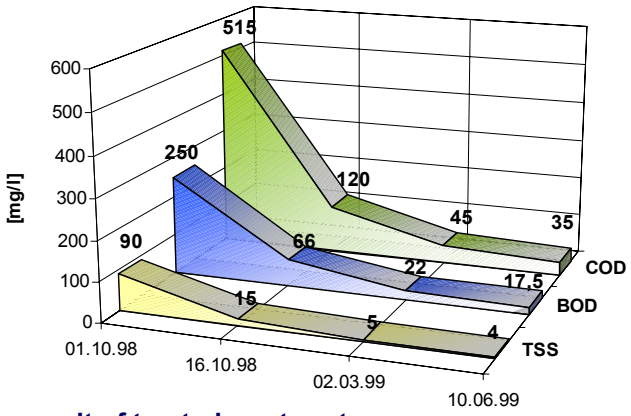
Effluent Laboratory Test Results

Reduction of Pollution Load in the first six month



Laboratory result of treated wastewater

No	Parameter	Satuan	Kadar Maks.	Hasil Analisa		Reduksi
				Inlet	Outlet	
1	Suhu	C	<30	-	-	-
2	BOD	mg/l	30	57	28	50,88%
3	COD	mg/l	80	138	46	66,67%
4	TSS	mg/l	30	44	13	70,45%
5	NH^3 bebas	mg/l	0,1	0,37	0,09	75,68%
6	PO^4	mg/l	2	5,7	2,42	57,54%
7	pH	6,0 - 9,0		7,48	7,45	-

Note: BOD: Biologycal Oxygen Demand, COD: Chemical Oxygen Demand, TSS: Total Suspended Solid, NH3:Amoniak, PO4: Phosfat

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CBS - dewats

Community Based Sanitation

Appropriate Wastewater Treatment System for Communities, Small and Medium Enterprises

BORDA

Bremen Overseas Research and Development Association

Overview

Appropriate wastewater treatment for communities, small and medium enterprises

dewats project aims to support communities & SME in planning, designing, and constructing of effective, efficient, and cost-efficient appropriate wastewater systems based on a modular, partly standardized technical design.

dewats technology applications provide state-of-the-art technology at affordable prices because most of materials/input used for construction are locally available.

The advantages of *dewats* technology:

- Providing treatment for both, domestic and industrial wastewater.
- Providing treatment for wastewater flows from 1-1000 m^3 per day
- Reliable and long lasting applications, tolerant towards inflow fluctuation
- Do not require sophisticated maintenance
- Low maintenance cost
- Wastewater pollution reduced by up to 90 %
- Ground water is not polluted
- Biogas production
- Long desludging intervals

Due to these advantages, ***dewats*** technology is an effective, efficient and affordable solution for community wastewater treatment.

Technology

Integrated moduls of decentralized wastewater treatment system

Sedimentation bio digister

- Optionally constructed and integrated with 'Baffle Reactor'
- Brick construction, fully waterproof, and air-tight plastering
- Biogas produced as renewable energy source
- Functioned as settler for 'Black Water'

Baffle reactor and anaerobic filter

- Anaerobic degradation of suspended and dissolved solid based on up-flow principle
- Simple, durable, easy to maintain
- Underground construction, little permanent space required
- Effective, efficient

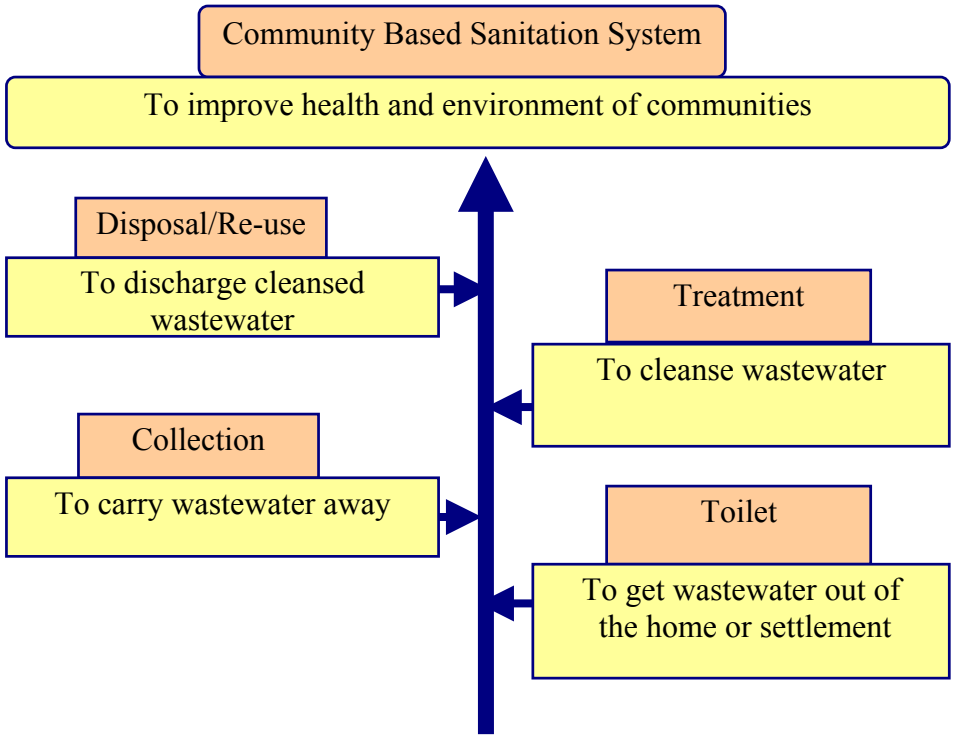
Horizontal sand filter

- Aerobic-facultative-anaerobic degradation of dissolved and fine suspended solids
- Pathogen removal
- No wastewater above ground
- No nuisance odor
- High treatment efficiency

Aerobic ponds

- Aerobic degradation
- High pathogen removal rate
- Simply constructed
- Naturally & environmentally reliable in performance
- Provide possibilities for pleasant landscaping

Purpose of CBS - Components



Implementation

The participatory approach defines the implementation steps of *CBS*

1. Community participatory assessment (CPA)

CPA assists community in planning and in finding out the suitable sanitation system.

A sustainable sanitation system which efficiently - effectively functioning, can be gained when it reflects the community choice and meets their needs.

2. Survey / transect walks

Survey / transect walks by communities together with ***dewats*** experts.

It collects first hand information about all important aspects related to wastewater, site condition, existing sanitation system and its culture.

3. WWTP construction

Construction is the most important part in ***dewats*** wastewater treatment plant (WWTP).

Wastewater discharged is treated appropriately in this section.

4. Households connection

Households connection constructed for connecting wastewater resulted from toilets, washing rooms, and kitchen to sewage line of ***dewats*** wastewater treatment plant.

Informed Choice Catalogue

Benefits

- Helps to identify suitable sanitation options
- Facilitates the assessment of different sanitation system components with regard to stakeholder preferences
- Powerful tool for technical bottom-up planning
- Reference to get overall information about technical options at a “glance”

Why ?

- It is proven that community-based sanitation systems are significantly more sustainable, e.g. have a longer lifetime, function more efficiently and are better maintained, if they fully reflect preferences of communities and local stakeholders

Structure

- The SANIMAS-ICC informs about major component options of sanitation systems – Toilets, Collection System, Treatment System and Disposal/Re-use.
- Within the “Technology Sheet”, design and function of presented technical options are described briefly
- Within the “Evaluation Sheet” technical options are assessed with the help of various criteria such as – Capacity, Costs, Self-Help Compatibility, Operation & Maintenance, Replication Potential, Reliability, Convenience and Efficiency
- Assessments made for specific options are summed up as statements which are classified as “Pro” and “Contra”
- The highly visualized lay-out encourages readers to browse through the contents

Information and Component