



Unlocking Public and Private
Finance for the Poor

REQUEST FOR APPLICATIONS

Data Systems Implementation
for Migrant Remittances and
Financial Services

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1. EXECUTIVE SUMMARY

An estimated 281 million people — roughly 4 percent of the world's population — live and work outside of their home countries. This number represents an increase of 50 percent since 2000. Because of their migrant status, these populations often face unique challenges. Many fall outside of – or lack access to – the legal and social safety nets of both their host countries and home countries and those without formal identification documents face heightened financial vulnerability. Yet their economic activity is vitally important. Remittances – funds sent back home to family members by migrant breadwinners living abroad – represent a significant share of the total income flowing into many developing countries and they have the potential to be a major driver of sustainable development.

Many new technologies have emerged in recent decades to facilitate remittances. Nonetheless, there is a frequent disconnect between the remittance services available on the market, the policies that regulate them, and the needs, aspirations and challenges experienced by the migrants who rely on them. This has resulted in limited adoption of formal digital remittance channels. Digital remittances in particular hold great potential to promote the financial inclusion of historically marginalized groups – migrant women in particular. Compared to the cash-based models that currently dominate the formal remittances market – and the informal alternatives which are just as big or bigger in many corridors – digital remittances have the potential to provide significant advantages to migrant populations.

The UNCDF Migrant Money domain falls within the agency's broader global strategy of 'Leaving No One Behind in the Digital Era.' We seek to leverage innovative approaches and digital technologies to build inclusive digital economies that facilitate economic inclusion and strengthen the financial resilience of migrants and their families.

UNCDF aims to leverage transaction-level data on remittance flows in low- and middle-income countries to improve the functioning of the remittance market and to increase the financial resilience of migrant families. This is part of a broader effort to support the economic development efforts of the origin and host countries. UNCDF engages with public and private sector stakeholders to enhance the capacity of regulators to monitor and analyse remittance transaction data, which can be used in evidence-based policymaking. UNCDF also works to foster favourable policy and regulatory environments and to deliver financial and technical assistance to a wide range of financial institutions (e.g., banks, cooperatives, microfinance institutions, money transfer operators, and mobile network operators) with an eye to improving the digital remittance ecosystem and designing migrant-centric financial products and services (e.g., savings, credit, insurance, payment services, remittances, pensions, and investments). UNCDF recognizes that even the best databases on remittances suffer from substantive data gaps, and that these omissions hinder product innovation and constrains policymaking in the sector. For this reason, **UNCDF is seeking to engage a data engineering firm to build and deploy a 'data lakehouse' (lake + warehouse) that will streamline the collection, processing, curation, and analysis of demand and supply-side remittance data, and to develop interactive dashboards that will inform remittance markets and stakeholders.** UNCDF seeks a firm with expertise in setting up and implementing data lakes and data warehouses, as well as a track record of delivering complex data engineering and analysis projects and building front-end dashboard solutions. The assignment will start with the existing

transaction data gathered by UNCDF (n=80 million records), and will support additional and frequent data ingestion.

Scope: Global

Period: 2022-2023 with possibility of a second phase subject to positive performance appraisal

Budget: Up to US\$500,000 for the first year, with possible renewal of the grant subject to positive performance appraisal and additional funding available.

Eligible candidates: UNCDF is looking for a data engineering firm that will lead this assignment. Applicants may apply independently or as part of a consortium, provided that the consortium was established prior to this request for applications being issued. Applicants with experience in the remittances and forex market and with UN agencies and/or developing economy markets will be preferred.

The selected institutions will be signing a UNCDF Financing Grant Agreement.

All applications must be submitted via Apply at this link: https://apply.uncdf.org/prog/data_systems_implementation_for_migrant_remittances_and_financial_services no later than **Monday 22 August 2022 23:59 Eastern Daylight Time**.

Please send your questions to uncdf.rfa@uncdf.org no later than Sunday 15 July. A document answering frequently asked questions raised by interested institutions will be updated at the same webpage no later than Saturday 23 July.

2. DATA & RESEARCH

Even the best databases on remittance flows into low- and middle-income countries suffer from substantive data gaps, which hinders product innovation and policymaking. When comparing the economies of sending and receiving countries, for example, the outflow data do not always match the corresponding inflow data for bilateral corridors. It is not always clear which channels (e.g., online, agent or bank) are being used to transfer remittances, or who is sending or receiving them (e.g., youth, women or other population segments that are not being counted in the data). Because the official data is known to under-report informal and unregulated flows of remittances, it is not fully understood how remittances affect a developing nation's balance of payments. Moreover, data on remittance flows are only updated and reconciled periodically – often just once a year – and they lack granularity and precision. More real-time data are needed, with greater disaggregation by geographical and demographic characteristics such as sex and age.

To bridge the data and knowledge gaps, UNCDF is committed to working with stakeholders to promote data, research and learning activities that support the creation of enabling ecosystems, the design of migrant-centred product innovations and the making of evidence-based policy. Our goal is to ensure that remittance services empower and strengthen the financial resilience of all migrants, their family members and others. Since many of the UN's Sustainable Development Goals intersect with remittances and financial inclusion, our actions and research objectives support the 2030 Agenda for Sustainable Development.

UNCDF aims to address two broad research questions within the topic of remittances:

- To what degree can the shift from cash to digital remittances strengthen the financial inclusion, resilience and inclusive growth of migrants and their families?
- How can innovation and policies be improved to ensure digital remittances reach and address the needs of customers – with a focus on the delivery of last-mile remittance services (e.g., to reach low-income migrants and families, women and youth)?

UNCDF aims to strengthen the body of evidence on international remittances by improving the collection, analysis and dissemination of accurate, reliable and comparable data and research, disaggregated by sex, age, remittance corridors, remittance channels (cash, bank, e-wallet) and other characteristics. Through the data collaborative with remittance companies and regulators, UNCDF generates learnings, research insights and publications on migrant profiles, remittance flows and transaction patterns to inform evidence-based policymaking and migrant-centric product innovation. At the same time, its research insights help remittance services providers (RSPs) to develop more inclusive, migrant-centric products and inform the policies of central banks and other regulators.

Existing data and knowledge gaps include:

- Public data on migration and remittance flows lack granularity and precision. More real-time data is needed, with greater disaggregation by geographical and demographic characteristics such as gender and age.

- Remittance volumes published in the recipient countries' balance of payments (BOP) grossly underestimate the actual level of remittance flows, due to underreporting of informal or unregulated flows of remittances. There is limited data on the size and the growth of the formal and informal remittance flows in the market and there is a need to supplement the BOP data with highly disaggregated, real-time transaction data from RSPs.
- Due to a lack of appropriate reporting and analysis systems, it is difficult to determine how much the shift from cash-based to digital remittances during the global Covid-19 pandemic has led to a formalization of remittance flows.
- There is limited information on the profiles of migrant senders and recipients and a lack of data disaggregated by remittance corridors and channels (e.g., bank, cash or e-wallet transfer); by who sends and receives remittances (e.g. youth and women are not distinguishable in the data); by the usage of remittances by recipients or by the frequencies and amounts of transactions.
- Remittance service providers often have customer data on the sender or receiver (sex, age, location, intended usage) and transaction data on the volume (frequency, amounts) sent. But they sometimes lack other crucial market data and may not analyse their data to derive sufficiently detailed product development and market insights.

Addressing these data gaps is essential because the lack of information hinders remittance service providers, policymakers and regulators in their understanding of last-mile markets where recipients depend on remittance income. Better data monitoring and reporting make it possible to follow the growth and the direction of the market in real time, to make sure remittances are reaching the intended recipients, including low-income people, women, and youth. The steady shift from cash to digital remittances (which leave a data footprint) also creates opportunities for useful market insights. New methods of data collection, automation, and visualisation can now be applied which allow the mining of large volumes of transaction, market and openly accessible information. Data can be transferred through open APIs, it can be collected cost-effectively through apps and visualized through online interactive dashboards. There is an opportunity to leverage these big data footprints to fast-track evidence-based policy innovation and implementation.

A collaborative approach to collecting, analysing, and visualizing remittance market data for both the public and private sectors is needed to improve outcomes for migrants and their families receiving remittances. To facilitate better understanding of the remittance markets, UNCDF has collaborated with RSPs to analyse and understand their demand or supply-side data, seeking insights that inform product and policy development. The data housed currently by UNCDF covers 7 RSPs across multiple regions, with over 8 million unique customers, with 80+ million transactions and 3000 phone surveys for remittances users (see Annex – I). More providers are expected to share data over the next year and there is also a repository of public datasets¹ available.

¹ Highly relevant public data sources currently available for remittance markets are the KNOMAD migration and remittances databases (available at <https://www.knomad.org/data/migration/emigration> and <https://www.knomad.org/data/remittances>, respectively), the United Nations Department of Economic and Social Affairs (available at <https://www.un.org/development/desa/pd/data/global-migration-database>) and the International Organization for Migration (IOM) migration data portal (available at <https://www.migrationdataportal.org>). As well as wider national financial inclusion datasets such as Findex, Intermedia and Finscope.

UNCDF now aims to set up a data lakehouse to aggregate the data from research engagements, to offer more precise, real-time and granular understanding of a select set of remittance markets, especially in least developed countries. Under this approach, RSPs share their transaction and customer-level data for policy and inclusive-innovation research purposes with UNCDF. UNCDF further supports the RSPs by analysing their transaction and customer data in conjunction with additional customer research (e.g., surveys and interviews) and analysis of data scraped from the web. The analysis generates rich insights to help offer migrant-centric and linked financial services, with a focus on remittances and wider financial inclusion and resilience. UNCDF also provides data, research and technical assistance to remittance service providers active in developing countries to apply a 'migrant and gender lens' to product and service development. It identifies knowledge and data gaps in RSP data repositories and identifies use cases to help address them. Migrant- and recipient-level insights will inform the development of products and policies, foster new ideas and innovations in the remittance sector and support research publications.

Migrant-centric and gender-responsive digital remittances will not emerge on their own. To ensure that financial services work for both men and women on the move, and to strengthen the incentive for RSPs to provide migrant-centric financial services in a commercially viable manner, we require new ways of addressing the data gaps, and to implement research and collaborations across public and private sectors.

3. PURPOSE AND SCOPE OF WORK

3.1 SCOPE OF WORK

UNCDF is seeking a data engineering firm to set up a data lakehouse and dashboards for international remittances across global corridors. The data lakehouse should be cloud-native and provide a front-end interface for managing, transforming, and visualizing the stored data.

The selected grantee should:

- Work closely with members of the UNCDF Migrant Money Research Team to understand the existing programming, research methods, software and data processes. The grantee should engage collaboratively with various members of the team to conceptualize how the data lakehouse can address several use cases to inform different audiences in the remittance ecosystem.
- Propose the most suitable technology stack to improve, streamline and scale the UNCDF's current data collection, ingestion, transformation, and analysis workflow. The grantee should take into consideration the UNCDF priorities surfaced during the discovery phase, which may include factors such as cost-effectiveness, scalability, industry best practices and data security.
- Implement the data lakehouse, building upon and improving UNCDF's current data pipeline (see section 3.5) to leverage opportunities for automation and generalization. UNCDF's existing data tools (developed in R, Python, Stata, Tableau, and PowerBI) should be translated into the appropriate, agreed-upon software in the stack.
- Clean, transform and migrate data into the data warehouse. Processes for cleaning and transforming future data received should be developed to enable quick intake of future data.
- Develop easy to use, interactive dashboards to display customer and market insights, which could include descriptive analysis, market research and predictive models. In adherence with UNCDF branding guidelines, develop a webpage on the [Migrant Money website](#) to host tiered access (see section 4.3) to the dashboards for different user segments, including remittance service providers, regulators, researchers and academia. Propose and implement load-management strategies wherever necessary to reduce loading times.
- Develop and document API(s) to handle inbound and outbound requests, enable data loading, management, queries and extracts. Document all technical aspects of the data lakehouse for handover to UNCDF.
- Refine and update data governance policies in collaboration with UNCDF that take into consideration best practices and existing organizational practices.
- Transfer full ownership of the data lakehouse to UNCDF, train the UNCDF Migrant Money Research Team, and in some cases UNCDF partners, to maintain and make future changes to the data lakehouse. Develop training presentations and materials for various audience groups.
- Continue to engage with the UNCDF Migrant Money Research Team on a regular basis to ensure continued maintenance until handover and system knowledge transfer is complete. Identify next steps and requirements for phase two of the project.

3.2 COLLABORATION WITH UNCDF

To design and implement the data lakehouse, the applicant would closely collaborate with the UNCDF Migration and Remittance Program Research and Innovation Team. This dedicated team of 10 staff and consultants runs (big) data analytics, research and systems activities. The team directly supports human-centric policy and product-design insights, knowledge dissemination, learning and impact monitoring. It also serves as a focal point for managing relationships with external research partners and data collaboratives to ensure the services supplied to UNCDF are cost-effective.

Proposed division of responsibilities (subject to finalization with the data engineering firm)

Sr #	Responsibility	Stakeholder
1.	Current data work information	UNCDF
2.	Requirement gathering	Data engineering firm
3.	Requirement gathering sign-off	UNCDF Data engineering firm
4.	Cost sign-off for technology procurement	UNCDF Data engineering firm
5.	Data lakehouse development	Data engineering firm
6.	Data lakehouse QA	Data engineering firm
7.	Data lakehouse implementation	Data engineering firm
8.	Data lakehouse testing	Data engineering firm UNCDF
9.	Data cataloguing and migration from current systems	Data engineering firm UNCDF
10.	Data lakehouse live deployment	Data engineering firm
11.	Training UNCDF staff	Data engineering firm UNCDF
12.	Bug fixes	Data engineering
13.	Data lakehouse ownership	UNCDF

3.3 OBJECTIVES AND AUDIENCES

The objective of the data lakehouse, set up by the data engineering firm and UNCDF, is to generate regular customer remittance market insights, disaggregated at the migrant and recipient level, that will inform the development of products and policies in the remittance sector and support market research publications. This project aims to support stakeholders in the remittance sector more widely with data insights to apply a customer-centric lens by disaggregating by sex, age and other market data.

The primary output of the data lakehouse will be a publicly accessible webpage to inform the global remittance ecosystem with access and visualisation capabilities on remittance market intelligence. Data and visuals that are publicly available will be appropriately aggregated and anonymized to ensure privacy and protection measures are in place in accordance with UN Global Pulse Principles on Data Protection and Privacy². The webpage will also have dashboards with restricted access, which will allow stakeholders to visualize their own data with more granularity. Access to the data lakehouse will also be granted to research entities with whom UNCDF has signed the requisite NDAs for the conduct of research as a public good.

The system will support distinct groups of stakeholders in relevant organizations and sectors. It is expected to offer tiered and protected access for selected users – e.g., remittance service providers, regulators, UNCDF – and each may have their own specific use case:

1. A select number of UNCDF and academic researchers, who may be offered full access for doing specific market research. The insights gained through the data may be used more widely for research purposes relating to publications, working papers and insight pieces on migrant-centric digital remittance access, usage, financial inclusion and resilience. The content and deliverables/learnings from the published work will be considered a public good and placed in the public domain with the intent that these publications and insight pieces can be freely and widely used by other parties while respecting data proprietaries and confidentiality in line with data handling protocols to be shared during the discovery phase. UNCDF and the research institution will thus be joint owners of the intellectual property.
2. Remittance providers active in developing countries. This may include money transfer operators, banks, mobile money providers, mobile network operators, financial intermediaries, banks and microfinance institutions. This group should have full access to any of their own data stored within the lake and the aggregated data dashboard.
3. Policymakers and regulators from central banks, financial regulatory authorities, telecommunications regulatory bodies and development partners, standard-setting bodies, law enforcement agencies, wider academic and research audiences. This group may have access to data that has been aggregated to some degree and anonymized.
4. The general public. This group may be granted access to high-level market data, visualisations and statistics as well as links to all of the published reports.

² <https://www.unglobalpulse.org/policy/ungp-principles-on-data-privacy-and-protection/>

3.4 USE CASES

The system should provide data views and dashboards for different stakeholders depending on their use case. It will help RSPs, policymakers, international organizations, non-governmental organizations (NGOs) and regulators to understand and track the growth and dynamics of remittance markets, and help inform market research, product development and policymaking. By gaining more precise and regular insights, the data lakehouse may also support other research – including academic publications and working papers – that could be of value to the broader remittance sector. Table 1 illustrates key use cases per stakeholder group. The dashboards should become the go-to place for remittance companies, regulators, researchers, to track and benchmark remittance flows and markets.

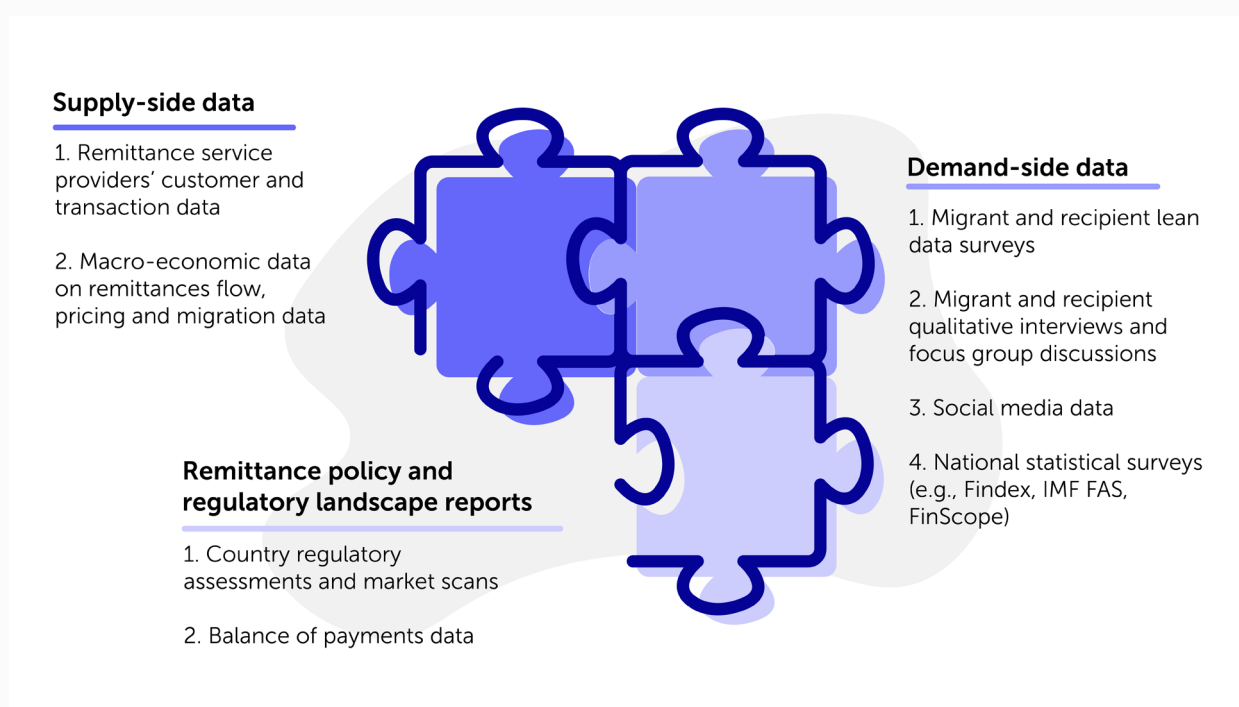
Table 1 Examples of key use cases for a remittance market data lakehouse (non-exhaustive list)

Key use cases per stakeholder	Remittance Service Providers	Regulators	UNCDF / Researchers
Monitor the size and growth of formal (digital) and informal remittances	X	X	X
Benchmark real-time performance of RSP to the overall remittances market	X		X
Monitor the impact of exogenous shocks to the remittance market (such as COVID-19, natural disasters, mobile money taxes and exchange rate shocks)	X	X	X
Identify last-mile distribution market barriers (for women, youth, low-income senders and receivers)	X	X	X
Identify market opportunities to develop more suitable products or invest in infrastructure to increase usage by underserved populations	X	X	X
Identify customer profiles, costs and transaction patterns	X	X	X
Develop conformity mechanisms to match existing (including transaction and other) data collected on remittances in two specific areas: (1) reflection of remittance data in balance of payments and (2) informal remittances	X	X	X
Measure the results of programme KPIs and learnings			X

3.5 DATA TYPES AND PIPELINE

UNCDF requires support on current data work and internal processes, including: data-type streamlining; data ingestion; data extracted from transactional systems; qualitative data; non-traditional data (e.g., social systems data); standardizing and strengthening data-sharing protocols; and data transformation. This would require solutions to support easy front-end data uploading and direct API integration with RSP providers, and open-source data (such as World Bank Indicators, IOM datasets, Knomad etc.). Data upload options should be developed with an eye to enhancing the efficiency of the data pipeline and enabling frequent data refreshes for RSPs. Furthermore, the data company would support the development of various interactive data views and dashboards that could present information from multiple sources and display different levels of detail to partners, depending on their access credentials.

UNCDF generates substantial market intelligence through its research partnerships with the private and public sectors. The data lakehouse will aim to overlay, link and triangulate supply-side, demand-side and regulatory data to offer opportunities for multi-source analysis and a more complete and granular picture of remittances markets. Figure 1 illustrates this picture of market intelligence that will be informed by the research answers gleaned from these three sources.



Supply-side data overview

1. *Remittance service providers' transaction and customer data* are rich and high-frequency, and they can offer detailed customer segmentation – e.g., by sender, recipient, sex, age, and other demographics; by remittance volume, transaction size and frequency; as well as by corridor, type of channel (digital, agent or cash) and track the uptake of other financial services. Through our existing and previous data collaborative partnerships, UNCDF has collected and analysed 7 datasets from various RSPs, and we have ambitions to expand this with an additional 10 to 15 RSPs in 2022 and 2023 across Africa and Asia. Combined, these 7 datasets cover 80+ million transaction records and over 8 million remittance senders and recipients. This data facilitates the tracking of remittance

flows and usage in real time.³

2. *Macro-economic data on remittance flows, pricing and migration*: This includes annual macro-economic and aggregated data on remittance and migrant flows published by the Global Knowledge Partnership on Migration and Development ([KNOMAD](#)), the United Nations Department of Economic and Social Affairs ([UNDESA](#)) and the International Organization for Migration ([IOM](#)).⁴ It further may include readily available quarterly data on remittance pricing from World Bank, [Remittance Prices Worldwide](#) database.

Demand-side data overview

1. Surveys and interviews: UNCDF has gathered various demand-side data, including an increasing number of phone survey data (n = 3,000), as well as more qualitative data from focus group discussions and in-depth interviews of remittance customers. Such data offer insights into whether remittance services reach underserved, excluded and last-mile customer segments. They also reveal how remittances are used to support household incomes as well as for productive or consumptive purposes, and show how they benefit the financial resilience of male and female senders and recipients.
2. National statistical surveys: Publicly available national statistical surveys (e.g., [Index](#), FinScope, [IMF Financial Access Surveys](#)) offer sporadic but detailed insights on formal and informal remittances markets and migrant receiver profiles.
3. Social media data: UNCDF is experimenting with social listening as well as web scraping on specific migrant remittance markets and corridors including platforms such as Twitter, YouTube and Facebook. We see potential uses for this type of data to be added on a frequent basis to the data lakehouse. We welcome proposals of other public sources.

Remittance market landscape

1. *Country assessments*: UNCDF has a series of market analyses produced and published in the form of reports that can be added to the data lakehouse as a repository of useful information.⁵
2. *Balance of payments data* is shared by several regulators and may be considered for inclusion in the data lakehouse.

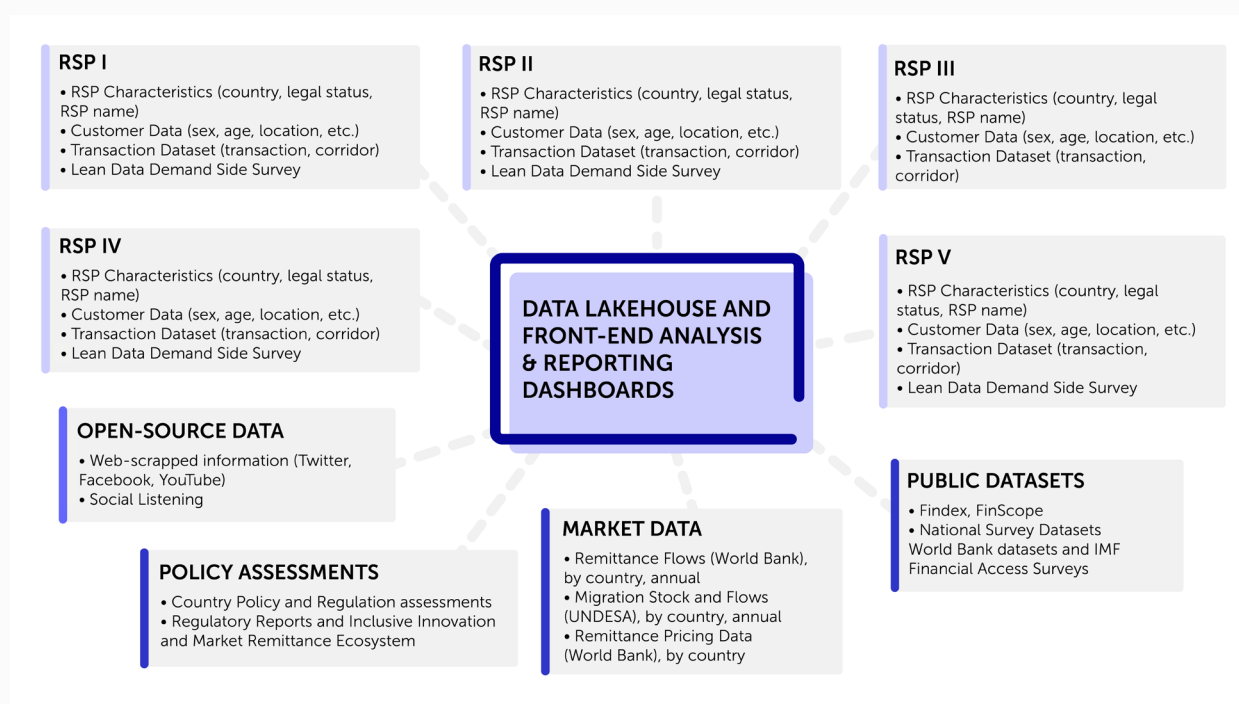
The remittance markets, especially in least developed countries, in which UNCDF operates and on which it has collected data cover several sending and receiving countries in Asia, including (but not limited to) Bangladesh, Myanmar and Nepal, as well as in Africa, including (but not limited to) Cameroon, Ethiopia, the Gambia, Ghana, Kenya, Nigeria, Senegal, South Sudan, Tanzania and Uganda.

3 See Table 2 for [Airtable](#) and Tableau dashboard outputs.

4 See Table 2 for macro-economic data [dashboard](#) on remittances flow, pricing and migration.

5 View the published assessment guides and corresponding country assessments here:
<https://migrantmoney.uncdf.org/frameworks-guides-toolkits>

An illustrative example of a possible data lakehouse model is shown below in Figure 2:



UNCDF has already set up a protocol for the data pipeline and mining processes, with international remittance transaction data to move from raw data, data ingestion, processing, analytics and outputs and dissemination. The protocol report describes key steps on how to prepare, process and standardize Management Information System (MIS) data so that it can be aggregated and offer anonymized indicators for customer and market analysis. For all RSPs, UNCDF has standardized common coding sheets (in Python and R) and these follow a data pipeline process with front-end visualisations and reporting in Tableau and PowerBI. The data pipeline process and protocols cited form a starting point for setting up the data lakehouse and can be further enhanced by the data company.

The existing process has been established to facilitate the cross-RSP analysis of the datasets. The process currently entails the following:

- 1. Data collection and storage**, transfer and extraction of transaction data, open data, surveys, market datasets. For working with transaction data and to protect data privacy, a UNCDF mutual Non-Disclosure Agreement (NDA) is signed with each remittance service provider (RSP). UNCDF applies protocols for data handling and data sharing.
- 2. Data ingestion**. This entails understanding the datasets, indicators and indicator values as well as conducting a data-mapping exercise to map the data available to the common indicator names and formats that our program uses. After the mapping, the data is cleaned and reformatted per the common dictionary (information model and code lists).
- 3. Data analysis**. This may include descriptive analysis, market segmentation and benchmarking and predictive analysis; generating customer profiles and segmentations; and Tableau or PowerBI

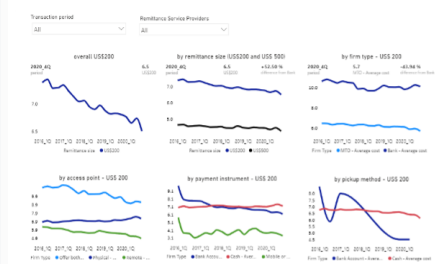
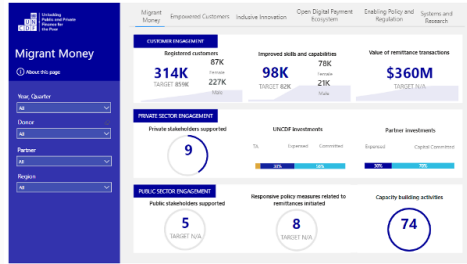
dashboards that overlay and triangulate various datasets and generate multiple and frequent reports and insights.

4. **Data outputs and dissemination.** This includes presenting interactive remittance market dashboards and reporting and feeds into producing remittance research insights papers and series. It also provides insights for migrant- and gender-centric innovation and policymaking. UNCDF also produces market research and regular insight series based on the data and information.

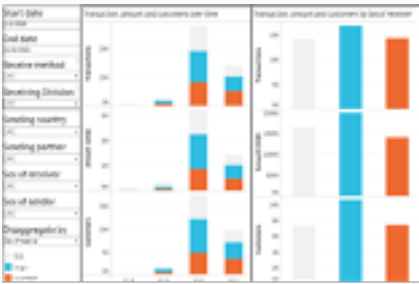
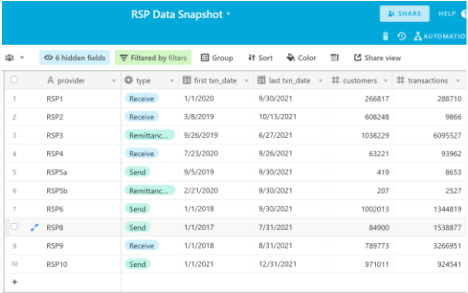
All dashboards would need to be consolidated, interactive and interconnected. UNCDF has already combined various macro- and micro-transaction datasets into dashboards, and would need one overarching integrated data dashboard for the sector, (see illustrative examples in Table 2 below). This needs to be one secured and consolidated interactive web-based dashboard that can be used easily by all stakeholders. Table 2 demonstrates dashboards developed by UNCDF from existing supply and demand side data.

After completion of the assignment, the knowledge and maintenance of the full dashboard and data lake needs to be transferred back and institutionalized with the UNCDF Migrant Money Research Team.

Table 2 Key dashboards to be integrated

	Global Remittance Data	KPI Programme Results Dashboard
Data	(Demand-side) Macro-economic data on remittance flows, channels and pricing, all countries.	(Supply-side) Quarterly KPI reporting and programme risks and learnings.
Dashboards	<p>Data on Migration and Remittances</p> 	<p>Programme Results Report</p> 
Software	Power-BI	Power-BI

* Illustrative example of one page of the dashboards

	Partner-Transaction Data Individual Dashboards	Transaction Indicator Outputs
Data	(Supply-side) Eight individual RSP partner dashboards based on transaction data*	(Supply-side) Airtable transaction standardized transaction data outputs. Stop-gap measure to facilitate aggregated analysis of datasets stored in different locations.
Dashboards		
Software	Tableau	Airtable to be linked to Tableau or PowerBI

* Illustrative example with dummy data.

3.6 EXPECTED OUTPUTS

Phase	Activity	Output	Foreseen Date
Initiation	<p>Financing Grant Agreement (PBA) and Non-disclosure Agreement (NDA) signed</p> <p>Project kick-off meeting to ensure stakeholder alignment on project objectives, scope and deliverables • Set-up project team and governance structure • Schedule frequency for internal monitoring meetings • Review activity-wise project plan • Agree on co-creation plan for the framework and assessments</p>	<p>Financing Grant Agreement (PBA) and Non-disclosure Agreement (NDA) signed</p> <p>Project kick-off meeting Up-to date workplan</p>	Month 0
Discovery	<p>Meetings and consultative calls conducted with members of the UNCDF Team to identify and understand data sources, use cases and audiences, including their profiles, priorities and constraints.</p> <p>Data assessment completed, including an in-depth review of UNCDF data handling and pipeline protocols, software and code, transaction datasets (raw and after transformation), qualitative database (raw and after coding), results measurement framework and tools, RSP and remittance market data dashboards, programme dashboards, and Airtable bases.</p>	<p>List of Key Informants and stakeholders conducted Notes from Key informant interviews (KII) and consultations with relevant stakeholders.</p> <p>Statement of work report with an inventory of data sources, mapping of use cases and audiences, and the technology stack for the data lakehouse.</p>	Month 1

Design	In collaboration with UNCDF, select 5 use cases (see section 3.4 for examples) from the discovery phase inception report for which the data lakehouse will be developed.	Project roadmap specifying the design proposal and timeline for the development of the data lakehouse for the 5 use cases. The report should include the proposed data lakehouse architecture, data pipeline, data migration plan, security considerations, user access tiers and authentication methods. Projections for hosting and maintenance costs for UNCDF should also be included.	Month 2
	Gather requirements, create the conceptual lakehouse architecture and identify optimal technology stack.		
Setup	Build the infrastructure for the data lakehouse.	Populated Data lakehouse backend and frontend (webpage and dashboards) in beta mode for 4 to 6 selected use cases in accordance with technical requirements (4.1, 4.2, 4.3, 4.4).	Months 3-6
	Develop prototypes for dashboards and webpage.		
	Migrate existing data into the data lakehouse.		
Testing	Access granted to a group of test users, representing the various target audiences. Meetings and joint calls conducted with test users to collect feedback both for the back end (data ingestion, storage) and front end (dashboard).	Brief report on the changes made further to the UAT insights Data lakehouse and dashboard changes incorporated to the data lakehouse in accordance with technical requirements (4.1, 4.2, 4.3, 4.4).	Month 7
	Test the inclusion of additional RSP datasets and refreshes through the complete lifecycle in the pipeline.		
	Rigorous system testing completed for data refresh, security and bugs.		

Launch	Develop webpage with embedded dashboards and data access tools.	Webpage launched with access to dashboards in accordance with technical requirements (4.1, 4.2, 4.3, 4.4).	Month 8
Documentation	Thorough documentation (user manual) of the data lakehouse for UNCDF technical team.	Technical documentation for the setup and maintenance of the data lakehouse common pipeline including API load and export	Month 9
	Thorough documentation (user manual) of the data lakehouse for other identified audiences.	Video tutorials and platform walk-throughs for each user audience	
	Identify and propose data governance practices for the data lakehouse that make use of industry best practices and organizational standards	Data governance framework for the data lakehouse	
Handover & Training	Data lakehouse handover trainings conducted with Research Team for maintenance. Phase two for the project (2023-2025) identified including activities, timeline, resources.	Full access and ownership of data lakehouse granted to respective audiences including all codes developed given to UNCDF.	Months 10-12
	(Virtual) Training for wider UNCDF staff on use of the data lakehouse for dashboard analysis and data exporting	4 tailored trainings planned and held for each expected audience covering the relevant dashboard(s)/ systems. Ongoing maintenance and troubleshooting support until December 2023.	
	(Virtual) Training(s) for RSPs on how to upload and access their data		
	(Virtual) Training(s) for policymakers and regulators on how to view and navigate the dashboard(s)		
	(Virtual) Training(s) for multi-lateral and civil society on how to view and navigate the dashboard(s)		

3.7 EXPECTED OUTCOMES

According to the projects and solutions presented, candidates must include in the proposal a complete list of results, outcome indicators and targets for monitoring achievement of different results. Below is a non-exhaustive list of key performance indicators (KPIs) for the projects. Other indicators would be finalized based on the nature of the project and tracked to ensure its success.

Deliverables would be derived from key project milestones to be agreed mutually between UNCDF and the selected applicant in accordance with the identified milestones, outcomes and targets of the KPIs, during the due-diligence and negotiation phase.

For illustration, milestones can include conducting market research and finalizing a go-to-market strategy.

In the application form, candidates will have to set reliable and attainable targets for each of the following indicators.

Indicators	Disaggregation
# Number of trainings & workshops for financial service providers	Total:
# Number of financial service providers trained	Total: Women:
# Number of trainings & workshops for policymakers & regulators	Total:
# Number of policymakers & regulators trained	Total: Women:
# Number of trainings & workshops for multi-laterals and civil society	Total:
# Number of multi-lateral and civil society employees trained	Total: Women:

4. TECHNICAL REQUIREMENTS

4.1 HARDWARE/SOFTWARE AND HOSTING

The technology stack is expected to meet the following specifications:

- Wherever applicable, it should incorporate open-source applications to facilitate the data lakehouse.
- The data lakehouse implementation should be cloud-native.
- If any proprietary solutions are proposed in the data lakehouse, the data firm should keep in mind their procurement, implementation, maintenance costs. These costs should be kept within the budget as mentioned in the RFA.
- The technology stack should address the latency and throughput requirements for both the back end and front end of the data lakehouse, given the high frequency of data inputs.
- For integrations with the data lakehouse, appropriate APIs should be developed using the most commonly available protocols such as JSON, REST, and SOAP. The APIs will be used for direct integration with partners for data updates and other data collaboratives.
- All back-end and front-end access logs shall be maintained in detail. Log history is crucial for UNCDF as is tiered access to keep a track of all activities on the data lakehouse.
- All proposed solutions should be easily scalable.

4.2 SECURITY MEASURES AND RISK MITIGATION

Data privacy and security measures that are in line with UN standards and industry best practices must be in place throughout the stack. Multi-factor authorization methods should be in place for web portal access.

The technological architecture should have DRM (disaster recovery management) and load bearing in place to manage any primary server outages and heavy traffic. Moreover, periodic backup of live servers will be taken to ensure that up-to-date data backups are in place for DRM. It is important to note that the data lakehouse development is conducted using agile methodology to reduce turnaround times and bugs, and to ensure that the implementation of use cases is in line with UNCDF's expectations.

4.3 DASHBOARDS AND DATA ACCESS

Dashboards must be designed in accordance with UNCDF and Migrant Money brand guidelines and visual style guides. The dashboards will be accessible through a webpage portal developed by the grantee. The webpage will be developed and hosted on the Migrant Money website. Front-end webpage development for dashboard housing should be done using open-source tools wherever applicable.

The webpage should also allow users to export data. Data export functionality and options (aggregated vs. disaggregated vs. raw) will be tied to the user's access tier and institutional affiliation.

Other than the front-end webpage and dashboards, the UNCDF team should have graphical user

interfaces (GUIs) for data lakehouse management and dashboard updates.

4.4 USER ACCESS AND AUTHENTICATION

Access to the back-end technology stack will be limited to the UNCDF Research Team. This to prevent unauthorized access or changes to the live database and servers. The data lakehouse should have GUIs for data lakehouse managers to devise user profiles, grant access, and grant permissions to team members as and when required.

The webpage that hosts the dashboard should include a user authentication protocol (like the one described above) that will allow UNCDF to designate access to different dashboards and subsets of data. Different users/partners will have different permissions for dashboard access, viewability, data export, etc.

4.5 BRANDING AND WRITING

All written deliverables are expected to be edited and copyedited in accordance with the UNDP Editorial Style Manual (to be provided) at the grantee's expense. Outputs which are designated for public consumption (e.g., dashboards, visualisations, presentations) must be produced in accordance with UNCDF brand guidelines. All outputs will be considered final after they have been reviewed by UNCDF and feedback has been adequately addressed by the team.

4.6 LANGUAGE

Correspondence: English

Training materials: English

Content delivery: English & French. Webpage and dashboards should be available in both English and French. Costs associated with translation will be borne by the grantee.

4.7 WORK-FOR-HIRE

The outputs and all the work developed by the grantee as provided under the Financing Grant Agreement, including all written, graphic, audio, visual and any other materials, contributions, applicable work product and production elements contained therein whether on paper, disk, tape, digital file or any other media, are considered work made for hire. UNCDF will be the sole proprietor of the Deliverable Service(s) from the time of their creation and owns all rights, titles and interests therein throughout the world including, without limitation, the copyright and all related rights. Once completed and approved by UNCDF, the content and deliverables/learning from the work will be considered a public good and placed in the public domain with the intent that this should be freely and widely used by other parties.

5. ELIGIBILITY FOR APPLICATION AND EVALUATION CRITERIA

5.1 ELIGIBILITY

Only applications that meet the eligibility requirements and minimum criteria for the submission will be scored.

- The applicant or lead applicant must be a registered entity.
- The applicant or lead applicant must be a data engineering firm.
- Applicants may apply independently or as part of a consortium, provided the consortium partnership was established prior to issuance of this request for applications.
- Applicants may apply **only once** under this RFA, whether independently or as part of a consortium.
- The lead applicant must be a registered entity with at least five years of operations and must have statutory accounts and financial statements for at least four operating years.
- Applicants shall not have been the subject of bankruptcy, liquidation, judicial settlement, safeguarding, cessation of activity or any other similar situation resulting from a similar procedure.
- No applicant – including individual employees and members of its board of directors – shall be included on any United Nations financial sanctions lists, particularly in the fight against the financing of terrorism and against attacks on international peace and security.⁶
- Applicants must not be involved in any of the following activities⁷:
 - » Manufacture, sale or distribution of controversial weapons or their components, including cluster bombs, anti-personnel mines, biological or chemical weapons or nuclear weapons.
 - » Manufacture, sale or distribution of armaments and/or weapons or their components, including military supplies and equipment.
 - » Replica weapons marketed to children.
 - » Manufacture, sale or distribution of tobacco or tobacco products.
 - » Involvement in the manufacture, sale and distribution of pornography.
 - » Manufacture, sale or distribution of substances subject to international bans or phase-outs, or wildlife or products regulated under the Convention on International Trade in Endangered Species (CITES).

⁶ See: <https://www.un.org/securitycouncil/sanctions/information>

⁷ See UNDP Policy on Due Diligence and Partnerships with the Private Sector (2013): https://popp.undp.org/_layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_DOCUMENT_LIBRARY/Public/BERA_Partnerships_UNDP%20private%20sector%20due%20diligence%20policy%202013_FINAL.pdf&action=default

- » Gambling, including casinos, betting, etc. (excluding lotteries with charitable objectives).
 - » Violation of human rights or complicity in human rights violations.
 - » Use or toleration of forced or compulsory labour.
 - » Use or toleration of child labour.
- Applicants shall have fulfilled all obligations relating to the payment of social security contributions and obligations relating to the payment of taxes in accordance with legal provisions in force in their country of incorporation.

UNCDF will conduct due diligence on selected applicants. Applicants must have documents ready for confirmation that they meet the eligibility criteria, including certificates of compliance with the tax authorities and any other documentary evidence that might be requested by UNCDF besides the application form.

5.2 EVALUATION CRITERIA

The Evaluation Committee will score the applications according to the criteria listed below.

The evaluation will follow the combined scoring method:

Rating the Technical Proposal (TP):

TP rating = (total score obtained by the offer / maximum obtainable score for TP) × 100.

Rating the Financial Proposal (FP):

FP rating = (lowest-priced offer / price of the offer being reviewed) × 100.

Total combined score:

Final rating = (TP rating) × (weight of TP, e.g. 70%) + (FP rating) × (weight of FP, e.g. 30%).

Technical proposal: 100 points.

Criteria	Points obtainable
Demonstrated experience in delivering full stack data solutions to enable business intelligence and research activities. Firm should have demonstrated experience through past projects of setting up data lakehouses, including building multi-source data ingestion pipelines; deploying data science models, visualizations and dashboards; and developing professionally designed web portals.	30
Quality and suitability of the proposed methodology and technological solution. The proposed methodology will be evaluated for its ability to meet the technical requirements in section 4.	20
Demonstrated experience of the grantee working with transaction and customer data related to banking, compliance and payments in private sector and public sector, especially in developing countries. Experience working with cross-border payments, remittance, and forex markets preferred. Experience setting up data pipelines and dashboards with private sector data and/or public data for market intelligence, product and policy development and research purposes in developing economies.	30
Qualifications, experience and structure of the proposed team that will deliver the data lakehouse and complementary data solutions that includes people with appropriate and relevant backgrounds in data engineering, data science, web design and project management. Experience working with large, multinational organizations.	20
Total	100

Financial proposal: 100 points.

To be computed as a ratio of the proposal's offer to the lowest price among the proposals received.

Total proposal: 100 points.

6. ELIGIBLE COSTS

The criteria for eligible expenditure determine whether a cost qualifies for funding under UNCDF rules and procedures.

The general criteria for eligibility of costs under UNCDF funding include the following:

- Eligible costs must be incurred by the applicant during the project (after the signature of the Financing Grant Agreement and up to the end of the grant period).
- Eligible costs should be indicated in the estimated overall budget of the action attached to the Financing Grant Agreement.
- Costs must be identifiable and verifiable, in particular being recorded in the accounting records of the applicant and determined according to the applicable accounting standards of the country where the lead applicant is established.
- Costs must comply with the requirements of applicable tax and social legislation.

- Costs must be reasonable, justified and comply with the principle of sound financial management, in particular regarding economy and efficiency.
- Workshop costs are eligible, for the workshop venue, food and beverages, and publication material.
- Training expenditure (financial education, digital education, soft skills) for the projects eligible. If applicable, this will include all related expenditure, such as the cost of the venue, participant travel, and so on.
- Investment costs directly attributable to the project, relating to research and innovation, are allowable.

7. INELIGIBLE COSTS

The following costs are ineligible and not accepted:

- Returns on capital and dividends paid by the lead applicant or any other member of the consortium.
- Debt and debt service charges.
- Provisions for losses or debts.
- Interest owed.
- Costs declared by the applicant in the framework of another action receiving a grant financed from another donor.
- Indirect costs, also called overheads.

8. AGREEMENT PARAMETERS

Potential applicants shall give evidence that their solutions are aligned to the following parameters.

8.1 APPLICANTS

Eligible candidates can apply alone or as lead applicant in a consortium of firms, as long as they comply with the eligibility requirements set forth in section 5.1. In the case of a consortium, the lead applicant shall comply with the eligibility requirements. The lead applicant will be responsible for:

- submitting the application form on behalf of the consortium;
- ensuring that each partner is fully aware of the composition of the partnership and of the contents of the Application Form;
- signing the Performance-Based Agreement with UNCDF;
- fulfilling all obligations set out in the Performance-Based Agreement;

- ensuring the allocation and the fulfilment of the funds among the consortium partners in compliance with the Performance-Based Agreement;
- ensuring the allocation and the fulfilment of the tasks among the consortium partners in compliance with the Performance-Based Agreement.

8.2 PROJECT DURATION

The project is expected to have a 12-month duration, with the possibility of extension for two more years. Activities under this Financing Grant agreement are expected to be terminated no later than 31 August 2023⁸. After August 2023, UNCDF would intend to commence a second phase for this project with a new budget allocation for the period August 2023- August 2025 and subject to positive performance appraisal and quality of deliverables submitted.

8.3 BUDGET

UNCDF will provide a grant to a single applicant with the highest score in accordance with the Evaluation Criteria as set out in section 5.2. UNCDF contributions will range up to US\$500,000.

The grant will be allocated accordingly:

8 Maintenance services for the data lake house will be until 31st December 2023.

Phase	Activity	Output	Foreseen date	Payment
Initiation	Financing Grant Agreement (PBA) and Non-disclosure Agreement (NDA) signed	Financing Grant Agreement (PBA) and Non-disclosure Agreement (NDA) signed	Month 0	10%
	Project kick-off meeting to ensure stakeholder alignment on project objectives, scope and deliverables • Set-up project team and governance structure • Schedule frequency for internal monitoring meetings • Review activity-wise project plan • Agree on co-creation plan for the framework and assessments	Project kick-off meeting Up-to date workplan		
Discovery	Meetings and consultative calls conducted with members of the UNCDF Team to identify and understand data sources, use cases and audiences, including their profiles, priorities and constraints.	List of Key Informants and stakeholders conducted Notes from Key informant interviews (KII) and consultations with relevant stakeholders.	Month 1	10%
	Data assessment completed, including an in-depth review of UNCDF data handling and pipeline protocols, software and code, transaction datasets (raw and after transformation), qualitative database (raw and after coding), results measurement framework and tools, RSP and remittance market data dashboards, programme dashboards, and Airtable bases.	Statement of work report with an inventory of data sources, mapping of use cases and audiences, and the and the technology stack for the data lakehouse.		
Design	In collaboration with UNCDF, select 5 use cases from the discovery phase inception report for which the data lakehouse will be developed.	Project roadmap specifying the design proposal and timeline for the development of the data lakehouse for the 5 use cases. The report should include the proposed data lakehouse architecture, data pipeline, data migration plan, security considerations, user access tiers and authentication methods. Projections for hosting and maintenance costs for UNCDF should also be included.	Month 2	10%
	Gather requirements, create the conceptual lakehouse architecture and identify optimal technology stack.			

Setup	Build the infrastructure for the data lakehouse.	Populated Data lakehouse backend and frontend (webpage and dashboards) in beta mode for 4 to 6 selected use cases in accordance with technical requirements (4.1, 4.2, 4.3, 4.4).	Month 3-6	20%
	Develop prototypes for dashboards and webpage.			
	Migrate existing data into the data lakehouse.			
Testing	Access granted to a group of test users, representing the various target audiences. Meetings and joint calls conducted with test users to collect feedback both for the back end (data ingestion, storage) and front end (dashboard).	Brief report on the changes made further to the UAT insights Data lakehouse and dashboard changes incorporated to the data lakehouse in accordance with technical requirements (4.1, 4.2, 4.3, 4.4).	Month 7	10%
	Test the inclusion of additional RSP datasets and refreshes through the complete lifecycle in the pipeline.			
	Rigorous system testing completed for data refresh, security and bugs.			
Launch	Develop webpage with embedded dashboards and data access tools.	Webpage launched with access to dashboards in accordance with technical requirements (4.1, 4.2, 4.3, 4.4).	Month 8	10%
Documentation	Thorough documentation (user manual) of the data lakehouse for UNCDF technical team.	Technical documentation for the setup and maintenance of the data lakehouse common pipeline including API load and export	Month 9	10%
	Thorough documentation (user manual) of the data lakehouse for other identified audiences.	Video tutorials and platform walk-throughs for each user audience		
	Identify and propose data governance practices for the data lakehouse that make use of industry best practices and organizational standards	Data governance framework for the data lakehouse		
Handover & Training	Data lakehouse handover trainings conducted with Research Team for maintenance. Phase two for the project (2023-2025) identified including activities, timeline, resources.	Full access and ownership of data lakehouse granted to respective audiences including all codes developed given to UNCDF.	Month 10-12	20%
	(Virtual) Training for wider UNCDF staff on use of the data lakehouse for dashboard analysis and data exporting	4 tailored trainings planned and held for each expected audience covering the relevant dashboard(s)/ systems.		
	(Virtual) Training(s) for RSPs on how to upload and access their data			
	(Virtual) Training(s) for policymakers and regulators on how to view and navigate the dashboard(s)	Ongoing maintenance and troubleshooting support until December 2023.		
	(Virtual) Training(s) for multi-lateral and civil society on how to view and navigate the dashboard(s)			

9. APPLICATION REQUIREMENTS AND PROCESS

9.1 STRUCTURE OF THE APPLICATION

The applicant must submit a complete application form online.

Please be sure to have prepared the following documents:

- Certificate of incorporation
- Latest audited financial statements
- Latest management accounts
- Official document confirming that the candidate is in compliance with all tax and social security payment obligations
- Technical submission form (using UNCDF's template)
- Budget and workplan (using UNCDF's template)
- CV form (using UNCDF's template)

All submissions must be completed in English.

Only applications that follow the Submission Format and which include all the necessary documentation will be considered.

9.2 APPLICATION DEADLINE

All applications must be submitted by 23:59 pm EDT (the New York time zone) on 22 August 2022 on Apply Platform at this link:

https://apply.uncdf.org/prog/data_systems_implementation_for_migrant_remittances_and_financial_services

It is recommended to start the online submission at the earliest convenience.

9.3 SELECTION PROCESS

- **Step 1: Eligibility screening.** Eligibility will be assessed by the Remittance Programme's review team according to the eligibility requirements as set out in section 5.1.
- **Step 2: Evaluation of eligible applications by the Evaluation Committee.** The Remittance Programme's Evaluation Committee will evaluate the applications based on the evaluation criteria set out in section 5.2.
- **Step 3: Due diligence.** Members of the Remittance Programme's review team will conduct due diligence on applicants and applications that receive the minimum qualifying score (70/100).
- **Step 4: Notification of applications.** All applicants will be notified of the status of their applications.
- **Step 5: Pre-grant negotiation and Performance-Based Agreement.** The selected applicants will finalize the scope of the grant, and the budgets, activities and indicators and targets, workplan and disbursements of the grant that will be released upon completion of each milestone.
- **Step 6: Approval of the selected applications by the Investment Committee.** Applications selected

by the Remittance Programme's Evaluation Committee will be reviewed, discussed and approved by the Investment Committee. Any further due diligence requirements, risk analysis or milestone recommendations from the Investment Committee will follow in later steps.

- **Step 7: Notification of applications.** All applicants will be notified of the status of their applications after final approval from UNCDF Board/Investment Committee.

9.4 TIMELINE

24 June 2022	Application window opens
15 July 2022	Deadline for questions in writing
23 July 2022	FAQ document published
22 August 2022 23:59 EDT	Deadline for submission

1. Real-time assistance from UNCDF

For requests and queries, send an email to uncdf.rfa@uncdf.org

Annex 1 – Information on UNCDF housed data

	RSP 1	RSP 2	RSP 3	RSP 4	RSP 5	RSP 6	RSP 7	RSP 8	RSP 9	RSP 10	RSP 11	RSP 12
NDA signed	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓		✓
MIS and data mapping	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓		✓
Market scan	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓
Data shared	✓	✗	✓	✓	✓	✓	✓	✓	✗	✓		✓
# Customer records	800K	✗	85K	1M	✗		260K	1 M	✗	600+		
# Transaction records	3.5M	✗	1.6M	0.7M	✗	13M	2M	5.2M	✗			
Data analytics	✓	✗	✓	✓	✗		◆	✓		◆		◆
Social listening	◆	✗	✓	◆			✓	✓	◆		◆	✓
Lean data survey	◆	✗	◆	◆	✗	✗	✓	✓	◆			
Qualitative research	◆	◆		◆	✗	✗	◆	✗	✗	✗	✗	✗

Legend:
 ✓ = Completed
 ◆ = In process / to be completed
 ✗ = Not applicable

Annex 2 - Example of indicators from various datasets

Indicator	Indicator Description	Detail
Access		
Date and time period		
Sex	Gender	1. Men 2. Women 3. Others
Age	Age of customers divided by age groups.	1. Young adults (<=25 years) 2. Middle-Aged adults (26-55 years) 3. Older adults (>=55 years)
Employment	Different types of employment sector	1. Agriculture 2. Industry 3. Service 4. Professional 5. Government
Location	Customer's residence	1. Country 2. City 3. District 4. Municipality

Remittance transaction corridor	Sending country and receiving country information for transactions	
Usage		
Active customers	Percentage of active customers that has performed a transaction in the last 90 days	
Number of transactions	Number of transactions performed, divided into seven groups	1. No. of transactions = 0 2. No. of transactions = 1 3. No. of transactions = 2-5 4. No. of transactions = 6-10 5. No. of transactions = 11-50 6. No. of transactions = 51-1000 7. No. of transactions = 1000+
Number of transactions in the last year	Number of transactions conducted in the last 365 days, divided into seven groups	1. No. of transactions = 0 2. No. of transactions = 1 3. No. of transactions = 2-5 4. No. of transactions = 6-10 5. No. of transactions = 11-50 6. No. of transactions = 51-1000 7. No. of transactions = 1000+
Low-, Medium-, High-value transactions	Percentage of low-, medium-, and high-value transactions	1. Low value - <\$200 2. Medium value - \$201 – 500 3. High value - >\$500
Volume of transactions	Total volume of transactions performed by a customer	
Volume of transactions in the last year	Volume of transactions performed by a customer within the last 365 days	
Volume of Low-, Medium-, High-value transactions	Volume of low-, medium-, and high-value transactions	1. Low value - <\$200 2. Medium value - \$201 – \$500 3. High value - >\$500
Average transaction amount (US\$)	Average transaction amount by customer over the customer life cycle, in US\$	
Transaction channel	Medium used to send or receive the transaction	1. Bank account % 2. Mobile wallet % 3. Agent %
Family impact	In your opinion, what are the top three ways that your family's life has changed since you started receiving/sending money with [RSP]?	fam_impact_1 fam_impact_2 fam_impact_3 fam_impact_4 fam_impact_5 fam_impact_6 fam_impact_7 fam_impact_77 fam_impact_8 fam_impact_0 fam_impact_dk

Financial literacy	What kind of training or support would you like to receive to help you send remittances abroad using [RSP]?	fin_lit_0 fin_lit_1 fin_lit_2 fin_lit_3 fin_lit_4 fin_lit_5 fin_lit_6 fin_lit_dk
Financial literacy A	What kind of training or support did you receive to help you send remittances abroad using [RSP]?	fin_lit_a_0 fin_lit_a_1 fin_lit_a_2 fin_lit_a_3 fin_lit_a_4 fin_lit_a_5 fin_lit_a_6 fin_lit_a_7 fin_lit_a_77
Financial literacy B	What kind of training or support would you like to receive to help you send remittances abroad using [RSP]?	fin_lit_b_0 fin_lit_b_1 fin_lit_b_2 fin_lit_b_3 fin_lit_b_4 fin_lit_b_5 fin_lit_b_6 fin_lit_b_7 fin_lit_b_77
Financial service change	Since you started using [RSP], has your use of other financial services (1) increased a lot, (2) increased, (3) decreased, (4) decreased a lot, or (5) remained unchanged?	1. Increased a lot 2. Increased 3. Decreased 4. Decreased a lot 5. Unchanged
Financial service usage	In the past 12 months, which of these financial services have you used?	fin_serv_use_0 fin_serv_use_1 fin_serv_use_2 fin_serv_use_3 fin_serv_use_4 fin_serv_use_5 fin_serv_use_6 fin_serv_use_7 fin_serv_use_8 fin_serv_use_9
Financial training	How would you prefer to follow the training and support offered by [RSP]?	
Financial training A	How did you follow the training and support offered by [RSP]?	

Financial training B	How would you prefer to follow the training and support offered by [RSP]?	
Financial wellbeing A	I tend to worry about paying my normal living expenses.	Yes No
Financial wellbeing B	After paying of my expenses, I have money left over at the end of the month.	Yes No
Financial wellbeing C	I feel confident to use my phone for financial transactions.	Yes No
Financial wellbeing D	Receiving remittances is stressful.	Yes No
Financial wellbeing E	I feel international remittances can improve my family's financial life.	Yes No
Recipient remittances barriers	What are the three main challenges you face when receiving money through [RSP]?	rec_barr_receiv_1 rec_barr_receiv_10 rec_barr_receiv_2 rec_barr_receiv_3 rec_barr_receiv_4 rec_barr_receiv_5 rec_barr_receiv_6 rec_barr_receiv_7 rec_barr_receiv_77 rec_barr_receiv_8 rec_barr_receiv_9 rec_barr_receiv_0
Recipient remittances benefits	What are the three main benefits you experienced as a remittances recipient using [RSP]?	receive_benefit_1 receive_benefit_2 receive_benefit_3 receive_benefit_4 receive_benefit_5 receive_benefit_6 receive_benefit_7 receive_benefit_77 receive_benefit_8 receive_benefit_9 receive_benefit_dk
Recipient satisfaction	How satisfied are you with the process of receiving or sending money abroad via [RSP]?	
Remittance channel preference	Which of the following channels do you prefer for receiving or sending remittances?	
Remittance channel usage	Have you ever used one of these channels to receive or send remittances?	remit_chanl_use_1 remit_chanl_use_2 remit_chanl_use_3 remit_chanl_use_4 remit_chanl_use_5 remit_chanl_use_6

Remittance control	In general, who decides how the remittance money should be used?	
Remittance usage	For what purpose has most of the money you received or sent abroad been used (intended use of remittance)?	remit_use_1 remit_use_10 remit_use_11 remit_use_12 remit_use_2 remit_use_3 remit_use_4 remit_use_5 remit_use_6 remit_use_7 remit_use_77 remit_use_8 remit_use_9 remit_use_13 remit_use_dk
Respondent's age	Age group	
Respondent's education level	Highest education qualification	
Respondent's employment type	Type of employment	
Respondent's gender	Gender	
Respondent's household income	What is your total MONTHLY household income before taxes?	
Respondent's marital status		
Respondent's mobile usage	In the past 12 months, what kind of financial transactions did you make using your mobile phone?	resp_mobile_use_0 resp_mobile_use_1 resp_mobile_use_10 resp_mobile_use_2 resp_mobile_use_3 resp_mobile_use_4 resp_mobile_use_5 resp_mobile_use_6 resp_mobile_use_7 resp_mobile_use_77 resp_mobile_use_8 resp_mobile_use_9

Recipient respondent's relation	In the past 12 months, from whom did you receive money from abroad using [RSP]?	resp_relation_receiver_1 resp_relation_receiver_2 resp_relation_receiver_3 resp_relation_receiver_4 resp_relation_receiver_5 resp_relation_receiver_6 resp_relation_receiver_7 resp_relation_receiver_8
Respondent's sector	Sector of employment.	
Respondent's confidence level	Since you started using [RSP], would you say your confidence in handling your own money (1) increased a lot, (2) increased, (3) decreased, (4) decreased a lot or (5) remains unchanged?	
Respondent financial emergency	Since you started using [RSP], how would you say your ability to handle a financial emergency has changed?	
Respondent stress	Since you started using [RSP], has your stress over receiving or sending money abroad (1) increased a lot, (2) increased, (3) decreased, (4) decreased a lot or (5) remained unchanged?	
Sender barriers	What are the three main challenges you face when sending money through [RSP]?	sender_barr_1 sender_barr_10 sender_barr_2 sender_barr_3 sender_barr_4 sender_barr_5 sender_barr_6 sender_barr_7 sender_barr_77 sender_barr_8 sender_barr_9
Sender benefit	What are the three main benefits you experienced as a remittances sender using [RSP]?	sender_benefit_1 sender_benefit_2 sender_benefit_3 sender_benefit_4 sender_benefit_5 sender_benefit_6 sender_benefit_7 sender_benefit_77 sender_benefit_8 sender_benefit_9

Sender satisfaction	How satisfied are you with the process of receiving or sending money abroad via [RSP]	
Support	Did you receive any training or support to receive or send remittances abroad using [RSP]?	
RSP service decision	Whose decision was it to start using the services of [RSP]?	
RSP service decision method	Whose decision was it to start using the services of [RSP]?	
Remittance money usage	In general, who decides how the remittance money should be used?	



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