

Resilient by Design: Why Disaster Relief Payments Are a Natural Use Case for Blockchain

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Executive Summary

In moments of crisis—whether wildfires, hurricanes, floods, or pandemics—rapid, reliable financial relief is often the difference between stability and catastrophe for affected families and small businesses. But the systems responsible for delivering this aid in the U.S. remain plagued by delays, fraud, disbursement errors, data fragmentation and outdated infrastructure.

This paper makes the case that blockchain can transform how federal and state governments manage emergency disbursements. Not by replacing current systems overnight, but by gradually complementing them with a more agile, auditable, and programmable layer of infrastructure. The same features that make blockchain useful in private-sector supply chains—immutability, traceability, and real-time coordination—are a perfect match for the fragmented ecosystem of disaster relief.

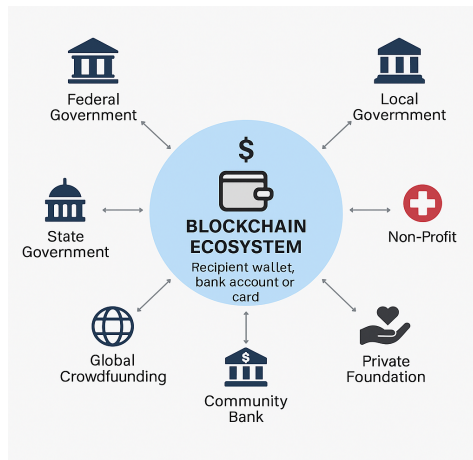
Moreover, the tools and partners to make this happen already exist. Community banks, fintechs, payment processors, and nonprofit networks are ready to help modernize disaster relief. Federal and state governments must now provide the regulatory clarity, digital ID standards, and pilot funding to test these innovations before the next disaster strikes.

The Case for Payment Innovation in U.S. Disaster Relief

Disaster response in the U.S. spans multiple players—FEMA, Treasury, state governments, local governments, nonprofit organizations, private foundations, community banks, and fintech payment processors. Despite years of digital advancement, government payment disbursement remains fragmented and opaque.

After major disasters, survivors often face delays of weeks or months in receiving financial aid. Some receive the wrong amounts, others get aid for which they don't qualify, while legitimate recipients fall through the cracks. During COVID-19, billions were lost to fraud. Today, organized groups of individuals working together continue to defraud public assistance programs. Meanwhile, scammers use stolen or synthetic identities to intercept payments intended for victims.

Beyond fraud, there's a broader issue of operational inefficiency. Current systems rely on batch processing, siloed data, outdated identity verification, and slow interagency coordination. Public confidence in government programs erodes when relief is delayed or misdirected. That's where blockchain can help—as a tool for trust, coordination, and control.



Why Blockchain Is Uniquely Suited for Disaster Relief

Blockchain systems offer several key advantages that align directly with the needs of disaster payment programs:

- ✓ **Traceability and Transparency:** A blockchain ledger provides a shared, tamper-resistant record of transactions from appropriations or origins to recipient. Government agencies, payment partners, and even auditors can view disbursement flows end-to-end in real-time or near real-time.
- ✓ **Programmability:** Smart contracts can automate eligibility rules and trigger payments based on verified agreed-upon data inputs, taking subjectivity out of the equation.
- ✓ **Interoperability:** Instead of each agency or nonprofit operating its own siloed payment system, a shared ledger allows coordination across jurisdictions, ensuring efforts are not duplicated.
- ✓ **Digital Identity Integration:** Blockchain enables stronger identity verification and fraud reduction through privacy-preserving digital identity solutions, ensuring that only authorized individuals receive aid.
- ✓ **Resilience:** Distributed ledger systems can continue operating even when centralized servers or traditional networks are down.

International aid agencies such as the World Food Programme have already used blockchain to deliver disaster relief in conflict zones and refugee camps. The technology is mature enough for U.S. governments to start testing now.

Why Now—and Why Governments Must Lead

The U.S. is entering an era of more frequent and severe disasters. Climate change, cyberattacks, and pandemics all pose growing risks. Simultaneously, the financial system is undergoing transformation—from real-time payments and stablecoins to tokenized deposits and programmable money. States, community banks and technology vendors are in a pivotal position to build out the digital infrastructure needed for a blockchain-based disaster payment ecosystem. If governments do not modernize their core payment infrastructure, they risk being left behind—or worse, relying on fragmented private platforms that do not meet public transparency and fraud reduction standards.

Recommendations: How to Get Started

For Federal Agencies:

- Pilot blockchain disbursements for FEMA relief with defined success metrics
- Incorporate blockchain readiness into FEMA reform
- Encourage regulatory sandboxes for tokenized funds and decentralized identity
- Develop a national digital ID strategy built around privacy and decentralization
- Focus on open architecture, interoperability, vendor neutrality and strong ID verification protocols
- State Treasurers, community banks and payment processors should be at the table early
- Encourage state-level experimentation through innovation grants
- Encourage public-private collaboration

For State Governments:

- Leverage work done by other states further along with blockchain adoption
- Engage with community banks, fintechs and payment agents as key partners for blockchain on/off ramps
- Launch blockchain sandbox pilots
- Innovate in digital ID, wallets, compliance and integration
- Begin rolling out digital ID initiatives built around privacy and self custody
- Leverage successful collaborative pilots at the state level to pave the way for federal adoption
- Coordinate with broadband/digital inclusion offices

For Community Banks and Service Providers:

- Engage with state and local disaster planning
- Pilot tokenized emergency payments
- Contribute to digital ID development

Conclusion

Disaster relief is one of the few payment use cases where speed, transparency, and trust are truly life-critical. Blockchain is not a cure-all, but it is a well-suited tool to address the unique challenges of fragmented disaster disbursement systems.

The question is not whether governments should explore blockchain for disaster relief—but how quickly they can act to test and refine these systems before the next crisis hits. Federal and state governments must now lead with vision—and urgency.