PRESENTATION ON

Performance Based Models for Flood and Water Management Assets

28th October 2026





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Performance-based contracts can end Bangladesh's build-neglect cycle, if land, payment and legal basics are in place

1 THE PROBLEM

<0.1%

of GDP is spent on water maintenance, against 0.5% needed

~10%

of maintenance demand was funded in 2021, down from about two-thirds in the late 1990s

2 THE OBJECTIVE

Develop realistic pilots for performance-based delivery, and test them under today's limits

Today: pay to build, repair when it fails

To be tested - pay for performance over the asset's life

3 WHAT WE ACHIEVED

- Identified potential opportunities that can demonstrate new approaches for asset management, operations and maintenance
- Suggested performance linked structures that can act as templates for scaling up and replication
- Rollout depends on resolving gaps in institutional capacity, financing options and market appetite

The bigger aim: to spark ideas for keeping water assets working beyond the traditional approach.

What if maintenance was contracted as a performance, not repaired after failure?

Five pilots can show where this works now, and what must change to scale it.

Weak upkeep traps Bangladesh's water assets in a build-neglect-rebuild cycle

THE CYCLE



8–12 yrs

between full rehabilitations of coastal embankments, because missed minor repairs turn into costly rebuilding

INSECURE FUNDING

10×

more new projects since 1995, while maintenance funding barely rose

NO ASSET MANAGEMENT

No inventory

of asset condition, so maintenance requests lack evidence

What it causes: FENI, AUGUST 2024

99

embankment breaches on the Muhuri, Kahua and Silonia rivers (BWDB)

Old earthen embankments, patched almost every year, last renovated in 2010. Record rain was the trigger; weak upkeep let it become a breach.

1 million+

people marooned

Incentives favour building new, and no one is clearly accountable for keeping assets working.

Source: PfW report on the build, neglect and rebuild cycle in Bangladesh's water sector (IWFM-BUET and MetaMeta for RVO); BWDB; Prothom Alo and TBS (Feni floods, 2024)

Performance-based PPP contracts can resolve the build-neglect-rebuild cycle

WHY THE CYCLE PERSISTS	WHAT PERFORMANCE-BASED PPP CONTRACTS DO
Incentives favour building new	Incentivizes maintenance of the existing asset
No one is accountable for keeping assets working	Links payment to how the asset performs
Missed minor repairs become costly rebuilds	Forces a lifecycle perspective

Netherlands and other countries have succeeded with performance-based PPP models to ensure proper operations and maintenance of water management assets with positive results.

But

PPPs are complex and do not work in all situations – they need an optimum set of project characteristics and ecosystem conditions to be effective and generate value

Six missing PPP basics explain why these assets have not attracted private money in Bangladesh

No direct revenues or user fees

Flood protection is a public good, so there is no income stream to repay private finance

No track record

Water authorities do not have a demonstrated track record of multi-year budgeting and payments

Limited institutional capacity

Limited capacity to run PPP procurement in agencies like BWDB

Challenges with availability of sites

Ownership issues, encroachments (e.g., on banks of urban canals), lack of land for dredge material disposal

Domestic contracting market is limited

Limited capacity for large scale projects

Financiers are not accustomed

Financiers do not offer products suitable for such contracts, don't know how to evaluate risk and price the same

Contract design answers the six barriers, mostly by starting small and scaling up

Gaps and Issues	How can the contract structure resolve these issues
• No direct revenues or user fees	• Government pays a fee tied to asset performance
• No track record	• Start with small contracts, then scale up
• Limited institutional capacity	• Start with small contracts to build capacity and experience
• Challenges with availability of sites	• Allocate site risks to the contracting authority, clear access before procurement
• Domestic contracting market is limited	• Start small, with low value low risk contracts to create a gradual domestic contracting market, use regional / global players initially for skill transfer
• Suitable finance is not available	• Start small, with low value low risk contracts to create a gradual domestic financing market

We tested performance-based contracts on five pilots from about 60 projects

FROM LONG LIST TO PILOTS

~60 projects shared by BWDB, BEZA, LGD and DNCC

~15 cost more than EUR 1 million

8 discussed with stakeholders

5 3 projects dropped as they were too small, not PPP suitable

THREE CONTRACT TYPES CONSIDERED

DBOM

The public sector pays for the build. A contractor designs, builds, operates and maintains, paid on performance.

DBFOM

The contractor also finances the asset. Government pays over time, tied to performance.

Performance-based service contract

Pays for an outcome, such as river depth held. No new asset is built.

BWDB = Bangladesh Water Development Board
BEZA = Bangladesh Economic Zones Authority (now merged into Invest Bangladesh)
LGD = Local Government Division (of the Government of Bangladesh)
DNCC = Dhaka North City Corporation

Five pilots cover flood defence, sewerage, drainage and river navigation

1 Mirsarai Super Dyke with solar

PROBLEM

22 km coastal dyke protecting the National SEZ, at risk of the build-neglect-rebuild cycle

IDEA

Solar income pays for upkeep; one contractor builds the solar plant and maintains the dyke

2 Dhaka wastewater interceptor

PROBLEM

Under 20% households are connected to sewer, many households empty their waste into drains, which discharge into the lakes

IDEA

A contractor builds and operates 16 km of sewer link, paid on performance (DBOM)

3 Rupnagar and Baunia Khals

PROBLEM

7.6 km of urban drainage canals in north Dhaka, with encroached banks

IDEA

Rehabilitation plus long-term performance-based maintenance (DBOM)

4 Jamuna river dredging

PROBLEM

Sediment limits navigation along a 250 km river stretch

IDEA

The contractor is paid to hold a set channel depth; no new asset is built

5 Kallyanpur canals

PROBLEM

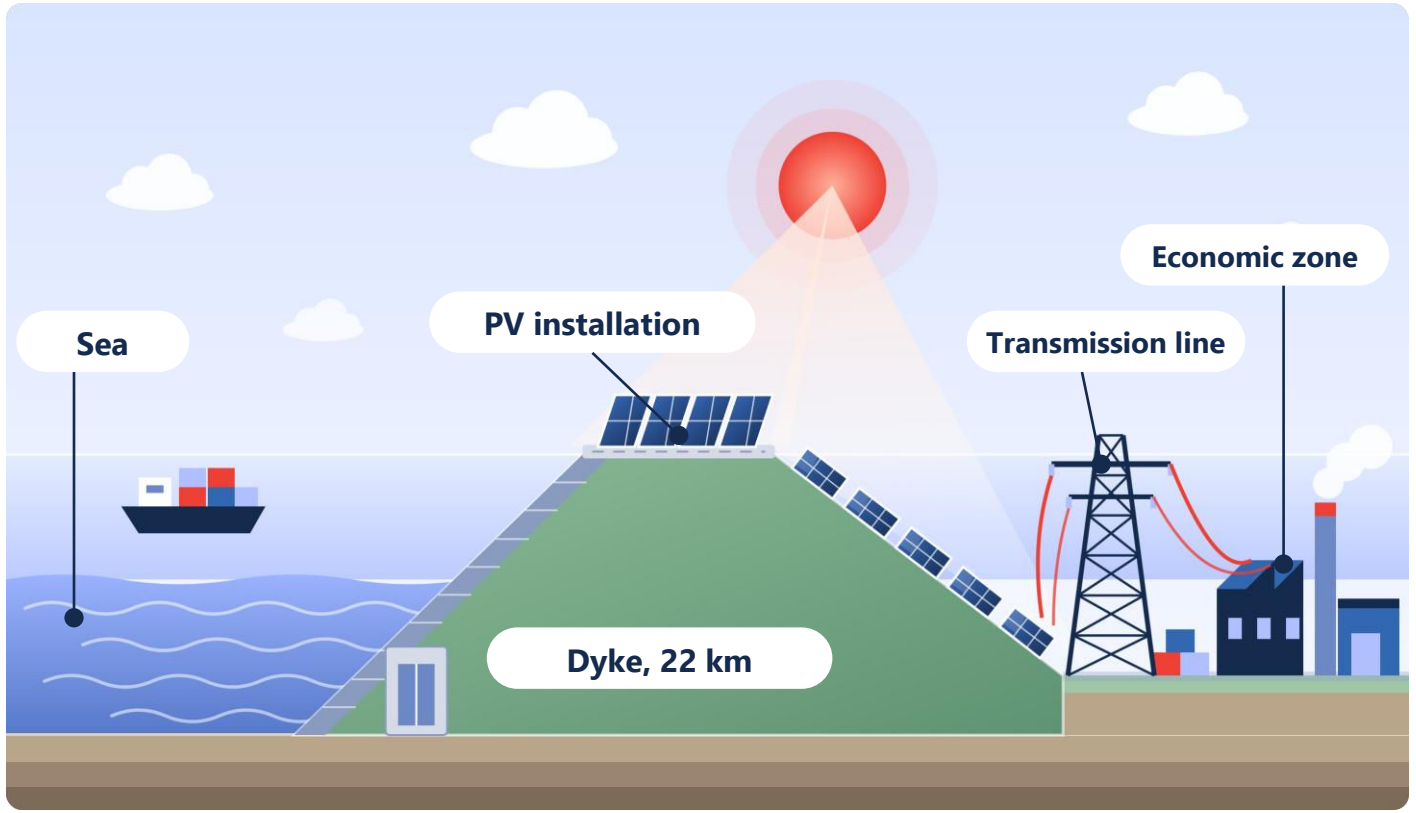
Main storm drainage for 1.5 million people; 98% of canal-side land is encroached

IDEA

Canals, pump station, retention pond and waste barriers under one contract (DBOM), after land is cleared

Except for the solar dyke, all pilots use public capital with a private contractor paid on performance.

Pilot 1: solar panels on the Mirsarai Super Dyke would pay for its upkeep



sketch is illustrative, not to scale

SPONSOR
BEZA has handed over the dyke to BWDB for maintenance, BWDB likely to be the contracting authority

LOCATION
Mirsarai, Chattogram; Phase 1 of the National Special Economic Zone

DYKE
22 km coastal embankment, about 9 m high, with sluice gates

SOLAR CAPACITY
45 to 57 MW (51 MW assumed) on the crest and land-side slope

ELECTRICITY BUYER
National grid or zone industries

One contract links solar revenue to dyke maintenance

Contracting authority
BWDB likely; to be confirmed

- Gives access to the dyke crest and slopes
- Provides data on the dyke's condition
- Keeps the risk of storms beyond the design level
- Can step in if revenue is not ring-fenced

20-year contract

One contractor
Developer or consortium

- Designs, builds, finances and runs the solar plant
- Maintains the 22 km dyke to agreed standards
- Insures and hands back both assets

Maintenance reserve: a set share of solar revenue is ring-fenced for the dyke

Electricity

Payments

Electricity buyer
National grid or zone industries

- Signs a long-term power purchase agreement
- Pays a fixed tariff for 20 years

Lenders may want separate solar and dyke companies

EUR 22.0M
solar capex (51 MW)

EUR 7.95M
electricity revenue a year at US$0.1094 per kWh

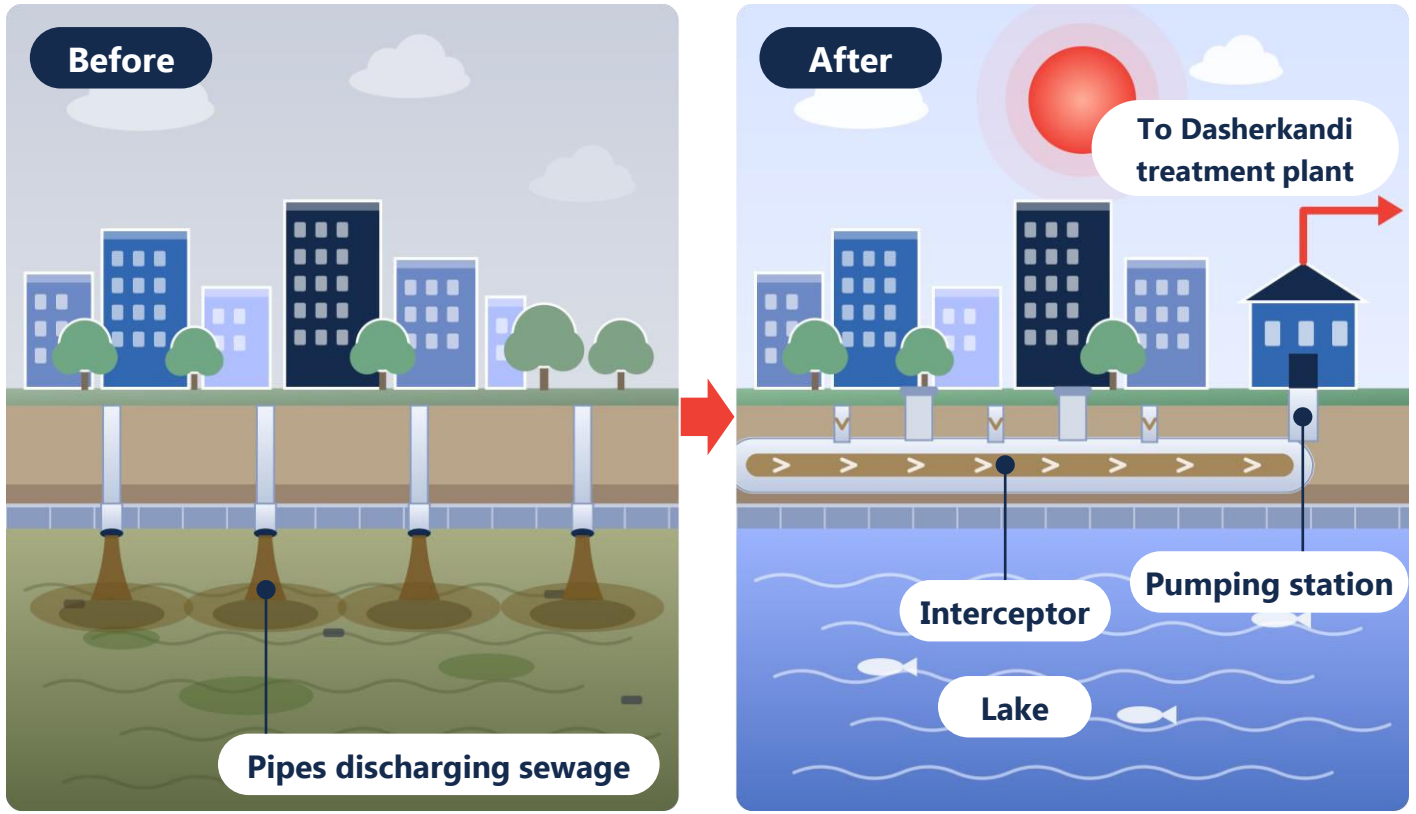
EUR 1.29M
dyke upkeep a year, EUR 25.9M over 20 years

70-75%
debt share of solar finance, 25-30% equity

23%
preliminary return (IRR) on the solar plant

figures are preliminary and rest on team assumptions

Pilot 2: an interceptor sewer would keep sewage out of Dhaka's lakes



sketch is illustrative, not to scale

SPONSOR
LGD proposed it; DWASA is the likely contracting authority

LOCATION
Gulshan, Banani and Baridhara lakes, Dhaka North City Corporation Zone 3

SCOPE
About 16 km of interceptor sewer plus a sewage lifting station at Gulshan

TREATMENT PLANT
Dasherkandi plant (500 MLD) runs under capacity: no sewer link to it

FUNDING
World Bank PforR; capex about EUR 8.45M

One performance-based contract would build and run the interceptor

Public funders
World Bank PforR, through LGD

- World Bank refunds government against verified results
- LGD passes the funds to DWASA
- No private money goes into the deal

Funds →

Contracting authority
DWASA; to be confirmed

- Gives access along the lake bank
- Removes illegal outfalls and structures
- Pays construction milestones, then the O&M fee
- Keeps the risk of flows above design capacity

Payments →

← **Works and service**

One contractor
Civil contractor with a network operator

- Designs and builds about 16 km of sewer and the lifting station
- Runs and maintains both for 15 years, then hands them back

O&M fee depends on results: share of flow captured, pump uptime, blockages

Several interceptors could be bundled into one contract to attract bidders

EUR 8.45M	EUR 0.21M	EUR 11.5M	<0.5%	EUR 0
capex: sewer EUR 6.76M, lifting station EUR 1.69M	O&M a year; EUR 3.0M over 15 years	total cost over 15 years	of DWASA's yearly surplus: the O&M fee	private capital: the state pays all capex

O&M costs are author assumptions to be validated

Pilot 3: Rupnagar and Baunia Khals would be restored, then kept clear



Sketch shows the restored canal, illustrative and not to scale

SPONSOR
Dhaka North City Corporation (DNCC), under the Metro Dhaka programme

LOCATION
Goranchatbari drainage zone, from Mirpur to the Turag River

SCOPE
7.6 km: 2.0 km of Rupnagar Khal and 5.6 km of Baunia Khal

THE GAP
Maintenance stopped for 7 months in 2023-24 when a contract expired

FUNDING
World Bank PforR; capex about EUR 25.7M

One contract would restore the khals and keep them working for seven years

Public funders
World Bank PforR, through LGD

- World Bank refunds government against verified results
- LGD passes the funds to DNCC
- No private money goes into the deal

Funds →

Contracting authority
DNCC

- Clears encroachments and keeps the boundary clear
- Gives access along the canals
- Pays construction milestones, then the O&M fee
- Shares the risk of upstream dumping and heavy rain

Payments →

← **Works and service**

One contractor
Civil contractor with canal experience

- Desilts and restores 7.6 km; builds banks, walkways and two trash rakes
- Maintains the canals for 7 years, then hands them back

O&M fee depends on results: desilting done, trash rake uptime, flow capacity kept

tendering waits until encroachments are cleared

EUR 25.7M
capex: Baunia EUR 18.9M, Rupnagar EUR 6.8M

EUR 0.51M
O&M a year; EUR 3.6M over 7 years

EUR 29.3M
total cost over 7 years

7 years
operating term, plus 3 to 5 more if targets are met

EUR 0
private capital: the state pays all capex

O&M costs are author assumptions to be validated

Pilot 4: Jamuna dredging would pay for depth held, not sand moved

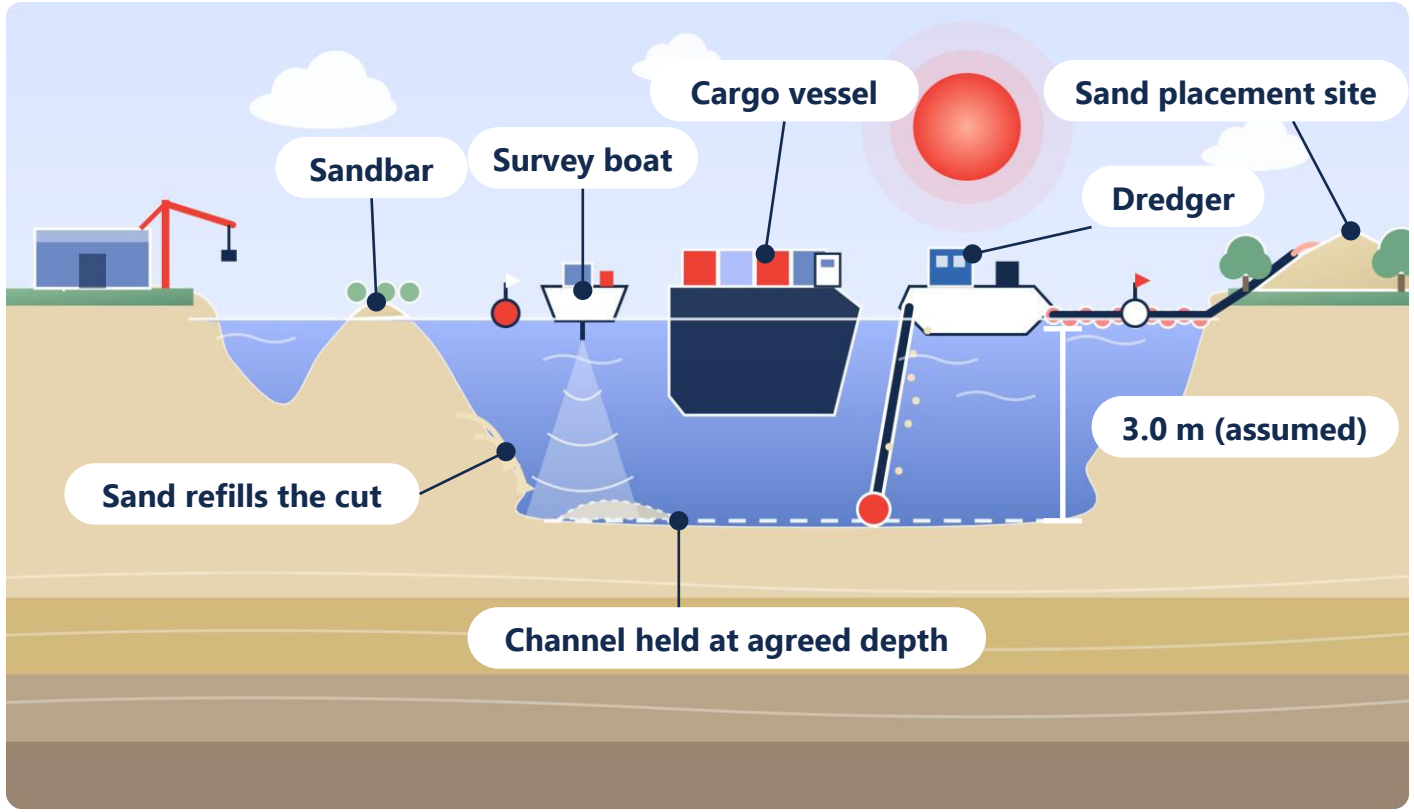


illustration is schematic, not to scale

SPONSOR

BIWTA, the inland waterways authority, is the proposed contracting authority

LOCATION

Jamuna River, 250 km from Daikhowa to Aricha

THE RIVER

Carries 500-650M tonnes of sediment a year; channels shift fast

CHANNEL (ASSUMED)

3.0 m deep and 76 m wide; no appraisal sets a standard yet

STATUS

The World Bank project that would fund it is not yet appraised

One service contract would pay the dredger for keeping the channel open

Public funder
World Bank Jamuna project 2

- Funds the contract from public money
- Not yet appraised, so scope and cost are indicative
- No private capital apart from the contractor's own fleet

Funds →

Contracting authority
BIWTA; its first contract of this type

- Secures sites for the dredged sand before tender
- Provides the baseline river survey
- Pays as each river section reaches the depth, then a service fee
- Takes liability for flood events beyond agreed limits

Payments →

← **Works and service**

One contractor
International dredging contractor

- Dredges the first 10-30% of the reach in a two-year campaign
- Holds the agreed depth for 7 years, guided by surveys

Pay depends on the share of time the depth is held, not on volume dredged

EUR 22-66M
first campaign, covering 10-30% of the reach

EUR 23.2M
service fee a year for the 250 km

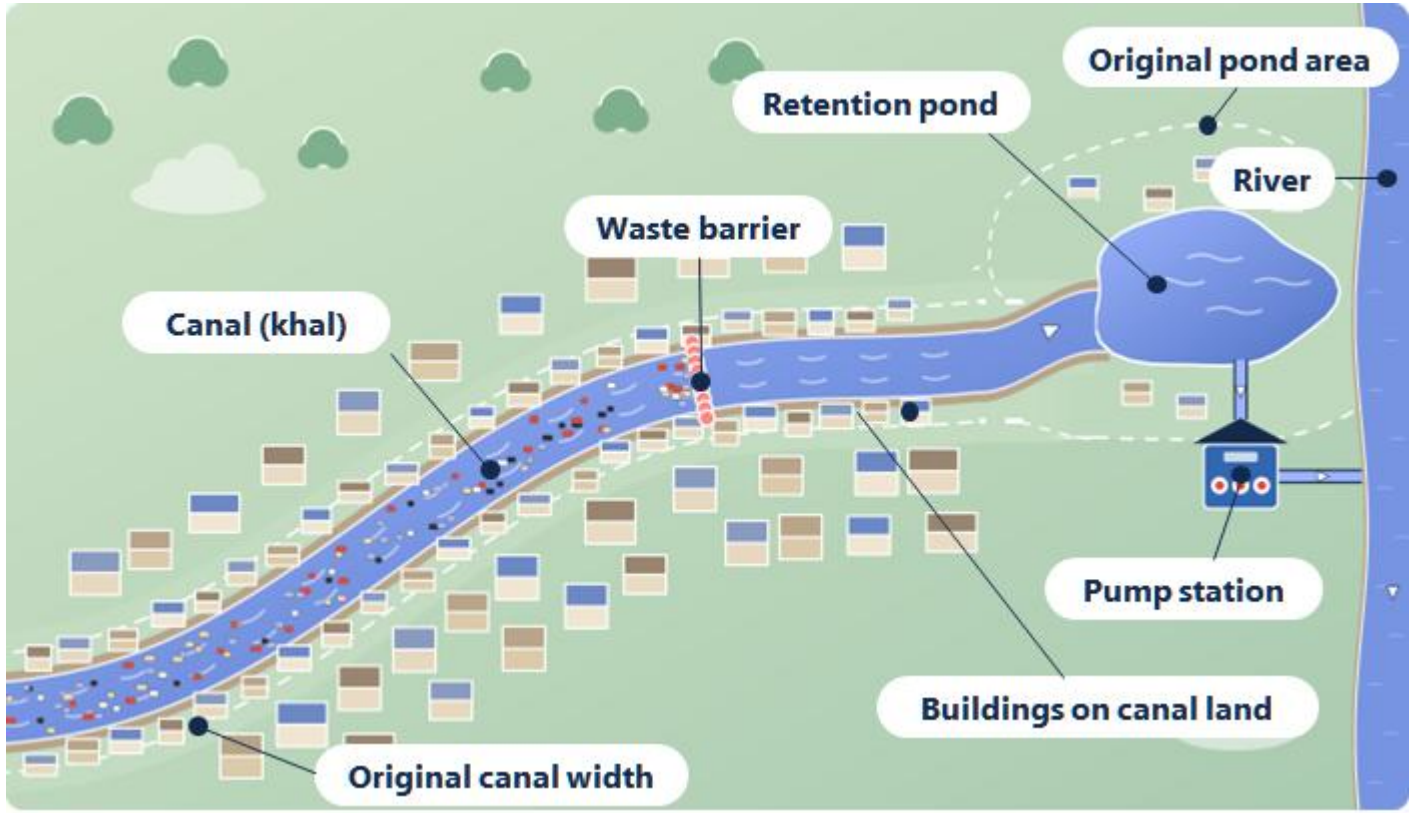
EUR 206M
7-year total at a 20% campaign; range 184-228

7 years
term; the campaign runs in years 1 and 2

US$4.50
per m3, median of South Asian contracts

costs are indicative, drawn from awarded contracts in Bangladesh and India

Pilot 5: Kallyanpur's flood drainage can be rebuilt only once land is cleared



SPONSOR
DNCC is the executing agency; Dutch government support is proposed

LOCATION
Kallyanpur, Dhaka North: drains an area of 1.5 million people

SCOPE
Five main canals, a retention pond, a pump station and waste barriers

THE PROBLEM
98% of canal-side land is encroached; the pond shrank from 95 to 18 ha

FUNDING
Government-to-government grant and soft loan; capex EUR 121.7M

Source: illustrative and not to scale

One contract would rebuild and run Kallyanpur's drainage for 15 years

Public funders
Government-to-government

- Grant and soft loan proposed in the project proforma
- Dutch government support is proposed
- No private money goes into the deal

Funds →

Contracting authority
DNCC

- Clears the canal and pond land before tender
- Keeps new encroachment out
- Pays construction milestones, then the O&M fee
- Takes liability for storms beyond the design level

Payments →

← **Works and service**

One contractor
Civil, pump and waste partners

- Restore canals, expands pump and pond, installs waste barriers
- Runs all four for 15 years

O&M fee depends on results: pump uptime, storage kept, barriers working, re-encroachment reporting

No private capital; tendering waits until DNCC has cleared the canal and pond land

EUR 121.7M
capex: canals, pump and pond

EUR 3.3M
O&M a year; EUR 49M over 15 years

EUR 171M
total cost over 15 years

15 years
operating term, as costed

98%
of canal-side land is encroached: clear it first

Source: Based on the PDPP

Assessment of the identified pilots on PPP suitability parameters

		1 Dyke and solar	2 Interceptor	3 Rupnagar-Baunia	4 Jamuna dredging	5 Kallyanpur
1	One contracting authority	●	●	●	●	●
2	Clear asset ownership and boundary	●	●	◐	◐	◐
3	Authority can afford the payments	●	◐	◐	◐	◐
4	Authority can legally sign the contract	●	●	●	●	●
5	Asset condition baseline available	●	●	◐	◐	◐
6	Performance can be set as KPIs	●	●	●	●	●
7	Flood and storm risk can be contained	○	◐	○	○	○
8	O&M big enough to attract bidders	●	◐	●	●	●
9	O&M cost benchmarks available	○	○	◐	●	◐
10	Project generates useful data	●	●	●	●	●
11	Can be replicated and scaled	●	●	●	●	●
12	Three or more qualified bidders	●	●	●	●	●
13	Dutch business can take part	●	●	●	●	●
14	Precedents in the region	◐	●	◐	●	◐

● Fully met (1 point) ◐ Partly met (0.5) ○ Not met (0)

Recommended sequence

1	**Get one legal ruling covering all five projects** Ask the PPP Authority (now Invest Bangladesh) in a single request whether these contracts fall under the PPP framework or normal procurement. The answer sets the approval route and timeline.	First
2	**Take the Dhaka interceptor to full feasibility** Best mix of public benefit, scale and deliverability. Build local cost estimates, survey outfalls and flows, size a bundle of interceptors, plan payment security and test the market.	Priority
3	**Build a standard performance dredging contract** Use Jamuna as the reference case, not the first application. Test the template on one or two calmer river sections, with independent depth checks.	Template
4	**Move the solar dyke forward in parallel to the interceptor and dredging projects** Settle who the contracting authority is (BWDB is likeliest) and confirm by survey that the crest and slopes can carry the panels.	In parallel
5	**Begin preparations for the two canal projects** Do not tender until the city corporation has cleared encroachments and contractors confirm interest. Meanwhile map encroachments and gather cost data.	Prepare

Six institutional moves would turn one-off pilots into a pipeline

1 Set an asset management strategy

Screen assets against clear criteria for suitability to performance contracting, then use the screen to build the pipeline.

2 Build capacity where the mandate sits

Training, embedded experts and standard templates for the institutions that hold the mandate.

3 Design products that secure payments

Financial products that secure the payment obligations of the public counterparts.

4 Reform the PPP enabling framework

The PPP Authority has recently merged into a new organisation. Now is the right time to change the framework.

5 Pool DFI funds into a platform

Use DFI funds to build a blended finance platform for these projects, not grants or cheap loans to single programmes.

6 Use the Dutch-Bangla G2G platform

Incubate a couple of the proposed PPP projects through the government-to-government platform.

Dutch institutions can back each of the six moves with existing instruments

	Institutional move	Dutch support option	Dutch actors
1	**Asset strategy and pipeline**	Fund baselines, feasibility and site studies for the screened assets	Deltares, Haskoning, Ecorys, Witteveen+Bos, IHE Delft, Rebel
2	**Capacity in mandated institutions**	Grant-funded knowledge partnerships and embedded experts	EKN through SNV, World Water Partnership, VEI, Rijkswaterstaat
3	**Products that secure payments**	Technical assistance to design products that secure payment obligations	EKN, Invest International
4	**PPP framework reform**	Policy dialogue following PPP Authority recent merger	EKN, Partners for Water
5	**DFI platform for blended finance**	Fund-level patient and subsidized capital, not project-by-project grants	FMO, Climate Fund Managers
6	**Dutch-Bangla G2G platform**	Incubate a couple of the projects. A G2G grant and soft loan is already proposed for Kallyanpur, unconfirmed	G2G channel; Dutch US$6.0M Jamuna grant intended

Options for consideration, not confirmed instruments

LET'S TALK



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