

# DeDuplicating humanitarian aid in Nigeria

## Pilot Report

Start Date: February 2022

Completion date: March 2023



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# The Team

## **The Pioneer:**

Lotti Douglas

## **Partner:**

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# The Context

## **The problem the pilot sought to address**

In Northeast Nigeria, where 8.7 million people urgently require humanitarian aid, there is a significant funding gap to meet the needs of vulnerable populations. To address this challenge, the humanitarian community has been called to improve their efficiency and eliminate duplication of assistance and effort. The duplication problem in humanitarian aid refers to instances where a beneficiary receives assistance from multiple organisations for the same needs.

This issue, affecting approximately 16% of all humanitarian aid in 2020, and up to 40% in certain regions, significantly hampers the intended impact of aid efforts. Although aid agencies are aware of this challenge and make efforts to coordinate their activities, any act to share sensitive beneficiary information for crossmatching and preventing duplications poses difficulties. Moreover, the time-consuming nature of manually coordinating and comparing beneficiary lists adds complexity to the process, leading to potential human error.

## **The idea conceived for this pilot**

*Can a blockchain-enabled application enable interoperability between humanitarian aid actors and reduce the duplication of aid efforts?*

A blockchain-based technology solution from the company GeniusTags was chosen to address this duplication problem in Nigeria, building on the success of a previous pilot in Syria. The Syria pilot, conducted in 2021, demonstrated the solution's ability to detect 113 duplicates among 7,000 beneficiaries in real-time, ensuring the security and privacy of what is highly sensitive personal data.

The solution, part of the GeniusChain initiative, automates the entire deduplication process without requiring human intervention. Using a universal unique identifier (UUID) for each beneficiary, the solution checks for duplicates on the blockchain, ensuring real-time detection without the need for organisations to share sensitive beneficiary information. The solution has a four-step setup, allowing organisations to integrate the technology into their existing workflows without the need for significant policy or procedural changes.

# Goals of the pilot

The pilot explored the following key goals:

1. Grow from the first implementation of the GeniusChain system in Syria to see how it could work in other contexts
2. Build and test with Nigerian humanitarian actors, building more detailed understanding of the needs of different users and contexts
3. Review the effectiveness of the GeniusChain solution in flagging duplicate beneficiaries

## Key Activities

Over four “sprints” - time-boxed units of experiments - the team was able to understand the Nigerian context by collaborating with the Cash Working Group and successfully onboard two agencies - Caritas and Mercy Corps - onto the GeniusTags system, as well as agree on a shared set of data standards between them.

- **Sprint 1 (February 2022 - April 2022):** Raised awareness of the duplication problem, officially announced the pilot, and generated momentum by encouraging participation from humanitarian actors.
- **Sprint 2 (August 2022 - October 2022):** Engaged with humanitarian agencies to address key assumptions surrounding tech adoption. This involved understanding and aligning with organisations’ data collection and management workflows, evaluating the integration of biometrics, and ensuring compliance with data protection laws and regulations.
- **Sprint 3 (November 2022 - January 2023):** Onboarded humanitarian agencies onto the system. Worked collaboratively with agencies to establish a shared standard for data endpoints.
- **Sprint 4 (February 2023 - March 2023):** Refining the data collection and pre-processing standards, testing the system, and assessing scalability and effectiveness.

# Findings from pilot activities

## **Finding 1: Personal and sector-specific data is managed in a specific way by agencies in Nigeria, but for deduplication systems can be treated the same.**

Key questions the pilot sought to test:

- How can the technology adapt to the specific data collection and management workflows of humanitarian agencies in Nigeria?
- What are the requirements for organisations to seamlessly integrate and start using the GeniusChain UID Platform within their existing workflows?
- What types of data are collected about beneficiaries, and how can the technology ensure accurate and reliable duplication checks while respecting privacy and security measures?
- What technology tools are currently employed by organisations for data collection and management, and how compatible are they with the GeniusChain UID Platform?

### **The methods used for testing:**

- The team engaged with humanitarian agencies to experiment with assumptions related to data collection and management workflows. Meetings were held with participating agencies to understand and map out their data workflows. This involved examining how data is collected, cleaned, stored, and managed in the context of assessment and distribution stages. Specific attention was given to the roles of community committees, field teams, M&E teams, and Programs teams during both stages.
- The kinds of data collected about beneficiaries were examined, differentiating between personal/demographic data and sector-specific data. Emphasis was placed on house GPS coordinates, age/sex disaggregation, and other specific data points.
- The team evaluated technology tools such as Kobo Collect, Microsoft Excel, Power BI, and a local mobile application used for data collection and management. The integration of these tools with the existing workflow was considered.

### **Key findings from testing:**

The UID platform already aligns with the technical needs of the Nigerian context, indicating no immediate requirement for technical changes. More specific findings were used to design and configure the GeniusChain UID Platform in other experiments.

## **Finding 2: Agencies can maintain their compliance with data protection laws by expanding the consent obtained from beneficiaries for the collection and processing of their data.**

Key questions the pilot sought to test:

- Does the proposed technology comply with Nigerian data protection laws and regulations?
- How can organisations using the technology maintain compliance with data protection laws while processing beneficiary data?
- How aware are beneficiaries of the data processing methods, and what information should be communicated to them regarding the technology's use?

### **The methods used for testing:**

- Conducted an experiment to assess compliance with Nigerian data protection laws, considering the sensitivity of humanitarian data. This included desk research on compliance requirements, collaborating with the FT Hub team and gathering resources on local regulations.

### **Key findings from testing:**

The Nigeria Data Protection And Privacy Regulations (NDPR) restrict data collection and grant rights to data owners. They also outline some key compliance requirements, for example, the appointment of a data protection officer.

Agencies can maintain their compliance with data protection laws by expanding the consent obtained from beneficiaries for the collection and processing of their data to cover the platform. The solution processes data on agency devices minimally, using a secure hash function with zero storage on servers.

## Finding 3: GeniusChain could integrate with biometric scanners, but since these vary in their methods of capturing and utilizing biometric data, additional investigation is required

Key questions the pilot sought to test:

- Can the integration of biometrics, such as fingerprint scanning, enhance beneficiary identification in the GeniusChain platform?
- Can the GeniusChain platform effectively integrate with tools like Simprints for biometric identification?

### The methods used for testing:

The team reached out to cash assistance agencies in Nigeria that reported using Simprints, a type of biometric scanner focused on fingerprint recognition..

### Key findings from testing:

Whereas in Syria, collection of biometrics is not permitted, in Nigeria GeniusChain could integrate with biometric scanners. While all biometric scanners essentially capture and utilise biometric data using the same method (production of a digital template ID), how they do so varies on the biometric tool. Further examinations are needed to demonstrate best practices of integrating GeniusChain with biometrics in general.



## Finding 4: As more agencies sign up and agree on shared data standards, the inclusion of new agencies can help to identify further duplicates and enhance system tailoring

Key questions the pilot sought to test:

- Can a shared standard of data end points for deduplication be agreed by participating agencies?

### The methods used for testing:

- Participating agencies were asked to provide the surveys and questionnaires used for the collection of beneficiary information.
- The team compiled a list of data end points corresponding to each question, and shared the form with agencies for confirmation.
- Participating agencies were onboarded onto the GeniusChain platform and were gradually introduced to its features. This included creating accounts, navigating the system, and running duplication checks in both one-by-one and bulk modes.

### Key findings from testing:

In the Syrian context the platform uses the beneficiary's own information (i.e. name, surname and gender) as well as their ID document to generate a UID. In Nigeria, the team relied on the personal information of the beneficiary's next of kin. Another difference was that data collection is community based in Nigeria, as there is no civil registry with which to compare.

The team concluded that as more and more agencies for a particular context are onboarded, a standard for data consistency grows to cover most, if not all, the data pre-processing requirements within a context and is therefore increasingly effective at detecting duplicates.

The team found that engaging with more agencies allowed for a more comprehensive understanding of the data end points and the nature of the data collected. This collaboration would enable agencies to review and provide feedback on data preprocessing and UID generation rules, making it more adaptable to diverse scenarios and ensuring its effectiveness across different contexts.

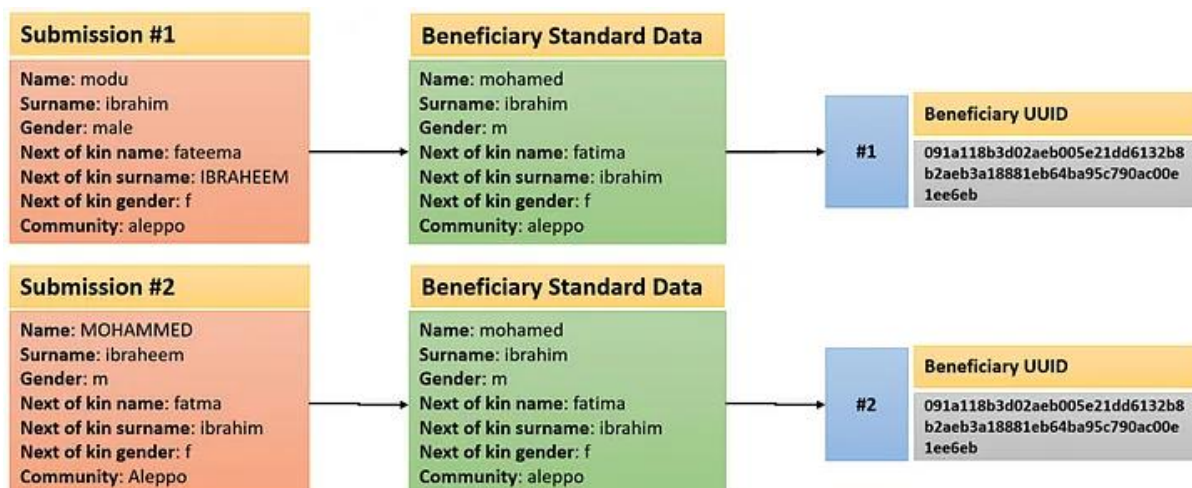


PHOTO CREDIT: GeniusTags | A unique identifier can be created from two independent sets of humanitarian aid data, with which a duplicate can be flagged



**"Not one institution is in charge of dictating which parts of the data gets to be collected and how and what gets corrected... Identifying those and then accommodating them in the system rather than one institution coming up with a standard is a community driven standard... I'm not saying that it's easy, but still the system will accommodate those things.."**

- Samer Hafar, GeniusTags

## **Finding 5: It can be challenging to engage humanitarian agencies, but some strategies stand out**

### **Key findings from testing:**

The team established communication with various humanitarian agencies and donors, aiming to enlist their participation in testing the GeniusChain platform. Although several agencies expressed interest, a UN agency had to withdraw later on, possibly due to the inherent rigidity of such large agencies and a reliance on established corporate solutions over a more experimental approach. One contributing factor might also be the agency's requirement for a data protection audit, indicating concerns about the risk associated with utilising beneficiary data. Unfortunately, this concern was not followed up on by the agency after clarifying questions about the request were made.

Another challenge faced by the team was the speed of response from individuals approached, which often resulted in project delays. There was a notable lag in receiving responses to queries, typically taking 1-2 weeks. Furthermore, the process of engagement, which involved ensuring people understood the tasks and actively participated, further contributed to a sluggish pace. Finally, the turnover of personnel resulted in the loss of key individuals.

The team reflected that the success of an initiative like the pilot depends heavily on obtaining approval from high-level officials such as the country director or, at the very least, the head of programmes. This is due to the nature of such an initiative, involving data, data processes, and the need for multiple agencies to agree to take part. Considering this challenge, starting with natural buy-in from a consortium could have helped.

Furthermore, a challenge faced by smaller organisations, including many NGOs, lies in the absence of key senior roles like a chief operating officer or chief data technology officer who may be in a stronger position to comprehensively understand both humanitarian programming and the proposed technology, as well as have the authority to give senior-level approval. These reasons perhaps explain the lack of strategic impetus from NGOs during the pilot, to really demonstrate their commitment to new ways of working and to achieve donor efficiency.

Achieving engagement from a donor like the FCDO is challenging, relying on an unlikely scenario where diverse roles (from the program manager to information management specialists, head of program, country director, and technology personnel from headquarters) are able to invest the necessary time to understand and commit to the initiative. Engagement requires a concerted effort, and needs to involve individuals who comprehend the problem and solution, and are able to contribute towards collective approval.

Given the complexities of securing senior buy-in, one strategic approach could be to integrate the testing of a technology solution like GeniusChain into a call for proposals. Although organisations commit to deduplication in every proposal, in reality, there is no kind of safe and responsible process to enable that. So, by explicitly writing the expectation to test an initiative like GeniusChain in such calls, the chances of successful piloting can improve.

# Conclusion

Overall, the pilot was able to successfully onboard two agencies, Caritas and Mercy Corps, signifying operational success and some willingness to experiment with the system in the humanitarian sector. However, the team reflected that it would have been great to have a fully engaged local partner who could have supported some of the basic questions the team had early on.

The team initiated communication with humanitarian agencies and donors to involve them in testing the GeniusChain platform, encountering challenges such as a UN agency withdrawing interest. Delays in engagement were further exacerbated by slow response times, turnover of personnel, and distributed responsibility across agencies. The critical need for a more high-level approval, particularly from country directors or heads of programs, is also clear, and there was a surprising lack of strategic impetus among NGOs, highlighting a missed opportunity to showcase their inherent adaptability to the donor community. To address these challenges, a suggestion is made to integrate expectations for testing initiatives like GeniusChain into calls for proposals, aligning incentives for an increased probability of pilot success.

On the other hand, the team celebrates that engagement was not achieved in a top-down way, but with consent. Initially, it was assumed that if the problem was legitimate and understood as needing to be solved, engagement would be strong. And when it wasn't, there were suggestions that the team should have asked for mandatory engagement led by a donor. But this was deemed as coercive rather than modelling the collaborative culture that the platform wanted to encourage.

It seems the challenge in reaching agency participation wasn't rooted in lack of interest but rather stemmed from constraints in time and resources. While the project wasn't very labour-intensive, the absence of funding for agency staff appears to surface a financial challenge, especially considering the need for compliance to existing programmes. Building on the pilot required the time and engagement of organisations, yet without financial support, expectations regarding clear and accurate billing of time were at risk, potentially undermining established rules. Recognising the need to align funding and compliance requirements could motivate agencies to prioritise future engagement.

Looking ahead, providing funding for innovation emerges as a key motivator, as it aligns with organisations' bottom line, ensuring they are not investing time and effort without adequate support. A potential opportunity lies in leveraging this motivation, with organisations like Mercy Corps and others pitching to entities such as ECHO for additional support and funding, and fostering a collaborative environment.

In terms of technical findings, it was established that the platform's foundation appears flexible enough to accommodate the unique data management requirements of different contexts, as evidenced by its successful implementation in Nigeria. One of the most important discoveries by the team was that key identifiers used by agencies differ between contexts (next of kin information is used in Nigeria compared to the beneficiary's own information and ID document in Syria), emphasising the importance of understanding and adapting to local practices.

The Nigerian context also presented unique opportunities, one of which was potential for biometrics integration. While the team was unable to test this directly with a participating agency, biometrics could offer a unique and permissible method for identifying individuals in a much more efficient way. Further evidence is needed in order to see if integration of biometrics, such as fingerprint scanning, enhances the identification of beneficiaries using the GeniusChain's platform, and if the platform effectively integrates with tools like Simprints for biometric identification.

The agreement on a shared set of data standards between agencies is a positive outcome, indicating a common understanding and collaborative effort toward consistent data practices in Nigeria. The system's effectiveness increases as more agencies sign up, emphasising the significance of collaboration in identifying duplications and ultimately ensuring that humanitarian aid is maximised.

**"However much every context is different, there's also a huge number of similarities across agencies as well as context. So actually, this way of working is nowhere near as controversial as it sounds, because however much everyone likes to highlight the differences between the way that they work... they actually all work quite similarly."**

- Lotti Douglas, FCDO

## Recommendations for further work

The next step in Nigeria is to flag duplicates using real beneficiary data, replicating the platform's ongoing use in Syria. The pilot in Syria was very successful and was able to detect 113 duplicates in a set of 7000 registered beneficiaries, in real-time, while maintaining the security and privacy of the beneficiary data.

Some of the logical next steps for this pilot are:

- Onboard additional organisations in Nigeria to promote scale.
- Work closely with a consistently engaged agency to drive piloting forwards.
- Use the solution to check for duplicates in Nigeria, in real time.
- Continue to develop and implement the GeniusChain platform in additional humanitarian contexts, working closely with donors and humanitarian practitioners to build on and share learning from both Syria and Nigeria.

In addition, the learnings of this pilot have informed recommendations for alternative approaches to testing the technology, which are:

- Consider working with a consortium of organisations that already have established agreements and cohesive processes, who trust each other and come together on a regular basis.
- Directly fund an organisation's time spent on the project, or explore how solutions could be incorporated into bigger programmes or awards so that resources can be dedicated towards it.

There are, finally, recommendations related to advocating for the continued testing of this technology:

- Use findings from the pilot phase to suggest that agencies continue to experiment with something that has already gained some traction and use.
- Remind potential participants of the overall mission and continue to advocate for this technology as supporting an approach that upholds the protection and privacy of incredibly vulnerable people.
- Concentrate on the strategic impetus teams could have for this work. DeDuplication is an important process and a commitment made by organisations for which they are limited in their response.

