Making Electronic Payments Work for Humanitarian Response

International Rescue Committee | MAY 2016

INTERNATIONAL RESCUE COMMITTEE

This report builds the case for electronic payment preparedness to support humanitarian interventions by providing a baseline analysis of existing donor support for electronic payment preparedness and actual electronic payment preparedness needs in select high-risk disaster prone countries.

This project was funded with UK aid from the UK government.

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Acronym List

ACAPS	Assessment Capacities Project
CaLP	Cash Learning Partnership
CCT	Conditional cash transfer
CGAP	Consultative Group to Assist the Poor
CGD	Centre for Global Development
CTP	Cash transfer program
DEPP	Disasters and Emergencies Preparedness Programme (DFID)
DFID	U.K. Department for International Development
DFS	Digital financial services
DRR	Disaster risk reduction
ECHO	European Commission's Humanitarian aid and Civil Protection department
ELAN	Electronic Cash Transfer Learning Action Network
E-payment	Electronic payment
E-transfer	Electronic transfer
FSP	Financial service provider
G2P	Government-to-person (payments)
GEO	Global Emergency Overview
IFC	International Finance Corporation
IRC	International Rescue Committee
KYC	'Know Your Customer'
MVT	Market Viability Tool
NGO	Non-governmental organization
ODI	Overseas Development Institute
PoS	Point of Sale
UNCDF	U.N. Capital Development Fund
UNDP	U.N. Development Programme
UNICEF	U.N. Children's Fund
UNOCHA	U.N. Office for the Coordination of Humanitarian Affairs
USAID	U.S. Agency for International Development
USAID/FFP	USAID's Office of Food for Peace
USAID/OFDA	USAID's Office of U.S. Foreign Disaster Assistance
WHS	World Humanitarian Summit
WFP	U.N. World Food Programme

Executive Summary

The dialogue leading up to the WHS has cast a spotlight on humanitarian cash transfers. **Significant global attention has centered on the role of cash transfers in bringing efficiency to the humanitarian system and improving outcomes for crisis-affected populations**. U.N. Secretary-General Ban Ki-moon has called for cash-based programming to be the default method of support for affected populations[1], and various high-level panels[2] have called for broad scale-up of cash transfers in humanitarian programming. But is it actually possible to safely distribute cash to the millions of people displaced from their homes or impacted by disaster each year across the world?

To realize a global scale-up in cash transfers, countries facing crises must have the necessary infrastructure and financial services in place to make payments safely and efficiently. **E-payment[3] mechanisms, including mobile-based money transfers and card-based payments such as prepaid debit cards, are effective tools that enable efficient and scalable transfers, improve transparency, and mitigate fraud in humanitarian response**. However, these tools are not present in all countries. E-payment tools are increasingly common, but as yet impractical in countries with weak digital and financial infrastructure, regulatory environments, and/or financial institutions.

Although there has been a substantial increase in donor and private sector interest and investment in digital finance systems worldwide during the past several years, **countries or regions most at risk of natural or man-made disasters and where humanitarian organizations tend to respond are often overlooked in these investments**.

The objective of this paper is to investigate both the current state of preparedness of e-payment systems to deliver cash transfers in emergency response, and the extent to which existing efforts are actually preparing those e-payment systems to meet the specific e-payment needs of humanitarian agencies.

> Understanding e-payment preparedness

Currently, a number of approaches to strengthen e-payment systems exist in developing countries; however, these initiatives are often uncoordinated. While these efforts focus on similar activities to strengthen e-payments, they aim to achieve different outcomes. Development actors, for example, might focus on strengthening e-payments to achieve financial inclusion or economic growth; humanitarian actors aim to establish rapid and efficient vehicles for delivering aid in emergencies; and private sector actors mainly look to ensure returns on services provided. National and donor governments are invested in each of these outcomes, yet their funding streams are often segmented. **In short, there are a number of similar investments and initiatives underway to support e-payments, but no coordinated approach to unify these activities to simultaneously contribute to humanitarian and development outcomes**.

This paper analyzes how existing DFS initiatives can better align to support humanitarian response, and uses a framework for comprehensively considering e-payment preparedness. This framework aligns the roles of demand-side (end users, consumers, humanitarian organizations) and supply-side actors (FSPs), and national and donor governments in strengthening e-payment systems. The framework consists of the following three elements:

- The preconditions necessary for e-payment preparedness to be feasible. Preconditions are the basic indicators of the readiness of a county's e-payment ecosystem[4] to support cash transfers at scale in emergency response.
- The preparedness actions that ensure e-payment use. Preparedness actions identified in the framework focus on those activities specific to facilitating the delivery of e-payments during emergencies.
- The actors involved in both preconditions and preparedness activities. Actors represent the demand side and the supply side, the national governments who enable e-payment use in emergencies, and donor governments that fund and facilitate many of the activities.

> Applying the e-payment framework: Findings from the field

Six countries were evaluated against the preconditions established under the e-payment preparedness framework to identify their level of readiness for e-payments and the activities needed to strengthen their responsiveness to shocks. The Central African Republic, Pakistan, Nigeria, the Philippines, Somalia, and Yemen were chosen as case studies to represent varying levels of investment in DFS and various types of crises faced.

The country case studies demonstrate a range of readiness and potential for e-payments, but fairly low uptake of e-payments when emergencies strike. Those countries most ready for e-payments have strong infrastructure and electronic Government-to-People (G2P) systems in place. Yet, the cases of Pakistan and the Philippines show that, despite having the infrastructure and systems in place before a crisis occurred, humanitarian actors still struggled to deploy e-payments in emergency settings. That is, having e-payment

infrastructure in place is necessary, but not sufficient to effectively scale its use for meeting the needs of disaster-affected households. **Explicit investment to link e-payment infrastructure with the specific needs of emergency response by implementing preparedness measures outlined in the framework is necessary to capitalize on potential e-payment readiness**.

> Existing support for e-payment preparedness

Additionally, the paper seeks to establish a baseline understanding of how donor support for e-payment preparedness compares to the e-payment preparedness framework. The paper looks at the current state of funding for emergency preparedness activities as well as funding streams commonly associated with financial inclusion or digital finance. Donors examined in the study include DFID, USAID and ECHO, as well as IFC from the World Bank Group and UNCDF. Several trends emerge from the baseline analysis:

1. For most donors, humanitarian preparedness funding is commonly aligned with resilience funding streams. Although there is significant investment in resilience, specifically in linking humanitarian and development actors to build better prepared communities, **no resilience approach explicitly discusses the strengthening of e-payment systems or e-payment preparedness**.

2. Financial inclusion and last-mile connectivity initiatives are expanding e-payments in a number of countries. Significant progress has been made in transitioning G2P payments to e-transfer mechanisms—a key indication of readiness for e-payments at scale in emergencies. **However, donor investments in last-mile and G2P initiatives are focused largely on countries less prone to crisis**. Resilience-oriented programming, proportionally more directed at disaster-prone contexts, can address this gap, but e-payment investments are not explicitly emphasized in resilience approaches. **As a result, countries most likely to require humanitarian assistance and where e-payment systems are most in need to scale-up emergency cash transfers are often those countries with the lowest level of preparedness**. Only four of 13 countries currently facing severe humanitarian crisis have digitized G2P programs in place, and only six countries have any initiative underway to extend network connectivity to the last mile.

> Conclusions

Current investment in e-payment systems is insufficient to deliver cash transfers at scale during emergency responses in high-risk countries. Although significant work has been done to strengthen e-payments in some regions, particularly more stable countries, funding streams must target countries vulnerable to emergencies with an explicit focus on the e-payment investments required for safe, efficient, and scalable humanitarian cash transfers. To achieve the grand ambition of making cash transfers the default option for humanitarian response, this paper offers four specific insights:

1. **Countries where emergencies are most likely to occur are the least well prepared**. Of the 13 countries currently facing severe humanitarian crises according to ACAPS' GEO[5], only four countries (or 31 percent) have a digitized G2P payment program in place and only six countries (or 46 percent) have initiatives underway to achieve last-mile connectivity. A significant geographic re-focusing of DFS investments is needed to ensure the preconditions and infrastructure to deliver e-payments are present and functioning in high-risk countries and areas within those countries. Directing existing resilience or development initiatives to address this gap will strengthen the level of readiness of the most vulnerable countries.

2. **Humanitarian objectives of e-payment system-strengthening initiatives must be made explicit**. Strengthening the capacity to meet emergency needs when humanitarian crises arise should be a stated objective of large-scale investments in last-mile connectivity and DFS. Currently, e-payment preparedness for emergency response is mostly a secondary benefit of humanitarian investment and often misses rural, sparsely populated, or particularly poor geographies—the very areas where natural and man-made crises are most likely to occur. Demand for e-payment services from humanitarian actors should be a stated consideration in investment decisions in terms of meeting the volume and logistics of e-payments as well as weighing the potential humanitarian gains from the expansion of services through customer and merchant acquisition.

3. **A single framework strengthens e-payment readiness for humanitarian response**. Given the wide range of actors involved in strengthening e-payment systems, it is exceptionally challenging to align priorities, interests, and investments to achieve shared desirable outputs. The e-payment preparedness framework presented in this paper provides a single reference point for understanding what is needed for each actor at each phase of establishing and strengthening e-payment systems, and enables the identification of strategic entry points to build the level of e-payment preparedness in each country. In doing so, the framework highlights the difference between e-payment strengthening writ large and e-payment strengthening specifically for humanitarian response.

4. **Country-specific e-payment preparedness plans are necessary**. One size does not fit all in terms of planning for e-payment activities during an emergency response. There is wide variation in the level of development, investment, and preparedness of e-payment systems to deliver emergency cash transfers. The investments required from donors, governments, private sector, and humanitarian actors to strengthen e-payment systems must be tailored to the needs of each country and emergency. The e-payment preparedness framework assists in identifying those priorities.

Introduction

There is growing recognition among donors and humanitarian practitioners that delivering cash transfers as opposed to in-kind aid provides more effective assistance to people affected by conflict and disasters. The U.N. Secretary-General Ban Ki-moon has called for cash-based programming to be the default method of support for affected populations where markets and operational contexts permit.[6] Additionally, the High-Level Panel for Humanitarian Financing[7] has encouraged a scale-up of CTPs as a vehicle to improve the efficiency and transparency of aid delivery across the humanitarian system. However, to realize these benefits of a global scale-up in cash transfers, sufficient infrastructure must first exist in crisis-affected countries to safely and efficiently transfer cash payments to all disaster-affected people.

New and innovative mobile technologies and branchless banking have shown great promise in changing how aid is delivered. E-transfers make the delivery of cash more secure, faster, cost effective, and scalable as humanitarian of cash transfers organizations replace hard currency with e-payment systems. Financial connectivity promises more effective ways to deliver aid, even to the most remote areas of the world.

Once payments are transferred to banks or e-money accounts, beneficiaries can withdraw money from payout points (ATMs, POS devices, mobile money agents) using magnetic-stripe cards, smart cards, or mobile phones secured with PIN codes or biometric identifiers. Overall, e-payment systems reduce transaction costs, prevent loss or theft, and give beneficiaries more control over their resources. New delivery channels also provide opportunities for bringing unbanked beneficiaries into a formal financial system. As such, widespread adoption of e-payments is an instrumental step to achieve greater financial inclusion and broad-based economic growth.

In theory, e-payments[8] seem like optimal solutions to support scaling-up of emergency cash to people in need. In practice, however, implementation of e-transfer programs is more challenging and can require significant up-front investment depending on the level of preparedness of the underlying infrastructure. Typically, emergency cash transfers are delivered in remote areas where there is a shortage of reliable payment providers with liquid cash-out points, inadequate and unreliable electricity, and patchy mobile coverage. Delivery platforms (mobile or card-based) that work in one country or one section of a country can be prohibitively expensive in another. Local regulatory environments are not always supportive of agent banking or KYC[9] requirements conducive to emergency e-transfer programs.

Key lessons from recent humanitarian crises in Liberia, Nepal, and the Philippines underscore the importance of e-payment preparedness. Although the Philippines enjoys a well-developed digital payments infrastructure,[10] aid agencies responding to Typhoon Haiyan initially struggled to use e-payments and opted instead to deliver cash by hand-to-hand payments or through remittance companies. Indeed, despite years of experience responding to numerous natural disasters in the Philippines, planners had failed to ensure continuity of mobile coverage and sufficient payout points, causing delays in e-transfer programs by up to 12 months.[11] In the end, with the exception of WFP[12] — which partnered with Pantawid Pamilya[13] —only three aid agencies (UNDP, Mercy Corps, and GOAL) actually used mobile platforms to deliver aid and most implemented these during the recovery period and on a much smaller scale than initially planned.[14]

Fragile infrastructure and weak enabling environments increase the time and cost of developing and implementing e-transfer programs. These programs naturally become less expensive with repeat and longer-term disbursements, but short-term humanitarian cash-transfer programs too often fail to work as planned. Where e-transfers are considered viable, agencies often opt for stand-alone, custom-made delivery solutions that are dismantled after the emergency response and leave behind no sustainable payment platforms to support broad-based economic growth.

To realize this ambition of significantly increasing the scale of cash transfers in emergencies, and to do so in a manner that drives efficiency, transparency, and a pathway to financial inclusion, e-payment systems are necessary in the countries experiencing or at risk of crisis. These e-payment systems need to be in place before crises happen to ensure they actually support humanitarian response objectives and have the intended benefits for affected populations. As such, strengthening and expanding e-payment services is both a long-term economic development objective and a critical and core part of preparing for emergencies. To do this, greater investment is needed to establish the necessary regulatory environments, physical infrastructure, and financial services required for a functioning e-payment system to meet the needs of both the general population as well as humanitarian organizations.

This paper uses an e-payments preparedness framework to investigate the current state of preparedness of e-payment systems to deliver cash transfers in emergencies. Drawing from six country case studies and an analysis of donor funding patterns, this report explores the extent to which existing efforts to strengthen e-payment systems are actually preparing those systems to meet the specific e-payment needs of humanitarian agencies.

Structure of Report

This report examines the current state of investment in e-payment system strengthening for use in emergency response. To do so, the report puts forth a conceptual framework for understanding the different actors, components, and preconditions required to use e-payment systems in emergency contexts. This framework is used to analyze the roles of humanitarian, host government, donor, and private sector actors as they each relate to preparing e-payment systems for emergency response, and is specifically focused on the preparations required to build infrastructure, enabling political and regulatory environment, and programmatic components that would enable a rapid response at scale in an emergency. This conceptual framework is presented in Section I, and serves as the basis for the policy analysis and country case studies that follow.

Section II provides a baseline on preparedness needs in high-risk countries using the framework from Section I. This section looks at the current state of e-payment systems in six high-risk countries—the Central African Republic, Nigeria, Pakistan, the Philippines, Somalia, and Yemen—selected based on the wide range of crises faced, e-payment infrastructures, enabling regulatory environments, and existing social safety net programs. The case studies of these six countries highlight the complexities of navigating different e-payment ecosystems and build a case for customized country-specific e-payment preparedness agendas.

Section III analyses leading donor activities as they relate to each component of the e-payment preparedness framework from Section I, including past and ongoing initiatives, investment priorities, and programmatic approaches. This section focuses on donor approaches to resilience (the ability of a country to respond to shocks effectively and recover rapidly) and digital finance investments to identify critical gaps in support for each element of the e-payment preparedness framework.

Section IV provides high-level conclusions from the analysis and describes a vision for the future of e-payment preparedness.

Finally, research-related details are included in annexes to the report.

I. ELECTRONIC PAYMENT "PREPAREDNESS": WHAT IS IT?

E-payment "preparedness" can be defined as a combination of contextual characteristics, actors, and activities that enable an e-payment system to be deployed for humanitarian response. This paper adopts the following framework as a heuristic tool for understanding e-payment preparedness. The framework includes the following three components:

1. The preconditions necessary for e-payment preparedness to be feasible;
2. The preparedness actions that can be done before a crisis to ensure e-payment use; and
3. The actors involved in both preconditions and preparedness activities.

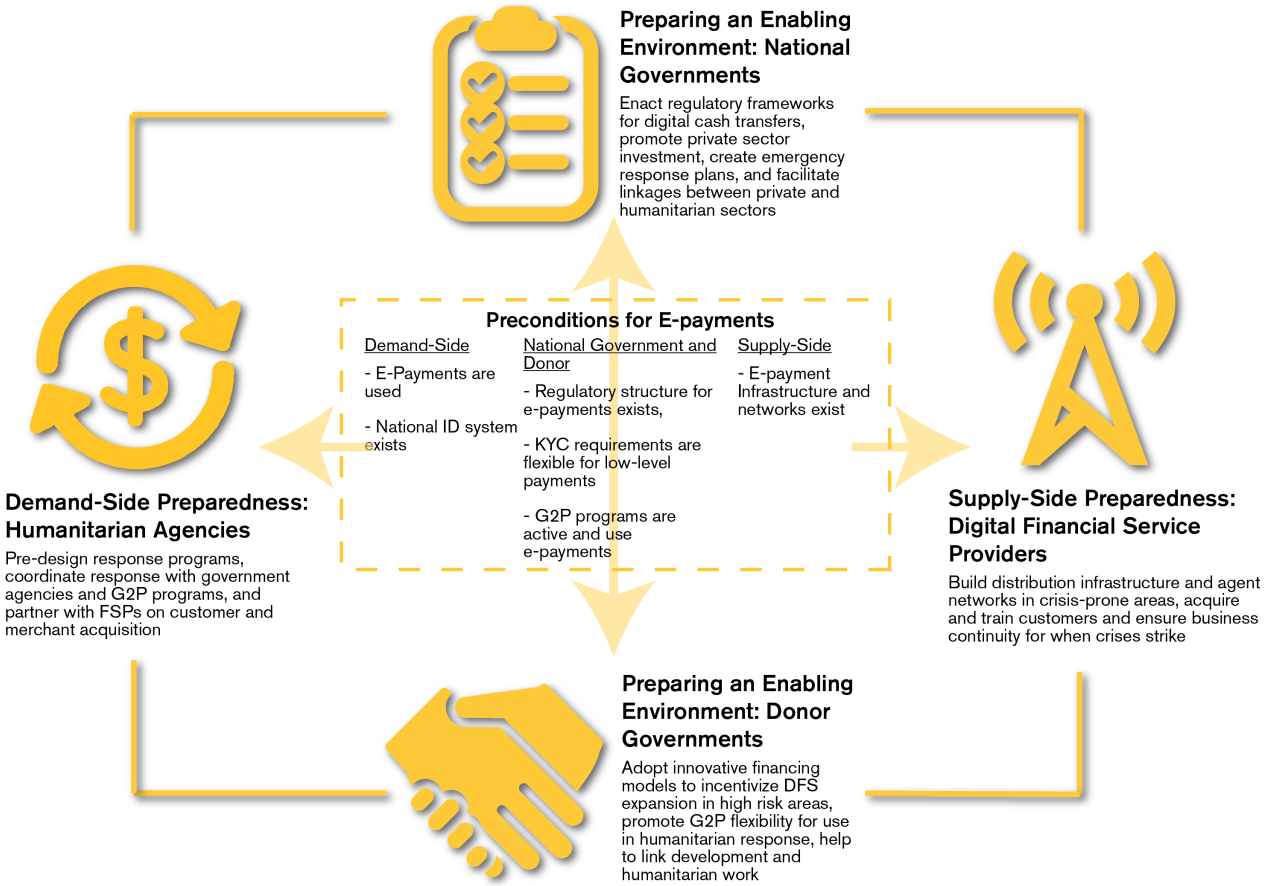
Preconditions are those critical contextual factors that enable e-payment use in humanitarian response. While not all of these factors need to be in place for e-payment use, their existence makes post-crisis use of e-payments much more likely. In essence, these **preconditions reveal how "ready" a country might be for e-payment in a humanitarian response**.

Preparedness actions are activities that humanitarian agencies, governments, private sector, or donors can undertake to promote e-payment use. **These preparedness 'activities' can be carried out in advance of a crisis to strengthen uptake and adoption of e-payment services when emergencies do occur.**

The actors involved in e-payment preparedness are diverse, but their actions are highly interdependent to enable e-payment use in humanitarian response. E-payment preparedness is still a relatively new concept and is typically associated with programmatic response-related preparedness activities, such as making pre-arrangements with payment providers ahead of emergencies to implement cash transfers rapidly when a crisis occurs. The conceptual framework below expands the understanding of preparedness to include the roles of a wide range of actors involved in e-payment system[15] development, namely donors, host governments, private sector companies, and humanitarian organizations.

Currently, each actor understands e-payment systems strengthening differently and through a variety of different lenses, including (but not limited to) resilience, financial inclusion, financial services, regulatory, infrastructure, and/or economic development. Although each actor is approaching similar activities from a different point of view, **this framework demonstrates how actions undertaken by these actors can be combined to strengthen preparedness for emergencies**.

E-payment Preparedness Framework



> Preconditions

The preconditions for e-payments serve as basic indicators of a country's e-payment ecosystem[16] readiness to support cash-transfer programming in an emergency response. These preconditions serve as a foundation on which to build greater investments in preparedness. The preconditions touch on the users, the regulatory environment, as well as the physical (electricity, roads, broadband) or digital payment (connectivity, agent networks, etc.) infrastructure and services needed to deliver e-payments.

- On the demand or e-payment customer (also known as 'user') side, we can estimate that a country is ready for e-payments in emergencies if the general population is familiar with and uses e-payment services, and there are recognized forms of identification to appropriately identify the intended recipient of a transfer.
- On the supply side, which includes financial or telecom providers offering payment services, e-payments can only be feasible in emergency situations when network connectivity and agent networks are able to reach a critical mass of the population.
- On the government side, including national governments and donors investing in e-payment systems, a regulatory framework must be in place that provides rules for e-payments. More specifically, tiered KYC requirements should be in place to enable rapid e-payments for low-value transactions or in emergency contexts.

These preconditions offer a snapshot of how ready a country is for e-payments, and what further preparedness activities are needed from each actor to strengthen e-payment systems for use in emergency response. In Section III, these preconditions are applied to six country case studies to assess their level of preparedness and identify preparedness actions needed to use e-payments during emergency responses.

> Preparedness Actions

The e-payments preparedness framework presents a variety of actions each category of actors in the digital financial ecosystem can take to strengthen e-payment systems for use in emergency response.

- **Demand-Side Preparedness: Humanitarian agencies** plan for the rapid delivery of cash assistance when emergencies occur, and can work with government and private sector actors to ensure relevant systems are in place before crises hit. Humanitarian actors can coordinate with government and other organizations to pre-design response programs and coordinate the use of G2P programs for humanitarian response. Additionally, humanitarian actors can collaborate with DFS providers to anticipate the volume and geographic coverage of potential e-payment needs in crisis-prone areas, and to partner on merchant and customer acquisition to ensure potentially-affected populations have use of e-payment services before emergencies hit.
- **Supply-Side Preparedness: Digital FSPs** are responsible for building and maintaining the infrastructure and networks so that when emergencies occur, the structures are already in place to withstand shocks and rapidly deliver cash assistance to affected populations in need. DFS providers can prepare for this role in emergencies by building distribution infrastructure and agent networks in crisis-prone areas, acquiring and training customers and merchants before emergencies to facilitate rapid e-payments after crises, and developing business continuity plans to ensure continued service provision when crises strike.
- **Preparing an Enabling Environment: National Governments** are responsible for ensuring an environment conducive for the expansion of e-payment systems that can support both humanitarian and long-term economic development objectives. Governments alone are positioned to enact regulatory frameworks to motivate investments in e-payment services. Additionally, governments should promote and support private sector investment in infrastructure, create emergency response plans to include electronic cash transfers, and facilitate linkages between private and humanitarian sector actors.
- **Preparing an Enabling Environment: Donor Governments** play a facilitator role among humanitarian actors, national governments, and private sector DFS providers. Donors can support national governments by offering innovative financing models to incentivize DFS expansion in high-risk areas, using financing models to foster partnership and buy-in from private sector actors, and promoting G2P programs that are flexible for use in humanitarian response. Finally, donors can provide the necessary bridge between DFS-related development and humanitarian preparedness initiatives.

The preconditions and the preparedness actions, when implemented together among the variety of actors involved in the e-payment ecosystem in each country, will ensure that e-payment systems will be available to support the humanitarian effort when emergencies occur. Throughout this report, this framework will be used to evaluate the state of e-payment preparedness in a select number of countries, highlight the funding priorities of different donors, and identify opportunities to strengthen e-payment investments to improve humanitarian preparedness and development outcomes in vulnerable countries.

II. BASELINE ANALYSIS OF E-PAYMENT NEEDS IN HIGH-RISK COUNTRIES

Given the different maturity levels of e-payment ecosystems and the diverse nature of crises affecting individual countries, there is no one-size-fits-all approach for investment in e-payment preparedness. Each market is different and, more importantly, the nature of the crisis can significantly shape the type, extent, and even feasibility of e-payment preparedness.

This section examines six country case studies against the preconditions outlined in Section I to 1) identify which preconditions exist in each country, and 2) provide insights into the main gaps in or best opportunities for strengthening e-payment systems for humanitarian preparedness. To evaluate the level of readiness for humanitarian e-payments, these case studies examined the preconditions from the demand, government, and DFS provider perspectives. On the demand side, case studies focused on the extent to which the population uses e-payments and has a recognized national personal identification system. From the government (national and donor) perspective, the analysis focuses on the presence of digital G2P payments (mainly for government social safety nets), the existence of policies or regulatory frameworks governing the use of digital cash payments, and KYC rules conducive to small payments. On the supply side, the case studies examine the extent of e-payment infrastructure, connectivity, and networks to support e-transfers.

Case Studies

Six countries were chosen based on varying levels of investment in DFS and variety of crises faced. To evaluate the presence of the preconditions in each country, the case studies draw on a variety of data points—some presented for all countries (e.g. penetration rates for mobile, card, and ATM banking) and others unique to a given country—that illuminate the current status of the e-payment ecosystem.

Additionally, the case studies include a ranking based on Nethope's Mobile Financial Services MVT.[17] While a ranking in isolation does not say everything about a country's e-payment system, the MVT does allow for comparisons between countries.

The country snapshots below present key DFS indicators and data points for each country. See Annex E for full case study country profiles; country-specific preparedness needs and opportunities are included in Annex F. Annex G includes detailed financial service penetration rates for each country.

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NATURAL DISASTER · CONFLICT RISK · FOOD INSECURITY · POPULATION · DFS PROVIDER · GOVERNMENT

Philippines

MVT Ranking: 7

High risk of storms, cyclones, earthquakes and floods

Penetration Rates

Bank: 28.1%
Mobile: 49.5%
Card: 20.5%

High mobile penetration (50%), but mobile (rural) coverage remains critical

Low access to finance partially due to limited reach of formal banking infrastructure and fragmented geography

Thriving financial sector – 18 commercial bank branches per 1,000 km2 in 2013 and 9 commercial bank branches per 100,000 adults

Relaxed KYC registration requirements on a provider-by-provider basis

One of 20 acceptable forms of ID considered acceptable

Government's flagship national large-scale conditional cash transfer program - 4Ps - currently covers up to half of those residing in the worst typhoon-affected areas

The 4Ps primary payment provider is LBP (Landbank) through debit cards

Nigeria

MVT Ranking: 38

High risks of droughts and flooding

1.5 million displaced from Boko Haram insurgency

Acute food insecurity for IDPs in Northeast

Penetration Rates

Bank: 44.2%

Mobile: 43.1%

Card: 35.6%

Nigerian Identity Management Commission introducing more than 100 million e-ID cards with MasterCard prepaid payments functionality

Large, fast growing telecoms market with 4 GSM operators serving the market

Mobile penetration of 43% high, but far lower in rural areas where quality of service is poor and network outages are frequent

Severe under supply of electricity, low electrification and power shortages especially in rural areas

Northeast and Northwest disproportionately excluded from formal financial services

Weak capacity in social safety nets and limited measures to improve social safety nets during a crisis

Tiered KYC requirements (since 2012) for mobile money simplifiy registration, allowing individuals without formal IDs to be included in the financial system

80% of Nigerians have some form of ID that facilitates registration

Pakistan

MVT Ranking: 53

Severe risk of flooding, severe storms, droughts and earthquakes

Political instability and high risk of political violence

Rural and urban areas at-risk of terrorism

Penetration Rates

Bank: 8.7%

Mobile: 32.0%

Card: 2.9%

90% of population lives within areas with mobile network coverage

Access to mobile phones for nearly 80% of Pakistanis, including poor, rural and unbanked households

Majority of the adult population registered with NADRA (Pakistan's national database and registration authority)

97% of adults hold national biometric identity cards

Highly competitive mobile money market with 8 providers using various operational models, but a heavy focus for most providers remains basic over-the-counter services (OTC)

95% of mobile money transactions occur through mobile banking (m-banking) agents, and the remainder processed directly through customers' mobile-wallet (m-wallet) accounts, using mobile phones

Significant digitization of G2P payments – 85% of Benazir Income Support Program payments are digitized via pre-paid cards

State Bank of Pakistan gradually reduced KYC requirements for low-balance accounts, facilitating account openings for new beneficiaries

The NADRA KYC verification fee waived for beneficiaries transitioning from a limited mandate account to a branchless banking Level 0 account

Somalia

MVT Ranking: 78

High risk for droughts

Political violence and consequent displacement – more than 68% of the people who are in crisis and emergency are IDPs

Protracted violence and prevalence of rebel, clan and militia groups

850,000 people facing acute food insecurity and 2.3 million living in "food-stressed" situations

Penetration Rates

Bank: 7.9%

Mobile: 24.4%

Card: 2.4%

One of the lowest mobile penetration rates in the world, but ranks high in the percentage of adults using mobile phones to pay bills and send/receive money

No established banking sector

Highly sophisticated informal banking systems of money transfer agents (Hawala) facilitate remittances and transfer money safely, reliably and electronically throughout the country

MTOs (such as Hortel and Zaad) are primary providers of cash transfers (take deposits, deliver cash) functioning through an extensive network of agents typically operating as franchisees

No government social safety net in place, but NGOs running safety net projects

No formal banking system or functioning central bank, and no policy for inflation or foreign exchange

No state-based legal or institutional framework for market competition exists in Somalia

Yemen

MVT Ranking: 98

Potential for sustained periods of violence high

Territorial expansion of Shia Houthi movement and increased attacks against Houthis by Al-Qaeda

Growing displacement (UNHCR estimates 500,000 displaced since 03/27/2015)

Sectarian tensions

High levels of acute food insecurity

Penetration Rates

Bank: 6.4%

Mobile: 44.9%

Card: 1.9%

Access to finance problematic especially in rural areas where 70% of the population live

Financial access for vast majority of Yemenis through moneychangers or the national postal service, both of which are limited mainly to basic transactional services

Largely cash based economy

Small and weak banking sector (one of the weakest in the MENA region)

Underdeveloped financial markets and payment system

More than 8 million mobile phone customers, but less than 1 million bank accounts

4 mobile operators ensure availability of mobile services

Mobile operators beginning to expand coverage to rural areas

Poor infrastructure, lack of power in rural areas typically requires use of generators and solar cells

Currently, the Social Welfare Fund (SWF) provides unconditional cash transfers to roughly 40% of the total population

Cash transferred through postal agents or cashiers (hired by SWF to distribute funds in remote areas)

Inadequate regulatory and supervisory framework as well as a weak financial institutional infrastructure

Actively promotes mobile and branchless banking

Central African Republic

MVT Ranking: 104

Weak political institutions

Ethnic tension

Increased presence of Boko Haram/Al-Shabaab resulting in displacement (estimated 430,000 IDPs and 423,300 refugees)

Acute food insecurity (roughly 1.5 million people requiring food assistance)

Penetration Rates

Bank: 3.3%
Mobile: 21.5%
Card: 1.0%

Extremely low bank penetration especially outside of capital and main cities with 95% population unbanked

Virtually non-existent cash out points (ATMs, branches, agents), all limited to cities

Underdeveloped mobile money market with relatively new and inexperienced service providers

Poor power infrastructure – inefficient and unreliable power supply and poor access to grid electricity particularly in rural areas

Poor enabling environment due to weak political institutions

Inadequate safety net programs or mechanisms to support vulnerable groups

All six countries have e-payment gaps, but the differences in preconditions for the use of e-payments in humanitarian response is far greater between some countries than others. As such, it is useful to classify these case studies into three groups: High, Medium, and Low Readiness for humanitarian e-transfers.

In the High Readiness category are Nigeria, Pakistan, and the Philippines. These countries have strong penetration rates, ensuring populations can access and use services. All have national identification systems, tiered KYC rules, and G2P programs in place that use e-payments. Additionally, these countries each have vibrant telecoms markets with rapidly improving infrastructure, but are still hampered by low coverage in rural areas.

The Medium Readiness countries include Somalia and Yemen. Despite the political instability, natural disaster, and food security threats, both countries have comparable penetration rates and a high use of mobile phones. Although each country has weak formal financial institutions, Yemen maintains a large-scale G2P program and Somalia has mainly humanitarian organization-lead safety net programs that rely on mobile payments. Supply-side infrastructure is limited, but slowly expanding in Yemen and widely used in Somalia in conjunction with informal Hawala networks.

Of these case studies, only the Central African Republic falls into the Low Readiness category. The country has the lowest bank, mobile, and card penetration rates, with 95 percent of the population unbanked. Weak government institutions do not support any formalized banking system or regulatory structure, and no G2P payment programs are in place. Limited electricity infrastructure and mobile networks predominantly limited to urban areas mean the necessary structures are not in place to use e-transfers when emergencies happen.

Although each of these countries needs more investment to strengthen their e-payment readiness for emergencies, these needs are not the same.

The High Readiness countries have the preconditions largely in place for e-transfers, but investment is required to strengthen those systems, build the networks, and foster connections between the actors in the e-payments preparedness framework. As seen in the Philippines Typhoon Haiyan response, the preconditions for e-payments may be present, but the uptake of e-payments in emergency programs was limited by inconsistent network coverage and low customer familiarity with the services.[18] **The preconditions for e-payment use in emergencies must be matched by investments in the preparedness activities in order to ensure e-payments can strengthen humanitarian responses**.

On the other hand, those countries in the Medium Readiness category require further investment in establishing some preconditions, such as regulatory frameworks or G2P systems to support the systematic use of e-payments. Although humanitarian cash transfers using e-payments may be feasible in these countries, such as in Somalia during the 2011 famine response, strengthened regulatory environments would greatly incentivize expansion of e-payment services.

Those countries in the Low Readiness category require significantly more investment to overcome the low levels of regulatory and infrastructure development, and will likely not be prepared for e-payment adoption without substantial and continued commitment to build the minimum preconditions.

While these six country profiles are only snapshots, they nevertheless reveal a wide range of e-payment ecosystems among high-risk countries and the necessity of building country-specific preparedness plans. This analysis demonstrates that the MVT indicator is a promising tool for rapidly assessing the readiness of e-payments in a country; however, this indicator must also be interpreted against the level of humanitarian need to inform investment priorities. These profiles also demonstrate that the countries with severe humanitarian needs are woefully unprepared.

Substantial new investment in e-payments is required in many countries to harness the speed, efficiency, and transparency benefits of e-payments that help scale-up cash transfers in these contexts. Evaluating the level of preparedness for humanitarian e-payments assists in prioritizing where e-payment strengthening programs should focus within each country, and subsequently targeting donor investment at critical gaps in preparedness levels of at-risk countries.

III. BASELINE ON EXISTING DONOR SUPPORT FOR ELECTRONIC PAYMENT PREPAREDNESS

To maximize the value to humanitarian action of investments in e-payments, this section gauges donor commitment to the broader framework of e-payment preparedness. While donor strategies are not necessarily framed in terms of preparedness, we can assess existing donor support for e-payments preparedness by looking at several related topics. A number of relevant topics overlap with aspects of the preparedness framework and are addressed in this section, including cash-transfer programming, resilience and emergency preparedness, and existing digital finance initiatives. E-payment preparedness, as described in the conceptual framework in Section I, requires thinking differently about current approaches to both humanitarian and development assistance. By understanding lead donors' thinking and funding flows on the interrelated issues of resilience, preparedness, cash-transfer programming, and digital finance, we can identify opportunities to strengthen e-payment systems for humanitarian response in current approaches.

The lead donors interviewed as part of the study include the International Finance Corporation (IFC)[19] of the World Bank Group, United States Agency for International Development (USAID), European Commission's Humanitarian Aid and Civil Protection (DG-ECHO), United Kingdom's Department for International Development (DFID), and United Nations Capital Development Fund (UNCDF). Donors were selected on the basis of their extensive role in funding cash-transfer programs in humanitarian emergencies and/or their strong commitment to accelerating and extending DFS throughout the world. See Annex A for a list of interview questions. See Annex B for a list of individuals interviewed.

1. Donor Support for Humanitarian Cash Transfers

Donors are increasingly funding cash-transfer programs in emergencies as opposed to in-kind assistance, as cash supports a wider range of needs, encourages freedom of choice, promotes resilience, supports both early-recovery and long-term development initiatives, and can facilitate financial inclusion.

Cash transfers also provide potential links between emergency response and non-emergency social protection programming—for example, Ethiopia's Productive Safety Net Program and Kenya's Hunger Safety Net Program—particularly in areas vulnerable to chronic shocks and disasters. Understanding donor commitment to cash-friendly emergency response planning sheds light on future support for e-payment preparedness. DFID, ECHO, USAID, and the World Bank are interested in increased cash-transfer programming, albeit to varying degrees.

DFID is committed to increasing the use of unconditional cash transfers and is steering funds to initiatives that facilitate investment in nationally owned social safety net programs. DFID is also addressing the connection between preparedness, coordination, and rapid emergency cash-based response. In 2015, DFID commissioned ODI to convene the High-Level Panel on Humanitarian Cash Transfers, which noted the "transformative potential of cash transfers for humanitarian response and the humanitarian system."[20]

ECHO is committed to cash transfers as a tool for both emergency response and linking relief, rehabilitation, and development activities. While ECHO funding streams remain sector focused, the donor is increasingly funding multi-purpose cash transfers, where a single cash payment is made to cover multiple needs. As such, ECHO generally promotes the use of unrestricted cash transfers.

Although USAID, including OFDA and FFP, is increasingly interested in flexible cash-based interventions in complex and logistically challenging contexts, cash-transfer programs remain largely sector driven and based in agriculture, food security, and economic recovery.

The World Bank is funding more unconditional cash transfers, even though CCTs continue to play a strong role in its approach to

assistance. Nevertheless, the World Bank is heavily committed to digitizing social safety net programs to deliver cash electronically, including through use of debit cards[21] and biometric verification.

Still, despite increased funding and no indication that donors face limitations in further embracing cash transfers,[22] cash transfers remain a small proportion of global humanitarian assistance (estimated at 6 percent, although likely slightly higher) and still not routinely used during large-scale humanitarian crises.[23] The High-Level Panel on Humanitarian Cash Transfers calls for donors, agencies, and stakeholders to scale-up the use of cash transfers to make cash assistance a central component of emergency preparedness and response. The report also advocates for both improved coordination in the delivery of cash transfers that implies broader reform of the humanitarian system and the use of digital delivery mechanisms to promote efficiency and financial inclusion.[24]

Each of the leading donors plays a significant role in promoting the use of cash transfers in humanitarian response. Additionally, **each donor has expressed strong support for both preparedness efforts to better respond with cash transfers when emergencies happen, and the need to do so using e-transfer mechanisms where available**.

High-Level Panel on Humanitarian Cash Transfers—Recommendations:

1. Promote more humanitarian cash transfers
2. Invest in readiness
3. Devise better measurements of cash (other than vouchers)
4. Promote systematic analysis of CTPs
5. Leverage cash transfers to link humanitarian assistance with longer-term development programs
6. Capitalize on private-sector experience
7. Whenever possible, use digital delivery mechanisms and promote financial inclusion
8. Improve aid agencies systems
9. Improve coordination
10. Improve scale and use of unconditional CTPs
11. Make cash transfers central to strategic response plans
12. Finance CTPs separate from assessment targeting and monitoring

2. Donor Resilience and Preparedness Initiatives

Donor funding strategies increasingly emphasize resilience-building efforts, particularly in countries facing recurrent crises. Resilience is defined as the ability of a country to manage crises and not compromise its longer-term prospects.[25] Emergency preparedness is considered an essential component of resilience. As such, analyzing donor approaches to resilience helps us understand ways that e-payment preparedness needs may be addressed through current resilience-oriented initiatives and investments.

Understanding donor approaches to resilience is important for e-payment preparedness in two ways. First, resilience approaches relate how donors manage recurrent crises and fund disaster and/or conflict prevention and emergency preparedness. These trends will inform the extent that preparedness initiatives or approaches address the different elements of the e-payments preparedness framework. Second, donor practices related to resilience—such as embedding resilience in program formulation, promoting resilience with partner governments, supporting multi-year humanitarian funding, embracing flexible development funds, and bridging humanitarian and development silos—may indeed also directly or indirectly affect e-payment preparedness. See Annex C for a list of donor approaches to resilience and emergency preparedness reviewed for this section.

With the exception of DFID and ECHO, which are committed to adopting resilience as a core approach to both man-made and natural disasters, donors tend to view resilience primarily through the lens of natural disasters. Some donors, such as the World Bank Group and UNCDF's Local Development Finance for Inclusive Growth, pursue a "linked sectoral approach" focused on building resilience in key sectors, including disaster risk management, climate change and environment, conflict and fragility, and social protection and labor.[26,27,28] The World Bank Group believes the best way to minimize disaster and crisis is through joint humanitarian and development efforts, emphasizing improved communication and coordinated responsibilities.[29,30] Other donors, including ECHO, are working to align humanitarian response with longer-term development. Seeing the integration of DRR into relief operations as a critical step to preparedness, ECHO has increased its involvement in DRR and preparedness during the last decades.[31]

Since 2012, USAID has committed to building resilience and facilitating inclusive growth to expand development activities to the most vulnerable populations.[32] Breaking down silos and improving collaboration between humanitarian assistance and development programs is critical to USAID's approach, as is considering humanitarian assistance in the planning, design, and budgeting of future programs.[33]

Donors differ on the extent that resilience is institutionalized, from implementing practices to organizational change, within their respective agencies. DFID actively encourages the development of links between humanitarian and development sectors in fragile countries experiencing conflict, as well as embedding disaster resilience into key humanitarian and governmental institutions. For example, DFID's 2011 Humanitarian Emergency Response Review,[34] which emphasizes disaster resilience as "a new and vital component" of humanitarian and development work, calls for greater investment in preparedness and resilience to help high-risk countries withstand and recover from crises, both man-made and natural.[35]

Baseline on existing donor support for electronic payment preparedness (continued)

The Humanitarian Emergency Response Review also emphasizes innovation and new technologies.

Finally, whereas DFID and USAID have adopted multi-year humanitarian funding and flexible development funds for crises (e.g., USAID's Crisis Modifier and DFID's Internal Risk Finance), ECHO has not.[36]

Unfortunately, none of the donors' approaches and resilience frameworks specifically mention e-payments.

Overall, although donors diverge in how they frame resilience and work to institutionalize resilience within their agencies, all address preparedness to some degree. **Although no donor has an explicit objective of e-payment preparedness within their resilience approaches, several core aspects of resilience initiatives promoted by all donors directly relate to the e-payment preparedness framework.** Activities—such as supporting contingency planning and coordinating humanitarian and development actors, strengthening national disaster management plans, promoting innovative technologies for economic development, or using flexible or innovative funding mechanisms—all address the demand for, enabling environments, and supply components of the e-payments preparedness framework. **Despite clear linkages, there lacks an explicit connection between resilience, preparedness, and e-payment system strengthening in donor approaches and funding priorities**.

3. Existing Digital Finance Initiatives: Development or Humanitarian?

Although donors differ in their resilience approaches, they all agree that widespread adoption of e-payments is instrumental to achieve financial inclusion and broad-based economic growth.[37] Numerous donor-funded development initiatives focus on strengthening digital payment infrastructures, digitizing G2P payments, and improving payment provider capacity, all of which focus on increasing access to finance while improving efficiency, reducing costs, and enhancing transparency. Regretfully, there is little focus on how development investments in these DFS initiatives support humanitarian response.

Donors recognize that during emergencies e-payment systems enable quick and rapid distribution of cash transfers and can provide potential first-entry points into the financial system for unbanked populations (i.e. greater financial inclusion). Yet, donor investments in DFS systems and the last-mile connectivity required to deliver those services do not necessarily target vulnerable areas in high-risk countries where e-payment infrastructure is most needed. Where DFS investments are taking place in disaster-prone countries, cooperation and coordination between development and humanitarian programs is often lacking. This section looks at DFS initiatives that are directly or indirectly supporting humanitarian interventions to identify critical gaps in e-payment preparedness.

Certain donors are beginning to seek innovative ways to bridge the gap between development and humanitarian programs and address e-payments infrastructure. For example, DFID increasingly recognizes that DFS infrastructure is a key barrier to wider adoption of digital finance and considers this a critical area where donors can do more to bridge the gap between government and the private sector.[38] In the 2015 Digital Advisory Panel-commissioned review of DFID's digital strategy in development programming,[39] DFID was shown to have played a strong role in promoting access to digital technologies and strengthening ecosystems that support scale-up and replication of successful interventions. Other issues the panel addressed included piloting, scaling and growing innovative technologies that enable rural connectivity; improving mapping to highlight coverage gaps and inform investment; and working with the private sector, governments, and stakeholders to build favorable regulatory environments and market conditions to increase investment in connectivity. Admittedly, although this digital strategy focused primarily on development programs, the same initiatives addressing connectivity could also support humanitarian interventions in disaster-prone countries.

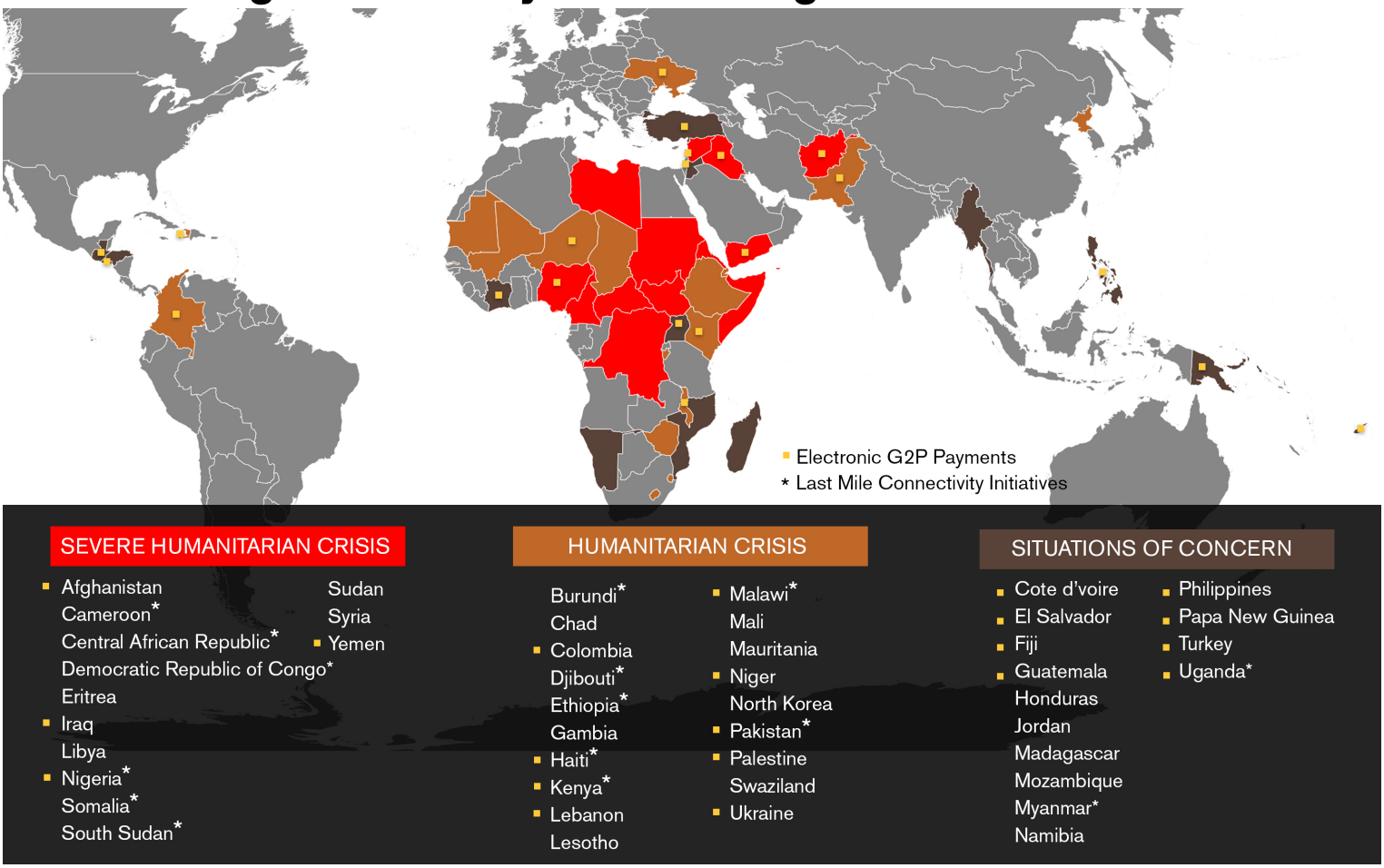
Both DFID and ECHO are leading efforts to leverage existing social safety net channels in countries where e-payment ecosystems are already in place such as Kenya, Pakistan, and the Philippines. Both donors are working to strengthen these systems, not only to scale up in times of emergency, but also to scale across in ways that include more recipients in social safety nets.

USAID's Global Development Lab Digital Finance Team is likewise collaborating with USAID's humanitarian programs (FFP and OFDA) to address the use of technology in its work. The team seeks innovative ways to bridge the gap between development and humanitarian programs that entail digital payments components by building awareness about longer-term development investments in digital finance, noting that "long-term investments in digital finance sectors support relief efforts,"[40] and building resilience in areas of recurrent crises. To this end, in early 2016 the Global Development Lab, FFP, and OFDA convened donors, development practitioners, and humanitarian actors to develop the 'Barcelona Principles' for the use of digital payments in humanitarian response.

USAID's Scaling Innovations in Mobile Money project in the Philippines is an example of a development investment that addressed concerns surrounding humanitarian emergency transfers to remote areas by introducing mobile money in these regions. The project also participated in UNOCHA's Cash Working Group to provide inputs (e.g. FSP information/mapping) and help develop standards in program design, targeting, and distribution. The follow-up E-PESO project[41] will continue some of these initiatives.

Additionally USAID—together with other donors, humanitarian agencies, and humanitarian networks such as CaLP and ELAN—

Digital G2P Payments in High Risk Countries



is bolstering efforts to expand and improve the use of e-transfers in humanitarian responses while providing foundations for digital financial inclusion and long-lasting infrastructure.[42] Another USAID project, still in the concept phase, is focusing on the West Africa Ebola response, recovery, and resilience. The project includes an information communications technology component that addresses the development and deployment of tools and infrastructure (including mobile money 'cash-out' agents in remote areas).

These investments are regarded by USAID as essential for future emergency response, strengthening safety net programs and everyday financial transactions. USAID is encouraging partnerships that address last-mile connectivity, capacity building and training, and the development of new financial models to mobilize capital for investment.[43]

Finally, the High-Level Panel on Humanitarian Cash Transfers called for greater attention and investment in infrastructure in areas prone to crisis.[44] This would likely entail collaboration with donors, agencies, government and the private sector.

While these DFS initiatives focus on last-mile connectivity and provide insights and models potentially applicable to emergency e-transfers, and while digitization of G2P payments and in particular social safety nets offer potential synergies for humanitarian interventions, few of these initiatives directly advance e-payments for humanitarian programming in high-risk countries. There remains a significant deficit of e-payment services in crisis-prone countries.

Above is a map of high-risk countries according to ACAPS' GEO. G2P programs using electronic payments, a precondition for humanitarian e-payments, are active in countries marked on the map with a square. DFS last-mile connectivity initiatives, which help lay the groundwork for G2P payments and humanitarian e-payments, are represented by an asterisk in the list below the map. A more detailed list of DFS initiatives included in this mapping can be found in Annex D.

As is evident in this map, the majority of countries facing humanitarian crises are left out of development-oriented initiatives that help digitize G2P payments or strengthen last-mile connectivity. Only four of 13 countries (or 31 percent) have a digitized G2P payment program in place, and only six countries (or 46 percent) have initiatives underway to bring last-mile connectivity. The prevalence of these programs improves for each category of watchlist country (47 percent for 'humanitarian crisis' and 57 percent for 'situations of concern'), illustrating that those countries most at risk of severe humanitarian crises are receiving relatively less investment attention both in terms of network connectivity and strengthening government safety net programs.

4. Critical Gaps in E-payment Preparedness

Although select DFS initiatives are addressing humanitarian emergency response needs in some contexts, and while much progress has been made to improve humanitarian preparedness, critical gaps related to strengthening underlying e-payment infrastructure to meet the needs of emergency response remain.

E-payment preparedness as described in the conceptual framework presented in Section I presents how humanitarian organizations, donors, host governments, and private sector actors each contribute to creating an environment where e-payment systems can effectively be used in emergency response programs. Until now, investing in financial and digital infrastructure has not been considered part of humanitarian preparedness agendas. **Although donors play a critical role in enabling the private sector to expand DFS, their efforts do not sufficiently target disaster-prone areas or adequately address the preconditions for emergency e-transfers**. Comparing existing initiatives to the e-payment preparedness framework reveals the following critical gaps in e-payment preparedness:

Demand Side Preparedness: While there is considerable donor support for humanitarian actors to build organizational capacity and coordinate with government social safety nets, there are critical gaps in pre-positioning detailed program implementation plans, establishing agreements for processing e-payments when emergencies happen, and partnering with FSPs before crises occur to ensure customers and merchants have access and use payment systems.

Supply Side Preparedness: To fully engage with humanitarian cash transfers, FSPs need to build out physical infrastructure and agent networks in high-risk areas, partner with humanitarian agencies to acquire and train new customers, and provide low-cost e-payments when emergencies occur. Additionally, FSPs need to strengthen their own business processes, develop business continuity plans for infrastructure and service delivery in high-risk areas, and develop low-cost products for digital payments and connectivity.

- **Network Connectivity:** Connectivity remains a critical component of emergency e-transfers and is central to branch-less banking. All types of e-transfers require some degree of network connectivity, allowing transaction information on the front end to be uploaded on the back end. Even smart cards require online reconciliation. Last-mile initiatives only sporadically target countries at high-risk of crises. **Additional investments to extend connectivity are needed, particularly for remote, low-population, or unstable areas where emergency response is likely**.
- **Agent Network Development:** Strengthening and expanding agent coverage to disaster-prone areas is critical to the success of e-transfer programs. Countries with mature branch-less banking agents may still lack coverage to populations in remote areas vulnerable to recurrent risks. Moreover, agents might not be equipped to serve as cash-out points for large-scale payment programs. Some mobile money providers might be eager to go the 'last mile' as part of their business strategy, but many require assistance to roll out a network of accessible and liquid agents to underserved disaster-prone areas. **Agent network expansion will require new thinking about partnership models between humanitarian agencies and FSPs to ensure that agents can sustainably service the remote areas where humanitarian actors are present or active.**
- **Service Provider Capacity:** FSPs are often responsible for managing the network of agents/cash-out points. Most payment providers, especially in high-risk countries, are unprepared to handle the high-volume, low-margin business of emergency transfers and require significant capacity building and training on the part of agencies.

Government-led Enabling Environment: While more governments are exploring ways to digitize their social safety net programs, these efforts alone are insufficient to create an enabling environment conducive to humanitarian e-payment responses. **Regulatory structures must be in place and predictable to incentivize investments by DFS providers. Additionally, KYC, identity, and other regulatory requirements must be suitable and flexible to allow continuity of operations even in emergency contexts, particularly in countries facing recurrent crises**.

Donor-lead Enabling Environment: While donors are supporting initiatives to improve and coordinate cross-agency initiatives, greater investment is needed to expand the impact of existing donor efforts to more high-risk countries. **Specifically, donors should expand the use of innovative financing models to incentivize expansion of FSPs into high-risk areas and encourage national government-run social safety nets to remain funded and have flexibility for use in humanitarian response**.

Conclusion

The current state of investment in e-payment preparedness is insufficient to adequately deliver cash transfers at scale during emergency responses in vulnerable countries. By reviewing current investment patterns, in particular those focusing on resilience, preparedness, last-mile, and G2P digitization initiatives, it is clear that significant work is taking place to strengthen electronic payments in some places (particularly more stable countries) and to establish the preconditions that enable e-payments during emergency responses. Nevertheless, a more explicit focus on the e-payment requirements of humanitarian actors must be taken into account when strengthening e-payment systems in order to be prepared to deliver cash transfers at scale in emergencies.

Comparing the e-payment preparedness framework against the reality of e-payment ecosystems in a variety of countries and the existing donor priorities yields the following observations on the current state of readiness:

1. **Countries where emergencies are most likely to occur are the least well prepared**: Of the 13 countries facing severe humanitarian crises, only four have a digitized G2P payment program in place and only six have initiatives underway to bring last-mile connectivity. **A significant geographic refocusing of DFS resilience and financial inclusion investments is needed to ensure the preconditions to deliver digital emergency payments are present and functioning in high-risk countries**. Directing existing resilience or development initiatives to address this gap will strengthen the level of readiness of the most vulnerable countries, benefiting both development and humanitarian responses. Without more investment to prepare an enabling environment through sufficient infrastructure and services to deliver cash transfers at scale, cash-based responses will remain time consuming, inefficient, and susceptible to administrative and financial risks.

2. **Humanitarian objectives of e-payment system-strengthening initiatives must be made explicit**. This report has highlighted the extensive investment occurring in digitizing G2P systems, last-mile connectivity, and resilience-building programming to foster economic growth and financial inclusion. Strengthening humanitarian response should be a stated objective of these initiatives as well. Currently, preparedness to rapidly respond to emergencies using e-payment systems is a secondary benefit of these investments, but these initiatives often miss rural, sparsely populated, or particularly poor geographies—the very areas where humanitarian crises are most likely to occur. Demand for e-payment services from humanitarian actors should be an explicit consideration in investment decisions on where to invest in new infrastructure and what services to support. Additionally, humanitarian actors offer a significant incentive to DFS providers to expand into crisis-affected geographies; there is a predictable demand for e-transfers related to emergency response, and humanitarian actors have an interest in supporting expansion of e-payment services through customer and merchant acquisition. The e-payment preparedness framework identifies those aspects of preparedness that support both long-term development and humanitarian objectives, and can be used to identify gaps . **Governments, donors, and private-sector actors should adopt stated humanitarian preparedness objectives in existing and new funding commitments** to strengthen economic growth in the long term and improve the efficiency of humanitarian cash transfers to stretch aid budgets.

3. **The e-payment preparedness framework is a useful tool for analyzing country-level e-payment investment needs**. The framework presented in this paper focuses attention on specific improvements needed for a country to have e-payment systems in place and ready for use during an emergency. Given the wide range of actors involved, including but not limited to host governments, donors, private sector, and humanitarian organizations, **this framework provides a single reference point for understanding what is needed for each actor at each phase of establishing and strengthening e-payment systems**. Additionally, comparing the framework with country-specific e-payment development contexts allows for the identification of strategic entry points to build e-payment preparedness in each country, to enable humanitarian response as well as G2P, financial inclusion, and economic growth objectives.

4. **Country-specific e-payment preparedness plans are necessary**: As case studies of e-payment systems in six different countries demonstrate, one size does not fit all. There is wide variation within countries as well as between countries in the level of development, investment, and preparedness of e-payment systems to deliver emergency cash transfers. As such, **the investments required from donors, governments, private sector, and humanitarian actors to strengthen e-payment systems must be tailored to each country context**. The framework is a useful tool to guide countries to e-payment preparedness.

Technology is evolving and spreading in the developing world at a rapid pace and presenting humanitarian organizations with new options to deliver cash assistance at scale with speed and efficiency. But e-transfers will remain limited in countries with weak digital and financial infrastructure, regulatory environments, and/or financial institutions. To scale-up efficient delivery of cash transfers in emergencies across the globe, **donors, humanitarian agencies, governments, and the private sector must work collectively to ensure necessary investments to grow e-payment systems in disaster-prone countries**. Simultaneous investment in regulatory frameworks, infrastructure, and humanitarian response capacity will enable a more systematic adoption of e-transfers in countries and regions afflicted by recurrent crises.

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Annex A—Interview Questions

Interviews with the lead donors and experts focused on the following key themes that help the author frame the discussion around electronic payment preparedness. These themes include:

Emergency Preparedness and Resilience

- What is the donor's approach to emergency preparedness and resilience?
- Does the renewed focus on resilience offer opportunities to increase support for CTPs, since donors can better link humanitarian and development programming?

Approach to CTPs:

- What is the donor's approach to CTPs
- How do donors view the future appetite for CTPs?
- What are the remaining challenges and opportunities moving forward?
- Does the renewed focus on resilience present opportunities to increase support for CPTs, since donors can better link humanitarian and development programming?

Approach to Electronic Cash Based Transfers (e-transfers) for Humanitarian Assistance

- What are donor's approach to e-transfers?
- What type of new funding vehicles and potential business models need to be explored between electronic payment providers and humanitarian agencies to prepared delivery platforms to support humanitarian interventions?

Electronic Payment Preparedness:

- What exactly does electronic payment preparedness entail?
- What type of investment is required to "prepare electronic payment systems" to support humanitarian interventions and how will that investment differ across countries and in different conflict contexts?
- What are the funding vehicles? Are there examples of development investments focused on e-payments in high-risk countries that simultaneously e-transfers for emergency response?

Coordination in development and humanitarian programming:

- How can efforts be better coordinated between development and humanitarian communities in order to invest in long lasting infrastructure that supports development and humanitarian objectives?
- What synergies exist between longer investments in safety nets, payment delivery systems and financial inclusion with short-term emergency responses?
- Are donors willing to consider a broader, more inclusive electronic cash transfer strategy that address both humanitarian and development concerns?

Annex B—List of People Interviewed

Dascig, Rowena	Humanitarian Affairs Analyst, UNOCHA - Philippines
Dooley, Chris	Financial Inclusion Practice Area, Former Facility Manager, UNCDF Better than Cash Alliance
Etulain, Troy	Project Director, Mobile Solutions Technical Assistance and Research, FHI 360.
Harihareswara, Nandini	Senior Digital Finance Advisor, USAID's Global Development Lab, USAID
Lake, Andrew	Principal Operations Officer, Retail Payment Institutions & Innovation, IFC
Lehman, Joyce	(Previous) Program Officer at Gates Foundation; (current) Technical Advisor, Mobile Solutions Technical Assistance and Research, FHI 360 on
Martin, Christine	Senior Advisor, Digital Finance and Agriculture, USAID's Global Development Lab, USAID
McLean, Calum	Technical Advisor, Food Security, ECHO
Meissner, Laura	Economic Recovery and Market Systems Technical Advisor, USAID/OFDA
Murray, Sara	Electronic CTP Manager, ELAN, Mercy Corps
Palascio, Agnes	National Disaster Response Advisor, UNOCHA Philippines
Thiruthimana, Santhosh	Practice Director, Channels & Linkages, Enclude Solutions
Waites, Tim	Humanitarian and Resilience Advisor, Resilience and Social Assistance, DFID

Annex C—Donor Approaches to Resilience and Emergency Preparedness

This table presents key highlights of respective donor approaches to resilience and emergency preparedness:

Donor	General Approach to Resilience and Preparedness	Initiatives
World Bank	▪ Resilience initiatives are largely focused on natural disaster and climate risk management (Global Facility for Disaster Risk Reduction). ▪ The World Bank's disaster risk management initiatives build in resilience as a core component of project design, thereby mainstreaming DRM into day-to-day development work. ▪ The World Bank follows a "linked sectoral approach"[45] to resilience focused on building resilience in key sectors including disaster risk management, climate change, conflict and fragility, environment, social protection and labor. ▪ The World Bank sees minimizing disasters and crises as a joint humanitarian and development responsibility and is urging improved ways of working with one another and coordinating efforts.[46,47] ▪ Increasing efforts to emphasize a "system based approach" and a rethinking of modalities of engagement particularly for protracted crises in fragile conflict prone states.[48]	▪ Leading efforts to develop innovative disaster risk financing solutions though IBRD/IDA such as the Caribbean Catastrophe Risk Insurance Facility and the Pacific Catastrophic Risk Assessment and Financing initiative. ▪ The Global Facility for Disaster Risk Reduction collaborates with governments and partners providing technical and financial support for risk assessments, risk reduction, preparedness, financial protection and resilient recovery and reconstruction. ▪ Through Global Facility for Disaster Risk Reduction and in partnership with UNDP, the World Bank is increasing its support to disaster countries in conducting post-disaster needs assessments and strengthening national safety net programs.[49]
DFID	▪ DFID is fully committed to adopting resilience as a core approach to tackling both natural and man-made disasters and is taking a lead role in uncovering how development and humanitarian communities can better coordinate efforts to support resilience.[50] ▪ Resilience agenda is derived from its 2006 DRR Policy, Humanitarian Emergency Response Review and response (2011).[51] ▪ DFID's 2011 Humanitarian Emergency Response Review[52] emphasizes disaster resilience as "a new and vital component" of humanitarian and development work and identifies preparedness a strategic area moving forward, calling for greater investment in preparedness and resilience to support high-risk countries withstand and recover from crises (manmade and natural).[53] It also emphasizes innovation and new technologies.	▪ DFID's DEPP improves preparedness in developing countries most at risk of humanitarian disasters by funding projects improving "quality and speed" of emergency responses.[55] Specific countries include Afghanistan, Chad, Indonesia, Madagascar, Myanmar, Nigeria, Pakistan, Palestine and the Philippines. ▪ As part of DEPP, DFID joins forces with WFP and UNICEF is 20 million pound project operating across 23 countries with the aim of identifying impact of preparedness on effectiveness of response.[56]

	▪ DFID is committed to embedding disaster resilience in all DFID country programs with a timetable and measurable milestones.[54] ▪ Actively encouraging embedding disaster resilience into key institutions and governments as well as developing links between humanitarian and development work in fragile conflict countries.	▪ Leading efforts to build resilience by moving to multi-year humanitarian financing particularly in fragile countries facing escalating crisis (e.g. Yemen) and shifting the focus to building national capacity within humanitarian response and supporting the transition of beneficiaries from emergency support to longer-term livelihood programs.[57] ▪ Resilience a central element of their work in developing countries (e.g. Bangladesh, Ethiopia, Kenya, Malawi, Mozambique, Nepal Sudan, and Uganda). ▪ Flexible Development Funds for use in crisis (DFID's Internal Risk Finance).
ECHO	▪ EU's new resilience approach (2013) is largely shaped by the recurrent crisis in the Sahel region and the Horn of Africa demanding a longer term more systematic approach to building resilience.[58] ▪ ECHO's approach emphasizes building resilience through national resilience strategies, disaster management plans and prevention systems and focuses on coordination of development and humanitarian efforts. ▪ Over the last decades, ECHO has increased its involvement in DRR and preparedness and regards the integration of DRR into relief operations as critical to preparedness.[59] ▪ Commission Staff Working Document - Action Plan for Resilience in Crisis Prone Countries (2013–2020) includes a timetable and implementation priority of EU's support to development and implementation of national and regional resilience approaches, capacities and partnership.[60] ▪ Linking relief to rehabilitation and development is the model addressing the gap between relief and development whereby relief is seen as a catalyst for longer-term development projects.[61]	▪ Supporting Horn of African Resilience and Global Alliance for Resilience Initiative initiatives underscore the importance of preparedness and ECHO's new approach to resilience. Projects also demonstrate ECHO's commitment to bridging the gap between humanitarian and development assistance and facilitating linkages between relief, rehabilitation and development and promoting a mix of short-term, medium-to-long term responses.[62] ▪ Resilience initiatives focus on strengthening capacity in long-term engagements that are part of country led resilience agendas using flexible financing, risk financing and innovative financing mechanisms.[63] ▪ ECHO's flagship disaster preparedness program (DIPECHO) focuses on building resilience and preparedness through development of contingency plans, early warning systems, evacuation as well as disaster management and coordination in disaster-prone regions of the world including South East Asia, Caribbean, Central America, Andean Community, and Central Asia. ▪ ECHO encourages replication and scaling up of DRR initiatives by development actors and inclusion of DRR at all levels by development donors and governments. ▪ In 2013, over 20 percent of ECHO's humanitarian funding went to DRR with the largest portion (52percent) allocated to Africa. The primary focus is on strengthening resilience to shocks triggered by natural disasters.[64]

USAID	▪ Building resilience to recurrent crises became a USAID priority in late 2011 shifting attention beyond DRR and mega disasters to building resilience in communities.[65] ▪ Policy Framework (2011–2015) calls for core operational principles across the entire portfolio and commits USAID to reducing the numbers of people requiring humanitarian assistance in the Sahel (Resilience in the Sahel Enhanced program) ▪ Since 2012, USAID has been a leader on pushing the resilience agenda and is committed to expanding its development activities to the most vulnerable to build resilience and facilitate inclusive growth in its 2012 policy guidelines on "Building Resilience to Recurrent Crisis." ▪ A critical component to USAID's approach is breaking down silos and improving collaboration between humanitarian assistance and development programs and considering humanitarian assistance in the planning, design and budgeting of future programs.[66] ▪ USAID emphasizes importance of working with host country partners on issues related to resilience and sees governments as responsible for ensuring vulnerable communities receive support.[67]	▪ USAID's Global Resilience Partnership was launched to address resilience challenges in Sahel, horn of Africa, and South and Southeast Asia. ▪ USAID launched Resilience in the Sahel Enhanced program in 2014 building on joint development and humanitarian efforts to end cycles of crisis and build resilience in the Sahel. ▪ OFDA focuses on a variety of DRR programs that include emphasis on disaster preparedness. OFDA also lays foundations for recovery and rehabilitation by linking its work to the development activities of USAID missions. (e.g. Revitalizing Agricultural/ pastoral Incomes and New markets project, Ethiopia). ▪ Through OFDA's structure and innovative vehicles (e.g. joint planning cells, crisis modifier mechanisms), it is able to engage effectively in USAID's broader resilience agenda. ▪ Relief-to-development design using multiyear funding and flexibility allows for rapid response to changing conditions.[68] USAID uses multi-year humanitarian financing, flexible "crisis" development funds (e.g. USAID's Crisis Modifier) to support its resilience efforts. It also uses flexible funding – Mercy Corps received flexible funding in the Revitalizing Agricultural/Pastoral Incomes and New Markets project in Ethiopia.
UNCDF[69]	▪ UNCDF's Local Development Finance for Inclusive Growth addresses resilience of communities in the face of natural disasters. ▪ UNCDF views its financial inclusion practice as an effective way to reduce vulnerability and shock (e.g. savings, micro-insurance) and thereby enhance resilience of populations in disaster prone areas. ▪ UNCDF's focus on resilience and preparedness is largely focused on climate change. LoCAL is the UNCDF's facility for investing in local level climate resilience.	▪ LoCAL (a UNCDF facility) supports local government to invest in building resilience through climate resilience grants. ▪ Resilience grants are also used for investments promoting food security or climate-related DRR and preparedness. Grants build on national systems and incentivize local governments to integrate climate change and resilience into their planning (e.g. Bhutan and Cambodia).

Annex D—DFS Initiatives

Select donor initiatives promoting digital financial services and last mile connectivity.

DFS - Last Mile Connectivity Initiatives Developing low cost payment platform solutions and incentivizing network expansion through innovative business models
▪ CGAP's Digital Financial Services promotes innovations through new business models that provide low-cost electronic retail payment platforms to the poor.[70] ▪ IFC's investments in branchless banking services such as WIZZIT in South Africa and FINO in India focused on developing low cost channels that will allow FSPs to poor and rural areas through mobile phone banking and cards. ▪ IFC investments in new payment platforms that provide service providers with innovative business models to expand their outreach (e.g. IFC mobilized a $345 million financial package for Grameen phone, a leading telecom operator to support its expansion of coverage in rural areas) ▪ UNDCDF's mobilization of investment for infrastructure and connectivity and supporting innovative delivery channels that offer potential for scale. ▪ UNCDF's Mobile Money for the Poor (MM4P) aims to build mobile money solutions in low-income environments (Liberia, Lao People's Democratic Republic, Malawi, Nepal, Uganda, Benin, Senegal, and Zambia) ▪ UNCDF's MicroLead Expansion working with FSPs to encourage outreach to unbanked rural populations (Bhutan, Burundi, Central African Republic, Cameroon, Democratic Republic of Congo, Ethiopia, Ghana, Lao People's Democratic Republic, Liberia, Malawi, Myanmar, Rwanda, Samoa, Sierra Leone, Solomon Islands, South Sudan, Tanzania, Timor-Leste, Uganda, and Vanuatu) ▪ Gates initiatives providing low cost solutions and increased payment efficiency to service providers to encourage expansion to poor and rural areas. ▪ Gates is working closely with MasterCard through the "MasterCard Labs for Financial Inclusion" based in Africa stimulating new innovations for banking the poor.[71]
Payment Digitization and Social Safety Initiatives **Efforts promoting digitization of government payments and initiatives focused on strengthening social safety net programs to support emergency transfers**
▪ WB's/DFID/Gates digitization initiatives supporting G2P payments (e.g. Pakistan, Cote d'Ivoire, Palestine, Haiti, Kenya, Philippines, Turkey, Uganda, Ukraine) ▪ UNCDF plans to continue encouraging innovations in the use of technology for development (mobile banking) but also addressing how digital payment platforms can be better used to transfer social transfers and payments from governments to persons in vulnerable groups. ▪ UNCDF's Pacific Financial Inclusion Programme, working with Fiji's Department of Social Welfare to transition welfare recipients from cash payments to bank accounts accessible at ATMs and merchant shops using debit cards. ▪ Together with BTCA, Gates promotes digitizing government payments (G2P, P2P and P2B), engaging in regulatory agendas, fostering public private partnerships to build payment platform infrastructures, and improving regulatory enabling environments.[72] ▪ Initiatives strengthening social safety net programs that can support emergency transfers if and when needed (DFID, ECHO, and WB). Building off of the experience following Typhoon Haiyan (Philippines) and the UN coordinated efforts to deliver emergency cash transfers to beneficiaries of the 4P program, more efforts are focused on building capacity, improving terms of engagement with cluster leads and donors, and identifying trigger indicators for scale up and scale down during emergencies.[73] ▪ Contingency budgets and risk financing mechanisms - Ethiopia's Productive Safety Net Program includes contingency financing mechanisms (contingency budgets and risk financing mechanisms) that allow the potential for scale up. Donors are increasingly focusing on emergency e-transfers being an entry point for engagement in longer-term social protection initiatives where safety nets are fragile or non-existent (Kenya's Hunger Safety Net, Oxfam, Care and Concern, DFID funded).

Annex E—Case Study Country Profiles

Central African Republic (C.A.R.)	
Crisis Typology	▪ Ethnic violence ▪ Humanitarian Displacement (estimated 430,000 IDPs and 423,300 refugees) ▪ IDPs face malnutrition and high mortality rates. ▪ Violent clashes in capital and northwest of the country ▪ Weak political institutions ▪ Acute food insecurity with roughly 1.5 million people requiring food assistance ▪ Weak political institutions and ethnic tension and an increased presence of Boko Haram/Al-Shabaab resulting in high risk of displacement. ▪ Low risk of rapid onset natural disasters. **IRC Watch list Status:** **High Risk – Complex Emergency (rapid, medium onset)** **Low Risk – Natural Disaster**
Financial Infrastructure	▪ Extremely limited banking sector ▪ Extremely low bank penetration especially outside of capital and main cities with 95% remaining population unbanked. ▪ Limited outreach through microfinance
Digital Payments Infrastructure	▪ Low mobile phone penetration, connectivity limited to main cities. ▪ Virtually non-existent cash out points (ATMs, branches, agents) ▪ Underdeveloped mobile money market - relatively new and inexperienced service providers and weak infrastructure. ▪ Limited card penetration (debit and credit) - In 2015 Master Card signed a deal with Ecobank to offer cards and e-payment solutions in 30 Sub-Saharan countries including C.A.R. Focus is on urban and higher income population. ▪ Poor power infrastructure – inefficient and unreliable power supply - Poor access to grid electricity particularly in rural areas ▪ Lack of infrastructure (roads, power) particularly in the rural areas
Financial Regulatory Environment	▪ Poor enabling environment due to weak political institutions
Social safety net programs	▪ C.A.R does not have adequate safety net programs or mechanisms to support vulnerable groups. (WB, 2011, Reducing Poverty and Investing in People: The New Role of Safety nets in Africa)

Nigeria	
Crisis Typology	▪ Severe risk from storms can cause flooding ▪ High risk of droughts ▪ Continued population displacements to urban areas ▪ Political and security issues in the north. ▪ Acute food insecurity for IDPs in greater Maiduguri area. ▪ Boko Haram insurgency responsible for more than 1.5 million people displaced ▪ Potential for inter-communal violence in northern areas and Middle Belt region. ▪ Intense military operations in northeast contributing to displacement. IRC Watch list Status: High Risk – Complex Emergency (rapid, medium onset) High Risk – Natural Disaster (rapid, medium, long-running)

Financial Infrastructure	▪ Solid banking system and extensive microfinance network. Banking sector focused largely on urban and upper income customer segments and wholesale market ▪ Informal financial services frequently provided through rotating savings and credit groups, VSLAs. Roughly 14% of Nigerians reported using informal financial instruments[78] ▪ Financial inclusion is improving: 44% of adults (> 15) hold a bank account with a formal FI or mobile money provider as of 2014 but continued low rates of financial inclusion especially outside major cities and urban centers.[79] Sizeable proportion of adult population still excluded from financial services (particularly acute in the informal sector (e.g. subsistence small scale farming, trading, etc.) employing 74% of adult population[80] ▪ Bank penetration is especially low, in rural areas and the northern parts of the country. 39% of Nigerians live in rural areas. Access also varies by geographic regions with North East and North West disproportionately excluded from formal financial services.[81] ▪ Constraints to bank penetration: poor ATM and PoS terminal penetration and poor internet connectivity. ATMs and branches still most prominent payment channel. ATM network is not sufficiently widespread and reliability is poor given power outages and operational problems. Financial cash out points are still concentrated in urban and high-income areas. ▪ Reliance on cash is high with 67% of Nigerian adults preferring small to medium transactions in cash[82]
Digital payments infrastructure	▪ Severe undersupply of electricity, low electrification and power shortages especially in rural areas.[83] ▪ Relatively high levels of mobile phone ownership (smart phone penetration is still nascent at around 10-15%.[84] (GSMA, 2013) ▪ Large and fast growing telecoms market with 4 GSM operators serving the market. Mobile penetration of 43% is high but far lower in rural areas where quality of service is poor and network outages are frequent. Mobile device downtime due to power supply outages is common, especially in rural areas.[85] ▪ Two mobile money companies dominate the market (Paga and Firstmoney) and mobile money remains limited to active bank users[86] (banks offering mobile money services) and focused on money transfers, airtime purchases and bill payments. No evidence that mobile money is being adopted by the unbanked population. ▪ Distrust in mobile money (poor mobile network quality and mobile network fraud) especially amongst the rural population is prevalent and accounts for low uptake of mobile money.[87] ▪ Poor agent networks, inadequate capital outlay by MNOs, poor infrastructure (especially electricity) and limited interoperability and interconnectivity between networks also contributes to low mobile money adoption.[88] ▪ Level of comfort with cards is increasing but overall card penetration is still negligible and concentrated in higher income urban segments of society. ▪ High % of remittances per GDP. Domestically, 67% of unemployed Nigerians or 20 million rely on remittances from other people. Internationally, Nigeria is one of the biggest remittance destinations in the world ($21 billion in 2012) and mobile money operators like Vcash are beginning to offer services linking Western Union accounts with mobile wallets.[89] Recently, World Remit (online money transfer service) agreed to partner with MTN (Nigeria's largest telco operator) allowing customers to send remittances to MTN mobile money customers (Brookings, 2015)
Financial Regulatory Environment	▪ High ranking by Brookings for government commitment to financial inclusion – Its National Financial Inclusion Strategy (NFIS) and commitment reduce numbers of financially excluded by half and expand participation in formal sector to 70% by 2020 are seen as positive steps.[90]

Financial Regulatory Environment (continued)	▪ High level of government support for digital financial services (e.g. Lagos, inclusive "cash lite" initiative). NFIS seeks to expand access points to channels including bank branches, microfinance bank branches, ATMs, POS, and mobile agents.[91] NFIS is working to develop and implement tiered framework for KYC regulations and agent banking frameworks.[92] ▪ National e-ID cards with MasterCard's prepaid payments functionality could be a game changer. Upon completion of the pilot program, the Nigerian Identity Management Commission plans to introduce more than 100 million cards. This is considered a "game changer" in that it removed the "proof of identity" barrier and will allow Nigerians to receive funds (e.g. social grants, subsidies) electronically.[93] ▪ Tiered KYC requirements (since 2012) for mobile money simplify registration that allows individuals without formal IDs to be included in the financial system. 80% of Nigerians have some form of ID that facilitates registration.[94] ▪ Nigeria has a bank-led model of mobile money where regulations forbid MNOs to receive mobile money licenses and offer services directly to the public. Instead, MNOs are active through partnerships with banks. Ecobank dominates the market followed by First Bank and United Bank for Africa. MNOs like Airtel, Etisalat, Globacom and MTN have partnerships with banks. In total there are 24 licensed DFS providers largely concentrated in urban areas. ▪ Nigeria Central Switch operating as of 2013 ensures interoperability among deposit taking institutions and licensed payment service providers. But, mobile money platform interoperability has not yet been achieved.[95] (Brookings, 2015) ▪ Agent banking regulations are in place allowing banks to extend beyond branch models but still require improvement as existing rules require agents to have operated as a commercial entity at least one year prior to application for agency status (impeding informal agents in more rural areas).[96]
Social Safety Net Programs	▪ Overall weak capacity in social safety nets and limited measures to improve social safety nets during a crisis. Currently, Nigeria is in the process of introducing a new social safety net. World Bank is funding projects (Nigerian State Education Program Investment Project and Nigeria Youth Employment and social support operation YESSO) that support strengthening of Nigeria's social safety net system.[97] ▪ Conditional CTPs include COPE, which is focused on girls' education and is supported by DFID, UNICEF, and the World Bank. COPE is currently being implemented in various parts of the country but have limited reach due to weak institutional capacity at state level to implement, service delivery and financial infrastructure.[98]

Pakistan	
Crisis Typology	▪ Severe risk of flooding ▪ Susceptible to storms, drought and earthquakes ▪ Political instability and high risk of political violence ▪ High risk of terrorist attacks ▪ Potential displacement due to military action. IRC watch list status: High Risk: complex emergency (slow onset) High Risk: natural disaster (rapid onset)
Financial Infrastructure	▪ High ranking (100%) by Brookings Institute on country commitment to financial inclusion - State Bank Pakistan (SPB) developed a national financial inclusion strategy in partnership with the World Bank in May 2015.[99] Emphasis is on facilitating and enabling branchless banking and bolstering the microfinance sector and agricultural lending.[100] ▪ InterMedia survey conducted 2013-2014, found that people trust bank more than mobile money.[101]

Financial Infrastructure (continued)	▪ Relatively mature banking system with numerous commercial banks, MFIs and informal service providers. As of 2013, 9 commercial bank branches per 100,000 adults and 14 branches per 1,000 km2.[102] ▪ Low bank penetration – Only 8.7% of adults (> 15 yrs.) had accounts with formal financial institutions. Currently 17.5% of adults > 15 years have used formal or informal financial services (including mobile money).[103]
Digital payments infrastructure	▪ Strong digital payments infrastructure with numerous mobile and branchless banking platforms. ▪ 90% of population lives within areas with mobile network coverage and mobile subscriptions have increased dramatically in the last years with nearly 80% of Pakistanis having access to mobile phones including poor, rural and unbanked households.[104] ▪ Considered the most competitive mobile money market in the world with 8 providers using various operational models, but a heavy focus for most providers remains basic over-the-counter services (OTC) including bill payment and money transfer. Improving financial inclusion will depend on transitioning OTC customers to mobile accounts. ▪ Advanced branchless banking - # of branchless banking accounts continues to grow (03/2014 - 3.8 million) dominated by OTC transactions accounting for 80% of transactional volume and mobile wallets (14%). ▪ Major banks have branchless banking licenses and First Microfinance Bank has agreement with Pakistan Post to serve customers through rural post offices. As of 2013, approx. 86 active agent outlets per 100,000 adults up from 28 in 2012[105] (Brookings, 2015) ▪ OTC (over-the-counter) is the predominate mobile money model in Pakistan with over 95% of mobile money transactions occurring through mobile banking (m-banking) agents, and the remainder being processed directly through customers' mobile-wallet (m-wallet) accounts, using mobile phones. M-wallet accounts currently have a limited role in the m-money services market. OTC is ideal for digital payment connectivity to unbanked communities but not conducive to account adoption. ▪ Uptake and use of mobile money services remains limited – as OTC only offers limited products. Many people are not registering for mobile money accounts because they are satisfied with the limited services they get through an agent. Much work is being done to incentivize registration of digital accounts (e.g. recent agreement was signed to reduce biometric verification fees for mobile account registration) ▪ Mobile money market is dominated by Telenor's EasyPaisa - a partnership between Tami Microfinance Bank and Telenor (MNO) targeting the traditionally financial excluded households and UBL Omni (which does not have partnership with an MNO). Easy paisa has 31 % market share of national agent network and is Pakistan's leading service providing mobile wallet accounts for registered users of the Telenor Pakistan mobile phone services and also provides OTC mobile money services. (Brookings, 2015). Unfortunately, use of Easypaisa is limited due to the fact that few merchants accept e-wallet payments or allow clients to store value in mobile wallets. ▪ Cash heavy society – 99% of payments are made in cash – reflected in their preference for OTC.
Financial Regulatory Environment	▪ SPB has gradually reduced the KYC requirements for low-balance accounts, facilitating account openings for new beneficiaries. It has also waived the NADRA KYC verification fee for beneficiaries transitioning from a limited mandate account to a branchless banking Level 0 account. Most of the adult population is registered with NADRA.[106] Large initiative began early 2015 requiring biometric re-verification of SIM cards (more intensive than KYC). 97% of adults hold national biometric identity cards.

Financial Regulatory Environment (continued)	▪ Biometric verification systems were implemented in 2014 and used for issuing new SIMS and mobile operators are now rolling out biometric SIM registration terminals in retail locations across the country. Development of this infrastructure will likely encourage of new accounts. (Brookings, 2015) ▪ Pakistan has committed to the Better Than Cash Alliance and stresses the importance of digitized G2P payments. ▪ SBP has recently launched a mobile money pilot increasing daily and monthly transfer limits for Easypaisa mobile money account holders.[107]
Social Safety Net Programs	▪ Pakistan Government launched Benazir Income Support Program (BISP) in 2008 as a social safety net for the poorest segments. It is the World Bank's flagship national safety net system, supported by IDA's TA since 2009. BISP first used post offices to distribute cash and later required recipients to open bank accounts to which funds were electronically transferred and made available through smart cards or mobile transfers. ▪ Significant digitization of G2P payments – 85% of BISP payments are digitized via pre-paid cards. The Employees Old-Age Benefits Institution (EOBI) has also digitized 80% of its payments to pensioners.[108] Currently, WB is providing additional funding to further strengthen the program and expand its coverage innovative payment schemes within social protection space offers new opportunities to expand financial inclusion. Banks clearly see G2P as a key opportunity to grow their branchless banking business. As the branchless banking sector develops, G2P payments will benefit. Government fees to banks for making BISP payments incentivizes banks to establish agent locations in places where normally it would be too expensive to set up in the early phases of their branchless banking rollout.[109] ▪ MasterCard and Bank of Punjab - a recent partnership focused on automating government pay-outs and distributing payment cards allowing them access to formal financial services.[110] Biometrics will be used to verify identity of recipients.

Philippines	
Crisis Typology	▪ High risk of storms, cyclones, earthquakes and floods. ▪ Security issues in Mindanao IRC watch list status: High Risk: Natural Disaster (rapid onset) Low Risk: Complex Emergency (slow onset)
Financial Infrastructure	▪ Thriving financial sector – 18 commercial bank branches per 1,000 km2 in 2013 and 9 commercial bank branches per 100,000 adults. There were 49 ATMs per 1,000 km2 and around 23 ATMs per 100,000 adults.[111] ▪ Poor access to finance particularly in rural areas - According to World Bank 2014 Global Financial Inclusion Database, 28% of adults (> age 15) have an account at a formal financial institution but only 15% at the bottom 40% of the income scale held an account. Low access to finance is partially due to fragmented geography and limited reach of formal banking infrastructure. Banks slow in taking banking beyond branches. In the Philippines, 610 out of 1635 municipalities do not have banks.[112] The poor have limited access to financial instruments. Despite robust microfinance environment, microfinance institutions tend to be urban areas or semi-urban areas.[113] ▪ Strong commitment to advancing financial inclusion – Government is committed to establishing a national financial inclusion strategy. ▪ Rural bank penetration remains problematic given geography of country. In 2014, 610 of 1,634 cities and municipalities in the Philippines did not have a bank branch in Q2 2013, and even among those that did, availability and use of banking services was skewed toward more densely populated areas.[114]

Digital payments infrastructure	▪ Overall high mobile penetration (50%) but low % smart phone penetration (14% in 2014).[115] Critical issue is mobile (rural) coverage. As of 2014, 111 mobile subscriptions per 100 people (individuals hold more than 1 subscription) in the Philippines, 17 active agent outlets for every 100,000 adults, and 36 active agent outlets per 1,000 km 2.[116] ▪ Growing e-money penetration: By 2013, the number of registered, e-money accounts had grown to over 25 million accounts for a population of about 98 million and usage of these accounts are high.[117] ▪ Sizeable domestic and international remittance flows. Remittance companies still regarded as reliable source of payment delivery due to greater penetration in rural areas. ▪ A developed and efficient mobile transfer system in place. Mobile transfers were piloted in emergencies: Typhoon Haiyan response in 2013 (WFP/UNDP); Ketsana response in 2010 (WFP/CSFI/DSWD) and card based transfers were piloted by ACF with PVB bank throughout the Cotabato response in 2011. ▪ Significant growth opportunities for mobile money – As much as 50% of mobile users in the Philippines are unbanked.[118] ▪ 2 major mobile payment players (Smart and G-cash) - Smart Communications (Banco De Oro (BDO) is issuing bank) offers a card based package (Smart Money) allowing customers to buy air time, send and receive money and pay using a card. Smart Money uses an existing retail payment network of ATMs, smart wireless centers, and accredited cash-out merchants. Globe Telecom launched G-Cash (through GXI, operator of G-cash)) offers SMS based packages providing customers with a mechanism to facilitate money remittances, loan settlements, disbursements, and pay bills and make purchases via text message. Globe did not partner with a commercial bank and relies on non-bank agent network including pawnshops, outlets in store, and Globe outlets). Globe also partnered with rural banks that perform cash in/out in rural areas. Recently, GXI partnered with BPI Globe BanKO (mobile based, microfinance focused savings bank) expanding its network of cash-out outlets. ▪ Low credit card penetration. Cards continue to operate mostly through magstripe but by 2017 all pre-paid cards should have shifted from magnetic stripe to smart card (chip and pin). Proprietary cards only operate in proprietary POS of that same bank.[119] Most cards issued are pre-paid or debit cards and a minority or MasterCard/Visa brand. In 2013, banks began piloting mobile POS devices to increase merchant acceptance.[120] ▪ Momentum for expanding the e-commerce sector - Smart and G-cash beginning to expand services that cater to ecommerce sector through credit card substitutes. Smart has recently launches its Charge2Phone service (with Visa and Citibank) that utilizes Near Field Communication (NFC) technology to allow mobile phones to act as a tap-to-use payment solution.[121] USAID E-Peso project is looking to develop an electronic retail payment system (B2B, B2P, P2P) ▪ Philippines still lags in adoption of advanced mobile payments hardware (e.g. mobile payments dongles, mobile POS payments that use NFC chips).[122] ▪ E-payment penetration increasing but remains low - cash still accounts for 99% of all payment transactions and the country's retail payment system is highly paper based. Main use of mobile money remains sending remittances and for airtime.[123] USAID's recent e-Peso project aspires to develop a single electronic payments platform (B2B, B2P, P2P).
Financial Regulatory Environment	▪ Relaxed KYC registration requirements on a provider-by-provider basis (1 of 20 acceptable forms of ID are considered acceptable).

Financial Regulatory Environment (continued)	▪ Strong enabling environment with progressive regulations enabling MNOs to offer mobile money services independently of banks, empowering non-banks to perform cash in/cash out functions. Philippines offers a hybrid bank led and MNO led models. Smart Money is the bank-based model and GCash is the non-bank based model. GCash offers stand along accounts. ▪ BTCA reports that regulatory conditions supporting electronic conditional cash transfers or other government/social programs (G2P) are not fully supportive due to remaining problems with infrastructure to process payments, availability of ATMs and agents in rural areas.[124]
Social Safety Net Programs	▪ Government's flagship national large-scale conditional cash transfer (CCT) program (4Ps) currently covers up to half of those residing in the worst typhoon-affected areas. The 4Ps primary payment provider is LBP (Landbank) through debit cards (used at select bank branches and ATMs). Mobile money systems can also be used for G2P payments (GCash Remit used mobile infrastructure to dispense 4Ps payments in remote areas). In response to Typhoon Haiyan, Smart formed partnership with Landbank. The 4Ps is not specifically designed to improve financial inclusion, but uses various channels to deliver payments. ▪ Payment cards are used for some government transfers (CCT program Pantawid Pamilya). Landbank has supported use of payment cards at POS machines to purchase goods.[125] ▪ Humanitarian agencies have been using CTP as part of relief and early recovery response. CTP was used in several emergencies since 2009 including Tropical Storm Ketsana, Tropical Storm Washi, Typhoon Bopha, and Typhoon Haiyan. Implementation of CTP (75% conditional) was used on a large scale for Haiyan with some 45 organizations implementing CTP amounting to $34 million.[126]

Somalia	
Crisis Typology	▪ Political violence and consequent displacement – more than 68% of the people who are in crisis and emergency are IDPs ▪ Rebel, clan or militia groups and protracted violence. ▪ Potential for increased presence of Al-Shabaab. ▪ High risk for droughts ▪ Food insecurity – 850,000 people facing acute food insecurity[127] and 2.3 million living in "food-stressed" situations. IRC watch list status High Risk: Complex Emergency High Risk: Natural Disaster
Financial Infrastructure	▪ No established banking sector - When the state-owned banking system collapsed in 1991, private remittance companies became the sole financial institutions connecting Somalia with the rest of the world. ▪ Highly sophisticated informal banking systems of money transfer agents (Hawala) facilitate remittances and transfer money safely and reliably throughout the country electronically. MTOs are primary providers of these cash transfers (deposit taking institutions, delivery of cash) functioning through an extensive network of agents typically operating as franchisees. MTOs play essential role in delivery cash for humanitarian relief. ▪ Hawala agents transfer money nationally and internationally in the absence of a banking system. Many of the urban areas have easy access to funds from the hawala branches or indirect transfers. In rural areas, this is more difficult although hawalas can go directly to rural areas to pay cash payments to project beneficiaries (Cash-based Safety nets for Livelihood Support Feasibility Study, STC UK and Horn Relief 2014)

Digital payments infrastructure	▪ Remittances play a major role and MTOs play vital role (64% of remittance collection points are located outside urban areas). Diaspora remittances are among the primary financial sources for the survival of many Somali citizens[128] ▪ Mobile penetration rates low (24.4%) but increasing. The 7 MTOs mostly function in Somalia's several de-facto autonomous regions (e.g. Somaliland) where use of mobile money is growing rapidly. Somalia has one of the lowest mobile penetration rates in the world, but it ranks high in the percentage of adults using mobile phones to pay bills and send/receive money.[129] Somalia's high score for % adults using mobile phones to conduct financial transactions (despite low mobile penetration scores) is largely driven by Somalia's largest telecom company's (HORTEL) mobile banking services (ZAAD) through which people transfer money and make payments and most importantly receive remittances from abroad. ▪ Internet penetration is extremely low. In late 2013, Liquid Telecom built Somalia's first fiber-optic broadband link. Government is beginning to regulate the sector and is planning to issue licenses that will allow the operation of high-speed mobile broadband technologies. ▪ Somalia is one of the most sophisticated and active countries in term of mobile payment. Very high mobile money rates - recent growth of mobile transfers via mobile phone (but not yet connected with international remittances, with exceptions of World Remit). ▪ Somalia ranks high in the world in % of adults using phones to carry out financial transactions. Commercial use of mobile money is less common in rural areas where traders are often reluctant to accept mobile money. ▪ Somalis use mobile money as e-wallets (holding money in the system for larger purchases or transfers) as opposed to P2P activities more prevalent in Kenya. ▪ Recently money transfer via mobile phone has taken off within the Somali territories, facilitating payments for goods/service but this this is not yet connected with the international remittance system on any scale. Two mobile money services set up in Somalia in 2011 launched by Hormuud and E-mall mobile money services launched by Nationlink. HORTEL is Somalia's largest telecom company) is pushing ZAAD mobile banking service to receive remittances.[130] ▪ Recent partnership with MasterCard/Premier bank (first international payment network) will jumpstart usage of payment cards. Premier Bank ATMs will accept cards for cash withdrawal and plans to issue MasterCard debit cards followed by prepaid cards, and point of sale (POS) machines.[131] ▪ There are no cash machines and no POS machines in stores to accept bank cards. (CALP, 2013, Cost-efficiency)
Financial Regulatory Environment	▪ Poor enabling environment ▪ Somalia has neither a formal banking system nor a functioning central bank, and there is no policy for inflation or foreign exchange.[132] ▪ No state-based legal or institutional framework for market competition exists in Somalia. ▪ Remittance companies operate under no formal financial regulations.
Social Safety Net Programs	▪ No social safety nets in place - community-based structures fill the gap but are unfortunately less effective in times of repeated crisis. NGOs are also running various social safety net projects: Adeso and STC are implementing a social safety net project in northern region of Somalia in the rural communities. Oxfam used mobile money in a livelihood e-cash pilot program (2012). Concern Worldwide launched a mobile money transfer initiative (conditional and unconditional) cash aimed at food security. Other humanitarian programs include Horn Relief and Norwegian Peoples Aid Emergency Cash Relief Program (ECRP 2004) funded by Novib/Oxfam Netherlands, Horn Relief, AFREC, WASDA and Development Concern the Emergency Drought Response Action (EDRA).

Social Safety Net Programs (continued)	▪ The success of emergency CTPs are driving the push for a cash based social safety net program and options to compliment recovery and rehabilitation programs. (STC and Horn Relief at leading this initiative).

Yemen	
Crisis Typology	▪ Sectarian tensions rising ▪ Territorial expansion of Shia Houthi movement and increased attacks against Houthis by Al-Qaeda ▪ Potential for sustained periods of violence is high. ▪ High levels of acute food insecurity. ▪ Growing displacement (UNHCR estimates 500,000 displaced since 03/27/2015). ▪ Shortage of fuel. IRC watch list status High Risk: Complex Emergency Medium Risk: Natural Disaster
Financial Infrastructure	▪ Small and weak banking sector (one of the weakest it he MENA region) an underdeveloped financial markets and payment system.[133] Non-bank financial institutions (NBFIs) play marginal role. 8 banks operating in Yemen (4 of which are state-owned). ▪ Microfinance is still relatively new but expanding outreach to poor in both urban and rural areas. Current situation of security/political unrest has dampened microfinance activities. There are 2 specialized microfinance banks. ▪ Access to finance is problematic especially in rural areas where 70% of the population live. Nearly 70 percent of the population in Yemen lives in rural areas in more than 130,000 localities throughout the country, and lack basic infrastructure and services. (USAID, Economic Growth Appraisal, 2012) ▪ Any financial access for the vast majority of Yemenis is either through moneychangers or the national postal service - Both are limited mainly to basic transactional services. ▪ Branch and ATM penetration low. ▪ Largely cash based economy.[134]
Digital payments infrastructure	▪ Banks are exploring mobile banking to expand distribution – but still in infancy ▪ Usage of payment cards low. Payment cards infrastructure is growing rapidly, but usage levels at an overall level remain low. ▪ More than 8 million mobile phone customers, but less than 1 million bank accounts[135] ▪ WFP is providing $15 million in cash in innovative e-voucher project (vouchers delivered to mobile phones via text). ▪ 4 mobile operators ensure availability of mobile services. Mobile operators are beginning to expand coverage to rural areas. ▪ Poor infrastructure, lack of power in rural areas typically requires use of generators and solar cells.
Financial Regulatory Environment	▪ Inadequate regulatory and supervisory framework as well as a weak financial institutional infrastructure. ▪ National Payment System (NPS) in Yemen is very weak, and lacks the core payment systems infrastructure. Manually processed checks, and SWIFT based payment orders are the primary means for large value payments. ▪ The authorities actively promoting mobile and branchless banking, and will issue the required regulation in collaboration with CGAP and USAID.[136] ▪ Yemen has some of the most advanced Micro Finance Institutions (MFI) laws and regulations in the MENA region.[137]

Social Safety Net Programs	▪ Yemen already has a social welfare fund and distribution system, although it is in need of reform. In 2014, Yemen launched a reform program that promised to strengthen its social safety net. ▪ Currently, the SWF (Social Welfare Fund) provides unconditional cash transfers to more than 1.5 million households or roughly 40 percent of the total population. The government intends to use part of the savings from the subsidy reform to increase monthly cash transfers from about $18 to about $27 per household. Cash currently transferred through postal agents or cashiers (hired by SWF to distribute funds in remote areas.[138] EU has supported the SWF; WB has provided technical assistance and administered an EC funded emergency cash transfer together with the SWF (2009). ▪ New, smaller-scale social protection programs have been introduced in recent years, including CTs funded by donors such as DFID, the European Union (EU) and the World Bank, which build beneficiary information and implementation mechanisms put in place by the SWF.

Annex F—E-Payment Preparedness Needs and Opportunities in Case Study Countries

Preparedness Needs	Potential Opportunities
Central African Republic (C.A.R.)	
C.A.R's e-payment infrastructure is virtually non-existent (low mobile phone ownership, low mobile and mobile money penetration, limited mobile money agents and overall technology illiteracy). With limited reliable mobile payment providers, it is unlikely that mobile cash transfers would be a suitable option in the short run.	▪ Supporting card based e-transfers will require substantial investment to strengthen the banking infrastructure and address connectivity issues necessary to support wider adoption of e-transfers. ▪ Recent developments between Master Card and Ecobank and the potential roll out of pre-paid card programs in more rural and remote areas of the country might present opportunities for e-transfer programs. ▪ New technologies (e.g. World Vision's LMMS) could present opportunities to overcome beneficiary registration challenges in locations without electricity or internet in crisis zones using technology applications.
Nigeria	
Nigeria's infrastructure requires significant investment to strengthen electronic platforms for emergency e-transfers particularly in the more remote areas of the country like Northern Nigeria experiencing chronic and recurrent crises. Currently, most agencies are using cards and vouchers or direct cash delivery through Nigerian Postal offices particularly in the rural areas providing aid to disaster or conflict affected people. Strengthening infrastructure to support emergency e-transfers would require substantial investments particularly in agent network development, connectivity and the electricity infrastructure. Banks are lagging behind in efforts to expand outreach to the unbanked especially in rural areas and MNOs are restricted to the communication infrastructure and have little coverage in the northeast. Another challenge relates to insurgents systematically destroying communications infrastructure across the northeast making connectivity in these areas highly unreliable.	▪ Opportunities for e-payment preparedness initiatives to build off of government's commitment to improve digital inclusion and donor led DFS initiatives and advocate expansion of access points including bank branches, microfinance bank branches, ATMs, POS, and mobile agents to crisis prone areas. ▪ Opportunities to build off of government and donor led initiatives focused on driving new innovations in mobile money use for business, G2P and remittances. Nigeria's low banked population coupled with high mobile penetration (43%) indicates growth opportunity for mobile money.[139] ▪ Opportunities to engage seasoned players in the card payments business in Nigeria (e.g. MasterCard) and banks or MFIs with adequate presence in targeted areas to explore potential card based transfers. ▪ Monitor developments in government/donor efforts to strengthen Nigeria's Social Safety Net. Further digitization of G2P payments (especially social programs) will open possible opportunities to piggyback on future delivery channels. ▪ Opportunities for cost sharing models between MNOs, humanitarian organizations, banks and other actors to support the extension of mobile networks and branchless banking to conflict areas (e.g. UNHCR/Vodaphone and Zain facilitating mobile network coverage to Yida camp in South Sudan). ▪ Opportunities to build off of Master Card and Government of Nigeria recent expansion of e-ID cards now allowing beneficiaries of government payments to receive money directly to ID cards.[140]

Pakistan	
Pakistan has a well-developed digital payment infrastructure with multiple mobile and branchless banking platforms. It also has a robust financial sector with commercial banks, MFIs and numerous informal financial services providers. Although both the financial and digital payments systems appear strong, however accessibility to these systems remains the biggest challenge with nearly the entire population remains unbanked or under-banked. Very small % of Pakistanis have financial accounts with financial institutions or mobile money providers. Pakistan's branchless banking network is extensive but transactions focus primarily on basic OTC services and users are not required to be registered thus remaining outside of the formal financial system. Currently, there is a significant push by donors/government to increase mobile money registration, boost mobile money usage, and enhance digital inclusion in the country.[141] Future mobile transfer pilots which would allow better rural penetration (due to good mobile coverage and mobile ownership) will require investment to build awareness of mobile money, encourage registration and weaning people off of OTC services.	▪ Opportunities to build off of Pakistan's extensive track record in using card-based transfers in emergencies through government programs (BISP) and with humanitarian interventions (WFP, Save The Children) and focus preparedness efforts on building relationships with experienced partners like United Bank Limited (UBL) that have proven successful in managing card and cash disbursements for areas at risk and are clearly targeting the unbanked as a strategic new market segment. Preparedness efforts can also benefit from the comprehensive database of the country's national identification system. ▪ Opportunities to link emergency cash transfers to future efforts focused on overhauling the OTC model and encouraging wider access to a mobile platform where more recipients of government payments/emergency transfer are encouraged to join the formal financial system. ▪ Building off of government initiatives focused on expanding the microfinance sector and promoting agricultural lending schemes as DFS will likely play an increasing role in these initiatives and might be an entry point for emergency cash transfers. ▪ Building off of government programs increasingly focused on utilizing mobile transfers for government payments opening opportunities for humanitarian agencies to link emergency cash interventions to existing social protection payments in the future.
Philippines	
Philippines has one of the most developed and efficient cash transfer systems in the world for aid agencies and the government is supportive of implementing emergency cash assistance. Both mobile transfers and card-based emergency transfers were piloted with success but were often slower to set up with significant tweaking required to get money to the designated cash out points. Challenges facing past e-transfers included inconsistent cell phone coverage, lack of agents in targeted areas and cash out liquidity. Preparedness efforts should be focusing on developing standard approaches supporting systematic adoption of e-transfers, coordination efforts, leveraging linkages with existing DFS development initiatives (e.g. E-PESO) and piggy backing off of existing digital platforms being used in national safety net programs. Addressing the remaining technological barriers, will require facilitating investments to improve cell phone coverage, agent coverage and liquidity and scaling ATMs/and POS in particular areas prone to disasters.	▪ Opportunities to leverage existing digital platforms being used by the 4P program (scale up, early warning triggers, etc.). Working with government to explore how humanitarian cash transfers can be delivered via 4Ps (covering 4 million households). Topping up on amounts already paid out was explored by WFP. ▪ Opportunities to facilitate increased partnerships with MFIs that have wide reach in rural areas as well as mobile money players (e.g. SMART and BanKO) ▪ Opportunities to coordinate with other humanitarian organizations on sharing contracts with e-payment providers.

Somalia	
Somalia offers limited options for delivering cash as there is no formal banking sector, no ATMs, and no POS terminals in stores. E-transfer work through the Hawala system or mobile money schemes. To date, emergency e-transfer programs have proven highly successfully using the Hawala system that has proven effective in penetrating the rural areas (Oxfam Emergency Cash Transfer Program). Mobile based transfers have also been used successfully (ECHO Conditional Cash Transfer, Concern Worldwide and IOM unconditional cash transfer, Concern Worldwide). As small-scale pilots using mobile phone technology will entail substantial investment, economies of scale should be sought through multiple transfers or follow programs utilizing the system.	▪ As cash distribution via local money transfer systems is often used by humanitarian organizations. Recent closure of Hawala agents international bank accounts (due to suspicion of links to terrorist operations) should be closely monitored as this might pose a threat to this delivery model. ▪ Monitor developments and possible expansion with World Remit's launching of international remittance services via mobile phone in Somaliland. ▪ Continue promoting cash coordination as this remains central to e-transfer programming and preparedness. See CaLP's Cash Coordination and Guidelines for Somalia.[142]
Yemen	
Yemen is one of the poorest countries in the Arab world and is currently highly vulnerable given the political and security situation. It has a weak e-payment infrastructure so most cash transfers are delivered through the country's postal system. Yemen's low bank penetration and coverage combined with weak branchless banking network poses a challenge to potential card based transfers. Substantial investment would be required to build out sufficient cash out points and improve network coverage in conflict areas.	▪ Building off of initiatives improving social safety net programs and interlinking humanitarian and development strategies to increase investment in chronically vulnerable areas. ▪ Building off of World Bank's Financial Infrastructure Development Project (2013) focused on developing Yemen's payment infrastructure – with the ultimate aim of reducing the use of cash.

Annex G—Financial Services Penetration Rates in Case Study Countries

Country	CAR	Nigeria	Pakistan	Philippines	Somalia	Yemen
Bank Penetration[143] *% adult population*	3.3	44.2	8.7	28.1	7.9	6.4
ATM Coverage *# of ATMs per 100,000 adults*	0.9	11.4	5.4	19.3	No data	4.2
Bank Branch Coverage *# of bank branches per 100,000 adults*	0.9	5.8	9	8.1	No data	2
Card penetration *# of surveyed > age 15 own debit card*	1	35.6	2.9	20.5	2.4	1.9
Mobile penetration[144] *% of population*	21.5	43.1	32	49.5	24.4	44.9
Mobile network coverage[145] *% of population*	21	72	36.0[149]	99	No data	No data
Mobile Accounts[146] *% of adults*	No data	2.3	5.8	4.2t	37.1	No data
Agent Outlets - registered[147] *Per 1,000 adults*	No data	35.6	106.3	38	No data	No data
Mobile Money accounts (active and registered)[148] *Per 1,000 adults*	No data	No data	13.7	84.5	No data	No data

End notes

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[3] E-payments include card based (smart or pre-paid debit) and mobile transfers. In this report, we refer to electronic CTPs (e-transfers) as CTPs for mobile money, prepaid debit cards, ATM cards or other forms of digital cash. For purposes of this study, vouchers are not included in e-transfers.

[4] The entire architecture and infrastructure required for an e-transfer system to function including the technology, agents, e-transfer devices, senders, receivers, etc.

[5] The GEO is a weekly update that provides a snapshot of current humanitarian priorities and recent events. Its primary objective is to rapidly inform humanitarian decision makers by presenting a summary of major humanitarian crises, both recent and protracted. It collates information from a wide range of sources, including ReliefWeb and news media, and displays this information to enable quick comparison of different humanitarian crises. ACAPS is a nonprofit initiative of a consortium of three NGOs (Action Contre la Faim, Norwegian Refugee Council, and Save the Children International) created in December 2009 with the aim of supporting the humanitarian community with needs assessments.

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[9] KYC requirements are meant to help financial service providers perform due diligence on clients before offering them a means to store and transact funds.

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[15] An e-payment "system" refers to the many actors and chain of transactions involved in using an e-payment mechanism, such as mobile money or card-based payment, and how payments are made electronically as opposed to through cash or checks.

[16] E-payment ecosystem as used in this report encompasses all payment-related activities, processes, mechanisms, infrastructure, institutions and users in a country.

[17] The MVT, developed by Nethope in partnership with USAID, provides a comprehensive ranking of the overall maturity of the mobile financial services ecosystems in 104 countries. It uses 40 key indicators within six indicator groups. All indicators are sourced from existing international data sets. Primary data sets were not collected for the MVT. A high ranking in overall score generally indicates that a country's digital payment market conditions are conducive to exploring the expansion and continued adoption of mobile financial services. http://solutionscenter.nethope.org/products/view/1638

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[69] UNCDF is the UN's capital investment agency that provides innovative seed capital (loans, grants, credit enhancement) and technical support to help MFIs as well as local governments financing capital investments in water systems, schools, roads, etc. in order to catalyze increased private sector investment. Its core expertise is in inclusive finance and local development finance and focused primarily on LDCs.

[70] CGAP's Digital Finance "Plus" initiative explores how the ability to process small-value payments digitally can help extend critical services and utilities, such as clean water, health, energy, and education, to previously underserved communities and its Digital Finance Frontiers explores the role of digital data in the relationship between customers and financial services providers. Some of the countries included in CGAP's Financial Inclusion Insights (FII) study were Bangladesh, Ghana, India, Kenya, Nigeria, Pakistan, Rwanda, Tanzania, and Uganda. since 2012 CGAP has been involved in the development of an ecosystem for digital financial services in the WAEMU region – a customs and monetary union between the countries of Benin, Burkina Faso, Côte d'Ivoire, Guinea Bissau, Mali, Niger, Senegal, and Togo.

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[145] Mobile Network Coverage defined as The % of a country's population that is covered by at least one mobile network operator's network (2009)

[146] Mobile accounts - % of adults who used mobile phones to conduct financial transactions

[147] Registered agent outlets - # of outlets where one or more mobile money agents are contracted to facilitate transactions for users.

[148] Mobile money accounts defined as # of registered mobile money accounts that have been used to conduct mobile money or Cash-In-Cash-Out (CICO) transactions over the past 90 days. Calculated as # of active mobile money accounts*1000/adult population in reporting country.

[149] 2015 Brookings Financial and Digital Inclusion Project states that as of 2014 more than 55% of people in Pakistan were living with cellphone coverage (only just over 50% were covered by 3G network as of 2015)- World Fact book, (2014) and GSMA Intelligence, May 2015.

The International Rescue Committee (IRC) responds to the world's worst humanitarian crises and helps people to survive and rebuild their lives. Founded in 1933 at the request of Albert Einstein, the IRC offers lifesaving care and life-changing assistance to refugees forced to flee from war, persecution or natural disaster. At work today in over 40 countries and 22 U.S. cities, we restore safety, dignity and hope to millions who are uprooted and struggling to endure. The IRC leads the way from harm to home.

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