FUTURE-PROOF AID POLICY

EXECUTIVE SUMMARY

From Tech to Transformative Aid Policy:
Leveraging Digital Cash & Voucher Assistance Programming

Emerging Impact **celo**

Acknowledgements

Future Proof Aid Policy

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Introduction

In response to increased global need caused by the COVID-19 pandemic, the Center for Strategic & International Studies (CSIS) estimates that, as of April 2020, G20 countries are providing $6.3 trillion in fiscal support, representing 9.3 percent of 2019 G20 GDP. Of course, the effects of this massive redistribution of capital is limited by *how* the money is distributed, which often occurs with outdated systems built over a decade ago. With millions of people without bank accounts, formal identification, or access to the internet, the ability of governments and major humanitarian agencies to reach them — should resources exist — is extremely challenging.

One approach increasingly used by major humanitarian agencies , international organisations, and government agencies to bridge food and housing insecurity gaps, particularly due to major events such as the pandemic or natural disasters, has been cash and voucher assistance (CVA) programming. In contrast to in-kind programs, which provide goods or services to those in need (i.e. beneficiaries) instead of cash, CVA programs empower beneficiaries to make their own purchasing decisions based on what they need. CVA is a major part of almost every humanitarian response, and the total amount of CVA has doubled since 2016, from $2.8 Bn to $5.6Bn in 2019 and it is an increasingly important tool in the humanitarian toolbox.[1]

With the increasing need to simultaneously support millions of people experiencing food and/or housing insecurity caused by the pandemic, worsening natural disasters, or increased geopolitical conflict, it has become clear that governments and other agencies must modernize social protection systems to transparently and cost-effectively distribute aid at scale in the wake of economic crises, pandemics, and climate change-related natural disasters.

To better scale social protection programs and meet the needs of under-resourced communities globally, digital cash and voucher assistance programming (DCA) is becoming an increasingly relevant solution. This has become especially true amidst decreasing, international contributions to the humanitarian sector, particularly to humanitarian agencies, and consequent staff reductions due to recent economic crises and COVID-19. While "digital" has previously been defined as the use of any digital device or system to deliver assistance (such as mobile money), for the purposes of this paper, DCA programming consists of disbursing digital currency to humanitarian aid beneficiaries , rather than physical vouchers or checks. This form of aid delivery provides   an opportunity to exponentially decrease the operational costs of social protection programming, increase the speed of program facilitation, enhance coordination and monitoring, and make the scope and economic impact of assistance programs completely transparent.

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[1] *Jodar et al. (2020). "The State of the World's Cash 2020 – Full report" CaLP, Cash Assistance Learning Partnership, 23 July 2020, https://www.calpnetwork.org/wp-content/uploads/2020/07/SOWC2020-Full-Report-1.pdf.*

By leveraging blockchain technology via DCA, humanitarian agencies can disburse aid instantaneously to tens of thousands, if not hundreds of thousands, of disenfranchised community members at a time, using a single digital device and shared platform. Furthermore, humanitarian agencies can provide 100% transparency to donors as to how the aid is being spent, while preserving beneficiary data privacy rights. DCA provides emerging market communities the opportunity to become members of a burgeoning, online economy through which they can then access financial services and products not previously accessible. This is particularly useful in the increasing number of locations where ongoing conflict and political and economic instability results in a breakdown of traditional finance, creating major barriers to traditional cash assistance. DCA allows for the use of digital currencies that can function independently of failed systems, retain value and help agencies maintain delivery speed and scope while adhering to "do no harm" principles.

However, a great deal of policy development, product design and iteration, and responsible field piloting is required to ensure that DCA can be executed at scale, without harming program participants or violating emerging regulatory compliance.

Thus, the purpose of this brief is to (1) provide an overview of the current state of cash and voucher assistance programming, (2) provide a comparative overview of the current cash assistance policies leveraged by major humanitarian agencies, (3) introduce the prevalence of blockchain and digital currency technologies, and (4) recommend policies agencies should leverage when piloting and scaling major DCA programs. By providing a strong foundation for the development and iteration of DCA methodology, it is our hope that the scale and impact of humanitarian aid can increase exponentially, saving hundreds of thousands, if not millions of lives in the process.

The State of Humanitarian Aid

Cash aid-based social protection programmes, which are responsible for dispersing nearly $152.8 billion in aid to millions of people in need in 2019 alone, continue to be heavily reliant on applications like Microsoft Excel, wire transfers, and checks, to manage and disburse aid. Aid administration conducted with such antiquated methods makes compliance a constant fear, financial audits incredibly onerous, and accountability virtually non-existent.[2] To this day, it remains close to impossible to trace individual contributions — either online or by simply dropping change into a contribution box — to the programmes in which they are spent. With the declining capability of humanitarian agencies to deliver life-saving programmes, and the inefficiency of government programming to support people in need quickly, some of the most marginalized members of society are at high risk of losing their lives during the COVID-19 pandemic. By becoming more efficient and changing the existing paradigm, major humanitarian agencies and governments alike may prevent such a systemic collapse of social protection services and other aid infrastructure from happening in the future.

To combat the disastrous effects of the pandemic, and increase their capacity to serve people in need, humanitarian agencies and government agencies have desperately tried to modernize their systems, but to little avail. For example, even though the U.S. government has spent over $1.5T billion on IT since 1994, 80% of all IT spending, equating to $64 billion a year, is on the operations and maintenance of "aging legacy systems, rather than innovating more efficient processes and systems. This is the spending equivalent of more than three NASAs and more than seven Commerce Departments, annually.[3]

In contrast to massive government spending on IT infrastructure, for humanitarian agencies, there just isn't enough funding to finance technology needs, and many humanitarian agencies are not aware of the best solutions to properly modernize their aid distribution. The Chronicle of Philanthropy reported that the average nonprofit technology budget accounted for 3.2 percent of total annual organizational spending, the equivalent of an average of $114,443 per year. The average nonprofit reported having about four-and-a-half technology staff members, each, on average, supporting 30 employees. Furthermore, the majority of the world's largest humanitarian agencies do not have designated roles for the exploration of innovative technologies to improve existing systems. Despite such a limited investment into using expanding technology, a little more than two-thirds of nonprofits reported that their strategic plan includes technology components, although nearly half are not conducting any assessments to determine their return on investment from technology spending.[4] Paradoxically, these same institutions have extensive reach, presence, and programs in countries where the need for technological innovation and access is most acute.

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[2] Booker, Christopher. "Aid by DAC members increases in 2019 with more aid to the poorest countries." OECD, Organisation for Economic Co-operation and Development, 16 Apr. 2020, https://www.oecd.org/dac/financing-sustainable-development/development-finance-data/ODA-2019-detailed-summary.pdf.

[3] Michael Garland, Gaurav "GP" PalJun 18. "Government Needs to Get Serious about IT Modernization." FCW, fcw.com/articles/2019/06/18/garland-pal-it-modernization-comment.aspx.

[4] O'Neil, Megan. "Average Nonprofit Spends 3.2% of Budget on Technology, Report Says." The Chronicle of Philanthropy, The Chronicle of Philanthropy, 28 July 2014, www.philanthropy.com/article/Average-Nonprofit-Spends-32-/152817.

1.0 An Overview of Cash & Voucher Assistance Programming

In the last five years or so, there has been a big push for the expansion of cash and voucher assistance programming (CVA), a type of temporary assistance available to families to help pay for immediate needs while the adults of the family re-establish financial security. Much of the support for these programs can be attributed to growing evidence demonstrating the effectiveness and efficiency of cash transfers compared to in-kind donations. In its many forms, including physical bank notes, cheques, vouchers, electronic funds transfers through bank cards and mobile cash, cash assistance leads to a greater impact on the local economy, kick-starting market recovery processes.

Cash assistance tends to be less costly to manage administratively, allows for greater flexibility and choice for receipts, and most importantly, empowers vulnerable households to make financial decisions. Similarly to in-kind donations, cash transfer programs are not without their obstacles and risks. Fraudulent and corrupt activities can be more tempting when dealing with cash and there is a risk that recipients will be exploited by financial service providers, or that weak internal controls may lead to mismanagement or theft. However, proper regulatory mechanisms, standard accounting systems, capacity building, and innovation can help overcome these challenges.

Virtually all major international donors contributing to the humanitarian and development sectors agree that cash is a better and more impactful delivery system to meet the needs of families affected by crises and development challenges. This agreement was notably enshrined at the 2016 World Humanitarian Summit, where donors, aid agencies and UN member states agreed to the "**Grand Bargain**": envisaged as a *quid pro quo* between donors and humanitarian agencies—the underlying logic being that both donors and aid agencies could make changes to improve the efficiency of aid delivery freeing up more human and financial resources to directly benefit affected people, with cash assistance being identified as a key method for doing so. There are currently 25 UN member states, 22 NGOs, 12 UN agencies, two Red Cross movements, and two inter-governmental organisations who have committed to delivering on the obligations enshrined therein.

Ten priority areas of focus[5] are defined in the Grand Bargain commitments for international donors, governments, and UN agencies, international organisations and NGOs. Featuring prominently in these commitments are two areas of work - "Increased Use and Coordination of Cash Based Programming" and "Greater Transparency" - that can be significantly strengthened by deploying more advanced and better adapted digital solutions to deliver cash in the context of humanitarian and development programming.

However, to deliver on these commitments, virtually all willing stakeholders - aid agencies, donors, field teams, and service providers - must begin to think forward and flexibly, bearing the discomfort of innovation that moves beyond existing ways of working, and towards an improved means of collaborative delivery that involves technology and practitioners working hand-in hand. This paper seeks to define and position Digital Cash Assistance (DCA) as a means to achieve this end.

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[5]A description of the 10 Grand Bargain Workstreams can be found at: https://www.grandbargain4ngos.org and at the official page of the InterAgency Standing Committee's Official website: https://interagencystandingcommittee.org/grand-bargain

2.0 Benefits of Cash Assistance

A number of ill-informed assumptions and unfounded claims regarding the efficiency and impact of cash assistance discourage some governments and international humanitarian agencies from employing such programs. Among these are the assumption that recipients will waste the assistance on unnecessary or vice goods and services. In reality, however, in-kind donations are far less efficient and more costly. A 2014 proposal by CARE found that transportation and overhead costs can account for as much as 53 cents for every dollar of in-kind grain shipped.[6] With studies demonstrating that recipients often purchase the same food items as those included in in-kind assistance, cash assistance can have the same or even greater impact as in-kind donations but at lower costs, allowing humanitarian agencies to reach more people in need.

Cash assistance can also be employed to bridge the divide between emergency response and longer-term recovery as the impact of a local emergency is felt beyond the individual household. For instance, cash transfers can stimulate local economies in need and link people to financial services for the first time. A 2010 study by Concern Worldwide found that for each dollar provided as part of its cash assistance program in Zimbabwe, $2.59 were circulated through the local economy.[7] Another study in Lebanon found the multiplier effect of cash transfers to be 2.13 meaning that or every $100 in cash transfers, $213 is generated in the local economy.[8] These analyses also lay bare the essentials - cash, as a global and fungible medium of exchange is essential to economic participation, distribution of wealth, employment, the exchange of goods and the return of normalcy that are essential **both** for long-term development programmes and recovery from acute crises.

As such, cash assistance sits neatly at the centre of the "humanitarian development nexus", a term used to challenge the status quo of humanitarian aid as being disconnected and poorly coordinated with long-term development objectives, structural inequality, and the long-term needs of people the world over who desire progress out of poverty[9]. Cash approaches are delivered across this nexus - in social welfare programs, long-term financial inclusion approaches, protracted recovery programs and immediate relief delivery. For multi-mandated agencies, such as NGOs who delivery across multiple sectors and areas of work, cash serves as a single tool that can efficiently generate impact across programmatic areas.

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[6] *Food Aid Reform in FY2014: A Common-Sense Proposal at the Right Time* (Rep.). (n.d.). Retrieved August 18, 2020, from https://care.org/wp-content/uploads/2020/05/2013-0412-Food-Aid-One20Pager.pdf

[7] Staunton, C., & Collins, M. L. (n.d.). *Evaluating the Effectiveness of Cash Transfers versus Food Aid: A case study in rural Zimbabwe* (Rep.).

[8] *Report: Emergency economies: The impact of cash assistance in Lebanon* (Rep.). (n.d.). Retrieved August 13, 2020, from International Rescue Committee website: https://www.rescue.org/sites/default/files/document/631/emergencyeconomiesevaluationreport-lebanon2014.pdf

[9] *The Humanitarian-Development-Peace Nexus : What Does it Mean for Multi-Mandated Organisations?* Oxfam, June 2019. Accessed at: https://reliefweb.int/report/world/humanitarian-development-peace-nexus-what-does-it-mean-multi-mandated-organizations

By placing the power of choice directly in the hands of vulnerable households, cash transfers also ensure the dignity, inclusion, and participation of families within the local economy. Unconditional cash transfers allow families to spend the funds on their most pressing needs, including rent, food and healthcare. Such empowerment and enhanced ability to make decisions leads to positive feelings and a sense of equality between refugees and host communities. For example, a case study conducted by the UNHCR in Greece found that cash-based responses reap dignity gains and allow families to cook meals according to their preference and needs.[10] In addition, the UNHCR found that cash assistance programs in Lebanon also correlated with improved refugee-host community relations, as families receiving assistance experienced fewer verbal and physical conflicts with the Lebanese host communities.

The gains of cash transfers reach far beyond efficiency, and also lead to investments in productivity, both in terms of physical and human capital. With cash assistance, households can also spend these funds on their small businesses, livestock, or education and skill development. A 2016 study on unconditional cash transfers for thatched roof households in Kenya found that the majority of funds were used for home improvements, investment in businesses, or livestock holdings. Livestock holdings increased by 50% for recipients when compared to non-recipients, and recipients were 24% more likely to have an iron roof at the end of the program.[11]

When households are able to play a larger decision-making role in economic assistance programs, the impact of the assistance becomes even greater, and households evolve from mere recipients to participants. Year upon year since the first adoption of cash approaches by agencies circa 2004 (Indian Ocean Tsunami), the data and results have proven consistent across contexts, countries and continents. Cash enables empowerment and participation, and this expedites recovery and positive outcomes for families and communities in the short, medium and longer term.

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[10] Pavanello, S. (2018). *Multi-purpose Cash and Sectoral Outcomes: Greece Case Study* (Rep.). UNHCR.

[11] Han, C. (2016, November 18). Cash assistance programs for the poor: How families use the money. A look at Kenya. *Journalist's Resource.*

3.0 The State of Policy of Cash Assistance Programs

Existing major humanitarian cash assistance programs, and their associated policies and technology, provide a framework for implementing these programs effectively. A high-level analysis covers large humanitarian players, many of whom are leading the expansion of cash and voucher assistance (CVA[12]). These organizations include: United Nations High Commissioner for Refugees (UNHCR), World Food Programme (WFP), Mercy Corps, Oxfam, United Nations International Children's Emergency Fund (UNICEF), World Vision, and the International Committee of the Red Cross (ICRC). The table below compares the organizations' cash transfer programs, including the volume of transfers, form of transfers, latest technology being employed, established procedures and tools, capacity of agencies to deliver CVA, and partnerships.

All agencies have recognized the added value of unconditional cash-based assistance, and most have made drastic advances in implementing such transfers. Cash transfers now account for a third of humanitarian spending for both WFP and Mercy Corps. UNHCR has streamlined CVA into its operations worldwide, both through internal and partner capacity building, as well as employing dedicated CVA officers in the field and at headquarters. Finally, collaboration on cash interventions is becoming more common, as more humanitarian agencies recognize the need for common platforms.

The UN agencies often are part of, or lead, such platforms, often exclusively for UN families. In addition, UNICEF and the WFP also prioritize the strengthening of national social net systems to ensure sustainability and national ownership. Other platforms that are not led by UN agencies include the Common Cash Delivery Network (CCD), a network of the 15 largest international NGOs, who are estimated to lead and operate the "last mile" delivery of 80% of cash delivered in humanitarian settings. The division of funds, labour, delivery systems and subsequent coordination of cash assistance delivery across agencies is fraught and complex. Despite broad commitments to deliver the majority of the world's humanitarian aid in cash, coordination and transparency on who does what, and where and how funds flow to participants remain continuous challenges, as outlined in the State of the World's Cash Reports in 2018, 2019, and 2020.[13]

Table 1.0: Comparative Cash Assistance Chart Across Major humanitarian agencies

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[12] CVA is the globally agreed definition enstated by the Cash Learning Partnership for humanitarian and development assistance delivered via cash or vouchers, accessible at: https://www.calpnetwork.org/library-and-resources/glossary-of-terms . Other agencies use terminology to define the same, such as CBI (cash based interventions), CBT (cash based transfers), CTP (cash transfer programming).

[13] *The State of the World's Cash Report* , published by the Cash Learning Partnership, acts as a global report tracking cash assistance delivery by humnaitarian agencies, including critical analysis of progress against Grand Bargain committments and humantiarian standards. Reports can be accessed at: https://www.calpnetwork.org/state-of-the-worlds-cash-2020

Agency	Volume	Type	Technology	Processes / Tools	Capacity	Partnerships
UNHCR	From 2016–19: **Amount** $2.4 billion **# of People** ~20 million **Countries** 100+	Physical Cash, Vouchers (5%) Mobile Money (35%)	ATMs, iris scans and EyeCloud	Guidelines and toolkits on: gender, feasibility and response analysis, market assessment toolkit, financial services and monitoring	5,000 internal staff and partners Cash based intervention officer in field and at HQ	Common Cash Facility partnership with humanitarian agencies, UN agencies and service providers
WFP	From 2018–19 **Amount** $2.1 billion **# of People** 27.9 million **Countries** 64	Physical Cash, Vouchers Mobile Money E-Money	Digital Cash Assistance (Pilot Expand Phase) – Building Blocks E-Money	Supply chain analysis E-Cards SCOPE (beneficiary data management)	Fast IT & Telecommunications Emergency and Support Team provides capacity building for CBI	National Governments to strengthen national safety net systems Implementing partnerships with NGOs
Mercy Corps	Since 2014 **Amount** $60 million **# of People** 1.96 million **Countries** 32	E-Money (Prepaid Mastercards)	Digital Cash Assistance (Pilot Start Phase) E-Money	Cash Transfer Implementation Guide E-Cards	Pay it Forward program with Mastercard providing capacity building	Mastercard partnership Cash Consortium in Iraq Libra Association Celo Alliance
UNICEF	In 2019 **Amount** $582.4 million **# of People** ~13.72 million **Countries** 70+ (96 across all programs)	Multi-sector child grants Physical Cash, Vouchers Mobile money	Blockchain (Research pilots through Unicef Innovation venture) Mobile Money (partnered with Airtel Africa)	Harmonized Approach to Cash Transfers Minimum Preparedness Standard Tool Cash Learning Partnerships Cash Learning Hub	Supports governments in developing national cash transfer and social protection system Humanitarian Cash Transfers Programmatic Guidance outline	Inter-agency research and learning initiative Transfer Program gathers evidence and advises governments on cash transfer. Common Cash Facility in Jordan builds economies of scale

ICRC	In 2019 **# of People** 4.7 million (CBP and in-kind donations), 60% of whom are internally displaced people 900,000 people provided with income support	Physical Cash, Vouchers Mobile Money E-Money	Cash Hub Platform Blockchain Open Loop Payments Pilot Project Red Rose (e-voucher solution)	Guidelines and SOPs for Cash Transfer Programs Cash Transfer Programming: Guidelines for Mainstreaming and Preparedness Cash in Emergencies Toolkit	Engaging National Society Leaders through advocacy for CBP Cash Information Technology Practitioners	Movement Cash Peer Working Group
World Vision	As of 2019 **Amount** $321 million **# of People** Over 3.7 million **Countries** 21 countries	E-vouchers and electronic payments	Inhouse *Last Mile Mobile Solutions* BeReady Cash	Cash Based Programming Manual and Cash for Asset Manual	Asia Cash Preparedness Learning Lab Global Cash Based Programming Unit's 40 trained officer deployed to field offices	USAID (Title II) Partnerships with WFP and UNHCR Local partnerships (local NGOs, civil society)
Oxfam Intl	As of 2019 **Amount** $36 million **# of People** 9.6 million affected by conflict & disasters (cash and in-kind assistance) **Countries** 35 (out of 90 total countries present)	Vouchers (electronic & paper) Electronic payments (debit cards, direct deposit) Digital cash (UnBlocked Cash project) Paper – cash in hand, cheques	Blockchain (UnBlocked Cash Project) E-money (mobile service providers, e-payments) Red Rose (closed loop e-vouchers)		Working With Markets and Cash: Standard Operating Procedures Global Humanitarian Team – Global Cash and Markets Advisor, deployable Humanitarian Support Personnel Technical (cash specialist) teams in 7 regions globally	Co-founding agency, Cash Learning Partnership (CaLP) Common Cash Delivery Network Global Grand Bargain

3.1 UNHCR

A leader in cash transfer programs, UNHCR has committed, by 2020, to doubling the use of cash as a share of its assistance. Worldwide, the agency distributes more cash assistance than traditional in-kind donations, marking an important shift in humanitarian aid. A major culture shift towards cash transfers was initiated in 2016, as the agency trained some 5,000 internal and partner staff on cash assistance. Technical officers specialised in the delivery of cash assistance are now employed in 35 field operations and at headquarters. The number has increased from just five to over 100, half of which are national staff. Between 2016 and 2019, some 20 million forcibly displaced people in more than 100 countries received over $2.4 billion in cash transfers.[14]

UNHCR cash assistance targets the most basic needs, including: protection, education, shelter, health, livelihoods, and winter needs. 95% of transfers are unconditional. The means of cash delivery varies in each country and is based on local context. This critical cash is often delivered through the latest available technology with the use of digital payments increasing by some from 2016 to 2019. For example, in Jordan cash transfers are distributed to refugees via ATMs, iris scan, and the EyeCloud. In contrast, cash assistance via mobile phone in the Democratic Republic of Congo proved to be very useful during the COVID-19 pandemic, allowing UNHCR to continue delivering to some of the most vulnerable while also helping reduce virus transmission rate by limiting physical interactions.

3.1.1 UNHCR Existing Guidelines

A number of processes, tools and systems support the effective delivery of UNHCR's massive cash transfer program. These range from guidelines on integrating gender, a Cash Feasibility and Response Analysis Toolkit, market assessment toolkit, standard operating procedures, toolkit for contracting financial services, and monitoring tools. Many of these tools are also available to the greater humanitarian community.

3.1.2 UNHCR Partnerships

UNHCR's cash assistance program is also grounded in a number of partnerships within and outside the UN system - all with the objective to improve efficiency and reach more people in need. The Common Cash Facility (CCF) brings together 28 partners and the private sector, setting common terms and conditions for cash transfer services. The leverage of the CCF has brought down bank transfer fees from 5% to 1%, as well as reduced duplication. UNHCR, WFP, UNICEF and OCHA also committed to a common cash approach in 2018, promoting collaboration and efficiency and maximising economics of scale.

UNHCR is working towards its goal of developing a protected digital financial economy in which displaced people are empowered to be a participant rather than simply a recipient. One major objective is to integrate beneficiary and cash management systems with social registries. Core technology, such as biometrics, will enable a more accountable and transparent cash transfer program.

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[14]United Nations High Commissioner for Refugees. (n.d.). UNHCR Implementation of the Policy on Cash-based Interventions. (2016-2019). Retrieved August 22, 2020, from https://www.unhcr.org/5dde6f0d4.pdf

3.2 World Food Program (WFP)

The World Food Program's cash assistance program has grown substantially over the past decade to reach a record-high of $2.1 billion in 2019, or 38% of its total annual assistance portfolio.[15] While the majority of WFP assistance is not linked to cash assistance, the agency recognizes the added advantages of cash assistance to implement its global mission to fight hunger, including its flexibility, efficiency and choice. Currently, the WFP delivers cash assistance in the form of physical bank notes, e-money, mobile money, debit cards, or value vouchers redeemable at locally-contracted shops.

In addition to providing cash assistance, similar to UNICEF, WFP works closely with governments to strengthen their national social protection systems. The Emergency Social Safety Net program in Turkey, implemented in cooperation with the Turkish government, Turkish Red Crescent and WFP, is the single largest humanitarian cash program to date. The WFP also supported Ecuador's safety net system when it used it to distribute cash assistance in the wake of the 2016 earthquake.

Furthermore, the WFP closely considers the local supply chain whenever it plans and implements cash-based interventions. By doing so, it can better ensure supply chains are sufficient to meet household demands, and that recipients can get the best value for their money and have access to good quality food at fair prices.

3.2.1 WFP Partnerships & Programs

The agency's Fast IT & Telecommunications Emergency and Support Team (FITTEST) plays an important role in integrating technology into WFP's operations, as well as the wider humanitarian community's, humanitarian responses, including in the world's most challenging environments. Cash-based interventions are supported by FITTEST through the timely mobilization of staff, capacity building, IT and power solutions, and procurement and maintenance of cash-based transfer emergency equipment.

For instance, in the absence of reliable financial service providers and poor financial infrastructure, the WFP has used an in-house technology called SCOPE to deliver cash in Somalia. The technology is used to register targeted beneficiaries, provide them with a SCOPE card that can be used at registered retailers, monitor assistance, and transfer cash using a closed-loop payment system.

In the Zaatari refugee camp in Jordan, the WFP is using blockchain technology to deliver cash assistance via their "Building Block" initiative. The program allows refugees to pay for items from a grocery store without cash or a credit card. Instead eye pay or an iris scan is used to confirm the recipient's identity against the agency's database kept on a blockchain and pay for the goods. This program distributes cash-for-food aid to over 106,000 Syrian refugees in Jordan.[16] This system provides WFP with a record of every transaction while also saving costs (98% in banking fees) and protecting the security and privacy of aid recipients. A similar initiative is being replicated in Cox-Bazar by the WFP.

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[15] Cash transfers. (n.d.). Retrieved October 14,, 2020, from https://www.wfp.org/cash-transfers

[16] Building Blocks. (n.d.). Retrieved August 22, 2020, from https://innovation.wfp.org/project/building-blocks

3.3 Mercy Corps

As the first organization to pilot a cash-for-work program, both in Afghanistan and in response to the Indian Ocean Tsunami in 2004, Mercy Corps is a leader in cash assistance programs. Mercy Corps delivers 42 cash transfer programs in 17 countries around the world, accounting for 34% of its total humanitarian aid portfolio.[17] In the last ten years, Mercy Corps provided 400,000 households with emergency cash assistance.[18]

Much of this cash assistance is delivered during humanitarian crises and in the aftermath of natural disasters. For example, Mercy Corps was able to support more than 25,000 people to rebuild their lives and connect to the banking services for the first time through mobile cash assistance after Typhoon Haiyan in the Philippines.[19]Part of the NGO's efforts to build capacity in cash assistance include a Cash Transfer Implementation Guide for teams delivering both unconditional and conditional cash transfer programs. This guide is part of a larger set of CTP tools that include voucher and e-transfer guides. Additionally, Mercy Corps has developed a 'Cash Consortium' approach in regions like Iraq, where their aim is to promote effective, harmonized, and coordinated multi-purpose cash assistance, allowing agencies to expand their reach.

3.3.1 Mercy Corps Partnerships

In addition to its cash transfer guides, Mercy Corps has a social-sector-leading approach toward establishing strategic partnerships with the private sector. This is particularly important when it comes to finding ways to leverage technology to enhance the capabilities of their cash assistance programming. For instance, the agency partnered with Mastercard in 2012, allowing it to distribute cash transfers in the form of prepaid credit cards. These prepaid cards have supported thousands of refugees in countries such as Greece and the Balkans make their own purchasing decisions. Through this partnership, Mercy Corps also taps into the expertise of Mastercard employees. Its *Pay it Forward: Doing Well by Doing Good* program integrated Mastercard employee volunteers into critical projects worldwide. For example, in Nepal Mastercard employees supported Mercy Corps' cash transfer program by training local groups on how to digitize financial transactions.

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[17] Cash Transfer Implementation Guide. (n.d.). Retrieved August 22, 2020, from https://www.mercycorps.org/research-resources/cash-transfer-implementation-guide

[18] The Facts: What you need to know about cash assistance. (n.d.). Retrieved August 22, 2020, from https://www.mercycorps.org/blog/quick-facts-cash-aid#:~:text=Over%20the%20last%20decade%2C%20Mercy,to%20more%20than%20400%2C000%20households.

[19] The facts: What you need to know about cash as aid. (2020, April 09). Retrieved August 22, 2020, from https://www.mercycorps.org/blog/quick-facts-cash-aid

3.3.2 Mercy Corps Digital Cash Assistance

Mercy Corps has also begun actively investigating how blockchain technology and digital currency can further support the modernization of cash assistance programming. In 2019, the organization joined as a founding member of the Libra Association in partnership with Facebook, Kiva, Lyft, among others, in an attempt to achieve financial inclusion using a blockchain system named "Libra." The Libra Association is an independent membership organization headquartered in Geneva, Switzerland. It oversees the Libra blockchain ecosystem by serving as network governors, distributing ecosystem growth grants to entrepreneurs seeking to build on the Libra blockchain, and providing strategic guidance to ensure the blockchain ecosystem's future success on a global scale. The Libra project, initiated by Facebook, hopes to achieve global financial inclusion by providing those without bank accounts safe and affordable access to financial services, primarily using the Libra blockchain and it's digital currency, the 'Libra coin.' The underlying technology of the Libra project, the Libra blockchain, uses a consortium-based network and promises to enable low-cost, international, and near-instant digital cash transfers using Facebook's products to potentially reach billions of people.

Likewise, in May 2020, Mercy Corps joined the "Alliance for Prosperity", a community of nonprofits, startups, and venture capital firms dedicated toward growing the Celo blockchain system and increasing global financial access and inclusion. The Celo blockchain system uses a different digital currency than that of the Libra blockchain, named the "Celo Dollar," or cUSD, in an effort to realize its vision for financial inclusion. cLabs, the core developer team within the Celo ecosystem that develops the Celo blockchain and wallet, has already deployed its own digital cash assistance pilots with major humanitarian agencies like the Grameen Foundation to test the standing hypothesis that modernized humanitarian aid programs are more effective than traditional cash assistance. Mercy Corps' inclusion in both the Celo and Libra blockchain ecosystems indicates a strong belief in the digital future of humanitarian aid at scale.

3.4 Oxfam International

Oxfam has been a global leader in cash and voucher programming for more than 20 years, with an emphasis on the use of these approaches in humanitarian responses. Oxfam's country office humanitarian budgets totalled over $199 million in funding to support conflict and disaster affected communities in 2019. This sector of their aid contributes a significant amount to the work being undertaken by Oxfam and its partners. Oxfam's early experience in this type of programming allowed the organization to contribute towards seminal research on cash assistance in humanitarian programmes. These early programs also helped to raise the profile of cash assistance, and its many benefits, within the humanitarian community. Oxfam was one of the five founding members of the Cash Learning Partnership (CaLP) in 2006, and continues to be a leading member of this important network, which has grown to include over 80 members today.

Oxfam International has delivered cash and voucher assistance in humanitarian and development programs in over 40 countries worldwide. From 2017 through 2019, an average of $47 million in humanitarian aid was delivered exclusively in the form of cash assistance. In the same time period, 56% of all of Oxfam's programmes (humanitarian crises and long-term development), cash is the preferred method of delivery.

3.4.1 Oxfam Digital Cash Assistance

Oxfam successfully trialled the first delivery of blockchain-powered disaster assistance in the Pacific region in 2019 and is currently scaling the program - entitled The UnBlocked Cash Project - for future implementation across the Oxfam International confederation. This first trial was done in one of the world's most remote, and disaster prone countries – Vanuatu. This initiative is one of the few global examples of bringing cutting edge technology down to the community level, resulting in a blockchain use case that is characterised by community-based, participatory product iteration. This successful trial resulted in localised ownership and delivery, and the leveraging of community-level micro economies and ecosystems to enable inclusion and functionality.

The UnBlocked Cash Project exemplifies how the efficiency of humanitarian aid can be improved without compromising transparency and sustainability. Traditional challenges in cash assistance, such as the tracking of payments, lengthy reconciliation times, capacity and infrastructure barriers and cost, were overcome with this unique community-centric approach. The Project has since scaled and now covers 3 countries and over 20,000 beneficiaries. Oxfam was awarded the EU Horizon 2020 Global Prize for Blockchains for Social Good in the Aid & Philanthropy sector in 2020. More details of this project and its outcomes can be found in the case study analysis in section [4.5.]

3.5 UNICEF

In 2019, UNICEF delivered cash transfers programs that benefited 51 million children, including 8.5 million in emergency settings.[20] On top of meeting children's immediate and basic needs, UNICEF's multi-sector child cash-assistance grants aim to discourage negative coping mechanisms, including child labor, early marriage, and school dropout.

In addition to implementing its own cash transfer programs, UNICEF strongly advocates for making the maximum use of and strengthening existing national social protection systems. In line with UNICEF's Grand Bargain Commitment, the agency supports governments in designing national cash assistance and social protection systems that target children. For example, in Thailand UNICEF supported the expansion of the Child Support Grant which currently covers more than 1 million children and is expected to reach half the population under 6 years old by 2024.[21]

3.5.1 UNICEF Partnerships

As part of a collaboration between UNICEF, FAO, University of North Carolina, and UNICEF country offices, the inter-agency research and learning initiative *Transfer Project* analyses the impact of large-scale, unconditional national cash assistance programs in the Middle East and Africa. The initiative contributes to national system strengthening by providing technical assistance in the development, implementation and analysis of national cash transfer programs in over a dozen countries. The program also hosts a bi-annual workshop to encourage the sharing of best practices, capacity building and cross-border collaboration in national cash assistance programs.

UNICEF strives to collaborate with other humanitarian agencies to create efficiencies, build scale and leverage resources. Field-level coordination and joint programs with the WFP and UNHCR have led to common payment facilities, improving effectiveness and efficiency of cash assistance programs.   For example, in Jordan UNICEF, UNHCR and other humanitarian agencies jointly run the Common Cash Facility to improve coordination and achieve economies of scale. Its work with the World Bank focuses on bridging gaps in social protection systems. UNICEF also works closely with local humanitarian agencies, the Red Cross and Red Crescent Movement to collect data for monitoring its existing cash assistance programs.

UNICEF advocates for a cash-plus approach that integrates humanitarian cash responses into national social protection systems. This is meant to support the move from delivering short-term cash responses to achieving long-term development goals and promote national ownership. Cash-plus programs also link receipts of cash transfers to complementary services and interventions.

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[20] For Every Child, Reimagine. UNICEF Annual Report 2019. New York: United Nations Children's Fund (UNICEF), 2020.

[21] Ibid

3.5.2 UNICEF Existing Guidelines

The agency's comprehensive Humanitarian Cash Transfers Programmatic Guidance outlines UNICEF's approach and tools for cash assistance. In addition to its guidelines, it also includes an emergency preparedness platform for implementing cash-based interventions. Guidelines cover coordination through country-level cash working groups and inter-agency platforms, calculation of a child-sensitive minimum expenditure basket, internal learning, human capacity, and strengthened partnerships. Beyond these guidelines, UNICEF's Harmonized Approach to Cash Transfers sets out procedures and principles for the distribution and monitoring of cash transfers to government partners and NGO partners.

Prompted by the global COVID-19 pandemic, in May 2020 UNICEF partnered with telecom company Airtel Africa to create its largest mobile-money engagement to date. Under this partnership, UNICEF will use mobile technology to benefit an estimated 133 million school-aged children currently affected by school closures in 13 countries across sub-Saharan Africa during the COVID-19 pandemic (Chad, Congo, Democratic Republic of the Congo, Gabon, Kenya, Madagascar, Malawi, Niger, Nigeria, Rwanda, Tanzania, Uganda and Zambia).

3.6 World Vision

As of 2019, World Vision International (WVI) had delivered over US$321 million in cash and voucher assistance to over 3.7 million beneficiaries across 5 continents, 34% of which was delivered electronically via e-vouchers and electronic payments. With over 15 years of experience delivering cash assistance as a humanitarian and development solution, WVI is ranked as the 4th largest distributor of cash assistance in the humanitarian sector (alongside UNHCR and WFP). Furthermore, WVI World has committed to delivering at least 50% of its humanitarian aid in the form of cash by 2022.[22]

World Vision employs its *Last Mile Mobile Solutions* technology to expedite and improve the distribution of food, cash assistance, and relief supplies, especially in the wake of humanitarian and natural disasters. This software allows aid workers to register recipients in seconds. Recipient information is then transferred to a computer for streamlined verification and tracking. WVI also employs the BeCashReady platform, a web application that monitors CBP within and between organisations.

3.6.1 World Vision Partnerships

In addition to its own cash-assistance programs, World Vision is also a Title II NGO with USAID (i.e. preferred status for funding)and one of the largest partners for major UN agencies delivering cash, such as WFP and UNHCR. At the local level, WVI leads and participates in various cash transfer programming working groups and clusters. For example, in South Sudan, the agency is an active member of the Cash Technical Working Group, contributing to improved coordination to harmonize geo-targeting, indicators, and monitoring tools, develop market assessment tools, as well as to define the Survival Minimum Expenditure Basket.

WVI's overarching Cash Based Programming Manual and Cash for Asset Manual provide staff and partners with guidelines covering the entire project cycle, from situation analysis to project evaluation. It also provides an overview of the roles and responsibilities and a set of guidance and tools to use.

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[22] Revolutionizing Cash. Retrieved August 21, 2020, from https://www.wvi.org/disaster-management/revolutionising-cash

3.7 International Committee of Red Cross

In addition to in-kind transfer, the ICRC delivers cash and vouchers to people affected by conflict, disasters, and humanitarian crises. These cash transfers are intended to support households in securing their most basic needs as well as covering longer-term costs such as rent, school fees, and legal fees. These transfers may take the form of physical cash, vouchers, transfers to banks or money dealers, debit cards, or mobile phones.

In 2019, ICRC distributed food aid in the form of in-kind distributions, cash transfers or vouchers to more than 4.7 million people worldwide, 60% of whom were internally displaced people. While statistics for cash transfers are not published, the agency's 2019 Annual Report states that ICRC supported just under 900,000 people with income support, including cash-for-work, seed money or raw materials for micro-economic initiatives, and other household income assistance programs.[23]

ICRC's cash assistance programs are not as mainstream as other humanitarian agencies and seem to be on an adhoc basis. For some projects, like in the case of Cox's Bazar for example, administrative barriers prevented ICRC from shifting from in-kind donations to cash-based transfers as planned. Nevertheless, the ICRC participates in multi-member cash-based intervention platforms, including as a member of the Movement Cash Peer Working Group. As part of this group ICRC helps develop standards and guidelines for cash and voucher assistance as well as building front-line workers' capacity in using cash and vouchers to respond to emergencies.

3.7.1 ICRC Existing Guidelines

The ICRC has a number of CBP guidelines, standard practices, and resources designed for field practitioners. One set of their guidelines specifically advises national societies on how to become cash proficient through mainstreaming and preparedness. Given that many barriers still exist to CBP at the national level, including perceptions about the risks and complexity of such programs, the ICRC has developed these guidelines on how to best engage with national society leaders to advocate for the misunderstood benefits of CBP. To engage with national society leaders, the Cash Hub Platform seeks to expand and scale the use of CBP within ICRC by sharing the experiences and best practices of cash and voucher assistance between national societies. To do so, the Cash Hub Platform provides an online connection to a community of CBP staff and volunteers for online discussion and networking. Based on this feedback, cash preparedness is a priority of the platform. ICRC's cash information management, such as the Cash Hub Platform, aims to enable efficient and transparent CBP by supporting data collection, analysis, documentation, and reporting activities.

Though on an adhoc basis, the International Federation of the Red Cross and Red Crescent Societies (IFRC), which together with ICRC is part of the International Red Cross and Red Crescent movement, employed blockchain technology in its cash assistance. In 2018, IFRC partnered with the Kenyan Red Cross Society to implement the *Blockchain Open Loop Payments Pilot Project* in Isiolo County, Kenya. This program successfully reached over two thousand households affected by drought.

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[23] ICRC Annual Report 2019: Facts and Figures. (2019). Retrieved August 18, 2020, from https://www.icrc.org/sites/default/files/wysiwyg/ar2019_facts_and_figures.pdf

4.0 Inefficiencies of Cash Assistance

The existing policies for cash assistance across humanitarian agencies, governmental agencies, and local authorities provide a wealth of knowledge for the implementation, data collection and success of cash assistance programs. Despite the numerous benefits of cash transfers, there are a number of inefficiencies, barriers and risks.

The international humanitarian and development community, although making major efforts to mainstream the use of cash assistance, has struggled with these obstacles consistently over the years. The "State of the World's Cash" reports, produced by the Cash Learning Partnership, has built evidence and documented the recurrent nature of these difficulties over time, and across diverse geographic regions. At the same time, the practitioner community and country teams often struggle to surmount and address these risks and operational barriers through their existing delivery systems and methods.

Inflation

When not properly planned, cash transfer programs can lead to inflation, affecting all residents including non-beneficiary households. This would be the case when such mechanisms rapidly pump a significant sum of money into small, isolated and or supply-stressed markets. This risk is typically mitigated by a thorough market or feasibility assessment, but pressure to deliver, particularly in rapidly evolving crisis contexts can result in rushed (or skipped) market analyses and assessments.

Capital Controls

Local inflation (unrelated to cash transfers) as well as capital controls can severely limit the ability of humanitarian agencies to implement impactful cash transfers programs. For example, in Venezuela, when the local currency devalued dramatically, so did the purchasing power of the cash transfers. When banks impose capital controls that limit the withdrawal and movement of funds, this can also make it more difficult to implement sustainable cash transfer responses. Digital currency can fill this gap by offering a borderless transaction that is not affected by localised economic instability.

Abuse

Those receiving cash transfers are often the most vulnerable populations with limited financial exposure and knowledge. Unfortunately, this can increase the risk of abuse by poor internal controls or financial service providers, including excessive fees, humiliation, and harassment. Coupling cash assistance with programs that increase digital and financial literacy can mitigate these risks and empower households as participants in their economic development rather than mere recipients of aid. Likewise, in communities where there is a stigma attached to receiving social assistance, recipients appreciate the privacy that comes with digital cash assistance programs.

Corruption & Fraud

Similar to in-kind transfer, cash transfers can be targets of corruption, fraud, theft, and diversion. While in-kind donations can also be sold to generate cash, cash can be a more tempting target. However, evidence does not support that this is a serious challenge that cannot be overcome. At the same time, it may be easier to implement risk management systems for cash transfer programs than in-kind donations. Digital currency transfers can, for example, be better traced than in-kind donations or physical cash. With money also going directly to beneficiaries, without the need to transport cash or set up distribution points, the risk of diversion with money transfers is reduced.

Limited Infrastructure

While the logistical costs of cash assistance programs are generally lower, this is not true for locations lacking infrastructure for e-transfers or traditional financial payments such as cash withdrawals requiring bank branches and ATM machines. . As such, setting up the appropriate infrastructure may not always be feasible and can be costly and time consuming. In such circumstances, the transfer of physical cash or vouchers may be more appropriate, but is rarely efficient. "Cash in hand" approaches are increasingly discouraged by humanitarian agencies and donors due to security and fraud risks and AML controls.

Costly Last Mile Delivery

The delivery of a single payment to an affected family can have a considerable impact spanning across sectors, providing dignity of choice and flexibility. However - there is frequently a major misalignment between the reach of financial services and the reach of humanitarian agencies, who have an obligation to reach the most vulnerable and marginalised groups in remote or difficult to access places. This generates significant cost in the "last mile" of delivery. The use of digital currencies combined with digitized delivery, disbursement and tracking systems can reduce the logistical costs of monthly distribution to distant locations, while also enhancing cost-effective monitoring by virtue of the transparency that blockchain solutions provide.

High Capacity Barriers for Country Teams

Even when an organization has fully bought into the need to deliver cash assistance, the reality of implementation in developing country contexts often means that the technical capacities and skills are not immediately available to do so. Cash has more impact, but requires strong financial analysis and accounting skills, as well as complex processes such as market data analysis, household expenditure calculations and lengthy, difficult reconciliation of payments, often to thousands of people per month. A 2018 report by CaLP[24] found that only 40% of humanitarian and development stakeholders have sufficient technical capacities in-house to deliver at the country level. In addition to the use of digital currencies, digital cash assistance offers a chance to automate these complex processes, lowering capacity barriers and making the quality and rapid delivery of cash programmes more accessible to local country teams.

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[24] The State of the World's Cash Report, 2018. *The Cash Learning Partnership (CaLP)*. Accessed at: https://www.calpnetwork.org/publication/state-of-the-worlds-cash-report/

Financial Literacy & Access

Limited financial skills and inclusion for the most vulnerable populations creates a barrier to implementing effective cash assistance programs. There are 1.7 billion people globally who have no financial account - at a bank, mobile money provider or other financial institution.[25] Though time and resource consuming, including these people in the financial system and ensuring that payment mechanisms can be used and re-used as payment instruments by participants can have long-term effects and support poverty reduction.

Perceived Risks

Expansion of cash assistance is reported to be limited due to risk-averse systems and procedures on the part of the humanitarian agency, particularly at the country level. These procedures, including specific technical expertise, financial and programmatic monitoring, evidence and analysis, are more often applied to cash transfer programs than in-kind donation programs, causing a more timely and inefficient process. Agencies may also be averse to implementing cash transfers programs as they report a significantly high perceived reputational risk in case of any misuse of funds. Both of these factors may result in agencies continuing to implement in-kind transfers despite the growing evidence of the added value of cash transfers programs.

Regulation

Counter-terrorism legislation in aid agencies' home countries also acts as a barrier, and can result in aid agencies limiting the scope of activities and target populations they reach. Banks have, for example, suspended their services to humanitarian agencies, particularly humanitarian agencies, working in particular areas.

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[25] The Global Findex Database. (2017). Retrieved August 22, 2020, from https://globalfindex.worldbank.org/

Provided high operations and maintenance costs for governmental agencies attempting to modernize, and the low technical literacy and budget support within major humanitarian agencies, it is increasingly important for such organizations to adopt lightweight and lower cost tools that can increase the efficiency of their emergency cash and social protection programs by an order of magnitude. Such a need is magnified when taking into account the increasing recurrence of major natural disasters, conflict and instability, increasing inequality and as climate change and geopolitical uncertainty.

Provided that nearly two-thirds of the global workforce earn their livelihoods in the informal sector, there are nearly 2 billion people who lack social protection support, a living wage, rights at work and decent working conditions that are often expected within more formally registered and regulated organizations.[26] The lack of formal protection for under-resourced communities at extreme risk of food, housing, and healthcare insecurity   is now occurring at a time when most humanitarian agencies and government agencies are not prepared to scale pre-existing social protection programs to millions of people at a time. The COVID-19 pandemic has particularly stress-tested the capabilities of aid programs to scale, and the results of such a test are disappointing to say the least. This is now occurring in an environment where official development assistance and donations to humanitarian crises has been steadily declining for nearly a decade, while the number of affected populations has only increased over the same time period[27]. In light of the global impacts of COVID19, foreign assistance flows are expected to drop even more dramatically in the next 2-5 years as budgetary expenditure is focused on domestic priorities.

This global challenge is large enough to extend beyond countries in crisis to more "developed country" contexts, particularly in 2020. When the American unemployment insurance system, which provides cash assistance to recently unemployed Americans to prevent prolonged financial insecurity between jobs, saw a record 36 million Americans file jobless claims as a result of the worst unemployment crisis since the Great Depression, it buckled under the sheer volume of inquiries, leaving millions of Americans without pay for weeks.[28] Even worse, hundreds of millions of dollars of aid funds were sent to companies that did not critically need financial aid. More than 300 publicly traded companies received payments. Indebted fossil-fuel producers have been among them. At least one company used its aid to benefit wealthy, private jet-owning clients. Small businesses, meanwhile, say they have struggled to gain access to the loans.[29] Families

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[26] Nearly two-thirds of global workforce in the 'informal' economy – UN study. (2018). Retrieved October 18, 2020, from https://news.un.org/en/story/2018/04/1008562#:~:text=More%20than%2061%20per%20cent,protection%20and%20decent%20working%20conditions.

[27] *"Declining Aid, Rising Debt Thwarting World's Ability to Fund Sustainable Development",* UN Press Release, High Devel Dialogue on Financing for Development, UN General Assembly. September 26, 2019. Accessed at: https://www.un.org/press/en/2019/ga12191.doc.htm

[28] With 36 million Americans filing new jobless claims in the past two months, unemployment insurance systems are struggling to keep up. (2020). Retrieved October 18, 2020, from https://www.cnbc.com/2020/05/14/unemployment-insurance-system-is-failing-in-america-heres-why.html.

[29] The mystery of which US businesses are profiting from the coronavirus bailout. (2020). Retrieved October 18, 2020, from https://www.theguardian.com/us-news/2020/jun/09/us-congress-billions-coronavirus-aid-relief-package.

living below the poverty line were almost completely left behind, with no other safety nets available to resort to.

For humanitarian agencies with under-resourced country offices, working in countries that are unlikely to have similar government resources - such as $2 trillion stimulus packages to support their citizens - it has been exceedingly difficult to scale existing cash assistance programs during the pandemic, as such programs have to be facilitated remotely, with less staff, and whilst still relying on manual tools like email, excel spreadsheets, and physical vouchers. Despite the trillions of dollars in economic stimulus pledged by global governments to help ease the hardship of their respective communities, in many places, corruption is preventing aid from reaching the people who need it most. Transparency International's Anti-Corruption HelpDesk has extensive data[30] pointing to the corrosive impacts of corruption on economic growth and the nature of corruption as a major driver in aggravating inequality, fair income distribution and public confidence in governance and security.

In 2020 alone, more than 1,800 people contacted Transparency International's Advocacy and Legal Advice Centres (ALACs) to report over 1,500 cases of corruption and other irregularities related to the COVID-19 pandemic. The most egregious case took place in Sri Lanka, where the government announced a single payment of 5,000 rupees for low-income families, senior citizens and people with disabilities. The government put local consuls in charge of distribution without clear tracing mechanisms or accountability. Some consuls say they never received any money to distribute from the government. Others were simply disorganized or inefficient and never directed the money to where it was supposed to go. In one case, a local officer is alleged to have stolen the money she was supposed to distribute to low-income families. In April 2020, staff at Shelter for Integrity (the ALAC in Sri Lanka) heard from 40 people who did not receive the aid to which they were legally entitled. Twenty-eight of the reports came from Tamil people in a single rural province in northern Sri Lanka.[31]

By modernizing the tools humanitarian agencies and government agencies use to disburse cash aid, global social protection can become better fortified to scale across hundreds of thousands, if not millions of people while maintaining cost-effectiveness, speed, and, more importantly, accountability and transparency.

The usage of blockchain technology, which can securely and transparently track the flow of digital funds at a fraction of the cost of electronic (bank-to-bank) transfers and be processed exponentially faster, is well positioned to evolve cash assistance programs to become more accountable and more reliable at scale, particularly as smart phone and Internet penetration are on the rise globally.

NGO and government agencies might be able to pre-position systems to support program beneficiaries within the same day of being impacted by economic, geopolitical, and/or environmental crises with the same size, or smaller staff communities that they have now - all whilst providing under-resourced

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[30] *The Impact of Corruption on Growth and Inequality*, Transparency International, 2014. Accessed at: https://www.transparency.org/files/content/corruptionqas/Impact_of_corruption_on_growth_and_inequality_2014.pdf

[31] CITIZENS STRUGGLE AS PROMISED COVID-19 AID GOES MISSING. (2020). Retrieved October 18, 2020, from https://www.transparency.org/en/news/citizens-struggle-as-promised-covid-19-aid-goes-missing#.

communities tools that can be used beyond the social protection program itself and serve as the basis for economic inclusion long after the program has ended. Likewise, the borderless nature of digital platforms can assist agencies in delivering cash assistance across multiple locations simultaneously, massively simplifying the complex process of managing regional, multi-country humanitarian programmes, such as the Whole of Syria response, or extreme climate events impacting multiple countries, as in the extreme drought events affecting countries in the Sahel.

Sections 5.0 and 6.0 delve into the basics of blockchain technology and digital currency, how the technology is poised to positively impact cash assistance programming, and which considerations humanitarian agencies and government agencies should make before deploying their own 'digital cash assistance programming.'

5.0 An Introduction to Digital Currencies

Unlike mobile money or e-payment cash assistance programs, which either use centralized account systems or still rely on wire transfers in the background, Digital Cash Assistance programs (DCA) leverage a decentralized account system in which the money being transferred is truly controlled by whichever account holds the money. This system is called blockchain technology, and it is particularly useful at automating trust between transacting parties, given that it can be completely tamper-proof, and radically transparent.

For cash assistance programs, blockchain technology can ensure 100% transaction transparency, and thus guarantee complete donor funds traceability to further strengthen the legitimacy of the social protection program. Additionally, transactions can be limited to approved accounts participating in a program, such as registered beneficiaries and vendors, preventing the mis-use of funds with unidentified actors. Lastly, given that public blockchain networks are not owned by a single entity, the underlying financial network supporting the program's transactions is secure from corporate abuse, or high-level collusion at a governmental level.

Digital currency, rather than fiat currency controlled by banking institutions, is used to transfer value on blockchain networks. Thus, the use of digital currency is central to facilitating Digital Cash Assistance programs. Rather than using physical vouchers, or in some cases checks to disburse aid, humanitarian agencies and government agencies can leverage blockchain technology to instantaneously send digital currency to tens of thousands of program participants at a time remotely, which a complete record of how much capital went to each participant, and how those funds were used.

Subsections 5.1 through5.3 define what digital currencies are, what types of digital currencies are useful in digital cash assistance programs, and describe the risks associated with digital currencies.

5.1 What are Digital Currencies?

"Digital currency" is a type of asset used as an online means of exchange. The most well known is 'bitcoin,' the first digital currency for instant online payments. Digital currency can be leveraged to facilitate digital payment transactions, and such transactions are typically handled using digital technologies and devices. While most digital currencies are volatile and cannot be used as a reliable store of value (i.e. not an asset where one could safely store their savings, much like bitcoin), this is not true for all digital currencies.

For instance, the "digital dollar," is a specific form of digital currency that is pegged to a fiat currency, in this case the United States Dollar (USD)[32]. The advantage of pegging a digital currency to an existing asset is the ability to overcome the high volatility of traditional digital currencies. These specific types of digital currencies are often also referred to as "stablecoins", referencing their non-volatile nature.

There are multiple types of "digital dollars" publicly available. The only difference between types is the way they are collateralized (i.e. backed by another asset or system to maintain their value). Currently, there are three main types of "digital dollars", all of which can be employed in humanitarian cash assistance programs.

Fiat–Collateralized digital dollars

Crypto–collateralized

Non–Collateralized (algorithmic) digital dollars

Sub-section 5.2 delves into the details of how each type of digital dollar's collateral system functions to provide more clarity as to which digital currencies should be used in digital cash assistance programs.

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[32] We use the term "digital dollar" and not for example "digital euro" to reflect the current market preference for US dollar as the predominantly used global reserve currency.

Modernizing Cash Assistance

5.2 What types of Digital Dollars are there?

Fiat–Collateralized Digital Dollars

This type of digital dollar is backed by fiat reserves held in a traditional bank, with each token representing a pre-defined quantity of money (e.g. a $1 token is equivalent to $1 in the bank). The fiat-collateralized digital dollar is issued when collateral, in the form of fiat, is exchanged with the central issuer and burned when fiat is exchanged back. Fiat can be in the form of money, silver, gold, or other commodities such as oil, but the most commonly used fiat is the U.S. Dollar[33].

Crypto–Collateralized Digital Dollars

Crypto-collateralized digital dollars are backed by other digital currencies. Since digital dollars are supposed to be less prone to volatility, crypto-collateralized digital dollars are typically over-backed by various, more volatile digital currencies (e.g. bitcoin) to ensure the overlying digital dollar maintains its peg to a fiat-currency, like the U.S. vDollar or Euro. For example, one digital dollar worth $1 USD is backed by $2 USD in bitcoin. Thus, if bitcoin were to lose value, to say $1.50, the digital dollar would still be adequately collateralized to represent $1 USD.

Non–Collateralized (algorithmic) Digital Dollars

Unlike the other types of digital dollars, non-collateralized digital dollars are not backed by any fiat or digital currency. Rather, their value is determined based on user expectations (much like fiat currency). The total supply of non-collateralized digital dollars, otherwise known as seniorge shares, automatically decreases and increases based on market demand via an algorithm supporting that particular digital dollar's economic system. The system of non-collateralized digital dollars is similar to when central banks print bills to maintain currency values.

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[33] Note: Any currency issued by a national, central or reserve bank can also be used in this manner for blockchain transactions.

5.3 Assessing the Risk of Using Digital Currencies

Similar to any asset, digital currencies have certain risks associated with how they are collateralized, how they are custodied, and how they are regulated.

Volatility

Compared to hard currencies, there is significantly more variation in the value of digital currencies which often fluctuate due to unexpected changes in market sentiment. Digital dollars, however, pose a much smaller risk of volatility, as they are *designed to remain stable and be used as a reliable store of value*. However, depending on how well the digital dollar was designed, the token could lose it's peg due to unforeseen circumstances and/or exploits (as with 'fiat' currencies). Even fiat-collateralized digital dollars, which are literally backed on a 1:1 ratio with fiat money in a bank account, can become volatile if the reputation in the financial institution housing the digital dollar's reserve funds comes into question and it is found that the responsible bank is not holding a 1:1 ratio of, for example, USD to digital dollars.

Cybertheft

Crypto exchanges, wallets and even personal computers that are used to store digital currencies can be hacked into and digital assets stolen. Holders of digital currencies must either rely on their own computer security system to protect themselves against theft, or select a third party entity to custody and protect their digital assets. Thus, it is crucial that tools used by cash assistance program beneficiaries and vendors are provided with intuitive tools that do not require a high amount of technical literacy.

Fraud

Given that digital currencies can be managed by unregulated companies that may lack sufficient internal controls, they could be susceptible to fraud. This risk is exacerbated by the fact that there is no central agency regulating digital currencies. I/humanitarian agencies need to ensure that they are partnering with strictly regulated, licensed, and well-known businesses when facilitating a digital cash assistance program.

Inability to Recover

To use digital currencies within a personal digital wallet, a private key is used. A private key is a variable in cryptography that is used with an algorithm to encrypt and decrypt code - simply put, it is the password to unlock digital wallets and access that wallet's digital assets. However, it is impossible to recover stolen digital currencies or digital currencies stored in wallets that have lost private keys. Once digital currencies are transferred out of a user's wallet and the transaction is committed to the blockchain, the transaction cannot be stopped or reversed. Restoring access to a digital wallet is also impossible if the private key is lost by the owner. Essentially, this extraordinarily high level of security displaces risk onto the individual or entity, entrusting him/it to hold and manage the private key safely and responsibly.

Regulatory Risk

Due to the global nature of digital currencies and myriad of anti-money laundering and privacy laws, mitigation and compliance costs and efforts are cumbersome. In the US, digital currencies are regulated by many of the same government agencies that regulate the traditional world of finance, including the IRS, SEC, CFTC, and local regulators. The same is true for international equivalents. Most relevant for nonprofits in the United States is the IRS. The IRS issued initial guidance on digital currencies in 2014 and updated their guidance in 2019. They have made it clear that they classify digital currencies as property for tax purposes. Thus, making a donation in digital currency to a 501(c)3 is similar to a stock donation, meaning the donor does not pay capital gains tax and can write off the donation on their taxes. Furthermore, for digital dollars, particularly those pegged to a fiat currency like the United States Dollar (USD), there is no capital gains tax because there is virtually no change in value. The SEC and CFTC treat digital currencies as securities and commodities. Similar to these traditional types of assets, they apply the applicable regulatory framework based on the type of digital currency. Within the context of digital cash assistance programming, and to minimize organizational risk, humanitarian aid initiatives that leverage digital currencies should still maintain the applicable Know Your Client (KYC) practices when distributing funds to beneficiaries and on-boarding program vendors.

Uncertainty

Digital currencies are a relatively new technology that is rapidly developing and adapting. There remains much uncertainty about its future viability as well as the regulations that may be put in place.

Custody

A crucial aspect of leveraging digital currencies for cash assistance is the custody of the digital currencies themselves, before and after program deployment. Custodying digital currency, that is the storage and security of digital currency, is fraught with potential errors that could result in losing access to the funds altogether. Furthermore, a relatively high technical literacy is required to maintain cryptographic keys that provide access to custodied digital currencies. Provided that many humanitarian agencies do not have internal policies for handling digital currencies, many feel uncomfortable utilizing digital currencies at all. Despite these challenges, an increasing number of nonprofits have indicated a yearning to pilot cash assistance programs that use digital currencies. Some of the challenges of custodying digital currencies including high minimum balances for organizational accounts, high technical literacy required of cash assistance program managers (i.e. have poor user experiences), and, oftentimes, digital currency platforms do not support off-ramps into fiat currencies used in emerging economies. These difficulties of custodying digital currency in a simple, secure, and transparent manner, in parallel with the illiquidity between digital currencies and emerging market fiat currencies, hampers the social sector's ability to scale digital humanitarian aid. These challenges essentially render cash assistance program vendors powerless when attempting to "cash-out" from digital currency to local fiat. Thus, it's imperative that nonprofits establish technology partners that will custody digital currencies for cash assistance programs.

6.0 What is Digital Cash Assistance?

Digital cash assistance (DCA) builds on traditional cash transfers programs by leveraging digital currency's underlying software, blockchain technology. Instead of providing beneficiaries with checks, physical vouchers, or, in some cases, literal cash, recipients receive aid digitally using digital currencies. Digital currency, once received by beneficiaries, can be used as either conditional or unconditional cash assistance that can then be transferred directly to beneficiaries and/or vendors participating in the cash or voucher program.

Executing DCA programs has proven to be up to 96% faster and 60% cheaper than facilitating traditional cash assistance programs, particularly during beneficiary registration and aid distribution. More importantly, humanitarian agencies can disburse aid to a previously served beneficiary community during geopolitical or natural disaster instantaneously, without the delay typical of cash assistance. This allows humanitarian agencies, governments and donors to immediately address, and even potentially forecast, the need for emergency cash and social protection programming.

Aid can be sent across borders, to one or multiple locations in minutes, and hence provide aid to regions that may not be as accessible on the ground. The speed and facility of these processes then allow agency staff to focus more closely on program design, community participation, awareness and household identification processes. This has become especially evident during an worldwide pandemic like the COVID-19 pandemic, where physical contact and cross-border travel is limited. Additionally, DCA programs provide humanitarian agencies a high and easy to access funds flow and financial audit record, so that donors understand who benefitted from the aid, how and where the aid was spent, and what was purchased.

Provided that the development of DCA programming is an iterative and evolving process, the following subsections provide details as to what the current DCA methodology looks like, and which tools are used during this type of humanitarian aid.

6.1 Methodology & Technology

Aid organizations tend to take two different approaches to designing and implementing DCA programs. Some organizations develop a human-centered approach that ensures the end users are involved in both the design and implementation of the process. Oxfam's *UnBlocked Cash* project   in Vanuatu and the   *eArziki* project by CARE in Niger are two such examples highlighted by the PositiveBlockchain study.[34] These user-friendly solutions tend to have a greater impact as they are adapted based on local context, helping to ensure better buy-in and engagement from users themselves.

Throughout these particular DCA delivery and design processes related to the denomination, distribution and storage of digital currency are actively adapted to the competencies and literacy of local users (e.g. small vendors). In contrast, some aid agencies take a top-down approach that fails to involve the end users of the cash assistance program and instead focuses on identity verification and monitoring transfers, thereby replicating a longstanding critique of humanitarian and development programs as failing to effectively localize project design. Overall, the most successful demonstrations of DCA take a blended approach that combines tactics and practice from innovations practice, such as iterative product development, with best practice from the humanitarian and development sector, such as community engagement and participatory project design.

Emerging Impact (formerly ConsenSys Social Impact), a public benefit corporation, supports major humanitarian agencies in their transition from traditional cash assistance to DCA programming. Emerging Impact has developed a product oriented methodology (known as "Community Compliance Methodology") that humanitarian agencies can use and build upon while piloting and expanding their own cash assistance programs using emerging technologies, like blockchain and digital currencies. The Community Compliance Methodology and framework was developed in partnership with Oxfam Vanuatu during their debut project UnBlocked Cash. In this project, Oxfam Vanuatu trialled the world's first digital currency-backed cash assistance program, providing a community-inclusive approach to deploying blockchain and similar emerging technologies in the field.

Oftentimes, a traditional product design approach makes fundamentally incorrect assumptions about the user's educational background, spoken language, and/or technical literacy. Therefore there may be solutions that cannot be realistically adopted by those who are un- or underbanked. In contrast, social sector 'methodologies,' do not present aid programs as products. Thus, humanitarian agencies typically do not see program participants as customers to their programming. As a result, agency programs across the humanitarian and development nexus often lack the capacity, willingness or agility to quickly integrate beneficiary and community feedback and to remain responsive to design changes suggested by the grassroots.

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[34] Positive Blockchain, Scrypt, "Community Currencies: Trade facilitation and community development in the age of blockchain & DLT (2019). Retrieved on August 29, 2020, from https://storage.googleapis.com/scrypt/Community%20currency%20-%20Report%20final.pdf

The outcome of the social sector's lack of 'program productization' is that (1) program iteration occurs very slowly and lacks efficiency, and (2) the NGO's hyper-focus on donors eliminates up-stream focus on vendors, beneficiary feedback and other program partners. If these the needs and requests of these stakeholders were integrated more effectively, they could substantially enhance the overall program experience and outcome(s) for beneficiaries. Community Compliance Methodology) is Emerging Impact's approach to mapping the capabilities of a technology to the needs of marginalized communities in a manner that does no harm, maximizes community participation, and sustainably provides economic empowerment, social protection and education.

The Community Compliance Methodology approach is divided in the following phases, which will be expounded upon in the subsections 6.1.1 to 6.1.8:

1. **Product Capability Assessment**
2. **Product Education**
3. **Country Assessment**
4. **Feasibility Study Sprint**
5. **Pilot Plan Development**
6. **Community Mobilization**
7. **Pilot Deployment**
8. **Case Study Development & Methodology Retrospective**

6.1.1 Product Capability Assessment (PCA)

Beneficiaries (i.e. the community members benefiting from any particular humanitarian aid or development) may struggle with new technology, reading and/or writing, or numerical literacy, preventing them from using software applications that would otherwise interface well with western or higher income consumers. Therefore, it is important to conduct a product capability assessment to (1) understand which capabilities the product needs to support so that it can be intuitively used by marginalized populations; (2) understand which capabilities the product needs to support so that it can further optimize program operations; (3) ensure that the product is properly insured and has completed a 'functional audit' flagging any bugs, data privacy discrepancies, and licensing discrepancies; and (4) create design and development sprints to resolve such user experience gaps. Table 2.0 provides a summary of the questions used for PCA of a given product and associated technology provider.

Table 2.0: Product Capability Assessment for Digital Cash Assistance Programs

Question	Capable	Score	Needed Improvements
Is the product usable by people with limited numerical literacy?	Yes / No	0 - 1	TBD
Is the product usable by those with limited technical or digital literacy?	Yes / No	O – 1	TBD
Is the product usable by those who struggle to read and/or write?	Yes / No	O – 1	TBD
Does the product have the proper licensing to transmit fiat and digital currencies in the technology provider's country of origin?	Yes / No	O – 1	TBD
Does the technology provider of the product have product insurance and general liability insurance protecting the program from any potential losses?	Yes / No	O – 1	TBD
Does the technology provider have a clear compliance policy? (e.g. vendors, beneficiaries, local field partners)	Yes / No	O – 1	TBD
Does the technology provider have educational collateral that the agency can use in the field to educate beneficiaries, vendors, and local field partners?	Yes / No	O – 1	TBD
Does the technology provider have educational collateral the agency can use to up–skill internal stakeholders?	Yes / No	O – 1	TBD
Does the technology provider have a team member or advisory partner that speaks the same language as the country team and local field partner staff implementing the program?	Yes / No	O – 1	TBD
Does the technology provider custody digital currencies?	Yes / No	O – 1	TBD
Has the technology provider's product been audited for bugs and feature capabilities?	Yes / No	O – 1	TBD

Note: Higher PCA scores are directly correlated with a decrease in program operations costs using the technology provider in question. The "Needed Improvements" column is for agency notes should they determine they would like to move forward with the technology provider, but need specific product / offering improvements before doing so.

6.1.2 Product Education

Simple and concise product education is integral in persuading nonprofits/humanitarian agencies, and community and government partners to use the program's selected product in the field. The following provides a guide as to which stakeholders require educational collateral to progress a DCA program most effectively.

PRODUCT EDUCATION STAKEHOLDERS

STAKEHOLDER	DESCRIPTION
Nonprofit Manager	The Manager needs to understand how the product links to and furthers their program/project objectives.
Community Leader	Community Leaders need to understand what the program is, how to use & explain the product, how it will immediately benefit the community and how to teach participating community members how to use it.
Community / Field Manager	The Community/Field Manager needs to understand what the social impact program timeline is, what the scope of impact for the program is, how to reliably use the product being leveraged in the program, how it will immediately benefit the community, and how to teach community. leaders and sometimes vendors how to use the product.
Government Official	When new technology is used in a program, these stakeholders need to understand if the product is legally compliant with local policies. It is critical to ensure that there is a link between product use and national strategies or policies
Beneficiary	Beneficiaries need to know how to use the product (if the product is made for consumer usage). They also need to be reassured that they are playing an active and dignified role in using and adapting the product to assist their peers/community and improve their livelihoods.

One pagers, the program proposal, and posters are typically the same for all stakeholders, whereas webinar content (for training purposes) and slide deck collateral needs to be tailored to each specific stakeholder. On-site training provides a key way to connect with stakeholders, field questions and help to familiarize them with the product; this process should be as inclusive and participatory as possible. Time invested in on-site training will build trust, empower stakeholders to train others, and increase usage.

6.1.3 Country Assessment

In preparation for the deployment of any aid program, it is important to review existing program feasibility assessments, program reports and/or product evaluations, including proposals for the particular pilot or program (e.g. RFP response, previous case studies citing usage of the product, etc.). Depending on the scope and type of program in question, national surveys may also be useful to review, or design guidance and collaboration with the country team may be required for any relevant project baseline or community consultation surveys. For example, if this is a social protection intervention, a national household survey on poverty and household expenditure should be reviewed.

NEEDS ASSESSMENT	ALIGNMENT	COMPLIANCE
Assess what specific needs this initiative will address via the adoption of this product into your program cycle.	In order to ensure the overall alignment of the desired product with your program objectives, we'll map these to product functionality to ensure the product can serve to maximize program impact.	When adopting new technologies, it is absolutely critical to identify and review relevant legal and regulatory considerations related to product use.
There are three key areas that we will assist you to analyze and summarize for validation by key stakeholders. — Program-specific needs — Institutional needs — User/client/beneficiary needs	This includes identifying where product design or intended use should be adapted in the following areas: — Decision making — Community outreach — Program implementation processes	There are two key areas to examine related to compliance — Institutional compliance — Government/legal compliance

6.1.4 Feasibility Study Sprint

The Feasibility Study Sprint encompasses the application of standard monitoring, evaluation, accountability, and learning approaches to check assumptions in product design that may not be applicable in the local scenario. Included in this process is also a horizon scan of risks, relevant regulatory frameworks, local economic/spending behaviours and on-market financial services that are currently being used in the target country or area. This information gathered at the country level provides an opportunity to participants and staff to measure the likelihood of success of the pilot activity and longer-term product adoption.

DATA COLLECTION

A blend of qualitative and quantitative approaches will be developed in close collaboration with your team to collect the following information:

+ BENEFICIARY INTERVIEWS
+ FACILITATED COMMUNITY DISCUSSION
+ KEY INFORMANT INTERVIEWS
+ VENDOR & MARKET SURVEYS
+ NETWORK TESTING
+ STAKEHOLDER ANALYSIS
+ RESOURCE & COST FORECASTING

The results of the data collection efforts (of which all or a select few may be used) will be analysed and aligned across these four core indicators.

+ ACCEPTANCE
+ APPROPRIATENESS
+ ACCESS
+ MARKET CAPACITY

6.1.5 Pilot Plan Development

Steps leading up to, and including, the results of the Feasibility Study (6.1.4) will inform the planning of a pilot period to test the extent to which the product can be used and integrated as seamlessly as possible into existing program approaches and processes. An experimental lens is used to approach the pilot with a maximum amount of objectivity. Borrowing from the scientific method, the ways of working of humanitarian and other social sector stakeholders are integrated into this model.

DEFINE SCOPE & STAKEHOLDERS

This process focuses on the confirmation of the "4 Ws" — who will participate in the pilot process as a key stakeholder or observer; when the pilot will take place, and for what time period; what the purpose, objectives and desired outcomes are; and where the pilot activities will take place (geographic location/s).

DEFINE A HYPOTHESIS

Specifically, this will focus on capturing a precise, testable statement or set of assumptions that you wish to prove or disprove through the pilot activities. For example: "The use of the XXX platform will increase the speed of delivering humanitarian cash and reduce existing costs"

PILOT PROCESS DEVELOPMENT

Review execution (updating timeline, benchmarks and outputs as needed based on simulation outcomes)

Monitoring: Define what data has to be collected, and when, that will measure indicators linked to your hypothesis.

Defining roles and responsibilities of key staff and stakeholders

Documentation required: Tools, education, guides, awareness materials (written or video), hardware specifications

Simulation test of process

6.1.6 Community Mobilization

Prior to launching a pilot, it is essential to ensure that community members, leade, and target households have a clear idea of the pilot plan, and that they have the opportunity to ask questions and discuss the process with your organization and between each other. We have found that visual products, delivered to and posted within the community are often the most effective. These include posters, infographics, and diagrams showing:

- How the pilot program will work;
- Who is eligible to participate; and
- What tools are being used during the program.

It is important to schedule specific times at the beginning of the pilot development process when program participants, particularly vendors and local field partner staff, can learn more about the scope of the program, its eligibility requirements, and the tools being used. The latter is particularly true if program participants must be educated remotely due to geopolitical conflict in the pilot region and/or health crisis (e.g. the COVID-19 pandemic). The following Community Mobilization Schedule (Table 3.0) provides an example of what these educational sessions would cover and how frequent they should occur.

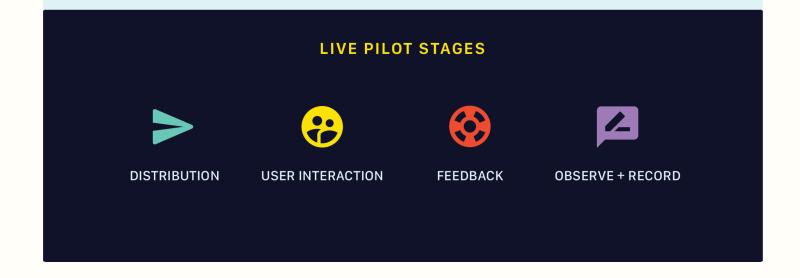**Table 3.0:** Community Mobilization Schedule (Example)

Session Name	Description	Stakeholders	Time
NGO Pilot Program Overview	Technology provider presents the program timeline for comments/changes; develops project management cadence for check-ins.	Technology Provider, NGO	60 Min
NGO Pilot Tools Overview	Technology provider presents an overview of which tools are being used in the program, how they work, and which beneficiaries and vendors need to use the tools.	Technology Provider, NGO	60 Min
NGO Pilot Tools Training	Technology provider presents how to use the program's tools so that NGO staff are well informed and can answer additional questions.	Technology Provider, NGO	60 Min
Local Field Partner Pilot Tools Overview	Technology provider presents an overview of which tools are being used in the program, how they work, and which beneficiaries and vendors need to use the tools.	Technology Provider, Local Field Partner	60 Min
Local Field Partner Pilot Tools Training (2x)	Technology provider presents how to use the program's tools (overview and training) so that field partner staff are well informed and can answer additional questions.	Technology Provider, Local Field Partner	120 Min
Vendor Tool Training	Local field partners train vendors on how to use relevant tools during the program and provide vendors with brochures with tool guides	Local Field Partner, Beneficiary	60 Min
Beneficiary Education	Local field partners educate beneficiaries, post programme posters for passive education, and register beneficiaries.	Local Field Partner, Beneficiary	Passive

6.1.7 Pilot Deployment

The pilot deployment phase should be seen as the actual use and application of information in all previous phases of the Community Compliance Methodology pilot approach. Depending on the scope of the pilot and the surrounding programmatic context, the specific timeframes for this phase will vary. This is especially true if the pilot is taking place in a region fraught with geopolitical conflict, as project scoping changes can delay the actual aid disbursement process.

PILOT DEPLOYMENT STAGES

SIMULATION EXERCISE

PARTICIPANT AND CORE USER TRAINING

DISSEMINATION OF AWARENESS MATERIALS

KICKOFF MEETING/WORKSHOP SESSION

REGISTRATION OF BENEFICIARIES

THREE TRAINING SESSIONS

RECIEPIENT USER TRAINING

LIVE PILOT STAGES

DISTRIBUTION   USER INTERACTION   FEEDBACK   OBSERVE + RECORD

6.1.8 Case Study Development & Methodology Retrospective

At the conclusion of the pilot/program, it is necessary to build a robust case study that captures the impact of the program. This case study will serve to retrospectively educate social sector stakeholders on the insights gained from facilitating this DCA program. Such insights can provide recommendations for the development of a clear pathway to scale the program, and empower other social sector organizations to affect similar change within their communities.

PRODUCT DESIGN STAGE

Once a product direction is established and alignment is achieved, a project is able to enter the design stage which has a standard agile structure:

IDEATION + CONCEPTING

Understanding issues and exploring product strategy

PRODUCT DEFINITION

Formally defining the strategy and firm project requirements

ITERATION + PRODUCT EDUCATION

Prototyping and testing until a satisfactory solution is reached

IMPLEMENTATION

Fleshing out and refining the solution with development

GO TO MARKET

6.2 Regulatory Compliance & Digital Currencies

The Security and Exchanges Commission (SEC) and CFTC treat digital currencies as securities and commodities. Similar to these traditional types of assets, they apply the applicable regulatory framework to digital currency. For instance, Know Your Customer (KYC) regulations require financial institutions to conduct customer identification, verification, and due diligence when registering customers for SIM cards or mobile money. Similarly, digital currency providers and exchangers must also comply with these regulations. However, such compliance can be challenging in emergency or humanitarian situations when recipients may lack formal identity documents, a challenge that humanitarian cash transfer practitioners are familiar with. Furthermore, digital currency providers are obliged to conduct anti-money laundering measures continuously to detect and prevent assets from being used for illegal activities, including tax evasion, market manipulation, misappropriation of public funds, or trade of illicit goods. They are also required to follow procedures to combat the financing of terrorism.

Finally, taxation of digital currency remains a challenge for DCA in many countries. While some countries, such as Singapore, exempt digital currencies from taxation, other large economies do not. For instance, in the United States, taxpayers are obliged to report any profit or loss from digital currencies. However, enforcing these measures is not as straightforward as traditional assets. This forces tax authorities to resort to innovative enforcement measures, such as monitoring social media and web activity to identify who is holding digital currencies. Technology companies are also required by law to share user information of those who have downloaded digital currency exchange applications with tax and revenue authorities.

Digital currencies are often unregulated and regulatory compliance falls primarily under the prerogative of providers and exchangers. Those who trade fiat-to-crypto typically perform at least some level of compliance to these regulations given that they conduct business with banks. Likewise, humanitarian agencies with DCA would be obliged to ensure compliance with all three regulations throughout their supply chain. While a standard framework for the regulation of digital currencies does not exist, humanitarian agencies would be wise to ensure compliance to avoid any damage to their reputation, impact and public trust.

Luckily, the majority of successful applications of DCA have demonstrated that where regulatory frameworks do not exist at the local level, financial authorities revert to existing regulatory compliance requirements for financial services, such as standard KYC, AML/CT and requisite capital controls and financial intelligence reporting mechanisms that already apply to financial services on the market, such as bank accounts, micro-finance, currency exchange entities and commercial banks. When this is the case, humanitarian agencies who have experience implementing emergency cash assistance and social protection payment programs face virtually the same set of regulatory requirements, and are often knowledgeable and experienced enough to respect and integrate compliance into *both* DCA and traditional cash assistance programmes.

With these regulatory considerations in mind, it is integral that humanitarian agencies ensure that they keep a record of all transactions that occur during their DCA program. These transactions will immutably remain on the underlying blockchain used by the technology provider for as long as that blockchain exists. It is particularly helpful if the technology provider uses a public blockchain, as such blockchains are more transparent and more secure, and therefore have a much higher probability of lasting longer as a publicly accessible record. However, it is still important to maintain a document that contains all blockchain transactions and transaction amounts for the agencies' record keeping. Transactions could also be stored in an agency's database for more efficient retrieval.

6.3 Benefits of Digital Cash Assistance

DCA programs offer an array of advantages over traditional cash transfer programs, including mobile money and e-vouchers that are immediately convertible to and from fiat currency.

Speed
DCA transfers are 96% faster than traditional money transfer methods. Reconciliation processes can be automated, and online platforms for distribution remove the need for repeated (ex. monthly) distribution events, and transaction transparency allows real-time generation of monitoring analytics, reducing the need for frequent logistics expenditures associated with field monitoring visits.

Safety & Transparency
Blockchain transactions are secure and transparent, limiting the chances of fraudulent and corrupt use of humanitarian aid. Aid agencies can audit and track all transactions by running a ledger of live, traceable transactions via the Sempo dashboard. Transparent transactions help humanitarian agencies simplify financial auditing and even solicit more donations.

Privacy
Humanitarian agencies are able to track how recipients are spending aid without revealing any personal information. Personal Identifiable Information (PII) does not need to be stored directly on the blockchain, and when this is the case, it is fully encrypted. Likewise, user interfaces used by NGOs are provided with tiered access options to enable anonymized views of data, with selected access to more detailed information for select program managers for monitoring purposes. This reduces the risk of existing privacy breaches that have been observed in normal cash assistance practice, such as the unauthorized commercial use of data by financial service providers, or staff error - such as the sharing of documents on email or paper that contain sensitive information.

Limited Infrastructure Required
Aid recipients do not need access to the internet, a bank, or a phone or a bank account to tap into digital cash transfers. This makes digital currencies ideal for communities with low-literacy, low-connectivity, and/ or those suffering from an emergency that has eliminated the use of banks. Due to the limited infrastructure required, DCA can pave the way for the financial inclusion of excluded and poor households.

Borderless
For populations living under authoritarian regimes or suffering from economic stability and capital controls within local banking systems, DCA can overcome these challenges to deliver aid directly - and remotely - to those in need. This enables humanitarian agencies with a responsibility to neutrality to maintain humanitarian access, while keeping a low profile to mitigate risk. "Borderless" also has a major advantage in terms of managing multi-country and regional humanitarian operations using a single platform; this is invaluable in cases of conflicts that bleed across borders, or in the case of natural disasters   affecting multiple countries at once.

Cost
Transferring digital currencies is more cost-effective than other digital cash transfers, such as vouchers or cash. For instance, Oxfam's UnBlocked Cash Project cut transaction costs by 60% compared to standard cash transfer program delivery.[35]

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[35] Smith, K. (2020, July 10). Oxfam Ireland awarded a grant to develop Blockchain tech. *Irish Tech News.*

Scale

The applications used to transfer digital currency have little to no capacity barriers, meaning that it is possible to easily scale the program. Humanitarian agencies have a key role to play in participating in the design of scalable solutions that are adapted to minimum humanitarian standards and programming needs (ex. EFSVL, WASH, Food Security, Shelter etc). Furthermore, there is potential to integrate economic empowerment and open-ended payment facilities in emergency cash social protection programs, enabling sustainability.

Access to Data

A plethora of new data becomes available with DCA. Such data can help humanitarian agencies to better design aid programs, anticipate and mitigate risks, and measure impact beyond typical parameters, such as examining the broader market stimulus function of cash assistance. Crucially, this new data may allow for more accurate monitoring of funds, which offers greater accountability to donors. In turn, this can lead to a greater involvement and commitment from the donor community.

Community Participation

Community currencies, such as the one supported by Grassroots Economics in Kenya, offer a solution to increase purchasing power and market activity despite cash scarcity in the national currency. These localized currencies foster local trade by allowing communities to exchange goods and services registered on the blockchain. The eArziki by hiveonline and CARE Niger exemplifies the positive effects of community currency. Since this program utilizes blockchain technology, it helps to establish a financial history for community savings groups, which often have no entry point to the financial system. Thanks to blockchain, these records can then be shared with microfinance institutions allowing individuals, groups, or small businesses with access to credit.

6.4 Obstacles to Digital Cash Assistance

As with any new technology, DCA has certain challenges to its implementation, security and acceptance within the communities where aid is typically required. Many of these are similar to those faced with the advent and increased adoption of cash assistance - meaning that the majority of humanitarian agencies are in face well equipped and often more familiar than tech firms alone in facing these challenges.

Financial Illiteracy

Expanding the use of digital currencies among those with limited financial skills and knowledge is challenging. DCA is a new concept and many may not understand or trust it. Given the risks associated with cyber security and the inability to unlock lost keys, it is crucial that recipients have a basic understanding of digital dollars before a program is instigated.

Mistrust

Due to a lack of understanding or recent high-profile hacking cases, aid organizations and donors may not have faith in the use of digital currencies or DCA.

Organizational Culture

DCA challenges the traditional business model of humanitarian assistance. Persuading humanitarian leaders and staff to prioritize a shift from traditional cash assistance to digital assistance will require a major cultural shift for some organizations.

Regulation

Mainstream adoption of digital cash assistance also requires effective regulatory and protection mechanisms which do not currently exist under the existing decentralized digital currency system.

6.5 Case Study: Project UnBlocked Cash

By tapping into the DCA, humanitarian actors can overcome some of the largest challenges of traditional cash transfer programs: lengthy reconciliation times, difficulties tracking payments, and costly monitoring and reporting. This case study from Oxfam exemplifies how DCA makes cross-border transactions faster and easier, automates reconciliation processes, and ensures security, without compromising transparency. Most importantly, it serves as a model for a community-based design for a more localized and inclusive aid delivery model.

The first-ever blockchain-powered disaster assistance initiative in the Pacific region was developed by Oxfam, in partnership with companies Sempo and Emerging Impact (formerly Consensys Social Impact). This program was carried out in one of the world's most remote, and disaster prone countries – Vanuatu. The *UnBlocked Cash Project* drives cutting edge technology down to the community level through a participatory approach, localized ownership and delivery, and the leveraging of community-level micro economies and ecosystems to enable inclusion and functionality.

The payment delivery system runs on the Ethereum blockchain and is enabled by the participation of community-level vendors who play a direct role in micro-economic recovery and development. It is a blend of humanitarian assistance, digital financial inclusion, and locally-led blockchain innovation. A main objective of the initiative was to develop an innovative model for deploying a more rapid, efficient, and transparent cash assistance for future disaster relief programs. Oxfam's DCA initiative in disaster-prone Vanuatu provides an interesting case study that other humanitarian agencies can look to when designing digital assistance solutions.

6.5.1 The Problem

Located in the 'ring of fire,' the Pacific Island Vanuatu often experiences extreme weather, including volcanic eruptions, seasonal cyclones, earthquakes, tsunamis, drought, and landslides. There is growing concern about the rising sea-levels, increased frequency of extreme weather events and declines in local food production due to climate change. Humanitarian agencies that work across the 80+ islands in this nation could greatly benefit from a cash aid model that provides instantaneous aid, enables remote oversight and delivery, reduces transaction costs, and offers real-time insights to drive program optimisation.

6.5.2 The Solution

Project UnBlocked Cash, a Cash and Voucher assistance pilot, was launched in May 2019 to connect people in disaster-prone communities with aid more quickly. Prior to launch, Oxfam engaged Sempo and Emerging Impact to conduct a holistic assessment of the time, cost, and quality of digital cash-based transfer programs. The pilot phase put vulnerable people in the position to determine whether DCAe would be useful for them, rather than leaving the choice to humanitarian experts and donors with limited understanding of the local context.

During the community-based planning process, Oxfam learned that smartphones are rare in Vanuatu and that the internet connection can be disrupted for days as a time. Most people lack photo IDs, debit cards, or bank accounts. To fill these gaps, it was clear that the DCA program needed to be robust, bridge connectivity gaps, and ensure digital and financial inclusion.

Community involvement was extended beyond the planning process with a three-week, adaptive training, testing, and design process implemented in villages across Vanuatu. This allowed Oxfam to gather feedback that informed product development and application updates.

The unique solution created based on local feedback was deployed through a strong partnership between Sempo, Oxfam Vanuatu and Emerging Impact.   Sempo, a blockchain-backed cash transfer platform for humanitarian agencies, provided the technical solution, Oxfam Vanuatu implemented the pilot program and Emerging Impact aided in the initial design of the pilot and provided blockchain advisory and communications support. Finally, Emerging Impact evaluated the pilot and made recommendations for future program utilisation and scaling potential.

Target households totaling over 1,200 individuals were provided with a Near Field Communication (NFC) card that could be used to make purchases at the participating community-based vendors. To conduct transactions, shopkeepers were issued a smartphone with the Sempo mobile application installed. The Ethereum blockchain backend was developed to track the flow of digital cash between Oxfam, beneficiaries, and vendors.

The success of this solution lies in its dual distribution process that leverages the benefits of both blockchain technology and digital currency, while also being fully compliant with the regulations that prohibit the use (i.e. trade) of cryptocurrencies. Sempo's solution allows an NGO and its donor to engage in an end-to-end trackable distribution process using a blockchain-based crypto-asset, without any of the crypto-assets being distributed to in-country parties. The digital currency is therefore locked in an escrow and is exchanged into a digital token that is only used for transaction purposes. The tokens can then only be returned and exchanged into a digital currency (and then into local fiat) by registered vendors.

The added value of the program includes:

Time savings:

It took minutes to enroll recipients. Distribution of funds was centralized and simplified.

Choice:

NFC cardholders were able to choose and purchase the items they needed most at one of the 28 registered vendors.

Local Impact:

Smaller shops and stallholders were able to participate as vendors since payments via digital cash were resolved faster than local currency.

Real Time Monitoring:

A live dashboard allowed the Oxfam team to monitor fund allocation, allowing for issues to be troubleshooted and resolved within hours, instead of days.

KYC Compliance:

Vendors were required to provide all necessary documentation to ensure compliance and a vendor agreement was signed with Sempo.

Cost Saving:

The program reduced the costs of distributing funds by 75%, from 20% to 5%. To overcome further transaction costs, the roles of 'super vendors' were established. These vendors had enough cash reserves to cash out smaller vendors and perform a batch cash out process for multiple vendors, reducing bank costs. This solution further benefits the recipient community where vendors can earn a fee that normally would leave the local economy.

6.5.3 The Outcome

The DCA pilot program in Vanuatu proved to be more efficient than cash, cheques, or voucher methods. Community response was also very positive with high community engagement, and reported ease of use (82%), from both the program organizers and the community. Over 98% of beneficiaries reported that they would choose to receive assistance in this way in the future, following a natural disaster. Using the DCA approach, Oxfam Vanuatu was able to demonstrate significant improvements in time, cost and transparency for humanitarian agencies, donors and recipients, including a 96% reduction in onboarding time. User feedback from community stakeholders revealed their preference for this platform compared to other modes of assistance, attributing its ease of use, safety, and choice. The trial resulted in better inclusion at the micro-business level, increased ownership and participation by larger vendors (via a fee-based incentive), and reduced cost in accessing banking infrastructure equivalent to a 60% savings in transaction fees.

Programme outcomes and ongoing discussions between Oxfam and key stakeholders such as the Vanuatu Reserve Bank, three local banks and the Vanuatu Chamber of Commerce have highlighted the relevance of this solution in generating digital financial inclusion. These positive outcomes include the potential to continue to enroll unbanked vendors in the ecosystem, without compromising their cash flow. This was particularly important for women who face greater mobility restrictions compared to men. Pilot feedback was gathered through on-site monitoring and focus groups, indicating a highly positive user experience for both women and men overall.

In the same vein, the solution has since played a central role in helping Oxfam to leapfrog the process of introducing cash assistance to local stakeholders as a humanitarian delivery modality. This is one of the only pilot projects that has achieved true scale - it is now being used by a consortium of 17 local and international NGO, government and private sector partners to deliver over $3 million in cash assistance to nearly 5,000 households and 300+ vendors nationally, reaching a total of 14,000 people by the end of 2020.

7.0 Policy for Digital Cash Assistance

As humanitarian agencies commit to expanding cash assistance interventions, they should also consider the added value of developing DCA programs. These innovative cash interventions have the potential to transform the way cash transfers are delivered, allowing for real-time monitoring, reductions in both time and cost, developing financial inclusion and literacy, and scaling impact. When designing and implementing DCA programs, aid agencies need to consider the several policy recommendations described here.

7.1 Community Involvement

The most successful aid projects are those that involve the community from the planning and design phase through implementation, including the assessment of gender-specific constraints. Only by doing so are humanitarian agencies able to identify and mitigate local challenges and barriers to program access, and assess demand. The Oxfam Vanuatu case study is a prime example of the added value of ensuring the participation of local communities. To ensure the community is adequately involved in the development of a DCA program, I/humanitarian agencies need to take the following steps:

- *Conduct a pilot feasibility study and reach out to local field partners and community leaders early during the pilot scoping phase.*
- *Work with local field partners and community leaders to identify beneficiaries and vendors.*
- *Develop educational collateral for donors, vendors, beneficiaries, and local field partners. Provide all educational collateral in the pilot region's native language.*
- *Schedule time to educate all program stakeholders, particularly those that will need to use the program's tools and resources. Provide all program education in the pilot region's native language.*
- *Leverage community engagement to improve the blockchain/DCA application and platform itself, using a community-based product development and iteration process to ensure local voices are built into the the technology itself.*

7.2 Financial Literacy

Simply implementing a DCA intervention does not ensure local communities will participate. For instance, some may prefer more familiar transfer systems. Therefore, it is key to develop the community's financial knowledge and skills alongside program implementation, ideally over the long-term. By doing so, humanitarian agencies are also empowering communities and contributing towards financial inclusion and the sustainability of digital cash interventions. Additionally, DCA programs have high potential to transform social protection efforts into economically empowering initiatives. DCA programs connect the tools used to disburse and receive digital aid with new forms of e-commerce and financial services, as many emerging economies in which humanitarian aid programs are deployed begin to enter the digital economy.

7.3 Collaboration

Due diligence must be done to ensure the effective collaboration and buy-in from key stakeholders and partners. Aid agencies need to consider the following stakeholders in their DCA program:

- **Community Leaders**

  The active involvement of the community, often through community leaders (or focal persons), is crucial to the success of DCA programs. These individuals are best positioned to identify the unique risks, challenges, and opportunities on the ground. Aid agencies should conduct a mapping exercise of key community leaders and influencers and how they can be integrated into the project from the design stage. This could include religious leaders, local politicians, educators, syndicates, and business leaders. For an inclusive approach female, refugee, and disabled leaders should also be included where appropriate.

- **Custody Agents**

  Digital currency custody is integral in the success of a DCA program, particularly between program deployments, when project funds are not being used. Therefore, it is important to always designate which party will custody the digital currency being disbursed in the DCA program. Oftentimes, the custody agent in a DCA program is the technology firm providing the software that issues digital disbursements to beneficiaries, but this is not always the case. If the agency facilitating the DCA program feels comfortable, it may decide to self-custody all funds in their own digital wallet, or custody funds with a trusted digital currency exchange like Coinbase. However, the latter custody methodologies should not be used if the agency does not have a digital currency custody policy in place detailing transfer protocols for country offices to follow (e.g. how to responsibly and securely custody private keys). If the DCA technology provider does not provide custody of digital currency, and the agency does not have a formal policy in place providing a standardized protocol for country teams to follow, then the agency should contract an advisory or financial firm that specializes in such services for the scope of the pilot.

- **Offramp Agents**

  Vendors participating in the assistance program (i.e. program approved, small businesses that sell resources to program registered beneficiaries) should have the flexibility to either (1) keep the digital currency they have earned from beneficiary customers and use it as they desire, or (2) convert their digital currency to local fiat currency (or USD) and withdraw and transfer their money to their bank account. In the case that they do not have a bank account, vendors should be able to receive cash in exchange for their digital currency on the ground, when available. This may not always be immediately available in an ongoing health crisis, such as in the context of the COVID-19 pandemic, however this scenario is unlikely. In an effort to provide vendors with this choice, I/humanitarian agencies need to establish a "Offramp Agent" that can convert digital currency back into local fiat currency (or USD). Offramp agents could be local digital currency exchanges that the agency has decided to partner with prior to program deployment. It is important to note that the digital currency exchange partner must have currency for the exchange pair between the region's local currency and the stable digital currency being used. Otherwise they will not be able to convert to and from the

program region's fiat currency. In the case that the region does not have a digital currency exchange partner, alternative models, like using a 'Super Vendor" are possible. In the "Super Vendor" model, all smaller vendors can offramp from digital currency to their local currency by going to a larger vendor (the 'Super Vendor') that the agency has partnered with for the expressed purpose of cashing out program vendors. The Super Vendor will then exchange their digital currency, collected from smaller vendors, with either the agency itself or an internationally available liquidity partner (e.g. digital currency exchange or financial institution).

- **Government / Central Banks**

  Leveraging the potential of emerging technologies such as blockchain and digital currencies, requires careful cooperation with central authorities in order to safeguard the solution's compliance. In most jurisdictions worldwide there are no readily available regulations for these frontier technologies. The regulators' approach is either with openness, allowing for innovations to shape the policies (e.g. Uganda), or where blockchain-based innovation is subject to permission. Alternatively, blockchain-based pilots are permitted under the regulator's conditions (known as "regulatory sandboxing"), making regulators actively engaged in these pilot programs. Therefore, humanitarian agencies must be aware of the existing policy strategies of the targeted regions, in order to build strategic partnerships, or not risk or impede existing programming. Depending on the geopolitical context, developing a successful and effective DCA should be in the interest of state authorities. Thus, in scenarios where there is potential for cooperation, humanitarian agencies should attempt to build good standing and relationships with the Central Banks, engaging with them early in the planning process. Considering the increasing popularity of the Central Bank Digital Currencies (CBDC) concept, it is very likely that national banks will play an essential role in the future of DCA programming.

- **Technology Provider**

  Aid agencies will need to partner with technology providers to implement DCA programs. These providers support the development, implementation, and follow-up of the technology required, such as mobile applications for vendors or the blockchain technology itself. Prior to publishing a call for proposals for technology, a proper analysis of the feasibility and community feedback of technological solutions needs to be conducted. Once aid agencies have identified the technology that is most appropriate for the local context, they should recruit providers with a strong reputation and background in delivering such technology, including previous experience in the technology's use for humanitarian purposes. Additionally, all technology providers should be audited with the Product Capability Assessment prior to being awarded the RFP contract. Specifically, the agency should request a live test of the technology provider's product to ensure it meets the minimal program operational requirements.

- **Consultants, Pilot Managers**

  Introducing new technologies and embedding DCA solutions into the existing cash transfers programming involves a great deal of managerial work including new stakeholders and knowledge, new processes, and operations. humanitarian agencies will benefit greatly from working with consultants who can guide them through the process of learning new technologies, and through the engagement with different organizational cultures. In addition to expert advisory, humanitarian agencies should seek operational support to manage pilots. This can be conducted by individuals or companies (i.e. consultants) that can bridge the capabilities of solution providers with the needs of the humanitarian agencies and its beneficiaries.

- **Field Partners**

  By including implementation partners such as community organisations, local NGOs and local businesses and governments in the DCA program planning, aid agencies can leverage their resources, networks, and experience for greater program impact. It is recommended that aid agencies analyze current partnerships and map non-partner NGO actors, including grassroots, and local humanitarian agencies, to include the most relevant organizations in the design, implementation, and monitoring of the DCA program. Important factors to consider when analyzing NGO actors include: (1) reputation with local communities; (2) access to vulnerable, hard to reach households; (3) experience in cash assistance programs; (4) risk aversion towards new technology; and (5) financial and human resources and knowledge that can be leveraged upon.

7.4 Tools

There is an array of technology that can be implemented in DCA programs. Project managers will need to carefully consider which is the most ideal for their purposes. This process must involve community members to ensure feasibility and smooth operationalization of the technology within the local context. Audits should also be conducted to ensure that technology is delivering the intended results and whether any new technology can fill any existing gaps in service. Some categories of technology to be considered include:

- **Transaction Ledger (Blockchain)**

  The blockchain serves as a public ledger where a series of transactions are recorded.[36] These are used to verify and document receipts of DCA programs and for program monitoring and evaluation. They differ in terms of transaction costs and speed.

- **Digital Wallets**

  Recipients store funds, make transactions, and access payment history through their digital wallet. This wallet is often in the form of a mobile application on smartphones or unstructured supplementary service data on feature phones.

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[36] Blockchains can be public (e.g. Ethereum, Celo) but also private (IBM's Hyperledger). This report discusses the use of public blockchains as the appropriate type enabling greater public transparency.

- **NFC Cards**

  Near Field Communication (NFC) technology enables data to be exchanged between devices. Chip-enabled NFC cards allow users to make contactless transactions while NFC-enabled mobile phones or POS terminals allow businesses to receive and store payments.

- **Mojaloop**

  It is the world's first open source platform for interoperability in a real-time payment network, which can help unbanked people access digital financial services. It connects all customers, merchants, banks, and other financial providers within a country's economy for seamless, low-cost transactions.

- **Offline Wallets**

  Serving the same purpose as digital wallets, offline wallets overcome the challenge of limited internet connections. With offline wallets, digital currency can be stored and accessed on desktops, in hardware such as USB sticks, in paper form or as physical coins. The added advantage of these wallet forms includes greater security, since they are not connected to the internet, and the ability to recover lost or stolen passwords.

7.5 Compliance

While digital cash tends to be highly regulated, implementing agencies should make compliance a priority to lessen risks. A holistic analysis of tax regulation of both the implementing and donor target regions should be conducted as these regulations vary by country, including the licenses required, KYC, and AML legislation. Home based tax regulations will depend on where custody providers, technology, and liquidity providers are based. An extensive mapping and analysis of the regulations for these locations should be conducted as part of feasibility studies.

Therefore, human resources will need to be fully knowledgeable in applicable regulations to implement these measures appropriately.

KYC (Know Your Customer)

DCA vendors will need to comply with the KYC regulation. Specific compliance measures vary depending on the home base, so aid agencies should conduct a detailed mapping of regulations. At a very minimum, aid agencies will most likely be required to collect data on beneficiaries' name, date of birth, address and identification number. Customer due diligence will also need to be performed to determine the trustworthiness of recipients. The level of due diligence required varies depending on the risks. Ongoing monitoring should also be performed as part of KYC's risk mitigation.

AML (Anti–Money Laundering)

AML regulations will also vary by country, however the Financial Action Task Force has a list of globally endorsed standards against money laundering and terrorist financing. These recommendations are divided by sector and those developed for the nonprofit and banking sector would be good references for agencies developing DCA programs. Likewise, national regulations will need to be analyzed according to the home base of cash assistance activities.

7.6 Choice of digital dollar

With each type of digital dollar coming with its own risks, opportunities and challenges, a risk assessment should be conducted to inform which type of digital dollar will be used for the assistance program. Naturally, risk is subjective and so agencies will also need to consider the local economic, political and social context. The choice of digital dollar will also inform the resources required for auditing and accounting. Note that most digital dollars are pegged to the USD, and it is essential to ensure that there is enough regional access to liquidity for program participants to offramp from the digital dollar chosen. To this end, the aid agency will need to ensure there are liquidity partners that can quickly convert the chosen digital dollar to and from the pilot region's fiat currency. A summary of this risk assessment is provided in Table 4.0.

Table 4.0: Digital Dollar Risk Assessment

	Price volatility	Liquidity	Centralized control
Fiat–Collateralized digital dollars	**Moderately low risk** – Fixed face value in fiat currency but is susceptible to inflation alongside the linked currency.	**Low risk** – Can be exchanged for fiat reserves.	**High risk** – Highly centralized therefore more at risk for hacking and poor monetary policy.
Crypto–Collateralized digital dollars	**Medium** – Value based on digital currencies, which are extremely volatile and could leave the digital dollar under collateralized.	**Moderately low risk** – Can be easily and quickly liquidated if the digital currencies used to collateralize the digital dollar have high market capitalizations.	**Low risk** – No single entity controlling currency reserves means less risk for hacking.
Non–Collateralized (algorithmic) digital dollars	**Low risk** – Value maintained by algorithm–controlled monetary policy.	**Medium risk** – Provided that non–collateralized digital dollars are not backed by other currency, it is crucial that such digital assets be listed across major exchanges to ensure there are liquidity pairs with this type of digital currency.	**Moderately low risk** – Most decentralized digital means it is less at risk for hacking. However, it is crucial to understand the function of the digital dollars' algorithmic protocol to understand how decentralized it actually is. For example, if the protocol gives the creator the ability to undermine the economic system completely, or unfairly control the digital currency itself.

7.7 Organizational change

Humanitarian agency staff may be reluctant to back digital cash programs given its relative novelty. The sector at large rarely keeps pace with global innovation, and is often slow to change existing legacy systems[37]. Furthermore, existing organizational policies, procedures, and culture may also impede an NGO's move towards digital cash. A streamlined digital cash policy and vision coupled with capacity building and human resources are necessary to develop sustainable and impactful DCA programming.

7.8 Monitoring, Evaluation and Learning

Humanitarian agencies should not overlook the positive spillovers of DCA interventions, including timely and ongoing access to a wealth of new data. This data must be used to inform programming across many sectors.   In addition, the real-time nature of data allows for rapid production of monitoring reports demonstrating program impact via transaction tracing, including the categorisation of beneficiary expenditure by sector, and disaggregation by gender, age, and disability, enabling rapid, low cost reporting in line with SPHERE standards. Transaction and fraud monitoring can also result in secondary reduction of costs related to field visits to gather the same data, better financial oversight to catch fraudulent activity, and improved troubleshooting by monitoring if beneficiary entitlements are being used - and if not, resolving why.

7.9 Consent and Privacy

Recipients of DCA programs should give consent to data collection and use (CALP). This consent should be freely given, meaningful, and informed. Recipients must fully understand why they are sharing data, what is being done with it, who has access to it and so on. Privacy protections related to the association of personal and sensitive data on the blockchain is agile, and can be protected in two ways - either by storing personal data off-chain, and only storing transaction data on the network, or by utilizing the complex cryptographic information of information "on-chain", which as yet is significantly less prone to hacking that traditional database networks.

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[37] *The Two Worlds of Humanitarian Innovation,* Refugee Studies Centre, Working Series Paper N.94, 2013. Accessed at: https://reliefweb.int/sites/reliefweb.int/files/resources/RSCworkingpaper94.pdf

8.0 Conclusion

In order to scale existing social protection programs and meet the needs of under-resourced communities globally, Digital Cash Assistance is a highly relevant solution that can serve to boost the delivery power of humanitarian and development agencies delivering cash.. Since DCA disburses digital currency, rather than physical vouchers or checks, it is an opportunity to exponentially decrease operational costs and the increase the size, speed and availability of assistance programs. By leveraging blockchain technology, I/ humanitarian agencies can disburse aid instantaneously while providing 100% transparency to donors.

The Aid sector is rarely engaged in the process of shaping emerging technologies, particularly in the ways that they are used in emerging markets and affected communities. Agencies yield a specialised area of expertise, and often have a footprint in areas of the world that others do not operate in, do not have access to, or simply do not prioritize or include when new technologies are developed. This paper seeks to argue that there is now an opportunity to be seized - to deliver better, and more cost effectively - and an inherent responsibility for agencies to enhance outreach and community inclusion as blockchain technology and adoption continues to expand over time.

To be able to provide aid through digital currency, policy development, product design and iteration, and responsible field piloting is required. This brief has provided a comparative overview of the current cash assistance policies leveraged by major humanitarian agencies, and recommended policies humanitarian agencies should leverage when piloting and scaling major DCA programs. It is strongly believed that a strong foundation for the development and iteration of the DCA methodology will save hundreds of thousands, if not millions of lives.

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