Sustainability Assessment of Productive Sanitation in IDP Emergency settlements

Case study South Darfur, Sudan

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Research objectives

**Goal:** investigating the feasibility of productive sanitation in the South Darfur emergency settlements

- Review the productive sanitation systems (PSS) currently utilized in emergency context and their performance, and challenges.
- Identify the sanitation Situation services currently applied in South Darfur IDP’s settlements based on bellagio principles.
- Identify the possible sustainable productive sanitation options for Ottash and Kass camps.
Social and technical data collection
Current service quality
Current service quality
After the latrine is full
Trying dry sanitation
Sub Stream Collection and Measurements
Grey water collection
Experiments

Constructed wetlands
HSSF technology
Recycled water quality
Making Biochar (Biofuel)
Opportunity VS Challenges

- Creating income for members through sanitation business.
- Safely collect the waste and reduce public health risk.
- Prolong the latrine lifecycle.
- Positively contribute to transition from relief/recovery phases to development.

- Low technical capacity at the state level.
- IDPs communities highly depended on aid; result of supply lead approach.
- Community lack of awareness regarding health risk associated with untreated waste.
- The community participation could limited by the selected design (e.g. plastic sheet VS local material).
### Agenda Item

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<tr>
<th>Agenda Item</th>
<th>Discussion/Decisions</th>
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<tr>
<td><strong>5. Sustainability Assessment of Productive Sanitation in IDP Emergency settlements - Case Study – Weni Modawi</strong></td>
<td>The presentation has acquired big interest from the WASH Partners, welcoming the idea and seeing it going in line with the sector strategies, highlighted particularly in: Increasing the sustainability of the sanitation services, and Working on the accountability of the household falling within the sanitation premises in range. Find the presentation <a href="#">here</a>.</td>
<td>The presenter has received two comments raised in question, by the end of her presentation: The first one from the Health Ministry (ESP), where the focal point was to include some of her research’s data on an upcoming health national plan. And The focal point of the second comment, addressed by ADRA Sudan asked whether the researcher has managed coming up with solutions for the desludging of pit latrines, and how the new management scheme is going to tackle the user’s accountability. The presenter, in response, welcomed the ESP focal point suggestion and stated how she’s looking forward to cooperate and assist. As for ADRA Sudan, she proposed a Urine diverting latrines with double pit, as a solution for the desludging obstacle of the pit latrines; since this option increases the pit’s life time, plus turning the feces to compost, which is a benefit to the latrine owner. In addition, the presenter believes that by looking at sanitation as a business end user of the waste will be interested to collect faecal matter as well as sanitation service beneficiaries has to pay minimal/affordable fees to feel comfortable.</td>
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Thank you
Offsite Treatment and Reuse

Public sanitation

- Public sanitation
- Emptying
  - CE1. Manual
  - CE2. Mechanical
  - CE3. Motorized
- Transport
  - CT1. Motorized
  - CT2. Animal powered
- Treatment
  - T1. Co-composting
  - T2. Co-digestion
  - T4. Biochar production
- Use & application
  - D1. Aquaculture
  - D2. Electricity production
  - D3. Briquette processing

Household ➔ Monthly fee ➔ Community entrepreneur

- Vulnerable population ➔ No fee

Private enterprise ➔ Subsidized Emptying fee ➔ Government authority

- Government authority ➔ Discharge license ➔ Full Emptying fee ➔ Purchase price

- Micro-franchise/ Micro-consignment ➔ Tax
Onsite Treatment and Reuse
Public sanitation

Covered Household → Monthly fee → Micro-franchise/ Micro-consignment → Purchase price

Vulnerable population → No fee → Government authority → Tax

Public sanitation → Treatment → Use & application

P1. Agricultural product
P2. Electricity
P3. Briquette
SE1. Restaurant or leisure centre
SE2. Laundry business

Government authority
Tax
Household sanitation

Household technology → Household Treatment

- T1. Co-Composting
- T2. anaerobic treatment
- T3. Alkaline stabilisation
- T4. Sludge drying technologies
- T5. Prefabricated Constructed wetlands
- T6. Lava filter systems
- T7. Solar disinfection of effluent

Household Treatment → Use & application

- D1. Aquaculture
- D2. Compost
- D3. non potable water use

Use & application → Community entrepreneur (Household)

- Reduce consumption
- Market contribution

Community entrepreneur (Household) → Micro-franchise / Micro-consignment

- Purchase price

Micro-franchise / Micro-consignment → Government authority

- Tax

Government authority