

Guidelines for the Implementation of the Bellagio Principles and the Household-Centred Environmental Sanitation Approach (HCES)

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Keywords

Environmental sanitation, household-centered approach, nutrient recycling; sanitation planning

Abstract

In response to the fact that almost half of the world population still lack access to adequate sanitation and in recognition that the conventional approaches to Environmental Sanitation are unable to make a significant change in this appalling situation, an Environmental Sanitation Working Group of the Water Supply and Sanitation Collaborative Council (WSSCC) developed in 1999 the Household-Centred Environmental Sanitation (HCES) approach. The HCES approach is a radical departure from past central planning approaches as it places the household at the core of the planning process. The approach responds directly to needs and demands of the user and attempts to avoid the problems resulting from either “top-down” or “bottom-up” approaches. Successful implementation of the HCES approach requires the dissemination of information and assistance to those responsible for improving environmental services, such as municipal officials, urban planners, and policy makers responsible for creating an enabling environment. Based on these considerations, provisional guidelines were prepared. They provide specific guidance for (a) creating an enabling environment for the use of the HCES approach and (b) undertaking a 10-STEP-process for its development and implementation.

Introduction

Since the earliest urban settlements, it has been recognized that some services have to be provided to ensure that the inhabitants are healthy and able to live in decent conditions. These services are: provision of safe water supply; the sanitary disposal of wastewater and human wastes; the proper management of solid wastes; and effective storm water drainage. In this paper these services are referred to as Urban Environmental Sanitation Services (UESS).

Throughout the past few decades, efforts to improve living conditions among those lacking basic amenities have emphasized the provision of potable water. The other, equally vital, UESS components have invariably been considered less important. As a result, 2.4 billion people still do not have access to proper sanitation (WHO/ UNICEF/WSSCC, 2000), less than 50% of

municipal solid wastes are collected (WRI et al., 1996) and no one knows how many people are flooded out each year.

Although there are several reasons for the neglect of these other components and especially for the failure to achieve satisfactory sanitation coverage (Simpson-Hebert and Wood, 1998), the WSSCC Working Group on Environmental Sanitation came to the conclusion that poor planning lies at the heart of current shortcomings in environmental sanitation interventions (EAWAG/SANDEC and WSSCC, 1999). Too often only lip-service is given by environmental sanitation professionals to environmental management issues and services are not conceived in an integrated way. For example, provision of a water supply without allowing for the removal of wastewater may create standing water, thereby producing health hazards and poor living conditions. Nor is sufficient attention paid to the fact that the reduction of waste and the more efficient use and reuse of water and materials is the most effective way to reduce demand for waste treatment and disposal.

There has also been a tendency to develop systems that respond to problems of environmental waste management as perceived by policy makers and professionals, rather than to households' and communities' perceptions of their actual needs. Conventional UESS planning usually consists of what became to be known as a "Top-Down" approach. Needs are determined by well-meaning officials at central, regional and even municipal levels, based on their own perceptions. Those to be provided with services are "Target Beneficiaries" without much, if any, say in matters of service level or determination of priorities.

The Bellagio Principles for Sustainable Environmental Sanitation

A representative group of experts drawn from a wide range of international organisations involved in environmental sanitation accepted the need to challenge conventional thinking and called in the Bellagio Statement for a radical overhaul of conventional policies and practices world-wide based on the following lessons learned from past efforts to improve UESS:

(a) "Business as usual" is not sustainable even in the industrialized countries; (b) the under-utilization of organic residues is economically wasteful; (c) the pressure of humanity on a fragile water resource base, and the corresponding need for environmental protection and freshwater savings, require that wastewater and wastes be recycled and considered as resources; (d) sanitation systems designed and implemented without consultation with stakeholders at all levels, and without their participation, are ineffective; (e) there is a lack of integration between the provision of water supply and arrangements for disposal of wastewater, and between excreta and wastewater management, solid waste management, and storm water drainage; (f) without sanitation and hygiene education, the health impacts expected from water supply are greatly diminished; and (g) the export of industrialized-world models of sanitation to environments characterized by water and resource scarcity is inappropriate.

In the light of these compelling arguments for radical re-thinking, the following principles were proposed as the underpinning basis for a new approach in environmental sanitation:

1. Human dignity, quality of life and environmental security at household level should be at the centre of the new approach, which should be responsive and accountable to needs and demands in the local and national setting.
2. In line with good governance principles, decision-making should involve participation of all stakeholders, especially the consumers and providers of services.
3. Waste should be considered a resource, and its management should be holistic and form part of integrated water resources, nutrient flows and waste management processes.
4. The domain in which environmental sanitation problems are resolved should be kept to the minimum practicable size (household, community, town, district, catchment, city) and wastes diluted as little as possible.

The Bellagio Principles were endorsed by the members of the Water Supply and Sanitation Collaborative during its 5th Global Forum in November 2000 in Iguacu (Brasil).

The Household-Centred Environmental Sanitation Approach (HCES)

The Household-Centred Environmental Sanitation Approach (HCES) developed by the WSSCC Environmental Sanitation Working Group is largely based on the Bellagio Principles (Schertenleib, 2000). There is consensus among the members of the Water Supply and Sanitation Collaborative Council that it offers the promise of overcoming the shortcomings of conventional approaches because its two main components correct existing unsustainable practices of planning and resource management. These components are:

- The HCES approach makes the household the focal point of Environmental Sanitation Planning, reversing the customary order of centralized top-down planning. It is based on the concept that the user of services should have a deciding voice in the design of the service, and that environmental sanitation problems should be solved as close as possible to the site where they occur. Only problems not manageable at the household level should be “exported” to the neighbourhood, town, city and so on up to larger jurisdiction. Making the household the key stakeholder also provides women with a strong voice in the planning process, and changes the government’s role from that of provider to that of enabler;
- The *Circular System of Resource Management (CSR)* that, in contrast to the current linear system, emphasizes conservation, recycling and reuse of resources. The circular system practices what economists preach: waste is a misplaced resource. By applying this concept, the circular system reduces “downstream” pollution.

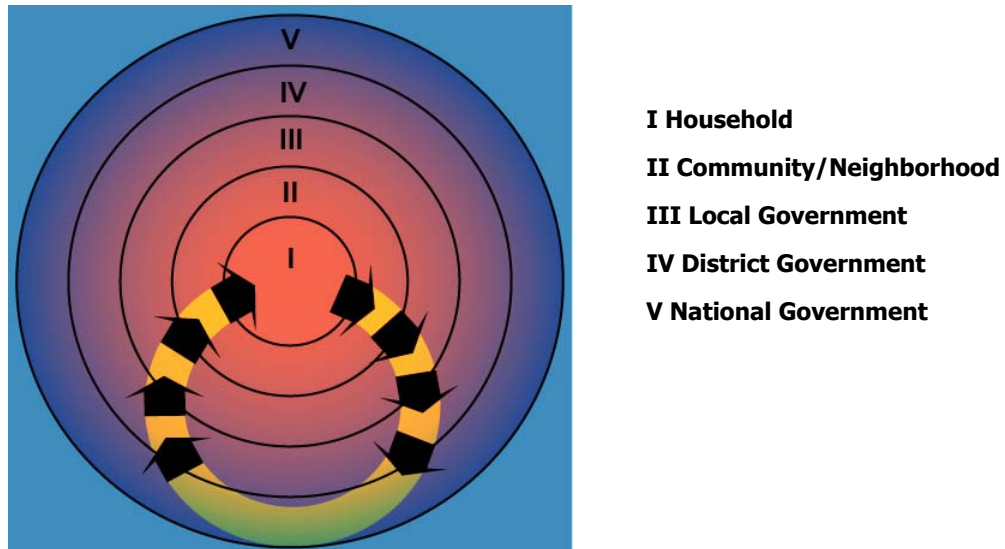
Structure of decision making in the Household-centred approach

The conventional approach to water supply and environmental sanitation is based on a highly-centralized system of decision-making, usually under the control of the national government. In recent years, many governments have attempted to decentralize by delegating their functions to second-and third-tier governments (for example, to provinces and municipalities). However, the results of these efforts have been mixed. Delegation often leave central policy-makers in charge and do little to encourage initiatives by local office-holders and managers. The problems with devolution generally result from the fact that only the new responsibilities, not the means of implementing them, are transferred to the local authorities.

The HCES Approach is a radical departure from past central planning approaches. As shown in the figure on the following page, it places the stakeholder at the core of the planning process. Therefore, the approach responds directly to the needs and demands of the user, rather than central planner’s often ill-informed opinions about them. It is based on the following principles: (a) Stakeholders are members of a “zone”, and act as members of that zone (“zones” range from households to the nation). Participation is in accordance with the manner in which those zones are organized; (b) zones may be defined by political boundaries (for example, city wards and towns) or reflect common interests (for example, watersheds or river basins); (c) decisions are reached through consultation with all stakeholders affected by the decision, in accordance with the methods selected by the zone in question (for example, votes at national level in a democratic system, town hall meetings at local level, or informal discussions at neighbourhood level); (d) problems are solved as close to their source as possible. Only if the affected zone is unable to solve the problem should the problem be “exported”, that is, referred to the zone at the next level;

The HCES approach attempts to avoid the problems resulting from either “top-down” or “bottom-up” approaches, by employing both within an integrated framework. The needs are determined in a bottom-up approach where decisions flow from the household to the community to the city and finally to the central government based on informed choices at all levels. The top-

down part of the HCES approach consists then of fitting the proposed program within the municipality's overall UESS strategy and ensuring support for its implementation.



Circular System of Resource Management

An important concept of the HCES approach is to minimise waste transfer across circle boundaries by minimising waste-generating inputs and maximum recycling/reuse activities in each circle. In contrast to the current linear system, the *Circular System of Resource Management (CSR)* emphasizes conservation (reducing imports) of resources, and the recycling and reuse of resources used (minimizing exports). Resources in the case of environmental sanitation are water, goods used by households, commerce and industry, and rain water. The circular system practices what economists preach: waste is a misplaced resource. By applying this concept, the circular system reduces “downstream” pollution.

Strength and weakness of HCES

HCES is a multi-sector, multi-actor approach to delivering integrated urban environmental services. As already mentioned, it is designed to respond to household needs and priorities, since the household is the level at which decisions on investments are made and where behaviour change begins. Its main *strength* is that it offers the possibility of providing an integrated, affordable and sustainable package of services meeting the users' priorities. Its potential *weakness* is that it requires collaboration and coordination between multiple agencies which may have different capabilities and little commitment to working together.

Guideline for Implementing the HCES approach

Successful implementation of the HCES approach requires the dissemination of information and assistance to those responsible for improving environmental services. Therefore, preliminary guidelines were prepared which are mainly targeted at municipal planners (especially those responsible for planning urban environmental services) and civic officials, such as mayors and city managers. These are the people who will initially have to take the decisions on whether and how to apply HCES, who will implement and support the process, and who will be responsible to their citizens for the results. The guideline is intended to assist them to understand the HCES approach, to apply it in their own circumstances, and to be able to explain it to the user communities. Other potential users of the guideline are municipal/state/provincial and central

government officials, whose support is essential once local authorities decide to undertake HCES-based programs. The provisional guideline provides specific guidance for

- a) Creating an Enabling Environment for the use of the HCES approach; and
- b) Undertaking a 10-STEP Process for developing and implementing the HCES approach.

Creating an Enabling Environment for Implementing the HCES approach

An “enabling environment” is important for the success of any investment program, but it is especially vital when applying an innovative approach, such as HCES. Most of the critical elements should be identified or become evident during the program development process. Ideally, they should be identified, at least in broad terms, prior to the program launch so that the entire process does not start off with misunderstandings. It is essential that they are recognized before or during the identification and evaluation of options at the latest, since if these critical elements cannot be assured, then some of the options may not be feasible.

Government Support

Political support at all levels is essential. HCES involves departures from conventional methods, especially in its institutional approaches, and the program promoters should plan to devote considerable efforts to familiarizing elected officials, senior sector staff and advisers with the concepts. This will involve presentations, seminars, visits to demonstration projects in communities to learn about the possibilities offered by HCES.

Legal Framework

The most obvious immediate need for change in order to accommodate HCES is in the matter of standards. Many existing standards (national or municipal) are based on those developed in industrialized countries, under conditions totally different from those applying today in developing countries, and so they are often inappropriate. Even where they are in theory appropriate, they often cannot be applied (because they are too expensive), and enforcement is weak. Nevertheless, it is dangerous for a public sector official to reject the standards explicitly, because then the official may become personally liable for any resulting problems. Part of launching HCES should therefore be to secure a moratorium on the application of existing standards to the program area, and part of the overall exercise should be to try to identify standards which would be more appropriate.

Institutional Arrangements

Stakeholder service demand and delivery capacity will vary from zone to zone, and so will the need for support services. Local (neighbourhood) organizations will therefore require specific support inputs not only from similar organizations (that is, from similar zones), but from organizations in larger zones with greater responsibilities and (hopefully) greater capacities. The most significant change introduced by the HCES approach is the participation of stakeholders that previously have often had little opportunity to participate under the conventional system of project planning and implementation. Most UESS organizations are unfamiliar with the concept of basing their program planning on responding to household demands and arriving at solutions acceptable to the household through a consultative process. Existing organizations will have to change their modus operandi from managing to supporting, requiring a good deal of reorientation and retraining of staff. For now, NGOs often bridge the gap between central organizations and stakeholders at the lower, community levels. This gap should eventually be eliminated, with more permanent arrangements between central organizations and organisms created by the community to satisfy its needs (which might still involve NGOs). Prior to program launch, a preliminary assessment should be conducted to determine the capacities of the various UESS organizations and others who might become involved (including private sector and NGOs), and the existing status of collaborative planning activities. This knowledge will help planners to take quick action to remedy problems identified during the program launch meeting and throughout the HCES implementation.

Required Skills

Many groups and organizations will need training and orientation. For example **householders** will need to understand more about the implications of the options open to them, and will also have to be shown how to exert quality control over local builders and contractors, to make sure that they are not being cheated. **Communities and their organisations (CBOs)** which will undertake construction, O&M and/or management of local UESS will need training on technical matters, accounting and simple financial management, basic contract procedures, and monitoring and reporting. **NGOs** that will become involved in the program need similar training, but at a more advanced level, as they are probably going to have to train the participating communities. They will also need to become familiar with the social factors affecting the selection and proper use of UESS, and with supporting communications strategies. **Municipal staff** will need to be reoriented away from their present perception, that UESS deficiencies are primarily due to lack of technical solutions developed in industrialized countries. Instead, they should be helped towards a better understanding of the social, institutional, financial and other factors that have to be addressed. All of these groups and individuals will need training in "commercializing" waste recycling and urban agriculture/horticulture activities (e.g., marketing) if the full potential that is offered by the application of the circular system is to be achieved. Only then can the simultaneous improvement of both the health and economic productivity of members of the participating households be achieved.

Credit and other Financial Arrangements

A major recurring problem encountered by low-income customers and small entrepreneurs is the lack of capital to finance investments or equipment, even when they are capable of paying small amounts for current expenses. Rather than to resort to grants or subsidies, governments and their agencies should consider the establishment of a line of credit, or the provision of equipment and materials against regular payments. The provision of grants and subsidies often has the unintended effect of encouraging users and organizations (at whatever level) to choose systems and technologies they are unable to sustain, which later leads to rapid deterioration of facilities and deficient services

10-STEP-Process for Developing and Implementing the HCES approach

The last section of the guideline describes ten typical STEPs involved in developing and implementing an HCES programme. These STEPs are presented here in sequence, but in practice they will usually overlap, some STEPs may need to be repeated more than once in an iteration to find acceptable solutions, and they will always need to be undertaken bearing in mind the concerns of the municipality as a whole.

STEP 1: Request for assistance

The HCES process should start in response to a request for assistance from the people who will benefit from the services: in the model used in the guideline, this request would be made to the mayor (or other professionals serving the mayor), by the users themselves, their political representatives or local community leaders.

STEP 2: Launch of the planning and consultative process

Once a request for assistance in developing an HCES-based programme has been received, it is important to check that all the participating stakeholders really understand and accept the implications, for example: intensive user involvement; close collaboration between various agencies; and the possibility that the integrated, balanced, multi-service solution finally adopted may not exactly correspond to what the individual sectoral agencies had envisaged.

STEP 3: Assessment of current status

The next Step in the development of the programme is a comprehensive, participatory assessment of the current level of UESS service. This is a more complicated process than that carried out in typical conventional single-sector planning, which is often confined to trying to

answer questions such as 'What is needed in order for the water company to provide water through standpipes?' An HCES assessment needs to cover all the services, must be participatory in its methodology, and understand how services are provided and used within a particular social context.

STEP 4: *Assessment of user priorities*

The results of the status assessment (STEP 3) should be reported to the community through a participatory process (i.e., meeting, focus group discussions) at which representatives of relevant agencies are also present - but as equal participants, not as leaders. The objectives of this part of the process are to (a) present the findings of the assessment, (b) correct possible factual errors, and (c) Establish, in broad terms, the 'ground rules' for the next, most intensive part of the study: deciding which deficiencies should be given priority, what levels of service should be considered, what institutional arrangements would be acceptable, etc. The setting of priorities is ultimately done by the householders, taking into account the Bellagio principles.

STEP 5: *Identification of options*

The identification of the various options for UESS services that are conducted using the HCES approach have to cover the same broad range of topics as those conducted for any feasibility analysis; they must examine the technical, institutional, financial and social feasibility of each option, and assess other factors such as its impact on the environment. The guideline does not discuss these techniques, which are covered by a number of standard texts. However, some special features are discussed which set the HCES analysis apart from conventional analyses.

STEP 6: *Evaluation of feasible service combinations*

Once the costs and implications of various options are known, at least approximately, work can begin on determining which combinations are likely to be feasible. The lowest desirable level of service should have been decided during the consultations in STEP 4. Above this lowest level, the task is primarily matching a particular level of service with the associated on- and off-site facilities (for example, flush toilets are not feasible without a high level of water supply and effective means of wastewater collection, treatment and disposal).

STEP 7: *Consolidated UESS plans for the study area*

The objective of this STEP is to develop a programme that will cover the entire study area (as defined in STEP 2). The various options identified during STEP 6 are likely to be suited to particular neighbourhoods or communities, depending on factor such as income level, housing type, soil conditions and topography. The challenge now is to assemble and integrate these into a broader UESS network.

STEP 8: *Finalising of consolidated UESS plans*

The consultation involves three stages: (a) planners present the options that appear feasible for individual neighbourhoods; (b) planners explain the interactions between neighbourhood choices; and (c) planners assist the community on reaching a consensus on a broader programme. It may be more efficient to conduct the first two stages separately, neighbourhood by neighbourhood, but if this approach is taken, each neighbourhood must clearly understand and accept that the final stage may lead to later adjustments and modifications.

STEP 9: *Monitoring, (internal) evaluation and feedback (MEF)*

MEF must be thought of as one integrated process, even though it consists of three separate elements. There is no point in collecting data (monitoring) unless the data is then analyzed critically (evaluation), and then the conclusions of the evaluation used to improve the process being monitored (feedback). Good MEF is absolutely essential to the success of HCES programmes.

STEP 10: *Implementation*

The final guideline will include a section on matters requiring attention during implementation, because programmes undertaken using the HCES approach are likely to require adjustment

and fine-tuning during the implementation process, especially if new communities are added to the programme as work proceeds. However, this section on implementation can only be prepared after the HCES approach has been applied to actual projects or programmes based on the preliminary guideline.

Conclusion

A new approach (HCES) has been suggested to overcome the shortcomings of conventional approaches in environmental sanitation planning by placing the household at the core of the planning process and by introducing a circular system of resource management. In order to implement the HCES approach, preliminary guidelines were prepared to give guidance how to create an enabling environment and how to apply the HCES approach. The provisional guideline should be tested on selected projects, which should be subjected to careful monitoring and evaluation. That process should not only test the provisional guideline and reveal areas which need to be improved, it should also bring out the topics which need to be particularly stressed during implementation, and the issues which are likely to arise.

Acknowledgement

The preliminary guideline presented in this paper has been developed in the context of an informal WSSCC partnership on environmental sanitation. The work is also part of the Swiss NCCR North-South and financially supported by SDC.

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