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## LEARNING BRIEF: A Market-Based Strategy for Improved Latrines and Handwashing Products in Niger

SEPTEMBER 2022

This learning brief was developed as part of an applied research project initiated by the USAID Bureau for Humanitarian Assistance (BHA)-funded Practices, Research and Operations in Water, Sanitation, and Hygiene (PRO-WASH) Activity. This brief provides an overview of research carried out by Population Services International (PSI) and the PRACTICA Foundation, in collaboration with Hamzari, Girma, and Wadata, three BHA-funded Resilience Food Security Activities (RFSA), and their partners. The initiative used mixed methods to develop a market strategy for improved latrines and handwashing products in the implementation areas of Maradi and Zinder in Niger. More information and additional learning briefs are available [here](#).

### INTRODUCTION & RESEARCH OBJECTIVES

Sustained access to improved sanitation remains a consistent challenge in Niger and throughout the Sahel where issues of water scarcity are inextricably linked with limited improvements in household (HH) sanitation. High vulnerability to climatic shocks, persistent poverty, high population growth, cultural and social norms, and a difficult enabling environment for WASH investment underlie the lack of improvements. In 2020, 68% of the total population and 79% of the rural population still practiced open defecation (OD)<sup>1</sup>.

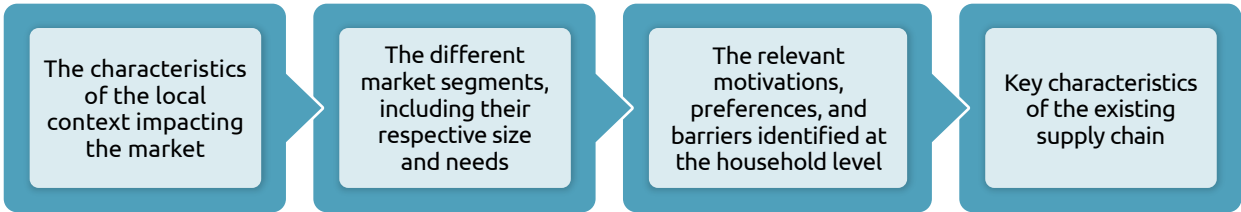
<sup>1</sup> World Health Organization – United Nations International Children’s Fund (WHO-UNICEF) Joint Monitoring Program (JMP). <https://washdata.org/data/household#!/table?geo0=country&geo1=NER>

Hamzari, Girma, and Wadata, part of the USAID Resilience in the Sahel Enhanced (RISE) II initiative, aim to improve these sanitation issues as part of their multisectoral approach to improve the food security and resilience of chronically vulnerable households. To support these initiatives, PRO-WASH partnered with Population Services International (PSI) and the PRACTICA Foundation to design a market development strategy focused on increasing the availability and accessibility of desirable, affordable, improved latrines and handwashing products in the Maradi and Zinder regions of Niger. This learning brief provides an overview of the study methodology, key findings, and early results of the findings to date. The brief can be used by other partners interested in conducting market research or expanding their market approaches to improve sanitation outcomes.

## METHODOLOGY

The research, carried out between October 2020 and July 2021, explored the local context, the sanitation and handwashing product market, and the commercial environment. PSI leveraged the USAID WASHPaLS Market-Based Sanitation Model to design the study. To develop this strategy, PSI sought to explore specific areas of inquiry (see Figure 1).

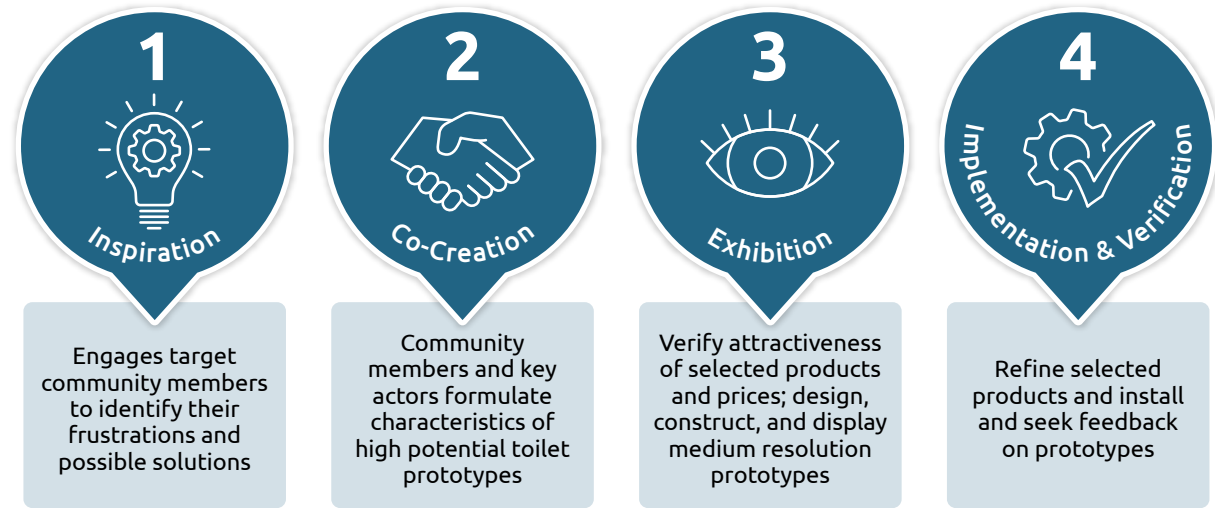
FIGURE 1: Key Areas of Inquiry



The study included five methods:

1. Literature review of the socio-economic situation and water and sanitation issues in the area;
2. Geographic information system (GIS) modeling to define homogeneous zones according to select criteria;
3. Household surveys, sampling six communes across the three intervention zones, including 832 households;
4. Surveys of supply chain actors, including 48 sanitation operators, 37 handwashing operators, and 6 NGOs/projects active in the study area; and
5. Prototyping products using human-centered design to explore their desirability, feasibility, and viability, over four months and across six localities (see Figure 2).

FIGURE 2: Prototyping Process







# KEY FINDINGS

## LOCAL CONTEXT

The RFSA implementation areas in Niger offer both opportunities and barriers to the adoption of improved latrines and handwashing products (see Table 1).

TABLE 1: KEY NIGER CONTEXTUAL FACTORS

	<p><b>Political Context:</b> Overall, the policy and legal environment is favorable to the development of the sanitation market. However, several key provisions of the Ministry of Hydraulics and Sanitation’s Water, Sanitation, and Hygiene Sectoral Program (PROSEAH), aimed at developing the sanitation market by 2030, have not yet been implemented. These include policies to encourage households to install hygienic toilets and ensure access for the most vulnerable.</p>
	<p><b>Environment:</b> While Niger’s proximity to Nigeria enables the import of necessary materials, the environment also creates a number of barriers. Notably, the poorly cohesive sandy soils require durable pits with masonry support structures, areas prone to flooding need elevated toilets, and limited secondary roads limit access for key market segments.</p>
	<p><b>Socioeconomic Context:</b> The high population growth and influx of refugees suggests an increasing need for WASH solutions. The predominantly Muslim population is inclined to strong hygiene practices due to regular religious ablutions; however, incomes are very low, and households are reliant on inconsistent agricultural revenues.</p>
	<p><b>Market Segmentation:</b> This study identified six key market segments based on two factors: (1) hygiene practices, defined as whether or not OD is practiced; and (2) urbanization level, which categorizes geographies as a city, town, or village, based on level of development. The populations are made up of predominantly male-led households with limited formal education levels and include a wide range of household sizes. Current toilet users are all within the top two wealth quintiles, while OD is practiced across all wealth quintiles.</p>

## IMPROVED TOILETS

**Demand:** The need for improved toilets primarily exists for households that practice OD in rural environments (villages and towns) and households who share improved toilets in urban areas (cities). Average spending on toilets varies from 23,500 FCFA (US\$ 37) in villages to 37,000 FCFA (US\$ 58) in cities. Inclination to purchase is higher amongst OD households due to dissatisfaction with OD. Overall, 80% of potential clients claim to be ‘ready’ to pay for or build an improved toilet; however, demand sharply declines at a cost of 30,000 FCFA (USD \$47).

**OD Households:** OD households are motivated by shame for practicing OD, desire for a latrine, and the difficulties of needing to travel to relieve themselves, especially for pregnant women, the elderly, and the sick. Few households are interested in sharing a toilet to reduce costs, while one-third are interested in a combined latrine/shower, and nearly half are interested in integrating a toilet into their bathing area. While most households prefer a non-flush model, 26-53% are interested in a flush model, with stronger preferences for a flush model in urban settings.

TABLE 2: Characteristics of the Ideal Toilet for OD Households

CHARACTERISTICS			
Has a solid (non-straw) hut with a door and a roof	Uses a hygienic interface with a trap or flap-type obstruction device	Includes a durable pit that can be used for more than 5 years without emptying	Costs no more than 18,000 FCFA (USD \$28)

**Households with Toilets:** Households with existing toilets express interest in improving their structure and/or the toilet interface. These households prefer flush interfaces. They are willing to pay an average of 17,000 FCFA (USD \$27) for upgrades.

**Supply:** Private supply actors (importers/wholesalers, concrete component manufacturers) are concentrated in regional capitals and major towns, and the manufactured products come primarily from Nigeria. Ceramic bowls, cement, concrete, and PVC pipes are available in the regional capitals and main towns. In other towns and villages, only local materials, such as banco (mud bricks), stones, and millet straw, are available.

**Potential Products:** Current local offerings include huts made of mud or straw, which either do not have a roof or door, or have a rudimentary door. In rural areas, most toilets are non-flushable, whereas 50% are flushable in urban areas. However, the types of pits do not vary much according to the environment. A large proportion of households with toilets use non-hygienic interfaces such as SanPlats without lids or traditional wood/earth models. Therefore, there is a potential market for an upgraded solution, which should include a flush option. Based on the demand analysis and co-create process, PSI proposed a variety of solutions that align with the identified criteria (see Table 3).

TABLE 3: Identified Criteria for Improved Toilets and Proposed Solutions

CRITERIA	✓ A safe and sustainable design (for health and security)	✓ A price beginning at 9,000 FCFA (USD \$14)	✓ A complete solution under 30,000 FCFA (USD \$47)	✓ Different types to meet varying aspirations	✓ Products compatible with menstrual hygiene practices
SOLUTIONS	Interfaces with a cover, flap, or S-trap; made out of bricks, cement, iron, and plastic; pits with masonry support	Offer a catalogue of products with pricing for each specific element	Use straw superstructures installed on the shower area; clients do the excavation; pits made for a 7-year fill cycle	Include interfaces with flush systems	Disposable menstrual hygiene products were not commonly used, so additional accommodations were not necessary

Through the human-centered design process, the researchers prototyped and exhibited a variety of potential products, including a banco hut, seven different toilet interfaces, two pits, and their appropriate pricing (see Table 4).



TABLE 4: Sanitation Products and Prices Retained from the Exhibition

				
Banco hut (without door) (25-30,000 FCFA / USD \$39-47)	Banco hut (with door) (30-35,000 FCFA / USD \$47-54)	Inlayed SATO pan (4,000 FCFA / USD \$6)	1.2 meter slab with SATO pan (14,000 / USD \$22)	PVC interface with concrete pit cover (18,000 FCFA / USD \$28)
				
SATO platform with concrete pit cover (23,000 FCFA / USD \$36)	1.7 meter³ banco pit (20,000 FCFA / USD \$31)	1.7 meter³ stone pit (19,000 FCFA / USD \$30)	1.7 meter³ pit with mix of banco and cinder block (28,000 FCFA / USD \$44)	

Households in the top four wealth quintiles should be able to purchase a basic toilet, estimated at 27 000 FCFA / USD \$42, while spending no more than 2% of their income on the toilet. However, households in the lowest quintile would require financing over 1-2 years.

**Supply:** The supply chain relies on a masonry/"do it yourself" model in both urban and rural environments. Households need purchase materials in the main town center and then install a banco hut, a Sanplat slab, and a banco superstructure. The total process takes approximately 9-16 days and costs 35,000-65,000 FCFA / USD \$54-101. In towns, households can access products sold by local masons and NGOs, but pre-manufactured inputs are not available. Vendors do not produce many Sanplat slabs and available products also do not adequately address issues of smell, durability, or the risks of flooding. The current market does not offer a complete product at an affordable cost that aligns with clients' aspirations or the seasonality of available income for construction. Additionally, few importers or wholesalers market their products, there is a lack of youth entrepreneurs, and households do not trust local masons to supply labor.

**Financing:** Given the insecurity and seasonality of agricultural revenues coupled with poverty levels, the most vulnerable households will require subsidies. However, only vendors of construction materials currently offer credit. Many microfinance institutions expressed interest in financing toilets in rural areas; however, none have begun financing their construction and their commitment to do so remains unclear. Therefore, financing will be a key challenge to address to ensure access to improved toilets for the most vulnerable.

## FECAL SLUDGE DISPOSAL MANAGEMENT

**Demand:** The disposal market is primarily in cities with pits that require emptying.

**Supply:** Professional disposal services are only available in the regional capitals and the market demand in the four relevant urban areas is not yet strong enough to make local disposal services economically viable. The usable volume of the proposed pits should allow for continuous use over a 4-year cycle. At the end of this period, households will be able to either have their pit emptied or build a new pit and relocate their latrine.

## HANDWASHING PRODUCTS

**Demand:** Amongst households who have a handwashing device, nearly all use a plastic kettle. As this device is widely considered sufficient, the potential for the sale of installed handwashing devices is very limited among those households. Needs for handwashing devices are concentrated in villages and remote areas, more than one kilometer from a main road. Over 90% of households use solid industrial soap for handwashing. Given the context of rapid population growth and the health risks of COVID-19, there is the potential for a strong increase in soap consumption.



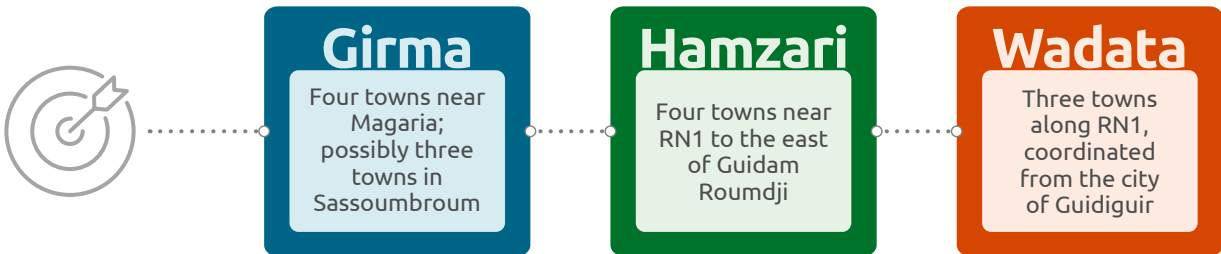
**Supply:** In the local markets, soap is available for 50-200 FCFA (USD \$0.08-0.16) for 25 grams, with powdered soap being the cheapest option. The plastic handwashing kettle is sold for 500-1,000 FCFA / USD \$0.78-1.55, while a handwashing device that includes a faucet costs 30,000 FCFA / USD \$47. No major deficiencies were identified in the handwashing product supply chain.

## PROPOSED STRATEGY

### TARGETING

PSI/PRACTICA recommend targeting population segments with a high concentration of need and a willingness to pay. The two primary targets for the RFSAs are households living in towns that practice OD, who would need complete toilet solutions, and those that have toilets, who would have diverse needs for specific elements (see Figure 2 for details).

FIGURE 3: Proposed Targets by RFSa



### PRODUCTS/SUPPLY

**Improved Toilets:** To ensure product supply, PSI/PRACTICA recommends identifying a focal point in the regional capital with the capacity and experience to import SATO pan and slab products from Nigeria, who can then dispatch the inputs to other localities. These inputs should then be integrated into toilets that use locally available materials. However, there is also the market potential for products made from inputs already available in the local market. Overall, a complete latrine package should be offered for less than 30,000 FCFA / USD \$47 in order for OD households to align with a willingness to pay. The toilet offerings should include flush and flap options and pits with varying volumes to align with the size of household. Based on the prototyping results, three manual flush interfaces and two pit models are recommended for the selected target market segments, as well as a cover for offset pits (see Table 5 for more detailed descriptions of products and Table 6 for recommended packages).

TABLE 5: Recommended Products and Pricing for Targeted Market Segments







PRODUCT		PRICE & LABOR TIME	DESCRIPTION
I1 – Slab with SATO 103 pan		14,000 FCFA / USD \$22 2 hours	The slab is usable with a limited quantity of water for flushing. Two metallic handles allow for easy maneuvering during transport. Considered modern and hygienic and avoids odors and insects.
I2 – Interface with PVC pipe bowl		7,000 FCFA / USD \$11 1 hour	This interface with a manual flush is connected to an offset pit that should be covered (F4). This does not require much space and is considered safe. All the materials are already available in the local market.
I-3 – SATO platform		12,000 FCFA / USD \$19 1 day	This interface with a manual flush rests on the ground and is connected to an offset pit that should be covered (F4). Considered modern and hygienic and easy to maintain.
F1 – Banco pit		20,000 FCFA / USD \$31 1 day	The complete installation of a pit (excavation and construction) depends on the soil density. The excavation is to be completed by the households, otherwise, there will be 3,000 FCFA in additional fees. Materials are available.
F2 – Stone masonry pit		19,000 FCFA / USD \$30 1 day	For the banco option, an apron/ledge and plastering will be required to ensure structural stability, but it is considered affordable. The stone structure is considered solid and durable.
F3 – Additional meter for pit		25,000 FCFA / USD \$39	This option enables households to adapt the volume to the number of users.
F4 - Cover		11,000 FCFA / USD \$17 2 hours	The vent allows for the evacuation of gasses produced in the pit.

TABLE 6: Recommended Packages and Pricing

PRODUCT	TARGET GROUPS		PRICE & LABOR TIME
	OD HHs	HHs w/ toilets	
1. Integrating SATO pan onto existing slab		✓	4,000 FCFA / USD \$6 1 hour
2. Toilet with SATO pan on a 1.7 m³ masonry pit	✓		35,000 FCFA / USD \$54 2 days
3. Toilet with PVC pipe on a 1.7 m³ masonry pit	✓		39,000 FCFA / USD \$61 2 days
4. Toilet with SATO platform on a 1.7 m³ masonry pit	✓		43,000 FCFA / USD \$67 2 days
5. Other products by demand	✓	✓	–

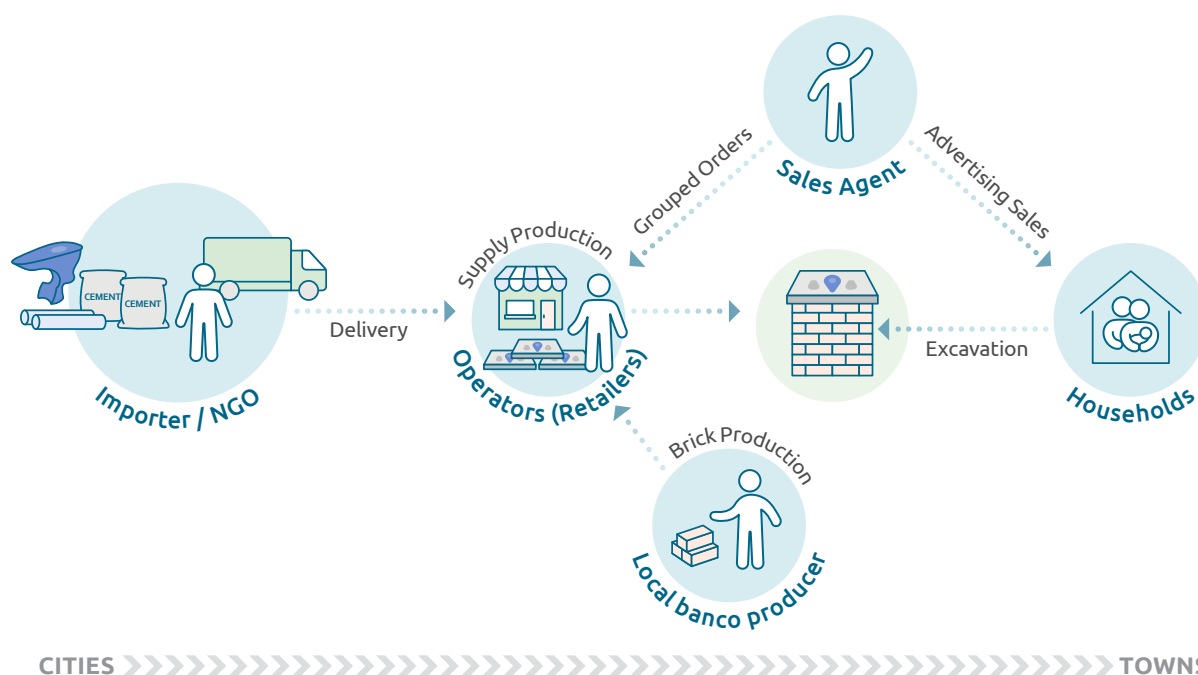
Products 2, 3, and 4 could be adapted for flood zones with an extra budget of 3-5,000 FCFA / USD \$5-8.

**Disposal Management:** While the market demand is not yet strong enough to make local disposal services economically viable, waste disposal needs present a medium and long-term business opportunity. For the current target population, the focus should be on improving collection/storage. It will also be important to sensitize households to their emptying needs, and waste management plans should be developed by local authorities.

**Handwashing Products:** The promotion of handwashing with soap should also be continued, with an emphasis on the need for systematic use. Households could also be sensitized to using cheaper powder soap for handwashing.

## SALES, MARKETING, & DELIVERY MODEL

FIGURE 4: Sales and Delivery Model





**Sales & Marketing:** The recommended sales model (see Figure 4) involves the development of a system for grouping orders and leveraging sales agents, radio marketing, and collaboration with religious leaders. Marketing should include messaging that improved latrines can help strengthen marital relationships by reducing suspicions that arise from leaving the compound at night to relieve oneself. Trained sales agents equipped with printed materials should hold group meetings and go door-to-door to persuade households to buy the promoted products. These agents could be Community Development Officers or Community Health Workers. RFSAs will need to determine the most effective remuneration by testing different commission rates.

**Delivery:** The proposed delivery model recommended (see Figure 4) involves having a retailer near the city who sources all the required manufactured inputs from importers. At the town level, commercial agents advertise the products and transfer orders to the operator.

In the case where the operator perceives that it is too complicated to do the pits, the model could fragment the supply of the product with, on the one hand, the interface produced and supplied by the operator and, on the other hand, a local mason could take care of the pit according to the standard plan agreed upon between the commercial agent and the household.

The model should include the following characteristics (Table 7):

TABLE 7: Key Characteristics of the Delivery Model

✓ Include the option for construction to be partially completed by the households	✓ Ensure the standardization and quality of products as well as the delivery in less than one month	✓ Only offer products/ services at prices that provide a margin to service providers
✓ Take advantage of locally available materials	✓ Limit the number of providers with whom a client must interact	✓ Be adaptable for bundling products/ services in harder-to-reach areas

**COMMERCIAL ENVIRONMENT**

To create an enabling environment, government, financial, nonprofit, and private sector actors will need to be engaged. Local authorities will be key to creating demand and adapting local regulations. Financing solutions should be offered via COGES (management committees) or formal financial service providers. Additional financing solutions adapted to meet the needs of the target population will also need to be identified. There will also be a need to coordinate with other NGO projects in the area. Private-sector partners will be critical for imports, production, sales, and installation. Finally, training should be offered to sales agents, retailers, authorities, and NGOs.

**APPLICATION OF FINDINGS TO DATE AND NEXT STEPS**

Collaborating on this applied research gave the RFSAs a starting point to develop a roadmap of market-based sanitation. Over the past year, the RFSAs have used the study findings to inform and guide their MBS activities. For example, the GIS and market segmentation exercise carried out by PSI allowed the RFSAs to develop data-driven demand and supply activities, as well as financing mechanisms and strategies. The information on market sizing was instrumental to the RFSAs in the development of a sales strategy, including setting annual objectives in terms of the volume of sales.

RFSAs have used findings to prepare sales and marketing activities around products, communication, and sales. This has included identifying marketing specialists or focal points to address these aspects, testing potential product names (branding) and developing a sales strategy. The partners investigated, discussed, and decided on a name for the brand and the different prototypes. A logo was developed to establish the product's reputation. RFSAs also facilitated training on various sales aspects, notably estimates of sales targets, the recruitment and training of sales representatives, the launch of sales operations, the supervision of the sales team, and the development of sales instruments and communication tools such as the radio.

This applied research also significantly contributed to the mapping of key stakeholders, households' willingness to pay, as well as the capacity to pay for sanitation services and products in the targeted regions or communities.

Moving forward, the RFSAs will continue to iterate based on experiences and lessons learned. Markets are dynamic and require continual adaptive management to maintain and grow sales and strengthen private-sector partnerships. During a recent workshop organized by UNICEF and the Ministry of Water, RFSAs shared their experiences with implementing sanitation marketing. This peer-to-peer sharing is also vital for identifying solutions to remaining challenges and pathways forward.

Findings from this research have also been used by UNICEF Niger in the development of the tender for their market-based sanitation activities. UNICEF is leveraging the research carried out by PRO-WASH, rather than duplicating, which can contribute to the harmonization and scale-up of market-based sanitation solutions.

## ADDITIONAL RESOURCES

The following learning briefs and resources were produced based on this research:

- [How to Use Human-Centered Design for Sanitation Products](#)
- [VIDEO: Human-Centered Design for Market-Based Sanitation](#)
- [How to Assess the Size of a Sanitation Market and Segment It](#)
- [VIDEO: How to Calculate the Market Size for Sanitation and Segment It](#)
- [How to Strengthen Market-Based Sanitation Strategies Using a Geographic Information System](#)
- [VIDEO: How to Strengthen Market-Based Sanitation Strategies using a Geographic Information System](#)

## ABOUT PRO-WASH

Practices, Research and Operations in Water, Sanitation and Hygiene is an initiative funded by USAID's Bureau for Humanitarian Assistance (BHA) and led by Save the Children. PRO-WASH aims to provide support for implementing partners in order to strengthen the quality of WASH interventions through capacity-strengthening, knowledge-sharing, and applied WASH research opportunities.

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## ABOUT GIRMA, HAMZARI, AND WADATA

There are three Resilience Food Security Activities (RFSAs) funded by the United States Agency for International Development Bureau for Humanitarian Assistance in Niger. As part of the Resilience in the Sahel-Enhanced (RISE) initiative, the RFSAs in Niger are: Girma in the Zinder region, implemented by Catholic Relief Services; Hamzari in the Maradi region, implemented by CARE; and Wadata in the Zinder region, implemented by Save the Children. The RFSAs aim to address critical challenges in food security, nutrition, and poverty, and improve the resilience of households and communities.

## ABOUT PSI

Population Services International (PSI) is a global nonprofit organization that uses consumers' perspectives to improve markets for more affordable, desirable, high quality health products and services in order to achieve universal health coverage, including safe sanitation.

<https://www.psi.org/about/>

## ABOUT PRACTICA

Practica Foundation is a non-profit consultancy organization with a mission to strengthen the skills and tools in low and middle-income countries in areas of rural water supply, irrigation, groundwater development, and sanitation.

<https://www.practica.org/>

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