

# THE FAECAL SLUDGE FIELD LAB

## putting the cart before the horse

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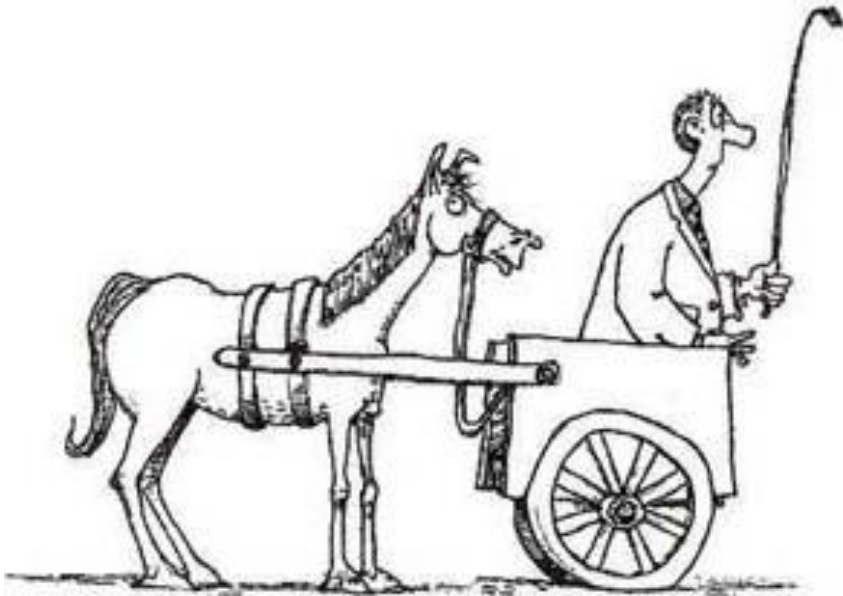


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# Unusual approach...



<https://medium.com/the-telegraph-engineering/putting-the-cart-before-the-horse-5e4f4b2dd1>



<https://kylecrooke.com/do-put-your-cart-before-the-horse/>

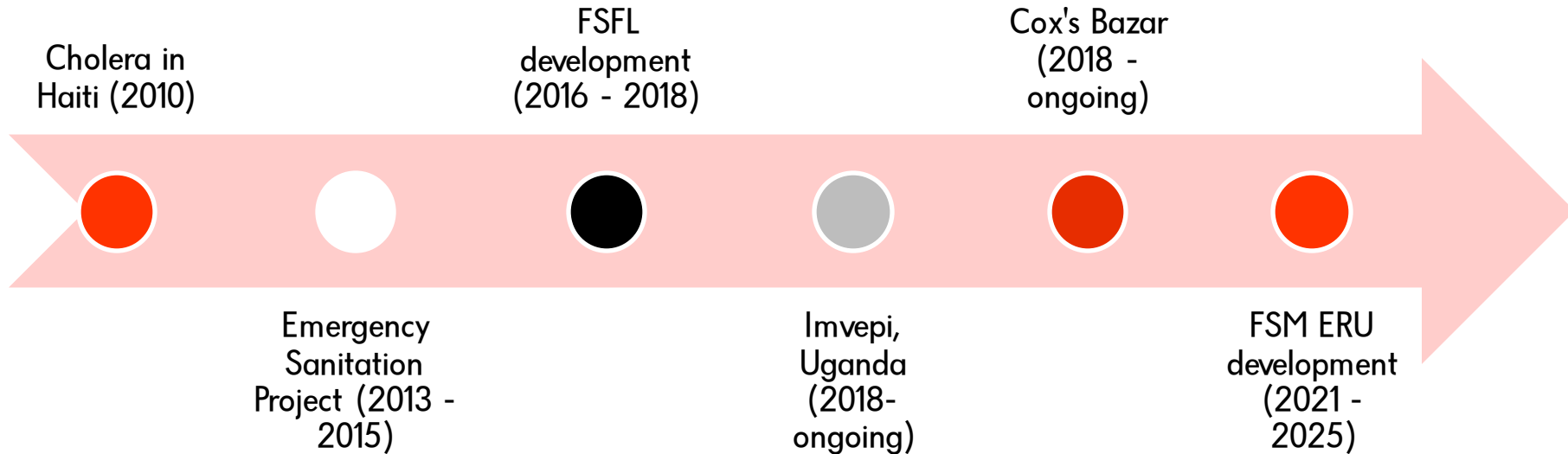
## ...but it worked!



## Today we would like to share with you:

1. a short history of the FSFL & where we are now
2. an overview of the FSFL components
3. stories from our labs in Malawi, Cox's Bazar, Uganda, Spiez & with Veolia foundation

# History of eFSM in the RCRC movement



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# Cholera in Haiti (2010)

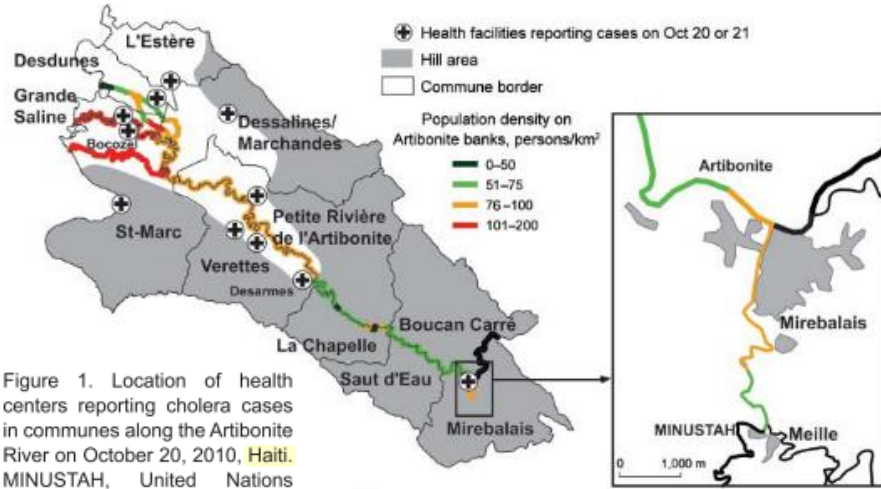
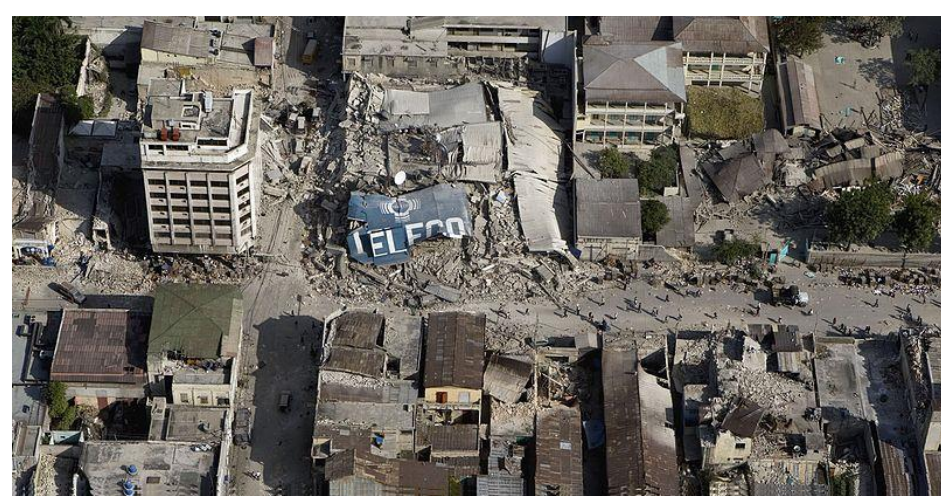
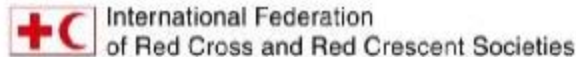


Figure 1. Location of health centers reporting cholera cases in communes along the Artibonite River on October 20, 2010, Haiti. MINUSTAH, United Nations Stabilization Mission in Haiti.



# Emergency Sanitation Project (2013-2015)

- collaboration to increase the global understanding of current and future emergency sanitation and to propose new concepts and modular technologies for safe excreta disposal in emergency settings that are applicable in a variety of situations
- focus on toilet design, onsite treatment, emptying & desludging and centralized excreta disposal



# FSFL development (2016-2018)

- development of FS field lab with academic & industrial partners and practitioners
- field testing of developed prototype in Malawi
- dissemination & training through follow-up project





# Imvepi, Uganda (2018 - ongoing)



# Cox's Bazar (2018 - ongoing)

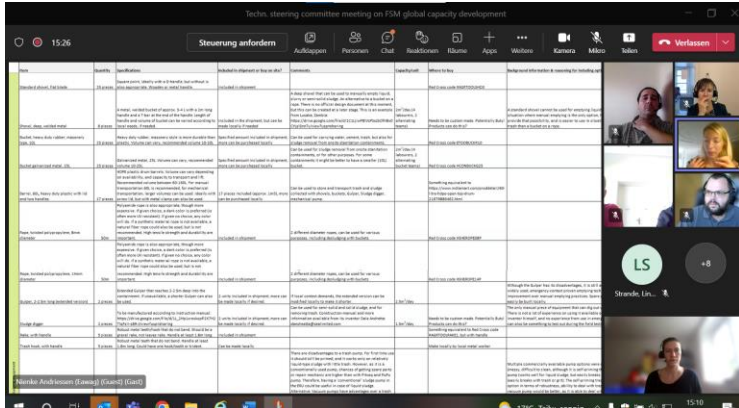
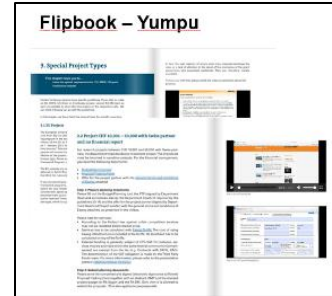
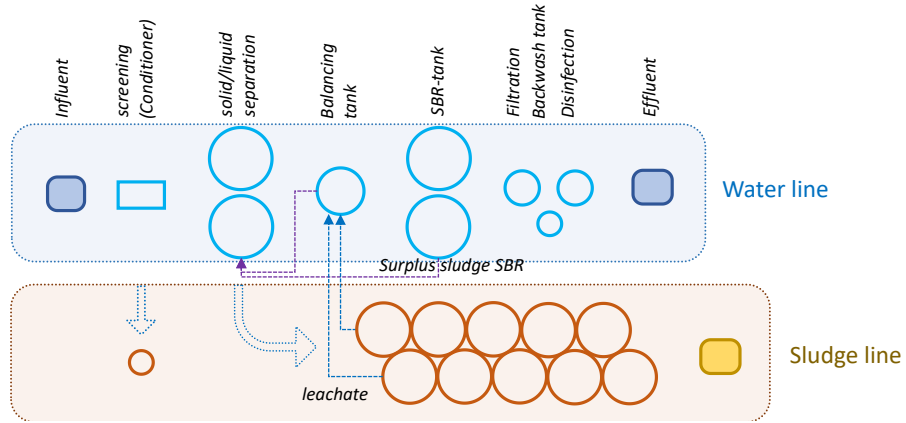
- 1st eFSM implementation
- 200 – 400 small FSTPs
- various analysis activities (no coordinated standards)



# FSM ERU development (2021 - 2025)

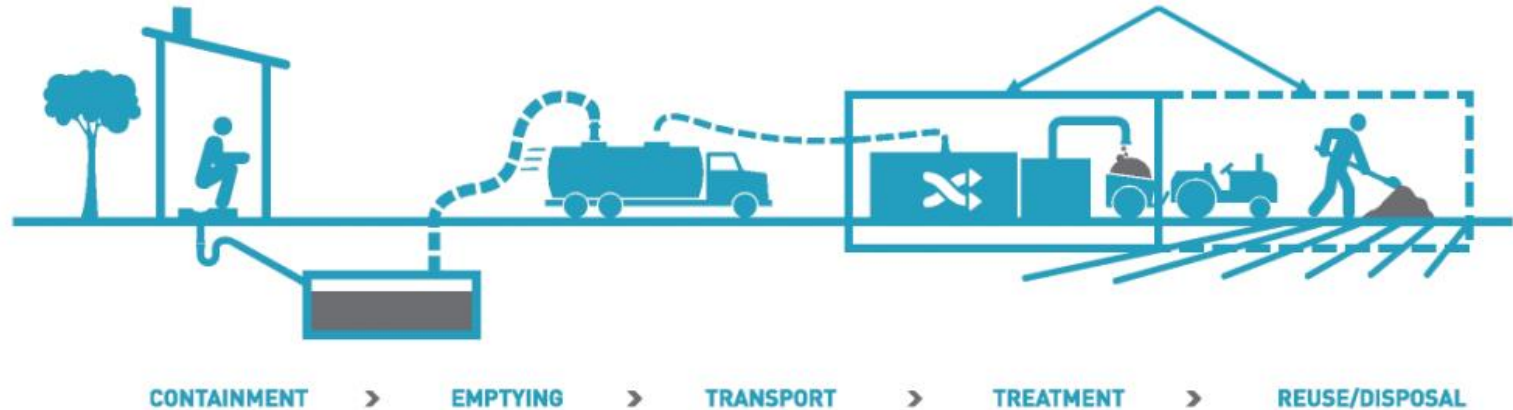


Co-funded by the European Union



# Faecal Sludge Management Service Chain

## Sanitation Value Chain



**Core tasks**

**Additional tasks**

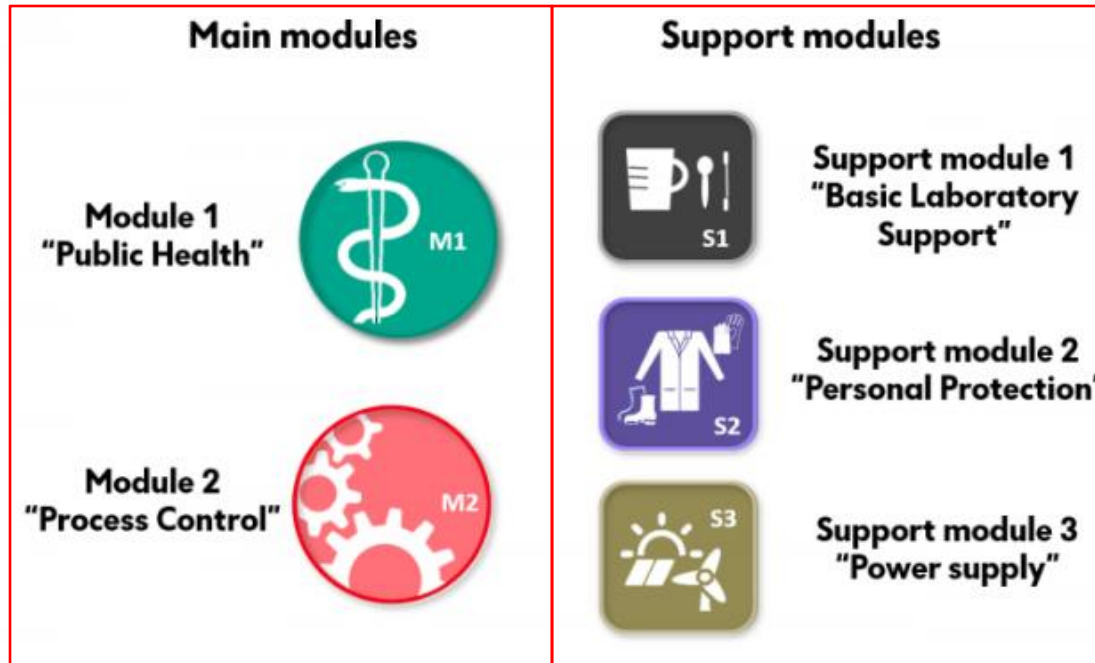
- Laboratory services
  - On site
  - Close in-time
- Development of a whole laboratory (≠ lab kit)



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# The FS field laboratory

- Appropriateness - comparable results to a standard lab
- Applicability - must work in the field
- Affordability - cheaper than standard solutions
- Mobility - must fit in a Toyota Landcruiser



All Faecal Sludge Field Laboratory Modules



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# Main modules – 2nd layer of modularity

## Public health

- Bacteriological indicator organisms
- Helminth ova

## Process control

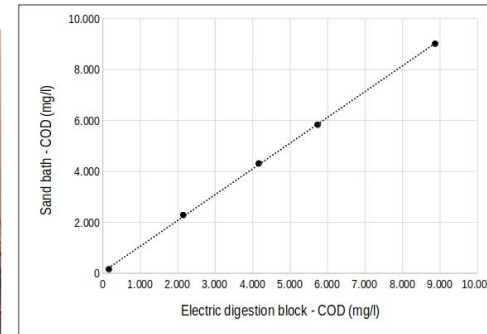
- Wide range of treatment processes
- From pH – meter to COD to Nitrogen species to TS



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# Adapted equipment

- Price
- Robustnes
- Electricity demande



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# The FS field laboratory – story time





# Deployments

- 2017 – 2019: Waste, Malawi
- 2019 – ongoing: IFRC/BDRCS, Cox's Bazar
- 2021 – 2022: GRC, Ahrtal
- 2022 - ongoing: URCS, Imvepi FSTP



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# FSFL adaptations

- Veolia Foundation
- Swiss Humanitarian Aid
- Médecins Sans Frontières



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# Current developments

- Publication of the FSFL Manual for Laboratory Technicians, Version 2022
- 2022 Update Equipment list
- Faecal Sludge Field Laboratory Information Management System
- Open source development: Attribution-ShareAlike 4.0 International (CC BY-SA 4.0)



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# Questions? Interested?

Please check out [www.faecalsludgefieldlaboratory.com](http://www.faecalsludgefieldlaboratory.com)  
or contact us through [fsm@redcross.at](mailto:fsm@redcross.at)



Thank you for  
your attention!

