

# A rapidly deployable Aerobic Faecal Sludge Treatment System

History and experiences from Bangladesh to the German Ahr Valley



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# Agenda:

- Short introduction
- Tsunami – deployment, „bloody diarrhea“ incident (2005)
- Literature and technological gap (2006)
- The concept (2006 – 2014)
- 2018 Bangladesh (Alpha) to 2022 Ahr Valley (Easy)
- Erection of the temporary systems
- Operation of the temporary systems
- Abilities, limits, scenarios
- Video links

# Short introduction

- Dipl.-Ing. chem., specialized on water treatment
- Nalco, Kärcher, Blücher, self employed, limited company
- EWB-GER since 2004, president 2016 - 2022
- Reservist Officer German Armed Forces
- Tsunami – deployment SEA 2005 – 2006 (THW)
- Tansania, Uganda, Malaysia (GRC, EWB-GER)
- Bangladesh 2017 – 2021 (IFRC)
- Ahr Valley since July 2021 (GRC)

# 2005 North – Sumatra / Indonesia



## Literature in 2006

- Tansania: Married men – mothers in law
- Religion: Backsides of latrines facing Mecca
- Gender: m / w / d
- Disability: Grab handles
- Feng Shui: Suitable color selection
- Wastewater: „Has to be discharged“

# The theoretical concept

- Screen: Coarse mesh
- Prim. Clar.: Conical round steel tank with liner
- Activ. Sludge: Surface aeration + Mixing
- Sec. Clar.: Conical round steel tank with liner
- Parasiten: Particle filtration
- Desinfektion: Chlorine and/or UV
- Schlamm: Digester / lime



# 2018 Bangladesh (Alpha)



# 2018 Bangladesh (Alpha)





# 2020 Bangladesh (Bravo) / solar



# 2020 Bangladesh (Bravo) / solar



# 2021 Mayschoss / Ahr Valley (Charlie)



# 2021 Honningen / Ahr Valley (Delta)



# 2021 Altenahr / Ahr Valley (Easy)



## Erection temporary systems

- Mayschoss: 3 days ground preparation  
8 days time to ready for operation
- Hönningen: 3 days ground preparation  
8 Tage Bauzeit bis Betriebsbereitschaft
- Altenahr: 5 days ground preparation  
7 days time to ready for operation

# Operation temporary systems

- Bangladesh:                    2 – shifts manual operation  
no electronic process control  
operation since 2018
  
- Ahrtal:                            main operation:                    2 visits / week  
3. step:                            PLC - control

## Abilities and limits

- Max Capacity: 2.500 PE per line (Deutschland)  
15.000 PE per line (Bangladesh)
- Manpower erect.: 8 people
- Erection time: app. 14 days until ready
- Manpower op.: visual inspection only  
annual maintenance
- Energy require.: app. 10 kW per 1.000 PE
- Effluent: Beats German regulations



## Video links

- IFRC (3 min)

<https://twitter.com/ifrc/status/1461570179909836806>

- First setup (10 min)

[https://youtu.be/EkvzrHI8\\_Rg](https://youtu.be/EkvzrHI8_Rg)

- News Magazine „Der Spiegel“

<https://www.spiegel.de/panorama/flutkatastrophe-im-ahr-tal-um-100-jahre-zurueckversetzt-a-139320de-922f-4a61-bef2-2d4d847564f5>

- Commercial video manufacturer

<https://youtu.be/2pZVhMUDgdQ>

**Thank you for your attention!**



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