Engagement with CSE since 2011

Reflection in field

Mainstreaming RWHS at Industry for production - 2019

DEWATS, 2012

Received Training on Urban Wastewater and Rainwater Management

Received Training on Tools & Approaches for CWS Management from CSE, 2018. Held at India

RW-convention in 2012. CSE is one among other organizers

Training facilitated by CSE and organized by WaterAid in 2011
Mainstreaming Rainwater Harvesting System in Industry for production purpose: Bangladesh

Zahid Hossain
Consultant-WASH, UNICEF
250 to 300 litres water needs for 1 kg cloth washing and dyeing according to PaCT (IFC), which is equivalent to daily water use for 2 people (Restiani, 2016)

RMG & Textile sector consuming 1500 billion litres of groundwater annually. (It was published on 2014 by a survey, was conducted by Netherland and Bangladesh Government)
Groundwater depletion

Groundwater table depletion rate is 1-2 meters every year due to huge water withdrawing against recharge.

Sources: CIMMYT-Bangladesh on 2014 under USAID funded research project
Why Rainwater Harvesting at RMG & Textile sector?

- Average rainfall 2000 mm at Dhaka and surrounding
- Country’s rainfall 1500 to 4000 mm, average 2000 mm
- Rain pattern changing and unpredicted

Source: Bangladesh Agriculture Research Council
WHY RAINWATER HARVESTING AT RMG & TEXTILE SECTOR?

- Considering the roof top as catchment area of factories under RMG and Textile sector (6850 factories including 4560 textile, average catchment area 8000 sqm). Source: BGMEA and BKMEA

- 90 billion litres of rainwater could be harvested annually

- 90 billions litres equivalent to 336 core Taka or 40 million US $ annually (38.37 Tk per cubic meter water) (1$ = 84 BDT)
WHY RAINWATER HARVESTING AT RMG & TEXTILE SECTOR?

- Hardness free or less than 5 mg/l - water is essential for wet processing purposes, so groundwater treatment is essential in this regard (10 BDT is needed for 1 cubic water water), but in case of rainwater – no need.

- Rainwater has been storage into tank under gravity flow whereas energy and technology need for groundwater extraction.

- Solving Waterlogging problem emerging due to climate change.
Rainwater Harvesting at Factory, Case study-1

Next Accessories Ltd

Underground recharge pit

Storage tank

Filter tank
Filter Tank and Storage Tank
Groundwater Recharge

Fig.: Cross Section of Recharge Well with Desilting Chamber.
Rainwater Harvesting at Factory, Case study-2

Fakir Fashion Ltd

Campus A

Campus B

Campus C

Plan for Filter & Storage

Inlet (Rain comes from roof)   Outlet (Filter water goes for uses)

Water reservoir

Filter

Number of drawing: 1

Design & Drawing by WaterAid Bangladesh

Scale: mm

Filter and Storage Design
Rainwater Harvesting at Factory, Case study-2

Pic: Catchment, Pipe networking and Storage

Collector pipe

Fakir Fashion Ltd

Roof

Pipes come down from roof

Filter tank (underground)
Rainwater Harvesting at Factory-Case study-4

Epic Garments Manufacturing Company Ltd (EGMCL)

Pic 4: Catchment, Pipe networking and Storage
Catchment and Harvested rainwater-4 factories

NAL - Next Accessories Ltd
FFL - Fakir Fashion Ltd
MKML - Metro Knitting and Dyeing Mills Ltd
EPIC - Epic Garments Manufacturing Company Ltd

**Fig 4: Catchment Area for RHS**

To be used in future for RWHS
Using for RWHS

**Fig 5: Annual Rainwater Harvesting**

Opportunity for harvesting rainwater
Harvested rainwater
Calculation: Value for money and ROI
Return on investment for RWHS is high

Reducing dependency on groundwater, eventually contributing to environmental sustainability

Controlling water logging in factory causing by heavy rainfall due to climate change

Helping for getting score for LEED certificate as well as helping to meet other compliance
Thanks