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NETSSAF

- Network for the development of Sustainable approaches for large Scale Implementation of Sanitation in Africa-

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Dissemination Level		
PU	Public	x
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

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INTRODUCTION

The following report includes information regarding both, technical and non-technical requirements for the large-scale implementation of sustainable sanitation in Africa. Contributions have been collected at the Mid-Term-Meeting held in Bamako, Mali, in 2007.

1. METHODOLOGY/PROCEDURE

The methodology/procedure of WP4 given in the DoW had foreseen that once the socio-economical characteristics and existing needs of typical cases have been identified in WP2 and a throughout evaluation of the sanitation technologies available is performed in WP3, an assignation of the most appropriated technology for each case will be executed in task 4.1. As a result a set of suitable sanitation options should be obtained, for which the technical and non-technical requirements were identified in task 4.2 and task 4.3, respectively.

Revision of the above stated methodology/procedure of WP4 and its respective tasks (task 4.1, 4.2 and 4.3) was first discussed amongst the work package leader (SEI) and the respective task leaders (ESCA, IEES) prior to the kick-off workshop on WP4 that was held at the NETSSAF-Mid-Term-Meeting in Bamako, Mali (June 21st to 25th, 2007). Common understanding of work package and task leaders was that revision of the methodology/procedure given in the NETSSAF project proposal might enhance the outcome of the work package. The revised methodology/procedure for WP4, as presented to, discussed and approved by the consortium of NETSSAF-partners is outlined in brief below:

It is concluded that even if “positive lists” of sustainable sanitation concepts/systems that are deemed suitable for a typical setting are prepared in all conscience at present, site-specific constraints and technologies and their respective costs may vary in future. Therefore it was decided that instead of naming a few sanitation concepts/systems that are deemed suitable for a typical setting, a methodology on how to select appropriate sanitation concepts would be prepared in task 4.1. Task 4.2 & 4.3 will compile universally valid technical and non-technical requirements for the large-scale implementation of sustainable sanitation concepts in West Africa. Those requirements will give a feed back to task 4.1. for the selection of suitable sanitation concepts.

Applying the decision support (DSS) tool, which is developed in task 4.1 and which reflects on technical and non-technical requirements compiled in task 4.2 and 4.3 will help in the evaluation of appropriate sanitation solutions in future.

2. GENERALLY APPLICABLE PLANNING STEPS

To guarantee for the successful large-scale implementation of sustainable sanitation in Africa, a wide range of technical and non-technical requirements must be met at the different levels of stakeholder involvement (e.g. the national level, regional level and local level) as well as throughout the entire term of the project.

According to and adopted from various sources such as the Household-Centred Environmental Sanitation (HCES) Approach (EAWAG 2005), “Sanitation 21 – Simple Approaches to Complex Sanitation” (IWA ????), “An ecosan Source Book for the preparation and implementation of ecological sanitation projects” (GTZ 2004) and the “Open Planning of Sanitation Systems” (EcoSanRes 2004) major phases of a sustainable sanitation project are:

1. Project start-up and launch of the planning proces
2. Creation of a demand for sanitation
3. Assessment of existing sanitary situation and settlement status:
4. Implementation of pilot-projects to demonstrate alternative sanitation concepts

5. Identification of User Needs/Priorities
6. Identification of Feasible Sanitation Concepts and Service Systems:
7. Consolidation and Finalization of Sustainable Sanitation Plans
8. Implementation
9. Participatory Monitoring and Evaluation

3. TECHNICAL AND NON-TECHNICAL REQUIREMENTS

For each of the above-mentioned project steps there is a set of technical and non-technical requirements to be full-filled to sustain the successful implementation of a large-scale sanitation project.

3.1. Definitions

3.1.1. Technical requirements

Technical requirements cover aspects such as sourcing, designing, management and logistics, installation, operation & maintenance (O&M), transformation & sanitation of products and logistics of distribution & application in agriculture or aquaculture.

Brief description of different technical aspects:

Sourcing: identification of all kind and types of sources of supply; referring not only to sourcing of (building) material (e.g. local, national or international suppliers of required sanitary wares) but also of human resources, etc.

Designing: assessing of good practice examples and adaptation of existing technologies to local needs and habits, etc.

Management and logistics: refers to management and logistic aspects of collection, treatment and reuse/disposal concept processes, and transport of (collected) flowstreams and/or sanitized end products, etc.

Installation: requirements referring to the installation of the collection, treatment and reuse/disposal concepts, etc.

Operation & maintenance: O&M aspects of the collection, treatment and reuse/disposal concepts, etc.

Transformation & sanitation of products: requirements referring to the transformation (processing) and sanitation of flow streams, etc.

Logistics of distribution and application: logistical aspects of distribution and application of sanitized flowstream(s) (applicable only if flowstreams are recovered for agricultural or aqua cultural activities after sanitization), etc.

Monitoring & evaluation: control of the functioning of the “whole” system (project) and its assessment for corrective actions, etc.

Technical training of involved persons: To make sure the operation and maintenance is being done properly.

3.1.2. Non-technical requirements

Non-technical requirements cover stakeholder aspects, financial aspects, economic aspects, environmental aspects, legal & institutional aspects and training, education & dissemination.

Brief description of different non-technical aspects:

Stakeholder aspects: focus is on all involved stakeholder groups and their awareness, needs and priorities in terms of sanitation

Financial aspects: requirements referring to the financing of large-scale implementation of sustainable sanitation systems/projects

Economic aspects: focusing on the collection, treatment, distribution and application of all relevant flow streams, including reuse aspects for energy and food production

Environmental and health aspects: refer to environmental and health issues of the sustainable sanitation project

Legal & institutional aspects: aspects that help in the establishing of an enabling legal & institutional environment

Training, education & dissemination: requirements referring to training, educational & dissemination aspects of sustainable sanitation projects

Please note that the following list of technical and non-technical requirements is of indicative purpose only and may change in time and space.

3.2. List of requirements

3.2.1. Technical requirements

Sourcing:

Survey on and identification of manufactures/suppliers of sanitary wares

Survey on and mapping of existing sanitary infrastructure

Provision of required building material

Provision of required manpower for implemenation

Acquisition of relevant documents on national politics and plans

Identification of key actors to build a team to set up the project conception

Identifying potential (international/national/regional) suppliers of sanitary wares (It is essential to know where the technical components can be purchased and who the potential suppliers are)

Assessment of existing standardised devices

Designing:

Survey on and identification of good practice examples in sustainable sanitation

Compiling design parameters from good practise examples

Derive a standard design for relevant collection/treatment and reuse/disposal facilities (To allow for the large-scale implementation of sustainable sanitation projects, standard designs for relevant collection, treatment and reuse/disposal technologies/facilities have to be derived)

Managing:

Survey on the availability of technical experts

Elaborate a user guide

Set up channels of communication between users and systems providers

Logistics:

Plan for transport and reception of building materials (To avoid bottlenecks)

Installation:

Selected system designs and related documentation

On site construction management

Survey on the availability of technical experts

Operation and maintenance:

Survey on and identification of successfully established O&M schemes

O&M manual (To allow the proper O&M)

Transformation and sanitation of products:

Survey on and identification of possible successful experiences in transformation and sanitation of products

logistics of distribution and application:

Survey on and identification of existing distribution and application schemes for sanitized flowstreams and non-sanitized sanitation flowstreams

Establishing a reliable logistics system for distribution and application

Scheme for successful distribution and application (To get to know all distribution logistics once the products are ready)

Contact potential end users (To know who is going to buy/use the products)

3.2.2. Non-technical requirements

Human aspects:

Survey on and identification of the kind and type of existing sanitary facilities and their effect on the health of people using them.

To guarantee for the sustainability of the sanitation projects, willingness and ability of users to pay for a certain sanitation/reuse concept has to be evaluated.

Survey on and identification of organisations, institutions, etc. implementing sustainable sanitation projects

Survey on and identification of user needs and priorities in regard to sanitation issues and household size

Awareness raising and demand creation in sustainable sanitation

Trigger the participation / involvment of all stakeholders in this step (Identification of potential active stakeholders for the different project steps: conception, implementation, and enforcement and evaluation)

Putting in place a team in charge of this project phase, including key stakeholders

Trigger the participation / involvment of all key stakeholders in this step

Identification of opinion leaders such as (chefs religieux, chefs coutumiers, comedians, women and youth associations, etc.

Continue to raise awareness through workshops, media, etc.

Implication of opinion leaders to trigger participation of all (users)

Decentralization (There should be a clear distinction in roles and responsibilities. The institutions should also have a clear structure)

Recognition of need of assistance (There should be a clear need for assistance before any meaningful project can be established, as this would make the users fully involved)

International stakeholders are to stop doing their projects individually, but rather streamline to the national strategy (This makes it easy to get support from the government)

Mechanism for promoting communities participation (Decision making in the municipality has to be the priority)

Emphasizing the participation of all stakeholders, beginning at the household/neighbourhood or community level, in planning and implementing UESS (HCES, EAWAG 2005)

Guide municipal authorities and other decision makers in how to secure an enabling environment.

Responding to consumer demand

Planning, designing and implementation of sanitation concepts in consultation with stakeholders at all levels, and with their participation.

Assisting householders and neighbourhood/community leaders and organisations to determine the service level they consider appropriate and sustainable

Use initial request as a starting point to identify UESS needs and priorities. (EAWAG 2005)

Financial aspects:

Survey on existing financing mechanisms (Identification of possible micro-financing mechanisms)

Funding of sustainable sanitation concepts (Assessing different funding options (e.g. micro-credit, “village banks”, rural cooperatives, etc.) for the large scale implementation of sustainable sanitation concepts in Western Africa)

National strategies for financing (Promoting national strategies for financing sustainable sanitation in respective countries)

Private Public Partnerships for sustainable sanitation (Promoting PPPs for the large scale implementation of sustainable sanitation in West African countries)

Survey on financial situation of households (Evaluation of willingness and ability of users to pay for a certain sanitation/reuse concept)

Lobbying and fund raising

Facilitating access to micro-finance for poor people

Private sector involvment

Development of a marketing strategy

Implementing financing mechanisms and marketing strategy

There should be a national strategy and not direct financing (This ensures that all projects meet the national strategy)

Survey on innovative financing Alternatives (Identification of suitable financing alternatives: Community based financing programmes, Micro credit programme, Cost recovery mechanisms, etc.)

Economic aspects:

survey on and identification of kind and type of existing production activities (agriculture, industry, trade, etc.) (Evaluation of local economy and of reuse potentiel for productive agriculture and income generation)

Mapping out of enterprises in (water and) sanitation sector Participation / involvment of private sector in this step (Identification of potential active stakeholders from the private sector for the different project steps: conception, implementation, and enforcement and evaluation)

Analysis of benefits through safer environment, better health, job creation, enhanced agricultural productivity, promotion of SMEs, etc

Cost analysis of different options of sustainable sanitation systems (Identification and definition of objectives to be reached in terms of health and environment)

Job creation through private sector involvement

Income generation through better health and enhanced agricultural productivity (by reuse of sanitized sanitation products)

Evaluation of the project impact on the economy

Economics of scale (An increase in the production of the technical components will lead to a reduction in the production price which will lead to lower selling price. Therefore, previously expensive materials will become relatively cheaper with increase in demand)

Economic appraisal of the system on the tree levels (Marketing of the system; -Idenfication of: the real cost of the system, the willing to pay of the stakeholders)

Environmental aspects:

Elaboration of fertilizer guidelines (Setting fertilizer guidelines for sanitized flowstreams with respect to local conditions (plant fertilizer demand, soil conditions, etc.))

Survey on health and environmental concerns; Survey on and identification of kind and type of existing sanitary facilities and their effect on health and environment (natural resources) conditions (Evaluation of the current sanitation and environmental situation)

Evaluation of the installed sanitation systems on health and environment

Assessment of the potential environmental impacts of the system (Identification of impacts on : natural resources, soil fertility, energy consumption, water resources, climate change)

Legal and institutional aspects:

Political support at all levels is essential

Promoting national strategies for sustainable sanitation in respective countries

Streamlining ministries (e.g. M. o. Agriculture; M. o. Finance, M. o. Rural Development, M. o. Renewable Energy, M. o. Health, M. o. Environment, M. o. Water Resources Management, etc.)

National associations for sanitation professionals

Identification of national politics/plans for sanitation (and health and hygiene) in respective countries (How to translate the project objectives into national strategies)

Evaluation of the current sanitation management system and identification of the key actors

Development of a legal framework for the project implementation

Elaboration of fertilizer guidelines (Setting fertilizer guidelines for sanitized flowstreams with respect to local conditions (plant fertilizer demand, soil conditions, etc.))

Identification and assessment of institutions to be involved in the project implementation (Identification, definition and distribution of responsibilities)

Political commitment through engagement and involvment of governmental and other authorities

Institutional set up and implementation of the legal framework

Participation of institutions

Assessment of health regulations, environmental laws, agricultural regulations, etc., (Identification of the national, regional and local standards for the products)

Determine how the proposed programme fits within the municipality's overall UESS strategic plan, if one exists, or prepare a draft strategic plan

Change of standards which are derived from and based on those developed in industrialized countries (under conditions totally different from those applying today in developing countries) and so often being inappropriate. (Eawag 2005)

Effluent standards should be based on real local problems, instituted incrementally (start small), realistic (affordable to achieve), and enforceable.

Training, education and dissemination:

Establish network of universities/colleges

Establish co-operations with foreign universities/colleges

Translation of training material into local languages

Mapping out and identification of education and training centres (schools, universities, etc.) (Evaluation of their capacity and needs in terms of training in sustainable sanitation)

Identification and assessment of all organisations involved in the project implementation (Evaluation of skills and knowledge to be developed, and identification of means and ways for capacity building / institutional reinforcement activities)

Organisation of workshops and specialized training courses at different stakeholder levels

Installation of demonstration units/plants

Institutional capacity building

Establish network of universities/colleges

Establish co-operations with foreign universities/colleges

Translation of training material into official/local languages

Training of trainers

Dessimination of training activities

Short training courses for professionals

Short training course for professionals on the DSS

Awareness raising for end-users

Education on standard designs to professionals

Technical training of maintenance staff

Practical education of end-users

Elaborate training programmes for trainers

Review of already published information, manuals and guidelines for specific audiences and topics

Development of different forms of site specific instructional and promotional material to meet the needs of stakeholders such as participating households, neighbourhood/community organisations and leaders, small contractors (HCES, EAWAG 2005)

Integration of health education into sustainable sanitation planning to maximise benefits

Training and orientation (in some cases such as government and municipality officals this will need to take place very early on in the process, while for others it will be more appropriate later on in the process (EAWAG 2005)

Householders need to understand more about the implications of the options open to them – convenience, cost, operation and maintenance requirements of each option, support needs and support availability, appropriate and sustainable hygiene practices, and so on.They will also need appropriate training to be enabled to exert quality control over local builders and contractors, to ensure they are not being cheated. (EAWAG 2005)