U.S. Disaster Relief Payments: Dangerously in Need of Innovation, and Fast

FPC Digital Assets Work Group

Overview

When disasters such as hurricanes, wildfires, pandemics or floods strike, timely financial aid is critical for survivors. However, in the United States, disaster relief payment systems — both public and private sector — are often slow, inefficient, and burdened by outdated processes. Survivors typically receive an initial small disbursement, but subsequent funds can take weeks, months, or even years to arrive. This delay results from reliance on legacy systems requiring multiple levels of verification, paper checks, ACH transfers, restrictive pre-paid cards, and inadequate identity verification that enables fraud.[1] These inefficiencies leave people without shelter, medical care, or necessities while billions in misallocation erode trust and waste resources. The over 14 percent of U.S. households (approximately 19 million), or 48-60 million individuals[2] who are underbanked, are disproportionately underserved, often receiving aid last, if at all.[3] The need for modernization is urgent.

This report explores how digital assets, digital wallets, digital IDs, stablecoins, and distributed ledger technology (DLT), commonly known as blockchain, can transform disaster relief payments, and drawing on global best practices, proposes actionable recommendations.

The Current State of U.S. Disaster Relief Payments

Distributing disaster relief funds in the United States is a complex, slow, and fragmented process. Despite significant investments in digital infrastructure and bureaucratic inefficiencies. Disasters often impair physical infrastructure, overwhelm government agencies, and leave millions of survivors without access to basic services, which comprise 70 percent of all U.S. counties, and lack robust banking infrastructure. Government aid must navigate federal, state, and local layers, while non-governmental organizations (NGOs) and private insurers add further delays. Disconnected and siloed processes, all of which limit coordination. Significant delays arise from efforts to avoid duplication of benefits while fraud remains prevalent due to weak identity verification and loose assessments. Nonprofits similarly hesitate as they struggle to coordinate with other donors, leaving survivors waiting for extended periods, sometimes up to seven years for long-term recovery. The absence of shared information across funders is a key cause of these delays.

Traditional delivery methods, such as checks and ACH transfers, are ill-equipped for a coordinated approach and present significant practicality for the underunderbanked. Gift cards, another common tool, are often store-specific and prone to theft. Fraud prevention measures, such as multi-factor authentication and verification processes, allowing fraudsters to siphon 20 percent or more[4] of available funds in some cases. This fragmented, slow system undermines disaster resilience, especially for vulnerable populations in disaster-prone and rural regions.

The Potential of Digital Ledger Technology

DLT, including tokenized deposits, tokenized real-world assets, stablecoins, and cryptocurrencies — paired with digital wallets, digital IDs, and blockchain technology — offer transformative solutions for disaster relief. These tools enable rapid, secure, and transparent transactions. Internationally, these technologies are already in use, providing valuable lessons for the United States.

Global best practices for disaster relief payments center around DLT and offer key lessons and benefits for the United States as detailed below. Efficient, transparent, and accountable aid tracking is a cornerstone of DLT's value, providing a transparent distributed and shareable ledger for tracking funds from donation to distribution to disaster survivors in real time. Features include:

Smart contracts streamline disaster financial aid by automating fund releases across federal, state, local governments, foundations, and NGOs once predefined conditions are met (e.g., damage assessments, emergency declarations, verified aid requests, as examples), reducing bureaucratic delays and ensuring rapid, accountable disbursement. Example: Estonia's KredEx[5] works with non-profits and government to enable capture and verify aid requests, and report on how funds are spent.

A **shared distributed ledger** enhances coordination by providing a single, transparent source of truth for tracking funds and aid distribution across multiple funders, preventing duplication of benefits, simplifying audit, and fostering seamless collaboration, while protecting survivor privacy. Example: SKUx[6] uses DLT to track payment transactions securely, for tamper-proof record keeping. This provides end-to-end payment visibility, logging all payments on an immutable distributed ledger.

Fraud detection and reduction is another critical advantage, as immutable records ensure funds are used for intended purposes. Blockchain records make every transaction easily auditable, minimizing spend outside of funders' intended use. The immutable blockchain ledgers offer a tamper-proof record of disbursements and expenditures, enabling real-time tracking. This could help coordinate across funders to avoid duplication of benefits and speed aid. Survivor privacy concerns can be addressed and protected using tokenized identities.

Offline resilience and backup systems ensure continuous service during outages, a vital feature in disaster scenarios. Solar-powered wallets or smartphones maintain access to digital assets, while paper wallets with QR codes serve as backups for funds and identity verification when electronic devices fail. Edge computing allows transactions to be processed locally and synchronized with the blockchain later. Mobile or PC cloud backups, on-chain and off-chain digital asset records, or portable hard drives enable data restoration onto new or repaired devices. In areas without internet access, mesh networks using Bluetooth or Wi-Fi Direct create local networks for crypto and traditional financial transactions, while preloaded smart cards (e.g., NFC-enabled and linked to wallets including private keys) offer backup for offline spending. Cold wallets securely store and use digital assets without live networks while digital asset vouchers allow offline transfers to merchants and contractors with guaranteed deferred settlement when connectivity returns.

Identity verification is enhanced and secured through blockchain-based digital IDs. Digital wallets are integrated with IDs streamline aid distribution. Progress in digital IDs evident in U.S. states like CA, NM, AZ, CO, MD, OH[7] and Utah.[8] The ID2020 Alliance (id2020.org) has used blockchain-based IDs to help refugees establish secure and self-services securely and transparently. Digital wallets also enable direct aid distribution, bypassing traditional banking delays, especially for the ununderbanked.

International Best Practices

The following are examples of international best practices for disaster relief payments:

- Stablecoins like USDC or PYUSD can be sent to wallets for purchasing essentials, as demonstrated by the World Food Programme.[9] In war zones such as Ukraine, the United Nations High Commissioner for Refugees (UNHCR) implemented a pilot project with the International Rescue Committee (IRC) using blockchain to disburse cash assistance to displaced individuals rapidly and securely.[10]
- Blockchain provides for expanded financing sources. Tokenized crowdfunding allows relief organizations or communities to raise funds globally using tokenized assets like USDC. Blockchain microloans, digital asset line-of-credit tokens (equivalent to cash distribution but repaid as credit), and digital asset loans (funded and repayable as digital cash) offer flexible financing. Kiva[11] offers wallets that enable peer-to-peer loans to small businesses, accelerating rebuilding efforts.
- In zones with little or no connectivity, including in conflict zones, Payala[12] enables real time transactions with card-to-card transactions even in areas with no internet outage. When cardholders return to a site with internet, data is uploaded and downloaded, and funds are settled.
- Beyond direct financial support, aid is enhanced through blockchain. In Syria, the WFP's Building Blocks Project[13] used blockchain to distribute cash assistance to refugees, creating a secure, efficient system that reduces intermediaries, costs, and fraud while speeding delivery and preserving recipient dignity by offering greater control over resources. Example: in Aruba and St Maarten Mercy Chain[14] deployed a unified, survivor-focused platform enabling seamless, rapid, and dignified digital aid delivery—from registration to payout—with embedded user choice and communication channels for feedback to donors and field teams.

Some Current Solutions Operating in the Disaster and Aid Space in the United States

As part of the California (CA) Wildfire Relief efforts, [15] GiveCard embedded its disbursement technology into Electronic Benefits Transaction (EBT) apps and worker-relief [16] GiveDirectly to receive digital payment options via both the RTP® Network, FedNow®, Zelle®, and virtual Visa® cards provisioned into digital wallets of disaster victims. Further in response to the CA Fires, similar to the response to fires in the U.K. and Spain, governments and aid organizations leverage PinkTel [17] to send real-time cash assistance, combining the speed of digital transfers with the utility of cash, including to the ununderbanked. Impacted people are sent a QR code to their phone, or they can be reached a paper check to take to an ATM (30K in the United States) or present to an Emergency Operations Center to scan, validate and accept cash.

Obstacles to Adoption in the United States

Despite its proven benefits, the United States lags in adopting digital assets and DLT, or blockchain, for disaster relief due to several barriers. Large federal agencies lose often rely on slow outdated payment systems and paper-based verification, resulting in widespread fraud. Funds must transit from the federal government to states and then sometimes counties where understaffing and outdated infrastructure exacerbate inefficiencies. The fragmented relief ecosystem, spanning government, NGOs, and corporate foundations, lacks a shared coordinated framework, leading to inconsistent aid delivery and duplication. Unlike countries with national payment directories or widespread DLT payment adoption, the United States has limited digital payment infrastructure in government and nonprofit sectors.

In the United States, concerns over financial stability and consumer protection also hinder adoption of blockchain, though other nations have demonstrated these to be manageable risks. The underbanked population faces additional barriers with reduced access to internet and smart mobile devices. The absence of pre-stored, verified digital records for real-world assets (e.g., property, appliances) slows insurance and government agency claims, a gap DLT could address by providing secure, tamper-proof records of pre-disaster holdings.[18] Infrastructure damage, digital literacy gaps, and regulatory challenges further complicate adoption of DLT or blockchain, though guardrails currently under development by policy makers and education campaigns could mitigate these challenges.

Recommendations for Modernization

To leverage DLT, the United States must act decisively. This paper recommends establishing a public-private collaboration (PPC) team of disaster, insurance, government, and fintech experts to develop a roadmap for short, medium, and long-term action. Short-term efforts could focus on low-cost solutions like digital wallets for last-mile delivery, while long-term initiatives might integrate DLT across federal and state government systems. According to the 2024 Resiliency Study[19], every $1.00 spent on preparedness yields $13.00 in recovery savings, underscoring the value of initiative-taking investment.

Given federal uncertainties, as part of this PPC, states should lead by encouraging digital IDs and tokenized asset records for citizens and by partnering with community banks and fintechs to be prepared to deliver funds in minutes. This is especially important in delivery of funds to the underbanked. With this preparedness, funds can be distributed to disaster victims' phones, before hardening of homes, during for evacuation support, and after for short-term relief, and for long-term rebuild and recovery. Regional and locally National collaboration is critical to avoid isolated efforts that duplicate or fragment aid and information-sharing gaps. These innovations could reduce disaster impacts, delivering funds "fast, safe, and with dignity" to the right people, at the right time, for the right purpose. [20]

Conclusion

The U.S. disaster relief payment system is trapped in inefficiency, but digital assets and DLT, or blockchain, offer a path forward. Global examples of success are outlined above, as are several already operating in the United States. These demonstrate fintech and blockchain's potential to enhance speed, accountability, and coordination. These capabilities match the federal government's focus on efficiency, and controlling for waste, fraud, and abuse, while providing an immutable record of all money movement for audit and data analytics. By adopting these proven tools, the United States can create a more agile, transparent, and resilient system, reducing costs, and accelerate recovery for people, businesses, and communities. With the increasing impacts of disaster, and the federal government disaster program at-in flux, now is the time for states and public and private sector stakeholders to apply existing proven financial technology solutions, ensuring aid reaches those in need without delay. It is time for collaboration across experts and directly with the federal government through its current efforts via the FEMA Office to scale and connect disaster relief efforts here in the United States. [21] Industry experts look forward to the opportunity to engage in discussions with the FEMA Council to drive efficiency and control for waste, fraud, and abuse in disaster relief programs.

Acknowledgements

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About the Digital Assets in the Financial Industry Work Group

Maps out how digital assets relate to the financial industry, focusing specifically on payments made with digital funds – central bank digital currency (CBDC), regulated liabilities, and stablecoin.

About the U.S. Faster Payments Council

The U.S. Faster Payments Council (FPC) is an industry-led membership organization whose vision is a world-class payment system where Americans can safely and securely pay anyone, anywhere, at any time and with near-immediate funds availability. By design, the FPC encourages a diverse range of perspectives and is open to all stakeholders in the U.S. payment system. Guided by principles of fairness, inclusiveness, flexibility, and transparency, the FPC uses collaborative, problem-solving approaches to resolve the issues that are inhibiting broad faster payments adoption in this country.

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[2] According to FDIC survey. In 2023, 14.2 percent of U.S. households—representing about 19.0 million households—were considered underbanked

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[18] State Farm, Allstate and others recommend you record your assets. https://www.statefarm.com/simple-insights/residence/home-inventory-how-to-create-one. Here is one SaaS option to quickly store your home and asset information: https://propertyhero.ai

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