



The Sanitation & Hygiene Fund

Sanitation  
Economy  
Estimates

**BENIN  
2022**



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SHF Website [www.shfund.org](http://www.shfund.org)

# About This Report

Safe sanitation, hygiene and menstrual health are essential to the achievement of health, education, gender equity, economic growth and climate outcomes in Benin. This report shines a spotlight on why making investments now into a thriving national sanitation economy makes sense for women, entrepreneurs, investors, the environment, climate, social impact and economic growth. These markets focus on products and services, renewable resource flows, and data and information to transform cities, communities and businesses in pursuit of national targets for equitable and sustainable development. In the context of the political, economic, social and technological landscape and the business environment, this report provides insights into the multiple opportunities for existing partners and new investors.

## A Note on the Estimates

The estimates presented in this report are anchored in country planning and budgets, and localized pricing. Baseline estimates for 2022 are projected into the future, with the assumption of reaching universal access, to generate a realistic picture of the full market potential and opportunity. Data collection and analysis was carried out between August and December 2022, followed by a review, including a consultation workshop with local experts in early 2023.

All calculations use the conversion rate of US\$ 1 equals West African CFA franc (CFA) 627.35 as per the exchange rate on 2 December 2022.

## About the Sanitation and Hygiene Fund

The Sanitation and Hygiene Fund (SHF) is a UN fund dedicated to achieving universal access to sanitation, hygiene, and menstrual health through market-based approaches. SHF works with Low- and Middle-Income Countries (LMICs) to build robust and climate-resilient sanitation economies and MHH markets. In Benin, SHF is supporting efforts to build an enabling environment and market ecosystem that will subsequently help channel investments in conjunction with development finance institutions and investors.

For more information, please visit:  
[www.shfund.org](http://www.shfund.org)



# Introduction

“ There is a growing recognition that a transformative approach is needed to meet global and national targets on sanitation, hygiene and menstrual health, and any such approach must be grounded in evidence and data. By catalyzing and growing national sanitation economies, we can unlock tangible impacts on health, education, gender equality, livelihoods and climate resilience for governments and for investors.”

Dominic O’Neill, Executive Director of the Sanitation and Hygiene Fund

Only seven years to 2030 and not only is progress on many Sustainable Development Goals (SDGs) lagging, but hopes of attaining the multiple benefits of women’s social and economic empowerment are under threat. In fact, the sanitation and hygiene target, SDG 6.2 related to safe sanitation, will not be reached until the 22nd century under current conditions.<sup>1</sup> The business of development is not working at the pace and scale needed.

Benin’s development priorities focus on developing human capital and promoting its wellbeing; increasing productivity and competitiveness in economic growth; addressing climate change and developing territories; improving governance, institutions, peace and security.<sup>2</sup> To realize Benin’s development ambition, there is an urgent need to ensure the role of women as leaders, entrepreneurs, employees and consumers in society and the economy. This cannot happen without affordable access to menstrual health and hygiene (MHH) products and services, and a strong sanitation economy that benefits all.

Achieving universal access to sanitation is a huge challenge. Access to safe sanitation is a basic human right. However, nearly half of the global population still does not have access to safely-managed sanitation, meaning they have a dirty or unsafe toilet where the waste is not treated, or there is no toilet at all.<sup>3</sup> Urgent acceleration of the current rate of progress, with increased investments in the sanitation and hygiene sector, is required if national development priorities and the global 2030 SDGs are to be met.

The world requires an urgent shift on how we tackle sanitation, a challenge that underpins several other SDGs linked to climate, livelihoods, economic growth, gender, global health and education. This report shows that the market economy approach can deliver on accelerating progress in the sanitation and hygiene sectors. The findings present an opportunity for stakeholders to accelerate collective progress towards achieving SDG 6.2.

## A Note on Market Drivers and Barriers

The development of any new economy or market encounters drivers and barriers. The development of the sanitation economy in Benin is no different. As the market is shaped through innovations along the value chain, strong and dynamic capabilities are needed. This includes work on improving financial competitiveness, considering incentives in the supply chain, enhancing infrastructure and supporting the building of capability among small and medium-sized enterprises (SMEs), in addition to public acceptance of new approaches, products and costs.

# About the Sanitation Economy

The **Sanitation Economy** is the growing economy of sanitation and hygiene products and services for all, including for the poorest and most vulnerable. It includes:

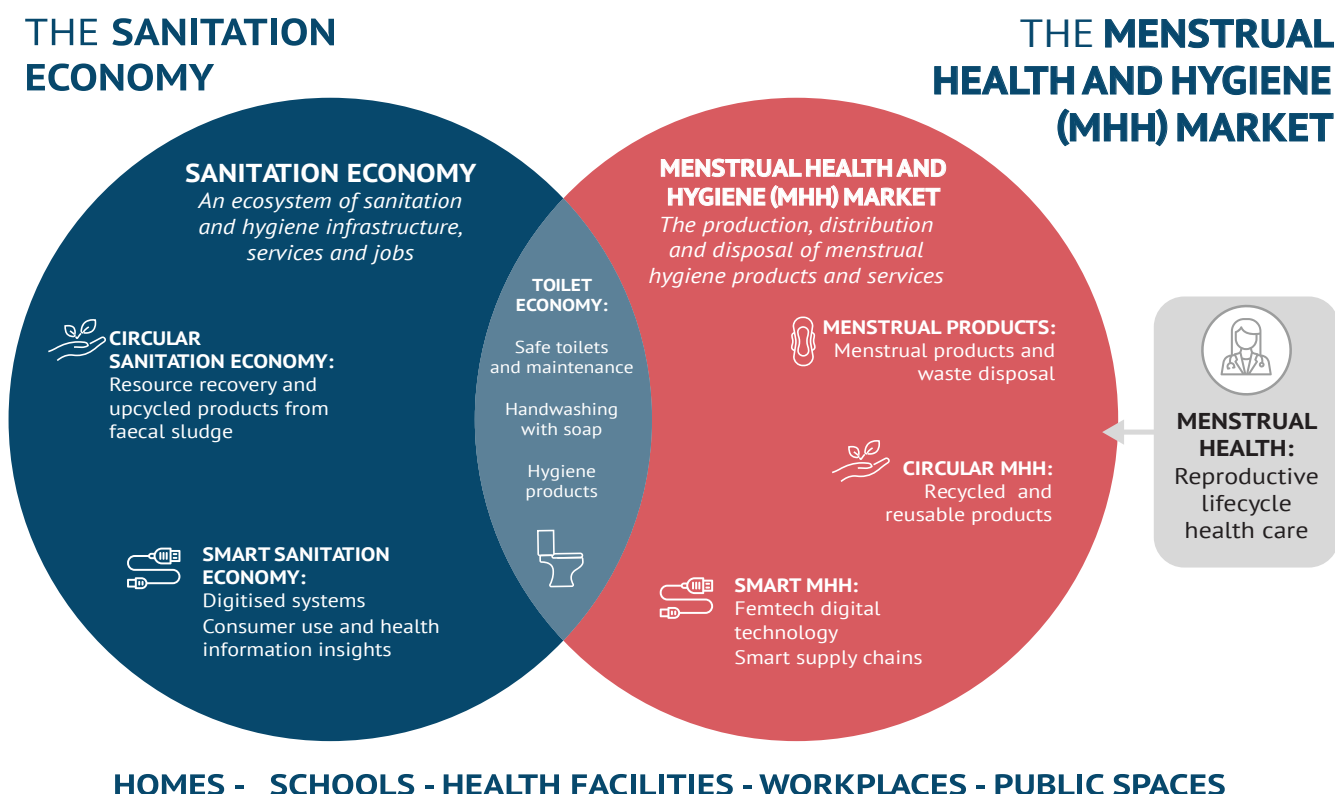
- products and services that provide safe toilet and handwashing access for all, whether public or private (Toilet Economy);
- systems that connect the biocycle, using multiple forms of biological waste, recovering nutrients and water, creating value-adding products such as renewable energy, organic fertilizers, proteins and more (Circular Sanitation Economy); and
- digitized sanitation and hygiene systems that optimize data for operating efficiencies, maintenance, plus consumer use and health information insights (Smart Sanitation Economy).<sup>4</sup>

The **Menstrual Health and Hygiene (MHH) Market** is the marketplace for menstrual hygiene materials, and development of related infrastructure, products and services including disposal and femtech solutions. It includes:

- access to reusable and disposable menstrual materials, as per choice and affordability, gender-responsive facilities and services allowing users to change, clean or dispose of materials safely (Menstrual Products);
- new and innovative technology including recycling and reuse to reduce the impact on the environment (Circular MHH); and
- smart supply chains to extend reach (Smart MHH).

These markets are closely connected as menstruating women and girls require access to safe toilets, handwashing and hygiene products, in addition to MHH.

Figure 1. The Sanitation Economy and Menstrual Health and Hygiene (MHH) Market



# Methodology

This report estimates the size of the sanitation economy, its products and services, renewable resource flows, data and information at a country level. The estimates were generated from verified data from published government and other available sources, and cross-validated by interviews with sector experts (see Figure 2). Estimates are provided for a baseline year (2022) and projected into the future on the assumption that universal access will be reached.

Figure 2: Data Sources and Methodology

THE SANITATION ECONOMY POTENTIAL FRAMEWORK					
Objectives	Methods and Tools	Data			
Country-level Analysis	Desk Research: PEST Analysis	Economic (GDP, Employment)		Social (Population, Gender, Urbanization)	
Market Projection	Desk Research and Calculation: Sanitation Economy Estimates Model	Sanitation Economy (Toilet, Circular Sanitation and Smart Sanitation Economies)			
Market Insights	Interviews, Consultation, and Desk Research: SWOT Analysis	Current Market	Market Drivers	Market Barriers	Market Opportunities
Solutions Showcase	Interviews, Consultation Group, and Desk Research	Investible Sanitation			

**PEST** = Political, economic, social and technological | **SWOT** = Strengths, weaknesses, opportunities and threats

The country’s potential was assessed at both macro and micro levels. Starting at the macro level, the economic, social and technological landscape was examined, using available reports, research and statistics. Each data source was assessed in terms of validity, integrity, precision, reliability and timeliness. Additional market insights were gathered through a series of interviews with key experts in the sanitation and hygiene spaces in the country. Interviewees included experts working on sanitation and hygiene, from the public and private sectors. The interview data was triangulated with secondary information sources.

The sanitation economy estimates were calculated based on the most recent population estimates and growth projections, available macroeconomic data and data on current access to sanitation and hygiene, existing estimates of the market value of products and services, and available data on the national context and consumer behaviors. Data collection and analysis was carried out between August and December 2022, followed by a review, including a consultation workshop with local experts in early 2023. The received feedback and comments were integrated and estimates and narrative were subsequently finalized.

As with all research, the estimates presented in this report are subject to some assumptions and limitations. While care was taken to use only the best and most recent available data and to address data gaps, including through the involvement of experts, some gaps remain and not all expert opinions have been independently verified. The projections assume steady progress towards universal access; however, these emerging markets are subject to long-term political, social and economic trends and developments, and may experience unexpected shocks, which could impact the outcomes.

# Country Context

Benin remains off-track in delivering safely-managed sanitation for all by 2030. In 2020, only 17% of the total population had access to basic sanitation (8% in rural areas and 27% in urban areas), 32% were still using unimproved and limited sanitation facilities, while 6.65 million people (52%) still practiced open defecation.<sup>5</sup> To reach the national sanitation targets by 2030, investment in sanitation, including menstrual health, is imperative. The country possesses positive attributes that could attract investments:



**Growing population:** with a population of 13 million people spread across twelve different states called *departements*, Benin is the 29th most populous African country,<sup>6</sup> 77th globally and has the 19th fastest population growth rate.<sup>7</sup> Estimated to grow annually at 2.75% between 2020 and 2030, its population could grow by 24% to reach 15.9 million in 2030. In 2021, with 99.83 males per 100 females, Benin had slightly higher female ratio than males.<sup>8</sup> Nearly 49% of the population (6.1 million people) lives in urban areas.<sup>9</sup> Nationwide, the number of households is expected to reach 1.92 million by 2025, with an estimated increase to 2.18 million in 2030, when the urban population is projected to equal the rural population.



**Young and active workforce:** the population is characterized by extreme youth, with 46.7% of the population under the age of 15 and 66.6% under the age of 25. The population of adolescents and youth will increase rapidly over the coming years to generate, on average, 200,000 youths arriving at working age each year. Currently, the population of working age individuals (15 to 64 years) represents about 46% of the total population. This marks opportunities to obtain a workforce for new businesses.<sup>10</sup>



**Modestly booming economy:** Benin's growth improved in 2021 to 7.0%, compared to 3.8% in 2020. The country has been ranked among the lower middle-income countries since 2019, with a GDP/capita estimated at US\$ 1,400. On the supply side, positive effects of reforms have resulted in increased economic growth and yields, improved governance of the agricultural sector and increased port traffic. On the demand side, the continuation of a countercyclical fiscal policy has resulted in growth with an estimated 17% increase in the business climate. Inflation fell to 1.7 in 2021 due to improved food supply.<sup>11</sup>



**Improved governance and business environment:** according to the World Bank's "Doing Business (DB)", a constant improvement in the business climate has been observed since 2014. In 2015, Benin was among the top 10 business reformers and has improved its ranking further since then.<sup>12</sup> Today, Benin is one of the leaders in Africa in the DB indicator for business creation, with a world ranking of 65th out of 190 countries. In terms of governance, the Mo Ibrahim Index of good governance (which considers security and rule of law, participation and human rights, sustainable economic development and human development in Africa) ranks the country in first place among the West African Economic and Monetary Union (WAEMU) countries and 13th out of the 54 reporting countries of the continent.

# Value of the Sanitation Economy

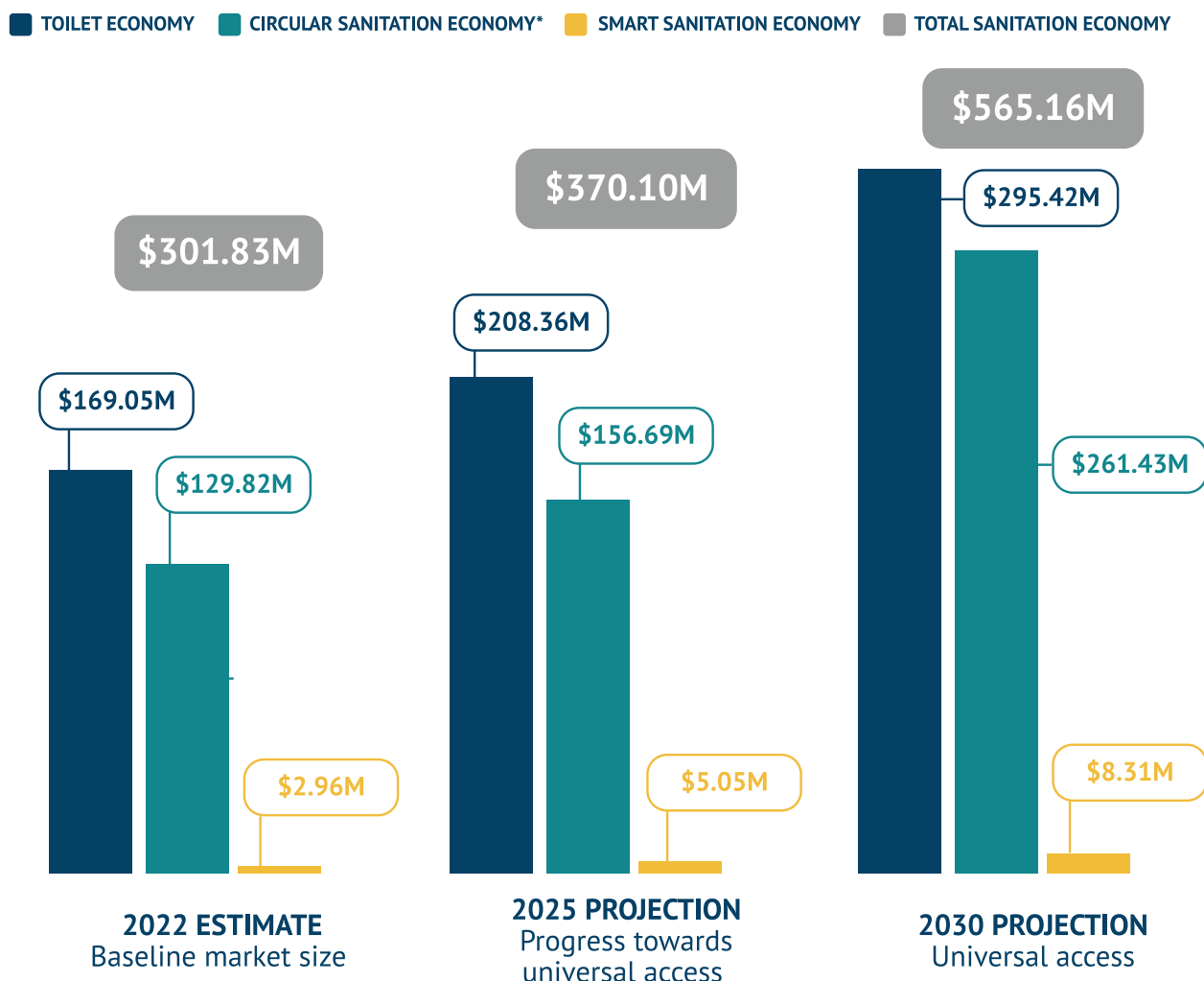
The current total value of the sanitation economy in Benin is US\$ 301.8 million. Potentially it can exceed US\$ 565.2 million, once universal access has been achieved.

## KEY POINTS

- At present, the toilet economy accounts for nearly 60% of the total sanitation economy.
- The circular sanitation economy and the smart sanitation economy are expected to grow.
- The potential for economic, environmental, and social return is significant.

When toilet, circular sanitation and smart sanitation economies are thriving, businesses can deliver new and alternative toilet and waste management solutions at a lower cost. They generate revenue and become net producers of valuable resources, such as water, energy, nutrients, proteins, data and information, presenting a new development pathway of opportunities for governments and the business sector to achieve SDG 6.

## MARKET ESTIMATE FOR SANITATION ECONOMY (IN US\$ MILLION)



\*While biogas has the highest financial potential, it breaks the nutrient cycle as the compounds from food consumption are burned rather than returned to the food system. For the overall sanitation economy estimate, and given that only one product can be produced from a volume of waste, Protein Meal product is selected as it promises financial returns while contributing back to the food system.



# Toilet Economy

The **toilet economy** has the potential to grow from an estimated value of US\$ 169.1 million in 2022 to US\$ 295.4 million, once universal access has been achieved. Within this category, the household toilet market is valued at US\$ 125.4 million in 2022 and has the potential to reach US\$ 223.4 million, and the public toilet market is valued at US\$ 43.6 million in 2022 and may reach US\$ 72 million.

## MARKET ESTIMATE FOR 2030 TOILET ECONOMY (IN US\$ MILLION) PROJECTION Universal Access

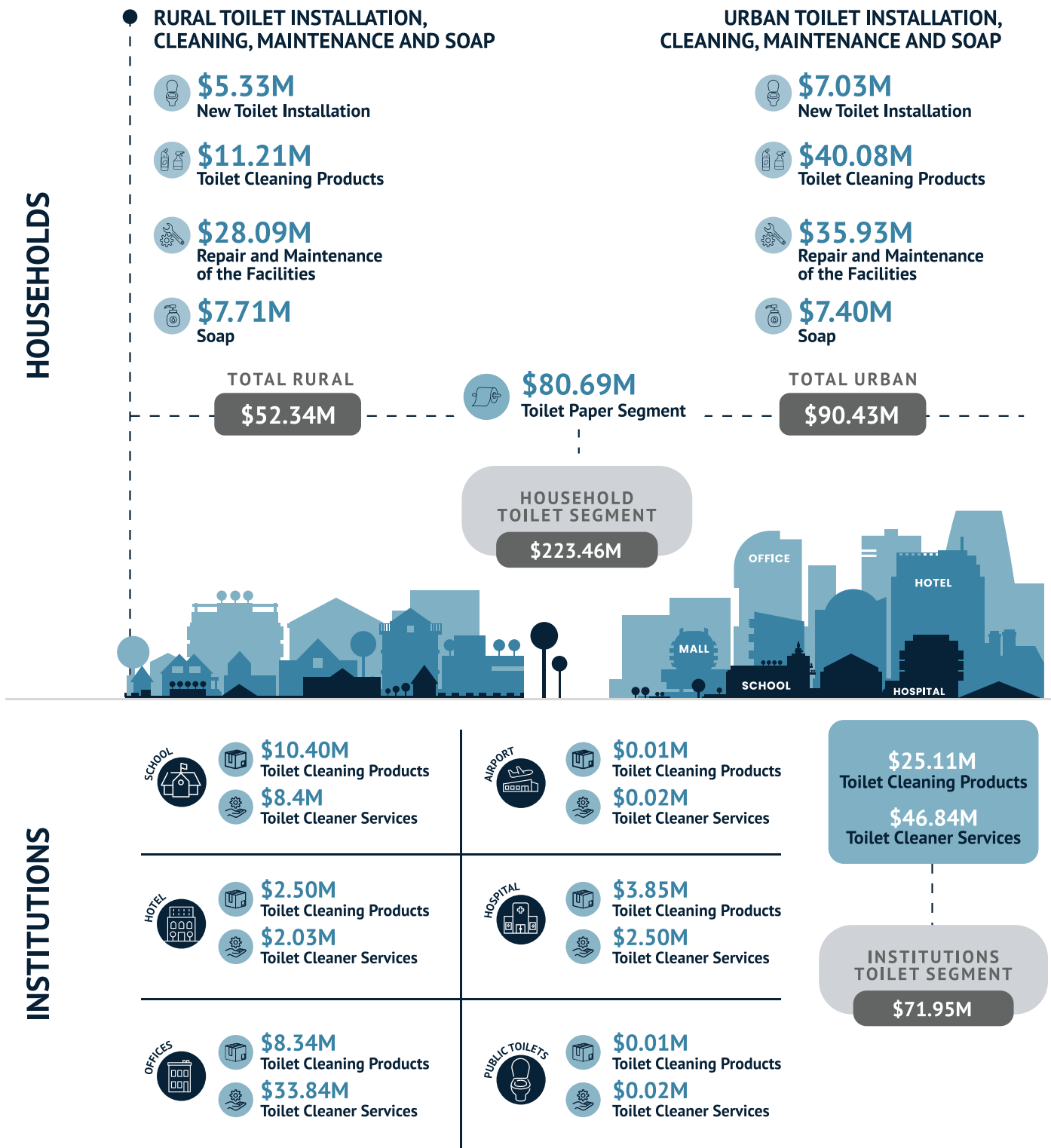


Table 1: Benin Household Toilet Market

MARKET ESTIMATES FOR TOILET ECONOMY - Households (in US\$ million)	Baseline: Estimate of 2022 market size	Projection: 2025 progress towards universal access	Projection: Universal access in 2030
<b>Urban</b>			
New Toilet Installation		2.43	7.03
Toilet Cleaning Products	32.82	35.23	40.08
Repair and Maintenance of the Facilities	18.82	23.22	35.93
Soap	4.20	5.00	7.40
<b>Total Urban</b>	<b>55.84</b>	<b>65.88</b>	<b>90.43</b>
<b>Rural</b>			
New Toilet Installation		1.07	5.33
Toilet Cleaning Products	9.24	9.84	11.21
Repair and Maintenance of the Facilities	6.67	12.79	28.09
Soap	4.37	5.21	7.71
<b>Total Rural</b>	<b>20.28</b>	<b>28.91</b>	<b>52.34</b>
Toilet Paper Segment	49.31	59.31	80.69
<b>Household Toilet Segment</b>	<b>125.43</b>	<b>154.11</b>	<b>223.46</b>

Table 2: Benin Institutions Toilet Market

MARKET ESTIMATES FOR TOILET ECONOMY - Institutions (in US\$ million)	Baseline: Estimate of 2022 market size	Projection: 2025 progress towards universal access	Projection: Universal access in 2030
<b>School</b>			
Toilet Cleaning Products	7.82	8.83	10.40
Toilet Cleaner Services	5.89	6.90	8.43
<b>Hotel</b>			
Toilet Cleaning Products	1.80	2.06	2.50
Toilet Cleaner Services	1.35	1.61	2.03
<b>Offices</b>			
Toilet Cleaning Products	4.58	5.98	8.34
Toilet Cleaner Services	17.26	23.35	33.84
<b>Airport</b>			
Toilet Cleaning Products	0.01	0.01	0.01
Toilet Cleaner Services	0.02	0.02	0.02
<b>Hospital</b>			
Toilet Cleaning Products	3.04	3.36	3.85
Toilet Cleaner Services	1.83	2.10	2.50
<b>Public Toilets</b>			
Toilet Cleaning Products	0.01	0.01	0.01
Toilet Cleaner Services	0.02	0.02	0.02
Subtotal Toilet Cleaning Products	17.25	20.25	25.11
Subtotal Toilet Cleaner Services	26.37	34.01	46.84
<b>Institutions Toilet Segment</b>	<b>43.62</b>	<b>54.26</b>	<b>71.95</b>

# Toilet Economy Market Insights

## Current Market Situation

- 1. Toilet access in large municipalities is high, with Cotonou leading at 95%.** Up to 5% of Cotonou households have no access to a toilet at the household level and most use public or their neighbors' toilets. Since most people live in a communal setup, more than half of toilets are shared with other households. An average of four households share one toilet.<sup>13</sup>
- 2. Unimproved toilets (open holes with no covers) are common in all municipalities outside of Cotonou.** In large municipalities, households with toilets often have ventilated latrines without cover. Mechanical flush toilets are accessible to 25% of households in Cotonou, 36% of households in Abomey-Calavi and 25% in Sô-Ava. Non-ventilated latrines with an uncovered hole are common to a third of households in Abomey-Calavi and the majority of households in Aplahoué and Sô-Ava.<sup>14</sup>

## Market Drivers

- 1. Government support is established.** The government promotes universal access to basic sanitation through the National Hygiene and Sanitation Policy, the public hygiene code and the National Strategy for the Promotion of Hygiene and Basic Sanitation in Urban and Peri-urban Areas (SNPHAB UPU) 2018-2030.<sup>15</sup>



## Market Barriers

- 1. Persistent poverty implies weak purchasing power.** Without any support, the financial burden of acquiring latrines or toilets is on households. World Bank data shows that 19.9% of Benin's population lives below the poverty line.<sup>16</sup> Although there is willingness to pay, the public's capacity is limited by low income and financial resources.
- 2. Sanitation taboos remain in some ethnic and religious groups.** Benin has over 42 ethnic groups and the majority of its population (80%) practices Voodooism. Muslims and Christians are well represented, even if most of them also practice Voodooism.<sup>17</sup> Interviews highlighted that some ethnic and religious groups in Benin believe that toilets should not be inside the house. This limits the market development of sanitation solutions that may naturally thrive in other contexts.

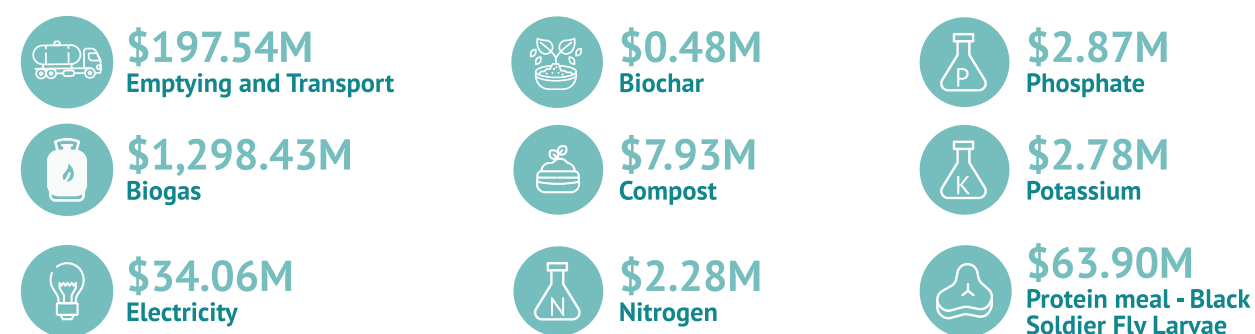
## Market Opportunities

- 1. There is a promising market for upgrades.** In most large municipalities, the requisite structural work for an improved toilet is already built. However, the toilet pans lack covers or water seals that block odors and insects. There is an opportunity to move households quickly from unimproved to improved sanitation. The introduction of toilet technology with sludge separation features like the SaTo Pan, for example, would be affordable for most households, compared to constructing new toilets.<sup>18</sup>
- 2. The portable toilet for rental housing.** Due to the prevalence of housing compounds and rentals in Benin, tenants without improved sanitation and whose landlords do not provide improved latrines are an important market opportunity. Renters inherently lack a strong incentive to invest in building latrines on property that they do not own. For these users, portable toilets provide an opportunity for safe, hygienic sanitation without investment in permanent facilities. Portable toilets could be either owned or rented, installed inside or outside homes and could be used in both high- and low-water table areas. They could provide both improved sanitation and proper faecal sludge management.<sup>19</sup>

# Circular Sanitation Economy

The **circular sanitation economy** appears to be on a favorable track due to the country's immense need for faecal sludge management services, energy and agricultural products. The surge in the price of agricultural products due to the current Ukraine–Russia conflict has further triggered the demand for locally-produced fertilizers. The market for emptying and transport is relatively strong, with an estimated value of US\$ 118.2 million in 2022 and the potential to reach US\$ 197.5 million by 2030. In terms of resource recovery, biogas shows the largest potential, with an estimated value of US\$ 236.7 million in 2022 and growing to almost 5.5 times this size to US\$ 1,298.4 million by 2030.

## MARKET ESTIMATE FOR 2030 CIRCULAR SANITATION ECONOMY\* (IN US\$ MILLION)



\*Note that this report does not total the estimates in the Circular Sanitation Economy as only one product can be produced from a volume of waste. Stakeholders are encouraged to look not only at the potential revenue of products but also, from a circular economy perspective, at retaining the value of the product. For example, biogas is a significant leader in financial potential, enables greener cooking and produces a liquid fertiliser. For the overall sanitation economy estimate, Protein Meal product is selected as it promises moderate financial returns while also contributing back to the food system.

Table 3: Benin Circular Sanitation Market

MARKET ESTIMATE FOR CIRCULAR SANITATION ECONOMY (in US\$ million) <sup>20</sup>	Baseline: Estimate of 2022 market size	Projection: 2025 progress towards universal access	Projection: Universal access in 2030
Emptying and Transport	118.17	133.91	197.54
Biogas	236.74	462.92	1,298.43
Electricity	6.21	12.14	34.06
Biochar	0.09	0.17	0.48
Compost created	1.65	3.22	7.93
Total nitrogen	0.42	0.81	2.28
Total phosphate	0.52	1.02	2.87
Total potassium	0.71	1.39	2.78
Protein meal/black soldier fly larvae	11.65	22.78	63.90

# Circular Sanitation Economy Market Insights

## Current Market Situation

- 1. An organized faecal sludge emptying and transport industry exists.** Pit latrines are emptied by private operators for 35,000 to 90,000 XOF (US\$ 55 to 142), depending on the volume of the pit. Emptiers are organized as the Union of Professional Sanitation Structures of Benin (USPAB), which brings together about sixty companies, most of which operate informally. Mechanical and manual emptying remain the two most popular emptying methods in the country.<sup>21</sup>
- 2. There is poor sludge and faecal sludge treatment service.** Drained sludge is discharged into the wastewater treatment plant built by the Beninese Industrial Company of Equipment and Urban Sanitation (BICEUS) in 1994 in Seme-Podji. It receives approximately 450 m<sup>3</sup> to 600 m<sup>3</sup> of sludge per day. Despite being damaged by coastal erosion and overwhelmed by supply, it remains the only treatment facility in the country receiving faecal sludge.<sup>22</sup>

## Market Drivers

- 1. The government is supportive of emptying and treatment services.** The government promotes the regulation of emptying and treatment with the construction of two new treatment centers, aligned to the National Strategy for Wastewater Treatment in Urban and Peri-Urban Areas (2018-2030), the Environmental Action Plan and the Environmental Governance Charter, etc.<sup>23</sup>

## Market Barriers

- 1. There is a weak public-private partnership (PPP) framework.** The framework for collaboration is not yet clearly formalized between private sector actors, especially emptying service providers and latrine providers. Some service providers, in particular artisan bricklayers and latrine suppliers, benefit from capacity building and the provision of small equipment through projects and programs supported by financial and technical partners (FTPs).<sup>24</sup>
- 2. Disposal/reuse of products is not popular.** Recovery of by-products is not common. In the past, there have been some pilot experiences with market gardeners in Cotonou, who used dried sludge as fertilizer. This pilot was not scaled up due to lack of support from the government and high investment cost.<sup>25</sup>
- 3. There is poor compliance with regulations.** Throughout the country, there is poor compliance with established standards regarding hygiene and sanitation rules, emptying, treatment of faecal sludge, disposal of wastewater and technical standards of installations due to the high cost of the materials and lack of support.<sup>26</sup>

## Market Opportunities

**1. The establishment of faecal sludge treatment plants (FSTPs) is needed.** Using the country's urban population and estimated waste generation, a simple projection of the required FSTPs in Benin is carried out.<sup>27</sup>

Estimated FSTPs needed	2022	2025	2030
Cotonou	31	34	39
Porto Novo, Para Kou, Abomey	74	80	92
Town Class 1 (above 50,000 - 4 towns )	34	37	43
Town Class 2 (below 50,000 - 2 towns )	22	24	27

**2. A circular sanitation economy will offer a solution to renewable energy needs.** The Government has mapped strategies to increase energy access by tapping into renewable energy sources.<sup>28</sup> The sanitation economy estimate shows there is significant energy production potential to be considered from the sanitation economy in Benin, in the form of biogas, electricity and biochar.

**3. A circular sanitation economy will offer a solution to fertilizer shortage.** The country's agricultural sector accounts for 22.8% of the GDP and employs 60% of the population.<sup>29</sup> The sector currently faces unprecedented price shocks in food, energy and fertilizers due to the Russia-Ukraine conflict. Fertilizer imports represented 189,111 tons in 2020.<sup>30</sup> The recovery of toilet resources in compost could be a solution as natural fertilizers from faecal matter allow producers to increase their yields by 20 to 30%.

# Smart Sanitation Economy

The **smart sanitation economy** is valued at almost US\$ 3 million in 2022 and is expected to grow to reach US\$ 8.3 million. Growth is likely to accelerate as internet connectivity (currently relatively modest due to unreliable connectivity) improves.

## MARKET ESTIMATE FOR 2030 SMART SANITATION ECONOMY (IN US\$ MILLION) PROJECTION Universal Access

**\$1.93M**  
Government Investment  
in Smart Sanitation

**\$5.07M**  
Sensor and Smart  
Technologies for Toilets

**\$0.61M**  
Sensor and Smart  
Technologies for FSTPs

TOTAL PRODUCTS

**\$7.61M**

**\$0.54M**  
Data Analytics  
Services

**\$0.16M**  
Mobile Application  
Services

TOTAL SERVICES

**\$0.71M**

SMART SANITATION  
ECONOMY

**\$8.31M**



Table 4: Benin Smart Sanitation Market

MARKET ESTIMATE FOR SMART SANITATION ECONOMY (in US\$ million)	Baseline: Estimate of 2022 market size	Projection: 2025 progress towards universal access	Projection: Universal access in 2030
<b>Product</b>			
Government investment in smart sanitation	1.17	1.41	1.93
Sensor and smart technologies for toilets	1.46	2.94	5.07
Sensor and smart technologies for FSTPs	0.10	0.27	0.61
<b>Total Product</b>	<b>2.72</b>	<b>4.62</b>	<b>7.61</b>
<b>Services</b>			
Data Analytics Services	0.16	0.32	0.54
Mobile Application Services	0.08	0.12	0.16
<b>Total Services</b>	<b>0.24</b>	<b>0.44</b>	<b>0.71</b>
<b>Smart Sanitation Economy</b>	<b>2.96</b>	<b>5.05</b>	<b>8.31</b>



# Smart Sanitation Economy Market Insights

## Current Market Situation

- 1. The smart sanitation market is waiting to be developed in Benin.** Interviews revealed that, although people are open to innovation and smart sanitation could possibly boom in the country, it is still far from reality, given the current sanitation, energy and connectivity infrastructure.
- 2. The integration of information and communications technology (ICT) in water and sanitation projects is just beginning.** By providing a wealth of historical data on financing techniques and requirements, the mWater platform has facilitated access to investment financing for water service providers through local commercial banks.<sup>31</sup>
- 3. Vidange Mimin is an innovative service that connects households via a telephone platform to sewage sludge trucks.** As part of the Sanitation Service Delivery (SSD) urban sanitation project, Vidange Mimin is an innovative service that connects households via a telephone platform to sewage sludge trucks, improving the quality of emptying services and compliance with tariffs.

## Market Drivers

- 1. Sanitation economy maturation will promote development.** As the sanitation economy matures in Benin, businesses will naturally adopt technologies to improve efficiencies, customer value and brand equity.

## Market Barriers

- 1. The country has a regulatory confidentiality framework.** Data brings issues related to privacy, ownership and confidentiality. The existence of a clear regulatory framework that permits businesses and governments to harness the insights and value from smart sanitation systems, while protecting and empowering citizens, can permit this marketplace to thrive.

## Market Opportunities

- 1. Smart sanitation technologies are possible in urban and well-developed establishments.** Smart sanitation will be of interest to the private sector, but implementation may not be possible in all areas. Suggested areas are urban areas, universities, airports, hospitals, health centers, schools, touristic places and stadiums.
- 2. The integration of ICT in water and sanitation projects can have positive impacts.** New ICT technologies can improve the efficiency gains of water service providers. They can enable a shortened response time, reduce travel distance and maintenance costs, optimize operations (production costs, energy efficiency, etc.) and improve quality of service.<sup>32</sup> They can also improve collection rates of water service providers through ICT-based payment systems. Some of the most common ICT technologies adopted by utilities are e-payment systems, which offer facilitated payments, increased reliability in billings and payments recovery, reduced administrative and payment transaction costs, and improved revenue collection.<sup>33</sup>

# Showcase

Innovations can drive consumer demand for sanitation, but it is more than just the toilets. The Toilet Board Coalition hosts an accelerator program that scales up essential innovations in toilet design, circular recovery of biological resources, smart digital technologies and menstrual hygiene products to ensure safe and sustainable sanitation for all. This section highlights sanitation solutions from the Coalition's portfolio plus Elphrods Services that are scalable, innovative, replicable, commercially viable and responsive to the needs of emerging markets in Asia and Africa.

## Toilet Economy

**Company name** CleanTeam

**Year Founded** 2010

**Country of Operations** Ghana

**Solution** Portable toilets



**Problem that you were trying to solve** Inadequate sanitation facilities in low-income communities



**Description of the Solution** CleanTeam offers portable toilets to low-income users in Kumasi, Ghana. CleanTeam uses a product-as-a-service model and charges monthly fees for toilet servicing, rental and waste collection thrice weekly. Waste collected from the toilet facilities is disposed of at the municipal treatment center.



**Impact** Over 600 toilets were installed, providing access to improved sanitation to 4,500 people.



**Contact Information** Abigail Aruna

**Company name** Elphrods Services LLP

**Year Founded** 2021

**Country of Operations** Kenya

**Solution** Affordable and inclusive WASH credits



**Problem that you were trying to solve** Inaccessible water and sanitation services in low-income areas



**Description of the Solution** Elphrods Services LLP offers small credits for small and medium-sized businesses and households wanting to improve their WASH facilities and matchmaking with WASH service providers (i.e. manual pit emptiers, exhausters, plumbers, utilities and master operators). The WASH credits enable them to connect their facilities to water piping networks, access formal pit emptying services and upgrade their pits to meet the required standards.



**Impact** Over 1,000 households have benefitted from the program since its inauguration.



**Contact Information** Denish Owiti



**Company name** Pit Vidura

**Year Founded** 2016

**Country of Operations** Rwanda

**Solution** Faecal sludge emptying and transportation



**PIT VIDURA**



**Problem that you were trying to solve** Unsafe and unsustainable faecal sludge emptying and transportation



**Description of the Solution** Pit Vidura is a sanitation logistics company that targets low-income communities with no access to public sewerage systems. It offers a quick and clean waste management solution to poor households and currently maintains over 960 toilets annually.



**Impact** Pit latrines are emptied annually (as opposed to every seven years prior to Pit Vidura) at a relatively affordable rate of US\$ 8.50 per household annually.



**Contact Information** Nicolas Kuria

**Company name** Kaka Cesspool Services

**Year Founded** 2018

**Country of Operations** Uganda

**Solution** Faecal sludge management services



**KAKA CESSPOOL SERVICES**



**Problem that you were trying to solve** Inadequate and unsafe faecal sludge emptying services in Uganda



**Description of the Solution** Kaka Cesspool Services is a faecal sludge emptying and transportation company that serves households in Uganda, including those in congested slums, which were deemed inaccessible. Faecal sludge is safely collected and transported to the treatment plant.



**Impact** Over 2,262 households were emptied – equivalent to 4,020 m<sup>3</sup> volume – in 2022. Employment opportunities, especially for the young, were also created in their respective communities.



**Contact Information** Derrick Matovu



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## Smart Sanitation Economy

**Company name** Garv Toilets

**Year Founded** 2017

**Country of Operations** India, Ghana, Nigeria

**Solution** Smart portable toilet cabins



**Problem that you were trying to solve** Lack of sustainable toilets for public use, especially for women and the disabled



**Description of the Solution** Garv Toilets offers a 'Smart toilet' solution, with self-cleaning and automation, requiring no grid power or sewer lines and less capital to maintain. It is also specifically engineered for women and the disabled population.



**Impact** Serves 170,000 users daily with over 900 toilets deployed in 68 locations.



**Contact Information** Mayank Midha



# A Forward Look

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“ The world keeps moving further away from achieving the Global Goals. We know how to get back on track. What we need is unity of purpose, effective leadership from all sectors and urgent, ambitious action. ”

António Guterres, Secretary-General of the United Nations

The sanitation economy provides sustainable and complementary solutions, monetizing toilet provision, products and services, biological resources, health data and information, to provide benefits across business and society. This report shows the unrealized potential exceeding US\$ 250 million that exists in the sanitation economy in Benin today and how the market almost doubles as these services expand to all Beninese. The Sanitation & Hygiene Fund (SHF) is committed to realizing this potential and the immense economic, social and environmental benefits.

As we create demand for sanitation and drive gender equality, we call on our development partners, the investment community, philanthropists, the financial sector and private sector to also focus on market-based sanitation, hygiene and menstrual health.

## Together we can



**1. Build a dynamic pipeline of bankable projects in the sanitation economy.** These investment propositions will focus on specific elements of the sanitation economy profiled in this report, and will lay out compelling business plans and clearly show the social, environmental and financial returns for investors.



**2. Facilitate flow of investment into the sanitation economy.** Together, we can align commercial investors, impact investors and philanthropists with the right type of investment opportunities. We will work with our partners to design innovative financial instruments to de-risk these investments and maximize the impact of funding from Benin's development partners.



**3. Strengthen the enabling environment to attract new and greater investments into the sanitation economy.** We know that the economic potential highlighted in this report will only be realized when barriers to investment are removed and new incentives are put in place. We are putting in place concrete plans on various priority public reforms to address these bottlenecks and we invite all partners to support these crucial actions.

Social impact and financial return can co-exist. We can achieve safe sanitation for all, catalyze economic growth, eradicate poverty and ensure women's empowerment and job creation. We look forward to your support.

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