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#### For more information:

SHF Website: www.shfund.org

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## **Foreword**



Nigeria is committed to accelerating progress to achieve sustainable access to sanitation and hygiene services for its people. This can only be possible if complex issues that continue to hamper the delivery of sustainable sanitation, hygiene and menstrual health are tackled. *The Sanitation Economy and Menstrual Hygiene Marketplace Assessment: Nigeria 2022* offers the evidence-based knowledge required to accelerate progress in this regard.

Commissioned by the Sanitation and Hygiene Fund (SHF), the new study serves as an important roadmap on how Nigeria can maximize the huge potentials available in the sanitation economy and the menstrual hygiene marketplace. The report presents estimates of the value of the sanitation economy and menstrual hygiene marketplace in Nigeria and offers partners and new investors access to data on the immense economic, social, and environmental potentials in these areas.

In addition, the report provides recommendations on how development partners, the investment community, philanthropists, the financial sector, and the private sector can get involved in this critical element of our health and economic well-being. This information can be a powerful tool in the effort to transform our cities and our communities in pursuit of equitable and sustainable development.

The rigorous methodology employed in this study gives its findings ample utility in business decision-making, policy development, allocation of funds, and priority setting in the sanitation economy and menstrual hygiene marketplace.

While Nigeria has made significant strides through the 'Clean Nigeria: Use the Toilet' Campaign, there is a need for increased participation by partners and investors in the sanitation and hygiene sub-sector. Such partnerships can play a key role in the efforts to achieve the campaign goal of an open defectaion free Nigeria by 2025. This report will guide Government at all levels to build on the platform of the Clean Nigeria Campaign.

I appreciate SHF for commissioning this study and supporting the Government of Nigeria through the market ecosystems enhancement and identification of key value propositions in the sanitation economy, with the goal of channeling investments in conjunction with development finance institutions and investors. This report will no doubt offer great value to stakeholders in the public and private sectors of Nigeria.

Engr Suleiman H. Adamu

FNSE, FAEna

Honourable Minister of Water Resources

# **About this Report**

On World Toilet Day, 19 November 2022, the Federal Government of Nigeria hosted the World Toilet Summit in Abuja on the theme Sanitation Innovations for Economic Development. The Federal Minister for Water Resources concluded the summit by presenting a communique, expressing the joint commitment of sanitation sector stakeholders in Nigeria to:

Undertake to mobilise adequate domestic and external funding for the required economic revolution. Implementation Strategies: a) harness the potential sanitation economy in our countries to contribute as a Sector to national development, by playing our specific roles as stakeholders in the process; b) governments to facilitate and ensure a conducive investment environment; Private Sector to innovate and invest smartly; development banks and partners to make available risk-backed innovative context-appropriate financial mechanisms and sector practitioners to innovate and implement appropriate service delivery models and operationalize them.<sup>1</sup>

Building on this commitment, this report illuminates the huge untapped social and economic opportunities that await investors in the sanitation economy and menstrual hygiene marketplace in Nigeria. These markets provide opportunities for social and economic return, for entrepreneurship and job creation. They 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, the report provides insights into the multiple opportunities for existing partners and new investors.

The report, Sanitation Economy and Menstrual Hygiene Marketplace Estimates Summary: Nigeria 2022, is one of three documents. In addition to this summary, the Sanitation Economy and Menstrual Hygiene Marketplace Assessment: Nigeria 2022 provides an in-depth analysis of the sanitation, hygiene and MHH marketspaces in Nigeria, and the Sanitation Economy and Menstrual Hygiene Marketplace Assessment Methodology Notes explain the methodology behind the estimates.

The Federal Government of Nigeria acknowledges the contributions and ongoing support of the Sanitation and Hygiene Fund (SHF) in the development of the Sanitation Economy and Menstrual Hygiene Marketplace Estimates Summary: Nigeria 2022, and to driving market-based approaches forward.

A note on the estimates: The report builds on earlier estimates, commissioned in 2020. The new estimates reflect a significant evolution and are increasingly anchored in country planning and budgets, and localized pricing. Where in the past a thriving sanitation economy was assumed in the baseline year, the updated estimates start with an estimate of the current reality. The baseline estimates are projected into the future with the assumption of reaching universal access to generate a realistic picture of the full market potential and opportunity. With the addition of separate menstrual hygiene marketplace estimates, menstrual products and services were moved out of the sanitation economy. Throughout the report, updated data, research and assumptions were used. Data collection and analysis were carried out between August to December 2022, followed by review including a consultation workshop with government and other key experts in early 2023.

# **About the Sanitation and Hygiene Fund**

The Sanitation and Hygiene Fund (SHF) is 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 sanitation economies and menstrual hygiene marketplaces. In Nigeria, SHF is supporting the government to enhance market ecosystems and identify investible propositions with a view to channel investments in conjunction with development finance institutions and investors.

For more information, please visit: www.shfund.org.



## Introduction

Nigeria's development priorities focus on issues of poverty, the need for an inclusive economy, health and well-being, education, gender equality and the enabling environment of peace, security and partnerships. To realise Nigeria'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 products and services and a strong sanitation economy that benefits all.

Safe sanitation, hygiene and menstrual health are essential to the achievement of health, education, gender equity, economic growth and jobs, and climate outcomes in Nigeria. Yet, achieving universal access to sanitation is a huge challenge. In Nigeria, it requires a quadrupling of the current rate of progress and a tripling of current investments in the sector if the global 2030 Sustainable Development Goals are to be met.2

The Nigerian government strongly supports private sector engagement in sanitation. In 2018 President Muhammadu Buhari, of the Federal Republic of Nigeria, declared a state of emergency on water supply, sanitation, and hygiene, recognising the urgent need to tackle a crisis that ranked Nigeria among the highest countries practising open defecation globally - with 19% of the population (39 million people) still practising open defecation in 2020.³ The national campaign, Clean Nigeria: Use the Toilet, for an open defecation free Nigeria by 2025, is now gaining traction with some 85 Local Governments Authorities (LGAs) having open defecation free status (ODF) by late 2022.

While the campaign is successfully generating demand for toilets, the supply and market elements of the value chain remain underdeveloped. It is now time to change this situation. The sanitation economy and the menstrual hygiene marketplace, as the estimates in this report show, can generate positive, measurable social, economic and environmental impact alongside promising financial returns. As Nigeria engages in sanitation and menstrual hygiene market-shaping, exciting partnership and investment opportunities exist to the tune of more than US\$ 8 billion as the country advances to universal access.

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 and the menstrual hygiene marketplace in Nigeria is no different. As the market is shaped through innovations along the value chain, strong and dynamic capabilities are needed. Nigeria is committed to working with its partners to tackle the systemic barriers that prevent entrepreneurs and enterprises from taking action. 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 and **Menstrual Hygiene Marketplace**

#### The Sanitation Economy 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 Economy); and
- digitized sanitation and hygiene systems that optimize data for operating efficiencies, maintenance, plus consumer use and health information insights (Smart Economy).4

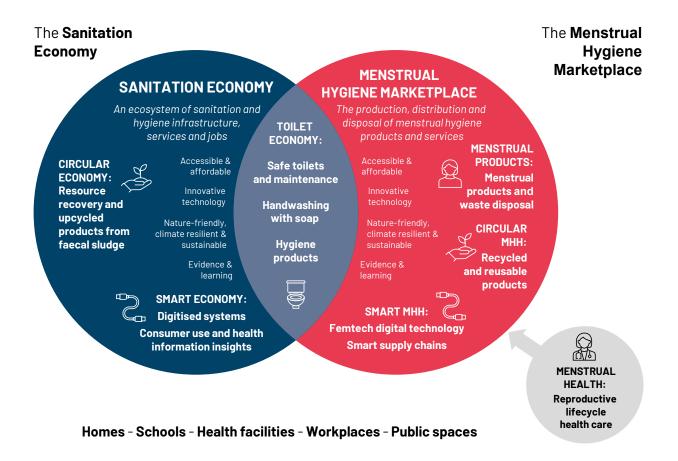


Figure 1. The Sanitation Economy and the Menstrual Hygiene Marketplace

### The **Menstrual Hygiene Marketplace** includes:

- access to reusable and disposable menstrual materials, as per choice and affordability, genderresponsive facilities and services allowing users to change, clean or dispose of materials safely (Menstrual Products); and
- 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 must be accessible for all, including the poor and vulnerable. They are also closely connected, as menstruating women and girls require access to safe toilets, handwashing and hygiene products, in addition to MHH.



# **Methodology**

This report estimates the size of the sanitation economy and menstrual hygiene marketplace, their products and services, renewable resource flows, data and information at a country level. The estimates were generated based on 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. (A detailed description of the methodology and indicators used is available as a separate document.)

As with all research, the estimates presented in this report are subject to some assumptions and limitations. While care was taken to only use the best and most recent available data, and 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 impact the outcomes.

#### The Sanitation economy and menstrual hygiene marketplace potential framework







Objectives	Methods and Tools	Data					
Country-level Analysis	Desk research: PEST Analysis	Political (Laws, policies, government)	Economic (GDP and growth rate)	Social (Population, gender, urbanization)		Technology (Electricity, internet)	
Market Projection	Desk research and calculation: Sanitation Economy and Menstrual Hygiene Marketplace Estimates Model	Sanitation I (Toilet, Circular S Smart Sar	Sanitation, and	nitation, and (Product		al Health Marketplace Access, Circular, and Menstrual Hygiene)	
Market Analysis	Interviews, consultation group, and desk research	Market drivers	s Market	Market barriers		Market opportunities	
Solution Showcase	Interviews, consultation group, and desk research	Investable sanitation and menstrual health solutions					
Call to Action	Interviews and consultation group	Government	Privat	Private sector		Investors	

Figure 2: Data Sources and Methodology

# The Combined Sanitation Economy and **Menstrual Hygiene Marketplace Potential**

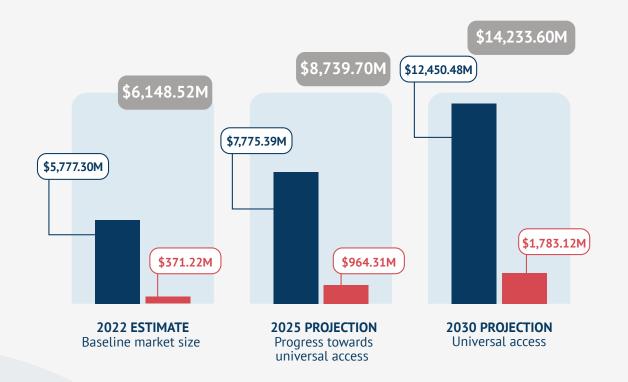


Combined, the sanitation economy and menstrual hygiene marketplace potential in Nigeria is currently estimated at US\$ 6.1 billion. This estimate has the potential to more than double to US\$ 14.2 billion.

- 2022 ESTIMATE Baseline market size
- 2030 PROJECTION Universal access

MARKET ESTIMATE FOR SANITATION ECONOMY & MENSTRUAL HYGIENE MARKETPLACE (in US\$ million)





# The Sanitation Economy

The current total value of the sanitation economy in Nigeria is US\$5.8 billion. Potentially, it can exceed **US\$ 12.5 billion** once universal access has been achieved.

#### **Key points:**

- The toilet economy accounts for approximately 80% of the total sanitation economy.
- The circular economy and the smart economy are expected to grow.
- The potential for economic, environmental and social return is significant.

When toilet, circular and smart 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) 🔳 TOILET ECONOMY 📕 CIRCULAR SANITATION ECONOMY\* 📒 SMART SANITATION ECONOMY 📗 TOTAL SANITATION ECONOMY \$2,532.20M \$1,568.14M \$1,094.17M \$24.51M \$14.42M \$8.26M \$5,777.30M \$7,775.39M \$12,450.48M **2022 ESTIMATE** Baseline market size 2025 PROJECTION Progress towards **2030 PROJECTION** universal access Universal access \$4,674.87M \$6,192.83M \$9,893.77M

<sup>\*</sup>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.

The toilet economy has potential to grow from US\$ 4.7 billion in 2022 to almost US\$ 9.9 billion once universal access has been achieved.

- The household toilet market is valued at US\$ 4.4 billion in 2022, with potential to reach US\$ 9.6 billion.
- The public toilet market is valued at **US\$ 225.7 million** in 2022 and may reach **US\$ 320.6 million**.

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



In the circular sanitation economy there is an immense need for faecal sludge management services, energy, and agricultural products in the country.

- The market for emptying and transport is relatively strong with an estimated value of **US\$ 735.3** million in 2022, and the potential to reach US\$ 1.7 billion by 2030.
- In terms of resource recovery, biogas shows the largest potential with an estimated value of US\$ 1.9 billion in 2022 and the potential to grow to US\$ 4.3 billion.

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



\$1.714.13M **Emptying and Transport** 



\$3.20M Biochar



\$34.54M **Phosphate** 



\$4,322.05M Biogas



\$113.57M Compost



\$35.81M Potassium



\$572.39M Electricity



Nitrogen



\$818.07M Protein meal - Black Soldier Fly Larvae

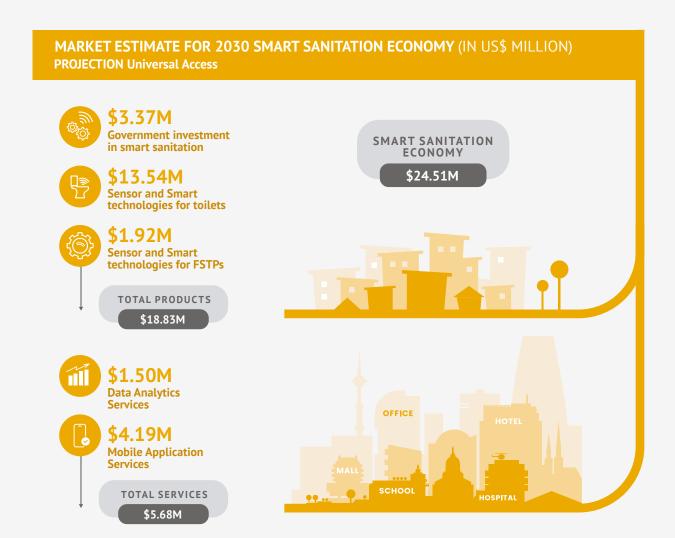






\*Note that this report does not total the estimates in the Circular Sanitation Market as only one product can be produced from a volume of waste. Stakeholders are encouraged to look not only at the potential revenue of products but also, from a circular economy perspective, at retaining the value of the product. Biogas is the significant leader in financial potential but 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, Protein Meal product is selected as it promises financial returns while contributing back to the food system.

The smart sanitation economy is valued at US\$ 8.3 million in 2022, with the potential to triple to **US\$ 24.5 million.** Growth is likely to accelerate as internet connectivity improves.

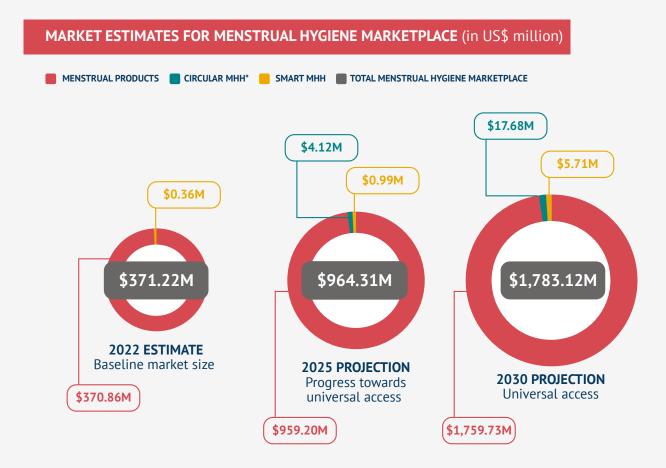


# The Menstrual Hygiene Marketplace

The current total value of the menstrual hygiene marketplace in Nigeria is US\$ 371.2 million. Potentially it can exceed **US\$ 1.8 billion** once universal access has been achieved.

#### **Key points:**

- Based on the expected number of menstruators with a need for products, the menstrual products economy dominates the menstrual hygiene market.
- The menstrual products market is expected to grow as women and girls in Nigeria are likely to access more types of products.
- The much smaller circular and smart economies have the potential to grow, with additional benefits for women's and girls' health and wellbeing, climate resilience and the environment.



<sup>\*</sup>Given that the circular economy production of electricity is exclusive to the production of other products, for the overarching market calculations the production of compost, cellulose, plastic and super absorbent materials was selected to represent, combined, the circular menstrual hygiene dimension.

The menstrual products market is valued at US\$ 370.9 million and has the potential to grow to US\$ 1.8 billion.

The circular MHH market is only emerging but has the potential to grow as more commercial menstrual products are being used.

- In addition to preventing waste by using reusable menstrual products, materials from used disposable products can be recovered.
- Compost can be created from organic pads.
- Electricity can also be generated by safely burning used products (with other household trash).

The **smart MHH market**, technological innovations on MHH, including mobile application services, exist but they are still scarce. This market has an estimated value of US\$ 0.36 million in 2022 and the potential to grow to US\$ 5.7 million.

### MARKET ESTIMATE FOR 2030 MENSTRUAL HYGIENE MARKETPLACE (IN US\$ MILLION) **PROJECTION Universal Access**

**MENSTRUAL PRODUCTS** 

\$1,759.73M

\$1.259.87M **Menstrual Pads** 

\$169.11M **Tampons** 

> \$57.40M **Menstrual Cups**

\$162.61M **Organic Menstrual Pads** 

\$72.27M **Period Underwear** 

\$38.47M Safe Disposal and Collection **CIRCULAR MHH\*** 

\$17.68M

\$0.96M Electricity

\$5.73M Cellulose

\$5.44M Plastic

> \$5.93M Super-Absorbent

> > \$0.59M Compost

**SMART MHH** 

\$5.71M

\$5.71M **MHH App services** 

**TOTAL** MENSTRUAL HYGIENE MARKETPLACE \$1,783.12M



\*Given that the circular economy production of electricity is exclusive to the production of other products, for the overarching market calculations the production of compost, cellulose, plastic and super absorbent materials was selected to represent, combined, the circular menstrual hygiene dimension.



## **Action**

This report shows the US\$ 6.1 billion potential that exists in the sanitation economy and menstrual hygiene marketplace in Nigeria today and how this will more than double as these services expand to all Nigerians. The Federal Government of Nigeria is committed to build on the platform of the Clean Nigeria campaign and realise 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.

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.

### Together we can

- Build a dynamic pipeline of bankable projects in the sanitation economy and menstrual hygiene marketplaces. These investment propositions will focus on specific elements of the sanitation economy and menstrual hygiene marketplace profiled in this report and 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 and menstrual hygiene marketplace. Together, we can align commercial investors, impact investors and philanthropists to the right type of investment opportunities. We will work with our partners to design innovative finance instruments to de-risk these investments and maximise the impact of funding from Nigeria's development partners.
- 3. Strengthen the enabling environment to attract new and greater investments into the sanitation economy and the menstrual hygiene marketplace. We know that the economic potential highlighted in this report will only be realised 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 invite all partners to support these crucial actions.

#### **Endnotes**

- Federal Government of Nigeria (2022). 2022 World Toilet Summit Report. Accessible at: https://mcusercontent.com/61133a487533b622ac2e4944a/  $\underline{files/5f710009-bb60-c547-2e65-1d91d4d30f24/WTS\_Report\_1\_\_compressed.pdf}$
- This Day (2022). 2022 WTS: Nigeria Must Triple Investment to Harness Economic Potential in Water Sector. President's speech at World Toilet Sum $mit.\ Available\ at: \ \underline{https://www.thisdaylive.com/index.php/2022/11/18/2022-wts-nigeria-must-triple-investment-to-harness-economic-potential-in-decomposition and the latest and the$ -water-sector-fg/
- Joint Monitoring Programme (JMP) 2020. Global dataset. Available at: https://washdata.org/data
- This definition is based on the Sanitation Economy concept developed by the Toilet Board Coalition (TBC). See: TBC (2020). Sanitation Economy Markets: Nigeria. Available at: <a href="https://www.toiletboard.org/sanitation-economy-markets-nigeria/">https://www.toiletboard.org/sanitation-economy-markets-nigeria/</a>; see also: TBC (2019). Scaling the Sanitation Economy 2020-2025. Available at: <a href="https://www.toiletboard.org/scaling-the-sanitation-economy-2020-2025/">https://www.toiletboard.org/sanitation-economy-markets-nigeria/</a>; see also: TBC (2019). Scaling the Sanitation Economy 2020-2025. Available at: <a href="https://www.toiletboard.org/scaling-the-sanitation-economy-2020-2025/">https://www.toiletboard.org/scaling-the-sanitation-economy-2020-2025/</a>



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