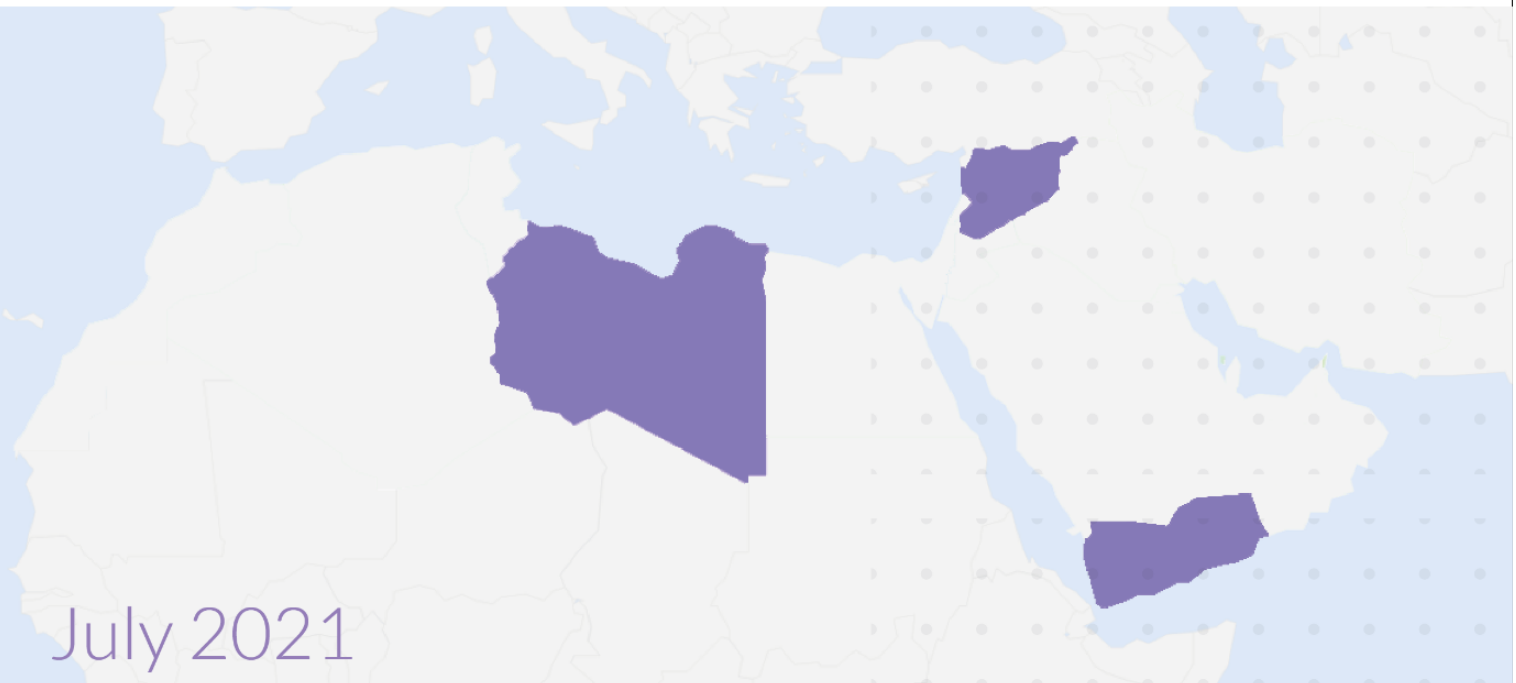
INNOVATION FOR CHANGE
MIDDLE EAST & NORTH AFRICA

Digital Currencies, Blockchain and the Civic Sector in the MENA Region

Syria, Libya, & Yemen



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1. INTRODUCTION AND RESEARCH SCOPE

1.1. Introduction

This research was commissioned by the Innovation for Change (I4C) network MENA Hub and conducted by Shurouq Qawariq, independent researcher, and Eric Asmar and Oumel Ghit Guelzim, of happy smala.

The Innovation for Change (I4C) network is a global network of people and organizations who connect, partner, and learn together to find positive approaches to overcome barriers to closing civic space and restrictions to our basic freedoms of assembly, association, and speech. I4C is a community-led network inspired by ideas, methods, and technologies from across sectors to create solutions that drive positive social change. I4C works together on advocacy, research, network building, education and training, fundraising, digital literacy, and technology development.

The I4C network consists of seven connected regional hubs that are growing in both physical and online spaces across Africa, Central Asia, East Asia, Latin America, and the Caribbean, the Middle East and North Africa (MENA), South Asia and the Pacific.

In January 2019, the I4C MENA Hub team published the first mapping and assessments of financial technology, crowdfunding and digital currencies in relatively open spaces in the region: Tunisia, Jordan, Morocco, and Lebanon. The primary purpose of this research was to provide a critical analysis of the potential of digital currencies and blockchain for the "social sector," with a specific emphasis on the MENA region. In December 2019, this research was expanded to cover countries in closed spaces within the MENA region, namely Algeria, Egypt, Occupied Palestinian Territory, and the Gulf Cooperation Council (GCC) countries, and to assess the feasibility, potential, and challenges of digital currency projects in these countries, as well as the legal frameworks and actors that are influencing the ecosystem.

This report is part of phase 3 of the research, which will map out the different literature and media resources available to study the identified variables of financial technology, specifically digital currencies and blockchain technology, and its potential for civil society development in the three countries under focus: Syria, Libya, & Yemen. The main aim of this research is to draw an accurate quantitative view of the impact of cultural, macro, and socio-economic factors on the usage of digital currencies (specifically digital payments and blockchain technology) for the benefit of civil society and identify the differences in the impact of these factors in different countries.

In addition to recommendations for the I4C MENA Hub and its members, we have drafted a functional concept for a solution that can contribute to overcoming barriers to funding for CSOs in conflict zones. For the purposes of this research, the term "digital currencies" serves as a collective term that includes cryptocurrencies, digital and mobile payment solutions, digital money transfer solutions, crowdfunding platforms, and other financial technology or "fintech" solutions, and any mention thereof implies all of the above. Any mention of a more specific product or technology is intended to reference only that term.

1.2. Research Questions

In order to investigate the digital currency and crowdfunding ecosystem in MENA as a viable funding option for civil society, the research will be guided by the following research questions, derived from the questions from the two previous phases of research:

Research question 1: What is the emerging ecosystem of financial technology in and around MENA conflict zones - specifically Syria, Yemen, and Libya -and what is the role of blockchain solutions in this ecosystem? What is the political, legal, sociological, and technological landscape of financial technology in Syria, Yemen, and Libya?

Research question 2: What are some of the civic space projects that financial technology (especially blockchain) is making possible in these conflict zones?
Research question 3: What opportunities do fintech, specifically blockchain, present for CSOs and HRDs?

1.3. Methodology

1.3.1. *Stage 1: Data Collection*

This stage mapped out the different literature and media resources available to study the identified variables of financial technology and blockchain technology and civil society in the three countries under focus: Syria, Libya, & Yemen, following the research questions and variables studied in the previous research (Crowdfunding and Digital Currencies in the MENA).
The main aim of this stage is to draw an accurate quantitative view of the impact of cultural, macro, and socio-economic factors on the usage of financial technology (specifically blockchain\ and digital currencies) for the benefit of civil society and identify the differences in the impact of these factors in different countries.

1.3.2. *Stage 2: Interviews/qualitative analysis:*

After reviewing available resources on the subject at hand and analyzing the information, we collaborated with the I4C MENA Hub team to identify and select a number of stakeholders operating in Syria, Libya, & Yemen to participate in online focus groups. The selected stakeholders are as follows:

1. Civil Society Organizations (CSOs) and international humanitarian/development organizations
2. Technologists, particularly blockchain and financial technology specialists
3. Human Rights Defenders (HRDs) operating in the target countries as well as members of the diaspora.

Four online focus groups were held in February and March 2021 to fill the gaps of the research, notably to better understand needs on the ground and identify existing best practices.

+ The Syria focus group included 3 activists from LGBTQI support CSO operating in Lebanon.
+ The Yemen focus group included 7 participants from CSOs and activists located in both the south and north of Yemen.…
+ The Libya focus group included 8 participants from the CSO and tech-active communities.
+ The final technologists focus group included 5 cryptocurrency, economics, and humanitarian work experts from around the MENA region and Europe.

1.3.3. *Stage 3: Opportunity mapping and prototyping:*

Following the data collection and focus groups, we examined the relationship between existing short and long-term socioeconomic factors that can support or hinder digital currency expansion and to identify opportunities for HRDs, donors, CSOs and aid organizations in the three target countries.

The technologist focus group in particular provided insights from other countries and humanitarian contexts to support possible methods and short-term solutions to facilitate the integration of digital payment systems in local civil society and lead us to a series of recommendations as to how civil society can maneuver and progress in their utilization of these tools despite existing barriers.

Finally, we put forward a functional proposal for a prototype of a blockchain solution to service organizations. The proposal includes priority target groups, key stakeholders, product description with a product map, and a proposed implementation plan.

1.3.4. *Stage 4: Closeout*

After the completion of the research, a webinar was organized to present the results of the research, validate the prototyping recommendations, and gather feedback from the I4C community.

2. RESULTS

All three of the countries of focus of this research have been active conflict zones for over 6 years (10, in the cases of Syria and Libya). All three countries are "Closed" civic spaces, according to the CIVICUS Monitor, and have been since the Monitor's inception in 2016. As a result, the opportunities for CSOs or startups are significantly more limited than in other countries covered by previous phases of this research. Below we aim to explore the ecosystem of actors that are typically stakeholders of digital currency solutions, the regulatory frameworks in place, and the specific challenges faced by local CSOs to secure funding for their activities. Finally, we highlight case studies from each country as well as others facing similar constraints.

2.1. Syria

As the Syrian catastrophe unfolds into its tenth year, the humanitarian needs in Syria continue to be severe. The Syrian reality is civil unrest, displacement, daily violence, danger, and no horizon of ending or stability. According to OCHA estimations, 11.1 million people in Syria need humanitarian assistance. The prolonged crisis has created five and a half million refugees and displaced a further 6 million Syrians inside Syria. Moreover, around 80% of the population live below the poverty line.

> "The destruction of civilian infrastructure, depleted savings and limited economic opportunities have forced many to resort to harmful coping strategies. The result is extreme vulnerability. Those particularly at risk are children, pregnant and lactating women, people with disabilities, the elderly and other groups or individuals with specific needs or diminished coping mechanisms." OCHA, 2021[1]

The resulting economic situation, and financial inclusion, are dire. In 2011, only 23.25% of the population of Syria had access to a bank account (no newer statistics were available.) In 2020, mobile penetration stood at 83%, internet penetration at 47%, and social media penetration at 35%.

2.1.1. *The Syrian Ecosystem*

Recently, the multitude of financial restrictions and sanctions and the challenging and expensive environment on Syria has made channeling money into the country very difficult. The banking sector is barely operational following the mass closure of banks in Syria & sanctions environment and extortionate exchange rate fees charged by Money Transfer Organizations (MTOs), has led to Informal Value Transfer Systems (IVTS), such as *Hawala* agents being used as the principal way to exchange money. For instance, using a *Hawala* agent is the most accessible way for Syrians to receive remittances. *Hawala* agents are playing a leading role in money transfers, outside of government control and regulations. The high risk *Hawala* agents are often involved in international money laundering, which makes banks and MTOs particularly wary of money transfers into Syria as they need to mitigate the risks of heavy fines from regulators or potential reputational damage to their organizations. Agencies exploring options for cash-based programming in areas outside government control need to develop extended agent assessment, due diligence, and monitoring routines to mitigate against the considerable risks of using an unregulated financial service in a conflict environment.

Syria received USD$530 million in remittances in 2010 but since then, data on remittances has been unreliable due to economic sanctions on the country. As direct bank transfers to Syria banks remain illegal in many countries, the principal way for most people to transfer money to Syria officially is an international money wiring service. According to the World Bank, $1.6 billion worth of remittances flow into Syria every year, comprising almost 15 percent of nominal GDP, according to the latest estimates adjusted to today's black market exchange rate. Moreover, there is a total lack of financial access in the most damaged areas. In fact, the distance to money transfer operators is considered the biggest hindrance to Syrians receiving remittances, especially in Southern Syria.

[1] https://www.unocha.org/syrian-arab-republic/about-ocha-syria

Thus, civilians are paying smugglers to cross the Syria/Turkey border and back to receive Syrian pounds. Although NGOs, and especially local NGOs, engaged in the Syria response are believed to have been making use of formal and informal money transfer systems, very little documentation is available. This is probably because such systems have been used for operational rather than Cash Transfer Programming needs and agencies' operational modalities are much less reported than project modalities and achievements. There is also considerable instinctive caution about sharing information on activities in Syria.

Given the above-mentioned overview of the status of financial transfers within and into Syria, it is vital to understand the traditional financial system of Syria, in order to look for opportunities within the formal sector for solutions that aid civil society to become more efficient.

2.1.1.1. The Syrian Banking Sector

The banking sector for many years has been majority owned and operated by the public sector through several banks of different types. The banking sector in Syria currently consists of 15 banks (Islamic, Conventional, Investment and micro-finance banks) which are subject to the supervision and guidance of the Central Bank of Syria (CBS). Private Banks, like their state-owned counterparts, report to the CBS. In the public sector, each bank is regulated by a separate decree such as Legislative Decree no. 35 of 2006 regulating the commercial bank of Syria.

Given the geopolitical context and the fragmentation of governance that resulted from the civil war since 2011, the financial black market is strong and currently represents a large proportion of the Syrian economy as of today. Stringent measures taken by Syrian government to crack down on the black market in early 2020 include:

+ The Presidential Decree no. 54 of 2013 and its amendment no. 3 of 2020[2] have banned the use of any currency other than the Syrian Pound.
+ Money exchange houses are also under scrutiny, with the Syrian government cracking down on those accused of price gouging.
+ Local Syrian media reports the government has shut down several exchange offices accused of driving up the exchange rate at the black market.

2.1.2. *Syrian Regulatory Framework*

Laws governing licenses for financial service companies were designed with traditional banks in mind, and few if any measures that include measures that can include digital currencies. Once a start-up (be it local or international) begins to offer financial services in Syria, it is likely operating in a legal grey zone. If in doubt, it should apply for the license – which costs $1-$3 million in most countries (the cost for a Syrian company is unclear). The start-up would require a significant upfront investment before being able to reach its clients. We were unable to identify cases specific to Syria, however many start-ups in the region seek partnerships with banks early-on in order to avoid the significant costs and regulatory hurdles involved in acquiring a license. While this approach often suits the start-ups, many entrepreneurs would benefit from a regulatory regime that adjusts to the new fintech reality.

[2] Currency Transaction Law Legislative Decree 54/2013 Promulgated by President Bashar Al-Assad on August 4, 2013
RELEVANT PROVISIONS
Criminalizes the sale of goods priced in any currency other than the Syrian Pound in order to increase demand for the local currency.

2.1.2.1. Microfinance in Syria

Syria's General Microfinance Decree no. 15/2007[3] gives permission to the Credit and Monetary Council (CMC) to license Social Financial Banking Institutions (SFBIs) which will provide different financial services lending and deposit-taking in addition to the provision of other financial and banking services to the poor. Moreover, it is possible to establish a for-profit entity which solely provides microlending as there is no legal requirement that obliges a permission to lend. This entity can be registered as a company according to the Commerce Law. It falls under the jurisdiction of the Ministry of Economy and Trade with minimal reporting requirements.

The social objectives of the institutions pertain to the overall aim of providing financial services to the low-income population that microfinance institutions typically serve. Importantly, Social Financial Banking Institutions must not necessarily be non-profit or charitable entities. Neither the Decree nor its executive instructions stipulate a maximum amount in Syrian Pound (SYP) or other currencies to qualify as a microfinance loan. The General Microfinance Decree is Syria's first and only law exclusively dedicated to microfinance. While laws and regulations enacted prior to 2007 do not focus specifically on microfinance, the Private Banking Law and the Islamic Banking Law do allow licensed private and Islamic banks to carry out the full range of banking activities (i.e., including microfinance). The CMC establishes the rules and prudential regulations necessary for continuity and soundness of the SFBIs' operations. Reporting requirements set by executive instructions stipulate an audited balance sheet and a profit and loss statement should be submitted to the Central Bank according to the International Accounting Standards. Although prudential regulations were not stated by the instructions, CMC adopts the Basel principles and standards that govern solvency ratio, liquidity ratios, required reserve, capital adequacy ratio, credit risk concentration ratios and corporate governance to all licensed banks in Syria.

2.1.2.2. Social Financial Banking Institutions (SFBIs) in Syria

The Commerce Law includes five types of commercial companies (general partnership, implied trust, limited partnership, limited liability company, and Société Anonyme joint stock company), but only the S.A. joint stock company (JSC) would be an appropriate legal form for a deposit-taking microfinance institution (MFI). Executive instructions specify that an SFBI must be formed as a S.A. JSC. (Noting that one could form a limited liability company to engage in microlending only.)
Licensed SFBIs may be established by Syrian or foreign institutions (including international NGOs). There are no limitations on foreign ownership in SFBIs, although they must obtain prior approval from the Ministers Cabinet. Limitations on the ability of SFBIs to establish market interest rates that allow them to serve their clients sustainably is a significant barrier to their viability, as well as the potential of the Microfinance Decree to accomplish its goal of expanded access to poor and unbanked Syrians.

2.1.2.3. Civil Society in Syria

Microfinance in Syria has largely been the domain of a few NGOs and UN related programs operating under special government decrees. NGOs, particularly the few that have provided microloans, have operated under the law known as the Associations and Private Institutions Law.[4] The law identifies an NGO as a group of persons, whether natural or juridical, with non-profit objectives. It is placed under the supervision of the Ministry of Social Affairs and Labour jurisdiction. NGOs can be registered after fulfilling the inception requirements

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[3] Microfinance Law
Legislative Decree 15/2007 Promulgated by President Bashar Al-Assad on February 19, 2007
RELEVANT PROVISIONS
- Microfinance institutions are subject to certain provisions of Law 28/2001.
- These entities are more concerned with providing finance and other banking and insurance services to low-income groups that are unable to obtain loans from conventional banks.
- The minimum capital requirements are set at SYP 250 million.

RELATED LEGISLATION
- To be read in accordance with the relevant provisions contained in Law 28/2001.

[4] Syria: CGAP (Consultative Group to Assist the Poor), Policy and Regulatory Framework for Microfinance in Syria, January 2008

stipulated by law. The law does not state any restrictions with regards to foreign ownership. The law is also silent on the provision of credit implying that there is no permission to lend requirement. No entity in Syria is allowed to mobilize deposits outside of the purview and supervision of the Central Bank. This applies to NGOs, which are forbidden to accept deposits and provide any financial services besides microloans. The law also clearly stipulates that all NGOs require preapproval for any funds transferred into or out of Syria.

Syrian law does not permit international NGOs to operate through a representative office, thus no international NGOs have been able to set up microfinance operations in the country without registering as a local NGO the Associations and Private Institutions Law. This law gave the Ministry of Social Affairs and Labor, if found necessary, the authority to merge two or more NGOs into one entity, without necessarily receiving their consent, of similar activities and objectives. Finally, the Microfinance Decree in no way affects the operation of NGOs engaged in microfinance as they have the choice of offering microfinance services under their existing NGO license rather than seeking a new microfinance license, and still be regulated as an under NGO charter. NGOs are not allowed to charge an interest rate above the maximum of 9 percent stipulated by the Civil Code, which may prevent sustainability of their microlending programs. NGOs must obtain pre-approval to accept foreign aid and donations from the competent government authority, the identity of which would depend on the objectives of the NGO. While this is not necessarily an obstacle, it is a requirement that may be time consuming for both the government and the microfinance lenders.

Based on the primary research, it is uncommon for new entities to seek such approval and is challenging for the civil sector to receive such an approval, especially for activism related mandates.[5]

According to research respondents, donors are beginning to fund projects in Syria now, especially with the return of some of the refugee population. The biggest challenges they face in fundraising is finding funding, receiving funding, local procurement procedures, and distributing funding to beneficiaries. Until now, most of the CSOs we have consulted channel their funds through Lebanon. It is very difficult for CSOs to disburse funds to beneficiaries in Syria, especially when activists are working on sensitive topics, such as Lesbian Gay Bisexual and Transgender (LGBT)issues. Currently, the only means for these CSOs to bring donor funds into Syria are informal (cash), and this activity can threaten the lives of activists. Other than transferring cash across the borders in suitcases, cash transfer services such as Western Union and hawalas are functional to transfer money up to a certain amount, but the transfers are at times blocked for larger sums. Moreover, sensitive topics can be dangerous to Syrian activists within Lebanon, where some activists have been blacklisted for organizing or attending LGBT rights events, such as the Pride organized in 2018 outside of Beirut, which was shut down by local authorities.[6] While current informal cash transfer methods are functional, they are dependent on third parties (hawalas or Western Union-type companies), and on often on Lebanese CSOs who are under increasing pressure due to the current political and economic crisis in the country.

2.1.2.4. Cryptocurrency in Syria

Investigating the legal treatment of cryptocurrencies under the present Syrian legislation highlights the serious loophole in the legal system's dealing with cryptocurrencies and the associated activities. There is no specific law or provisions that deal with, define, or regulate cryptocurrency and blockchain activities in Syria. Moreover, the position of the government and the legal system is not clear on the extent of the use and exchange of these virtual currencies. Leaving this decentralized cryptographic system unregulated can leave the door wide open for illicit activity with no accountability. In essence, Crypto-related activities are not allowed

[5] ibid

[6] https://www.nytimes.com/2018/05/16/world/middleeast/lebanon-beirut-gay-pride.html

or listed under Syrian laws and are not considered legal or illegal by any law or authority. There was one statement from the government stating that investing in cryptocurrencies is not authorized at all as it would facilitate the transfer of money without restriction or supervision. Most importantly, there are no provisions on monitoring or identifying illegal activities committed by using cryptocurrencies under any law and having or using cryptocurrency does not constitute a crime under the Syrian criminal law.

2.1.3. *Crowdfunding in Syria*

There are no regulatory frameworks for crowdfunding in Syria, and no governmental mentions of the term of its plans. There are no startups or companies in Syria facilitating online crowdfunding, as far as the research team gathered from formal and informal resources. There is very little literature available or scholarly studies on the potential for crowdfunding as alternative funding mechanisms for CSOs or for Entrepreneurs and SMEs. Even the Syrian Center for Media and Freedom of Expression has no sources on the topic.

However, the internet has seen a plethora of crowdfunding campaigns aiming at Syrians in the past ten years, raising millions of dollars for humanitarian appeals.
Syria has been majorly present in international crowdfunding campaigns for the past 10 years, mostly for refugee crisis appeals, food aid, medical aid, etc. More recently, a few recent crowdfunding projects for culture for Syria on Zoomaal, the Middle East's leading crowdfunding platforms.[7]

2.1.4. *Case Study: IRIS Technology in Za'atari Refugee Camps*

The World Food Programme (WFP) in partnership with the UN High Commissioner for Refugees (UNHCR) jointly introduced an iris scan payment system in Jordan's Za'atari refugee camp in 2018, allowing 76,000 Syrian refugees to purchase food from camp supermarkets by using a scan of their eyes instead of cash, vouchers, or e-cards. This program uses biometric registration data from UNHCR and blockchain technology to facilitate cash-transfer and payments within the camp. The technology is claimed to have security and convenience benefits. The introduction of an iris-based identity scan has the potential to allow refugees to carry their identity beyond their shopping experience, and carry their identity to other countries to help with education, record keeping, medical records etc. The system was developed in partnership with the private sector, including the tech firm IrisGuard, Jordan Ahli Bank, and Middle East Payment Services. Once a shopper has their iris scanned, the system communicates with UNHCR's registration database to confirm the identity of the refugee, checks the financial balance with the financial services firms and then confirms the purchase and provides a receipt.

An important issue raised by the tech focus group was the questions of individual data rights. While the retina scan proved a practical method of identifying users, the residents of the camp did not have the option to opt out of sharing their biometric data if they wished to continue receiving humanitarian assistance. This point touches on complex subjects outside of the scope of this research, but the ownership and protection of sensitive personal data such as biometrics should be taken into account when designing and deploying these types of solutions.

[7] Zoomal.com

2.1.5. *Case Study: Red Rose*

Red rose is an international service provider working in the humanitarian and card payments sectors in the past 30 years. It tailors its solutions which are based on a web-based system to the humanitarian sector. They have a beneficiary registration system and real time monitoring and evaluation reporting. Red Rose provides tailored solutions for each humanitarian case. Their services include:

Commodity E-Voucher:

+ Designed and deployed within 7 days
+ Supports the implementation of e-wallets and can be scaled up
+ Safe and secure transactions that cannot be duplicated even in an offline environment

Cash Distributions:

+ Distribution list and barcode: each beneficiary is assigned two unique barcodes, one for their profile and one as a proxy distribution voucher
+ E-voucher: beneficiaries are topped up with a cash value which can be redeemed from agents and vendors
+ Paper voucher: the vouchers can be printed on A4 paper using an office printer and include 9 security features. Can be redeemable at designated vendors
+ Prepaid card: can be topped up with up to $3000 annually, redeemable at points of sales and ATM services.
+ SMS Mobile money: directly integrated into mobile network service providers infrastructure and using built SMS messages. Needs to have an existing infrastructure of mobile money service providers to function properly.

Six NGOs use Red Rose in Syria: Azaz, Masakka, Tartus, Latakia, Aleppo, Homs, Damascus. One NGO has also deployed it in Lebanon. One of the first large-scale Humanitarian project implementations through Red Rose took place between 2015 and 2016 in Syria, where Relief International Turkey implemented a cross-border cash project targeting 2352 households in the north of Syria. The project's aim was to support WASH activities in Syria, which was implemented through PIN protected e-vouchers produced through the Red Rose platform. The Red Rose ONECard cash payment system was responsible for management, monitoring and transfers of the cash payments that went through Relief international - enabled by a grant from the United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA), enabling the target households to receive essential WASH services, including hygiene and water supply products.

The majority of staff and beneficiary feedback on the ONEcard system was positive. The reporting and payment systems were efficient and successfully implemented, with Red Rose' system deemed reliable and accurate in reconciliation of accounts. Moreover, the project led to the internal belief at Relief International Turkey that digitization of vouchers has a positive impact on project outcomes.

2.2. Libya

The Libyan civil war has caused persisting political instability, insecurity, and a failed governance structure since its onset in 2011. The civil war has led to around a million people in need of humanitarian assistance in Libya, half of whom are Libyan while the other half are refugees and transiting migrants from other countries. The humanitarian crisis has had significant impact on the security and livelihoods of internally displaced persons, returnees, and refugees and migrants, as well as the non-displaced and host communities, According to OCHA, the most pressing humanitarian needs in Libya include protection, healthcare and education, safe drinking water, and access to commodities. The vulnerability of these populations can be life threatening.[8]

Of the three countries studied in this phase of research, Libya has the highest rates of financial and technological inclusion. In 2017, 65, 67% of the population had a bank account. In 2020 mobile penetration rate reached 167%, internet and social media penetration rates reached 75% respectively.

2.2.1. *Ecosystem*

The Central Bank of Libya (CBL) serves as the regulator of the banking sector but is also the shareholder of public banks. As of the end of 2020, there were 19 banks in Libya, 5 of which are owned by CBL. These public banks have near complete control over the sector, representing approximately 90 percent of deposits. This creates noticeable conflicts of interest, including potential forbearance to the benefit of state-owned banks, as well as granting credit to well-connected beneficiaries. The conflict has led to a split central bank with two competing central banks in Tripoli and Bayda. The majority of Libyan banks are headquartered in the West and are under the authority of CBL Tripoli. Banks headquartered in the East control about a third of banking activity and are under the authority of the central bank in Bayda.

2.2.1.1. Microfinance in Libya

Libya's first microfinance firm recently opened. Namaa Tamweel was launched as a partnership between Assaray Bank (ATIB) and Expertise France, with branches in Tripoli and Benghazi. Namaa Tamweel will not only offer financing, but business support services to its clients. The company is a fully owned subsidiary of ATIB and therefore subject to CBL Tripoli's regulations and supervision. The project will offer financing from LYD 5,000 to 25,000 for up to 2 years.

2.2.1.2. Fintech in Libya

The Libyan fintech sector is very recent with a few initial projects that appear promising. Fintech Select Ltd. has recently entered a joint venture with a Libyan company Raseed, which provides software solutions to banks, telecom companies and utility service providers in Libya.

The joint venture aims to provide a full suite of financial payment services in the Libyan marketplace, including prepaid cards, e-wallet services, and billing, mobile, online, and international payments. The project will initially focus on providing new payment options to the government, banks, telecom companies, and other large companies and institutions.

2.2.2. *Regulatory Framework*

Despite some efforts dating back to 2008-2010, Libya lacks a legal framework to govern electronic transactions or e-signatures, as well as several other factors of digital growth (data protection and online privacy, cybercrime prevention, online consumer protection, etc.).

CBL has filled some of this gap in the form of circulars regarding payment cards, electronic and mobile payments, and mobile banking, which has allowed some companies to launch some new products and services. However, these banks, telecom companies, and other fintech providers must acquire a license from each of the two CBLs to operate in electronic payments. There is also

[8] https://www.unocha.org/libya/about-ocha-libya

no regulation detailing how or whether telecom companies would or should share information with the CBL. Currently CBL does not oversee telephone transfers that are within a bank.
Despite these regulatory hurdles, mobile banking and electronic payments are rapidly growing in Libya, in part due to the liquidity crisis resulting from the conflict. Some companies have implemented e-billing solutions and peer-to-peer money transfer app based on mobile wallets.
Notable among these are Watba, a money transfer service for customers of the Bank of Commerce and Development, and Sadad, which provides similar services tied to the client's phone number, rather than a bank account.

Mobile and smartphone penetration is high, particularly among youth and in concentrated population centers in a few cities along the coast. However, internet connectivity is low, as is the percentage of the population using mobile banking and payment services. This is largely due to poor telecom infrastructure and intermittent power outages.

2.2.2.1. Civil Society in Libya

Libya does not currently have a formal legal framework to regulate the activities of civil society. However, there are implicit red lines that dictate the limit of their scope, such as not threatening Libya's national security, or avoiding sectarian rhetoric.

The current law on associations[9] allows CSOs to develop their activities freely, and without interference by the authorities unless by judicial decision (Art. 8). Associations must respect 'democracy, civic values, equality, human rights, transparency, the fight against corruption, national laws and international conventions' (Art. 1). Article 5 bans any distinction based on race, gender, language, or ethnical or tribal affiliation. Some interpret this article as excluding the possibility of developing projects based on communitarian identities or cleavages, depriving tribes, and clans of a claim to a specific legal status.

CSOs can receive both public and private funding in the form of 'gifts, donations, and loans. While details on domestic public funding remain unclear, CSOs have the right to receive money from international donors (Art.13), however they are required to maintain transparency regarding funding sources.

Libyan CSOs are required to publish any foreign donation in a Libyan newspaper and declare it on the association's website within a month after reception of funds. While the law does not explicitly seek to regulate the presence of foreign NGOs on Libyan soil, Article 15 mentions the possibility for foreign associations to extend their activities to Libya and open local branches in the country.

1.1.1. *Crowdfunding in Libya*

Despite the disastrous effect of the Libyan civil war on the country's economy and political institutions, a few startups have emerged in Libya, and a few ecosystem players have been putting effort to grow the entrepreneurial culture among young people there. An example is Tataweer Research organization that invests in start-ups and offers capacity building programs. One recent example of their intervention is organizing a startup competition, in collaboration with the MIT Enterprise Forum. In 2018, the SeedStars Group held its first competition in for Libyan entrepreneurs. Another sprouting intervention is BYTE (Benghazi Youth for Technology & Entrepreneurship), which is a project which aims to promote technology leadership and innovation in Libya. Additionally, there's MEDA an international organization working with USAID to provide Libyan women and young entrepreneurs with training, mentorship, and access to funds. As for incubators, there's a business incubator at the Tripoli University. The project is a partnership between the University and the Tripoli Business Incubator Center, which is part of the Libya Enterprise, a government entity responsible for supporting SMEs in Libya. Government entities and local organizations like Libyana, the Oil and Gas Development Company and the

[9] https://security-legislation.ly/ar/node/33255

National Programme for Small and Medium-sized Enterprises are some of those involved in helping young entrepreneurs succeed. The UNDP and the European Union have also been involved in projects aimed at supporting young entrepreneurs.

Despite signs of a growing ecosystem, the legal and payment infrastructure is not conducive to crowdfunding[10], especially cross border transactions. Nonetheless, building on contacts from the second Libya Startups Expo in Tripoli, the first Libya-based crowdfunding platform emerged, Libya Crowdfunder (https://libyacrowdfunder.ly/). The inauguration if this platform shows that there are players in Libya that are starting to see the potential of crowdfunding beyond humanitarian appeals.

Conversely, a review of the worldwide crowdfunding projects that are related to Libya are all humanitarian related. Campaigns include the following:

- Save Marine Life in Libya
- Protect Children in Armed Conflict in Libya
- Medical aid for migrants stuck in Libya

Another interesting sprouting initiative that may proliferate in Libya is Islamic crowdfunding. Islamic crowdfunding appears to already exist in Libya, through a network of Libyan investors, and any citizen can fund through this network, as long as their project is dedicated to a sharia compliant endeavor, and the investors have a halal fund.[11]

However, when browsing US-based launchgood.com, the world's most popular crowdfunding platform targeting Muslim charity, Libya is not included as the countries they host projects for. While we were unable to confirm the reasons behind this gap, this is likely due to one or more of the following factors: US sanctions on Libya preventing the site from sending funds into the country, the lack of local infrastructure, and the hardships local CSOs face in payment transfers. The three campaigns found on the site seem to have originated from the Diaspora, and none of the three featured campaigns have gained substantial traction.

1.1.2. *Case Study: Tadawul Card*

Tadawul Financial Group was established in 2009 and is one of Libya's leading alternative payments and e-payment service providers. They issue banked based and non-bank-based debit and credit cards that can be used at ATMs, Points of Sale (POS) and Points of Purchase (POP) systems in Libya. Through their pay-as-you-go cards, the non-banked population can top-up their accounts, much like purchasing prepaid phone credits, in order to pay electronically online and in a network of stores around Libya. Moreover, they have been used to offer loans to the non-banked through the network. For example, most recently in 2020, the Libyan ministry of interior offered loans for its employees to purchase Eid Al Adha related goods with the option of charging the funds directly onto a Tadawul card. The loan was repaid by direct deduction from the employee's salary on a monthly basis thereafter. Other large institutions in Libya such as Sahary and Waha banks are offering similar deals to their employees, with loans charged to the Tadawul card.

In another use case of the card, one of the five major petrol operators in Libya, El Sharara Oil Services company, has distributed Tadawul cards to station owners, where Sharara will use the card to pay for station owners' fuel allowances.

However, these cards, according to respondents from the focus groups conducted for the purpose of this study, have challenges that include withdrawal limits and risks of hyperinflation. Finally, according to a report by OCHA on the Tadawul card, OCHA deemed that the card has good geographical coverage, consistent points of sale network that accepts the cards and has a standard fee of 3%. However, the report also noted that the network of shops that take Tadawul card are on

[10] https://pubdocs.worldbank.org/en/288521600444837289/Libya-Financial-Sector-Review-English-Final.pdf
[11] https://www.islamic-crowdfunding.com/libya.html

average more expensive than non-Tadawul service providers and have limited choice of fresh food items (especially fruit and vegetables) which are counterproductive when the Tadawul card is used to provide humanitarian assistance and food aid.

2.3. Yemen

The Yemeni civil war, ongoing since 2015, has left the country's institutions fragmented and its social, economic, and political spheres in turmoil. The two competing governments in Sanaa and Aden and their parallel unreliable banking infrastructures leave 90% of the population reliant on the equally divided cash economy, which is currently subject to hyperinflation. Poverty has risen significantly: before the conflict roughly half of the population lived below the global poverty line, while in 2020 it affects an estimated three-quarters of Yemenis. Civil society has been subject to harsh restrictions since before the onset of the war, with the CIVICUS Monitor rating Yemen as Closed.

Yemen has some of the lowest rates of technological and financial inclusion in the region, with only 6.45% of the population owning a bank account in 2014. In 2020, Yemen had a 60% mobile penetration rate, a 27% internet penetration rate and an 8.5% social media penetration rate.

1.1.3. *The Yemeni Ecosystem*

There are 17 local and international banks with 328 branches in Yemen, alongside 12 microfinance institutions (MFIs) with 106 branches. They are governed by two regulatory entities:

+ The Central Bank of Yemen (CBY), which is currently split into its Sanaa and Aden branches, controlled by the Houthis and the Coalition government, respectively. The CBY is responsible for fiscal policy and governance of the banking sector.
+ The Social Fund for Development (SFD) is a public institution that is semi-autonomous from the CBY and other government entities. The SFD has a mandate to finance poverty-reduction and economic integration programs.

1.1.3.1. Microfinance in Yemen

The microfinance industry is split between MFBs, which are regulated by the CBY under the 2009 microfinance law, and MFIs, which are governed by the SFD under Law No.1 of 2001, which covers associations and foundations and are treated like CSOs.[12] Given their status as banks under the CBY, MFBs can mobilize public savings and deposits and have autonomy over their own budgets and investment strategies. MFIs, however, are almost entirely reliant on foreign donor funds channeled to them through the Social Fund for Development (SFD). The SFD has not formulated specific regulations for MFIs, leaving the sector informal and less structured.

Most MFI funding is structured through donor programs aimed at supporting specific demographics or sectors of activity. These “traditional” programs are often replicated from other countries and are often ill-suited to the local context and conditions, and do not take a holistic, long-term approach to sustainability and impact. This has resulted in weaker outcomes and therefore limits MFIs to secure future donor funding.

1.1.4. *Yemeni Regulatory Framework*

Yemen’s policy framework regarding CSOs, and finance is fractured, as there are currently two governments as well as two central banks with parallel currencies and policies. The Houthi-controlled central bank in Sanaa refuses to accept new Yemeni Riyals printed by the coalition-controlled central bank in Aden. The policies outlined below predate the current conflict, and any reference to the Central Bank of Yemen (CBY) below refers to its incarnation prior to 2014. The application of these regulations depends on which government currently controls a given area of the country.

[12] Yemen National Microfinance Policy Statement (https://smed.sfd-yemen.org/media/attachments/2019/09/18/yemen-national-microfinance-policy-statement2007.pdf)

1.1.4.1. Civil Society in Yemen

The Law on Associations and Foundations (Law 1 of 2001) provides for the formation of associations, including national associations and organizations, cultural centers, and clubs. Associations are defined as : *"any popular group established in accordance with this law by natural persons the least number of which is 21 persons at the time of application for the establishment thereof and 41 persons at the constituent meeting, the primary purpose of which is the realization of a common benefit for a specific social group, or to undertake activities or functions that are of a public benefit, and which does not seek from its activities to generate a financial profit for its members, and the membership of which shall be open in accordance with the conditions spelled out in the organizational procedures"* (Article 2).

Foundations can be formed by one or more natural or legal persons for a public benefit purpose. There are no separate governance provisions for foundations. Associations and foundations must be registered at the Ministry of Labor and Social Affairs in Sana'a and/or its local representative offices in the governorates.

Any CSO must be founded by no less than 21 natural persons at the time of application and 41 persons at the time of the first meeting. According to the implementing regulations, associations must also deposit one million Yemeni rials (approximately US $5,000) with a bank before they can register.

1.1.4.2. Financial Regulation in Yemen[13]

Yemen's financial regulatory framework is mainly comprised of:

+ Law No. 40 of 2006 Regarding Electronic Payments Systems for Financial and Banking Operations
+ Microfinance Banks Law No. 15 of 2009
+ The CBY only governs microfinance banks and the SFD has proven unwilling to formulate regulations for the informal sector.
+ The closest to e-commerce laws and regulations in Yemen is the "Law No. 40 of 2006 Regarding Electronic Payments Systems for Financial and Banking Operations". The law recognizes electronic payment, financial, and banking transactions in the court of law. It provides the legitimacy for electronic signatures and transactions.

1.1.5. *Crowdfunding in Yemen*

Alternative financing and entrepreneurship can be one direction for economic recovery of Yemen. Yemeni entrepreneurs' sources of financing are limited to pocket money and money coming from family and friends. This is because conventional banks and financial institutions in Yemen are not playing their assigned roles of supplying funds to new ventures and limiting their supply of funds to already established and successful businesses. Crowdfunding can come in handy in this alternative financing and job creation for youth in Yemen. While the concept of crowdfunding, its potential and industry have been explored extensively in the years following its rise, yet almost no literature exists with regard to the Yemeni market. Similarly, to Syria, there are no regulations governing crowdfunding in Yemen, and no mention of the topic in any governmental or sectoral strategies. Crowdfunding is not allowed nor practiced inside Yemen. Similarly, to Syria and Libya, most worldwide campaigns targeting Syria are a humanitarian appeal.

[13] Revitalizing Yemen's Banking Sector: Necessary Steps for Restarting Formal Financial Cycles and Basic Economic Stabilization, Sanaa Center for Strategic Studies, February 2019

1.1.6. *Case Study: Telepin and ONE*

Telepin [14], a Canadian fintech provider, partnered with ONE, a Yemeni-backed fintech brand of the National Wallet Company, to launch Yemen's first mobile money platform in January 2020. Telepin was to provide the mobile money technology, while ONE was to provide a distribution network of more than 100,000 direct and indirect retailers in Yemen. They planned to launch a platform in late 2020 which will enable Yemenis with a mobile phone to receive money, securely manage it, and transfer among family and friends. They can then use the platform to pay bills, buy food, or cover needed medical treatment. There has been no public communication since the announcement of the partnership in January 2020, it is possible the project has been delayed due to the COVID-19 crisis.

1.1.7. *The CSO funding Journey*

In order to receive funds from foreign donors, CSOs in the three target countries follow a similar series of steps and associated challenges. Here we aim to lay out a common funding journey, while pointing out the specificities of each country:

1. **Funding agreement:** A donor organization signs an agreement with an organization, usually an INGO to implement a program in the target country. According to our focus groups, these funds tend to support two broad categories of programs:
    a. Direct humanitarian action: distribution of vital goods and services (health, food, etc.)
    b. Livelihoods programs: support for the subsistence and economic empowerment of populations most affected by the conflicts.

Organizations whose scope does not fit into these two categories have increasing difficulties securing funding. Organizations that can implement these activities usually do so as sub-grantees of larger national or international organizations.

2. **International audits and sanctions:** increasingly strict Anti-Money-Laundering and Anti-Terrorist Financing (AML-ATF) policies and donor audits often block or delay the disbursement of funds.

3. **Reception of funds:** International funds cannot necessarily be transferred directly to CSOs accounts (due to the aforementioned sanctions, audits, etc.), which impact CSOs differently in the three countries.

    In Syria, it is not possible to receive foreign funding, therefore donors will make transfers to partner organizations in Lebanon or Turkey. Until recently, those funds would be cashed out of the partner bank account and sent through hawalas or smuggled in cash into Syria. However, as of early 2021, border crossings from Turkey are very strictly controlled, and the 2020 economic crisis and resulting hyperinflation in Lebanon has led to a near-total collapse of the Lebanese banking sector. As a result, transfers through Lebanese partners are no longer a viable option.

    In Libya, restrictions on foreign funding have required a similar partnership configuration, wherein Libyan CSOs receive funds in Tunisia before repatriating them. These transfers are formalized through partnerships between Libyan and Tunisian banks, allowing individuals and organizations to open a double account, with a standardized procedure to transfer from Tunisia to Libya. However, the split within the Central Bank of Libya and hyperinflation have led increasing numbers of people to resort to hawalas and other informal agents.

    In Yemen, the two competing governments and central banks sometimes require CSOs to often request two authorizations for the same activity. Transfers through third parties in neighboring countries are not possible, therefore funds must go through a bank or Microfinance Institution. Since the beginning of the civil war, many international

[14] https://www.telepin.com/blog/how-canadian-fintech-is-helping-to-relieve-suffering-in-yemen/

correspondent banks have halted their partnerships with Yemeni banks, except for Lebanese banks. Lebanese banks were the official custodian for Yemeni banks. However, since 2020 Lebanese banks have frozen significant reserves held on behalf of Yemeni Banks due to the Lebanese banking sectors' liquidity crisis, prolonging the transfer time to Yemeni banks, which is already prolonged due to international sanctions and liquidity problems in the Yemeni Banking sector. Therefore, even when funds are secured and transferred, banks in Yemen almost never give the full disbursement of funds to CSOs, and usually limit the daily and monthly withdrawals for the CSOs, which creates significant hurdles in the implementation of programs and operations for CSOs. Moreover, oftentimes banks block funding due to various, usually inconsistent, audits. Even when all these trenches are crossed, due to the presence of two central banks and extremely expensive transfer fees between the two sides of the country, end users of CSOs (beneficiaries) end up with a fraction of the aid value they are supposed to receive.

4. **Program execution:** Given all the aforementioned challenges, as well as regulatory constraints in all three countries, CSOs conduct their daily financial transactions, including payment of salaries and subcontractors and disbursements to beneficiaries, in local currencies. Further AML-ATF requirements often pose additional limitations on who CSOs can pay.

5. **Reporting:** Given the high level of population displacement resulting from these conflicts, CSOs struggle to conduct longer-term monitoring and evaluation. Program results and indicators often suffer as a result, which further limits CSOs ability to raise funds in the future.

1.2. Best practices from other humanitarian contexts

Through our research and focus groups, we have identified additional case studies from other humanitarian crises that contribute relevant tools and best practices to address the situations in Libya, Syria, and Yemen.

1.2.1. *CELO - celo.org - blockchain protocol for financial inclusion*

The Celo foundation is a US based CSO that provides lightweight blockchain based infrastructure for financial inclusion applications. Their infrastructure includes a complete suite of blockchain software, including libraries that run on blockchain, and interoperable end user applications (e.g., wallets app). This infrastructure allows smartphone users globally to have access to financial services, send money to phone numbers, and pay merchants. The platform is built on a decentralized network that is managed by its community of users.

In addition to its technological platform, CELO provides education, technical research, community engagement and ecosystem outreach with the aim of attaining an inclusive financial system worldwide. Moreover, CELO has issued its own stable coin, cUSD. While not yet heavily operational in the Middle East, their near future plans are to enter the Middle East, with a focus on decreasing the friction associated with cash-transfer programs aimed to alleviate poverty. It will support projects with a network of developers to delve into more projects that can utilize the benefits of cryptocurrencies.

In the context of this research, CELO provides a core set of tools and an active community that have already deployed solutions in emerging economies and humanitarian contexts. They can serve as the basis of solutions that are customized for the specific contexts of the 3 target countries.

1.2.2. *Case Study: Fluus (Lebanon)*

Fluus is one of the first startups in Lebanon to offer exchange between fiat currencies and cryptocurrency. It is a peer-to-peer money exchange mobile application which converts Lebanese cash (USD and Lebanese Pound) into Bitcoin, Ethereum, Litecoin and Tether USD (USDT). Fluus offers a home delivery service, where a member of the Fluus team goes to the customer, collects

cash, and instantly uploads crypto- and stable- coins into their wallet. They plan to introduce merchant solutions like e-commerce integrations, billing, and payroll services. They work on education and capacity building for the Lebanese citizens and institutions.
The door-to-door model proposed by Fluus can serve as a best practice for serving communities that to not have the technical means or knowledge to work directly with a blockchain platform or e-wallet, as well as an effective means of converting cryptocurrency into local fiat currencies.

2. CONCLUSIONS AND RECOMMENDATIONS FOR THE I4C MENA HUB

Below we lay out our primary conclusions as well as a few recommendations for the I4C MENA Hub and its member organizations to support the use of digital currencies in Syria, Libya, and Yemen. Given the specific constraints laid out in the results above, the scope of potential outside support is much more limited than in the countries studied during previous phases of this research.

2.1. Challenges

2.1.1. *Regulation and Finance*

The regulatory environments in all three target countries are very limited and have only recently begun to take into account mobile payments, online payments, and fintechs. The conflicts have hindered efforts to make new regulations operational, in the case of Syria due to broad sanctions, and in Yemen and Libya due to competing governments and their associated regulatory bodies. International sanctions and AML-ATF policies also slow down or limit payments into the target countries.

Regulations on CSOs limit their scope of activities and their capacity to directly fundraise, though according to our focus groups, legal concerns have become secondary to operational and security challenges in the current environment, as providing services and executing programs in active conflict zones puts CSO staff and volunteers at significant risk.

This combination of factors often forces CSOs to use partner organizations in neighboring countries or informal money change and transfers to receive funds.

Bank account ownership, card and mobile payment usage are low in Syria and Yemen; however, they are improving in Libya. Our focus groups indicate that, as detailed in previous phases of this research, CSOs and their beneficiaries have relatively low levels of financial literacy and require further support to better understand how to manage their finances. However, given the contexts in which they currently live and work, financial education is generally considered a secondary concern.

2.1.2. *Technology*

IT and telecom infrastructure is very limited in the three target countries, with rural areas having little to no infrastructure in place. Mobile and internet penetration are low, as local telecom operators, like financial institutions, suffer from lack of support from deficient or competing governments and regulators, and infrastructure is damaged or destroyed by the conflicts. As a result, local CSOs and beneficiaries outside of major cities do not necessarily have access to smartphones or to a consistent internet connection. This also limits the potential applications of other tech to support their work (ex: mobile apps, cloud-based services like google drive, etc.)
Focus group participants admitted that their understanding and use of technology to support their activities was limited, and they were in need of capacity building regarding their use of technology in general terms.

2.1.3. *Mobile Money, Digital Currencies and Blockchain*

In addition to the aforementioned challenges, local knowledge of digital currencies and blockchain is very limited. Significant awareness-raising and capacity building efforts are necessary in order to serve these populations. Libya appears to have the most advanced technologies and user-bases for digital currencies, though they are quite nascent compared to their neighbors Tunisia and Egypt.

2.2. Opportunities

2.2.1. *Regulation and Finance*

Given the particularities of the context in Yemen, Syria, and Libya, there is little room for advocacy efforts to reform national regulation. Some larger actors, however, are supporting actions to

improve conditions on the ground. USAID, for example, is collaborating with the Yemeni Central Bank in Aden to put in place reforms to allow and promote mobile banking and payments.

2.2.2. *Technology*

While the use of certain IT is fundamentally limited for local actors in Libya, Syria, and Yemen, INGOs have much greater capacity and access to resources to test and implement tech-driven solutions.

Organizations such as the International Rescue Committee, the International Committee of the Red Cross, and the World Food Programme have piloted programs using mobile payments and blockchain technology with varying levels of success. Members of the I4C network can partner with these larger organizations to advance the use of these technologies in new contexts.

2.2.3. *Mobile Money, Digital Currencies and Blockchain*

Several actors have run successful mobile money and mobile voucher campaigns in the target countries, and according to our research, are actively looking for new partners for larger implementation. Mobile money solutions require less technical knowledge, and lower levels of infrastructure investment to function, and can serve as a means of familiarizing users with fintechs and their applications.

2.3. Recommendations for the I4C MENA Hub and its members

Regarding technology, the I4C MENA hub has over the past year run very successful programs around technology and cyber-security for CSOs. These can be capitalized upon to provide tools and training tailored to CSOs and HRDs in the three target countries.

Regarding regulation and finance, there are limited opportunities for I4C members to have a direct impact. However, we have identified two opportunities to support civil society in Libya, Syria, and Yemen.

First, is to support advocacy efforts to lift or lighten sanctions and AML-ATF controls on transfers to civil society actors in the target countries. As mentioned above, a number of countries have blocked or created significant barriers to make international transfers, and advocacy efforts for local regulators and donor organizations to put in place exceptions for humanitarian and civil society actors could be invaluable.

Second, if their circumstances permit it, CSOs in neighboring countries such as Lebanon can operate as service providers for CSOs in the target countries by, for example, serving as a legal and/or administrative interface with donor organizations. This is not possible for all CSOs, and entails potential non-negligible risks, however it responds directly to the needs of civil society.

Regarding digital currencies, there are a number of private sector actors, like those mentioned in the case studies, that are testing new technologies specifically targeting the challenges laid out in this research. Partnerships with these startups, which can be made directly through I4C or through large INGOs, could benefit the Hub members and their beneficiaries, while validating new tools that can have even greater impact.

3. FUNCTIONAL PROPOSAL FOR BLOCKCHAIN-BASED SOLUTION: I4COIN

3.1. Problem Statement

Syria and other conflict zones in the MENA region suffer from unstable governments and currencies, with varying fluctuations in exchange rates during periods of crisis and restrictions on foreign funding. As a result, CSOs, HRDs, and activists in these zones face significant challenges to fund their activities. The I4C MENA Hub is exploring the potential of blockchain to serve as the basis of an alternative medium of exchange for civil society organizations to receive foreign funding without the involvement of central banking authorities.

3.1.1. *Context: the "Last mile problem"*

The core problem faced by any money transfer solution operating under these constraints is conversion of the funds into a medium of exchange that is acceptable and usable to the end recipients. A cryptocurrency, for example, is useless to the end recipient if they cannot make day to day purchases with it. In the three target countries, this could be one of the local fiat currencies (depending on the central bank that controls a given region) or international fiat currency (generally USD). In the case of local currencies, the recipient faces the challenge of hyperinflation and lack of liquidity at local branches of financial institutions. In all cases, recipients also face security challenges, as any item of value can be taken from them and carrying international currencies can potentially expose them to greater risk.

3.2. Priority target groups

User	Challenges	Work to do
Donor organizations and International Civil Society Organizations	+ Restrictions on areas of reach, depending on political affiliation/affluence/territorial control + Last mile problem + Illegal means are more efficient + Need to capitalize on official and unofficial channels to execute humanitarian missions	+ Execute projects in conflict/disaster zones + Safely and quickly send funds to local CSO partners + Safely and quickly send funds to beneficiaries (cash transfer programs)
Local CSOs/HRDs in Disaster/ Conflict situations	+ Low levels of tech awareness / capacity + Poor/inconsistent internet access + Liquidity problems + Hyperinflation + Government restrictions on fundraising + Concern for personal safety	+ Execute projects in conflict/disaster zones + Safely and quickly receive funds from donors and INGO partners + Safely and quickly send funds to beneficiaries (cash transfer programs) + Safely and quickly pay local businesses
Beneficiaries of Local or international CSOs/ HRDs	+ Low levels of tech awareness / capacity + Poor/inconsistent internet access + Liquidity problems + Hyperinflation	+ Safely and quickly receive funds from CSOs + Safely and quickly pay local businesses

	+ Government restrictions on fundraising + Concern for personal safety	
Local Businesses and cash transfer agents (hawalas)	+ Only actors with capacity to bring funds into the target countries + High mobility	+ Safely and quickly receive funds from CSOs and beneficiaries + Safely and quickly pay other local businesses

3.3. Product description

3.3.1. *Functional overview*

Based on the challenges identified in the 'funding journey' above, I4Coin aims to streamline the process of transferring and converting money through the use of a "stable coin", that is to say a cryptocurrency whose value is tied to a fiat currency, namely USD. I4Coin will be supported by blockchain technology to facilitate reporting and ensure transparency and security of funding flows into conflict zones. I4Coin would allow international donor organizations to manage the flow of funding to and between the other users, each of whom has a unique digital wallet which allows them to accept and receive funds. In order to circumvent the "last mile problem", donors can mandate specific users ("clients" and "agents," see user types below) to disburse funds in local currencies in exchange for a commission. In order to meet the needs of actors in differing environments with differing levels of access to IT infrastructure, the 'cash out process' includes several forms of verification and disbursement.

3.3.2. *User Types*

3.3.3. *The New Funding Journey*

1. **Funding agreement:** A donor organization signs an agreement with a CSO, which takes the form of a smart contract on the I4Coin platform.

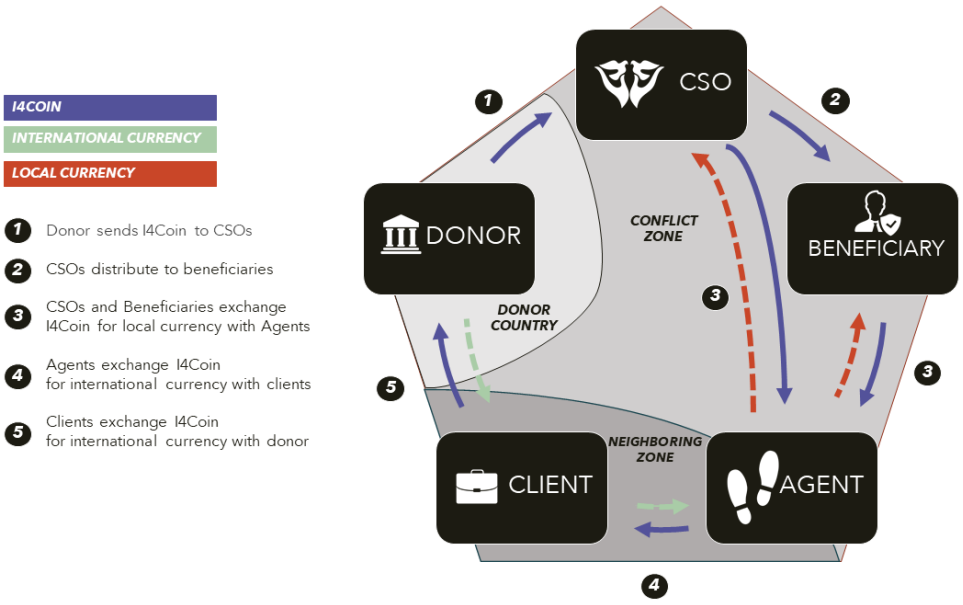
2. **Disbursement Plan:** The donor and CSO agree on one or several clients and/or agents to disburse the funds. Large sums can be split into several payments through different

clients/agents, so as to minimize risk. If the funding includes direct transfers to beneficiaries, the CSO uploads a list of beneficiaries and/or the cash-out method (e-voucher, mobile wallet, paper voucher, etc.). Each client and agent's commissions are automatically calculated into the program budget, and do not impact the net amount received by the CSO.

3. **Reception of funds:** The Donor releases the funds to the CSOs via I4Coin. Depending on the nature of the program, the Donor releases funds directly to beneficiaries, or to CSOs to then transfer to beneficiaries. The pre-agreed-upon Agent(s) exchange the I4Coin from the CSOs and or beneficiaries for local currency.

4. **Program execution:** Beneficiaries are provided with one of several means of receiving their funds, depending on their current context: mobile wallet, e-voucher (SMS code), paper voucher, or biometric verification. The beneficiary cashes out their I4Coin with a pre-agreed-upon agent. Once the transaction is complete, the agent can cash-out their I4Coin with the pre-agreed-upon Client(s).

5. **Reporting:** I4Coin allows for traceability of funds until their conversion into local currency by agents. To minimize the risk of fraud or theft, multiple verification systems can be used: SMS code, biometric verification, paper bar/QR code. Agents can only cash out when client verification is complete, and inconsistencies can result in automatic reduction of their commissions or blacklisting from the I4Coin platform.



Focus on 3. reception of funds and 4. program execution

3.3.4. *Technical requirements (non-exhaustive)*

Front-end:

+ Web, desktop, and mobile clients
+ Compatibility with older versions of android and windows
+ API for SMS and USSP code send/receive
+ APIs for identity verification (existing ID verification platform, biometrics, card/code scanner, or private key)

Back-end:

+ The back end could be based on existing stable coin architecture, like Ethereum or CELO, which should include "smart contract" functionality.
+ Given its use in insecure environments, data security and encryption will be extremely important.

+ APIs for voucher generation and verification
+ APIs for integration into payment gateways for mobile money

3.4. Proposed implementation plan

3.4.1. *Timeline*

Below is an approximate timeline for the implementation of I4Coin. This timeline is indicative, and actual implementation is dependent on a number of factors.

Action	Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4
Prototype solution design and development												
User testing and updates												
First field tests (e-wallet)												
API Integrations												
Second Test (e-voucher + paper)												
Multi-site testing												
Client and Agent Sourcing												
Country-level scale-up												
Multi-country scale-up												

3.4.2. *Key success factors*

+ Donors will be the primary evangelists of this solution and should make it simpler to use than existing alternatives. This may require them to revisit some administrative and reporting processes in order to not create additional layers of complexity.
+ Onboarding of clients and agents is fundamental to the functioning of the entire system. Therefore, specific awareness-raising and capacity-building activities must be designed and implemented in the target zones.
+ Contrary to other blockchain or cryptocurrency solutions, I4Coin is intended to supplement other forms of payment/transfer. It is contingent on a high level of trust between each user role, which must be maintained through interactions outside the system. For example, the selection of agents must always include CSOs and beneficiaries, to ensure the security of all stakeholders during the cash-out process.

3.4.3. *Key Performance Indicators*

Below is a non-exhaustive list of key performance indicators (KPIs) to track on the I4Coin platform. It is divided into two categories: activity, which measures the level of user engagement with I4Coin, and performance, which measures the efficiency and effectiveness of the platform

Activity	Performance
+ Number of active users by role + User growth by role + Volume of transactions on the network + Frequency of user connections + Density of user connections	+ Average transaction amount + Average transaction time + Ratio of active users by role + Use ratio of cash-out options + Use ratio of ID verification options

3.4.4. *Limitations*

+ Any solution that aims to circumvent local and international banking regulations and central banks is likely in violation of a number of national, and international laws, regulations, and/or treaties.

+ The proposed additional cash-out mechanisms (vouchers, etc.) can facilitate the use of I4Coin in contexts with limited access to IT infrastructure, however all user types (except beneficiaries) will need to have occasional access to the internet in order to synchronize their wallets.

+ Agents are an imperfect means of transferring funds, but according to our research, the most effective ones given the context. Clients serve as a means to verify the work of agents and provide a source of fiat currencies through formal channels. They are not a complete safeguard against fraud or theft. Agents also face greater risk, as they carry fiat currency to "cash out" other users, and their use of I4Coin may increase their risk of exposure. Additional context specific security measures will need to be taken to ensure the security of all users of I4Coin.

+ The physical security of users in conflict zones cannot be guaranteed, and therefore neither can the security of transactions. Any external verification mechanism can be taken away (phone, paper voucher) and biometric verification can be made under duress. However, by keeping the value of the transfer in I4Coin until the moment of exchange, the risks to CSOs and beneficiaries can be mitigated.

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