

Creating Data Standard Coalitions in Under-Digitised Environments

Gather's experience with The Hub in Antananarivo, Madagascar





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Abstract

This document is the open access guidance published by Gather on how to develop a coalition of sanitation organisations working in under-digitised environments to create data standards.

Acknowledgements

We are grateful to Kimberly Worsham, Principal at FLUSH and seconded Interim Director of Programmes at Gather for leading the creation of this document.

Our partners for this activities and projects referenced in this document include Commune Urbaine d’Antananarivo (the municipality) Société municipale d’assainissement (the municipal sanitation company), Loowatt SARL (a sanitation provider) and Water and Sanitation for the Urban Poor (a non-profit capacity builder).

The activities and projects that informed this document were funded by the Benchmark Initiative, Sir Halley Stewart Trust, UK Aid Direct, World Bank Data Innovation Fund.





About this package

What's the purpose of this package?

Gather is focused on strengthening sanitation systems (including on-site sanitation such as container-based sanitation toilets or pit latrines and sewer systems) in low-income urban areas. We use data as our key mechanism to strengthen those systems. We worked on data standards for sanitation service providers in Antananarivo, Madagascar, creating a coalition of implementers called The Hub. This was a pilot project.

Data standards are the rules, conditions, and guidelines by which data is described and recorded. They govern how data is collected, structured, published, and shared by individuals and organisations other than the data collector or owner. Without access to trusted data, decision-makers in emerging cities can less identify where and how to improve sanitation. While our team had experience working on data standards in other regions and contexts, our experience with The Hub was different due to limited resources; the region has low levels of digitization and geospatial data. Because of these limitations, our work with The Hub could not follow the same processes we had used before. Simply, we didn't have a manual we could use for our work with The Hub.

We are sure that our experience with data systems in Antananarivo through The Hub is not unique to other regions with few resources. We wanted to create a useful guidance document for other practitioners and implementers interested in pursuing similar data standard projects in low-resourced areas.

We created this bundled package that includes all the components that have made The Hub a success, despite it not running like a typical data standards project. This package will include defining the Hub, detailing the partnerships component, and including information about the data platform. It is designed to allow other organisations and teams to replicate The Hub in similar environments - ones that have limited digital and geospatial resources

Who is it for?

This package started as a way for Gather's team to communicate internally about our work with The Hub in Madagascar. We have formatted this current version to be used by three different categories of users:

- 'Users' who are program managers and directors interested in leading organisations and/or government agencies in developing systems to standardise data. This could also include technology companies concerned about sanitation data.
- 'Advocates' who want to share evidence that better availability, accessibility, and accuracy of location data for sanitation helps transform sanitation infrastructure and services for low-income communities.
- 'Fundors' who are interested in supporting efforts to reduce the sanitation data gap. This project was completed, thanks to FCDO.

What does it include?

This package includes guidance on best practices for creating collective action to standardise and share data in the industry to accelerate its progress and performance. It includes details

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on the three key segments in creating this effort - building trust, determining standards, and creating a shared platform for data.

The focal case study in this guidance is based on Gather's collective action work in Antananarivo, Madagascar, to mobilize the sanitation sector's data sharing and standardization with key actors. In this document, we refer to the collective action aspect as "The Hub". Throughout the guidance, we have included tips, advice, and lessons experienced while managing The Hub.

Who are Gather?



Gather is a UK-headquartered non-profit organisation that sits at the cross-sector of data, systems change and social justice. Our vision is to see thriving cities where every individual and community has access to essential services.

We are starting with urban sanitation in Antananarivo, Madagascar. There we have partnered with municipal sanitation organisations to build a model of best practice for using data to strengthen sanitation improvement for 1.7 million people.

As a small organisation, rather than implementing projects, Gather's key strength is its facilitating power. This entails bringing different stakeholders together in the same room, building their trust, and getting the group on the same page.

Data is Gather's "secret sauce" for facilitating these conversations. With data, Gather analyses data in urban areas, evaluates gaps and challenges, and develops tools and guides to help stakeholders make data-based decisions. We then get stakeholders to understand data, respond to data-based assessments that we lead, standardise data systems and sharing across sectors and organisations, and start using data for making decisions

Our approach is simple – we have a three-point system for our work: facilitating conversations, leading data diagnostics, and mobilising responses to change. This three-point system is fluid and goes between the different points depending on the local context. Furthermore, this system is continuous – we continue to go between each point, iterating and improving work as we go along.

We start our approach with either:

1. facilitating conversations, learning about what our stakeholders need to improve their work, or



2. lead a data diagnostics/research project to understand what data exists, its quality, or insights from analysing the available data.

From these points, we work to mobilise change with our partners.

We are changing systems of inaction, inconsistent performance, and poor sanitation coverage in urban areas by facilitating conversations and administering data diagnostics. Our systems change work mobilises responses to change – whether that means better sanitation services, new and effective collaborations and partnerships, or increased funding.

We have built our approach on strong data (including interviews with over 100 global sanitation professionals) that has been corroborated by experts (as evidenced in reports by WaterAid, World Bank, and the United Nations), and welcomed by local municipal decision-makers. Gather's emphasis on local understanding and shared ownership of outcomes is complemented by our core values of honesty and sharing. This has allowed us to build trust with stakeholders and gain a reputation for leading better data use through practical partnerships, pioneering technology and peer-reviewed research. Our approach has innovated the standardised collection, analysis, and understanding of the value of data to improve decision-making in the sanitation sector.

Our data tools are designed to be locally relevant and globally applicable. We are currently developing a digital roadmap to outline how we can add new features and services over time in an agile, responsive way to meet our partners' needs, and explore models to become financially self-sufficient.

In Antananarivo, Madagascar, we have helped municipal sanitation organisations share data with each other for the first time. Improved access to geospatial data – and a greater understanding of the analysis – has led to improvement plans for public handwashing facilities and household sanitation services for 350,000 people.

Gather has also produced award-winning, peer-reviewed research into the availability, accessibility, and accuracy of public sanitation data, and practical, referenced recommendations on how to improve it. This work has been published by institutions including the World Bank, presented at academic centres including the Water Institute at the University of North Carolina, shared at practitioner-led conferences including Global Sanitation Economy Summit and referenced by thought leaders include GSMA and the Toilet Board Coalition. Gather's team are also frequently invited to contribute to panels on decolonising data in the development sector, and our work has been recognised by Forbes, MIT Technology Review, Digital Leaders and Tech for Good.





The project behind the package

The Hub



The Antananarivo Sanitation Data Hub ("The Hub") was an effort to create collective action around standardizing datasets in sanitation in hopes that organisations will start sharing data that can be helpful for others working on sanitation projects. With The Hub, Gather worked with four local sanitation organisations in Antananarivo, Madagascar, to transform how they collect, share, and analyse sanitation data to improve services for 350,000 people.

The Hub was created in response to a call for proposals from the World Bank's Data for Innovation Fund and received additional funding from UK Aid Direct, the Alan and Nesta Ferguson Trust, and the Sir Halley Stewart Trust. Our local partners included Antananarivo's municipality, Antananarivo's municipal sanitation company, Loowatt SARL and Water and Sanitation for the Urban Poor.

What was achieved?

20 datasets on sanitation for 350,000 people have been shared between four organisations for the first time and partners reported a 40% increase in confidence in using data to make decision.

The strategies used during this project was facilitated conversation – delivered through three group workshops, regular group conversations and regular one-to-one conversations and the creation of data diagnostics – a new data standard, risk index, and sanitation data platform. These were created iteratively and collaboratively in order to respond to the needs and understanding of our project partners.

Three of our four project partners have used the data analysis to make at least one decision that will help them improve sanitation. This includes a new contractual agreement to better coordinate the improvement of services in areas where more than one organisation operates. This will improve the efficient allocation of limited resources.



All four project partners are committed to adhering to standardised data, understanding that created standardisation will allow for more data to be shared and better insight to be obtained that can inform how – and where – to best improve sanitation for vulnerable communities.

In our original project design, we had emphasized creating a data tool – the sanitation data platform – where the greatest need and benefit for members provide a space to discuss challenges and collectively solve issues that they had been struggling with individually for years. Using data was a critical mechanism for facilitating these conversations. Still, the ultimate winner of this project was that we could get members to build trust with each other and work together on sanitation projects.

The Global Sanitation Crisis

Today, 2.5 billion people live in cities around the world without access to safely managed sanitation. Past efforts to improve sanitation infrastructure and services for vulnerable communities in cities have struggled to gain momentum because decision-makers cannot access the best data to understand the best action to take.

We believe that toilets change everything. We believe that access to safely managed sanitation is essential for people to lead healthy, dignified lives and, in turn, for cities to thrive. Every year, the global sanitation crisis results in increased healthcare costs, decreased income, and reduced productivity totalling more than US\$200 billion.

When cities don't have the right sanitation infrastructure and services to support their populations, here's what happens.

- Water gets dirty: Poorly managed sanitation can seep into and contaminate the water sources that people drink from or use to cook, clean, bathe, and do laundry.
- Diseases spread: Drinking or using contaminated water causes people, especially kids, to get sick. More than 1,000 kids die each day from diarrhea due to water contamination.
- People miss work: When people get sick from coming into contact with contaminated water or spend extra time collecting clean water for their households, they miss work.
- Girls skip school: Sanitation impacts education for girls. Girls skip school or even drop out when they start their periods, if they can't access the toilet facilities they need at school.

While our focus is on sanitation, Gather strongly believes that our work processes in creating The Hub in Madagascar are easily transferable to other sectors beyond sanitation. The need for sharing data is not unique to sanitation, and the future is bright if we have cross-sectoral data sharing.



Sanitation in Antananarivo, Madagascar



The sanitation crisis does not exist as an issue in isolation. Madagascar is listed at 162 of the United Nation's Humanitarian Development Index. The sanitation crisis in Madagascar has contributed to:

- the spread of diarrheal diseases, cholera, and most recently, the plague –bubonic and pneumonic;
- Malagasy women and girls are not able to work or go to school due to lack of access to menstrual hygiene facilities;
- the total annual loss of \$567.7 million. For a nation where 91% of the population survives on less than \$2, this loss highlights a detrimental cycle of poverty and loss for many Malagasy people, especially for lower-income communities.

Madagascar is also considered one of the countries most overexposed to climate change. The capital city of Antananarivo is regularly affected by landslides and flooding, especially due to the structure of the landscape. Flooding and a lack of sanitation infrastructure leads to faecal contamination of water, exacerbating disease spread.

Many organisations are working to tackle Madagascar's sanitation crisis. In the last five years, WaterAid, UNICEF, and the World Bank have produced reports to analyse existing WASH systems and to bring forward policy recommendations. This literature review will summarise their key recommendations to position our research within the wider scholarship.

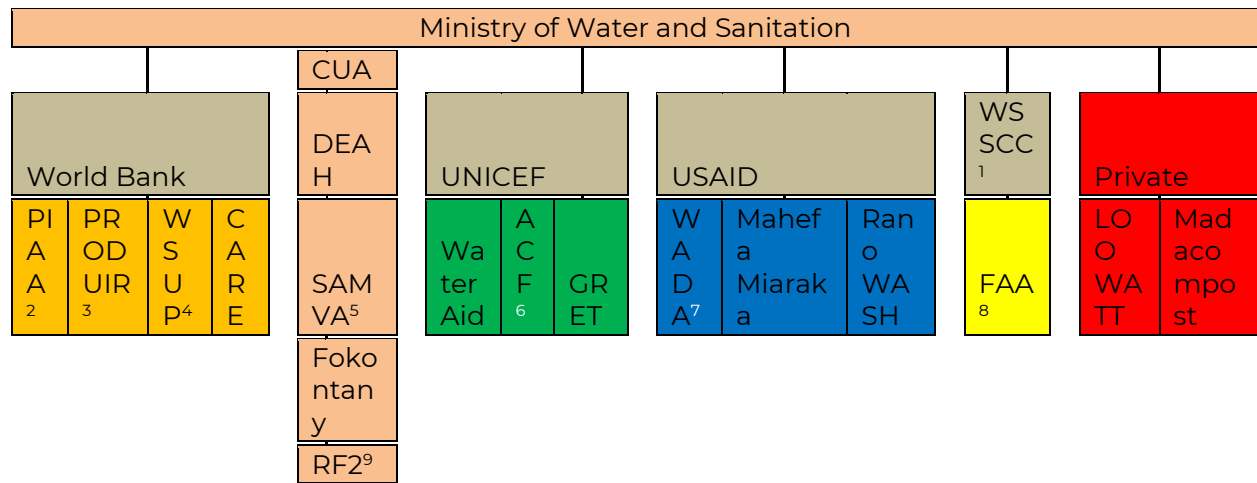
Madagascar's data gap is greater than just sanitation data. As we assess the sanitation data gap for Madagascar, we must be mindful of creating insight that empowers the national, regional, and municipal governments:

- identify funding priorities, particularly in areas where it is needed to counter the impact of flooding;



- understand what data is currently available - or needs to be made available - to understand investment priorities into the rehabilitation of infrastructure, the development of new infrastructure;
- advocate for greater external investment into sanitation infrastructure and services.

Gather developed a landscape map of stakeholders in Antananarivo's sanitation sector. Stakeholders include a network of national and local government agencies and departments, funders, non-governmental organisations (NGOs) providing services and advocating for improved sanitation, and the private sector. All report to Madagascar's Ministry of Water and Sanitation.



Legend

Orange box	Malagasy government
Light green box	Funders
Yellow box	NGOs that interact with each other grouped by their funders
Blue box	NGOs that interact with each other grouped by their funders
Red box	Private organisations

¹ Water Supply and Sanitation Collaboration Council

² Projet intégré d'assainissement d'Antananarivo

³ Projet de développement urbain intégré et de résilience du Grand Antananarivo (Integrated Urban Development

⁴ Water & Sanitation for the Urban Poor

⁵ Service Autonome de Maintenance de la Ville d' Antananarivo, which coordinates interacting groups including Fokotany and RF2 (Rafitra Fanadiovana – cleaning infrastructure)

⁶ Action Contre la Faim

⁷ Water and Development Alliance

⁸ Fond d'Appui à L'Assainissement

⁹ Community-based sanitation workers



Step 1: Principles

With The Hub, Gather was not looking to reinvent existing guidance and best practice but make it more accessible and understandable for people collecting new location data in the sanitation sector. This will help create a movement of professionals across the sector who can improve the availability, accessibility, and accuracy of location data for sanitation. Gather used and created a set of principles for The Hub to ensure that the project remained equitable, inclusive, and useful.

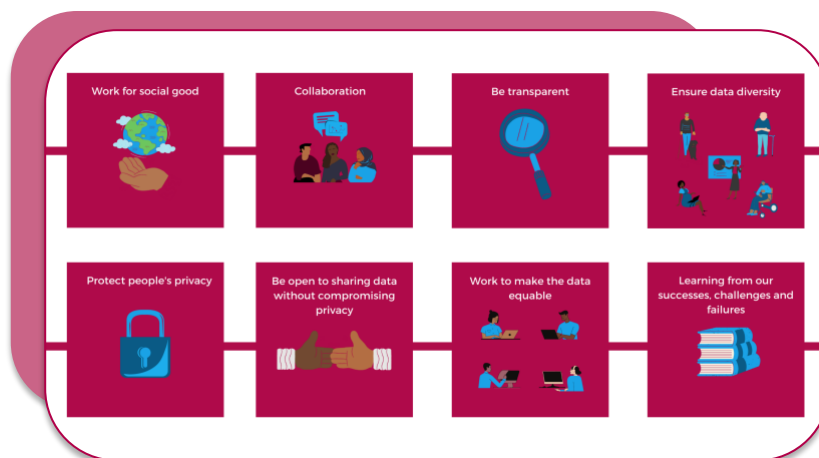
We recommend you select principles to guide your project.

Nakuru Accord

Transparency and accountability are necessary for achieving sustainable, positive impacts from water, sanitation, and hygiene. As a WASH professional, I believe that we can achieve this through a culture of sharing and adaptation when things go wrong. To support this, I will:

- Promote a culture of sharing and learning that allows people to talk openly when things go wrong.
- Be fiercely transparent and hold myself accountable for my thinking, communication and action.
- Build flexibility into funding requests to allow for adaptation.
- Design long-term monitoring and evaluation that allows sustainability to be assessed.
- Design in sustainability by considering the whole life cycle.
- Actively seek feedback from all stakeholders, particularly end-users.
- Recognise that things go wrong, and willingly share these experiences, including information about contributing factors and possible solutions, in a productive way.
- Critically examine available evidence, recognising that not all evidence is created equal.
- Write and speak in plain language, especially when discussing what has gone wrong.

Benchmark Principles of Improving Data Integrity





After researching the availability, accessibility and accuracy of sanitation data for 50 countries we agreed the following principles:

- Work for the social good: We commit to using data for the social good and will actively seek to prevent unintended, harmful consequences that could occur when collecting, sharing, and analysing the data. We believe that sanitation data should only be collected if it is to be used to improve the infrastructure and services for vulnerable communities.
- Work in collaboration with others: We will work with organisations and individuals within the sanitation sector to improve location data integrity for sanitation infrastructure and services.
- Be transparent: We will make sure that we: publicly communicate our reason for collecting, storing, sharing, and analysing the data with those we collect data about; welcome critique and feedback from all stakeholders, particularly those affected by the data.
- Ensure data diversity: We commit to collecting inclusive and well-representative data to surface minority groups who have different needs to the majority of the population or geography.
- Protect people's privacy: We will protect the privacy of individuals when we collect data about them. We will only collect, store, share, and analyse data with their express permission and will delete it when the permission expires. Data should only be held for the minimal amount of time needed to make good decisions.
- Be open to sharing data without compromising privacy: We will work together to improve data sharing between organisations in the same country or city. We believe that this openness will reduce the repetition and overlap of data collections and allow for geospatial analysis at the country or city level.
- Work to make the data equitable: We will ensure that the data we collect, store, share and analyse does not require skills or technology that excludes key stakeholders from analyzing it.
- Learning from our successes, challenges, and failures: We will share the lessons from our successes, challenges and failures in working to improve the integrity of location data in line with The Nakuru Accord: Failing better in the WASH Sector.

Decolonising Development

The literature is in agreement that there is an imbalance in global data for development. Earlier this year the Thematic Research Network focused on the unequal data relations between the Global North and South – with western organisations setting the direction for digitisation and not giving appropriate recognition to the economies and research in the Global South. Their recommendations are similar to those made by the Overseas Development Institute last year; greater financial and practical assistance is needed to strengthen national statistic offices so that local actors can map data gaps and lead on plans to improve data availability. WaterAid's most recent reports on the role of data for WASH highlight the need for a user-centred data culture which includes ensuring that monitoring systems are co-designed with the end uses of the data. Without co-creation, data tools become unused and new data siloes are created. In their 2019 paper on equitable data



sharing, Barnes et al., dig deeper into similar recommendations and advocate for funding to be specifically allocated to the time, skills, and resources that researchers need to plan, collect, and share data. They also encourage the creation of codified data sharing policies and guidelines within institutions.

Anti-Racism Agenda

To mark Black History Month in October 2020, our team met to discuss and agree on a new anti-racism agenda to recommit our efforts to dismantle, prevent, and call out racism in all of its forms.

Anti-racism is about taking accountability. At Gather, we want to be open to challenge about privilege and make sure that we tackle racism in our organisation and the non-profit, international development and technology sectors.

Accountability includes:

- Recognising the legacy of western colonialism. The unbalanced power dynamics of the past cannot be allowed to continue in international development. We have a responsibility to centre knowledge from local organisations and professionals from the Global South.
- Achieving real inclusion where every voice is represented, heard and valued.
- Providing opportunities for young people of colour.
- Promoting data diversity, increasing the visibility of underrepresented groups and their needs within data sets.
- Acting when individuals, communities, and organisations point out our shortcomings or share steps to help dismantle racism in all its forms.

We have agreed a list of accountable actions we want to take as a team. This list is not exhaustive, and we welcome suggestions from others committed to racial justice.

Centring Knowledge from The Global South

The legacy of power relations from the colonial era continues to shape the concept of knowledge. This has entrenched the idea that experts from the Global North are the primary holders of knowledge, while experts from the Global South are secondary observers and learners. This manifests in several ways, including preferential treatment given to research institutions located in the Global North, - exclusively white panels and events that discuss challenges and solutions, and projects being designed by organisations from the Global North without consent, collaboration or cooperation of organisations from the Global South.

Actions:

- We will refuse to sit on panels without racial, geographic and gender balance.
- We will only ever design and deliver local projects in collaboration with our local partners.
- We will use our Spotlight series to highlight the work of researchers, practitioners and professionals from the Global South.
- We will ensure that any panel we organise will represent the communities we work with.



Achieving Inclusion, Not Just Diversity

Diversity is measured by the makeup for a team and organisations. Inclusion is the measure of culture that enables diversity to thrive. We want a team culture that embraces differences and where everyone feels welcome, valued and part of Gather's mission.

Actions:

- We will continue to update our recruitment and onboarding processes so that every applicant and new team member know that they are welcome, that their voice is valued, and that we want to learn from their contribution to the team.
- We will make sure that every team member plays a role in designing and delivering our projects.
- We will make sure that every team member has an opportunity to represent Gather at external events.
- We will continue to ensure that every team member has access to training and opportunities to grow their skills and talent.
- We will continue to prioritise meeting together as a team (even if virtually) to learn and celebrate each other's backgrounds, experiences, and perspectives.

Proving Opportunities for Young People of Colour

We want to look to the future. Countless studies have shown that young people of colour are disadvantaged when gaining work experience and exploring career opportunities. This disadvantage is further entrenched if they come from a low-income background.

Actions:

- We will continue to develop an internship programme offering paid placements to young people of colour with the opportunity to gain experience in the non-profit, international development and technology sectors.
- We will also develop a work experience scheme that exposes young people of colour within schools in these sectors. We will partner with schools and social mobility organisations that already champion similar schemes.
- We will continue participating in schemes that promote inclusion and opportunity, such as Tech Talent Charter and Show the Salary.

Promoting Data Diversity: Data and maps are not inherently neutral. Like wider society, biases and prejudices are also present within data and maps. Datasets and analysis must be inclusive and representative, so we surface underrepresented groups with different needs to the majority of the population or geography. We also need to ensure that we don't become the owners of data or analysis at the expense of the data communities.



Actions:

- We will aim to create maps that reflect the communities that they represent. We will incorporate examples such as the Peters Projection Map, which rebalances our understanding of country position and size with the rest of the world.
- We will continue to use the Open Data Institute's Data Ethics Canvas to help us avoid any unintended harm whenever we design or deliver a project.
- We will continue to adhere to the data principles we created as part of our Benchmark Initiative to promote better ethical use of location and sanitation data.

Continuing To Learn

There is much for us all to learn. We are eager to learn from individuals and organisations committed to a just, equal society and have tools, recommendations, and challenges for us as a team. As a team, we have agreed to meet every three months to discuss our anti-racism agenda. We will challenge ourselves and see how we have done in implementing our actions. We will discuss honestly what we have learned and share additional steps we can take individually and together.



Step 2: Planning the Project

Once you have agreed your principles, plan the phases of a project, agree stakeholder roles and assign team responsibilities.

Phases of a data project

Data projects typically have two key aspects to them that are worth noting and explaining: Discovery and Delivery. Below are descriptions of what they entail.

- Discovery is the initial phase - and the most important phase – that looks to understand the users, their needs, challenges, and limitations. It's critical to empathize with the users and figure out how to address what they need - otherwise, the data project will struggle further into the process. Part of this phase is also to understand the local politics and meet people where they are, both culturally and in terms of capacity and skills. Discovery can often take far more time than the actual delivery of the data project's system at the end. Projects need to recognize this and plan for more time - and often, even more time than expected - to complete this part of the project. Discovery should go beyond what data organisations have. It should start with discovering the ultimate basic requirements for a data project. For example, do the stakeholders have computers/laptops to manage data? What is their level of literacy for data, maps, computers, etc.? Low capacity in these very basic elements can derail a data discovery project's deliverables.



NB: We found for the low capacity and resources in The Hub meant that nearly all of our work was focused on discovery processes. Hub members did not always know what their data was, and many even lacked laptops. The technical deliverable at the end was secondary to the legwork Gather put in to help members in The Hub realize their needs and limitations.

- Delivery is the second phase of a project that is the most tangible and noticed by outside actors. It is the phase when a data project produces the deliverable - whether it be a data platform, manual, report document with findings, standard data package, etc. - and shares it with the target audiences for review and implementation. While this can seem like the most important part of a data project, Gather's experience is that this is only secondary to the discovery phase; the trust-building and learning sessions are important for delivery success. Understanding these two different phases of a data project was an important lesson Gather learned while managing The Hub.

Hub Goals & KPIs

The Hub's goal was that, by September 2021, member organisations would:

- Use the platform to make three decisions;
- Rate the platform at 50% more accurate and useful than their current decision-making process; and
- Score between 50-80% adherence to the data standard when collecting new data. Gather's outcomes and outputs below were used to track the progress of The Hub. More information is available in Appendix 1.
- Outcome: Improved data-driven decision-making by four urban sanitation organisations in Antananarivo.
 - Incidence of decision making using a new sanitation index, accessed via a dashboard, amongst hub members (for potential investment and expansion of services).
 - All four hub members understand the importance of standardised sanitation data and are committed to adherence targets for collecting and sharing data.
- Output: Creation of a sanitation index to establish a new baseline for one arrondissement that shows level of risk and opportunity for the improvement of sanitation infrastructure and services
 - Creation of a sanitation index using complementary geospatial data sets on Antananarivo, Madagascar.
 - Creation of an online dashboard that hosts geospatial visualisations of the sanitation index for the 5th arrondissement.
- Output: Creation of a data standard for the sanitation value chain for use by four urban sanitation organisations in Antananarivo to improve their ability to collect and share data that can be analysed for decision making
 - The creation of a new data standard sanitation in Antananarivo, Madagascar, designed in collaboration with the organisations through their membership of the data hub.



Stakeholder roles

Gather met the members of The Hub based on relationships the team had created from stakeholders already working in Antananarivo and their local networks.

Gather, the coordinating organisation, committed to:

- Make the contract with the Funders available to the other partners;
- Organise and facilitate three workshops across the 9 months of the MoU in Antananarivo to provide a space for collaboration, sharing and learning;
- Provide analysis on data submitted by hub members, and provide access to the insight from this analysis to the hub members through an online portal;
- Provide disbursements to the CUA5, SAMVA, Loowatt and WSUP at three points across the 9 months of the MoU to facilitate the transformation of data practices, in line with the disbursement proposal (attachment 3);
- Produce, publish and promote three reports on the state of sanitation to share with hub members and a wider audience. The first of these will outline the sanitation data environment in Antananarivo, the second will cover recommendations for transforming how sanitation data is used in the city, and the third will be on the progress made towards implementing these recommendations;
- To safely and securely store all data submitted by hub members and ensure this data is not published or transmitted to other organisations or persons outside of Gather.

The Hub's members agreed to:

- Take note of the Funder's requirements as supplied by Gather and ensure in carrying out their work on the Project that Gather can fulfil its obligations to the Funders;
- To sign up to Gather's data-sharing agreement;
- To sign up to and adhere to Gather's safeguarding policy; fraud policy; and antibribery and corruption policy. This includes reporting immediately to Gather any alleged or actual incidences of safeguarding, fraud, bribery or corruption that could impact the project or anyone associated with it;
- Attend and participate in all workshops across the nine months of the project, as referenced in the disbursement proposal. Wherever possible, the Senior Representative named above or their representative should attend the workshops; where this is not possible at least two weeks' notice should be given, and an alternative representative should attend in their place.
- Work with Gather to identify and access relevant historical and current data sets for analysis;
- Submit relevant agreed historical data sets to Gather for analysis promptly, a maximum of two weeks after the first workshop;
- Regularly submit new or additional data sets to Gather for analysis throughout the nine months (monthly or every two months as new data becomes available). This should be data that has been newly collected or analysed, and the collection method, where possible, should demonstrate implementation of the data transformation processes agreed at the second workshop. It should be submitted via email or an agreed alternative method by the 15th of each month unless agreed otherwise;
- Provide feedback to Gather on draft reports before publishing on time.



Gather's team

Gather was the facilitating organisation, meaning that it had to invest in teammates that could drive The Hub's work forward and coordinate the members regularly. This team included members who could:

- Programme Manager (remote, UK): Oversee the programme and report to grants;
- Programme Coordinator (Antananarivo, Madagascar): Manage The Hub's logistics (including organising and hosting workshops), and manage stakeholders (job description in Appendix 2);
- Chief Technology Officer (remote, UK): Advise on sanitation data platform and tech team's needs;
- Product Manager (remote, UK): Lead product design and management for sanitation data platform, including data standards and risk index, while engaging stakeholders for user-led design; and
- GIS Data Scientist (Antananarivo, Madagascar): Deliver technical design and development of SDP, including data standards and risk index, geospatial engineering (job description in Appendix 2).

Original Work Plan

Gather started with a work plan for The Hub. The Hub would have workshops, get data from members, and show their data on a map-based data visualization platform that Gather would create. We expected that they would then ask for adjustments on these platforms and feel inspired to use the platform more. The original 7 major tasks in our work plan were as below:

Major Task	Activities
1 - Manage sanitation data hub workplan	<ul style="list-style-type: none"> • Decide upon priorities and KPIs • Track progress against KPIs • Manage timeline for workshops • Manage timeline for data standards development • Manage timeline and product roadmap for sanitation data platform development
2 - Prepare for workshops	<ul style="list-style-type: none"> • Design agenda and structure for workshops • Build materials to support workshops (e.g., PowerPoints, handouts, etc.) • Manage logistics for workshops (e.g., invite participants, book conference rooms, etc.)
3 - Facilitate workshops	<ul style="list-style-type: none"> • Facilitate workshops • Capture action items from workshops and share back with entire Gather team
4- Follow up on workshop action items	<ul style="list-style-type: none"> • Track action items from workshop



	<ul style="list-style-type: none"> • Liaise with in-country hub manager to ensure follow-through on action items
5 - Establish data standards	<ul style="list-style-type: none"> • Identify relevant subject matter experts • Design approach for gathering subject matter expert feedback • Gather subject matter expert feedback • Develop materials on data best practices, based on subject matter expert feedback, to share with hub participants
6- Build Sanitation Data Platform	<ul style="list-style-type: none"> • Gather requirements for initial release • Build functionality and formulas for initial release • Test functionality and formulas for initial release • Create user documentation of functionality and formulas (e.g., training aids, FAQs, videos, etc.)
7 - Build Sanitation Data Platform (subsequent releases)	<ul style="list-style-type: none"> • Gather feedback from previous releases • Gather additional requirements for subsequent releases • Build functionality and formulas for subsequent releases • Test functionality and formulas for subsequent releases • Create user documentation of functionality and formulas (e.g., training aids, FAQs, videos, etc.) • Communicate with users about net new functionality and formulas included in subsequent releases

Ideally, Gather would have had the ability to plan for a feasibility study at the beginning of the project. However, due to time and resource constraints, the team had to move forward with project planning based on their understanding of Antananarivo's landscape and communications from contacts in The Hub.

Amended work plan

Major Task	Activities
Set up	Legal documentation signed by Hub Members
	Complete due diligence
Data submission	Clean and assess existing data from hub members
Data standard development	Kick off meeting (held on Skype). Agree communication plan and key dates



	Survey on decision-making priorities and current data behaviours among hub members
	Assessment of draft data standard against hub member data
Pre-workshop activities	Pre-workshop activities
	Update of data standard
Workshop 1	First workshop: overview of sanitation data in Antananarivo, current data behaviours and decision-making priorities among hub members, introduction of data standard
Data collection	Summary of first workshop
	Develop plan for and start transformation of data practices
	Data collection
Workshop 2	Pre-workshop activities
	Second workshop: reflections on data standard and survey results. Update on adoption and adherence of data standard. Test index
Post-workshop activities	Summary of second workshop
	Draft report: Closing the Data Gap: recommendations
	Internal evaluation
	Update sanitation index
Workshop 3	Pre-workshop activities
	Third workshop
	Summary of third workshop
	Draft report: Progress to Closing the Gap
Project end and review	Project evaluation: report on project
	Publish report: Progress to Closing the Data Gap
	Publish online Sanitation Index (aggregated: no hub member data accessible to viewers)



Key learnings on reflection include:

- More time planning for The Hub's formal touchpoints – particularly the workshops.
- Would have started with a feasibility assessment to plan the workshops and Hub deliverables to be most impactful. For example, Gather would have planned the workshops differently if they had understood at the beginning that some Hub members lacked computers to work on geospatial projects regularly.
- Another reason why planning would have been helpful because there was internal confusion about who would lead the workshop design process. Because of time restraints and poor planning, the team often had to scramble to design and prepare for the workshops with the facilitator. Similarly, the team would have planned the workshops to be closer together to maintain motivation and engagement.
- Additionally, Gather learned that it would have been better to budget for the Gather team to be in-person rather than hire facilitators, or at the very least take more time to vet facilitators before hiring. The hiring process for the facilitator was fast, as the need was urgent and last-minute because of COVID-19 changes.
- In the future, Gather should spend more time planning contingency plans for workshops before hiring facilitators. The team can ensure there are clear structures and requirements for facilitators – both in terms of expertise and deliverables.

Project Costing

The total project cost for The Hub over the year was about £116,000-130,000. The budgeted costs for the project are in the table below:

ACTIVITY NAME	BUDGET LINE	TOTAL BUDGET
Workshops for hub members	Three workshops run by Gather	£3,0320
- Data behaviour transformation support for Hub members	Staff time for key decision makers to attend workshops, improve their data literacy and implement changes in the collection of data	£18,000
Additional staff costs		£10,000
1) PROJECT ACTIVITIES (SUBTOTAL)		£31,032
3) STAFF COSTS		£80,486
4) ADMINISTRATION COSTS		£3,403
5) MONITORING, EVALUATION & LESSON LEARNING		£3,257
TOTAL		£120,000



There were no travel costs because of COVID-19- instead, any travel costs budgeted were reallocated to project activity costs.



Step 2: Building Trusting Partnerships (Discovery, Phase 1)

Building trust in data projects ensures open conversations and creating deliverables that are useful for all stakeholders. Indeed, trust-building in partnerships is the most important part of data projects.

Gather's biggest success in creating The Hub was, above all else, creating a network where members trusted each other and felt comfortable to discuss challenges and solutions regularly.

Developing Partnership Strategies

A critical part of building trusting partnerships is to develop partnership strategies. This helps clarify their roles in the partnership while also articulating a clear strategy for the project that goes beyond the partner's specific tasks and activities.

Building partnerships based on trust can be tricky, but some tenets help guide the partnerships:

- Getting partners to explicitly agree that they will respect each other within and outside of the project
- Regular reflections on the project's progress
- Constant communications
- Transparent updates
- Available safe spaces for candid chats
- Simply listening mechanisms / feedback systems for partners to voice concerns or complaints

A good way to make sure roles are clear while building trust in the partners is to develop structure from day one. Memorandums of Understanding help provide that structure between the members and the Hub that clearly explains the scope of work and level of effort expected from each member. These Memorandums of Understanding also help build partners' trust because they commit to the project and know the others have, too.

An example Memorandums of Understanding from The Hub in Antananarivo are in the Appendix 3.

Creating Touchpoints and Feedback Loops

Another way to build trust is to create frequent touchpoints with members – both formal and informal – to keep dialogues open and moving forward. Gather did this by creating two formal touchpoint structures – meetings and workshops – and supported it with frequent informal emails and calls.

Workshops

Gather led three workshops over the pilot. Workshops were formal, multi-hour gatherings with all members where the group tried to answer questions and map out information together. Each workshop had specific thematic goals for members to tackle:



- Workshop 1 was where members mapped out their key sanitation pain points and data needs.
- Workshop 2 was where Gather trained members on data standards, and members began discussing what kinds of data standards they shared
- Workshop 3 where when Gather showed a prototype data solution to members and how it tries to address the pain points and needs of the members identified in Workshop 1 and subsequent meetings. Then, members provided feedback on what they liked or wanted changing.

To manage the workshops, an external facilitator led the meeting. This way, there was an outside entity keeping the team on track for workshop goals.

As the facilitating organisation, Gather developed the workshop goals and agendas a month in advance to allow for the team to prepare presentations and work with the facilitator. It was also important to use a facilitator who could navigate the workshop in the native languages to feel more comfortable expressing themselves.

Gather decided to be transparent and started workshop activities by describing the team's problems to accelerate trust-building. This enabled Hub members to share their own problems. In other words, Gather used its position as the backbone organisation for The Hub to set an example to other members about how to share their challenges. It also helped form cohesion with members – they bonded by identifying with each other's problems – and helped eliminate any prejudices they may have had about other member organisations.

Meetings

Gather led monthly meetings during the pilot, where members joined a call and provided updates about work progress and brewing concerns. Meetings were also used to prime members for upcoming workshops. Meetings also provided an opportunity for members to offer feedback for The Hub regularly.

Informal Touchpoints

Additional to the formal touchpoints, Gather's team committed to frequently interacting with members. This meant calling members to ask questions, following up on action steps from previous meetings, and providing a safe space for members to provide anonymous feedback or complaints. Gather would keep the feedback confidential, and provide aggregated, anonymized feedback to members during meetings and workshops that were constructive to developing The Hub's objectives.

Through informal one-on-one conversations, Gather's team could also probe for other pain points or challenges that members may not have been fully aware of in their organisations. It also helped Hub members be held accountable for their action steps after more formal touchpoints. For example, Gather could ask members to share their data for The Hub's pilot data platform.

Gather's Lessons & Experiences

Memorandum of Understanding



The first key step to building trust amongst The Hub's members was signing the MOU. The Memorandums of Understanding formalized the relationships and gave members a sense of obligation to participate in Hub workshops and meetings. Before the MOU, it was difficult to coordinate between the members because everyone had their own goals and priorities – the MOU helped streamline objectives for the coalition.

However, the Memorandums of Understanding process was also slower than originally expected. While the NGOs in The Hub signed quickly, the municipal agency delayed a significant amount of time signing the Memorandums of Understanding. The delays frustrated Gather's teammates and other organisational members. Gather was worried that The Hub would not include the municipality for a while because of many delays. Ultimately, Gather explained to the municipality The Hub's goals and maintained frequent communications with them to ensure The Hub's dedication to delivering good outcomes and gaining their buy-in.

Patient Communication

Gather spent a lot of time engaging in patient communication approaches with different members of The Hub. The team learned that its strength wasn't actually data, but the patience needed to maintain different organisational relationships with conflicting objectives. Gather learned that members preferred 15-minute phone calls over emails and text messages, requiring more patient communication tactics by the Gather team.

Much of the trust-building process included Gather reconciling work between the NGOs and the municipality. Initially, all of the NGOs were frustrated and angry with the municipality's management of sanitation initiatives. Gather's patient communications made it clear that the municipality was struggling far more than the other member organisations had previously known, which softened the relationships and brought the members closer together.

At the end of Workshop 1, the Gather team started spending significant amounts of time calling members to keep them engaged, get feedback from them, and move The Hub's work forward. The team found these frequency communications started building momentum in how much information members shared; the more they kept in contact, the more important information they received about pain points and contextually vital challenges. Though The Hub was building stronger, trust-based relationships between members, Gather found that getting members to act on the next steps after touchpoints remained challenging. It took a long time for members to do simple tasks, often after patient nudging.

Though members would sometimes state that they had done some tasks, the Gather team's analytics revealed that it was not the case, and had to hold members accountable to their next steps while reconsidering what tasks were essential or not. Sometimes, Gather had to acknowledge that The Hub was not a priority for all members, which emphasized the need to engage in frequent touchpoints with members patiently.

Outsourced Facilitators

Gather outsourced all of The Hub's workshop facilitation, as the team could not be in Antananarivo due to COVID-19 restrictions and the workshops needed to happen in the local languages – French Malagasy. While the facilitator could run the workshops well, outsourcing that work made it hard for the Gather team to learn valuable in-depth information.



The facilitator wasn't specialized in the sanitation sector, which meant they could not probe sector-specific questions to identify root causes for challenges members expressed during the workshops. For example, the facilitator did not know to probe the need to locate handwashing stations for some members who mentioned they needed that information.

Also, the facilitator notes were not thorough. This meant that Gather's teammates had to watch the meeting recordings (without necessarily understanding the language) to identify important body language cues to gauge the workshop's atmosphere.

Cultural Considerations

Gather found that considering cultural nuances was important to building trust in The Hub's members. Initially, the team hit a wall when trying to understand pain points across the organisations– in the Malagasy culture, it is common to focus on politics and not share problems or ask for help. However, gather found the presence of foreigners/outside (aka the Gather UK team) helped get the members to open up in one-on-one meetings about their problems.

Case Study: Loowatt & Antananarivo's municipality

Loowatt is a private social enterprise that provides container-based sanitation solutions for people in Antananarivo and turns faecal waste into energy. Loowatt had been standardizing their operations when they joined The Hub, ensuring that waste collection was more structured and efficient.

Loowatt had wanted to start working with the municipality for a long time, though they had been unsuccessful with aligning with the agency and agreeing to a contract with them. This made their work more frustrating because they could not coordinate with the municipality in their work. This made Loowatt lose trust in the ability to partner with the municipality.

Joining The Hub helped Loowatt meet personnel from the municipality, find the right contacts in the agency – including the new municipal sanitation organisation – and build trust with the municipality while rebuilding their confidence in partnering with them. Because of their members, Loowatt now has a contract with the municipality through municipal sanitation organisation, which will help boost their work and increase their impact in the city.



Step 3: Building the Standard User Requirements (Discovery, Phase 2)

The Hub used data systems as a mechanism to strengthen systems for sanitation service provision in Antananarivo. Having different data across different stakeholders makes it hard to compare impact and collaborate on activities.

How to Develop Data Standards

Typically, developing data standards across a coalition covers several aspects that need to be discussed:

Definitions

Identify and harmonise definitions in the sector – It's important to ensure that members understand the words they use in their work to reduce confusion and make it easier to standardize data definitions. For sanitation, this includes words like sanitation, faecal sludge, waste collection, and service provision.

Share Data

Share the indicators organisations use to collect data – Having organisations share their indicators to collect data will help members begin to identify similarities and differences to address in the data standardization process. This includes organisations sharing the (1) name of their indicators, (2) definition of the indicator, (3) how they collect the data and how frequently, (4) who collects the data, and (5) how they calculate the indicator (if relevant). Often, this process can happen by getting member organisations to fill out a spreadsheet with this information.

This may be challenging for members in under-digitized areas because they may not have full access to the data that they collect as an organisation, and may only know a few datapoints that they use for their work. Because of this, The Hub needs to be patient and try to connect local technical specialists (who have more insight in the data) with the boardroom (who knows what targets the organisation must achieve).

Share processes for how organisations collect data – Once the organisations share their data indicators, members can discuss their processes for collecting data. This can help the organisations understand their challenges with collecting data. This can also highlight potential quality issues and identify which members struggle. Furthermore, it will also help reinforce the members' trust with each other.

Map & Compare Data

Determine the key "core" data between organisations – Afterward, The Hub can start reviewing the data across the member organisations and find the similar indicators that each organisation use. Here it is important to note where definitions, frequency, or calculations may differ. Once The Hub's facilitating organisation can review these, they can share a list of proposed "core" data that the organisations could share across each other. There should not be too many core data for the organisations to determine at first to avoid overwhelming the members. Through this list of core data, members can work together to create standard data definitions and methods that they can all use and share.



Data standards in other sectors have been successfully adopted because:

- The data standard responded to a need identified by the sector;
- The creation of the standard was a collaborative effort that brought together multiple actors from across the sector into the communities that built, agreed on, and adopted the data standard; and,
- Influential stakeholders have promoted the global adoption of the standard.

Data Standard Process & Findings

When designing a data standard for sanitation data, we need to consider that the data standard:

- Needs to be able to integrate with the most popular data collection tools;
- Needs to build on previous standardization efforts from across the Water Sanitation and Hygiene sector; and,
- Must apply to datasets that decision-makers need.

Our proposed scheme for the data standard that is designed to increase the usability of sanitation datasets and provide guidance on the minimum specifications for when new data is collected on existing data is made ready to be shared. Learning that the city was under-digitised and lacked a strong understanding of data and data systems, this step was tricky to tackle with members. This was especially true because member organisations had different data literacy levels. Some members did not know how to find their own data within their organisations, or did not have a clear idea of where to start. In other ways, there simply was no data available.

Gather determined that one way to lead a conversation in the under-digitized context was to find other open datasets available for the members to review and start working with. Though Madagascar has an open data policy, it was hard to find open datasets that were not siloed or easy to access. For example, the funding agency USAID had datasets available for Madagascar that Gather was successful in obtaining; other Hub members did not even know the datasets existed. The figure below shows Gather's assessment of potential public and private datasets available in Madagascar; the rightmost column was the original assumption of data available for use; the larger column in the middle reflects the reality of data available in Madagascar for The Hub to use. It is clear from the visual that the reality of data availability was far more limited than what was expected.

Gather's Lessons & Experience

The Right People in the room

Gather learned that having general managers from member organisations may not have been the most appropriate people to join the workshops. The general managers did not have the deep technical understanding of data and geospatial systems needed to help direct conversations towards data standards. Despite this, it is culture dependent if you can bypass the general managers and focus your conversations with technical staff.



Organisational Capacity

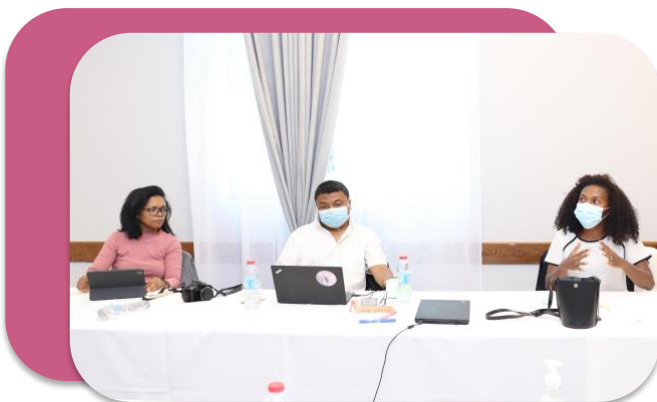
Gather learned that the organisational capacity for data and geospatial systems was much lower than previously understood. For example, the municipal sanitation organisation the budget to maintain infrastructures, and municipal staff often did not have laptops to use regularly. Also, for other organisations, some of the data collection done by different members was not digitized, making it challenging to harmonize systems and co-create a digital platform for members to use. This was particularly frustrating, given that Gather determined that the municipal sanitation organisation is the essential stakeholder in The Hub to agree on and adopt new data standards because of their proximity to local service delivery.

Data Experience

After calls with members to discuss data systems, Gather became less confident that the member organisations had enough experience and comfort to use the data; it was not clear if they could actually "deep dive into the data". For example, Gather discovered that the municipality's department responsible for sanitation has less than ten laptops for a team of more than 100 employees; most employees don't have laptops. The experience with data was even less for geospatial data systems; it became evident that some member organisations were not necessarily comfortable using maps, either, significantly limiting geospatial data conversations.

Data Sharing

Although the member organisations stated they were willing to share their data, they simply hadn't shared their data yet. It was unclear if this was because there were very limited datasets available, if the data was analogue (aka paper-based) and therefore difficult to share, or if there remained some hesitancy to share the data still. Once requested more directly to organisations, members slowly started sharing files after seeing the open data that Gather found and visually mapped for the members to see.



Photos of the second Antananarivo Sanitation Data Hub in 2021



Step 4: Building the Platform (Delivery)

The final step of a Hub- cycle should be the development of the platform required by the users. This could be an improved data process for members to follow such as: an application that visualizes data, a data input system, or a platform that collects and analyses the data contributed by members.

For Gather's Hub in Antananarivo Madagascar, the final product was the [sanitation data platform](#) (SDP) which will be used as the primary example for this section.

Gather has identified specific criteria that we have used to measure against the data collection tools:

- Synchronise via the cloud –ease to store data in one place and ensure backup.
- Near-real time update –for communication and quick decision purposes the tool would need to visualise or allow for export (to visualise in another tool)
- Multiple users – where multiple user and team members can benefit from the data at the same time.

Data Formatting Requirements

When data is uploaded to the sanitation data platform, Gather the sharer to answer questions about this data:

- What is the spatial context?
- How should it be labelled on the map?
- Do the datapoints have dates?
- Who owns the data? What are their contact details?
- Does the data need to be private or public?

The Hub's standard formatting scheme for members sharing data includes nine key attributes:

- Location
- Personal data
- Timestamp
- Format
- Metadata
- Values
- Shareability
- Accessibility

The simplicity or the lack of formatting schemes is to help reduce barriers to adoption in Antananarivo and other emerging cities. Based on frequency of use, a particular format will emerge. The scheme to compile that format is then marked as the data formatting requirement for accepting further updates. Gather found data standard guidelines by the [Open Geospatial Consortium](#) to help guide the data standards conversations, as well as ISO minimum metadata requirements. ISO standards better support data sharing across national and cultural boundaries. We have experienced and learned from other projects (e.g. Suivi Eau et Assainissement à Madagascar – SEsAM 2016) that forcing too many changes and requirements to data can result in stakeholders not sharing their data. Below are the



recommended minimal metadata profiles for geospatial data. For any data received Gather monitors the completeness of these profiles.

- ISO 19115: Metadata standard defining the geographic information of the data and including its identification, extend, quality, spatio-temporal resolution, spatial reference, and distribution information. There have been a few revisions to this standard and the latest edition is the ISO 19115-1.
- ISO 19110: Defining the methodology for cataloguing feature types by classifying, organizing, and creating catalogues of the feature type information (roads, rivers, measurements, etc.).
- ISO 19119: Metadata standard for geospatial services, such as web map application services, geoportal architectures, data models, and online data processing services.
- ISO 19139: Defining the XML schema generated using the format and content information relating to ISO 19115.

Data System Development

While there were many data sharing tools that could have been created for this project, The Hub in Antananarivo decided to develop a geospatial online data system for members to share their data and use the visualized data on a mapping system. Gather named this system the Sanitation Data Platform (SDP).

Normally, developing a geospatial data system for a coalition like The Hub starts with using basemaps, creating wireframes, and testing the user experience (UX). Gather defined these items as:

- Basemap is the foundational layer of geospatial information for the data system. This includes the roads, waterways, major buildings, and GPS location of other major landmarks.
- Wireframe is the step-by-step process that members would take to use the data system. This helps coders and software developers create a process that is logical and most useful for users.
- UX is how users navigate the online system and there needs to be improvements on the system's processes.

Gather's tech team knew that the basemap needed to be manipulated and moved around so that users could explore different regions on the map. The team also knew there would be many layers on the basemap for the users to apply. Gather's tech team used Open Street and Google Maps for the basemaps. They then layered resilience data on these basemaps. Gather did not initially create wireframes for the SDP; instead, the engineers developed the platform and worked backwards to understand the user process for inputting and using data in it. This makes sense, as under-digitised areas may struggle to understand and walk-through wireframes before a tool is available for them to explore.

With the wireframe process, normally data system development includes a UX testing process. Gather used one-on-one observations with member organisations to see how they used the SDP and where they struggled with the system to help adjust the UX. Once the SDP was developed, users could upload data in different formats (PDF, DOC, XML, CSV, etc.), where Gather would extrapolate the data and put it into the platform for geospatial visualisation.



Gather's Lessons & Experience

Developing the data platform for The Hub was challenging because of the under-digitised context in Madagascar. Below are some lessons from Gather's work with The Hub.

Formatting Requirements

While Hub members appreciated the importance of data standards, some of the formatting standards (particularly the ISO codes) were too much for them to commit to, and they had no agreement on data standard processes for their metadata. Additionally, Gather feared that because it took so long to get data from members there must be capacity limitations that would make imposing data formatting standards too much for the members.

System Development Process & Bespoke Systems

If we were to start this process again with The Hub, we would have worked more with off-the-shelf, licensed software and tools that would allow for faster troubleshooting with members and their needs. In that way, they could have built a platform faster and focus less on coding new aspects into the software. Licensed software they would have used to search for The Hub's members' capacity limitations while providing them regular data tools to help them with decision making include or plain web maps.

Data Sharing

Even though members had access to The Hub's sanitation data platform, they did not upload data into the platform. Instead, they felt more comfortable sharing datasets with Gather via email. Gather asked for data from members repeatedly but struggled to get positive responses for this. A possible explanation for this can be linked to the fact that the data to be uploaded to the platform needs to satisfy a certain scheme. Whereas by mailing a dataset, Gather would take care of the schema fit.

Despite Gather's work and successes in trust building in The Hub, trust remained the obstacle to data sharing. Legacy projects in Madagascar that attempted data sharing systems created an environment where each partner organisations trusts their own data as gold standard and distrusts other partner organisations' data as untrustworthy. In reality, each partner organisation's datasets are very limited and contain inaccuracies. Additionally, members like municipality were embarrassed by their lack of capacity and inability to share data because they did not know what they had to share.

Gather's workaround was to develop the sanitation data platform by using dummy data to help visualize how the system could be used; they also scraped the internet for any data on Antananarivo that would be useful for The Hub's goals, including population density data from Facebook's Data For Good initiative. Populating this data into the SDP sparked members' interest and willingness to share data because they could (1) get their heads wrapped around the sanitation data platform's purpose and value and (2) felt more trusting that The Hub would be more successful than past data standard projects.

Another challenge with data sharing was the limited amount of raw data available; for example, one organisation did not have raw data to share and only had dashboard-level data from other NGOs with which they partner. Similarly, data quality was not always assured for the data shared by the members.



Value-Added

Gather's work on the sanitation data platform was not valuable in the way originally anticipated; the value of the platform was likely in the conversations it started between the member organisations about data use. While the sanitation data platform fulfils a need, its value-add as a data tool is likely secondary to the collaboration efforts encouraged by the members while creating it.

One challenge about the value-added of sanitation data platform was that many members did not know what to do with the data in the platform in terms of their operations. Members were not using the platform for decision-making, as Gather could see very low engagement levels on the sanitation data platform. Members found the sanitation data platform's visualized geospatial data informational, but not necessarily actionable for their work. Additionally, much of the data needed to make the sanitation data platform more valuable just is not available or is not accessible for the local context.

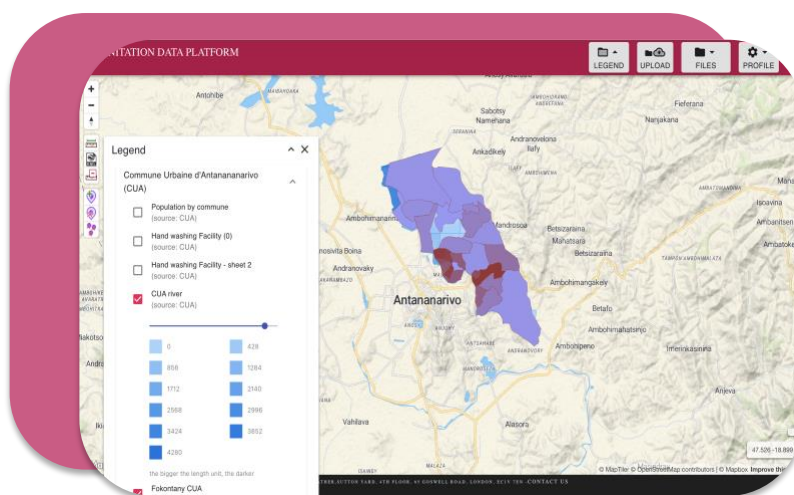


Image of the Sanitation Data Platform homepage



Reflection & Conclusions

The Hub's Impact

The Hub's members enjoyed working together with Gather, and believe that the Hub is a collaboration model that other projects should replicate. They felt that Gather organized the workshops and meetings to be collaborative, which members felt worked far better than other previous efforts. Ultimately, The Hub's model helped bring together organisations that normally haven't worked together and get them to work towards a single goal.

Because of The Hub's success at creating collaboration with sanitation stakeholders, members want to share this information with the mayor of Antananarivo to get him more involved and committed to sanitation efforts.

Expectations for New Projects

For new projects like The Hub, Gather may focus more on the collaboration and facilitation aspects that were most valuable to members than the software development and tool creation aspect (aka, the sanitation data platform). That said, some members want The Hub to use SDP as a tool to catalogue sanitation services for the city, and even the country, and want it to include more infrastructure data.

Members want more organisations to join The Hub, as it is the first initiative to bring stakeholders together and move forward in the same room. This would help the sector to work better and in a more unified way, while also making the data available to share more robust for market segmentation in the city.

Future projects Gather is pursuing to strengthen The Hub include the following goals:

- Create a new, nationally hosted base map for Antananarivo and accessible analysis to inform the optimisation and expansion of urban sanitation services for 1.7 million people. The base map will be co-created by and available to multiple stakeholders - not just from the sanitation sector – to maximise application.
- Invest in new data modelling and tools to share and analyse standardised data to allow the municipality to focus their limited resources on expansion of sanitation services to reduce dangerous faecal contamination of water and accelerate their ability to reach 2037 goal.
- Invest in institutional behaviour change and digital assets for multiple users to position Antananarivo as model of best practice in a global sanitation sector filled with siloed data and is not well known for collaborations that include municipalities.
- Invest in training so that assets are locally owned and maintained beyond the lifetime of the project.

Appendix 1

Details Results Framework and KPIs

This results framework was used to track the project by UK Aid Direct

	Description (Outcome indicators, Output activities)	Baseline	Milestone 1 (6 months)	Milestone 2 (12 months)	Means of verification
Outcome Statement Improved, data driven decision making by four urban sanitation organisations in Antananarivo.	Outcome indicator i) Incidence of decision making using a new sanitation index, accessed via a dashboard, amongst hub members (for potential investment and expansion of services).	No decisions are currently being made using a sanitation index that considers sanitation data from multiple organisations across the entire arrondissement. Decision-making is currently based on existing organisation's perception of provision within a given area or on limited, organisation-specific data collections that cannot be shared for enhanced analysis.	Target: All four hub members rate the sanitation index at 50% or above (recognising that the sanitation index is more useful and accurate for identifying areas of greatest need/risk for the population and opportunities to expand sanitation infrastructure and services).	Target: Each hub member has identified at least one decision each to improve sanitation infrastructure and services using the dashboard.	Feedback questionnaires completed by organisations from the second and third workshops (April and July). Assessment reports by hub manager based on meetings with organisations.
	Outcome indicator ii) All four hub members understand the importance of standardised sanitation data and	No organisations are collecting standardised data because there is no data standard currently	Target: Percentage adherence to the data standard by hub member:	Target: Launch of the online dashboard to access the geospatial visualisation of the sanitation index. Hub members attend third	Visitors to online dashboard tracked, including their usage and what information is most frequently accessed.

	<p>are committed to adherence targets for the collection and sharing of data.</p>	<p>available for use in the urban sanitation sector. There is also considerable disagreement and divergence on definitions used within data collections.</p> <p>Hub members collect data at different frequencies: Loowatt collects new data weekly, whereas WSUP, the CUA and SAMVA tend to collect it more sporadically or in large, one off surveys.</p>	<p>Loowatt: 100% of sanitation data collected by Loowatt that is governed by the data standard is shared with Gather, and 50% of this data adheres to the data standard.</p> <p>WSUP: 100% of sanitation data collected by WSUP that is governed by the data standard is shared with Gather, and 50% of this data adheres to the data standard.</p> <p>CUA/SAMVA: signed agreement on importance of data standard and to share data that is governed by the data standard with Gather.</p>	<p>workshop to test design of the dashboard.</p> <p>Hub members are accessing dashboard to interact with geospatial visualisations to inform decisions and are sharing new sanitation data they have collected.</p> <p>100% of hub members stating that the dashboard is useful for them.</p>	<p>Questionnaires completed by hub members rating the sanitation index for usefulness and accuracy against their previous tools and approaches for understanding risk and opportunity.</p>
<p>Output 1 Creation of a sanitation index to establish a new baseline for one arrondissement that shows level of risk and opportunity for the improvement of sanitation</p>	<p>Output indicator 1.1 Creation of a sanitation index using complementary geospatial data sets on Antananarivo, Madagascar.</p>	<p>There is no open, comprehensive data on sanitation infrastructure and services for the 5th arrondissement.</p> <p>Furthermore, there is no openly available analysis combining sanitation data</p>	<p>Data collected on sanitation infrastructure and services for 5th arrondissement with population of 350,000 to complement data shared by Hub members.</p> <p>Hub members attend two workshops to</p>	<p>Data collected on sanitation infrastructure and services for 5th arrondissement with population of 350,000 to complement data shared by Hub members.</p> <p>Index includes data shared by all hub members.</p>	<p>Summaries of workshops that detail key conversation and decisions agreed by Hub members about the design of the sanitation index.</p> <p>Design of sanitation index is published in report titled 'Closing the Gap: Year One Progress'. This report is</p>

infrastructure and services		alongside geospatial contextual datasets to give a baseline for the state of sanitation.	participate in activities that will help Gather to test and develop the index. The index analyses data that has been shared by Hub members and collected by Gather, alongside complementary geospatial data sets.	Hub members attend third workshop to sign off sanitation dsata platform. Design of sanitation index is published in report titled 'Closing the Gap: Year One Progress'. This report is disseminated by Gather and the Hub members.	disseminated by Gather and the Hub members.
Output 2 Creation of a data standard for the sanitation value	Output indicator 1.2 Creation of an online dashboard that hosts geospatial visualisations of the sanitation index for the 5th arrondissement.	There is currently no dashboard available to host geospatial visualisations on sanitation service level and infrastructure.	Initial geospatial visualisations created based on design feedback for the sanitation index during the first two workshops.	Launch of the online dashboard to access the geospatial visualisation of the sanitation index. Hub members attend third workshop to test design of the dashboard. Hub members are accessing dashboard to interact with geospatial visualisations to inform decisions and are sharing new sanitation data they have collected. 100% of hub members stating that the dashboard is useful for them.	Visitors to online dashboard tracked, including their usage and what information is most frequently accessed. Questionnaires completed by hub members rating the sanitation index for usefulness and accuracy against their previous tools and approaches for understanding risk and opportunity.
	The creation of a new data standard sanitation in Antananarivo,	There is no data standard currently available for use in the	Each organisation understands the sanitation data gap, its impact on their decision	Participation by all hub members in all three workshops.	Feedback questionnaires completed by Hub members after attending three workshops throughout the

<p>chain for use by four urban sanitation organisations in Antananarivo to improve their ability to collect and share data that can be analysed for decision making</p>	<p>Madagascar, designed in collaboration with the organisations through their membership of the data hub.</p> <p>Engagement by all hub members in creation and use of the data standard.</p>	<p>urban sanitation sector.</p> <p>Sanitation providers are aware of the sanitation data gap and how it is hindering their work, but are struggling to overcome it.</p>	<p>making and the value of a data standard for ten key indicators.</p> <p>Each organisation is committed to the goals of the Hub and the data standard. They have each attended two workshops, signed the data sharing agreement and shared sanitation data with Gather.</p> <p>Partners are committed to the goals of the Hub and the data standard. They have all signed the data sharing agreement and shared data with Gather.</p> <p>Participation by all hub members in two workshops.</p>	<p>Each organisation understands the value of a data standard for six key attributes.</p> <p>Input and feedback on sanitation data standard from all partner sanitation organisations.</p> <p>Assessment of existing sanitation data provided by Hub members. Results published in report titled 'State of Sanitation: The Gap' which is disseminated by Hub members and Gather.</p> <p>Design of new data standard is published in report titled 'Closing the Gap: Year One Progress' which is disseminated by Hub members and Gather.</p>	<p>year to ascertain change in level of understanding on importance of data standard .</p> <p>Assessment of existing sanitation data provided by Hub members. Results published in report titled 'State of Sanitation Data: The Gap' which is disseminated by members and Gather.</p> <p>Design of new data standard is published in report titled 'Closing the Gap: Year One Progress' which is disseminated by members and Gather.</p> <p>Summaries of workshops detailing key learnings and decisions by Hub members on the design and implementation of the data standard.</p> <p>Levels of attendance on monthly hub calls and workshops</p>
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Appendix 2: Example of Madagascar Job Descriptions

Hub Manager

Responsibilities

- The Hub Manager will be responsible for coordinating key aspects of this Hub's activities in Antananarivo. This includes:
 - Build and maintain productive relationships with project partners
 - Be the communications liaison between the Gather's UK team and project partners
 - Organise event planning and logistics for three two-day workshops
 - Work with the Gather UK team to complete research tasks and to produce reports that will be used for internal review and external dissemination

Key skills

The ideal candidate is:

- Fluent in English and has a working proficiency in either Malagasy or French
- Able to manage their own time to help meet project deadlines and organisational milestones
- Comfortable working remotely, using online communication channels to keep in contact with team members
- Proficient in Microsoft Office, especially Outlook, Word, Excel and Powerpoint
- Experience of working with the municipal government in Antananarivo will be a bonus but is not essential.

GIS Data Scientist

Responsibilities

Working closely with our geospatial manager to clean, process and explore data on sanitation in Antananarivo:

- Working with our geospatial manager and programme manager to design a robust data sampling strategy
- Developing our new sanitation risk index that identifies areas where sanitation provision is posing risks to local communities
- Working as part of our programmes team in London and Madagascar to deliver our new sanitation data hub project in Antananarivo
- Analysing data and presenting the results in maps, graphs and reports
- Explaining the results of your analysis to non-technical audiences in English
- Working with our geospatial manager and programme manager to develop our new sanitation data platform, which will host interactive maps showing where sanitation investment is needed most.

Required skills and qualities

- Experience in GIS, Python, Javascript and R
- Experience working with spatial statistics in Python or R
- Experience with PostgreSQL
- Fluency in Malagasy and English



- Excellent written and verbal communication skills
- Self-motivated, resilient and eager to learn
- Great team worker with the ability to work to team deadlines
- Beneficial skills
- Experience in uncertainty or probability mapping
- Experience in Linux
- Working-level proficiency in French
- Experience with the following:
 - environmental modelling,
 - interactive tools (including code sharing, dashboards, webpages, apps)
 - Use-case testing



Appendix 3: Example Memorandum of Understanding for The Hub

Memorandum of Understanding between the founding members of the Antananarivo Sanitation Data Hub

This Memorandum of Understanding is an agreement made on [date] between the following parties:

Gather Hub Ltd	
Senior representative	
Job title	
Registered address	
Company number	
Contact details	

and

5 th Arrondissement of the Commune Urbaine d'Antananarivo (CUA)	
Senior representative	
Job title	
Registered address	
Company number	
Contact details	

and

Service Autonome de Maintenance de la Ville d'Antananarivo (SAMVA)	
Senior representative	
Job title	
Registered address	
Company number	
Contact details	

and

Loowatt Sarl Ltd	
Senior representative	
Job title	
Registered address	
Company number	
Contact details	

and

Water and Sanitation for the Urban Poor (WSUP)	
Senior representative	
Job title	
Registered address	
Company number	
Contact details	

Subject of agreement

This Memorandum of Understanding (MoU) sets the terms and understanding between Gather Hub Ltd ("Gather"), the 5th Arrondissement of the Commune Urbaine d'Antananarivo



("CUA5"), the Service Autonome de Maintenance de la Ville d'Antananarivo ("SAMVA"), Loowatt Sarl Ltd ("Loowatt") and Water & Sanitation for the Urban Poor ("WSUP") to clarify the details of the agreement, commitments and policies of the Sanitation Data Hub project in Antananarivo, Madagascar. The Antananarivo Sanitation Data Hub is an innovative new project bringing together Gather, CUA5, SAMVA, Loowatt and WSUP.

Goal of the Sanitation Data Hub

The Hub was created in response to a call for proposals from the Global Partnership for Sustainable Development Data, and has funding confirmed from the UK Department for International Development (DfID), the Alan and Nesta Ferguson Trust and the Sir Halley Stewart Trust. As founding members of the Hub, the pioneering organisations will be working together to provide new data and insight on sanitation provision in the 5th arrondissement of Antananarivo. If additional funding is secured, there is the potential to expand the Hub to additional arrondissements throughout the city.

Details of agreement

This MoU covers a 9-month period from 1st March to 1st November 2020.

Please see attached:

1. Work plan – this provides details on the activities of each founding hub member, and the outputs and outcomes of the hub throughout its first year
2. Budget – a budget for the first year of the Antananarivo sanitation data hub
3. Disbursement proposal – proposed schedule of funding disbursements to CUA5, SAMVA, Loowatt and WSUP for the 9 months of the project, and requirements upon which disbursements will be made
4. Data sharing agreement – legally binding agreement outlining the terms and conditions under which hub members agree to share data with Gather, and Gather's responsibilities associated with that data
5. Safeguarding policy – sets out Gather's approach to safeguarding the welfare of staff members and partners, as well as children and vulnerable adults
6. Fraud policy
7. Antibribery and corruption policy

Commitments

By signing this Memorandum of Understanding, the parties agree to several key commitments.

Gather commits to:

- Make the contract with the Funders available to the other partners;
- Organise and facilitate three workshops across the 9 months of the MoU in Antananarivo to provide a space for collaboration, sharing and learning;
- Provide analysis on data submitted by hub members, and provide access to the insight from this analysis to the hub members through an online portal;
- Provide disbursements to the CUA5, SAMVA, Loowatt and WSUP at three points across the 9 months of the MoU to facilitate transformation of data practices, in line with the disbursement proposal (attachment 3);
- Produce, publish and promote three reports on the state of sanitation to share with hub members and a wider audience. The first of these will outline the sanitation data environment in Antananarivo, the second will cover recommendations for transforming how sanitation data is used in the city, and the third will be on the progress made towards implementing these recommendations;



- To safely and securely store all data submitted by hub members, and to ensure this data is not published or transmitted to other organisations or persons outside of Gather.

CUA5, SAMVA, Loowatt and WSUP commit to:

- Take note of the Funder's requirements as supplied by Gather and ensure in carrying out their work on the Project that Gather can fulfil its obligations to the Funders;
- To sign up to Gather's data sharing agreement (attachment 4);
- To sign up to and adhere to Gather's safeguarding policy (attachment 5); fraud policy (attachment 6); and antibribery and corruption policy (attachment 7). This includes reporting immediately to Gather any alleged or actual incidences of safeguarding, fraud, bribery or corruption that could impact the Project or anyone associated with it;
- Attend and participate in all workshops across the 9 months of the project, as referenced in the disbursement proposal (attachment 3). Wherever possible, the Senior Representative named above or their representative should attend the workshops; where this is not possible at least two weeks' notice should be given and an alternative representative should attend in their place. Non-attendance of two or more workshops will constitute a breach of this MoU;
- Work with Gather to identify and access relevant historic and current data sets for analysis;
- Submit relevant agreed historic data sets to Gather for analysis in a timely manner, a maximum of two weeks after the first workshop;
- Continue to regularly submit new or additional data sets to Gather for analysis throughout the 9 months (monthly or every two months as new data becomes available). This should be data that has been newly collected or analysed, and the collection method where possible should demonstrate implementation of the data transformation processes agreed at the second workshop. It should be submitted via email or an agreed alternative method by the 15th of each month unless agreed otherwise;
- Provide feedback to Gather on draft reports before publishing in a timely manner.

While the necessary time commitment will vary with the activities described in the work plan (attachment 1), we envisage that each hub member will commit around 2 days per month to hub activities on average over the 9 months of the project. If Hub members feel at any point that this is unrealistic, they should discuss this with the Hub manager and/or Gather's programme director to attempt to resolve this issue.

Safeguarding

CUA5, SAMVA, Loowatt and WSUP agree to abide by Gather's safeguarding policy (attachment 5).

Amendments

Except as expressly provided in this MoU, no variation of the agreement shall be effective unless it is in writing and signed by both parties (or their authorised representatives).

Breaches

If the partner breaches this agreement, both parties will endeavour to rectify the breach and adapt the agreement as necessary to facilitate the continuation of the project. Where applicable, disbursements and/or support and access to support tools from Gather to the



partner may be delayed at this point until the situation is rectified or cancelled if it cannot be rectified.

The parties affirm to know, understand and agree to all articles of this MoU as negotiated together.

Signed by

Gather Hub Ltd	
Name	Lindsey Noakes
Job title	Programmes director
Signed	
Date	

and

5 th Arrondissement of the Commune Urbaine d'Antananarivo (CUA)	
Name	
Job title	
Signed	
Date	

and

Service Autonome de Maintenance de la Ville d'Antananarivo (SAMVA)	
Name	
Job title	
Signed	
Date	

and

Loowatt Sarl Ltd	
Name	
Job title	
Signed	
Date	

and

Water & Sanitation for the Urban Poor (WSUP)	
Name	
Job title	
Signed	
Date	



GATHER

UK Registered Charity No. 1168130

Geovation, Sutton Yard, 65 Goswell Road, London EC1V 7EN

Madagascar NGO No. 65/202-BIM/ONG-REGAN

www.gatherhub.org