

# Developing sustainable rural markets for resilient sanitation: lessons from Bangladesh

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# Editorial

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Dear colleagues

It is with great pleasure that we present the third edition of the RésEAU Brief series, a medium to share SDC's learnings from water related projects and programmes at the global level. This edition focuses on how **sanitation market systems** can be developed, that are accessible to the poor, sustainable and that consider climate risks, drawing from experience in Bangladesh.

More than five years into the SDGs and with 2030 in sight, the world is not on track to reach SDG target 6.2, to 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. In 2020, 3.6 billion people lacked *safely managed services*, that is improved facilities not shared with other households and where excreta are safely disposed of in situ or removed and treated offsite. Of these, approximately half (1.9 billion) had basic services: improved facilities not shared with other households ([WHO-UNICEF; 2021:49](#)). Important progress has been made, especially also in Eastern and South-Eastern Asia, where population numbers not yet included in sanitation cover are high and where it is challenging to reach especially **rural populations**.

Achieving universal access to safely managed services by 2030 will require a **fourfold increase in current rates of progress** (15x in least developed countries and 9x in fragile contexts) ([WHO-UNICEF; 2021:9](#)). This makes it paramount to ensure that current sanitation investments are **climate and disaster resilient** and designed considering environmental risks. This responds to SDG target

13.1, to strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries by 2030.

SDC and its partners in Bangladesh have contributed to access to sanitation focussing on the rural population, through an approach that develops **market systems in sanitation**. The premise is that access to water supply, sanitation, and hygiene (WASH) services needs to be ensured as a **public service** for poor and disadvantaged populations and as such a result of inclusive water governance. At the same time, access can be enabled through economic development, drawing in and **developing private sector** players (see the [Swiss Cooperation Programme Bangladesh 2022–25](#)). In addition, given rising social and economic losses due largely to weather extremes, WASH services will need to consider **climate and disaster risk reduction** measures. For the future, the consideration of climate change and disaster risks and minimizing harmful effects to the environment is to happen in at least 30% of SDC's portfolio in Bangladesh. A concrete example on how is given in this brief.

In this RésEAU Brief, SDC staff and partners share their learnings from practice on how inclusive and sustainable sanitation market systems can be developed, to spark inspiration and offer guidance for similar actions. For further reading and a full range of resources, please refer to the [RésEAU ShareWeb](#), and keep up with sector news through our [news site](#).

We wish you happy reading and welcome comments!

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# 1. Introducing the SanMarkS project



## 1.1 Barriers for rural poor to access to sanitation

In rural Bangladesh, households' access to sanitation has significantly improved over the last 20 years, and the practice of open defecation has drastically decreased. However, more than half of the rural population does not have access to improved sanitation yet. The impact of poor sanitation and the associated lack of hygiene disproportionately affect **women and girls** and children and youth in general. The under-five mortality rate of 46/1,000, and the prevalence of stunting (36%) and diarrhoea (6%) among children under five years of age are still unacceptably high. Quality sanitation will improve not only health at the individual, household, and community level, but also has impacts on food security, dignity, and well-being.

The Government of Bangladesh has recognized the importance of increasing access to sanitation by the poor and other marginalized groups<sup>1</sup>. In addition to increasing access to **basic sanitation**, Bangladesh aims to address the SDG 6.2 challenge of raising access to **safely managed sanitation**, whereby excreta are treated and/or disposed of safely ([SDC Bangladesh](#)). In 2020, 39% of Bangladeshis had access to safely managed sanitation services (42% in rural areas and 34% in urban areas) and overall, large differences in basic sanitation between richest and poorest persist ([WHO-UNICEF, 2021](#): 51,126,152). This means 85,6 million people currently still lack access.

The poor and disadvantaged<sup>2</sup> face specific barriers to access sanitation such as: limited availability of sanitation systems in rural areas, low affordability, low quality, and non-durable latrines ([SDC Phase I](#)).

## 1.2 Approach

Public and development funds alone cannot cover the overall demand of improved quality latrines while rising income levels and growing awareness of better service facilities mean that an increased demand exists. This makes

it possible for the private sector to play its role in increased access to sanitation (DPHE, 2020:2-3).

This is what the **Sanitation Market Systems Development (SanMarkS) project** in Bangladesh has focused on. It aims at supporting sustainable rural markets for improved sanitation goods and services. As such, the project broadly promotes "market-based sanitation" (see Box 1: *What is market-based sanitation?*).

### Box 1: What is market-based sanitation?

The SanMarkS project stands for **Sanitation Market Systems Development** and aims to support **sustainable rural markets for sanitation goods and services**. As such, the project broadly promotes "market-based sanitation". **Market-based sanitation** is defined by UNICEF (2020:13) as "a development approach to improve sanitation in a country by **building the sanitation market** of goods and services for which the **customer** makes a full or partial monetary contribution (with savings and/or cash equivalents) toward the purchase, construction, upgrade, and/or maintenance of their toilet from the **private sector**. It does this by **strengthening domestic private sector supply** of and stimulating and activating customer demand for sanitation goods and services. It includes approaches such as 'sanitation market shaping', 'sanitation as a business', and 'sanitation marketing' (or 'SanMark')."

The basic idea is that the development of markets for sanitation goods or products (latrines, slabs, etc.) and services (sweepers, masons, installers, transporters, and sales agents etc.) is a **faster and more sustainable way to increase the access** of the population to sanitation, than the public sector can solely provide through government financed systems. The market is **part of the mix of mechanisms** and approaches needed to bring a country's sanitation policy and programming to practice. The market "does not replace governments' central responsibility for ensuring the adoption of adequate sanitation by all households and protecting public health" (UNICEF, 2020:17). At the center of the market-based sanitation approach lies the **core sanitation market**, which is "comprised of customers, entrepreneurs (business owners), and sanitation enterprises (businesses)". The latter comprises activities as determining the target market and the product system, delivery approach, and sales and marketing strategy to best reach customers (UNICEF, 2020:19,51).

1 Unimproved sanitation is costing the economy of Bangladesh US\$4.2 billion per year in losses, almost 1.5% of gross national product in 2018 ([SDC Bangladesh](#)).

2 Poor households are those who live off less than 1,25 USD/day/person. Disadvantaged households are those that live in hard-to-reach areas, or are from a sociocultural minority or marginalized groups, or live in disaster prone areas, or are differently abled, or are led by a woman, elderly person, or child (Fogelberg and Aslam, 2018:5,7 and 24-25 on detailed description of each category).

SanMarkS is based on the **market systems development approach**. At its core, sanitation products and services should be exchanged between households, who are on the **demand** side and local producers and retailers, who are on the supply side (see Figure 1). Public actors and NGOs play a role to enable and strengthen this market system, through a series of support functions and normative elements (depicted in the outer rings). The premise is that as the project will yield social and health benefits for consumers and economic benefits for the market system at large, its results stay sustainable (see [IDE](#)).

To strengthen the market system, support is needed on several fronts. On the one hand, the demand side, for which the project facilitates the availability of affordable and improved sanitation products (latrine components) and services, including the promotion of hygienic practices, and thus increasing **household demand** for new sanitation products ([SDC Bangladesh](#)). Concrete activities include community and local level **events** to increase demand and mobilize private sector actors (like latrine producers, national companies and their sales agents, micro-financing institutions) for **targeted marketing** to the poorest and disadvantaged households. The project also works to increase access to **microfinancing** for household consumers for wider adoption of quality sanitation facilities.

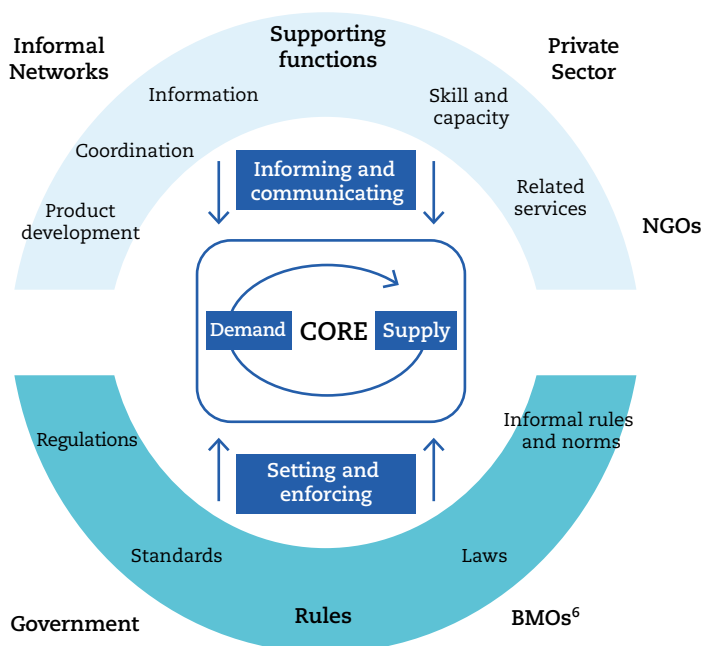
On the other hand, the **offer** side, the project enables private service providers (local latrine component producers, commercial retailers) to offer services that are affordable for rural users. This is done concretely by **trainings** of local latrine component producers<sup>3</sup> and by supporting the establishment and functioning of **Sanitation Business Associations** (SBAs) of latrine producers. The SBAs facilitate the linkages and collaboration in the supply chain, between the national level manufacturers of latrine parts and the latrine producers as the last mile agent of distribution. Another project activity is to increase latrine producers' **access to credit** by including sanitation loans in the portfolio of Microfinance Institutions.

At the enabling environment level, **public and civil society** WASH actors play a role to promote, procure, and subsidize improved sanitation for the poor and disadvantaged. Public agencies and civil society actors will also contribute to the revised Sector Development Plans for inclusion by adopting a pro-poor market-based sanitation strategy in line with SDG 6.2. Concretely this means,

3 The local latrine producers are mainly construction micro-entrepreneurs including masons. SanMarkS develops their business linkages and networks with sales agents and regional market representatives of national lead firms ([IDE, 2018](#)). Capacity building of local latrine producers includes their technical knowledge and know-how as well as market promotion strategies.

improved latrine<sup>4</sup> **subsidies for the ultra-poor** are channelled through the Local Government's sanitation scheme under the social safety net programme (SDC, 2021 *Factsheet SanMarkS Phase 2*).

The project partners are the Government of Bangladesh's Department of Public Health Engineering (DPHE)<sup>5</sup>, UNICEF, private sector organizations, and civil society actors. Its implementing partner is International Development Enterprise (IDE) Bangladesh.



► **Figure 1: Representation of a market system** ([DPHE, 2020:4](#))

4 An improved latrine is a latrine that includes a waterseal or a ventilated improved pit system. This in contrast to a basic latrine with a ring/slab without a waterseal, which does not ensure the hygienic separation of excreta from human contact (see DPHE, 2020:1).

5 DPHE is the national infrastructure development division for water supply and sanitation facilities throughout the country, excluding the capital Dhaka and other big cities and municipalities. DPHE provides advisory service to the Government of Bangladesh in policy and action plans for water supply and sanitation and provides support to the Local Government Institutions in the development and operation and maintenance of the water and sanitation facilities ([DPHE, 2022](#)). In SanMarkS, DPHE is engaged as quality assurer of improved latrine components produced by local producers at the local government level. At national level, DPHE acts a promoter of a revised WASH policy and guidelines that reflect a pro-poor market-based sanitation strategy.

6 BMOs is Business Membership Organization.

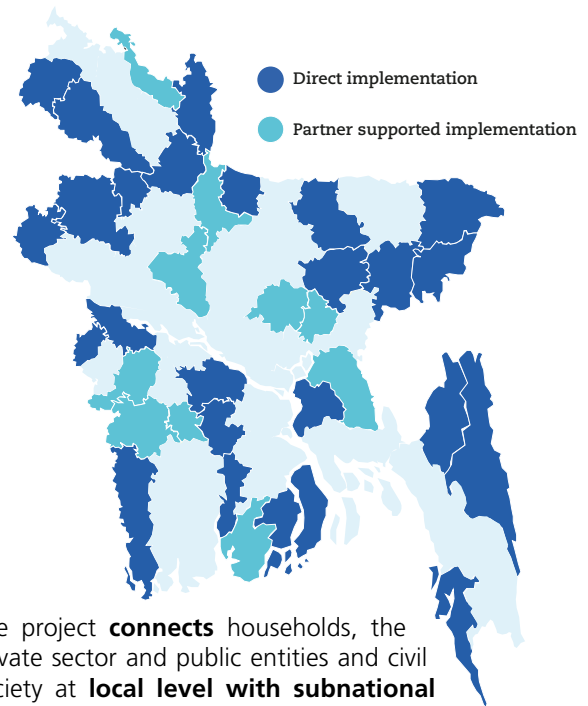
### 1.3 Evolution of project strategy and scales

From 2015 to 2019 SanMarkS **piloted** the market systems **approach** for creating rural sanitation service demand, offer and a supportive, enabling environment. In Phase 1, SanMarkS successfully tested the market system approach through a public-private partnership structure that improved sanitation and hygiene behaviour. Results were monitored and provided ample evidence of the value of the approach.

In its current phase until 2024, it aims to scale up nationally to contribute to meet the SDG 6.2 sanitation target by reaching 14.8 million households with safely managed sanitation services (see Figure 4). Now, the model developed to strengthen demand and offer is applied at a wider geographical scale while also fostering national policy and norms for a lasting basis. Greater access to finance through the involvement of Microfinance Institutions (MFIs) is sought to increase both demand and offer (Fogelberg and Aslam, 2018:2,17).

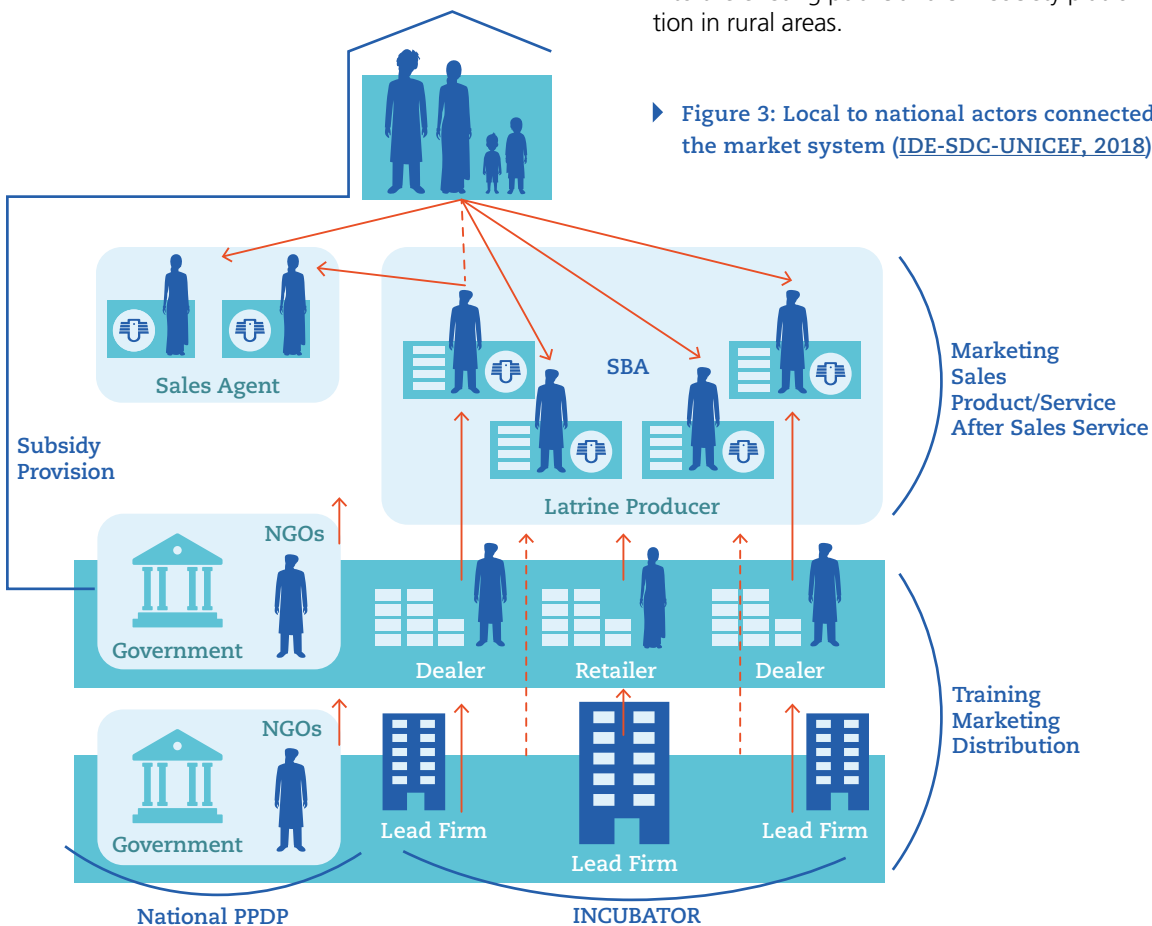
The project works in **35 districts** across Bangladesh, selected based on the hard-to-reach areas, poverty levels, rates of open defecation and of unimproved sanitation ([SDC Phase 2](#)). Partners such as MFIs and the Ministry of Local Governments, Rural Development and Cooperatives, support the implementation in 10 of these districts (see Figure 2).

▶ Figure 2: Map of 35 targeted districts in Bangladesh (IDE, 2022 / SanMarkS II Factsheet)



The project **connects** households, the private sector and public entities and civil society at **local level with subnational to national level** public and private sector actors (see Figure 3). The project promotes the **integration of the private sector** as a key stakeholder into the existing public and civil society platforms on sanitation in rural areas.

▶ Figure 3: Local to national actors connected through the market system (IDE-SDC-UNICEF, 2018)



## 1.4 Main results and targets

As a result of previous phases, the following results have been achieved till 2019:

- Over **160,000 improved latrines** were sold and installed in households, who directly invested **USD 2.7 million**. This shows that poor households can and will invest in improved sanitation options if they know about them and if they are **locally available and affordable**.
- **502 local latrine producers** (483 men, 93 women) are **trained** on improved products, business development and marketing techniques. They are linked with national firms in supply chains, continue to sell and construct improved toilets and many of them are organized in business associations.
- Increased willingness of the local government institutions, NGOs, civil society organizations and other sector actors to implement **smart subsidies in sanitation**.
- The **National Sanitation Marketing Guidelines** developed and endorsed by the Department of Public Health Engineering ([SDC Phase 2](#), [UNICEF, 2020: 164-165](#)).

The targets for 2024 are:

- 1.2 million improved toilet facilities sold, benefitting 1 million rural households, by 3,000 trained latrine producers in 35 districts and in partnership with 3 lead firms.
- At least 5 'access to finance' service providers offer sanitation loans and financial services to the latrine producers, Sanitation Business Associations, and households.
- Government approves and implements a revised WASH policy and considers pro-poor market-based sanitation for inclusion in the revised Sector Development Plans ([SDC, 2021](#); [SDC Phase 2](#)).

### Second phase: 2020 - 2024

**Outcome 1:** Use of services - Rural household **demand** for and use of improved sanitation products increases.

**Outcome 2:** Service delivery - Private service providers **sustainably offer** a variety of affordable sanitation services.

**Outcome 3:** Enabling environment - National and local **government** effectively utilize and **facilitate** market-based solutions for sanitation.

**Aim:** reach 4.5 million people (1 million households, 60% poor, out of whom 40% disadvantaged) particularly women, children and youth, in 35 districts.

**Budget:** 16 million CHF incl. SDC and UNICEF contribution and co-funding from the Government of Bangladesh.

### First phase: 2015 - 2019

**Outcome 1:** Rural **households** use improved yet affordable sanitation services and adopt better hygiene behaviour.

**Outcome 2:** **Private service providers** sustainably **offer** a variety of affordable sanitation services.

**Outcome 3:** Public and civil society water, sanitation and hygiene actors **promote, procure and subsidise** improved sanitation services for the poor and disadvantaged through **public private development** partnerships.

**Results:** 160.000 households (60% poor, out of whom 40% are disadvantaged) purchased improved latrines in 6 districts and 500 union parishads.

**Funding:** 6.3 million CHF from SDC incl. co-funding from UNICEF.

### Pilot phase 2013 - 2014

reached 7,000 households in 14 unions with improved sanitation systems.

**Key outputs:** An affordable **improved latrine product**.

A **private sector business model** for the improved latrine product for national-level outreach in a sustainable modality.

A **Public Private Development Partnership** platform at the local level for targetting public subsidies to improve sanitation products through commercial channels.

► **Figure 4: Timeline of the SanMarkS project**  
(Sources: [SDC Bangladesh on Phase 1](#) and [Phase 2](#), [SDC, 2021](#); [Fogelberg and Aslam, 2018](#))



## 2. What does a well-functioning sanitation market system that serves the poor look like?

### 2.1 Roles of public, private and development actors in the sanitation market system development

From a systems perspective it is important to have clarity from the start which permanent actor plays which roles to sustain the market system and overcome constraint especially the poor face in it as consumers. Figure 5 summarizes the roles public, private and development actors **ideally take** on in a functioning sanitation market system. The National Sanitation Sector Guidelines (see section 2.5) define these roles in greater detail for each institution involved, including their interests and incentives and resources at hand (DPHE 2020: 8-12).

In practice, it takes a market facilitator (as IDE in the case of SanMarkS) to build awareness and capacities, to facilitate links between actors, and coordinate actions and monitor progress to spot gaps, constraints and suggest improvements. In the long run, this facilitating role is ideally with the government as they are ultimately responsible for a country to reach SDG target 6.2.

### 2.2 How the project strengthened the private sector for a pro-poor sanitation market

Firstly, it is important to mention that local latrine producers themselves are **motivated** for social impact in their communities (see Figure 6).



Sector	Proposed roles in a sanitation market system
<b>Public</b>	<ul style="list-style-type: none"> <li>Regulate the quality of products for public health safety and consumer protection</li> <li>Provide the ultra-poor and marginalized with subsidized latrines and sanitation services</li> <li>Distribute sanitation products and public health information</li> </ul>
<b>Private</b>	<ul style="list-style-type: none"> <li>Supply affordable sanitation products to households that ensure public health and safety</li> </ul>
<b>Development partners</b>	<ul style="list-style-type: none"> <li>Share information on quality sanitation products through marketing efforts</li> <li>Help distribute products and public health information</li> <li>Support the government in providing the ultra-poor and marginalized with subsidized latrines and sanitation services</li> </ul>

► Figure 5: Ideal roles in a sanitation market system (Fogelberg and Aslam, 2018:15; DPHE, 2020:8-11)

“Apart from earning money through my sanitation business, I want to contribute to increasing hygienic sanitation practices in my society for a safer life.”

Md. Shohidul Islam  
Latrine Producer  
Khulna District

► Figure 6: Quote of a social entrepreneur<sup>7</sup> (IDE, 2016:5)

7 Social Water Entrepreneurship was the topic of RésEAU Brief no.2.

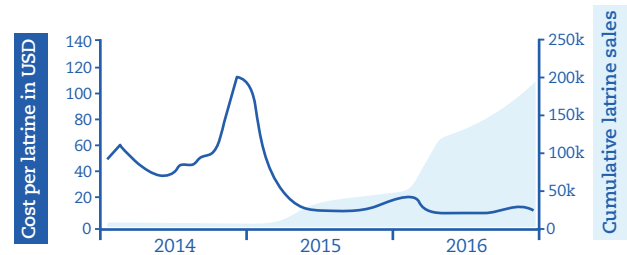


A second element is **capacity building and training of local entrepreneurs**, both men and women. SanMarkS offers latrine producers four to six day training courses to strengthen their product information, entrepreneurial capacity, establishment of business relationships, linkages to public and institutional buyers, and business development skills (UNICEF, 2020:202). Also, sanitation support agents such as masons, sweepers and sales agents participate in one-day trainings on their role.

Another aspect is the **financial incentive** for a latrine producer to remain in the system: i.e. the **profitability**. The project supports latrine producers' businesses in various ways: 1) demand creation events in which latrine producers and private sector meet directly with potential customers to introduce improved sanitation products and services; 2) motivate latrine producers to engage with sales agents for further demand creation events through a commission model; 3) increase access to finance through stimulating MFIs to increase their sanitation loan portfolio. A greater understanding the business case from a producer perspective will need to be gathered. Available evidence by the end of 2021 indicates that 83,809 latrines (7% of the target of 1.2 million) have been sold since November 2020 involving a total of 1,306 latrine producers (IDE, 2022:10).

For the market to work for the poor, prices need to be kept **affordable**. One way to do this is for local latrine producers to form **Sanitation Business Associations (SBAs)**, which are groups of local sanitation entrepreneurs organized for benefits such as training, bulk ordering, and representation to national manufacturers (IDE). Through **pooled procurement**, these associations buy latrine pans directly from national manufacturers at a reduced cost, previously inaccessible due to prohibitive minimum order requirements. Before the establishment of the associations, latrine components were procured through middlemen, with mark-ups as high as 150 per cent (UNICEF, 2020:171). The SBAs also help to mobilise and make use of collective skills, enforce quality standards among the members and engage with the government to create national quality standards for improved latrines (SDC e+i network, 2018).

Also, **national (lead) firms** (manufacturers) were strengthened to engage in sanitation supply chains targeted to the poor. Their interest was the distribution linkage with local last mile agents. The SBAs serve as the single point of contact and enable them to have access to customers who had previously been inaccessible due to the high costs and complex logistics involved in services a fragmented market across remote rural areas (UNICEF, 2020:171; SDC e+i network, 2018).



▶ Figure 7: IDE Bangladesh cumulative latrine sales compared to the cost per unit sold (IDE)

### 2.3 How to foster access of the poor and marginalized to sanitation goods and services

The first barrier for poor to access quality latrines is **affordability**. Figure 7 shows how, after initial product development and investment in training staff with relatively higher costs, **unit costs** were brought down while the sales to households went up steadily.

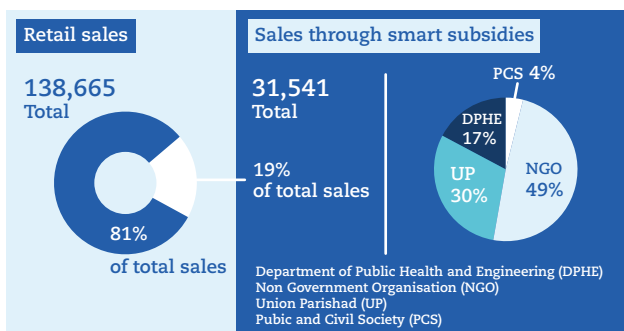
A second avenue was to coordinate access to **smart subsidies**, that target (ultra) poor households in a way that minimizes market distortion. For IDE, subsidies are smart when: 1) they engage the value chain; 2) use objective criteria to target the poor; 3) include a cost share by household for stronger ownership, such as through labour, transport, installation; and 4) the quality of latrines is ensured (IDE; 2019, tactic report). The project advocates for this with producers and local governments to select the poorest as target population and enables combinations of public subsidies and household's own contributions to cover the cost of improved sanitation (pers. comm. Rachid, 2022). By 2019, the so-called **institutional sales**<sup>8</sup> (a proxy for smart subsidies) through mainly NGOs and Union Parishad governments averaged 19% of total latrine sales (see Figure 8). In all, the local government subsidies to help poor households build latrines are now used more effectively, as the local latrine producers deliver cheaper and more hygienic latrines (SDC e+i network, 2018).

A third mechanism is access to **sanitation loans** through MFIs. This is both directed to consumer households as well as latrine producers. After having defined the access to finance strategy and thinking through a business model to work with MFI implementation partners using PKSF's<sup>9</sup> capital, this mechanism is a current focus of work of SanMarkS.

8 An *institutional sale* is when a latrine producer sells his/her product to an institution, which in turn delivers it free of cost to the end user, generally the poorest. The Government of Bangladesh's social safety net support programmes for sanitation are the vehicle for public subsidies in this case. A direct sale to the end user is called a *retail sale*.

9 The Palli Karma-Sahayak Foundation is an apex micro-finance lending and development organization, established by the Ministry of Finance.





► **Figure 8: Sales statistics of improved latrines in 2019 (IDE, 2020)**

## 2.4 The why and how of Public-Private Development Platforms

To improve coordination among public, private and development actors, SanMarkS has facilitated the forming of Public Private Development Platforms (PPDPs). These spaces enable contact and collaboration between these actors complementing their competences to:

- coordinate sanitation promotion activities
- establish sanitation industry standards and good practices
- facilitate smart subsidy provision (IDE).

After engaging stakeholders separately to understand their specific roles, strengths, and constraints, IDE brought these partners together to raise awareness of each other's work and seek consensus on key issues<sup>10</sup>. The SanMarkS team facilitates quarterly cross-sectoral meetings, district-level working groups, and biannual NGO collaboration meetings (IDE).

PPDPs have been established at local level and at regional to national level. An example of the collective work of a PPDR at national level is the input on implementation approaches to sanitation marketing made to the National Sanitation Marketing Guidelines (DPHE, 2020:6).

“The belief that PPDPs are unsustainable unless someone is willing to bring all the stakeholders together and drive collaboration is contrary to our experience.

While it is true that formal collaboration may decrease without an outside organizing force, IDE has seen that the initial efforts to get different actors to work together still leads to increased informal collaboration later on”.

Source: IDE, 2016:3.

<sup>10</sup> SanMarkS experience on promoting public-private partnerships for sanitation has been recognized in 2017 when it won the [P3 Impact Award](#) given out by Concordia, the University of Virginia Darden School Institute for Business in Society, and the U.S. Department of State's Office of Global Partnerships.

## 2.5 On scaling and sustainability of the sanitation market system

According to the 2018 midterm review, sanitation users are **expected to continue** to use the toilets they have accessed through the project and that the latrine producers will continue to sell improved sanitation following the project's completion.

Emerging signs of **systemic change** and their **sustainability** observed in 2018 were the following:

- Most permanent actors involved (latrine producers, lead firms, local governments, NGOs, MFIs) evidence **adoption** of pro-poor change that is viable and have concrete plans to continue it in the future.
- Some of the initial partners have **adapted** the changes, on their own initiative (e.g. some latrine producers have assumed marketing costs themselves).
- Similar or competing players have copied the pro-poor change by offering variants of it, thereby autonomously **expanding** (e.g. non-project trained latrine producers are selling improved sanitation products).
- System actors **respond** when non-competing players adjust their own practices in reaction to the pro-poor change. This is seen., for example, in the Department of Public Health Engineering (DPHE) developed national sanitation marketing guidelines and the emergence of Sanitation Business Associations (Fogelberg and Aslam, 2018:23).

One important pathway to seek to scale the market system approach for sanitation goods and services is through its integration in **national policies** and plans. Along this line, in 2020, the Department of Public Health and Engineering and the Ministry of Local Government, Rural Development and Cooperatives published the [National Sanitation Marketing Guidelines](#). This document can serve as a tool for public, private and development actor to apply a market system approach in their work in rural sanitation and came about with support from the partners of SanMarkS.

The national guidelines have been presented and widely shared across all relevant stakeholders in the sanitation sector. The development of technical products such as these guidelines, can be useful in building consensus, sharing experiences and in general for improving coordination among stakeholders (Fogelberg and Aslam, 2018:15). They are, for example, used in training events of latrine producers to apply a standard practice according to national norms for rural sanitation business (pers. comm. Rashid, 2022). Monitoring of its use in practice can provide insight into the impact of the guidelines and standards on the behaviour of public institutions, and private and civil society actors.



The major **challenge** around scale and sustainability relates to who could or would do what SanMarkS is currently doing. This means tackling constraints as market information, linkages, business development and coordination (Fogelberg and Aslam, 2018:19,22). Similarly, the most promising scale agents need to be identified that can expand the sanitation market system approach to other areas. The latter is challenging as there is not a single actor - public or private – who is solely responsible for rural sanitation: This is due to the shared public and private benefits of sanitation and the fragmented nature

of the market system, in which public and private actors all have some responsibility or interest (Fogelberg and Aslam, 2018:24).

The scaling strategy currently followed in the second phase, involving both *direct implementation* by the SanMarkS team as well as *partner supported implementation* through MFIs and the local government division of the Ministry of Local Government, Local Government, Rural Development and Cooperatives shall provide answers to these the coming years.

## Box 2: Public WASH service delivery and humanitarian response in the Rohingya refugee crisis

Following the outbreak of violence in 2017 in Myanmar's Rakhine State, more than 700,000 people have fled to and sought refuge in Bangladesh. At present, 888,700 Rohingya refugees live in 34 overcrowded camps in the Cox's Bazar district. Besides, approximately 472,000 people that live in the surrounding host communities have been the most affected by the presence of the Rohingya refugees and are also in need of humanitarian support. Switzerland has supported the humanitarian response to the now protracted **Rohingya crisis** since 2017. Humanitarian assistance is carried out in a manner that connects short-term and medium-term support for the Rohingya population in **camps and host communities**. So far, almost 32,600 persons from host communities were able to access water and sanitation facilities and 24,500 have improved hygiene (SDC Bangladesh, 2022:10).

Aligned with the Joint Response Plans, Switzerland contributed some CHF 49.5 million between 2017 and 2021, through various mechanisms: multi- and bilateral partnerships, direct actions and by seconding technical experts to international organizations. SDC links humanitarian and development approaches (nexus approach) through a joint analysis of situation on the ground, joint funding of medium-term activities and seeks for complementarities of instruments that address the needs of both refugee and the host population ([SDC Bangladesh Humanitarian Aid](#)).

An example of this **mid to long term vision applied in a context of humanitarian response** is the collaboration with the Department of Public Health Engineering (DPHE), aimed at **empowering DPHE in its role to lead the WASH sector** and manage the provision of drinking water supply, as well as waste water and solid waste management services for both vulnerable host communities and Rohingya refugees ([SDC Bangladesh Humanitarian Aid](#)).

Also, **local governments** in the Cox's Bazar district need to strengthen their role in **public service delivery**. The contribution implemented by **HYSAWA** is doing so by providing safe water supply, sanitation services and hygiene promotion to 250,000 people from the vulnerable host communities through enhancing the capacity of local government institutions.

Officials of Local Government Institutions are empowered through trainings and information sessions about their roles and responsibilities in public WASH service provision, to apply existing laws and guidelines on public finance management and demonstrate transparency and accountability in managing WASH services and to provide space to people, especially the poor and marginalized, to participate in planning and monitoring of water and sanitation facilities. On the demand side, women, men, boys and girls receive information on relevant hygiene standards and have access to safe drinking water and functional latrines. In interactive school sessions and courtyard meetings, special sessions for adolescent girls on menstrual hygiene are carried out.

► Source: [SDC Bangladesh 2022](#); [SDC Bangladesh HYSAWA](#); [SDC Bangladesh Humanitarian Aid](#)

### 3. How to make sanitation climate and environmental risk resilient

Sanitation structures in Bangladesh are highly exposed to climate related hazards, such as cyclones, heavy rains, flash floods and inundations, often leading to destruction of vulnerable livelihoods. The combination with a degraded environment, such as can be seen with the loss of mangroves in coastal areas, exposes people to the intrusion of saline water into the ground-water, waterlogged soils and tidal surges that have increased during cyclones (IDE, 2022:8). The population in the coastal belt of southern Bangladesh is particularly

impacted though the poor quality of its drinking water and damage to latrines.

In December 2021, SDC and partners have applied the [CEDRIG tool](#)<sup>11</sup> to the SanMarkS project activities, and exchanged with households, latrine producers and local governments to understand the climate, disaster, and environmental risks they face and to identify adjustments needed in technology and project intervention methodologies for greater resilience.



◀ **Figure 9: Rural house and roads exposed to the tide in Anulia Union, Assasuni Upazila, Satkhira (IDE, 2022)**

▼ **Figure 10: Front side view of a latrine producer centre (Nayeem Khan, 2021:5)**

#### 3.1 Outcomes of the CEDRIG analysis

The analysis focussed on the **risks** faced by individual households which have latrines as well as the local producers of latrine parts.

**Households** face challenges for water supply (as some fetch water from saline water sources, with negative health effects) and sanitation. Figure 11 summarizes some of the findings focussing on the sanitation infrastructure. Inundation from tides and from tidal surges causes latrines to be flooded, producing faecal contamination to the surrounding environment and damage to the latrine itself. Households therefore show less willingness to invest in a fixed, improved sanitation facility within their compound. “Households spend minimum amounts on latrine structures to save money as they know that these structures will not be functional after a natural disaster like a storm or a cyclone has taken place” (IDE, 2022:13; Nayeem Khan, 2021:6,9).

**Latrine producers’** production sites become flooded as



well, thus interrupting the continuity of production as often requiring relocation. Overall, the disaster causes a drop in consumer demand (IDE, 2022:13).

11 Climate, Environment and Disaster Risk Reduction Integration Guidance. CEDRIG is an instrument developed SDC to help development and humanitarian actors to analyze whether existing and planned strategies, programs and projects are at risk from climate change, environmental degradation, and natural hazards. This tool also helps to identify potential negative impact of project interventions, which can further exacerbate GHG emissions, environment degradation or risks of natural hazards (IDE, 2022:5).



Hazard	Impact	Measure
Salinization of groundwater and soil (environmental hazard)	Saline water used for cement rings of latrines reduces durability of latrine part (see photo), leading to less trust with costumers in turn limiting cover of improved sanitation and less revenues for latrine producers.	<ul style="list-style-type: none"> <li>• Rainwater harvesting at latrine producers' sites, with low-cost on-site reservoir.</li> <li>• Use an anti-saline chemical ingredient.</li> <li>• Raise awareness among latrine producers on the matter, in training and coaching.</li> </ul>
Cyclones characterized by intense rains and strong winds and associated tidal surges (climate related hazard)	Causes flooding of houses. Submersion of the latrine causes damage to the latrine pit infrastructure and its functionality.  This in turn reduces improved sanitation coverage as households are shifting to temporary, unimproved latrine structures.	<ul style="list-style-type: none"> <li>• Raise the plinth of the latrine pit to a higher elevation.</li> <li>• Raised soil platforms with vetiver grass planted on the slopes ("green fencing" and other low-cost indigenous technologies) to prevent soil erosion by rain and winds and stabilize slopes.</li> <li>• Seal latrine pits before the event (preparedness).</li> <li>• Better access to microfinance in coastal areas, both for working capital for entrepreneurs, as well as for households struggling to purchase latrines.</li> </ul>
Intense and excessive rainfall (climate related hazard)	Floods also interrupt the production at latrine producer's sites.	

► **Figure 11: Hazards, impacts and measures identified for more resilient sanitation infrastructure (IDE, 2022:12-16)**

The analysis also looked at the **impact** the sanitation market development supported by the SanMarkS project has on the environment. Two impact pathways were identified:

- The **plastic (Sato) pans** of the improved latrines, when disposed of after their use, will pollute the environment. Identified measures are raised platforms to reduce the flood damage to pans and searching for options and develop capacities for a more circular way of producing, maintaining, and disposing them (less water, more biodegradable) (IDE, 2022:15-16; Nayeem Khan, 2021:11).

- **Unsafe Faecal Sludge Management (FSM)** at community level was observed as a challenge associated with the improved sanitation at household level. Unsafe FSM contaminates the soil and water bodies, increasing health hazards. Measures include training of cleaners and sweepers and promoting technology on safe collection and management of faecal sludge and increasing awareness for action of the local government in addressing this problem (IDE, 2022:16).



► **Figure 12: Latrine rings at a producer centre. The use of saline water reduces the durability of these rings from 5 years to only 6-8 months (Nayeem Khan, 2021:6)**



► Figure 13: Participants apply the CEDRIG tool for risk analysis in San-MarkS project sites (IDE, 2022:14)

### 3.2 Implications for technology and market system actors

The collective analysis led to the identification of a series of practical and **technology** related measures as shown in the table. IDE is currently improving the technological proposal for improved rural latrines on two fronts:

- latrine super structure, modified for climate resilience
- planting of vetiver grass to stabilize latrines on slopes.

For these innovations to be taken up, **latrine producers** need to be aware of the environmental aspects and risks (salinity, water conservation, raised latrines) of their enterprise, which can be fostered by training, on-the-job feedback and from the user experience of their customers (IDE, 2022:16).

Public actors as the **DPHE** can play a role to increase awareness among different stakeholders on the environmental risks associated with sanitation (for example, massively installing latrine pits in areas with a high watertable, creating risks of contamination). DPHE can also further guide towards more resilient latrine technology, components, installation, and maintenance (IDE, 2016: 4).



► Figure 14: A latrine superstructure with a handwashing station fed by rainwater (IDE, 2017)







▶ Figure 15: Improved latrine structure with necessary attributes to make it more resistant to floods (raised platform) and to strong winds (circular shape, durable materials). The toilet also has ventilation, lighting and a ramp to enable access by physically challenged people (Md. Nahiduzzaman, 2022)



▶ Figure 16: Latrine installed on the slope of a rural household, left bare by erosion causing environmental and health risks (SanMarkS Project, Sunamganj, 2017, Md. Imran Nizami in IDE, 2022)



### Box 3: Local water governance for equitable access to drinking water in the Barind Area

The challenges related to the environment (water availability but notably also water quality) and climate and disaster risks surpass the capacity of the WASH sector to respond, and need to be assessed, governed, and managed from a larger, multi-sector use perspective considering the interdependencies between water, land, and ecosystems. Local Government Institutions (LGIs) are key here.

The *Integrated Water Resource Management in the Barind Area* initiative aims to ensure access to sufficient and safe water for 280,000 disadvantaged people of the Barind tracts in North-Western Bangladesh. The project does this by strengthening the **Local Government Institutions' capacity in water resource management** for enhanced water availability and to build an effective coordination platform applying existing water laws, rules and regulations ([SDC Bangladesh](#)). With the support from Switzerland, this project is implemented at **national** level by the [Water Resources Planning Organization](#) (WARPO, an apex planning body under the [Ministry of Water Resources](#) of the Government of Bangladesh, dealing with nationwide water resources planning), and at **sub-national** level by a consortium of the [Swiss Red Cross](#) and [DASCOH Foundation](#) (Phase 1 2014-2018; Phase 2: July 2018 – December 2023; CHF 7 million).

The Barind tract is a dry area classified as “hard-to-reach” with above-average incidences of poverty and water scarcity due to **over abstraction of ground water, changing rainfall patterns and contamination**. The massive use of deep tube wells for irrigation enables year-round cropping for food security but tends to undermine drinking water security. Water governance is challenging as entities affiliated to the Ministry of Agriculture focus on food security goals, while other government entities are mandated to protect groundwater sources and ensure drinking water security goals. The [Bangladesh](#)

[Water Act](#) (2013) and its regulations (2018) provide the legal framework to move towards integrated water resources management (IWRM), yet in practice, **coordination** amongst different water use sectors is still in its early stages.

To change this the project works on three fronts: First, enabling **citizens** (particularly the poor and women) to **engage with Local Government Institutions** (Municipalities, Upazila, unions, and other stakeholders) in IWRM processes so that LGIs are stimulated to ensure water supply to the underserved population and realize their right to water and jointly invest in IWRM. Second, supporting **decentralized IWRM committees** to address regional water resource issues, as LGIs apply the Bangladesh Water Act and associated rules and guidelines and committees implement IWRM measures to reduce water stress (the project has targets particularly on agricultural water use, such as groundwater irrigated boro rice replaced with less water intensive crops and rice systems in 15,800 ha out of 63,400 ha). And thirdly, assisting the Government of Bangladesh's and its **policy framework** in disseminating water information to all stakeholders and the formulation of the Barind participatory water management plan.

So far, 12'000 people (37% disadvantaged) engaged with IWRM initiatives with Local Government Institutions. 994 water resource management committees have identified **actions to reduce, re-use and recycle water** which were included in the annual development plans and budgets of their local governments. Examples are the installation of pipelines for drinking and irrigation; solar powered drip irrigation; the excavation of ponds; rainwater harvesting systems; managed aquifer recharge systems and the installation of monitoring wells. Union Parishads and beneficiaries contributed 16% of the investment costs.

► Source: [SDC Bangladesh](#) Phase 2; [SDC Bangladesh project factsheet](#); [SDC Bangladesh Phase 1](#); [WARPO](#); [MWR](#)



## 4. Lessons in a nutshell

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- To support counties to increase access to sanitation in a self-sustained manner, **systemic thinking is needed** in project design and implementation. This includes an analysis of actors' mandates and roles in sanitation coverage through the market and a continuous monitoring and reflection on their functioning without external support.
- The project has proven that markets and **market actors can play a key role** in offering sanitation goods and services on an increasingly wide scale over time. Ingredients for success are a proven, affordable technology, a solid training and support strategy and good **coordination** between public and private actors as well as NGOs on targeted subsidies for the poorest.
- To enable the poor and vulnerable households to step in this market as consumers, an understanding of market segments and **fitting financial support and incentives** targeted to the most vulnerable are needed. Affordability, durability, and subsidies that work with the market are key.
- For corresponding investments in rural sanitation to be durable over time, a **climate risk and environmental impact perspective** is needed on the technology and its market-based distribution: the poor are only served if improved sanitation is a real solution in the context in which they live
- **Tools are available** and do not need to be re-invented on the *how-to* of making WASH services accessible to disadvantaged constituencies and climate and environmental risk resilient: UNICEF's guidance on market-based sanitation and the CEDRIG tool for more climate, environmental and risk-smart projects.



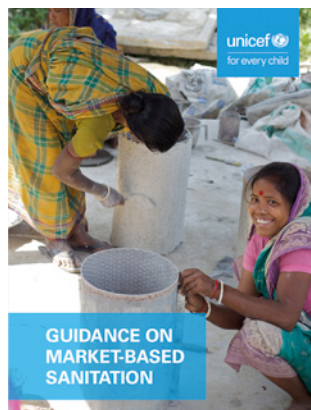
# Resources

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## Further reading on the SanMarkS and other water projects in Bangladesh

- SDC Bangladesh [SanMarkS factsheet](#)
- Solving sanitation from all sides, IDE [https://www.shareweb.ch/site/EI/Documents/PSD/PSD%20iDE-IR-BD\\_PublicPrivateDevPartnrships.pdf](https://www.shareweb.ch/site/EI/Documents/PSD/PSD%20iDE-IR-BD_PublicPrivateDevPartnrships.pdf)
- CEDRIG Operational Workshop of SanMarkS-II Project. Proceedings. December 2021. Syeda Zinia Rashid, SDC Bangladesh
- Syeda Zinia Rashid, SDC Bangladesh. Presentation on the use of the CEDRIG tool in SanMarkS at the IC Forum 2021: <https://icforum.swiss/topics/working-session-6?focusedItem=JoaGB91mSJIRoAfbuaic> (at 1:04 min)
- SDC Bangladesh [WASH support for vulnerable local communities in Cox's Bazar factsheet](#)
- SDC Bangladesh [Humanitarian response for Rohingya's refugees in Cox's Bazar factsheet](#)
- SDC Bangladesh [IWRM in Barind areas factsheet](#)

## Guidelines and tools



United Nations Children's Fund, [Guidance on Market-Based Sanitation](#), UNICEF, New York, 2020.

[CEDRIG](#) tool. The Climate, Environment and Disaster Risk Reduction Integration Guidance CEDRIG is an instrument developed SDC to help development and humanitarian actors reflect whether existing and planned strategies, 2 programs and projects are at risk from climate change, environmental degradation, and natural hazards, as well as whether these interventions could further exacerbate GHG emissions, environment degradation or risks of natural hazards.

◀ **Figure 17: Boat transporting latrine slabs and rings.** (IDE, 2022)



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Confederaziun svizra

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Cover photo

A latrine entrepreneur (on the left) producing a latrine slab  
with the support of his employee at his production centre

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