TRILATERAL SOUTH-SOUTH COOPERATION

The Trajectory of a Shared Learning Journey

Cooperation on Simplified Sewerage Systems, Solid Waste Management Services and Public Health in the Municipality of Viana, Luanda, Angola

UNICEF/Angola2024/Elena Thomas

Second Year of Implementation: The Power of Community Engagement

A Partnership between the IBSA Fund (India, Brazil & South Africa), the Government of Angola and UNICEF

GOVERNO DE ANGOLA

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unicef

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Note: The new Political-Administrative Division Law of Angola (Law No. 268/24 of 5 September 2024), implemented in 2025, has impacted the administrative positioning of the project. As a result, the project area, previously located within the Municipality of Viana, now falls under the jurisdiction of the newly established Municipality of Mulenvos.

ACRONYMS

ABC | Brazilian Cooperation Agency

ANR | National Waste Management Agency (Agência Nacional de Resíduos)

AJOCAMARC | Waste Pickers Youth Association of Angola (Associação dos Jovens Catadores de Materiais Recicláveis de Angola)

CAGECE | Ceará State Water and Sewage Company (Companhia de Água e Esgoto do Estado de Ceará)

CENFOC | Civil Construction Professional Training Center (Centro de Formação Profissional de Construção Civil)

CINFOTEC | Integrated Technology Training Center (Centro Integrado de Formação Tecnológica)

DECSU | Cooperative for Sustainable Community Development (Cooperativa para o Desenvolvimento Comunitário Sustentável)

DRSAI | Diseases Related to Inadequate Environmental Sanitation

ENSTLCE | National Strategy for Total Sanitation Led by Communities and Schools (Estratégia Nacional do Saneamento Total Liderado pelas Comunidades e Escolas)

EPAL | Luanda Water Company (Empresa de Águas de Luanda)

ESARO UNICEF | Regional Office for Eastern and Southern Africa (Escritório Regional do UNICEF para a África Oriental e Austral)

FONAS | National Water and Sanitation Forum (Fórum Nacional de Água e Saneamento)

FUNASA | National Health Foundation (Fundação Nacional de Saúde)

GDP | Gross Domestic Product

ISWM | Integrated Solid Waste Management (Gestão Integrada de Resíduos Sólidos)

IBSA | India, Brazil, South Africa

IGME | UN Inter-agency Group for Child Mortality Estimation

IMENHA | School for Water Management and Environmental Protection (Instituto Médio de Gestão de Águas e Preservação Ambiental)

INE | National Statistics Institute (Instituto Nacional de Estatística)

INEFOP | National Institute for Employment and Professional Training (Instituto Nacional de Emprego e Formação Professional)

INGA | National Institute for Environmental Management (Instituto Nacional de Gestão Ambiental)

JMP | Joint Monitoring Programme

MRE | Ministry of Foreign Affairs of Brazil

NGO | Non-governmental organization

SDG | Sustainable Development Goals

STLC | Community-Led Total Sanitation (Saneamento Total Liderado pela Comunidade)

UCAN | Catholic University of Angola (Universidade Católica de Angola)

UNICEF | United Nations Children's Fund

UNOSSC | United Nations Office for South-South Cooperation

UTGSL | Technical Unit for Sanitation Management of Luanda (Unidade Técnica de Gestão de Saneamento de Luanda)

WASH | Water, Sanitation and Hygiene

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Introduction

The Pursuit of Change Drives Innovation and a New Era in Peri-Urban Sanitation in Angola

This is the third publication in a series dedicated to documenting and analyzing the evolution of the Trilateral South-South Cooperation project, titled “Improvement of Water, Sanitation, and Hygiene Services in Angola through Trilateral South-South Cooperation”. The project focuses on introducing an innovative approach to simplified sanitation and integrated solid waste management (ISWM) in Angola.

In this context, it is essential to emphasize that access to safe drinking water and sanitation is a fundamental human right, recognized by the United Nations in 2010. This right is directly linked to the provision of other essential services, serving as a foundation for the implementation of fundamental rights, particularly in terms of promoting health, improving quality of life, ensuring social well-being, and reducing inequalities and poverty. Moreover, disparities in access to water, sanitation, and hygiene (WASH) services have significant social and health implications, particularly affecting children.

Following a year marked by strong political dialogue and alignment, the second year of project implementation shifted the focus towards deepening community engagement. There were weekly community meetings facilitated by UNICEF, creating spaces for dialogue, collaboration, and shared decision-making. Through these gatherings, community members transitioned from project beneficiaries to active participants and change makers. Finally, a baseline survey was carried out, to better understand the local context and inform the next phases of the project.

In parallel, topographic and technical studies were initiated in preparation for the upcoming infrastructure works. Community members were hired by the company coordinating the engineering part of the project. Concurrently, the community involved, reinforcing the project’s commitment to participatory planning and inclusive governance.

The consistency of community engagement – combined with transparent communication and opportunities for meaningful participation – has fostered a strong sense of ownership among all stakeholders. Residents, local leaders, and

TRILATERAL SOUTH-SOUTH COOPERATION

South-South Cooperation is a development cooperation modality where two or more developing countries pursue individual or shared national capacity development objectives through exchanges of knowledge, resources, and technical know-how and through (inter-)regional collective actions.

Trilateral South-South Cooperation (TSSC) brings together developing countries, developed countries and International Organisations to share knowledge and implement initiatives with common development goals. TSSC builds on shared governance among different actors and identifiable comparative advantages.

https://unsouthsouth.org/about/about-sstc/

The IBSA facility for poverty and hunger alleviation (IBSA Fund) was established jointly by India, Brazil and South Africa in March 2004 and became operational in 2006 to identify replicable and scalable projects that can be disseminated to developing countries on a demand-driven basis as examples of best practices in combating poverty and hunger. IBSA Fund-supported projects help partner countries in the Global South to achieve their national priorities, as well as all other internationally agreed development goals.

https://www.ibsa-trilateral.org/ibsa_fund.html

institutional partners have demonstrated a collective commitment to the sustainability and success of the initiative.

Looking ahead, the project will maintain its focus on inclusive community participation as infrastructure construction begins. Ensuring that all voices continue to be heard – and that the solutions remain locally driven – remains central to the approach.

1. The Angolan Context

Angola's population growth significantly exceeds the global average, ranking among the most demographically dynamic countries. Between 2000 and 2023, Angola's population grew by approximately 127%, whereas the global population increased by 31%, highlighting the rapid pace of Angola's demographic expansion (World Bank, 2025)[1]. Currently, about 69% of the population lives in major cities, reflecting an ongoing urbanization trend with an annual growth rate of 3.9%.

The slow expansion of sanitation services remains one of the key challenges for Angola's WASH sector. Between 2012 and 2022, basic sanitation coverage in the country increased by only 1%, from 65.4% to 66.4%[2].

Public investment from Angola's General State Budget (OGE) in the Water, Sanitation, and Hygiene (WASH) sector increased by 300 percent between 2021 and 2025. However, in real terms – adjusted for inflation – this represents only 56 percent of the nominal investment value in 2025. Despite this progress, the country still falls short of its sanitation goals, with more than 40 percent of the population lacking access to these essential services.

In 2024, the Government allocated 1.8 percent of the national budget – equivalent to approximately 0.6 percent of GDP – to the WASH sector. This level of investment remains lower than in other countries in the region, such as Mozambique and Cabo Verde, which allocated 2.26 percent and 5.56 percent of their national budgets, respectively[3].

Thousands of peri-urban families in Luanda still lack access to safely managed water and rely on inadequate sanitation facilities or practice open defecation.

Figure 1 illustrates access to water, sanitation, and hygiene services in Angola, highlighting national averages and disparities between urban and rural areas. It is important to note that access to basic services does not necessarily ensure

1 World Development Indicators | DataBank

2 https://washdata.org/reports/jmp-2023-wash-households

3 Angola-WASH-Budget-Analysis-2023-PT.pdf

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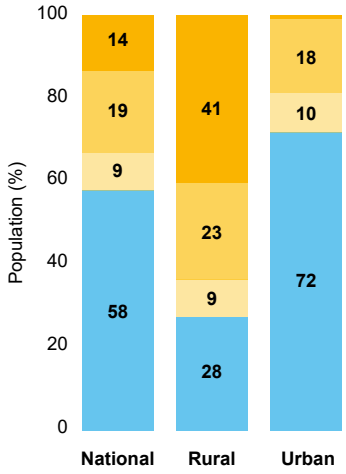
Figure 1: Access to Water, Sanitation, and Hygiene Services in Angola

Drinking water



Safely managed access
- Drinking water source located on premises.
- Available when needed.
- Free from fecal and chemical contamination.
- This is the highest level of water supply service.

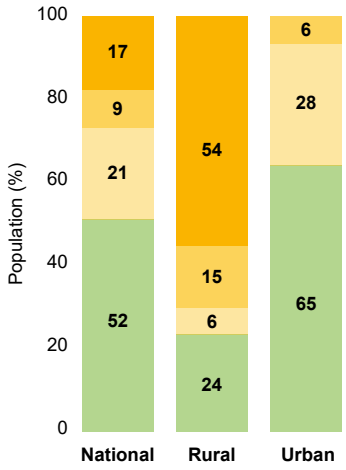
Basic service
- Improved source (e.g., public tap, protected well) within a 30-minute round trip.

Limited service
- Improved source, but requiring more than 30 minutes to access.

Unimproved service
- Water sources that do not ensure safety, quality, and adequate availability for human consumption. These sources pose a higher risk of contamination and are generally unprotected from external pollutants such as human and animal feces, chemicals, and other contaminants.

Surface Water
- Drinking water directly from a river, dam, lake, pond, stream, canal or irrigation canal.

Sanitation



Safely managed access
- Sanitation facilities not shared with other households, with excreta safely treated and disposed of.

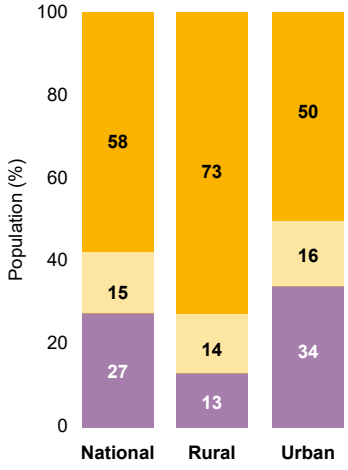
Basic service
- Facilities (such as private latrines or septic tanks) not shared with other households, ensuring a minimum level of adequate sanitation.

Limited service
- Facilities shared with other households, which may compromise hygiene and sanitation safety.

Unimproved service
- Inadequate facilities, such as latrines without a slab, open pits, or systems lacking proper separation of waste, exposing health risks.

Open defecation
- The practice of defecating in the open without any sanitation facility.

Hygiene



Basic hygiene services
- Availability of facilities for hygiene activities, such as handwashing with soap and water within the household or in a readily accessible and regularly used location.

Limited hygiene services
- Presence of handwashing facilities but without soap or reliable access to water, or facilities that are only available to certain household or community members.

No service
- Complete lack of appropriate infrastructure for hand hygiene, meaning no handwashing facilities are available.

Source: JMP 2023

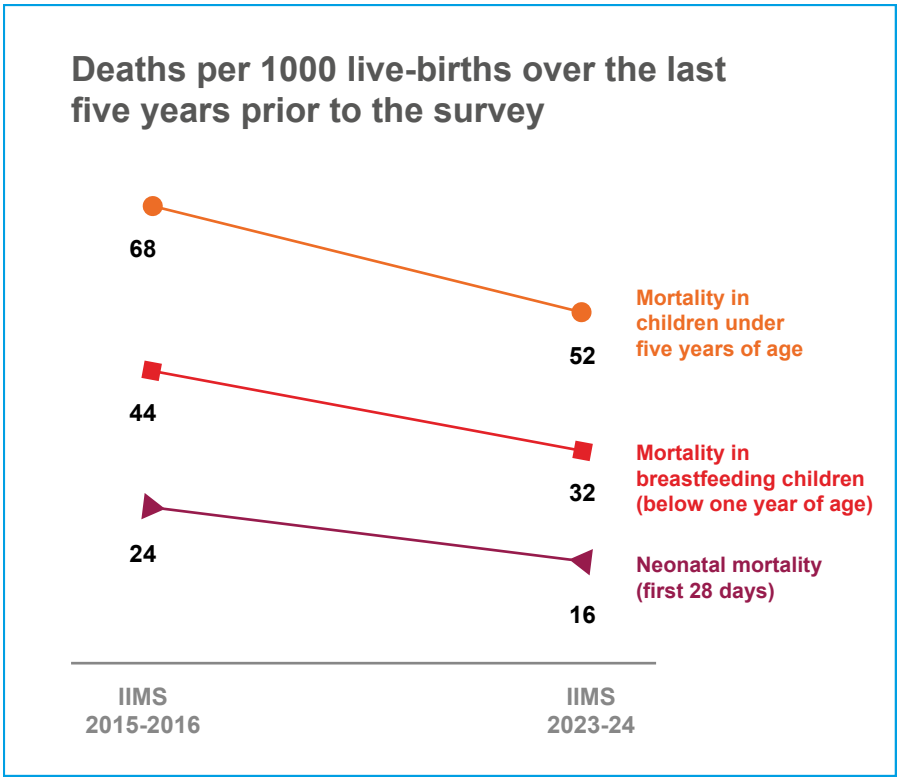
safe management, presenting additional challenges.

A significant challenge for the State and communities regarding WASH services is the limited understanding regarding the transmission of fecal-oral and waterborne diseases. This context reinforces the need for educational initiatives and continuous investments to improve living conditions and public health in the country (JMP 2023)[4].

Limited WASH services, combined with the practice of open defecation or the use of locations without adequate infrastructure, are among the primary causes of recurrent outbreaks of diseases related to inadequate environmental sanitation, such as arboviral diseases, cholera, and diarrheal infections.

Although the under-five mortality rate in Angola has decreased throughout the last decade, from 68 to 52 per 1,000 live births between 2015 and 2024 (Figure 2), the current rate is still considerably higher than the global average of 37 per 1,000 live births (UNICEF, 2025)[5]. It is estimated that at least 15% of these deaths are directly related to poor water quality and lack of basic sanitation (INE, 2016,

Figure 2: INE 2024



2024)[6]. This was evidenced by the cholera outbreak that began in December 2024 and continues to the present moment (April, 2025), with 5,749 people affected and 204 deaths recorded (MINSA 2025)[7].

The challenge of ensuring access to WASH services is particularly critical in Mulenvos, located on the outskirts of Luanda. Some of the primary WASH-related issues faced in this municipality include:

- Limited access to safe and continuous drinking water;
- Inadequate sanitation infrastructure, with insufficient sewage systems;
- Poor personal and household hygiene practices;
- Lack of health education and awareness about water and sanitation-related diseases;
- Rapid population growth, hindering the expansion of basic services;
- Inefficient solid waste management, exacerbating health risks.

Overcoming these challenges requires continuous investments, effective public policies, and educational initiatives targeted at local communities to promote and improve public health, quality of life, and reduce child mortality rates related to waterborne diseases.

4 https://washdata.org/reports/jmp-2023-wash-households

5 https://data.unicef.org/topic/child-survival/under-five-mortality/

6 INE-Angola

7 https://www.afro.who.int/pt/countries/angola/news/reforco-da-detecao-activa-de-casos-de-colera-em-angola

2. The Project

Brazil is recognized for its regulations on urban WASH policies, covering infrastructure, service management, planning, and integrated solid waste management. Angola, in turn, has sought to strengthen governance frameworks, legislation, and regulations while adopting new sewage systems with a strong focus on community engagement.

This Trilateral South-South Cooperation initiative, financed through the IBSA Fund and implemented under the leadership of the Government of Angola and UNICEF, benefits from crucial technical and strategic cooperation with Brazilian institutions such as the National Health Foundation (FUNASA), the Water and Sewerage Company of the State of Ceará (CAGECE), and the Ceará State Secretariat of Cities. Additionally, the initiative is coordinated in close collaboration with the Brazilian Cooperation Agency (ABC) of the Ministry of Foreign Affairs of Brazil (MRE), which is the government entity responsible for planning, coordinating, negotiating, approving, implementing, monitoring, and evaluating technical and humanitarian international cooperation projects of the Brazilian Government.

The overall project objective is to facilitate knowledge and technology exchanges to enhance access to water, sanitation, and hygiene services, integrated solid waste management, and circular economy in the municipality of Mulenvos[8]. These efforts aim to improve health outcomes and quality of life in low-income peri-urban communities by strengthening community engagement and empowerment. Further information on the initial steps of the project can be found in the first document of this series.[9]

As documented in the second publication of this series[10] of this series, the first year of implementation (2022-2023) involved two simultaneous and complementary processes. On one hand, significant political mobilization efforts were carried out, which were fundamental for formalizing commitments and advancing the project. On the other hand, a thorough process of training of trainers was conducted, focused on simplified sewerage systems, integrated solid waste management, community engagement, and environmental education.

Under the leadership of the Ministry of the Environment, in the capacity of the National Institute for Environmental Management, and UNICEF, a total of 72 professionals

8 The new Political-Administrative Division Law of Angola (Law No. 268/24 of 5 September 2024), implemented in 2025, has impacted the administrative positioning of the project. As a result, the project area, previously located within the Municipality of Viana, now falls under the jurisdiction of the newly established Municipality of Mulenvos

9 Trilateral South-South Cooperation in WASH: The trajectory of a shared learning journey | Cooperativa Sul Sul Trilateral

10 Trilateral South-South Cooperation in WASH: The trajectory of a shared learning journey - First year of implementation | Cooperativa Sul Sul Trilateral

"This project will change our lives for the better. The streets will be paved, there will be fewer flies and illnesses, and our community will be healthier."

Simões

from 14 Angolan institutions[11] participated in the training process, which took place between April and June 2023. These trainers are part of the teams responsible for implementing the project in their respective areas, acting as information multipliers within the government and among the beneficiary communities.

2.1 Project Pillars

Simplified Sewerage System

Simplified sanitation is an infrastructure model designed to provide wastewater management solutions for clusters of households, particularly in high-density urban areas. It is estimated that the Simplified Sewerage System can reduce costs by up to 65% compared to conventional systems[12]. Thus, it facilitates the provision of adequate sanitation for lower-income communities where traditional sanitation solutions may be impractical or cost-prohibitive.

This System also contributes to the financial and operational sustainability of sanitation services in areas with limited infrastructure, enhancing efficiency and accelerating the delivery of WASH services.

Beyond improving residents' quality of life, sanitation also contributes to environmental preservation by reducing soil and water contamination.

Solid Waste Management

Proper solid waste management involves leveraging materials that would otherwise be discarded into the environment, transforming them into income opportunities for local recyclable material collectors[13]. Thus, this approach promotes environmental sustainability and brings positive social and economic impacts to communities.

Environmental Education

Environmental education is essential for raising awareness about the importance of nature and the environment. It covers a broad range of topics, including climate change, biodiversity, pollution, natural resource conservation, and sustainable development.

Community Engagement and Empowerment

Community engagement is key to transform community members into change makers of their own realities. It enhances local ownership, strengthens communication channels, and fosters mutual accountability between institutions and communities. It also builds trust and facilitates open dialogue, laying the groundwork for longer-term partnerships and more responsive service delivery.

The simplified sanitation project exemplifies this participatory approach. Developed through close collaboration with local stakeholders, the project prioritizes collective decision-making and shared responsibility from the outset. Community members actively contribute to identifying priorities, shaping solutions, and monitoring progress – thereby ensuring that interventions are contextually appropriate and culturally relevant.

> *"I am a spokesperson for this knowledge. I have also changed my own behaviour and habits – we avoid stagnant water to keep mosquitoes and flies away. My entire family has changed its habits."*
>
> Dias Januário

11 1. The Municipal Administration of Viana, 2. National Environmental Management Institute (INGA), 3. National Directorate of Environmental Education (DNEA), 4. National Waste Management Agency (ANR), 5. Technical Unit for Sanitation Management of Luanda (UTGSL), 6. National Institute of Employment and Professional Training (INEFOP) 7. Civil Construction Professional Training Center (CENFOC), 8. School for Water Management and Environmental Protection(IMENHA), 9. Waste Pickers Youth Association of Angola (AJOCAMARC), 10. Kudisanza environmental association, 11. Integrated Technology Training Center (CINFOTEC), 12. People in Need (NGO), 13. Catholic University of Angola (UCAN) and 14. Luanda Water Company (EPAL).

12 https://sswm.info/sanitation-systems/sanitation-technologies/simplified-and-condominial-sewers

13 https://www.unicef.org/angola/en/stories/young-people-take-central-role-transformation-sanitation-mulenvos-de-cima

However, meaningful engagement is only possible when communities possess the capacity and agency to participate fully. Community empowerment is therefore a fundamental enabler of engagement. Empowerment is a social and political process grounded in equitable access to accurate, fair, and inclusive information. It allows individuals and communities to understand their rights, and actively take part in shaping the systems and structures that influence their daily lives.

In practice, the project fosters empowerment by facilitating the development of knowledge, skills, and leadership within communities. Local leaders are identified and supported to represent their streets and mobilize participation. Surveys are integrated throughout the project cycle, institutionalizing mechanisms for inclusive dialogue.

This approach reflects an understanding that empowerment is both an individual and collective process. It involves not only the capacity to act but also the confidence to do so, supported by an enabling environment that values community voice and leadership. Empowered communities are better equipped to sustain progress, advocate for their needs, and build resilience against future challenges. Together, community engagement and empowerment contribute to more equitable, inclusive, and sustainable development outcomes.

COMMUNITY ENGAGEMENT

Why is it important?

Community engagement is essential for turning social policies into long-lasting changes. At the local level. It ensures that policies are not only created for the communities – but with them. By involving residents in the design, implementation and monitoring of initiatives, community engagement builds trust, strengthens social ties and promotes shared ownership of solutions. It values people's lived experiences and transforms them into drivers of social justice and empowerment.

How can it be implemented?

Effective community engagement starts by adopting socio-educational approaches that integrate diverse forms of

"I've always participated in the project, from the start. The meetings are held on Saturdays. There, we learn how to manage water and waste, and we are committed to applying that knowledge now and into the future."

Dias Januário

knowledge – from technical expertise to traditional and local wisdom. These approaches become the foundation for developing inclusive processes, tools, content, and relationships that reflect and respond to the realities of the community.

Implementation Strategies:

- Create and strengthen communication channels for open communication and active participation between residents and public institutions.
- Facilitate regular community meetings, workshop and feedback sessions to co-design and adjust initiatives.
- Engage community leaders, educators and other key actors to act as facilitators of this process.

Expected Outcomes:

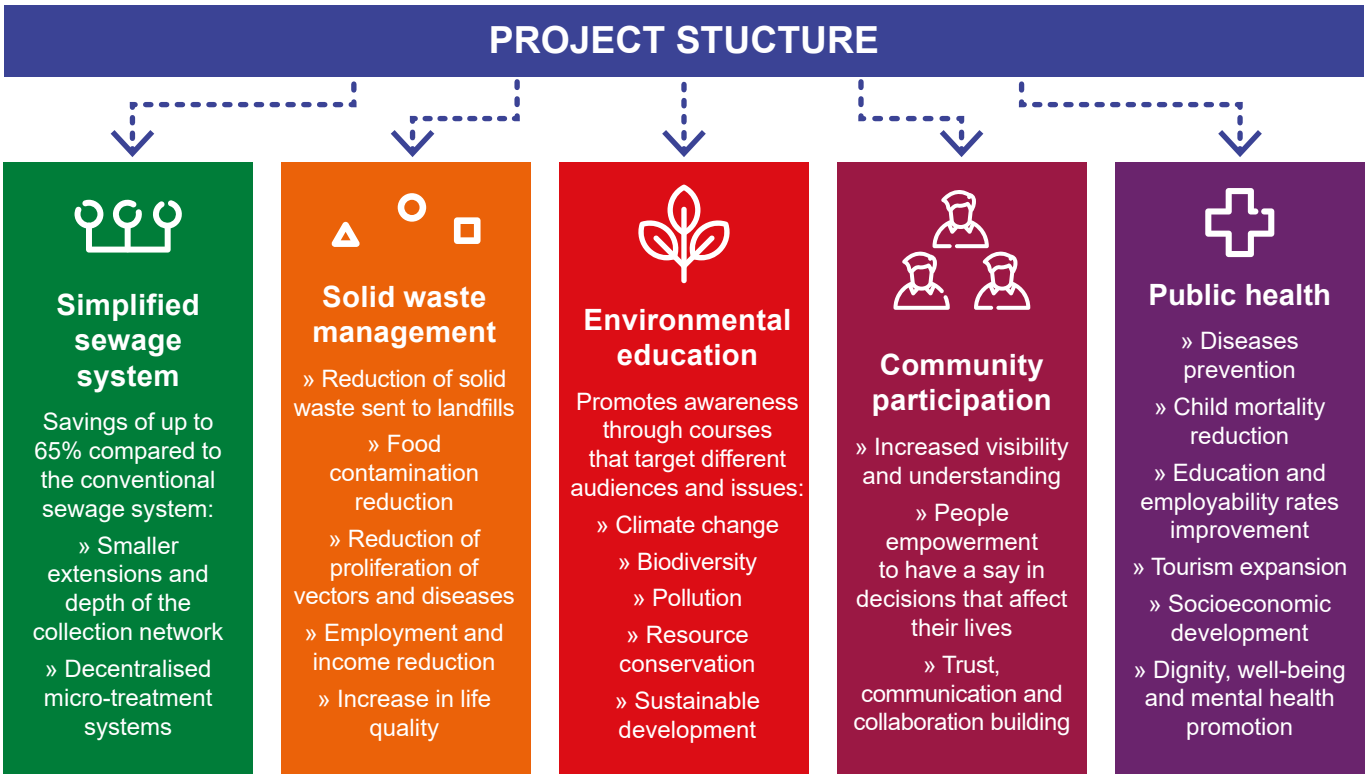
- Greater community participation and ownership.
- Long-term sustainability.
- Empowerment of individuals and groups to become agents of social transformation.
- Strengthened accountability, transparency, and responsiveness of public policies.

Public Health

Basic sanitation services are essential for ensuring a healthy environment for all. Therefore, sanitation must be a priority for national and local governments.

The improper disposal of solid waste and the lack of water treatment and sanitation services expose populations to harmful pathogens. The most prevalent diseases resulting from unsanitary conditions include leptospirosis, bacterial dysentery, schistosomiasis, typhoid fever, and cholera[14]. Understanding these risks is critical, and communities must

14 The main diseases transmitted via the fecal-oral route include giardiasis, cryptosporidiosis, amebiasis, gastroenteritis, typhoid and paratyphoid fevers, infectious hepatitis, and cholera. All of these are serious illnesses that can cause a range of severe symptoms and, in some cases, may even lead to death.



be informed about the links between their environment and public health.

3. Project Progress in 2024

In the second year of the initiative (2023-2024), efforts were especially focused on social mobilization and community empowerment, recognizing that progress depends directly on community engagement and commitment. Through baseline research and community dialogues, challenges to be overcome were identified, both in planning and project execution, including issues related to obtaining licenses and providing more sustainable water services.

Between April and December 2024, 30 meetings were held with 278 community members and local authorities to discuss demands and clarify all technical needs of the simplified sanitation project in Mulenvos.

Based on Brazil's experience and knowledge exchanges between Brazilian institutions and the Government of Angola,

TIMELINE OF COOPERATION
Summary of key events

2018
- Formal request for cooperation from the Government of Angola to the Government of Brazil

2019
- Study visit to Brazil from Angola (Ceará & Brasília)
- Planning for scoping mission to Angola from Brazil

2020
- Joint elaboration of concept note and submission to IBSA Fund
- COVID-19

2021
- Approved funding from IBSA Fund
- Virtual scoping mission to Angola
- Joint elaboration of results matrix and project document
- Submission of project document to IBSA Board

2022
- Project document approved by IBSA Board
- Project document signed by the government of Angola and UNICEF
- Joint elaboration of the annual work plan
- Technical mission to Angola
- Steering committee meeting
- Joint development of roadmap and terms of reference for capacity development

2023
- Completion of Training of Trainers worshops
- Technical definition of the project's implementation area and finalization of the Terms of Reference (ToR) for the design and construction phase
- Support to a regional knowledge-sharing initiative on South-South and Triangular Cooperation (SSTC)
- Technical mission to Angola
- Technical evaluation of the first year of implementation

2024
- Completion of baseline assessments
- Contract signed for the technical design and supervision of construction activities
- Organization of 30 community meetings
- Capacity-building activities on waste management and environmental education for community members and waste picker cooperatives
- Convening of the Steering Committee for the second year of implementation

communication materials were developed to help communities identify with the challenges they face.

I. Community Engagement

During the second year of this project's implementation, community members actively participated in weekly meetings, where they developed knowledge in simplified sanitation, integrated solid waste management, public health, environmental education, and hygiene. Additionally, regular meetings were promoted between the community and local government to review baseline data, project progress, and collaboratively plan for the future.

So far, different stakeholders have met to discuss and adjust the sanitation project, fostering alignment between the teams involved in its development. These discussions aim to study local conditions, identify challenges, and anticipate the limits and possibilities of the proposal.

In the municipality of Mulenvos, the project is creating opportunities for the community by improving access to drinking water, sewage infrastructure, and waste management solutions. Beyond solving historical problems, the initiative focuses on direct resident involvement, empowering them to take an active role in improving the neighborhood's sanitation and hygiene conditions. For example, 15 young people have been employed by the Topography company, providing direct support to the technical teams involved in the project. Together, these factors can help the community members better understand the importance of their participation in the project.

> *"Changing habits isn't easy, but we know that, over time, the community will adapt and do what needs to be done."*
>
> Maria Margarida

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ENSURE AVAILABILITY AND SUSTAINABLE MANAGEMENT OF WATER AND SANITATION FOR ALL

TARGET 6.1

By 2030, achieve universal and equitable access to safe and affordable drinking water for all.

INDICATOR 6.1.1

Proportion of population using safely managed drinking water services.

TARGET 6.2

By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.

INDICATOR 6.2.1

Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water.

UNICEF/Angola2024/Elena Thomas

II. Political Engagement

Political engagement has been a fundamental pillar in fostering a comprehensive and strategic understanding of access to WASH services. However, ensuring meaningful engagement poses significant challenges across all social sectors. To address this issue, participatory processes serve as an effective strategy for securing community acceptance through transparent and inclusive consultations.

During the second year of project implementation, UNICEF maintained continuous dialogue with policymakers, even amid shifts in the political-administrative landscape. Ensuring that sanitation remains a political priority is essential, aligning with Sustainable Development Goal 6 (SDG 6) and the government's commitments outlined in the National Development Plan 2022–2027.

To strengthen project sustainability, a coordination

group was established, bringing together local authorities, community representatives, and the private sector. The project acknowledges that while institutional coordination is key to overcoming structural and governance challenges in sanitation, sustained community engagement in decision-making is vital for long-term success.

UNICEF plays a pivotal role in facilitating collaboration among Angola's water, sanitation, and hygiene institutions through the National Water and Sanitation Forum (FONAS)[15]. This initiative has enhanced policy integration across the sector, minimizing inefficiencies caused by overlapping responsibilities and regulatory ambiguities.

As part of this process, critical aspects of sectoral regulation are under discussion, including the new National Sanitation Strategy, regulatory reviews, and the social inclusion of waste pickers.

III. Baseline and Organizational Process

Between March and June 2024, an initial baseline survey was conducted to collect essential data for the project implementation, focusing on engineering, behavioral barriers, and health. The survey was developed in collaboration with CAGECE, FUNASA, and the Ceará State Secretariat of Cities. This research was fundamental, as the project's success depends on resident engagement, given that they will collectively decide on the connection and maintenance of sanitation infrastructure.

Household and Commercial Survey

This survey aimed to:

1. Collect technical data for engineering purposes;
2. Understand social barriers to behavior change;
3. Obtain basic health data for future comparisons.

A total of 251 household interviews and 12 commercial establishment surveys were conducted in person. Interviews

Figure 3: Pilot project area mapped in blue and control area in red

15 https://www.minea.gov.ao/index.php/component/content/article/19-destaque/588-ministerio-da-energia-e-aguas-realiza-workshop-de-reavaliacao-conjunta-do-sector-das-aguas-saneamento-e-higiene

"I've been part of this project since the beginning. I attended all the meetings and have learned a lot. I share the knowledge with my friends so that, even in my absence, they can take action – disposing of waste properly, keeping the house clean, not throwing trash in the toilet."

João Antônio

were administered to one member of each household in the pilot project area and control area, using Kobo Toolbox software on tablets.

Integration of Waste Pickers and Cooperatives

The project also aims to strengthen the role of recyclable waste pickers and their cooperatives, with the following objectives:

- Improving working conditions for waste pickers;
- Enhancing the financial stability of cooperatives and independent waste pickers;
- Reducing pollution caused by solid waste in public spaces and the future sewage system.

To gain a clearer understanding of this context, a baseline study was carried out with waste pickers and their cooperatives in Luanda, Angola. The study included an in-person survey focusing on working conditions and health-related issues. Only individuals aged 18 and above were interviewed, using a convenience sampling approach across different locations. In total, 131 surveys were completed.

- 67 with independent waste pickers (Figure 5);
- 64 with cooperative workers, of whom 52 were directly involved in waste handling (waste pickers and street sweepers) (Figure 4).

Surveyor Training

To ensure the quality and accuracy of data collection, 12 surveyors were trained over three weeks, covering:

1. Community approach and engagement;
2. Understanding and applying the questionnaire;
3. Practical use of Kobo Toolbox, ensuring data collection accuracy.

Figure 4: Waste picker cooperatives

Figure 5: Independent waste pickers

"I have learned a great deal about sanitation, about how to separate waste – what can and cannot be recycled. I learned how to make soap using oil that would have been discarded. I learned hygiene practices to prevent flies and disease. I'm hoping for a better future. This project will help us a lot."

Maria Margarida

UNICEF/Angola2024/Elena Thomas

IV. Women's Participation

Throughout the implementation of the project, efforts have been made to promote women's participation and facilitate discussions on various issues related to sanitation, public health, and environmental health.

Women play a crucial role in community development. Women-led organizations are essential in advocating for rights and gender equality, contributing to family and social cohesion. Findings from the baseline survey cited above indicate that while 76% of households are headed by men, women are responsible for 57% of decisions related to sanitation, which highlights their central role in the management and use of services. Additionally, the survey revealed that:

1. 17% of decisions are made exclusively by men;
2. 26% of decisions are made jointly by couples or family members.

Women's participation has been emphasized in several areas:

- Facilitation of Debates: The project fosters inclusive discussions, encouraging women to share their experiences and concerns.
- Learning Process: It continuously promotes education on WASH, waste management, and environmental issues, addressing women's specific needs and responsibilities.
- Household Survey: The majority of survey respondents were women. This is attributed to the fact that women are primarily responsible for sanitation and hygiene matters within the household, highlighting their decision-making role and centrality in water resource management and family health promotion. This leadership underscores the importance of including women in sanitation policy planning and decision-making processes, ensuring that their needs and perspectives are considered in the implementation of sustainable and effective solutions.

During these discussions, participants debated the following topics: Well-being Impact and Hygiene Practices linked to Water and Sanitation Access, Household Waste Management, Environmental Education, and Community Collaboration.

V. Development of Technical Support Materials

Following the training sessions implemented during the first year of implementation, a series of materials was developed to promote behavior change in favor of a healthier environment.

The guides shown in Figure 6 were developed for businesses, municipal authorities, and the residents' committee to help ensure project sustainability. This process resulted in the creation of practical manuals[16] and a set of educational materials focused on behavior change, namely:

- General Guidelines for Socio-Environmental Work in Simplified Sewerage Systems
- Technical Support Guide for the Development of Simplified Sewerage Collection Systems
- Social and Behavior Change Materials

Community engagement in the development of these materials was essential to ensure their clarity, relevance, and practical application within the local context, fostering a shared understanding among all stakeholders.

16 Technical Guides - Simplified Sewage System | Trilateral South-South Cooperation

Figure 6: Environmental Education Support Materials

VI. Emphasis on Climate Change

Climate change is expected to have significant impacts on the water cycle, exacerbating existing issues and introducing new challenges. The municipality of Mulenvos presents a combination of social, environmental, and institutional characteristics that make it particularly vulnerable to climate change-related impacts. This heightened vulnerability results from the significant number of people living in poverty in precarious settlements. Additionally, unplanned peri-urban expansion contributes to negative implications for urban water resources and already fragile sanitation infrastructure.

Public sector actors involved in water and sanitation management face a considerable challenge: overcoming current vulnerabilities while preventing and/or adapting to future risks.

It has been observed that Angolan society's engagement with the issue of climate change needs to be strengthened. Other urgent matters, such as access to basic services and housing, often take precedence over climate change concerns in the priorities of social movements. In this context, the role of public actors is central. However, public policies and actions aimed at reducing or controlling vulnerabilities in peri-urban areas – whether through the provision of safe water or flood mitigation – are still in their early stages.

Nevertheless, the adoption of integrated management practices for wastewater, solid waste, environmental management, and the

sustainability of existing systems – particularly by promoting access to sanitation services – are all of great importance in preventing potential negative consequences of climate change.

VII. Technical Cooperation and knowledge exchange

Technical cooperation and knowledge exchange between Brazil and Angola have been key factors in the development and implementation of the project.

Key actions include:

- Identification and assessment of key challenges;
- Detailed analysis on how to overcome identified challenges;
- Development of innovative and practical solutions by leveraging the skills and resources of all stakeholders;
- Elaboration of theoretical and practical guides;
- Proposed improvements of processes and tools used by technical team;
- Implementation of solutions in a coordinated manner, ensuring that all participants are aligned and committed to the established objectives;
- Continuous and effective monitoring.

VIII. Engineering and Technical Design

The pilot sanitation project in Mulenvos includes the construction of a simplified sewerage network, composed of small pipelines, and a wastewater treatment station, benefiting both the pilot area and surrounding communities. The project's feasibility and economic sustainability depend on the active cooperation of residents and the knowledge of waste collectors in waste management.

A sanitary sewage collection system is essential for safeguarding public health and improving quality of life. It also represents a basic service that must be guaranteed for all. The system aims to expand access to sewage collection by optimizing available resources and adapting to local conditions. As such, even in areas with topographical constraints, it is possible to develop context-specific solutions that ensure equitable access for the community.

Current Phase of the construction design

Currently, the construction design is being developed by a contracted engineering company. This process includes:

- Detailed topographic survey, guiding the definition of the pipeline and drainage system;
- Individual house-to-house sketches, ensuring that the infrastructure is adapted to each residence;
- Screening of risks and environmental safeguards, ensuring project sustainability.

Modern topography plays a key role in this planning, utilizing techniques such as terrestrial surveying, photogrammetry, and remote sensing to collect precise data. Specialized software enables the analysis and visualization of this information, supporting strategic decision-making. In the context of Mulenvos, this

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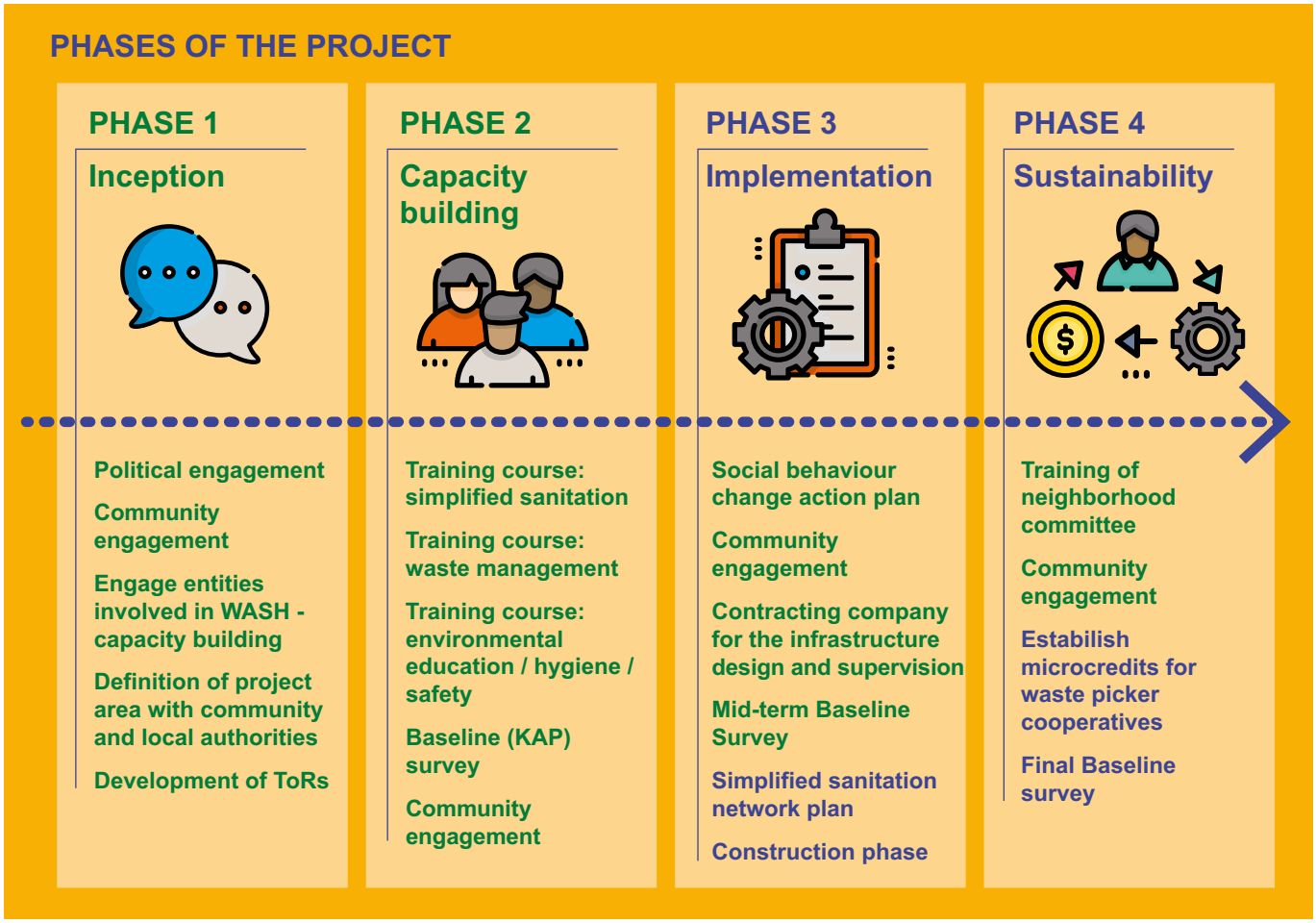

detailed analysis is essential to ensuring the efficiency of the sewage network, considering factors such as terrain slope and the technical feasibility of the infrastructure.

This work is currently underway and represents a significant step towards improving the sanitary conditions and quality of life in the community.

IX. Project Management Committee

The Project Management Committee is responsible for guiding, advising, and approving work plans, progress reports, and project evaluations. The committee meets once a year to ensure the achievement of the following objectives:

1. Ensure that the principles of South-South cooperation are upheld by all parties involved.
2. Guarantee proper coordination between the Government and the selected participating organizations.
3. Oversee the fulfillment of assigned roles and responsibilities.
4. Promote a shared vision regarding the participatory process initiated at the local level, establishing consultation and coordination mechanisms between Civil Society Organizations and the Government.

Parallel to the Management Committee, a Technical Committee meets monthly with the following responsibilities:

1. Monitor the phases of project implementation;
2. Ensure representation of all stakeholders;
3. Guide and support the planning and development of activities;
4. Provide opinions on specific matters submitted for discussion;
5. Assess and propose improvements.

Lessons Learned

1. Implementing a project of this nature requires a continuous **engagement effort from all actors involved, both at the political level and within the community**. Ongoing engagement with the community fosters trust in the project while encouraging participation.
2. Community engagement **is neither automatic nor guaranteed**; it requires a significant commitment in terms of time and effort from those leading on project implementation.
3. **Community trust in project leaders** has been essential for engagement and active participation. This trust was built through regular visits, continuous dialogue, and a willingness to address concerns with sensitivity and transparency. A commitment to listening to community members and responding to their needs not only strengthened project acceptance but also contribute to long-term sustainability of results.
4. Processes of **community mobilization and political coordination are time consuming** and may require adjustments to implementation timelines. **Flexibility in project deadlines** is essential to strengthen engagement among various actors and ensuring that results are sustainable.
5. Ensuring the sustainability of project activities requires **alignment between the implementation of appropriate technologies and existing regulatory and normative frameworks**. As demonstrated by this initiative, reviewing and adapting these frameworks should be anticipated and integrated into the project design as a central component.
6. The successful implementation of the project depends on **institutional commitment within the country**. To ensure sustainable impacts, it is crucial that public and private institutions responsible for water, sanitation, and hygiene management fully assume their roles in providing services to the population. This includes entities responsible for water supply, waste collection and recycling, and those

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supporting waste pickers and other related initiatives. The alignment and commitment of these actors are fundamental to project effectiveness and continuity.

7. Project implementation can serve as a catalyst for **income generation and job creation within the community**. For instance, local residents were hired to support the construction of the simplified sanitation infrastructure. This approach allows the implementing company to benefit from local labor, while community members gain a source of income, as well as new skills and technical knowledge that may support future employment opportunities. Such direct involvement fosters a sense of shared ownership and contributes to long-term sustainability of project results.
8. The policy of **social integration for waste pickers requires continuous follow-up** with these workers and their collectives. This need was also highlighted by discussions and studies that pointed to the difficulties of their inclusion in the local economy.
9. **UNICEF** promotes **dialogue between the government, the private sector, and civil society**, organizing spaces for discussion, capacity-building, and mobilization. These efforts contribute to a broader understanding of the project's positive impact on public health and sustainable development.
10. **Public-Private Partnerships** (PPPs) emerge as a viable pathway to **fostering** social and economic development, enabling investments in **technical training, small business** incubation, and support for **community entrepreneurship** – especially in areas such as recycling and infrastructure maintenance.

Next Steps

1. Strengthening community leadership:

Maintain the active involvement of local coordinators and neighborhood leaders in the pilot project to expand community awareness and engagement.

2. Inclusion of youth in technical work:

Continue to engage young people in technical activities, contributing to local job creation and the reduction of vulnerabilities.

"Before, many people didn't know how improper disposal of wastewater and trash affected our health. Now we're learning together and putting that knowledge into practice."

Simões

"In the beginning, some people didn't believe the project would work. Today, we see the difference: less garbage in the streets and more residents committed to change."

Joao Antonio

3. Strengthen waste picker cooperatives:

Develop and implement a plan to establish and strengthen cooperatives of recyclable material collectors, ensuring active and sustainable community participation.

4. Final project implementation:

Launch a bidding process to define the project's final implementation phase and hire a specialized company for the infrastructure work.

The process, as outlined, will be led by Angolan counterparts, with technical support and guidance from Brazilian entities. This partnership aims to combine technical knowledge and practical experience from both parties to ensure the project's success and sustainability.

Community Stories

Hope and Transformation: The Change That Comes with Basic Sanitation

In the Mulenvos community, water is a precious yet uncertain resource. It arrives only a few times per week, and in its absence, neighbors support one another by sharing what little they have. Waste collection, once carried out regularly, is now the responsibility of residents, who must transport it to containers themselves – something not always feasible. The consequences of this reality are visible in the streets and in the community's health, where diseases such as diarrhea and infections are common, especially among children.

In the face of these challenges, the basic sanitation project brought more than just infrastructure – it brought knowledge. From the outset, residents like myself have taken part in community meetings to learn about the importance of proper waste disposal, recycling, and safe water practices. Today, we know how to store and disinfect water more safely, and even how to reuse cooking oil to make soap. Small habits are changing: jerrycans are no longer scattered throughout the streets, and more and more people are adopting hygiene and waste management practices.

At first, many doubted the project would succeed. In Angola, we have heard many promises that never came to fruition. But this time, the difference lies in the commitment and dedication of those leading the initiative. These are individuals who listen to us, guide us, and make a point of being present in each household and every meeting. That motivates us to keep going and ensure that these changes are sustained. We know the real challenge will be to maintain what we are building – but we are learning that transformation depends on all of us. My hope is that this project not only succeeds in our community but also reaches many others.

Joao Antônio

Learning and Change: A New Perspective on Sanitation

Before the project, many of our everyday practices were not discussed in the community – like the impact of flushing waste down the toilet, which can clog pipes and obstruct water flow, or discarding used water into the streets, which attracts flies and spreads disease. Now, with the guidance we've received, I'm learning how to separate waste properly – recyclables on one side, food scraps on the other – and to put this knowledge into practice. This experience has been transformative, and I make a point of sharing what I learn with friends and family.

The project has sparked in me a deeper interest in community well-being. I want to keep learning, especially about how to repurpose used cooking oil into soap. I know that if we all apply these new habits, we will see tangible results: less waste on the streets, fewer insects, and consequently, fewer illnesses. Moreover, with paved roads and improved sanitation, our quality of life will improve.

Challenges remain, such as the lack of water in some homes and the need to raise further awareness about proper waste disposal. But I am already doing my part – I have adopted new hygiene habits at home and noticed a reduction in insects. I believe the key to the project's success is showing, in practice, how small changes can make a big difference. With collective effort, we can transform our community for the better.

Simões

A Project that Transforms Habits and Improves Lives

I have been living here for 15 years. Although we have piped water, the supply is irregular – some days we have it, others we do not. When it is unavailable, I rely on a storage tank. Additionally, used water ends up in septic tanks or flows directly into the street, compounding sanitation issues and attracting mosquitoes. Waste disposal also requires extra effort: we must carry it to the landfill ourselves, as collection services do not always reach us. These difficulties impact the entire community – both our daily lives and our health.

I have participated in the project's meetings and have learned a great deal. I now know how to separate waste correctly, reuse oil to make soap, and treat water to prevent illness. I also avoid stagnant water to reduce the presence of mosquitoes and flies. I make a point of sharing this knowledge with neighbours and friends, helping to raise awareness about the importance of these changes. My own family has adopted new habits, and we can already see the difference.

The greatest challenge remains reducing disease and ensuring that waste and wastewater are properly managed. That is why this project's implementation is so critical. It will not only help eliminate sources of contamination but also bring economic benefits by reducing the money we currently spend on medicine and septic tank maintenance. I know some people still resist change, but I always explain that proper sewage systems will improve everyone's lives. This project is a real opportunity to transform our community, and we are ready to be part of that change.

Dias Januário

Community Transformation: One Step at a Time

Participating in this project has been an enriching experience. Our community urgently needs basic sanitation to improve the health and well-being of all residents. In Mulenvos, waste remains a significant issue, but we now know that we can change this reality.

I've learned how to sort waste correctly, identify recyclable materials, and even turn used oil into soap, helping to reduce waste. I've also discovered the importance of basic hygiene practices to reduce flies and prevent disease. These are simple changes, but they make a big difference in our daily lives.

We still face challenges, such as stagnant water, and I know that changing habits does not happen overnight. But over time, people will see the benefits and begin to adapt. In the meantime, we continue mobilizing residents, encouraging each one to dispose of waste properly and maintain household hygiene.

Maria Margarida

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