharan Africa, 12% have an account at a formal financial institution compared with 45% in the richest quintile. These proportions are 21% and 51% in South Asia (ibid.). Across all income quintiles, women in developing economies are less likely than men to have an account at a formal financial institution (ibid.).

Savings behaviour (defined in the Global Findex as setting aside or saving money to cover future expenses in the past 12 months) also varies markedly both across regions and within economies. In Sub-Saharan Africa, roughly 40% of adults report saving; in South Asia, this proportion is around 20% (Demirguc-Kunt and Klapper, 2012). This does not necessarily mean they have a bank account, though, as in Sub-Saharan Africa the majority of people who save report saving outside a financial institution. Looking specifically at saving with a financial institution, including banks, credit unions and MFIs, men, adults in higher income quintiles and those with more education are more likely to report having saved with one of these (ibid.). Figures 1 and 2 present an analysis of two national household surveys in Uganda and Nigeria, showing how having a bank account and saving with formal financial institutions, in both contexts, are dominated by the top two quintiles, or in the case of insurance, the top one quintile.

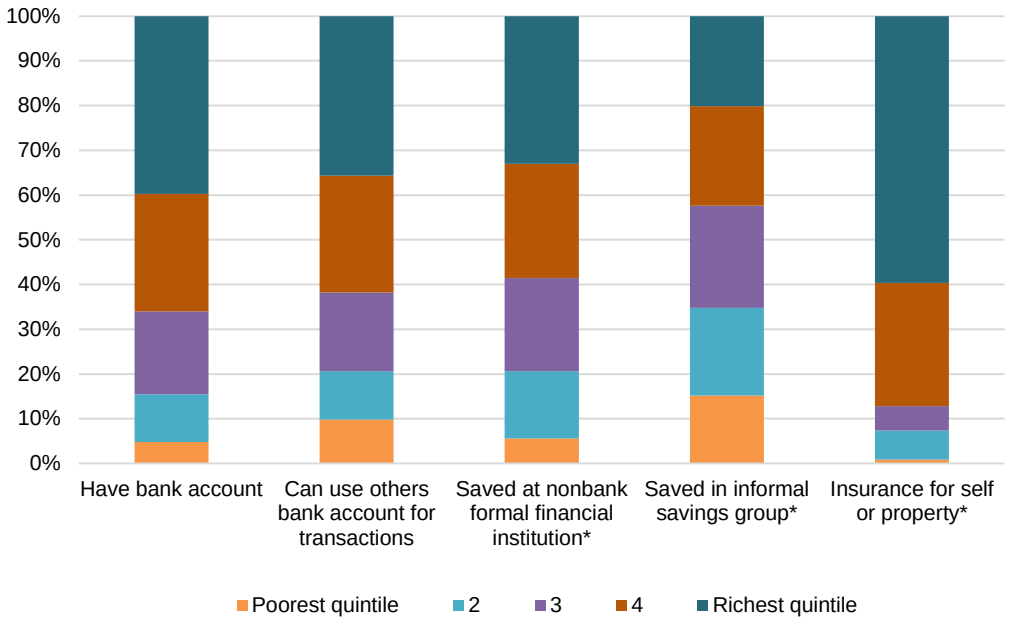
Figures 3 and 4 present analysis from Uganda and Nigeria of the proportion of households in each consumption quintile that have access to different financial services. This reveals that, in both countries, the poorest households are more likely to have saved in an informal savings group than have a bank account, whereas the opposite is true for the richest households. Formal forms of insurance, meanwhile, are largely restricted to households in the wealthiest quintile.

Figure 1: Household access to and use of financial services by consumption quintile, Uganda



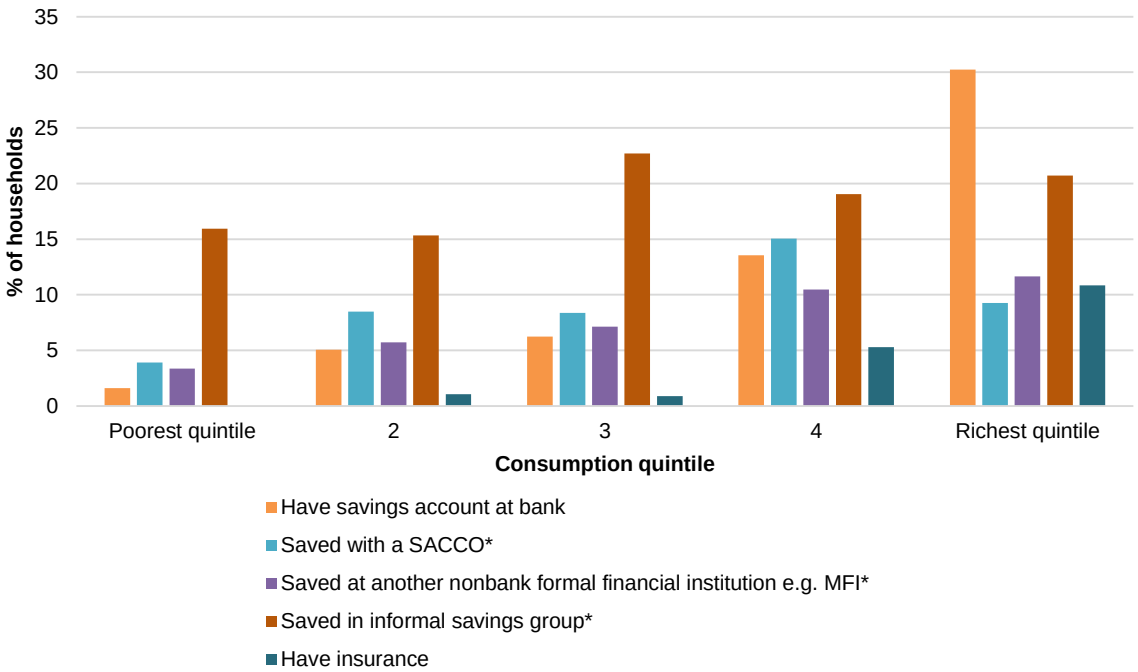
Notes: Over the past 12 months. Insurance includes health, life, vehicle, property and crop. At least one household member has access/use. Sample size: 1,761 households.
Source: UBoS (2010).

Figure 2: Household access to and use of financial services by consumption quintile, Nigeria



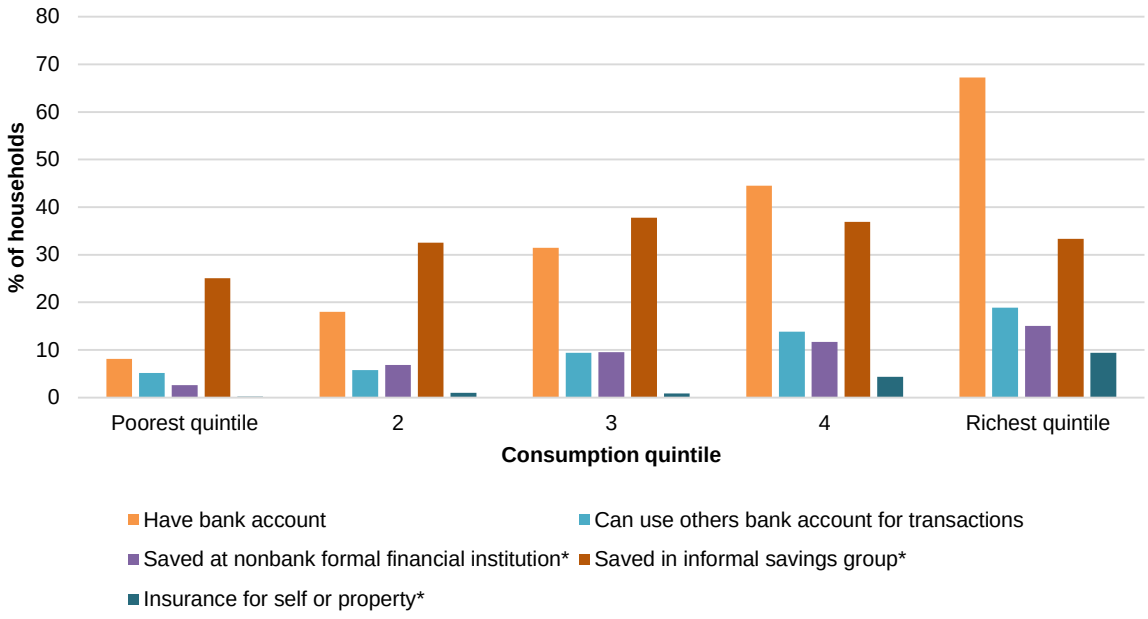
Notes: * Over the past 6 months. Insurance includes health, life, vehicle and property. Sample size: 4,437 households.
Source: NBS (2010).

Figure 3: Households in different consumption quintiles with access to financial services, Uganda



Notes: * Over the past 12 months. Insurance includes health, life, vehicle, property and crop. At least one household member has access/use. Sample size: 1,761 households.
Source: UBoS (2010).

Figure 4: Households in different consumption quintiles with access to financial services, Nigeria



Notes: * Over the past 6 months. Insurance includes health, life, vehicle and property. Sample size: 4,437 households.
Source: NBS (2010).

The reasons why people do not have an account at a formal institution (or save with one) are well explored and include high transaction costs (both monetary, such as account opening fees or minimum balance requirements, and non-monetary, in particular the time required to reach a bank or agent and to open an account); low consumer trust and confidence; regulatory requirements (including the documentation needed for Know Your Customer (KYC) rules); information and knowledge gaps (including limited financial literacy); and social constraints (particularly the relative power of women in intra-household relationships; Karlan et al., 2014a). In addition, existing financial services and products often do not conform to key principles for pro-poor financial services (Box 3; Collins et al., 2009), making them unattractive for poor people to use effectively.

Box 3: Principles for pro-poor financial services

- Reliability: in terms of the delivery of products and services at the promised time and in the promised amount;
- Convenience: the ability to repay loans and make and withdraw deposits quickly, frequently, privately and close to home;
- Flexibility: how easily transactions can be reconciled with household cash flow. This means people should be able to transact no matter how small the amount at any time;
- Structure: this refers to characteristics or events that promote self-discipline. This may include planned savings or loan repayment schedules or scheduled visits by financial service representatives. Structure is not important for day-to-day money management but rather for longer-term savings objectives.

At the same time, poor people are often more used to informal savings clubs, having a preference for these more convenient existing forms of informal savings (also see Figures 1 and 2). In Sub-Saharan Africa, 34% of savers report saving exclusively in a community savings club and not a formal financial institution in the past 12 months (Demirguc-Kunt and Klapper, 2012). People believe the small amounts they save are more appropriate for informal savings clubs. A study in India found that, despite feeling their income was too low to open a bank account or use bank savings, the vast majority of respondents still fulfilled the obligations of membership of a self-help group (SHG), saving regularly (either on a

weekly or monthly basis) (Ramji, 2009). Informal savings clubs, though, are not without their limitations, such as lack of privacy over the amount saved, leading to the potential for pressure to withdraw funds, and risks, including of theft. Chapter 2 discusses the potential for linking informal savings clubs to formal financial institutions in an attempt to combine the advantages.

A growing area of financial service provision also outside the formal banking sector is mobile money. In the 10 developing country economies with the highest reported use of mobile payments, many users of mobile money are not otherwise included in the formal financial system. In Kenya, 43% of adults who report having used mobile money in the past 12 months do not have a formal account. In Sudan, 92% do not. Overall in Sub-Saharan Africa, 12% of those without a formal account use a mobile phone to conduct financial transactions (Demirguc-Kunt and Klapper, 2012). On their own, there is some initial evidence that mobile payments, through facilitating transfers and remittances, have the potential to enable households to smooth consumption (Pande et al., 2012). Evidence from Kenya shows M-pesa users can fully absorb large negative income shocks (such as severe illness, job loss, livestock death and harvest or business failure) without any reduction in household consumption. This contrasts with a 7% fall in consumption after a negative income shock for households without access to M-pesa. One potential reason for this is households with M-pesa can receive remittances to help them cope (Jack and Suri, 2014).

There are also opportunities for mobile money fundamentally to increase access to savings. Here, commentators distinguish between basic mobile savings (the simple store of credit using a mobile system such as M-pesa) and bank integrated mobile savings (systems that offer a fuller set of banking services such as interest payments on deposits; Demombynes and Tehegeya, 2012). Though not an orthodox savings product, M-pesa is being used as a savings instrument, through accumulating a store of money on it, as well as a means to send money. People choose to save on M-pesa because of its ease of use (around 40% of people saving using it) and safety (26%; Jack and Suri, 2011). Chapter 4 looks at mobile money.

Both mobile money and linking with informal savings clubs can help reduce costs for financial service providers. It is not at all clear that banking the poor, using existing banking models, would be profitable for them (GAFIS, 2013). Developing a savings product exclusively for poor people is unlikely to give providers the benefits they seek from delivering services. A major exception to this is when bank accounts are required to receive payment flows, for instance social protection benefits. Many banks see this as a fail-safe way to serve poor customers, since there is a regular flow into the account and a regular fee coming from the payer (ibid.). Chapter 3 discusses further the role social protection payments could play in promoting access to, and use of, bank accounts, including to save. Linking informal savings clubs to banks can have similar effects.

Despite a defining characteristic of poverty being exposure to risk, few poor people have formal insurance. Across all income levels, just 6% of adults engaged in agriculture, an inherently risky activity in South Asia, Sub-Saharan Africa and East Asia and the Pacific, had purchased crop, rainfall or livestock insurance in the past 12 months (Demirguc-Kunt and Klapper, 2012). Limited take-up owes to both limited supply and demand, with major problems being upfront costs and lack of trust and understanding of insurance products (Cole et al., 2012). Chapter 5 investigates if, and how, index-based weather insurance could be extended more widely using farmers groups.

1.2 The role of savings and insurance in building resilience to shocks

The objective of insurance is precisely to offer protection in the aftermath of a shock, and there is evidence it can assist poor farmers in overcoming risk aversion and managing shocks. Weather-based index insurance in Ghana led to positive outcomes for farmers because the assurance of better returns encouraged them to shift from subsistence to riskier cash crops. Insured farmers bought more fertilisers, planted more land, hired more labour and had higher yields and income. This contributed to fewer

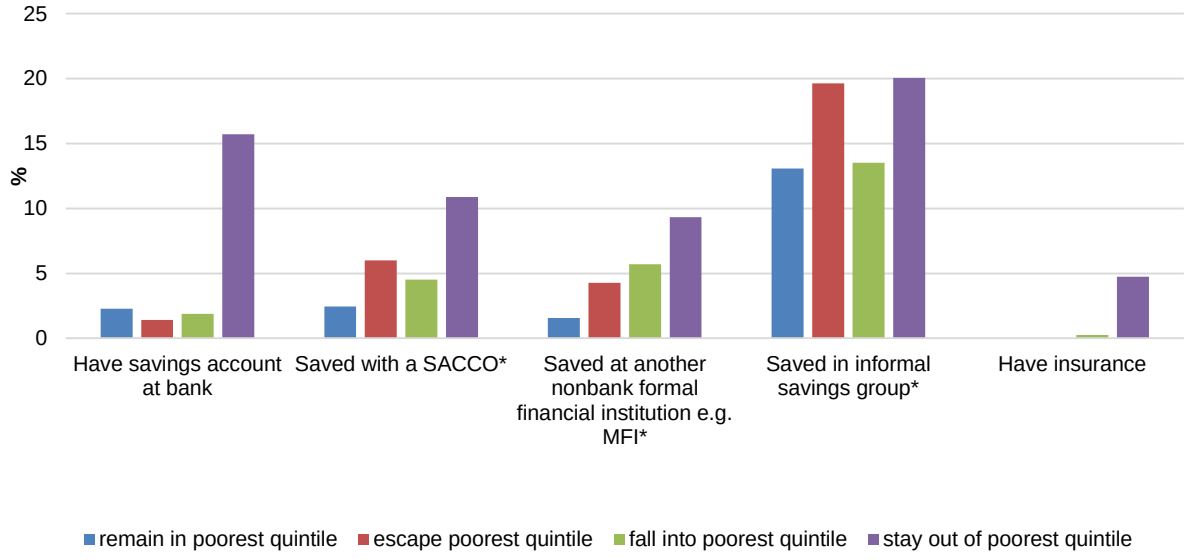
missed meals and fewer missed school days for children (Karlan et al., 2014b). Meanwhile, in Kenya, index insurance has provided protection against the negative impacts of natural disasters. In the face of a serious drought, farmers had to sell fewer assets (minus 64%), missed fewer meals (minus 43%) and were less dependent on food aid (minus 43-51%) or any other form of assistance (minus 3-30%) (Janzen and Carter, 2013).

Savings can also increase both consumption and investment, as well as help households manage shocks (Karlan et al., 2014a). Access to finance, including both savings and credit, was an important coping strategy for households during the 2007/08 global food price crisis (Compton et al., 2010). Specific findings from some field experiments include:

- In Nepal, in the slums of Pokhara, reducing account opening fees and the distance to a transaction point for a bank savings account increased take-up of savings accounts. These households with accounts saw, on average, a 20% increase in education expenditures and a 15% increase in fish and meat expenditures. They also experienced smaller reductions in weekly income as a result of health shocks when compared with households without a savings account (Prina, 2013).
- Take-up of a commitment savings service in western Kenya enabled female market vendors to mitigate the effect of health shocks, increase food expenditure for the family and increase investments in their businesses by 38-56% over female vendors without access to a savings account (Dupas and Robinson, 2013).
- In Malawi, commitment and ordinary savings accounts tied to tobacco crop sales led to increased land cultivation and use of agricultural inputs by farmers. This resulted in agricultural output rising 20% and household expenditure 13.5% after the next harvest (Brune et al., 2013).

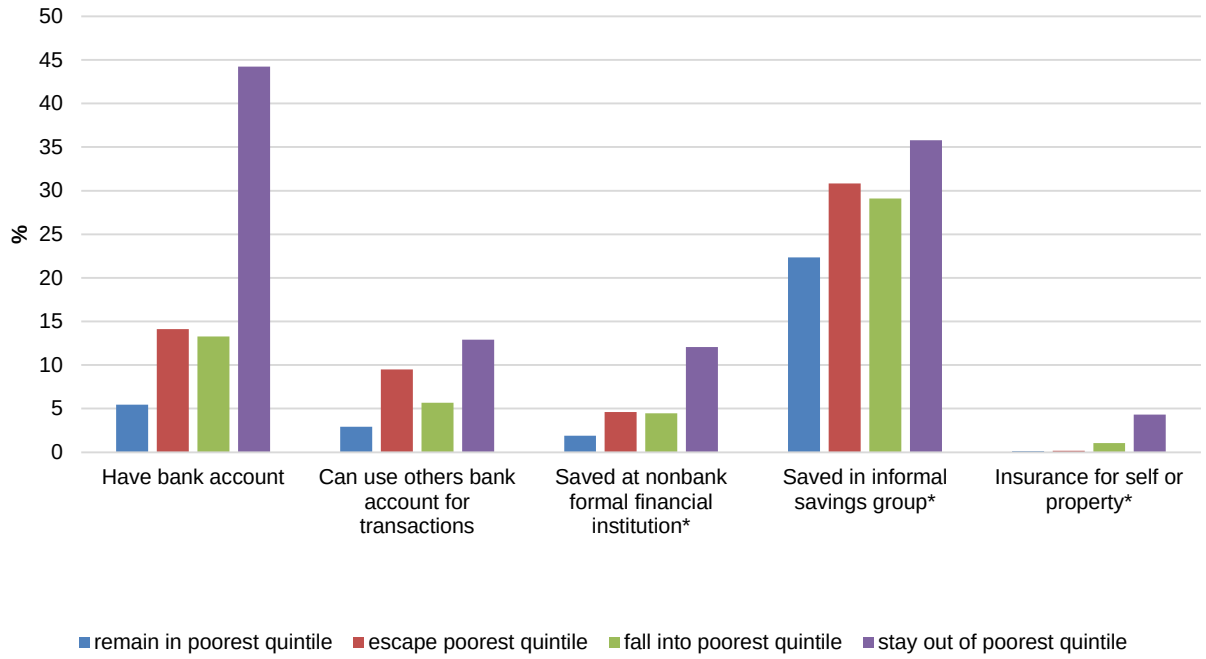
Aside from field experiments, analysis of national panel surveys, which follow the same households over time, do not reveal a clear relationship between access to different financial services and escapes from and descents into poverty at the national level (Figure 5 for Uganda and Figure 6 for Nigeria).

Figure 5: Household access to and use of different financial services according to poverty trajectory, Uganda



Notes: * Over the past 12 months. At least one household member has access/use. Sample size: 1,761 households.
Source: UBoS (2010).

Figure 6: Household access to and use of different financial services according to poverty trajectory, Nigeria



Notes: * Over the past 6 months. Sample size: 4,437 households.
Source: NBS (2010).

What Figures 5 and 6 do show is that:

- Households that remain in the poorest quintile over both surveys tend to have less access to formal financial services than either those that fall into the poorest quintile or those that escape from it over the period (an exception being having a savings account at a bank in Uganda).
- Households that stay out of the poorest consumption quintile over the period are the most likely to have access to formal financial services.
- Insurance from an institution is extremely low (less than 5% have access) for all groups.
- The form of savings most used by households across the four groups among those in the poorest quintile is informal savings clubs.
- In particular in Uganda, households that escape poverty have saved using savings clubs in the past year more than households that fall into poverty. However, whether this is because as households get wealthier they start to save in a group or because saving in an informal group, and the associated loans this gives access to, contributes to increasing wealth is unclear.
- A significant proportion of households staying out of poverty have a bank savings account.

2. Linking Formal and Informal Financial Services for Greater Resilience

Key points

Savings groups are a springboard to financial inclusion, and should be a key part of national financial inclusion policies. Savings has been neglected by the microfinance industry: this is now changing.

Groups reduce the costs of transacting with poor individuals for financial service organisations. Digital platforms will enable groups to access formal accounts 'near the doorstep', reducing the substantial geographical disincentive to make use of formal financial services.

Experience to date with linking savings groups and formal financial service providers is enough to know it can be done, that there are distinct advantages both to savings group members and to financial services organisations, but not enough to know what works best, especially for the poorest.

The involvement of digital platforms is critical for serving savings groups in the poorest, most remote communities.

Having non-governmental organisations as facilitating agencies remains critical to safeguard savings groups' sustainability, and for the financial institutions' risk assessment, but this constrains scaling-up.

2.1 Secure savings in today's world

It is has been well known for some time that savings accounts can expand household livelihood strategies (Collins et al., 2009; Duflo et al., 2009; Dupas and Robinson, 2013). Having safe savings enables poor people to invest in new tools and businesses to take them out of a low productivity trap or in searching for better work. It enables them to smooth erratic income streams, so they can eat regularly and invest in children's education. And poor people can better respond to the inevitable shocks (ill health, death, natural disasters, insecurity) if they have secure savings.

People use many different forms of savings (cash under the mattress, livestock, jewellery); few of them are very good. Informal rotating or accumulating savings groups are a positive start (see below), but linking these groups to more formal services would build and provide a more secure platform once group members gain confidence and access.

The microfinance industry has remained largely focused on credit, despite the name. The financial services industry has been slow to catch on and provide savings opportunities that are accessible by the poor, though there are exceptional organisations that have been mobilising large numbers of poor depositors, for example the People's Bank of Indonesia, the Bank for Agriculture and Agricultural Cooperatives in Thailand, credit unions in West Africa, Opportunity Bank in Malawi and Procredit Bank in the Democratic Republic of Congo (DRC). And today, Grameen Bank takes more in deposits than it makes in loans! (Christen and Mas, 2009).

It is too costly for mainstream financial services to provide savings accounts for individual poor customers, despite large latent demand for such accounts. Savings balances are low, transactions are small and there are large numbers of potential customers. The key issue for poor customers is to be able to deposit frequently and near home: travel to a distant bank branch is out of the question. So the solutions have to be low cost and geographically accessible. In the long term, banks are gaining new customers, some of whom will use bank services sufficiently for them to profit from the association. However, short-term profitability considerations often outweigh such long-term potential.

2.2 The advantages and limitations of savings groups

Informal savings groups of 20-25 members – rotating savings and credit associations (ROSCAs) and accumulating savings and credit associations (ASCAs) – are very popular across the world. These provide people with opportunities to save and receive a lump sum worth the value of their savings once in a savings cycle (ROSCAs) or to save regularly and receive short-term credit (ASCAs) as well as a share-out at the end of the cycle. Promoted savings groups are based on ASCAs, less numerous, but still popular as both a secure savings opportunity and an opportunity to borrow up to three times what has been saved. The returns to members can be high, as interest is charged on loans and this is returned to members with their savings.[2]

Savings groups help achieve resilience for members because they are close to members ('doorstep banking'), enforce savings discipline, enable bulky purchases using the end-of-cycle lump sums or share-out amounts and provide reliable short-term loans and emergency loans or grants.

Limitations include the following: (i) money is locked away in a lockbox, with keys held by a number of members, but the risk of theft is high and the sums involved can be considerable. Treasurers face enormous responsibilities, and members are often encouraged to borrow to reduce the amount in the lockbox; (ii) members cannot save enough for some bulky purchases in one cycle, leading to delaying purchase until several cycles are complete; (iii) loans are not available at the beginning or towards the end of a cycle; and (iv) some shocks (e.g. environmental, war) affect all members of a group and may reduce collective ability to save and repay. Savings groups cannot really help members become more resilient in the face of such hazards: external insurance of some sort is needed (BFA, 2014a).

While savings groups provide a degree of security for money saved, and a way of accumulating money to make bulky payments or purchases, and therefore contribute to people escaping poverty through investment, they are unable to address some of the covariate causes of insecurity and impoverishment, and experience of savings groups promoters suggests they may have limits in terms of sustaining members' upward trajectories if these need to be secured by more substantial payments of education fees, or more substantial business or farm investments than can be achieved in a savings cycle.

Do they include the poorest people? Since members can choose what level they save at, there is in principle no bar. Both the Village Savings and Loans Associations (VSLAs) and India's SHGs discussed below include many people among the poorest categories. While the individuals in these groups may not be 'bankable', the group almost certainly is. This compares with statements like that of the Barclays Bank/CARE/Plan International Linking for Change Alliance, which talks about 'people living on $1-2 a day' being bankable, suggesting poorer people might be less bankable.

BRAC's experience in extending savings group membership and microcredit to the poorest people, who are mostly day labourers, suggests it takes a significant investment in both financial and human capital to allow the poorest people (in this case women) to become micro-entrepreneurs (Box 4) and in many cases to escape extreme poverty. This approach to poverty reduction is now being trialled in many countries, with mixed results, depending partly on whether there are other measures in place that raise wage rates and therefore the incentive to remain employed rather than become micro-entrepreneurs (Bandiera et al., 2013). It is a credit-based program, with a savings component. However, it does indicate that, with proper attention to combinations and sequences of investments, it is possible for financial services to have a deep impact on the lives of the poorest people.

Box 4: BRAC's Targeting the Ultra-Poor programme in Bangladesh

The poorest women are eligible to receive an asset transfer worth $140 – many times the value of livestock commonly owned, and two year's training, worth about the same. This group receives weekly

[2] For a brief primer on savings groups, see BFA (2014a).

stipends, partly in the form of food, while they learn new occupations; a formal savings account and financial literacy training; and general support over two years from programme staff. By 2011 the programme was reaching 400,000 women; by 2016, it was expected to reach another 250,000 – so it is a sizeable attempt to lift the poorest people out of poverty. A large-scale randomised control trial reports that the programme achieves a significant occupational shift from wage to self-employment, in terms of both specialisation in one or the other and hours worked in each (Bandiera et al., 2013). This effect persists through to four years after an individual takes part in the programme.

2.3 Lessons from formal financial service linkage initiatives with informal savings groups

In 2006, evidence from 12 case studies of linkages suggested 'partnership seems to afford both partners the opportunity to overcome a weakness in what they can achieve on their own. But […] financial linkages, while promising, are difficult to set up and manage, require strong less formal as well as formal institutions and seldom result in a significant expansion of financial services beyond credit' (Pagura and Kirsten, 2006).

Now there is enough documented experience to say linkages between savings groups and financial services organisations can be made, although doing this well at scale remains a challenge, and there are promising impacts. But there is still an absence of strong evidence about reaching the poorest.

India

The biggest effort to link savings groups with formal financial services has been in India, where SHGs have been widely linked to state-owned and other banks through programmes supported by the Reserve Bank of India's National Bank for Agriculture and Rural Development, the World Bank and others. India's programme is the biggest financial inclusion programme in the world. In 2011, there were 7.7 million SHGs of 10-20 members each, with savings of Rs 7,016 crores; and 4.8 million SHGs had outstanding loans of Rs 31,221 crores (Narang, 2012), making this a substantial microcredit programme. Almost half the SHGs are women-only.

This massive effort has barely been evaluated, despite the huge numbers of groups and individuals, the substantial savings and the large loan portfolio. The few evaluations carried out have suggested they have considerably improved the access of the rural poor to financial services, and have had a positive impact on SHG members' socioeconomic conditions, skills levels and human capital (NCAER, 2008). A careful control group study of impacts of a World Bank-financed linkage programme focused on women's empowerment identified significant improvements in nutrition and consumption but not in income or assets, although this was only over three years. Significant empowerment of women applied to SHG members as well as non-members, so there were important positive externalities (Deininger and Liu, 2009). In many cases, SHG members have opened individual savings and other accounts, but this has not been properly enumerated or evaluated.

In terms of delivery of the linkage, three models have been recognised: SHGs formed and financed by banks; SHGs formed by non-governmental organisations (NGOs) and directly financed by banks; and SHGs financed by banks using NGOs or other agencies as financial intermediaries. Where NGOs have been involved in facilitating the organisation of SHGs, impacts can be greater, as they can when village infrastructure is superior and incomes and assets can increase more rapidly as a result (Swain and Varghese, 2011).

CARE's VSLAs

From small beginnings in Niger,

> Today there are 10.5 million members of savings groups (most of them women) in some 65 countries participating in over half a million groups. The vast majority of these groups are in Africa, but savings

> group membership is rapidly spreading in Latin America and Asia even in countries where […] ROSCAs are not common showing the vast unmet need for a safe and convenient place to save and easy access to small loans […] The difference [between savings groups and microfinance] is that while microfinance struggles to reach the very poor, savings and lending groups are expressly designed to meet their needs. Costs are so low because group members, not institutions, take on the tasks of lending, tracking payments and repayment – the major costs of financial institutions – and no funds external to the groups are required since the money lent is the money the members save. Savings groups prove that the poor are not too poor to save and that there is enough savings potential in a group of 20 to meet most members' needs, which are as much about insuring there is food on the table and dealing with emergencies as business development (Ashe, 2015).

In Africa, CARE has been promoting a variety of linkages (Box 5), with the following results: 4,200 groups (approximately 105,000 individuals) have been linked to one or more of 11 financial products developed for them by the financial services providers with which CARE has formed partnerships. A sample of groups saw higher savings, investment and rates of return on savings compared with non-linked groups, and those with savings accounts were saving more each week because the money was more secure. Members developed greater confidence in dealing with formal institutions, which are otherwise commonly feared.

Box 5: Linking VSLAs with formal financial services

CARE has promoted VSLAs in a number of African countries for more than two decades, and they have recently been linked to banks, microfinance banks and insurers, so people have safe deposits, savings that remain liquid for emergency and other uses, access to loans of the right size to meet growing business and farm investment needs and insurance to cover death, medical emergencies and crop failure. Linked associations have better performance than non-linked associations across a number of indicators (including rates of return on savings, savings balances and delinquency rates). And banks have adapted their financial products for groups, with lower deposit minimums and minimum balances, group-based credit products and flexible savings accounts. To achieve linkage, VLSAs need training. CARE has developed a 'linkage readiness tool' that assesses whether a VLSA is ready for linkage (CARE, n.d.).

So far, groups have access to only one financial service rather than a full suite. Complex products require a lot of financial education – both of the users and of the suppliers. For some groups, agents and mobile platforms remain frustratingly distant, so group representatives have to travel far to access the services. A next step is to connect individual members to financial services.

At present, customer acquisition costs (costs of starting an account) are picked up by intermediary organisations rather than by the financial service provider. A change in financial service regulations and policies may be needed to persuade service providers to pick up these costs. It is uncertain whether financial service providers will bear the costs of forming and preparing VSLAs. One possibility is that banks pay for customer acquisition of mature groups, providing intermediaries with a sustainable source of revenue with which to form and prepare VSLAs.[3]

Linking savings groups to formal financial services is thus in its infancy in Africa: more partnerships between mobile providers, banks, insurance companies, governments, donors and NGOs are required to achieve greater scale and lower risks; and more evaluation of these arrangements to understand better what works best and for the poorest people. Governments need to expand financial literacy, for example, when implementing social protection schemes.

The attractions for the private sector partners are: savings groups mobilise significant and predictable deposits, so help with market share and liquidity; they bring new clients; they would generate regular

[3] Gerry Boyle, CARE, personal communication.

fee income, provided fees were low enough for savings group members to transact frequently; and data on financial transactions and creditworthiness would enable KYC requirements to be met for a new set of potential customers (BFA, 2014b).

CARE's Access Africa programme has prepared a comprehensive manual covering linkages between savings groups and financial institutions (Labh, 2010), from which CARE derived eight principles:

- Link groups not individuals, and encourage a consensus approach;
- Only link mature groups that have saved for at least a year;
- Focus on demand from groups rather than supply from institutions;
- Prepare and educate financial institutions (MFIs, banks, mobile service providers) about savings groups, their unique characteristics; encourage customisation of products;
- Provide financial education to groups before linking them;
- Protect core savings group principles, and discourage formal institutions from demanding group savings and collateral;
- Link for savings before credit;
- Recommend a conservative savings to credit ratio.

There is some consensus among leading NGOs on the extension of credit through these linkages (Box 6).

Box 6: Guidelines on external credit

A SEEP Network briefing paper in 2010 saw consensus emerging on the following principles: savings groups should have completed at least one full cycle of successful operation before linkage to external credit is considered. Credit coverage should be limited. CARE proposes that the initial leverage ratio of savings to total debt not be greater than 1:2 (very different to the Indian SHG proportions noted above). More conservative voices propose ratios that do not exceed 2:1 in initial cycles. Loans should only be made to the savings group to augment its own loan fund, and not externally targeted to individual members. External loans should respond to the inadequacy of the savings group's own capital, relative to demand. Wherever possible loans should be structured as a line of credit (Allen and Panetta, 2010).

It should be acknowledged that there are poorer and more remote people than the ones becoming formally financially included and featured in this policy guide. They are most likely to be in fragile/conflict settings, yet have great resilience and a need for stable development, including financial services. The security and broader development issues are of course paramount (lack of all infrastructure, no banks at all, no formal economy and so on), but money is still needed and VSLAs can provide the foundations to prepare for the future in such areas. In remote Uvira region, South Kivu, in DRC, VSLAs have begun to build up financial skills and discipline, have proved easy to manage and accessible for women and offer a form of insurance and solidarity (Parker, 2014).[4]

Do other activities undermine the focus on savings? Aga Khan Foundation

Given the success of savings groups, facilitating agencies are often tempted to add other activities. The broad answer, based on a 2011 set of case studies for the Aga Khan Foundation, is that adding other development activities to the core activities of savings groups is most frequently positive. There are also issues surrounding risk, costs and sustainability, and the suggestion is to proceed with caution.

2.4 The digital promise

Savings groups and, more importantly, individual members can be linked digitally to formal financial services. This would mean funds being deposited in deposit accounts, which are much safer than

[4] The authors are grateful to Amy Parker, Children in Crisis, for these observations.

lockboxes; longer-term savings become possible, generating larger lump sums, on which interest is paid (although fees are also charged), and digitally recorded data about individuals can expand formal borrowing options for members who access individual accounts and services. This would require new practices in savings groups: using digital devices to record intra-group transactions.

This alliance of savings groups with banks (or MFIs) and mobile phone platforms has tremendous potential and is of huge interest to all the stakeholders involved. It enables savings groups in the poorest remotest communities to access financial services for the first time in many cases, and to become financially educated.

3. Social Protection: Building a Rung on the Ladder to Financial Inclusion

Key points

For governments and donors

Linking social protection with financial services offers significant potential for greater inclusion in financial services. It provides significant incentives to financial service providers to develop products suited to poor people.

It is not desirable or necessary to impose savings conditionalities on social transfer recipients. They need to be free to manage the savings–consumption trade-off and in many cases will save as well as increase consumption.

Enabling digital payments of transfers has many advantages, but requires government to regulate in favour of branchless banking and reduced KYC requirements for basic accounts.

A major challenge ahead is to extend the infrastructure required for digital platforms.

Government action may be required on all these points to overcome the barriers to linking social protection with financial services. Such commitments could feature in national financial inclusion plans.

For financial service providers

Banks are increasingly seeing government-to-person payments as a basis for extending their agent networks and their outreach to the poor, attracted by a dependable recurring source of income in the form of fees.

Agents have to have large liquidity reserves to make social protection payments; this can be problematic.

Poor customers need financial education on using the accounts opened to receive the transfers. This will reduce accounts being dormant. The receipt of a transfer is a good moment to provide such training.

The investment costs for using digital platforms for social protection payments are substantial, acting as a barrier to linking with financial services.

For social protection programme managers

Social protection administrators would need to stop telling their beneficiaries to ‘dump and pull’ – take their money out of their accounts immediately – if a link between the grants they receive and savings is to be created.

Making payments electronically has distinct advantages and offers potential for accessing other financial services. It reduces costs and increases effectiveness too where the infrastructure is available.

Social protection – social assistance style cash transfers and public works programmes in particular – have strong potential for reaching the poorest people; social protection is a vehicle for expanding access to and use of particular financial services. As a result, there is increasing interest in linking the social protection and financial inclusion agendas. This is also in recognition that being included in certain financial services can contribute to achieving many objectives of social protection, including building resilience in the face of shocks.

The design of a social protection programme should have clarity about whether it is appropriate for a social protection programme also to incorporate a financial inclusion objective and, if so, how this could best be achieved. Operationally, social protection can incorporate a variety of approaches to further the inclusion of recipients in financial services (Table 1). Digital payments can be a means of delivering social protection payments. Alternatively/as well, programmes can encourage savings, through saving (whether through a formal bank account or as a member of a savings group) being a condition of programme involvement or a criterion of 'graduation' from a programme.

Table 1: Social protection as a tool to promote financial inclusion

	Timing	**Types of intervention**
Add-in interventions **To enable**	Before receiving social protection payments	Digital payment of benefits
Add-on interventions **To encourage**	After social protection payments are received	Transfers conditional on saving or taking out insurance Financial literacy education Formation of savings groups

Source: Adapted from DFID (2007).

To date, financial inclusion has largely been considered a secondary interest in social protection programmes, and has often been greeted with some scepticism (i) because poor people are perceived to have limited ability to save and understand financial products; and (ii) owing to a concern with regard to overburdening social protection programmes with too many activities and objectives. Certainly, despite the seeming overlap between the objectives of social protection and the presumed benefits of financial inclusion, there remains a fundamental tension between the objectives of social transfer programmes to increase immediate household consumption and improve living standards and the longer-term objective of financial inclusion (Pickens et al., 2009). However, if social protection is seen as a long-term developmental tool to interrupt chronic poverty and the intergenerational transmission of poverty, the rationale for sponsoring financial inclusion becomes stronger.[5]

Add-on: encouraging savings behaviour through social protection – lack of money is frequently given as a reason for the perceived limited savings by poor people. Depending on size and frequency, social protection transfers could mean people have sufficient money to save. Some social protection and integrated livelihood programmes, combining cash or in-kind payments with broader forms of support or training, do enforce compulsory savings by beneficiaries. These include flagship programmes such as BRAC's Targeting the Ultra-Poor. Assessments of this show beneficiaries are both able to save and increase their immediate consumption and, because of the relatively large transfers, make productive investments (Hashemi and Umaira, 2011).

However, if social protection is used explicitly to encourage savings, at some point this may inhibit immediate household consumption and investment, and clearly there is a trade-off between immediate consumption and the ability to save. However, households manage this, and for the poorest households it may not be appropriate to attach savings conditionalities to the small transfers they receive (New America Foundation, 2011). Indeed, it may be that beneficiaries save a portion of their transfer through choice; assessment of Mexico's PROGRESA during its first two years found 12% of the value of transfers was saved, despite savings not being compulsory; and beneficiaries were still able to increase their consumption (Barrientos in New America Foundation, 2011). Since its inception, PROGRESA

[5] Thanks to Nanase Tonde for pointing this out.

(subsequently known as Oportunidades and now called Prospera) has introduced an optional savings account component. In addition to the cash payment, some of the transfer can be held in the beneficiary savings account and not only are some women keeping a portion of the transfer in this account but also other family members have started saving in the same account (New America Foundation, 2011). Whether a social protection programme aims to encourage savings will have implications for the size and frequency of the transfer. The outreach of formal financial service providers, meanwhile, will determine whether a social protection programme should encourage informal (as in Targeting the Ultra-Poor) or formal forms of saving (as in Oportunidades).

Add-in: the benefits of upgrading payment mechanisms – for recipients of social protection programmes, electronic payments can reduce costs and travel time and increase convenience. If they enable flexibility in picking payments up, then they also reduce the time spent waiting to collect them. In Argentina, one year after switching to receiving payments through debit cards, 87% of 1.5 million Jefes y Jefas de Hogar participants judged the new system to be an improvement on the old method of dispensing cash via local officials. Average time spent on payment days on travel to a withdrawal point and queuing dropped from 255 to 41 minutes. Meanwhile, the percentage of recipients who could walk to a location to receive their money has increased by 49% since ATMs have become widely available (Duryea and Schargrodsky, 2007, in Pickens et al., 2009). In Niger also, payments made through mobile transfer reduced the time spent receiving benefits (Box 7).

Box 7: Time savings from receiving social protection payments as mobile transfers

In Niger, administering social transfers by mobile transfer reduced overall travel and wait time to a quarter of the time required to collect manual cash transfers. Recipients of mobile transfers reduced travel time to a cashout point by 40 minutes when compared with manual cash distribution. This time saving does not include the additional three hours wait time involved in the average manual cash transfer.

The study authors calculate that, based on average agricultural wages, the time savings attributable to the digital transfer channel for each payment translated into an amount large enough to feed a family of five for a day.

Source: Aker et al. (2014).

Moving to electronic delivery of social protection payments also frequently cuts costs and reduces leakage for governments (Pickens et al. 2009). In Brazil, switching to electronic benefit cards issued by a state-owned financial institution helped to cut the administrative cost of delivering millions of Bolsa Familia grants nearly seven-fold, from 14.7 percent to 2.6 percent of grant value disbursed (Lindert et al. 2007). The South African Social Security Administration (SASSA) saw its costs of delivering social transfers drop 62 percent (to less than US$2 per payment) after moving to bank accounts offered by the private banking sector (Bankable Frontier Associates 2006 in Pickens et al. 2009). When payments are made directly to instruments controlled by recipients, such as debit cards or mobile phones, the opportunities for corruption are reduced. In Argentina, the percentage of Jefes participants who said they paid a bribe to local officials to access their benefit dropped from 3.6 percent to 0.3 percent after the move to an electronic benefits card (Duryea and Schargrodsky 2007; in Pickens et al. 2009).

However, the time and investment required up-front to implement a successful digital payment system means that, particularly in situations where there is pressure to deliver the first payment of a high-profile social protection scheme, the incentives are to deliver it as cash. Electronic delivery is also not likely to be appropriate in all contexts, including those where the necessary infrastructure (including cash-out points and reliable mobile signal) is insufficient for widespread access.

3.1 Designing an instrument for social protection payments to enhance access to formal mechanisms for saving

Social protection payments can be delivered through a number of mechanisms (Box 8), including as cash, through limited purpose instruments or through mainstream financial accounts. How the payment is delivered has implications for both:

1. the cost of the programme, particularly the extent to which digital payments are cheaper than cash delivery. When social payments make use of existing widespread payment infrastructure, electronic payments can be cheaper for a programme. However, when they rely on closed-loop infrastructure set up only to pay out cash to programme beneficiaries, they remain expensive and costs per payment are unlikely to decrease over time (Bold et al., 2012); and
2. the extent to which the digital payment of social protection benefits can contribute to financial inclusion. Ideally, moving to electronic delivery also lays a foundation for offering recipients a financially inclusive account. Delivering a government-to-person (G2P) payment electronically requires a 'landing spot' where funds are deposited and subsequently collected by beneficiaries. These two features – safe storage of funds and transactional capability – are basic requirements of a financially inclusive account. A third – accessibility – can be achieved via branchless banking (Pickens et al., 2009).

Many G2P payments, though, are designed to address one concern: transferring payments from a specific government programme to beneficiaries (Pickens et al., 2009). Limited-purpose instruments are popular among programme managers as they can make it easier to report on payments delivered and enable features including dormancy rules on unclaimed benefits. The main payment instruments used by Bolsa Família and Oportunidades require that funds unclaimed within a defined period be returned to the government (Bold et al., 2012). The electronic debit card featured in Argentina's Jefes y Jefas de Hogar programme is reloadable only by the government, and funds must be collected within two months or they are lost (Pickens et al., 2009). Cards like these have limited utility as a savings mechanism for recipients. It can be that these limited-purpose instruments impede the transition towards a mainstream financial account, and there is a risk of programmes getting caught in a position where it is hard to transition beyond this point to enable recipients to access a full range of financial services (Bold et al., 2012). At the very least, limited-purpose instruments should be implemented in a way that makes it possible to transition easily to mainstream financial accounts later (ibid.).

Box 8: Approaches to social transfer payments

Cash

The beneficiary has to appear at a particular payment point, often at a particular time, to receive her payment. In this case there is no store of value created for the individual and hence no way for her to leave some value for later use.

Limited-purpose instruments

These instruments transfer the grant to (at least) a notional account earmarked for the recipient. This virtual or actual earmarking enables more choice of times and locations at which the recipient can withdraw the funds. Nonetheless, the functionality of this account is restricted in one or more ways:

- **Accumulation:** the funds cannot be stored indefinitely; if not withdrawn in a defined window, the programme may reclaim the unused funds.
- **Convenience:** funds may be withdrawn only at dedicated infrastructure – that is, at agents or cash points specifically established for this purpose only (and that, therefore, non-recipients cannot use).

- **Additional uses:** no additional funds may be deposited into this account from other sources.

Mainstream financial account

These accounts have none of the limitations of limited-purpose instruments and are usually bank accounts that are available to non-transfer recipients as well. The recipient benefits from the same functionality as any other user of such an account. Accounts provided by non-banks, such as mobile phone companies that offer mobile phone-based wallets, could also meet this standard.

Source: Bold et al. (2012); Pickens et al. (2009).

3.2 An enabling environment for digital social protection payments

Making digital payments work requires partnerships between social protection schemes and either financial institutions and/or mobile phone providers, depending on the delivery model adopted. Social protection schemes can be an attractive business opportunity for financial institutions. They often represent significant payment volumes, prospective new customers and an additional source of revenue (Almazan, 2013). However, despite the potential benefits of digital G2P payment delivery for both sides, this line of business is extremely challenging. Fully committed partnerships are required to make it work (ibid.).

From the outset, the process of switching to electronic payments must be carefully managed to ensure the resulting digital payments deliver social transfers efficiently and increase financial inclusion. For example, the Kenya Hunger Safety Net programme explicitly required tenderers be able to provide an electronic store of value from which recipients could withdraw their funds as needed. But the designers did not specify that this had to be an account in a bank, meaning mobile network operators with mobile-based financial services also could apply (Pickens et al., 2009).

Countries that have successfully implemented digital G2P payments of social protection, including Brazil, Colombia, Mexico and South Africa, have adopted regulations that permit branchless banking through non-bank agents (Bold et al., 2012), reducing the costs for the institutions in ensuring beneficiaries have access to cash-out points. They have also assisted with the opening of low-value bank accounts by using tiers of requirements of KYC procedures, meaning people opening basic bank accounts meet fewer requirements, for instance the need for proof of address (ibid.). The government of Pakistan has undertaken a number of reforms to encourage digital payments in its flagship social protection programme (Box 9).

Box 9: An enabling environment for digital transfers in the Benazir Income Support Programme

In Pakistan, BISP represents the largest among social cash transfers in terms of number of beneficiaries and volume of payments. The State Bank of Pakistan, along with international donors, has played an important role in the evolution of G2P payment systems, including through:

- Branchless banking regulations in 2008. Though the central bank gives branchless banking licences only to banks, it has supported and encouraged a range of business model arrangements. Three mobile network operators now own microfinance banks.
- Gradually reducing the KYC requirements for low-balance accounts, facilitating account openings for new beneficiaries. This includes giving banks approval to open accounts for BISP beneficiaries without going through the normal process of verification, so eliminating an initial upfront fee.
- Waiving fees for ATM withdrawals for BISP beneficiaries. Even banks outside of the main six that are not involved in making BISP payments must give away free transactions if beneficiaries use their ATMs for withdrawals. The volume of these types of transactions is likely low, but it shows BISP's commitment to facilitating ease of payment for beneficiaries

- Acting as implementing agency for the Department for International Development (DFID)-funded Financial Inclusion Programme, which includes the Financial Innovation Challenge Fund. Launched in May 2011, the fund aims to foster innovations, test new markets, lower the cost of delivery, enable more efficient systems and procedures and provide new ways of meeting unmet demand for financial services.
- Launching a National Financial Literacy Programme to promote financial literacy among the general public at the national level. The programme delivers knowledge about basic financial concepts such as budgeting, savings, investments, debt management, financial products and branchless banking.

Source: CGAP (2013).

Overall, the biggest obstacle in expanding the digital transfer of social protection payments is a lack of infrastructure, described by some as the 'toughest nut to crack' (Porteous 2011, in New America Foundation, 2011). Finding the funds to invest in the telecommunications and infrastructure expansion necessary to expand branchless banking opportunities will often mean explicitly demonstrating the state-wide benefits of financial inclusion, and quite possibly state backing for some of these investments where markets are failing to provide (New America Foundation, 2011).

Certainly, the costs of investing in electronic delivery systems are considerable. Beyond the necessary telecom infrastructure, they may include the costs of investing in biometric IDs and readers, ID enrolment and establishing a robust agent network and overcoming substantial liquidity and security obstacles. The tender process needs to make the switch to electronic delivery systems attractive for both governments and social programme managers, as well as for the private sector. The Hunger Safety Net programme in Kenya breaks down costs into three parts – transaction fees; infrastructure fees; and fixed overhead fees – to encourage financial service providers to bid for transfer delivery. These obstacles help explain, in part, why many programmes continue to deliver social transfers in cash (New America Foundation, 2011).

Particularly in low-income countries with rudimentary banking systems largely concentrated in urban areas, developing the adequate physical infrastructure is a significant challenge and one that is often underestimated (Zimmerman et al., 2014). It may be that digital G2P payments should be phased in only after countries have a critical mass of agents in place and, for mobile transfers, where mobile payments and usage have reached a certain level (Almazan, 2013). Even in countries such as Kenya, with a well-developed system for mobile payments, infrastructure limitations have meant a social protection scheme had to switch from mobile transfers to using smart cards (Table 2). In Uganda, challenges in the electronic delivery of Social Assistance Grants for Empowerment (SAGE) mean an electronic transaction can take three to four minutes and depends entirely on the strength, or existence, of the network signal and capacity of beneficiaries and other community members to use the technology (Zimmerman and Bohling, 2013a). Because of the challenges in electronic delivery and the need to reduce direct operating costs for the mobile network operator and the dealers, the programme is switching from monthly to bimonthly e-payments (reducing the cost of delivery from 4.2% to 3.5% of the value of transfers). This will also reduce the transport costs for recipients (ibid.). However, it will also have implications for the 'protective' nature of the social protection payments.

Table 2: Physical infrastructure can impede transition to mobile payments

Challenge	Examples of programmes facing this challenge	Ways around it
Limited network coverage	MTN delivering SAGE payments in Uganda (Zimmerman and Bohling, 2013a)	MTN has built five new cell towers to serve SAGE recipients. MTN could not use its existing mobile money product owing to limited network coverage. Where there remains no network coverage, payments have to be delivered manually.
	Chars Livelihoods Programme (CLP), Bangladesh (CLP, 2014)	CLP had to continue to deliver manual payments in areas with no network. Development of new systems using SIM-embedded cards that work with specific portable payphones that can access several different mobile networks.
Low network strength and outages	The World Food Programme (WFP), Kenya, found network connectivity was not strong enough to process payments using M-pesa (Zimmerman and Bohling, 2013b)	When the mobile network was down, agents would transact offline and reconcile later, but regulations actually forbid this (Zimmerman and Bohling, 2013b). WFP Kenya thus moved to a new debit card-based system that provides each recipient with an Equity account and debit card.
Limited mobile ownership	BISP undertook a pilot using mobile payments but the cost of providing beneficiaries made the scheme unattractive to banks, particularly when many phones were lost or damaged after the first payment (CGAP, 2013)	United Bank Limited for payments of BISP: after a pilot issuing mobile phones, decided it was more cost-effective to issue smart cards during account registration instead (CGAP, 2013). Airtel Money in Malawi: worked with donors to acquire handsets for the 23,000 recipients (Almazan, 2013). In Kenya, Concern issued beneficiaries with Safaricom M-pesa-registered SIM cards, which they used in a shared handset at the distribution point to collect their social transfers (Brewin, 2008). Initially a group of 10 beneficiaries shared a SIM card. The group member who the card was registered to collected the money and divided it among beneficiaries (ibid.).

3.3 Making the business case for electronic payments

Governments need to give special attention to devising G2P payments in ways that will make them attractive to financial service providers. In particular, the business opportunity for banks needs to be

understood better, so policymakers can structure incentives in ways that produce sustainable solutions (Pickens et al., 2009)

In most countries, financial institutions struggle to provide commercially viable yet appropriate and accessible savings services to the poor and very poor. Linking cash transfer delivery – which in many cases reaches millions of very poor beneficiaries – to accounts may hold efficiencies of scope and scale, and so make a business case for financial institutions to bank the poorest of the poor at scale (New America Foundation, 2011). Child grants in South Africa are delivered to more than 8 million poor recipients, representing 22% of households in the country (SASSA, 2008 in Pickens et al., 2009). Brazil's Bolsa Família programme makes conditional grants to one-quarter of the country's households (Lindert et al., 2007 in Pickens et al., 2009). The lower boundary of what is 'big enough' varies, but some G2P programmes are too small to be directly profitable for most financial institutions (Pickens et al., 2009). Banks often see G2P as one of many opportunities to grow their branchless banking business, providing additional revenue for their agent networks, which can then reach not just beneficiaries but also other banking customers.

In an increasing number of countries, financial institutions are eager to bid on the right to deliver G2P payments. Most are attracted by the prospect of a dependable, recurring source of income in the form of fees paid by the government (Pickens et al., 2009). Offering accounts through which social cash transfers are paid can be profitable and sustainable for banks at the individual account level as long as government fees at a reasonable level remain. In the short term at least, governments need to continue paying these fees and not assume banks can get sufficient revenue from the float or from cross-selling[6] (Bold et al., 2012). Indeed, the inherent lumpy and infrequent nature of G2P payments challenges liquidity in rural areas and can impose additional costs on financial service providers. With these fees, G2P payments can be an important source of revenue for payment service providers. For United Bank Limited in Pakistan, where government pays a 3% fee in line with global best practice, G2P payments started off as being a key business driver (60% of revenues in 2011), but this has now dropped to 20-30% of revenues, as account activity levels are growing through taking on new clients in new areas (Almazan, 2013).

The business case for banks becomes less clear-cut when they expand from simply being the payment service provider to being the banker of the beneficiaries. Further investment in product development, agent rollout and marketing among beneficiaries will be a priority for banks only if they see some return on investment at some point in the future. This potential earning is currently unclear. But financial institutions can be sceptical about providing poor recipients with more than a way to withdraw payments. They often design deliberately limited products to ring-fence costs. For example, cards may be used at ATMs but not at teller windows; recipients may not be able to make deposits; there may be no debit function for enabling in-person purchases at merchants or transfer capability for remote payments (Pickens et al., 2009). The uncertainty of the bank business case is closely tied to the lack of understanding of G2P beneficiaries as potential banking customers (CGAP, 2013).

3.4 From landing pads to instruments for secure savings

In theory, electronic payment of social protection can be a stepping-stone to improving access to and use of formal savings accounts. Overwhelmingly, however, beneficiaries of social protection do not save in the bank accounts opened to receive transfers, even when account features or programme rules allow them to. Termed 'dump and pull' behaviour, beneficiaries instead withdraw the whole grant amount at once and as quickly as possible (Almazan, 2013). Savings are held in other, usually informal, instruments, ranging from hiding money in the house to participating in informal savings groups (Bold et al., 2012). In some cases, social protection programme administrators reinforce this behaviour, by

[6] Float = the transfer government makes to a bank; cross-selling = revenue derived from the customer paying for other services.

requesting prompt withdrawals from beneficiaries or not giving clear and consistent messages that people can save a proportion of the grant. In this way, beneficiaries may fear losing any unspent money. The focus of the service provider then becomes how to ensure the distribution network can handle this, rather than how to encourage customers to keep and use funds digitally through targeted marketing (Almazan, 2013).

Another reason beneficiaries tend not to save in the accounts opened to receive transfers, even if the account enables this, is limited understanding of its functionality and how to operate it. A common issue payment providers raise is beneficiaries forgetting their PINs, which then need to be reset, adding time to the withdrawal process (Almazan, 2013). Many require the assistance of agents to withdraw money (CLP, 2014; Zimmerman et al., 2014). Although G2P recipients often have limited schooling and little exposure to banking, this is not necessarily an insurmountable barrier to them using electronic infrastructure, as beneficiaries of Bolsa Família report. In 2004, when cards were first issued, only 24% of beneficiaries said using the card was ‘easy’ or ‘very easy’. This had increased to 96% a year later (Vaitsman and Paes-Sousa, 2007, in Pickens et al., 2009).

The main obstacle though, may be financial products that are not useful to poor people. India provides instructive evidence that poor people, like more wealthy people, will refuse to use poor-quality services. Approximately 85% of basic bank accounts opened by Mahatma Gandhi National Rural Employment Guarantee Scheme recipients are dormant (Ramji, 2009). A closer look reveals this to be a rational choice made by recipients. The average recipient spends the equivalent of a half-day’s wages and an entire day of travel to reach a bank branch and make a transaction. Further, financial institution staff typically provide little or no explanation about how the account works (ibid.). Use of accounts is better in programmes that incorporate well-designed financial services, but there are few instances of this (Pickens et al., 2009). Fundamentally attempting to link cash transfer programmes with savings options for poor people on a large scale remains untried and untested. There is an enormous opportunity to provide recipients with the ability to save, invest productively and mitigate emergencies (New America Foundation 2011).

4. Index-based Weather Insurance

Key points

Weather-indexed insurance has significant potential to help low-income farm households manage the risks of flooding, drought and extreme temperatures – the major environmental hazards to which they are regularly exposed.

There are several pilot programmes from which lessons can now be learnt for scaling up.

Examples of scale-up do exist but overall coverage of index-based weather insurance remains relatively low. While governments and projects have tried to use premium subsidies to expand coverage, it is innovation to address underlying obstacles, for example through customer education, effective delivery channels, reducing basis risk and bundling with other services, that is having a more sustainable impact on scale of coverage.

In terms of willingness to pay, the limited evidence suggests insurance is more attractive to wealthier farm households, partly because they have the cash to pay for it. So it may be that weather insurance will help prevent impoverishment more than it will address chronic poverty.

Despite the many risks chronically poor people face in their lives, insurance has been the financial service they are least likely to use or is least likely to be available. The microfinance industry has made significant progress in terms of widening the access of poor households to credit and, more recently, to savings services through innovations in product design, delivery channels and organisational structure. Mobile technology is starting to revolutionise payments systems for poor people and has high potential as a delivery channel for other financial services. The insurance sector has also seen innovative attempts to drive down the frontier of access to vulnerable, low-income clients. Index-based insurance – in which a predetermined and objective measurement, or index, triggers pay-out – is one of the innovations that has been developed and piloted with this objective in mind. This section examines index-based insurance as it has been applied to cover weather risk farmers face. It looks at its rationale and also evidence of its success in terms of widening coverage of low-income farmers in developing countries. It also suggests ways in which index-based weather insurance may have particular benefit in future.

4.1 The impact of weather risk on poor farmers

Weather risk has a major negative impact on farmers and those whose livelihoods are dependent on agriculture. Direct impacts after a bad weather event can potentially include lost income owing to a poor harvest or harvest failure, damaged assets and, for those already economically vulnerable, indebtedness and entry into a cycle of economic decline. Exposure to weather risk, however, may also have wider, indirect impacts. Farmers may choose risk avoidance strategies that reduce income-generating potential: diversification into low-risk, low-profit activities; limited investment in infrastructure and inputs. Weather risk may also affect households' access to services and infrastructure as service providers, such as banks, suppliers, traders and government agencies may also be reluctant to operate and invest in higher-risk areas.

4.2 Problems with conventional crop insurance

Conventional insurance has not been successful in helping low-income farmers address weather risk. Weather insurance, even if limited to coverage of the most severe risks, has been very costly for a number of reasons:

- **Administration costs** are high as assessment of claims is very difficult and expensive, particularly if large numbers of small farmers are involved. Assessment requires access to detailed individual farm data on average or expected yields and on-site inspection of often wide and remote cropping areas after weather events.
- **Moral hazard** risks are high, with insurance coverage itself dis-incentivising good cultivation practice, particularly as insurers are unable to monitor cultivation practices throughout the crop cycle. Insurers need to account for the cost of moral hazard when setting premiums.
- **Adverse selection,** in which farmers in higher-risk situations tend to buy disproportionately more coverage than those in lower-risk situations, is also a particular problem. This is because insurers find it difficult to accurately reflect patterns of local variation in weather-related risk and therefore tend to offer relatively uniform premium rates. Farmers who know they are particularly vulnerable to weather will be more likely to buy insurance at what, to them, may seem a reasonable price. Adverse selection affects the ratio of indemnity pay-outs to premiums collected, again increasing the cost of insurance.
- Within particular regions, most weather risk tends to be **highly correlated,** with many farmers suffering losses from weather events at the same time. This requires insurers to pool risk widely, to purchase reinsurance and to have access to finance in the case of large pay-outs. This also adds to the cost of provision.
- Conventional crop insurance has usually covered **multiple perils,** including a wide variety of different weather events, crop pests and diseases, etc. While offering wide benefits to policy-holders, it also significantly increases the cost, given the high frequency of pay-out.

For all these reasons, conventional crop insurance has been very costly to provide and, in most cases, has required significant ongoing state financial support in the form of premium subsidies or indeed direct provision of insurance. Subsidising premiums tends to exacerbate the problems outlined above, to act as a significant drain on government resources and to contribute to promoting cultivation in high-risk areas.

4.3 Potential benefits and limitations of index-based weather insurance

Index-based weather insurance was developed with a view to addressing the underlying problems and costs of conventional crop insurance. Rather than assessing individual claims, the insurance pay-out is triggered when a predetermined and objective weather measurement, or index (such as rainfall level in a particular area over a particular time period), is recorded. The level of pay-out is also predetermined, based on past loss data or estimates of likely losses – and is related directly to the index measurement. For example, if rainfall flooding is the insured risk, the pay-out would be triggered when recorded rainfall levels exceed a certain threshold over a certain time period and would increase by predetermined increments correlated to the index measurement. The increment would depend on estimates of losses from floods of varying severity. This mechanism addresses many of the problems of conventional crop insurance:

- Once the product has been designed, tested and piloted, administrative costs are much lower than in conventional insurance, as pay-out is automatic, based on the index measurement. No on-site claims assessment is required.
- Because an objective, external index triggers the pay-out, the problem of moral hazard as a disincentive for good husbandry is removed.
- Adverse selection is reduced as the process of product design requires collection of accurate past data on losses and evaluation of the local pattern of variation in weather risk.
- These reductions in various types of risk in turn make it easier for insurers to negotiate for lower-cost reinsurance.

However, despite these clear advantages, a number of potential issues arise with the provision of index-based insurance:

- **Application to drought, flood and extreme temperature hazards.** Index-based insurance can only cover single perils that have easily measurable indices. It is most appropriate, therefore, for crops that are threatened particularly by single severe risks (e.g. drought or flood or temperature variation) rather than those threatened by a combination of different risks. However, droughts, floods and extreme temperatures cover a very large proportion of the environmental hazards poor people face on a regular basis. Index-based insurance is also suitable for risks that are relatively highly correlated so that similar levels of losses can be estimated for an area covering a reasonably large number of potential policy-holders. Risks that have severe but geographically limited and random impact – like hail or tornadoes – are not well suited to coverage by index-based insurance. Index-based insurance is also suitable for relatively severe risks that take place at a medium frequency. If too frequent, the insurance will be too expensive. If very infrequent, clients may be unwilling to pay.
- **Basis risk.** Because pay-out is based on an independent index rather than actual losses, there are risks that it may not reflect actual losses. Pay-outs may occur when losses have not actually been incurred and pay-outs may not occur when losses have been incurred. Either case may result from inadequate data or mistakes made in product design but, even in the best scenario, is never entirely avoidable. Each may occur if weather measurement infrastructure is weak. This is similar to targeting error in social protection or other socioeconomic programmes. Agencies offering weather insurance will want to minimise these errors: regular surveys to monitor the level and nature of error and induce operational improvements will be necessary.

In addition, there are a number of conditions for successful operation of weather-indexed insurance schemes targeted to poor people:

- **The need for financial education due to product complexity and lack of insurance culture.** Formal insurance is not something many low-income farmers in developing countries have experienced, and there is usually initial reluctance to make payments to outsiders with no return if losses are not incurred. Particularly if pay-out rules are complex, understanding may be even harder to achieve with index insurance. Some have argued that poor people are reluctant in general to purchase formal insurance not because of lack of understanding of the product but because of limited trust in the provider (Banerjee and Duflo, 2011).
- **The need for an adequate distribution channel.** Given the product complexity mentioned above, the role of an agent network in explaining and selling policies is crucial, as well as the role in managing payment processes and enquiries and complaints efficiently. When insurance contracts are targeted at large numbers of small farmers in rural, sometimes remote, areas, the issue of delivery channels is particularly pertinent.
- **Adequate data infrastructure.** Index-based weather insurance is dependent on the reliable supply of accurate and detailed weather information, either from local weather stations or from satellite imagery. In developing countries, such infrastructure is not always in place, a factor that may limit the viability of an index insurance product.
- **An enabling policy environment.** If governments tend to provide generous relief payments in the wake of severe weather events, for example by subsidising banks to write off loans or by providing direct assistance to farmers, appetite for purchasing insurance to cover these risks will be relatively diminished.
- **An enabling regulatory environment.** Index insurance is a new product that will require approval from the insurance regulator. In many countries, because of unfamiliarity with index insurance, the approval process can be difficult.
- **High development costs imply the investment of public funds to get schemes started.** Initial product design is a complex process involving analysis of data relating to levels of risk exposure, previous or likely losses, levels of local variation, standards of data availability,

regulatory compliance and other issues. Insurance companies themselves seldom have sufficient resources to make this level of investment, and product development has, to date, been dependent mainly on donor or government support.

4.4 Experience of index-based weather insurance to date

A large number of pilot projects have been launched in developing countries, mainly since the early 2000s. Most of these projects remained as small-scale pilots and, in many cases, data on the impact are patchy. This section reviews literature on impact from a number of perspectives. First, it looks at the scale of current index-based weather insurance, in terms of numbers and proportion of farmers covered and level of coverage. Second, it presents evidence on targeting of low-income and vulnerable farmers. Third, it covers evidence of its impact on policy-holders from two perspectives: impact on consumption (e.g. insurance pay-outs replacing lost income after a severe weather event) and changes to production practices (e.g. greater confidence to invest in higher-return activities).

Scale

A recent synthesis report (Greatrex et al., 2014) identified four index-based weather insurance schemes that have been implemented at scale, defined as at least 10,000 contracts sold in 2013. This is not a large number, and shows that scaling up of pilot projects to date has been limited. Assessing the factors underlying successful scale-up in these schemes also demonstrates that there are both opportunities and warnings:

- **India's national index-based insurance scheme,** which covered 33.4 million farmers in 2012/13. This programme currently comprises the National Agricultural Insurance Scheme (NAIS), which requires compulsory coverage of Seasonal Agricultural Operations credit borrowers. The scheme, covering food crops, oil seeds and other commercial crops, uses an area yield index with pay-out triggered when sub-district yield averages drop below a predefined threshold. Insurance is provided by a state insurance company and is highly subsidised, with all indemnities in excess of premiums collected covered from the state budget. The government is trying to phase out this scheme, which is very expensive and has suffered operational difficulties. The modified NAIS attempts to reduce basis risk by using village-level yield averages as the index and also switches to government subsidy of premiums. It has not yet been implemented widely. The third component, the Weather-based Crop Insurance Scheme, now covers 13 million farmers and involves coverage of a wide variety of different crops and weather events. These schemes are based on weather data rather than area yields and are underwritten by private insurance companies, but the insured also enjoy heavy state premium subsidies. The key determining factors of scale are therefore the compulsory nature of coverage for borrowers and high levels of state premium subsidy. Subsidy levels have proved unsustainable and are now being adjusted. Subsidies of this kind may not be viable in other contexts.
- **Agriculture and Climate Risk Enterprise (ACRE) – East Africa.** This insurance programme, previously known as Kilimo Salama, is the largest programme in developing countries in which clients pay unsubsidised premiums. A variety of products are offered: weather insurance packaged with microfinance loans for agriculture (182,092 farmers covered in 2013); weather coverage for contract seed growers (650 clients in 2013); dairy cow insurance offered in conjunction with a dairy cooperative (58 farmers in 2013); a replanting guarantee for seed purchasers covering early drought risk (2,279 farmers in 2013). Determinants of success in take-up appear to be the bundling of insurance with loans and technical advice, agreements with strong delivery partners and, most famously, the use of M-Pesa digital payment channels for both premium payment and pay-out delivery.

- **R4 Rural Resilience Initiative in Ethiopia and Senegal.** This programme expanded from 200 farmers in Tigray in 2009 to 24,000 in 81 villages of Ethiopia and a further 2,000 in Senegal in 2014, and provides insurance against drought risk. The insurance is part of a wider programme of savings, credit and non-financial interventions such as agricultural extension. Scale has been achieved partly through an indirect subsidy in the form of 'insurance for work', in which participants earn money to pay premiums though public works programmes.
- **Mongolia's Index-Based Livestock Insurance Project (IBLIP).** This government of Mongolia/World Bank initiative provided insurance coverage for approximately 15,000 herders in 2013. It offers coverage of livestock against the risk of the *dzud* cold weather phenomenon, which decimates livestock herds on a five-to-eight-year basis. The index is based on average area livestock death statistics at the local region level. The coverage period is January to May; in June, a national livestock survey is carried out, the results of which are compared with figures from the previous December. A number of factors have been put forward to explain the programme's success. Basis risk is found to be very low. Also, risk has been segmented, with the government of Mongolia taking responsibility for the most severe loss events (over 30% of herds lost) through purchasing its own Government Catastrophic Coverage. This segmentation of risk makes the insurance more affordable for individual herders.

While these examples of scale-up do exist, overall coverage of index-based weather insurance remains relatively low. While governments and projects have tried to use premium subsidies to expand coverage, it is innovation to address underlying obstacles, for example through customer education, effective delivery channels, reducing basis risk and bundling with other services, that is having a more sustainable impact in terms of scale of coverage.

Poverty focus

Evidence on the extent to which low-income farmers have bought index-based insurance is sparse. In 2012, DFID commissioned a systematic review of the effectiveness of index-based micro-insurance in helping smallholders manage weather-related risks (Cole et al., 2012). This found only 13 studies met its criteria, of which only six were based on data for actual insurance policy purchase, whereas seven assessed potential take-up using a hypothetical insurance policy model. Of the six studies on real insurance products, four covered components of India's national index-based insurance scheme mentioned above. This is clearly a very small sample on which to base any firm conclusions. Average annual per capita income levels of respondents in these surveys ranged from a low of $106 per year (Ruvuma region of Tanzania) to $936 (Gujarat). Three of the studies found a significant positive relationship between income levels and interest in purchasing insurance, meaning insurance was more attractive to wealthier farmers. Positive links were also found between liquidity (cash availability) and readiness to buy insurance.

Other, more anecdotal, evidence seems to suggest that, while small farmers purchase index-based weather insurance, it tends to be wealthier small farmers who choose coverage. A study conducted by Bertram-Hummer and Krahnert (2015) in western Mongolia found 32% of herders with over 350 livestock bought IBLIP insurance in 2013, compared with 14% of those with less than 200 livestock. So it might help prevent impoverishment but is not likely to address chronic poverty.

Impact on consumption

As outlined above, the most direct potential impact of insurance coverage is in helping farmers recover from the economic effects of severe weather. This could be through avoidance of assets sales or reduction in consumption. A study was carried out into the impact on consumption and asset protection of coverage under the Index-based Livestock Insurance (IBLI) programme in Marsabit district, northern Kenya (Janzen and Carter, 2013). This is a pilot project that uses a remotely sensed Normalised Difference Vegetation index, with data collected by satellite, as an indicator for livestock losses. The index mechanism is based on analysis of the correlation between amounts of vegetation available as

forage and livestock mortality. The programme has reached more than 1,000 herders since its launch in 2000. The study found that, following a drought in 2011 that activated the scheme's first pay-out, households covered by the insurance were 36% less likely to anticipate selling assets and 25% less likely to anticipate reducing meals. No studies covered in the systematic review look specifically at the impact of coverage on consumption after a severe weather event.

Impact on production practices

Only one study in the systematic review looked at the impact of insurance on investment and production practices – a simulation exercise carried out by Hill and Viceisza with respondents in Ethiopia in 2009. This exercise indicated that farmers with hypothetical insurance coverage would choose to invest more in fertiliser when covered, particularly if they had invested in fertiliser before and had good knowledge of the insurance product.

A variety of other studies have shown that access to insurance does lead to greater confidence to invest in production. The International Finance Corporation (IFC, 2013) quoted results from a 2012 impact study on Kilimo Salama (now ACRE) showing insured farmers invested 19% more in production and earned 16% more than uninsured neighbours. Janzen and Carter (2012) quote a number of recent surveys showing, for example, that farmers purchasing rainfall index insurance in Ghana increase agricultural investment (Karlan et al., 2012) and that farmers in India with access to insurance move to riskier but higher-yielding rice production (Mobarak and Rosenzweig, 2012).

Box 10: A pilot weather index insurance project in northern Tanzania

As part of the country case studies carried out for this research, literature on one pilot weather insurance project was examined in Tanzania. The product involved pay-out for excessive rain or drought during specified periods of the cotton crop in the Kwimba region of Tanzania. The index used weather information from satellite data. It was underwritten by APA, a leading Kenyan insurer and cotton ginning factories were selected as the distribution partner. A total of 337 farmers were covered in the first pilot season 2013-4 and weather conditions did trigger pay-outs during the pilot. A review of this pilot (Wang, Internal Review for Gatsby Tanzania Trust, 2014) revealed a number of successful elements of the pilot (e.g. good control of basis risk, successful arrangement of insurance and re-insurance cover) but also challenges during implementation which mirror many of the obstacles to weather index insurance outlined above:

- Issues were found in the choice of distribution channel as, of five ginners initially contacted, only one agreed to act as an agent for the product in the end. It appears that the others felt that side-selling risk from contract farmers was higher than weather risk.
- The ginning factory paid for coverage of 337 farmers but did not inform these farmers that they were covered.
- Focus group discussions with farmers revealed nervousness about a new product and limited trust in the provider. Farmers also expressed desire for coverage of other production risks, such as ineffective pesticides and seeds which failed to germinate.
- Delays occurred with pay-out because of exchange rate and administrative difficulties.

While questions over demand for the product are more fundamental, the issue of the distribution channel may raise interesting questions. Though the ginning factory did not distribute the product as planned to individual farmers, perhaps as an 'aggregator' of services, the factories themselves might have been potential customers for insurance coverage (see 'Insurance coverage for aggregators' below)?

4.5 Lessons on access for and impact on the chronically poor

Despite the potential advantages of index-based insurance as a tool for poor households to address weather risk, developing and offering viable products is far from simple. It has, as yet, been possible to scale up only a few of the promising pilot projects that have been launched. Take-up has been strongest among wealthier, more experienced smallholders, suggesting it may be of greatest use in preventing impoverishment. However, while rigorous evidence is still sketchy, coverage does appear to have positive impacts in terms of consumption smoothing, asset protection and investment in production. It is time to learn the lessons of pilots and scale up, while attempting to increase outreach.

So what approaches may be most promising in terms of better realising the potential benefits of index insurance for the chronically poor? Clearly, much of the answer lies in more realistic appraisal and design of pilot products. Product development is a complex process, comprising assessment of risks, costs, target client behaviour, data quality, distribution channels, regulatory environment and market conditions. If all these aspects are assessed realistically, there is a higher chance pilot products will be successful and scalable. It has been suggested more intensive client involvement in this design process is one potential key to more demand-driven design.

Similarly, promoters may need to work harder on client education and promotion, as awareness and understanding of the product is an important determinant of success. However, some other broader suggestions on new directions for index-based weather insurance are particularly worthy of discussion:

- **New distribution partnerships.** Accessing, informing and servicing large numbers of small farmers is essential for the viability of insurance products, but it has proved difficult and expensive to achieve. Partnerships with companies or organisations that have wide networks servicing target customers and that have built up high levels of trust with these customers offer considerable advantages, as does bundling with complementary products. Examples include ACRE's partnerships with MFIs and bundling of insurance with agricultural loans. Other examples include the partnerships established by the IBLI programme with NGOs that have strong contacts with local communities.
- **Technology** can also help reduce transaction costs and make index-based insurance more affordable for low-income clients. The use of M-Pesa for premium payments and insurance pay-outs reduces transaction costs for ACRE clients. The replanting guarantee product offered by ACRE involves a scratch card attached to each bag of seed with a code number that clients text to ACRE to activate coverage. Sale of insurance, therefore, does not require any contact between the purchaser and a sales agent, significantly reducing costs.
- **Insurance coverage for aggregators that provide services to the chronically poor.** It has been noted that delivery of insurance products to individual households is particularly difficult and expensive owing to low product awareness, scattered locations, low individual value of coverage and other factors. This has led some to conclude that the real potential of index-based insurance may lie in insuring larger organisations that serve low-income communities, such as banks or MFIs, if they are also subject to weather risk, rather than direct marketing to households. If banks or MFIs are able to insure their portfolios against weather risk, they may be encouraged to lend in more high-risk areas; potential business interruption could be avoided and services continued to vulnerable clients in the event of the index being triggered; and, potentially, some of the benefits could be shared with clients through lower loan interest rates. An example of an index insurance product aimed at 'aggregators' such as banks is the Extreme El Niño Insurance Product in Peru. This is a product that insures against flooding losses in an extreme El Niño event and is triggered by rising sea temperatures in the Pacific, which are an early indicator of an El Niño event.

Box 11: Insuring against El Niño, northern Peru

'The El Niño Southern Oscillation (ENSO) is a climate event associated with warming sea surface temperatures in the Pacific Ocean. In years of extreme El Niño events, areas in northern Peru experience catastrophic flooding. As of 2010, it is possible for stakeholders in northern Peru to purchase a new form of insurance that pays out just as flooding begins and stakeholders begin incurring extra costs and consequential losses. Given the high basis risk associated with selling index insurance to households, this insurance is designed for firms and institutions that serve households that are highly exposed to El Niño. ENSO insurance is sold by a Peruvian insurance company, and a major global reinsurer carries most of the risk. This new insurance product is the first insurance to use sea surface temperature as the proxy for catastrophic losses and also the first regulated "forecast index insurance" product in the world.

'Despite the promise of index insurance, uptake by smallholder households is slow. Presently, index insurance may be better suited for risk aggregators—that is, groups or institutions that aggregate the risk of households either through the services they provide or through informal risk-sharing arrangements (for example, agricultural lenders, firms in the value chain, and farmer associations). Focusing first on risk aggregators should also help build linkages and sustainable products that will directly serve smallholder households.'

Source: Skees and Collier (2010).

- **Insurance coverage for groups.** Another potential avenue is the marketing of index-based insurance policies to groups rather than individuals. This has the advantage of potential larger scale and lighter client education requirements. Groups, particularly strong, existing groups with high levels of internal cohesion, may also help share risks between members and thereby also mitigate the basis risk facing individuals buying index-based insurance. In other words, groups may help divide up pay-outs to members more fairly, based on actual losses. Dercon et al. (2014) investigated the potential of selling index-based weather insurance contracts to *iddirs*, or funeral societies, in Ethiopia. *Iddirs* are indigenous, informal insurance groups that enable members to meet the heavy funeral costs of family members. Willingness to pay for the insurance was found to be higher when marketing efforts focused on the potential role of the group in sharing risks and allocating pay-outs between members.
- **Insurance coverage for governments.** Similarly, there may be a market for index insurance among governments that need to plan for, and provide, disaster relief to affected farmers in the case of a severe weather incident. The case of the Mongolian government buying insurance to cover its liabilities in the case of a severe *dzud* has already been mentioned. The Mexican government is the most prominent customer in this market, with Agroasemex, a state-owned reinsurance company, offering coverage to state governments in the case of maize and other crop losses owing to drought. State governments partly pre-finance relief payments to farmers in the case of severe drought through this index insurance product (Box 12).

Box 12: Financing state drought relief through reinsurance

'The Mexican government has generated mechanisms to help low-income producers who have no public or private insurance reduce the risk of catastrophic losses from weather. In 1995, it established the National Fund for Natural Disasters […], a federal program that provides ad hoc funds following natural disasters to local governments and public dependencies for infrastructure rebuilding and for restoration of natural resources, natural protected areas, coastal areas, and riverbeds. In 2003 the Fund to Assist Rural Populations Affected by Weather Contingencies […] was created to target assistance to small farmers in the event of weather-related shocks, including frost and wind damage. Costs are shared between the federal government (70 percent) and state governments (30 percent). These fiscal resources have covered the rural population's urgent needs related to catastrophic weather events, but

uncertainty about the occurrence of such events has meant that in some years these resources have been assigned to other programs.

'In response to this situation, AGROASEMEX has developed Catastrophic Agricultural Insurance […]—an index hedge designed to protect small producers affected exclusively by drought events. Federal and state governments buy the insurance to manage the risk they face from making weather-contingent payments to rural residents. The insurance allows the federal and state governments to increase payments to those affected by drought without increasing the budget. A region's access to this insurance is limited by three requirements: extensive and consistent historical climate data, infrastructure to measure weather changes in real time, and the agroclimatic conditions to allow crops to develop adequately.'

Source: Villarreal González (2009).

5. Mobile Money

Key points

Mobile payments systems can become rapidly inclusive – from very little coverage in 2008, Tanzania's coverage has shot to 48%, and experience in Kenya tells us this plays a role in capacity to withstand shocks.

Mobile money makes transfers easier – remittances and social transfers – both of which can play pivotal roles in poverty reduction. And mobile accounts are increasingly a channel to a range of financial services. They make financial transactions more convenient and safer, even if costs are sometimes higher.

The spread and uptake of mobile money requires a favourable regulatory environment. A number of regulatory authorities, such as in India and Nigeria, have shown caution in allowing mobile network operators to take the lead in providing mobile money services that allow users both to cash-in and to cash-out. With the payment banks legislation passed in India at the end of 2014, the government is relaxing this position, and hopes are high for a major increase in mobile money networks as a result. Similar regulatory reform elsewhere will be crucial to the growth of mobile money both as a payment system and as a delivery channel for financial services.

In the longer term, interoperability between mobile money networks is likely to be a key determinant of expansion in use and in transaction volumes. Currently, account holders cannot make or receive transfers from other mobile money networks. Particularly in more competitive markets, interoperability would increase the convenience and range of services, increase volumes and thereby also reduce average user costs.

Mobile money is a service in which the mobile phone is used to access financial services. It involves opening an account, primarily accessed via the mobile phone, which is often called a mobile wallet or e-wallet. The primary uses of mobile money to date have been to transfer money between account holders and to make payments for goods and services.

Mobile money is a very recent invention. The first service, called SMART Money, was launched in the Philippines in 2001 by SMART Communications, in partnership with Banco de Oro. This was shortly followed by GCash, launched by Globe Telecom in 2004. The best-known of the early innovators, however, was M-Pesa, launched by Safaricom in Kenya in 2007.

Despite its short history, mobile money has grown very rapidly and holds great promise for widening financial access to the un-banked. With optimal operation, the main advantages of mobile money systems to their users over traditional bank or cash transactions include:

- **Convenience.** Transactions can be made anywhere there is a mobile signal and at any time. No travel or queuing is required. Cash can be paid into the account or withdrawn from the account at an agent, the networks of which are growing extremely fast and are, again, usually more accessible than traditional bank branches.
- **Speed.** Transactions are made instantaneously if a signal is available.
- **Safety.** Mobile money transfers have proved a safer means of transmission than, for example, traditional physical cash transfer mechanisms – such as transport by friends and relatives or services operated by bus companies.

Evidence on the relative costs of mobile money is more difficult to gauge, although reduced transaction costs in terms of travel and time have clearly added to its appeal.

While mobile money has been used to date primarily for the purchase of airtime, transfers and payments, much of the interest in mobile money development lies in its potential as a delivery channel for other financial services, including savings and insurance.

Storage of cash in a mobile wallet is, in some sense, already a type of saving, although interest is not paid and regulators place ceilings on maximum amounts that can be stored. Also, while regulators have put in place measures to protect cash stored in mobile wallets, such as requiring operators to keep cash equivalents of an e-wallet float in regulated bank accounts, money stored in a mobile wallet is not subject to the same prudential protection as bank accounts. However, strong potential exists for linkage of mobile money accounts with bank accounts, operated primarily through the mobile channel, which could give access to a wider range of banking services.

This section examines the current state of coverage of mobile money services globally, including the variety of services offered and linkages with bank products. Then it looks at two markets – Tanzania and Nigeria – in more detail with a view to assessing the extent to which mobile money is being used by low-income households or has the potential to reach low-income households. Next it presents the limited evidence available on the impact of using mobile money on low-income users, followed by some observations on the potential for mobile money channels to improve the access of the chronically poor to savings and insurance services.

5.1 Current mobile money global coverage and use

According to the Groupe Spécial Mobile Association (GSMA), a global association of mobile operators, there were 3.6 billion unique mobile phone subscribers by November 2014. GSMA estimates that 85% of the global population can access a 2G signal and 55% a 3G signal. By the end of 2013, mobile money services were available in 89 countries. In 56 countries, two or more providers are competing. Of the 255 services operating globally, 53% of services were operating in Sub-Saharan Africa and 21 of them had over a million active users.

By December 2014, registered accounts worldwide totalled 299 million. At end-2013, there were 4,361 mobile money accounts per 100,000 adults globally (4%), although in Sub-Saharan Africa this figure was 24,652 (25%). The other region with high mobile money penetration is the Middle East and North Africa, with 15,164 accounts per 100,000 adults. As of end-December 2014, there are 16 countries (all in Africa except for Paraguay) where more people have mobile money accounts than bank accounts. This is significant in highlighting the relative importance of mobile money as an avenue for financial inclusion.

However, account inactivity is a significant issue globally. Of the 299 million accounts, GSMA reports that, at the end of 2014, only 103 million had been used to make a transaction in the past 90 days.

In some countries, particularly in South Asia, high numbers of mobile money users use the service over an agent's counter but have not opened accounts. GSMA estimates that 10% of mobile money services were being delivered over the counter globally at the end of 2014. Prominent examples of strong over-the-counter use are Easypaisa in Pakistan and BKash in Bangladesh. There lies a significant opportunity for increasing financial inclusion by encouraging these users to open accounts.

The key to mobile money expansion is the network of agents that open accounts, offer assistance and provide cash-in and cash-out services and, in some cases, a full range of over-the-counter services. Globally, the number of agents is expanding rapidly: 2.3 million by December 2014 (a 46% increase in one year). In three-quarters of the 89 countries where mobile money services operate, the number of mobile money agents exceeds the number of bank branches. However, as with mobile money accounts, levels of agent inactivity are also high. GSMA reports that, globally, 60% of registered agents were active in 2014 (i.e. had processed at least one transaction in the previous month).

In terms of products available, the most widespread are airtime top-up, domestic person-to-person (P2P) transfers and bill payments. Airtime top-ups are the most common transaction but are low in value – accounting for 3% of value transacted in December 2014. P2P transfers accounted for 25% of transactions but 73% of value. Bill payments accounted for 9% of transactions and 12% of value. Bulk payments services (e.g. government payment of benefits and salaries) are also growing fast. International remittance services remain limited at present, although they started to show strong growth in 2014, primarily in West Africa within the West African CFA franc area.

GSMA estimates there were 100 mobile insurance services active in December 2014. Of these, three-quarters are life insurance products – perhaps the simplest form of insurance on offer. Also, half of these insurance products were offered free, or included in existing charges for other services, if certain airtime use thresholds were met. For those that charge premiums, more than half also did not require payment by mobile money (e-wallet) but would accept payment in the form of airtime.

A prominent example of 'free', embedded life insurance is the product developed by Microensure, Tigo and Bima Insurance company for Tigo subscribers in Ghana. Customers can also upgrade their coverage by paying an additional premium. This product, together with a similar product in Tanzania, was covering over a million subscribers by July 2013.

Prominent non-life products include index-based weather insurance products offered by ACRE in Kenya. These products are outlined in the section on index-based weather insurance.

As of December 2014, 26 mobile money services were providing specialised savings products. Nearly half do not pay any interest on the savings account. The most prominent mobile money savings account is M-Shwari, launched by Safaricom and Commercial Bank of Africa, for M-Pesa customers in Kenya. M-Shwari had grown to cover 2.4 million customers by September 2013. A similar product, called M-Pawa, is now being offered to M-Pesa customers in Tanzania (see details below).

A hybrid model has been launched in Tanzania by Tigo Tanzania in which money stored in a mobile money account also earns interest, despite not being deposited in a bank account. In September 2014 Tigo decided to use interest earned on the balance of its trust account to pay out $8.7 million in interest to 3.5 million users and has committed to continuing doing this on a quarterly basis. This model is not permitted by regulators in most jurisdictions but does constitute a significant move towards mobile money accounts gaining more of the attributes of a bank account that would make financial inclusion through this route more meaningful.

So many more insurance products are on offer compared with savings because life insurance is very easy to organise – only a death certificate is required to activate insurance payments.

5.2 Mobile money in Tanzania

In Tanzania, it is estimated that 44% of adults over 15 have a mobile money account, compared with 10% who have a bank account. These are figures derived from the nationally representative Financial Inclusion Insights survey of 2,997 adults between November 2013 and March 2014. It shows an incredible growth in mobile money accounts since the service was first introduced in April 2008. Unlike many other markets, levels of activity in mobile money account use are high: 38% of the population are active mobile money account users (i.e. have used the account in the past 90 days).

These figures are confirmed by the 2013 Finscope Survey in Tanzania which showed that 50% of the adult population over 16 in mainland Tanzania were using mobile money in some form in 2013, compared with 14% who had a bank account.

There is disparity in use in terms of gender, rural–urban inhabitants and poverty status. According to the Financial Inclusion Insights data, 42% of men were active mobile money account users compared

with 35% of women; 55% of urban inhabitants were account holders, compared with 31% of rural; and 58% of people above the poverty line had active accounts compared with 35% of those below. The poverty line used here is the relatively high per capita income of less than $2.50 per day, as estimated using the Grameen Progress out of Poverty Index. Nevertheless, the figures do show the very significant spread of mobile money use by women, those in rural areas and those with low incomes.

Two types of demand drive mobile money use: for P2P transfers and to save money. Even though a mobile money account does not constitute a formal savings account, 25% of account holders said they opened the account either to store money or to start saving money. Receiving or sending money was given as the top reason for opening an account by 61% of account holders. Having opened an account, the most frequent transactions made are withdrawing and depositing money. Use of mobile money for payments is much less common.

Tanzania has a buoyant and competitive mobile money market with four different providers: Vodacom M-Pesa, Tigo Pesa, Airtel Money and Ezy Pesa. While M-Pesa is the largest provider (68% of accounts), its market dominance is not as strong as it is in Kenya. M-Pesa has been particularly successful in spreading agents and services to rural areas. There are some concerns that market expansion may be reaching its limits, though. The Finscope survey showed that, for 60% of respondents who did not use mobile money, the main reason was that they did not have a mobile phone. However, the Financial Inclusion Insights survey does show that 87% of the adult population overall either owns or has access to a mobile phone. So, although some more remote rural areas do not have a signal yet, there is clearly still a large percentage of the population who could already become account holders.

The survey also shows that, overall, mobile money services are quicker and more reliable than bank services. Mobile money account holders reported an average time for transactions (including transportation and actual transaction time) of seven minutes compared with 20 minutes for bank account holders. Mobile money transactions were reported to fail in 1% of instances, compared with 7% for bank account transactions.

In Tanzania, mobile money operators have also started widening their range of products to include both formal savings and insurance products. Vodacom has launched the M-Pawa, a savings account that is accessed digitally using M-Pesa mobile money. The product enables clients to deposit money in a regulated bank account (at the Commercial Bank of Africa Ltd), earn interest on the account and also build up a transaction history that will enable clients to access credit. The account is accessed through M-Pesa and the M-Pesa agent network – rather than physical bank branches. A Bloomberg article reported that 900,000 accounts had been opened by October 2014. One of the other mobile network operators, Tigo, has also introduced Tigo Wekeza (‘invest’ in Swahili), which also offers depositors interest on their savings. As outlined above, as of September 2014 Tigo has also started paying interest on the balance of its accounts to all mobile money account holders.

In terms of insurance products, Tigo offers a life and accident product called Tigo Bima, free to users who spend more than TzS 5000 per month. Customers have to opt in to the product, which lasts one month, with further coverage dependent on their mobile phone expenditure during the previous month. Vodacom has also teamed up with Heritage Insurance to provide funeral insurance for M-Pesa users. This is not a free add-on: clients pay premiums using their M-Pesa account. While these initial products are limited in scope, they clearly demonstrate the potential for mobile as a delivery channel for micro-insurance products in future.

Overall, mobile money has revolutionised financial behaviour in Tanzania since its introduction in 2008. To date, this has particularly involved a surge in digital P2P transfers and storage of cash in e-wallets. Linkages to formal savings and insurance services are starting to be developed and hold out great potential for deepening, as well as widening, financial inclusion in Tanzania in the years ahead.

5.3 Mobile money in Nigeria

The situation in much wealthier Nigeria provides quite a contrast. The Central Bank of Nigeria first issued guidelines for the regulation of mobile money services in 2009, and the first licences were issued in 2011, with actual product rollout in 2012. Services are, therefore, still very new. The Central Bank has licensed over 10 companies to provide mobile money services in Nigeria. However, according to the Financial Inclusion Insights survey, conducted with 6,002 adults aged 15 or over between September and November 2013, only 0.3% of the population actually uses mobile money, of which 0.1% hold an account. This compares with 38% of the adult population who have a bank account and 35% who use a bank account actively.

Awareness of mobile money is much lower than in Tanzania. According to the Financial Inclusion Insights survey data, 12% of the population could name or recognise the name of a mobile money provider. Ownership of a mobile phone, on the other hand, is over 90%, and ownership or access to a mobile phone is over 96%, so the potential for growth should be very high.

A recent report by the Helix Institute of Digital Finance analysed the reasons for the very slow uptake of mobile money in Nigeria, focusing particularly on a variety of constraints in the regulatory environment and on the supply side:

- **Regulatory uncertainty.** The Central Bank of Nigeria does not, as yet, allow telecom-led mobile money services (such as M-Pesa), permitting only either bank led or non-bank-/non-mobile-led services. This has dis-incentivised the telecom operators from partnering closely with banks, particularly as they believe this restriction may be lifted later, opening up new opportunities for them to offer mobile money services directly.
- **Tiered KYC regulation.** This has led agents to focus on registering Tier 1 clients with very simple KYC requirements (just name and phone number). However, the transaction limit of N3,000 per day for Tier 1 clients means transaction charges have had to be fixed at high levels in order to make the service viable (Box 13).
- **Technical problems.** Problems with accessing the network are very common in Nigeria. These problems create delays in transactions and erode trust in the service overall.
- Mobile money providers were found not to invest sufficiently in building strong **agent networks,** with loose agent recruitment criteria, limited training, inconvenience for agents in balancing cash and e-floats and insufficient monitoring and ongoing support to agents. Some agents are discouraged by low incomes and small customer bases.

Box 13: The cost of mobile money can be prohibitive

Ms Badmus was a customer of Paga Tech, the most popular mobile money service among low-income Nigerians. She wanted to save money and believed putting her money away in a mobile money account would prevent her from spending it too freely. She chose mobile money over a traditional bank because of the small amounts she was permitted to deposit, as well as to avoid long lines at the bank.

'If I have N100 or N200, I can save on mobile money,' she says. 'I am not sure the banks accept so little. They ask for N500 and more to transact.'

Ms Badmus transacted weekly through an agent, an experience she found positive. The agent was competent and trustworthy and provided satisfyingly fast service. But her experience with mobile money soured when she was hit with various fees, one of which she incurred when an unexpected expense forced her to withdraw some of her money.

'They said N250 for monthly charges and N50 for early withdrawal,' she says. 'I almost cried that day because it pained me a lot. I had N500, they deducted N300 and I had only N200 left.'

She found the experience so negative that she plans to stop using the service: 'I want to leave Paga because the […] charges are too much.'

Source: Grameen Foundation (2014).

So, while huge potential exists for the spread of mobile money systems in Nigeria, a whole series of regulatory and organisational requirements needs to be met in order to fulfil this demand. Nigeria's situation is by no means unique. Indeed, mobile money was initially slow to develop in Tanzania, leading analysts to discuss why M-Pesa was so popular in Kenya but not in neighbouring Tanzania. After an initial slow start, however, Vodacom adjusted its marketing message, fee structure and agent recruitment mechanisms and the growth in account holders started to surge as in Kenya.

5.4 Evidence on impact of access to mobile money

The rapid, and widespread, surge in mobile money adoption and use in a number of markets such as Tanzania highlight clearly the benefits users themselves see in its use. This surge is the result of the product fulfilling real demand and has not been driven by government promotion or subsidy. Because of the recent introduction of mobile money systems, there is, as yet, relatively little research evidence available on the welfare benefits of mobile money use to poor people.

Access to and use of mobile money in Kenya helped smooth household consumption following economic shocks. More convenient money transfer mechanisms available to those using M-Pesa enabled them to better connect with other households that could help them out in a period of shortage. Based on panel data over an 18-month period (late 2008 and early 2010), consumption by non-mobile money users dropped by an average of 7% after economic shocks, compared with no significant reduction for M-Pesa users. M-Pesa users were found to receive 16% more remittances after shocks and to receive them from a wider range of senders (Jack and Suri, 2014).

Panel data on 907 rural households in Uganda in 2009 and 2012 were used to assess the impact of mobile money use on consumption. Mobile money usage increased per capita consumption by 72% compared with non-users, primarily through a greater likelihood of receiving remittances, more frequent remittances and larger amounts. In 2009, less than 1% of respondents used mobile money, but this figure had increased to 38% by 2012. At the baseline, there was very little difference between future adopter and non-adopters of mobile money, with 50% of both groups receiving regular remittances (Menyegera and Matsumoto, date).

Early evidence therefore would seem to confirm the hypothesis that more convenient money transfer through mobile money systems facilitates domestic remittances and has a positive welfare effect in terms of both increasing and smoothing consumption by recipients.

5.5 Mobile money and its potential to promote financial inclusion of the chronically poor

Mobile money has grown very rapidly and has proved popular in rural areas and with low-income clients. In addition to facilitating transfers and payments, its significance lies in its function as a potential delivery channel for other financial services, including savings and insurance. What is needed, however, to help better realise the potential of mobile money in widening access to and use of financial services by the chronically poor?

In many countries, such as Nigeria, the answer lies initially in solutions to facilitate the growth and expansion of mobile money services at scale for everyone. Some of the relevant regulatory and institutional issues were described with reference to Nigeria. An important debate here focuses on whether regulators have allowed non-bank institutions – notably mobile network operators (MNOs) – to offer mobile money services independently – or whether provision is limited to bank-led models, as in

Nigeria, India, Pakistan and other countries. GSMA, the trade association of the mobile industry, makes a strong case that only MNO-led systems have experienced strong growth, given their existing agent networks, related products and technical expertise. Suggestions have also been made that stipulation of bank-led models only, and unwillingness to open up the mobile money market to MNOs, may be motivated by anti-competitive attempts to protect bank operations, rather than by other concerns, such as prudential regulation and fear of monopolistic market domination by MNOs.

Another regulatory issue particularly relevant in more competitive markets, such as Tanzania, is interoperability: the facility for users of different mobile money systems to make transfers and payments to users of rival networks. As with other networks, such as bank transfers, or indeed with mobile telephony, many believe interoperability is a crucial requirement for optimising the utility and efficiency of mobile money. The ability to send money to recipients in any network may increase the overall volume of transactions and thereby also help reduce the cost of the service.

Here, we focus more on issues that will particularly affect financial inclusion of the chronically poor. Some of these are issues inherent to mobile money systems themselves; others concern the opportunities that may develop through linkages with other institutions and services:

- **Signal coverage.** Remote areas further from main roads tend to have more limited mobile phone signals and to be less convenient for agents, who need to be situated close to banks in order to manage their liquidity. At the same time, and for similar reasons, incidence of chronic poverty also tends to be concentrated in such areas. As with access to other services, longer-term state investment in roads and other communications may be a necessary prerequisite to pushing mobile money networks into more remote areas where poor people live.
- **Simple interface, appropriate marketing and financial education.** Those with less education or more limited exposure to information technology can meet with a number of difficulties when using mobile money. In Nigeria, for example, menus appearing on mobile screens are mainly in English. Marketing information is often also presented in English and targeted at a more urban market. Even when operators do adapt services specifically for use by poor clients, problems with literacy, numeracy and basic financial knowledge may prevent uptake by the chronically poor. Answers may lie in longer-term investment in educational opportunities for the poor but also in more short-term and targeted financial education programmes.
- **Partnerships with other financial service providers.** Mobile money systems have the potential to offer poor clients a wider range of financial service products and to deepen financial inclusion. The section on index-based weather insurance described an example of this. Clients of ACRE weather insurance products in Kenya, for example, make premium payments and receive insurance pay-outs through M-Pesa, adding further value to their use of mobile money or, potentially, introducing them to the use of mobile money for the first time.
- **Use of mobile money systems for payment by government social protection schemes.** As the section on social protection linkages highlighted, opportunities exist to promote mobile money (or bank account) usage by the chronically poor if governments use these bulk payment systems to make payments to the chronically poor in their social protection programmes.
- **Linkage with savings groups and MFIs.** For many poor people, particularly those living in remote areas, membership of a savings group or MFI may be their only form of access to financial services and also an important channel for linkage to other services. As the section on savings groups described, various mechanisms for introducing mobile money to poor people through existing savings groups or MFIs, through either individual or specially designed group accounts, offers an opportunity for inclusion of particularly difficult-to-reach populations.

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