Literature Review

for the KaR ISWM Capacity Building Project 2001 – 2003

Building Municipal Capacity for ISWM Planning

containing:

- International Literature Review
- Regional Literature Review for Latin America
- Regional Literature Review for West-Africa
- Regional Literature Review for India
- Review of DFID-funded Waste Management projects by Mansoor Ali
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International Literature Review

Compilation: Anne-Lies Risseeuw, WASTE

INTRODUCTION

The purpose of this literature review is to give an overview of capacity building tools in the field of solid waste management planning and implementation from international and regional institutes. This overview will benefit the partners in the KAR Capacity Building for Integrated Sustainable Waste Management project in their work to compile a planning and implementation tool complimentary to the ERM Strategic Planning Guide and WASTE set of Five Tools on Integrated Sustainable Waste Management. These two documents serve as the basis for this capacity building project. The new tool will be first tested in three regions and in three cities more specifically: Bamako in West Africa, Bangalore in India and La Ceiba in Central America.

What we understand by ‘capacity building tools’ may be up for debate. Also the choice of the capacity building tools discussed in this document may be arbitrary and thus questionable. Documents have been included that have been specifically written for the circumstances in lower- and middle-income countries. Also documents have been added that treat one part of the solid waste management chain: disposal at land-fills. Others are included that cater for the involvement of one or two particular groups of stakeholders. Also documents have been added that go outside the terrain of solid waste management. These documents all share that they have something to offer that complements the two source documents, the ERM Strategic Planning Guide and the WASTE Set of Five Tools on Integrated Sustainable Waste Management.

More and more of this type of documentation is made available through the internet as freely downloadable documents. The big question remains how these organisations publicize their documents (including the fact that they are freely downloadable) in order for the target groups to know about these sources of information, and whether enough attention is paid to access for target groups that are difficult to reach, such as local authorities in developing countries. Typically this kind of information needs a trajectory of publicity. I very much doubt whether this is thought of and implemented outside the pilot and research projects these institutes are already involved in.

The two major questions remain:

- Who reads what?
- Who uses what?

Multilingual availability is very meagre, to say the least. Only one usable document is available in three languages, English, French and Spanish.

The titles have been placed in no specific order.
The contribution from Dr. Mansoor Ali should be seen as a more in-depth introduction to what Integrated Sustainable Waste Management and Capacity Building are.

He also gives an overview of the projects funded by DFID and run by WEDC of the Loughborough University in the field of solid waste management. Their contribution to this current DFID-funded project should not be neglected. Efforts should be made to not re-invent the wheel of capacity building in the terrain of an integrated and sustainable approach to waste management. Rather, the knowledge and experience of previous projects funded by DFID and other donor agencies should prevent the current project team to make the same mistakes and should support the team towards an improved capacity building tool for municipal staff working in waste management departments. At the same time bearing in mind that the effect of capacity building effort bestowed upon individual staff members may be hampered by the institutional context they return to.

The role of this literature review is to contribute part of the envisaged improvement.

**TABLE - SHORT OVERVIEW OF DOCUMENTS DISCUSSED**

The following table gives an overview of the publications discussed in this document with their most important parts highlighted.

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Abstract

The Decision Maker's Guide to Solid Waste Management, Vol. II has been developed particularly for solid waste management practitioners, such as local government officials, facility owners and operators, consultants and regulatory agency specialists. The Guide contains technical and economic information to help these practitioners meet the daily challenges of planning, managing and operating municipal solid waste (MSW) programmes and facilities.

The Guide's primary goals are to encourage reduction of waste at the source and to foster implementation of integrated solid waste management systems that are cost-effective and protect human health and the environment.

Because the infrastructure and technology for handling MSW are rapidly changing, the information presented should help decision-makers consider the numerous factors associated with successful implementation of new solid waste management solutions.

Readers are encouraged to carefully evaluate all of the elements in their waste-handling systems and implement source reduction, recycling and environmentally sound disposal.

Communities are encouraged to coordinate their goals for waste reduction and management, environmental protection, community development and employment.

Communities, businesses, institutions and individuals should apply their creativity and ingenuity in drafting policies and designing programmes that prevent the generation of waste in the first place.

When waste generation is unavoidable, the materials can be viewed as a resource from which reusable materials, raw feedstock, minerals, organic matter, nutrients and energy can be
recovered for beneficial uses. Residual materials requiring disposal must be carefully managed to protect human health and the environment.

The book encourages all individuals involved with MSW management to expand their professional skills and to help other practitioners and community members better understand the challenges and opportunities of MSW.

It is primarily through such cooperative enterprises that governments, communities and businesses can make the best possible decisions for the reduction and management of municipal solid waste.

Comments

The publication, although substantive – over 350 pages – has been written in a succinct and clear style enabling a quick overview by highlighting the most important parts at the beginning of each chapter and in the margin of the text. The book offers a thorough introduction for any practitioner in the field.

The publication is not specifically targeted at an audience in the South – but most of its contents is applicable.

Contains a glossary of urban waste management related terms.
INT-2 “Guidance Pack – Private sector participation in municipal solid waste management”

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<tr>
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Abstract

The purpose of this document is to assist solid waste managers and key decision-makers in municipalities to decide whether to involve the private sector in solid waste services and, if so, how this should be done. The information is based on a wide range of case studies and examples from the author’s international experience.

This pack consists of five separate parts.

Part I, the Executive Overview, introduces the Pack, touching on highlights of the other Parts and directing the reader to more detailed discussions in the subsequent parts.

Part II, the Guidance Note, contains the arguments for private sector participation, reviews the options, explains the issues that must be considered, and suggests the steps leading to implementation of its recommendations. There are frequent references to experiences and lessons learned in Africa, Asia and America.

Part III, the Tools, provides lists of criteria, checklists, sample terms of reference and questionnaire forms that will be of assistance to municipal managers and consultants who are preparing to involve the private sector.

Part IV is a comprehensive Word List.

Part V provides Sample Contracts and Agreements for both collection and disposal operations, allowing the reader to benefit from the experience of many cities and avoid making the mistakes that are often made when contractual agreements are initially drawn up. It also contains questionnaire forms so that they can quickly be adapted and used.
Comments

The style is concise, maybe too concise. The layout is very plain and with the subdivision in five distinctive booklets it is quite difficult to get an overview. In this respect the titles of the various parts do not help either.

Contains a CD-Rom with text identical to the set of publications.
INT-3 “Solid Waste Landfills in Middle- and Lower-Income Countries – 
A Technical Guide to Planning, Design and Operation”

| Title | “Solid Waste Landfills in Middle- and Lower-Income Countries – 
A Technical Guide to Planning, Design and Operation” |
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Abstract

The disposal of residual wastes to land is the ultimate end-point for any waste management system. It is a delusion to believe that the health and social problems posed by wastes come only from waste storage or collection activities. Unfortunately, open dumping is currently the world’s most common disposal method. No amount of careful waste collection or treatment will reduce the hazards to health of the environment from disposal if the final resting place for waste is an uncontrolled dump. Development of disposal sites away from open dumping is a necessity.

To advance waste management systems in countries undergoing development, attention should also be paid to the improvement of waste landfills. This technical guide seeks to demonstrate that, by encouraging small, continuous improvements in landfill siting, construction and operation, the accumulative effect over time is the achievement of better operations. The guide does not seek an immediate adoption of sanitary landfill practices. Instead, sanitary landfill is regarded as an eventual goal for which middle- and lower-income countries can plan during the course of several years.

The principle used in this guide is “keep it simple”.

Comments

Although this guide caters for only one element of the solid waste management chain, it is useful to consider this information as in most developing countries it is precisely the landfilling where most problems are experienced. This publication offers good information although in some instances it may lean too much on the technical side.
The perception that governments cannot efficiently provide water and sanitation (WSS) services has led to greatly increased private sector participation (PSP). Are regulatory regimes ensuring that service providers do not exploit their customers? Can PSPs save water and make it safer? Are the poor getting basic services?

An overview report from environmental economists at the International Institute for Environment and Development looks at recent experiences in five cities (Manila, Buenos Aires, Cordoba, Mexico City and Abidjan) which have gone down the private road.

Water sector PSPs are growing fast as globalisation and deregulation allow European and North American firms to enter new markets. In 1990-1997 new private sector capital expenditure on WSS projects was $25 billion compared with $297 million 1984-1990. By 1997 there were 97 WSS PSPs in 35 developing countries.

PSPs can take many forms:

- Service contracts for limited services (meter reading, leak detection, billing)
- Management contracts in which governments retain financial and legal responsibility for delivery
- Leases: renting a system for a stipulated period
- Build, Own, Operation and Transfer (BOOT) arrangements, increasingly used to build new wastewater treatment facilities
- Concessions, the most popular kind of PSP, usually giving the concessionaire monopoly service provision for a fixed period
- Divestiture, partial or total, of state ownership

The report recognises that there are numerous examples of efficiently managed public WSS utilities in developing countries. As far as PSP performance goes, experience to date has been
mixed: There is little empirical evidence that PSP leads to economic efficiency. A study in Buenos Aires found that the water company is performing worse than other privatised utilities. Excessive groundwater depletion has not been checked by privatisation. The general tendency to provide free raw water to concessionaires is not conducive to creating a climate in which the scarcity value of water is reflected in costs faced by service providers and users. In many cases the expectation that householders will be able, or desire, to pay for connections to new sewerage systems, has been unrealistic.

The policy implications emerging from the report include:

- Contracts require more than technical specifications. Household surveys are needed to determine preferences and ability to pay. Service improvements in poor neighbourhoods would be more affordable if there were increased access to credit and alternative payment schemes.
- Better cooperation is needed between different agencies involved in the regulatory environment. The need, as PSPs spread to countries with more extreme urban poverty, environmental degradation and weak or non-existent regulatory capacity, for existing forms of PSP to be modified, not simply replicated.
- Setting targets to reduce leakage rates, while at the same time providing raw water at zero cost, is inefficient and a burden to the regulator.
- For many cities the goal of universal water and sewerage coverage is decades away. Interim pro-poor measures are required to oblige operators to provide and manage public standpipes and septic tanks in poor neighbourhoods pending their incorporation in city-wide WSS schemes.

Comments

Although this paper may be judged as rather academic, its foundation is broad and various: five cities in three continents. It is interesting to read as it addresses other issues than normally addressed in the literature. It discusses the difficulty for local authorities that use PSP to internalise public health and environmental externalities, provide mechanisms whereby water consumption is sustainable and is allocated efficiently between alternative uses, and serve as a guarantor of a level of service provision which is consistent with a basic standard of living.

How useful this paper is for the KaR capacity building target groups partly depends on their linguistic abilities as this paper is available in English only. It is easily accessible through the internet, as long as you know where to look. It is freely downloadable through the ID21 website.

In what way this paper can be used as a tool depends on how far PSP has penetrated the cities in which the KaR capacity building project will work. This document is especially useful for local authorities that experiment difficulties in managing the PSP dynamic in their municipality – and these will increase in number as there is a global trend of using PSP as the panacea solution for sanitation management problems. The paper is also useful in the respect that it discusses the various modalities of contracts, leases, concessions and divestiture.
This paper discusses key issues and problems associated with municipal solid waste management in low- and middle-income countries, based on analysis of the experience gained through 72 projects supported by the World Bank over the period 1985-1995 totalling investments of more than US $ 1 billion, and suggests strategies for addressing the issues. In particular, a more comprehensive policy framework is needed at the national and local levels that links public health, environmental and decentralization policies more closely together so that they are mutually supportive. To improve future projects, more attention should be given to strategic service planning, better institutional arrangements, more efficient management and finance, and improved environmental protection. Specific recommendations are provided for each of these priority issues. Finally, information is provided on recent establishment of a collaborative donor working group and its programme of activities.

Comments

As one of the major players in the world of urban development funding agencies it is good to know what the World Bank learnt from its own project experience in the field of urban waste management. The paper itself is concise and gives a quick overview of the major problems in urban waste management, specifically those confronted by local authorities.

Once again, partly depending on linguistic abilities of the target group this short paper may be useful as a recapitulation of the major problems in the area. The paper now no longer is easily available to the general public – but photocopying and distributing the original might solve this obstacle.
INT-6 “Manual for Urban Environmental Management”

<table>
<thead>
<tr>
<th>Title</th>
<th>“Manual for Urban Environmental Management”</th>
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</thead>
<tbody>
<tr>
<td>Author(s)</td>
<td>GTZ</td>
</tr>
<tr>
<td>Publisher</td>
<td>GTZ – Germany  <a href="http://www.gtz.de">www.gtz.de</a></td>
</tr>
<tr>
<td>Year</td>
<td>1996</td>
</tr>
<tr>
<td>Pages</td>
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<td>Case-studies</td>
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<td>ISBN</td>
<td>-</td>
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Abstract

The purpose of this Manual is to help develop an effective methodology for urban environmental management in developing countries. It has been designed for use by staff of national government and non-government agencies responsible for developing municipal management capacity. It also provides material of direct interest to municipalities themselves.

The methodology presented in this Manual has been developed in the context of ongoing projects which have been running in Nepal and Thailand since late 1990, funded through German Technical Cooperation (Deutsche Gezellschaft für Technische Zusammenarbeit – GTZ). From the outset, the intention has been to develop and disseminate a methodology that will be effective, with appropriate adaptation, for use throughout the developing world.

In the first instance, the Manual has been used as a basis for national workshops, in which the methodology was discussed and adapted to local circumstances and needs.

Comments

The topic of the manual is broader than solid waste management only, but nevertheless gives some interesting insights and practical tips for municipal managers dealing with solid waste management in their cities. Although this manual was primarily written for Asia, and for Thailand in particular, it describes an approach that is applicable in other regions too. The approach has based itself on the Local Agenda 21 and focuses on awareness raising, networking and communication activities. It even offers a detailed framework for planning meetings for the various target groups involved in urban planning and detailed suggestions to reach an actual action plan. It is specifically in this respect that it is deemed useful to compare this ‘action planning process’ in all its details with the methodology used in the ERM Strategic Planning Guide and the UWEP Set of Tools from WASTE – where the suggestions for dissemination and communication might be the most valuable.

The GTZ Manual departs from the national level but in no way precludes the municipal levels with their own particular dynamic.
Partly depending on the linguistic skills of the target audience this manual can be useful in the sense that it offers detailed suggestions on how to involve the community, how to communicate with them and how to try to change their behaviour.

Unfortunately the document is now no longer easily available, other than by explicitly requesting a copy from GTZ in Germany.
Integrated Development Planning generally refers to a process of planning which takes a range of sectors, development activities and actors into consideration. It also adopts a holistic approach to the tools available to undertake such a process of planning and, on this basis, attempts to construct linkages between financial planning, infrastructure investment planning, service delivery, intergovernmental relations, and so on.

IDP is a way of maximising the impact of all development interventions that government makes. It is especially relevant at the local level.

The handbook is divided into four main sections.

Section A maps out the context within which South African municipalities will undertake IDP. Chapter 1 looks at some of the international trends which will influence local government and local planning in South Africa. Many of these trends are cross-cutting themes which recur throughout many chapters of this handbook. They include decentralisation, local planning, globalisation, changing conception of the state, delivery agents, affordability and service levels and governance.

Chapters 2 and 3 have a distinct South African focus – less applicable for the KaR Capacity Building audience.

Section B attempts to set out a broad agenda for change. Chapter 4 provides an outline of integrated development planning. It also identifies the five main elements of IDP, which are taken up in Section C. Chapter 5 summarizes some of the key tools and concepts in IDP.

Section C describes the five elements of IDP:

- Community participation
- Institutional development
- Financial planning
• Inter-governmental coordination
• Sectoral coordination

Finally, Sector D provides an overview of key sectors.

Comments

Although primarily aimed at a South African audience and their specific political context and history, this handbook is useful as it pays specific attention to local government and community involvement. It departs from a broader view than solid waste management only, namely urban development planning in general. The underlying basics of decentralisation, local planning and related principles are now globally recurring themes explained in a clear and succinct manner.

The texts in the handbook on Institutional Development and on the sector of Water and Sanitation are the most useful for comparison with the basic material for the KaR Capacity Building project. There is most overlap in the field of the ‘integrated’ approach of the underlying method and the concept of Integrated Sustainable Waste Management.
Abstract

This document is divided into three Parts, each of which has a different purpose and a different content:

Part A – Introduction and Overview
This begins by briefly describing the Environmental Planning and Management process in an SCP city, to establish the over-all context, it then explains in general what is meant by Institutionalising the EPM Process.

Part B – Institutionalisation: A Conceptual Framework
This is the main part of the document. It gives a careful explanation of what is meant by Institutionalisation of the EPM process – how it can be organised and undertaken. The explanation is detailed, aimed at the professionals and practitioners who will actually be implementing the SCP project on a day-to-day basis. Thus Part B contains not only explanations and guidelines, but also good advice based on experience in other SCP cities. Part B is thus intended as a guidebook.

Part C – City Examples, Further Explanations and Other Materials
To further assist those implementing the SCP project, Part C contains a variety of useful annexes and supplementary information. Aside form a Glossary of Terms and list of Information Sources, Part C is primarily devoted to a series of short case examples drawn from the real-world.
Comments

The Sustainable Cities Programme is a broad development programme, financed by a wide array of national donor agencies under the umbrella of UNCHS. This allows it to use a complete spectrum of case-studies derived from various continents.

Although the topic of this publication is broader than merely solid waste management, this publication is the most valuable in the Sustainable Cities series and most applicable to the KaR Capacity Building project, as it explicitly focuses on the city level elaborating on the various possible scenarios. In spite of the fact the this series of books were conceived primarily as guiding documents for SCP project staff, the content is quite applicable to the KaR Capacity Building context. The descriptions of case examples might be interesting for the target group to read as these will offer some points of anchoring.

Specifically useful are the subdivisions into separate elements of the institutionalisation process – this is specifically complimentary to the process described in the ERM Strategic Planning Guide, as it is cross-cutting from a different angle. Also their identification of possible gaps and constraints may offer some practical guidance in discussions with municipal staff.

Again this publication is available in English only making a demand on the linguistic skills of non-native speakers of English.
INT-9 "Improvement of Solid Waste Management in Developing Countries”

<table>
<thead>
<tr>
<th>Title</th>
<th>“Improvement of Solid Waste Management in Developing Countries” - Technical Handbook Series Vol. 1</th>
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<tbody>
<tr>
<td>Author(s)</td>
<td>Kunitoshi Sakurai</td>
</tr>
<tr>
<td>Publisher</td>
<td>JICA – Japan</td>
</tr>
<tr>
<td>Year</td>
<td>1990</td>
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<tr>
<td>Pages</td>
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<td>Languages</td>
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<tr>
<td>ISBN</td>
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Abstract

The supply of engineering hardware was considered to be a model of economic cooperation applicable to many developing countries. Hardware assistance, however, when provided to developing countries without the necessary engineering software, tends to be privately owned by some circles of society, and is not utilized effectively for the whole.

In the case of solid waste management, most of the developing countries have yet to establish the software required for modern development. It might have been possible for those countries to maximize individual interests, but they have no, or only insufficient, bases essential for a modern community.

The specific meaning of the “completion of technology transfer” in terms of software depends on the definition of the technology concerned. For instance, if solid waste management is considered to be “technology”, technical transfer would be completed when management has been left to the local staff and all processes can be handled by themselves alone.

It is the purpose of this book to promote the technology transfer of solid waste management, particularly to those who are working in developing countries.

Comments

The book offers a solid introduction into solid waste management and what it entails, even more so, it gives a full overview of possible external and internal problems that solid waste management may encounter. It caters for both the national and municipal level, with at both levels a strong focus on financial aspects, collection and hazardous waste management while at the same time offering practical tools such as a time and motion study survey.

Although the approach might be slightly conventional, it offers valuable basic material.

It is a pity that it is so difficult to obtain a copy. For this purpose photocopies could be made from the original – see also the UWEP Plus Reader II for the most interesting parts of the text.
Abstract

The sector assessment in the form of a sectoral analysis is the tool that allows the attainment of understanding of the sector at various levels. The assessment provides precise data on visible and invisible demands and deficits of service coverage, on institutional strengths and weaknesses, and on operational restrictions. Moreover, the assessment allows for the subsequent identification of the level of financial and non-financial resources (public or private) needed for the proper development of the sector.

Comments

Although primarily written with the Latin American region in mind – it definitely offers useful insights for countries from other regions as well. This manual and its approach is primarily useful during the first stages of KaR Capacity Building activities in the three cities. It offers some valuable assessment tools that are definitely complimentary to what the ERM Strategic Planning Guide and the WASTE ISWM tools offer. This handbook is primarily comparable to the ISWM concept as it distinguishes the various technical and non-technical aspects of waste management. The protocols provided in the booklet offer a whole range of practical questionnaires for assessing the field of solid waste management.
INT-11 “Guidelines for Municipal Solid Waste Management Planning in Small Island Developing States in the Pacific Region”

<table>
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<tr>
<th>Title</th>
<th>“Guidelines for Municipal Solid Waste Management Planning in Small Island Developing States in the Pacific Region”</th>
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<tr>
<td>Author(s)</td>
<td>SPREP</td>
</tr>
<tr>
<td>Publisher</td>
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<tr>
<td>Year</td>
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<tr>
<td>Pages</td>
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<td>Case-studies</td>
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<tr>
<td>ISBN</td>
<td>982 04 0200 x</td>
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<td>Funders</td>
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Abstract

These Guidelines have been prepared following visits and discussions with people involved in solid waste management in several island states. As a result, the Guidelines have identified key problems facing solid waste managers in the island states and outline possible solutions. It serves for the local managers and communities to develop and adapt these ideas to their own situation. The guidelines provide a methodology to identify and prioritise problems for action. The structure of the guidelines links to the key phases of the waste cycle and provides a workable and logical planning process to follow.

Comments

These guidelines have a firm basis in the actual practice of solid waste management in an island situation.

Although the focus is primarily on the specific island situation – the guidelines offer ample scope for comparison with the basic material of the ERM Strategic Planning Guide and the ISWM Tools Set of WASTE. Specifically so with regard to the integration of elements in the planning process.

The guidelines also give specific attention to the various waste materials.
Abstract

The state of waste management can be viewed as an overall indicator of urban development and the sustainability of a city. The adequacy of services to lower income communities also reflects on how successfully a city is dealing with issues of urban poverty and equity. These linkages reinforce the potential for this sector to be a useful proxy indicator of urban development. Waste management issues relate to a wide range of aspects of urban development. In this sense, indicators can be used to set targets, measure performance, track achievements and guide future actions.

Comments

The document is analytical and conceptual but gives nevertheless some practical links useful for a planning process especially when preparing some kind of monitoring system. It subdivides the waste management indicators into primary and secondary indicators. All the indicators mentioned are quantitative. It further elaborates on these with some key observations about waste management services, stating what waste is and what good waste management services entail.
INT-13 “Conceptual Framework for Municipal Solid Waste Management in Low-Income Countries”

<table>
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<tr>
<th>Title</th>
<th>“Conceptual Framework for Municipal Solid Waste Management in Low-Income Countries”</th>
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<tr>
<td>UMP Working Paper Series 9</td>
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<tr>
<td>Author(s)</td>
<td>Peter Schübeler, Karl Wehrle and Jürg Christen</td>
</tr>
<tr>
<td>Publisher</td>
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<td>Funders</td>
<td>UNDP/UNCHS, World Bank, SDC-Switzerland</td>
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Abstract

This document provides brief definitions of the main concepts of municipal solid waste management and identifies the goals and principles that normally guide municipal solid waste management system development. It discusses key objectives and issues which should be addressed by municipal solid waste management strategies with regard to political, institutional, social, financial, economic and technical aspects. Municipal solid waste management is an important entry point for integrated urban management support.

Comments

This document offers an overview of what municipal solid waste management entails and what ideally it should cater for. It is a good comparison with ISWM, the tools set. It is recommendable to read them side-by-side, specifically on what they have to offer on the aspects’ side.
### Abstract

The Local Agenda 21 Planning Guide has been prepared to assist local governments and their local partners to learn and undertake the challenging task of sustainable development planning. This planning approach is a first step that will enable them to provide the residents of their communities with basic human needs, rights, and economic opportunities, and at the same time ensure a vital, healthy, natural environment.

The Guide documents a process for developing action plans to address complex problems inherent in modern urbanized societies, it presents a framework for engaging local authorities with residents and local organizations in the design and provision of services to the community, while simultaneously protecting local, regional and global ecosystems.

### Comments

Although not specifically aimed at waste management planning, it is good to know about the broader aspects of sustainable development planning along the lines of Local Agenda 21, the major trend generally and globally adopted for sustainable development at the level of the municipality. It is always good to keep in mind what Local Agenda 21 stands for, especially so when in contact with the local authorities in the three cities during the ISWM planning processes. Local Agenda 21 may also for the municipal authorities be a good point of entry. The section on internal auditing and monitoring may be most useful.
The Integrated Waste Management Action Plan for the Batangas Bay Region has been drawn up along the lines of the four major waste streams. The four phases of the plan include: preparation, mobilization, implementation and development.

The preparatory phase includes identification of the applicable laws and requirements, and the development of a knowledge base on the sources, quantities and types of wastes being generated and disposed.

The mobilization phase requires an assessment of need for improving the situation. Also the training needs will be identified.

Then the actions will be implemented. At this stage, plans for long-term actions begin to develop.

The final phase is the development phase. At this point the public and private stakeholders will have reached an evolutionary stage where long-term solutions for waste management have been identified and capacities are in place for development. The public sector will have evolved a capacity to monitor and enforce. The private sector has had an opportunity to respond to regulations and control requirements in a practical and cost-effective manner.

Comments

This document and description of the action planning process in Batangas Bay – a coastal area - could serve as a case study and ideal basis for comparison. The document also gives attention to some of the waste materials typical for the region: industrial hazardous waste, and ship and port waste. The plan is interesting in the attention it pays to the use of the media and other communication means.
Abstract

To reverse the rising trend of waste growth in Hong Kong the Waste Reduction Framework Plan sets out dynamic and environmentally responsible programmes to extend the useful life of the landfills, to minimise the amount of waste produced that requires disposal, to help conserve the earth’s non-renewable resources, to increase the waste recycling rate, to identify the true costs of collection, treatment and disposal of wastes, and improve the institutional arrangements. The area requiring greatest attention in Hong Kong is household waste.

Comments

With extremely limited availability of land it is very interesting to read Hong Kong’s waste management plan that mainly targets on reduction. It is also useful in the sense that it offers a subdivision of elements and tools for waste management that both differs from the ERM Strategic Planning Guide and the WASTE Tools Set. It has been drawn up in a very practical manner and devotes much attention to the financial side, hidden costs, and the polluter pays and the user pays principles, and a maximization of private sector involvement. Very little is said about community participation and in what way communication can contribute to achieving goals and objectives.
INT-17 “Municipal Solid Waste Management - Involving Micro- and Small Enterprises – Guidelines for municipal managers”

<table>
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<th>Title</th>
<th>“Municipal Solid Waste Management - Involving Micro- and Small Enterprises – Guidelines for municipal managers”</th>
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<tr>
<td>Author(s)</td>
<td>Hans Christiaan Haan, Adrian Coad, Inge Lardinois</td>
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<tr>
<td>Publisher</td>
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<tr>
<td>Year</td>
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<td>Pages</td>
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<td>Availability</td>
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<tr>
<td>ISBN</td>
<td>92-9049-365-8</td>
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<tr>
<td>Funder</td>
<td>DGIS – SDC – ILO – GTZ</td>
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Abstract

This book is for managers, engineers and administrators who have some responsibility for municipal solid waste management, and who are looking for ways to improve the service or economise. It covers the “Why?” and “How?” of involving new entrepreneurs and small community-based groups in the collection of solid wastes (garbage) from streets, homes and businesses. The book is primarily concerned with situations found in middle- and lower-income countries, and draws extensively on experiences in Latin America, South-East Asia and Africa.

The first half is divided into short sections that each answer a particular question or issue. The reader can dip into selected issues without having to read from beginning to end. The sections are ordered in a way that suggest the sequence of steps that many municipalities might follow in considering a possible role for small private sector organisations.

The annexes provide backup information on topics such as current waste management issues, sociological aspects and recycling, and include a range of case studies and sample contracts.

Comments

Although the publication propagates a certain approach to municipal waste management i.e. involving the small entrepreneur, this book can serve as a source of reference in those cases where municipalities come into contact or plan to contract this particular group of stakeholders into managing their city’s solid waste. The advantages of contracting such a group, are explained in this book. Further facilitation is offered by way of sample contracts. This book is one of the very few books available in various languages, and as such its information is within reach of those speakers of Spanish or French who do not master English.
**Abstract**

This document reports findings from Phase I of a Department for International Development funded project concerning the development of practical guidelines for the application of the Strategic Sanitation Approach in urban areas. Results from a review of literature are discussed.

A total of 63 documents were examined in the review. Discussion has been summarised according to the key chapter headings used in Albert Wright’s publication “Towards a Strategic Sanitation Approach”. The review also draws on an interview with key DFID personnel involved in projects in India.

The purpose of the review is to examine how the key concepts underlying the Strategic Sanitation Approach (SSA) have been addressed in operational terms on the ground, highlighting examples where SSA ideas have been applied, what problems were identified in their application, and what issues require further consideration or clarification with the approach as a whole. Each section ends by abstracting the key points identified and posing questions which remain unresolved.

**Comments**

Although the topic of sanitation is broader than solid waste management, it is interesting to consider this book for this review as it took the principle of Strategic Sanitation Approach of Albert Wright as its guiding principle to value various projects and activities. Strategic Sanitation Approach shares with ISWM its aim of equity, sustainability and stakeholder participation. Furthermore, it has a strong focus on departing from the demand instead of being supply-driven as is mostly the case in conventional sanitation. It devotes a substantial part of the text on financial implications when applying SSA – this might be applicable to the current KaR project as well.
Abstract

This manual presents the findings from the Procurement of Infrastructure for Urban Low Income Communities project carried out by the authors as part of the Technology, Development and Research Programme, Engineering Division, Department for International Development of the British Government.

The purpose of the project is to investigate the extent and nature of the involvement of low income urban communities in the provision of their local infrastructure. The purpose of this manual is to provide guidance for promoting increased involvement of low income urban communities in the procurement of neighbourhood (tertiary level) infrastructure. The contexts are several and varied including:

- Upgrading works carried out by urban government
- Donor funded urban development programmes
- Programmes initiated by non government organisations

Comments

Although again the topic of the book covers more than solid waste management alone, this book offers useful information regarding the involvement of low-income community groups. Wherever this KaR project may come across the specific need to involve specifically the low-income community more, it may be wise to consult this publication. It also offers good information on the procurement process and sample contracts.
Many donor projects currently promoting participatory approaches have themselves been designed through non-participatory methods. Donors frequently impose generic ideas of participation on project objectives and methodologies and as a result municipal officials rarely initiate change voluntarily. Mostly they are cast into the domain of participation. While many officials are willing to attempt participatory approaches, many are deeply sceptical and nearly all ask for proof, tangible illustration and evidence:

- Where is community participation being undertaken elsewhere?
- How does it work in other cities?
- What problems have they had?
- How is the project organised in the municipality?
- Who is involved?
- How does a municipality communicate with a community?
- What are the roles of the municipalities and the communities?
- At what stage does the community get involved?
- Who leads the process within the municipality?

Over the last decade, the adoption of participatory approaches in the delivery of urban infrastructure has dramatically increased. Yet, to date, there are still few examinations of the municipal perspective of participation and only limited documentation of the constraints facing those municipalities that undertake such a shift in methodology.

A range of case-studies were studied, which led to a comprehensive analysis of the findings leading to the development of a strategic framework for building municipal capacity for community participation. This framework places the vast range of issues into a coherent structure for discussion and action.
Comments

This book is complimentary to the two basic works for this project in the sense that it offers a specific approach to community participation, which may be more elaborate than in the ISWM Tool on Community Partnerships and also more than the Strategic Planning Guide offers. For example, it includes internal municipal capacity in handling community participation and covers various forms of community participation. It also places community participation outside the specific context of solid waste management, which may be refreshing.
Abstract

The package “Services for the urban poor” consists of the following titles

1. Guiding Principles
2. Working with Partners
3. Action Planning Guidelines
4. Technical Guidelines
5. From Action Plans to Implementation
6. Operation and Maintenance

This set of manuals offers detailed guidance on the planning, design, implementation, operation and maintenance of basic services for the urban poor – based largely on experience from South Asia. It emphasises the need to integrate participatory approaches at the local level with strategic improvements to city level infrastructure. The intended readership includes policymakers, urban planners and urban engineers.

The “Guiding Principles” booklet describes the development of an action planning approach with administrative decentralisation and involvement of users in the planning process.

The “Working with Partners” booklet covers the possible partnering arrangements, the strengths and weaknesses of different institutional options for local programme management and the institutional constraints to the development of an action planning approach to improve services for the urban poor.

The “Action Planning Guidelines” booklet proposes a framework for action planning to develop local neighbourhood plans and area service plans for networked infrastructure which focuses on the importance of linking these together through consensus building.

The “Technical Guidelines” provide detailed planning and design guidelines which cover different technical options for service improvements to urban poor areas, including ‘handy tips’ for construction and maintenance.
“From Action Plans to Implementation” gives guidance on how to take the Local Action Plans forward to the stage of implementing service improvement at the field level. This focuses on the development and use of administrative procedures for technical and financial approval and the different options for procurement and contracting in order to deal with the potentially very large number of small improvement works which will arise.

“Operation and Maintenance” presents different strategies for managing operation and maintenance and to consider how these can be applied to produce detailed plans for improved operation and maintenance at the neighbourhood, ward and municipal levels.

Comments

Although the topic of this package is broader than solid waste management alone, it gives another insight into catering for urban services. The focus is primarily technical – also in volume of pages dedicated to the various topics. For example, the booklet on “Working with Partners” is rather slim. The Technical volume includes a short overview of solid waste management options – giving ample scope to local initiatives. Especially the section on Action Planning Guidelines gives food for thought and comparison with the Strategic Planning Guide of ERM. It also offers a handy checklist when doing the planning.
Abstract

This book presents the findings of a Department for International Development funded project. It has been written for policymakers and professional staff of urban governments, development agencies and non-government organisations in low-income countries. The book aims to help improve the poor practices of municipal solid waste management that prevail in many low-income countries – a subject that has received little attention compared with other aspects of infrastructure such as water supply and transport. It is a complex subject embracing waste collection, transfer, haulage and its impacts are wide including, for example, effects on environmental health, municipal finance and management, waste re-use and informal sector employment.

Comments

Although this book covers one element only of the solid waste management chain, it is interesting to read what disposal entails in the typical setting of a low-income country. In this sense, it is useful to read it side-by-side with the larger book on Landfill Disposal, also included in this review. In contrast to the aforementioned book, this publication pays more attention to the soft side of disposal and uses most aspects of the ISWM concept: technical, institutional, financial, social and environmental. The book also includes a brief glossary with waste disposal terminology.
Abstract

This Manual has been prepared as a tool to help improve DFID’s support for water supply and sanitation projects and programmes in developing countries. Its particular focus is on how DFID assistance can best meet the needs of the urban and rural poor for WS&S services. It also includes a chapter on logframe analysis as used by DFID staff.

Comments

It treats the same aspects as the ISWM model. Although specifically written for DFID staff, it may be interesting to read this point of view as it supplements what is offered in the Strategic Planning guide of ERM and the ISWM Tools Set of WASTE.
Abstract

The guide is one of the outputs of a research project to develop practical guidelines for the implementation of strategic sanitation concepts. The research was funded by the UK Government’s Department for International Development, as part of its Engineering Knowledge and Research programme.

The guide aims to answer the following questions:

- What can I do to improve sanitation in the urban areas for which I am responsible or in which I operate?
- How can I ensure that my actions are part of an overall strategic approach to sanitation provision?
- What can I do myself and for what tasks should I seek support?
- Where might I find that support?

Comments

The guide includes a glossary. Although the topic of the guide is broader than solid waste management as such, it offers some interesting points-of-entry with respect to the various tools it offers. For example, the one on information gathering is supplementary to what the two basic documents offer. Also the training modules are valuable.

The information is presented in a very clear and attractive way in the form of separate concise modules.
Abstract

This text puts the engineering and scientific details of Integrated Solid Waste Management into the framework of resource management. The book covers the engineering principles, the data, the engineering and scientific formulas and examples of the day-to-day issues associated with the management of municipal solid waste.

The book is organized into six parts. For the reader to understand the many facets of solid waste management, the book describes how the field has evolved from the technology of horse-drawn carts to legislation-driven technology. The historical development of this field and its current perspectives are presented in Part I. To answer the question of whether solid waste is an untapped resource or a disposal problem, information must be available on the sources, composition and properties of solid waste. These subjects are considered in Part II.

Because solid waste management has the dual functions of resource recovery and waste disposal, there is no one best place to apply the appropriate technology. In each situation, engineering principles must be applied to evaluate equipment and facility options, to make operational choices, and to develop management systems. The basic engineering principles that are an integral part of solid waste management are presented in Part III.

Advanced engineering principles related to the separation, processing and transformation of solid waste are presented in Part IV. Separate chapters are included on materials separation and processing technologies, thermal conversion technologies and biological and chemical conversion technologies. Because the reuse and/or sale of recovered materials is of considerable importance, a separate chapter is devoted to this subject.

The need for continuing care of the land remains after landfills are closed. Closure, restoration and rehabilitation of landfills are presented in Part V. Both active and abandoned landfill sites are considered as there are thousands of sites that existed before current regulatory standards for closure were developed.

Important management issues that must be evaluated in the development and operation of Integrated Solid Waste Management systems are discussed in Part VI. Two chapters are
devoted to the topic of waste diversion from landfills. The methodology for completing solid waste management plans is considered in the final chapter.

Comments

Although this technical book has not been written for the developing world context, it is one of those books one should at least know about. This very comprehensive book can be considered the technical bible on solid waste management. It covers nearly all, from historical developments to waste recovery and landfill management. Needless to say, the book is very detailed on technology, its major focus. It also offers very detailed descriptions of separation and recycling of the various waste materials.
**“Community-based Solid Waste Management”**

**Title**
“Community-based Solid Waste Management”
A Training Facilitator’s Guide

**Author(s)**
Julie Burland

**Publisher**
Peace Corps

**Year**
1997

**Pages**
a total of 271 pages

**Languages**
Available in English

**Case-studies**
several

**Availability**
difficult to obtain from Peace Corps

**ISBN**

**Funder**
Peace Corps

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**Abstract**

The objectives of this manual are to:

- Provide training sessions for development workers beginning and continuing solid waste management projects and activities.

- Provide information about solid waste management for people interested in the issues.

- Compile designs of solid waste transport vehicles, storage containers, and landfill models in one place to serve as a reference source.

- Compile experiences of worldwide solid waste collection systems so that others may learn from past successes and failures.

**Comments**

Although this manual is very practical and down-to-earth, it is mainly in this respect that it supplements the two basic documents of ERM and WASTE.
WEBSITES OVERVIEW

Also the following websites may offer valuable information:

**Solid waste**

Atlas on waste production in the South -- site in French
http://www.ulg.ac.be/cwbi/projets/atlas/index.htm

CEMPRE Brazil http://www.cempre.org.br/

CEPIS - Panamerican Centre for Sanitary Engineering and Environmental Services – many
documents freely downloadable http://www.cepis.ops-oms.org/indexeng.html

Collaborative Working Group on Solid Waste Management - CWG
http://www.melissa.org/cwg/

Environmental Protection Agency - EPA - Office of Solid Waste – US – also gives
information on the various regions http://www.epa.gov/osw/

Hazardous Waste Latin America - Control de Desechos Peligrosos - Red de centros de
capacitación y transferencia de tecnología para América Latina y el Caribe en el marco del
Convenio de Basilea http://www.rcctt-lac.org.uy/

Healthcare Waste Information http://www.keg.de/ihcwan/homepage.htm

ISWA http://www.iswa.dk/welcome.htm


Plastics and Rubber - Rapra Technology Limited, Consultants for the Rubber and Plastics
Industry
http://www.rapra.net/


Residuos Solidos -- Solid Waste Spanish / Portuguese http://www.resol.com.br/

Solid Waste com-site http://www.solidwaste.com/


Waste Management Association of Spain -- Club Español de los Residuos
Waste management plans of cities / regions / countries

Argentina - Provincial Waste Management Plan - La Pampa


Waste Management Plan for Argentina


Waste Management Plan for Kootenay – Canada
http://www.rdkb.com/waste.htm

Waste Management Plan for La Rioja - Spain
http://www.larioja.org/ma/paginas_navegacion/residuos.htm

Waste Management Plan for Massachusetts US
http://www.state.ma.us/dep/bwp/dswm/dswmpubs.htm#swmp

Waste Management Plan for the Netherlands
http://www.minvrom.nl/minvrom/pagina.html?id=1306

Local Agenda 21

Capacity 21 -- UNDP programme for Local Agenda 21 http://www.undp.org/capacity21/

Local authorities and Urban development

City Development -- Mayors network http://www.citydev.org/index.html

City Professionals LAm – UNESCO http://www.unesco.org/most/citypros.htm
CLAD - Centro Latinoamericano de Administración para el Desarrollo
http://www.clad.org.ve/elclad.html

Governance and Development - IIG Instituto Internacional de Gobernabilidad
http://www.iigov.org/iigov/inici.htm

ICLEI - International Council for Local Environmental Initiatives
http://www.iclei.org/

IULA - International Union of Local Authorities http://www.iula.org/

IULA - International Union of Local Authorities - Capacity Building Association
http://www.iula-acb.org/

Municipal information -- world-wide http://www.munisource.org/

Sustainable Communities Network http://www.sustainable.org/

Urban Governance Initiative http://www.tugi.apdip.net/

Urban Observatories http://www.unchs.org/guo/

Urban Upgrading http://web.mit.edu/urbanupgrading/

**Sustainable development**

IISD - International Institute for Sustainable Development
http://www.iisd.org/about/default.htm

Sustainable Development Communications Network (SDCN) http://www.sdcn.org/

Sustainable Development information http://www.sustainabledevelopment.org/


**Public-private interactions**

Public-Private Infrastructure Advisory Facility http://www.ppiaf.org/

Public-Private Partnerships for the Urban Environment (PPPUE)
http://www.undp.org/pppue/
Donor agencies – programmes

Asia Urbs EU programme http://www.asia-urbs.com/

Best Practices Database http://www.bestpractices.org

Bremen Initiative http://www.bremen-initiative.de

Cities Alliance - UN + World Bank programme
http://www.citiesalliance.org/citiesalliance/citiesalliancehomepage.nsf/


EMS: Environmental Management Secretariat of IDRC for Latin America and the Caribbean
http://www.ems-sema.org/

EU -- External Aid http://europa.eu.int/comm/scr/cgi/frame11.pl

GEF - Global Environment Facility http://www.gefweb.org/

Habitat Sustainable Cities - Electronic Library - Spanish and English
http://habitat.aq.upm.es/internet/

Healthy Cities http://www.who.int/hpr/cities/index.html

LIFE - Local Initiative Facility for Urban Environment

MAESTRO http://maestro.unep.or.jp/webm/


MELISSA -- Sub-Sahara Africa the Environment http://www.melissa.org/

PGU ALC - UMP for Latin America and the Caribbean http://www.pgualc.org/

SPREP - South Pacific Regional Environment Programme http://www.sprep.org.ws/
many documents freely downloadable

Sustainable Cities Programme http://www.unchs.org/scp/


UMP -- Urban Management Programme for Asia and the Pacific
http://www.hsd.ait.ac.th/ump/ump.html

UMP -- Urban Management Programme for Latin America and the Caribbean
http://www.pgualc.org/
URB-AL EU Urban Latin America programme http://www.urb-al.com

Programme partners

ACEPESA http://www.acepesa.org


ERM http://www.ermuk.com

Waste Wise Bangalore – India http://www.wwresourcecentre.net

WASTE http://www.waste.nl/
Regional Literature Review: Latin America

Compilation: Patricia Ulloa and Jane Olley

INTRODUCTION

The following document is a regional literature review for Latin America prepared as an output of the DFID KaR ISWM Capacity Building Project 2001-2003. The document was discussed at the Phase I Project Workshop in Oxford on 5-6 February 2002 and revised according to the findings of that workshop.

The purpose of this regional literature review is to give an overview of the tools available to assist decision-makers and technical staff in the planning and implementation of solid waste management systems in Latin America. The central documents being used in the KaR capacity building project are the ISWM Strategic Planning Guide supported by the Set of Five Capacity Building Tools produced by WASTE. The project will seek to ensure that capacity building activities are region specific and hence it may be necessary to adapt the Planning Guide to local conditions. It is hoped that the overview will provide an additional resource to the project team coordinating the design and implementation of capacity building activities for successful solid waste planning being undertaken in La Ceiba, Honduras.

This regional literature review is one of three which are being carried out in each of the target cities of the DFID KaR Capacity Building project i.e. Bamako (Mali), Bangalore (India) and La Ceiba (Honduras). These documents are now incorporated into this global document that considers a range of internationally distributed capacity building tools.

The publications reviewed in this document have been selected as either directly supporting solid waste management planning or specific elements of the planning process e.g. the design of sanitary landfills.

Sources of information

The sources of information accessed in the preparation of this document include both paper based and electronic publications and the analysis includes comments on the method of delivery.

There is an increasing wealth of information available to decision-makers, technicians and waste management practitioners in Latin America through the internet. A number of regional organisations specialise in waste management and both produce and distribute publications on the subject. Distribution is in some cases via downloadable files. Decision-makers require an internet connection and Acrobat reader software in order to access the downloadable pdf files (N.B. This is also a requirement for the ERM Strategic Planning Guide).
Regional organisations providing information on solid waste management and planning issues are discussed in the following sections.

**CEPIS**

The Pan American Centre for Sanitary Engineering and Environmental Sciences (CEPIS) is the specialised centre for environmental technology of the Pan American Health Organisation (PAHO), Regional Office for the Americas of the World Health Organisation (WHO) located in Lima, Peru. The Centre was established in 1968. The organisation’s mission is to cooperate with countries of the Americas to evaluate and control environmental risk factors that directly or indirectly affect the health of the population.

The organisation has an extensive library containing English, Spanish and Portuguese language publications. It has one of the most up-to-date collections of publications on environmental health in the Latin American region and can also be accessed through the internet.

The publications unit prepares, translates, prints and distributes manuals, guidelines, training modules, educational packages, technical documents, videotapes and other materials. These publications can be ordered by post, fax or through the website. In addition, selected publications are also available in downloadable form from the site.

The CEPIS website is located at [www.cepis.ops-oms.org](http://www.cepis.ops-oms.org) and includes a section dedicated to municipal, industrial and agricultural waste management. The CEPIS publications:

- Guía para el Manejo de Residuos Sólidos en Ciudades Pequeñas y Zonas Rurales
- Modelos de Privatización del Manejo de Residuos Sólidos Urbanos en América Latina
- Residuos sólidos municipales. Guía para el diseño, construcción y operación de rellenos sanitarios manuales
- Programa de costos según servicios prestados (COSEPRE) para el sistema de limpieza pública: guía técnica y manual del usuario COSEPRE 1.0

are reviewed in the current document.

CEPIS provides a comprehensive resource for anyone with access to the internet working in the waste management field.

**CEMPRE**

The Brazilian Business Commitment for Recycling (CEMPRE) is a non-profit association dedicated to promoting recycling within the scope of integrated waste management. It was established in 1992 and is maintained by private companies from various industrial sectors.
CEMPRE tries to increase the society’s awareness about recycling and waste as a whole through publications, technical research, seminars and data base development. The organisation’s mission is to:

- Promote the concept of integrated management of MSW
- Promote recycling after consumption
- Promote the 3 Rs principles of Reduce, Reuse and Recycle

CEMPRE is located in São Paulo, Brazil. The organisation has an extensive library containing Portuguese and Spanish language publications that can be accessed by hand in their centre and via the CEMPRE website. The website is located at www.cempre.org.br. CEMPRE publications can be ordered via the website.

The CEMPRE publication “Lixo Municipal: Manual de Gerenciamento Integrado” is also reviewed in this regional literature review.

The main focus of CEMPRE’s work is on reuse and recycling and most of their publications are in this area.

AIDIS

AIDIS (Asociación Internacional de Ingeniería Sanitaria) is present in most Latin American countries and often acts as an outlet for the sale of publications produced in the Latin American region e.g from the AIDIS Argentina website at www.aidisar.org.

The AIDIS publication Manejo y Disposición de Residuos Sólidos Urbanos produced by the Colombian branch of AIDIS, Asociación Colombiana de Ingeniería Sanitaria y Ambiental (ACODAL) is reviewed in the current document.

Metabase

Metabase is an internet based reference and research tool which can be accessed via the Metabase website at www.metabase.net. Metabase acts as a search engine that allows users to search member libraries and documentation centres across Central America in order to access and locate the documents they require. Metabase also presents detailed information about each documentation centre including their location, opening hours and lending policy.

For example, “Selección y disposición final de la basura: un servicio público municipal” also reviewed in the current literature review is located in the library of DEMUCA in Costa Rica and is therefore accessible to anyone living and working in waste management in and around the capital of Costa Rica. Hence Metabase can help practitioners to identify useful publications and locate in-country documentation centres from which publications can be borrowed.
LAM-1 GUIA PARA EL MANEJO DE RESIDUOS SOLIDOS EN CIUDADES PEQUEÑAS Y ZONAS RURALES

Title
GUIA PARA EL MANEJO DE RESIDUOS SOLIDOS EN CIUDADES PEQUEÑAS Y ZONAS RURALES

Writer(s)
Alegre, M, Cantanhede, A and Sandoval, L

Published By
Health Division, EHP/PAHO

Year
1997

Language
Spanish

Case Studies

Pages
70

Availability
Can be ordered from CEPIS website for US$10.
Also available in downloadable form from CEPIS website

ISBN

Funds from
Agencia Española de Cooperación Internacional (AECI)

Abstract

The publication covers the basic principles and key subjects for the correct management of solid wastes in small cities and rural areas of approximately 5000 inhabitants. In the first part, simple concepts and techniques for the evaluation, collection, recycling and final disposal of solid wastes are developed without detailed technical designs. Sanitary education and public cleansing service planning are covered in the second part of the publication. In the third section, various institutional and financial arrangements for solid waste management are discussed. In the last chapter environmental impacts and criteria for health and safety are discussed.

Comments

The document states that solid waste management should be planned and implemented in an integrated manner and that the success of SWM systems depends upon them being included in wider basic service development plans.

Despite the fact that the document includes sections on planning, the main focus of the document appears to be technical. Section 1 provides a number of tools designed to assist technical staff in the analysis of the current SWM system and the development of design criteria for improved waste management. These tools include:

- Methodologies for the direct and indirect calculation of waste generation rates
- Methodologies for the estimation of waste collection times based on both manual and mechanised collection
- Methodology for the calculation of area required for manual sanitary landfills
- Basic concepts for the treatment of organic wastes including composting, vermin-culture and animal raising
The second section outlines four phases for the planning and implementation of waste management i.e. Needs Assessment (1), Design (2), Implementation and Consolidation (3) and finally, Operation and Maintenance (4). The publication targets communities of 5000 inhabitants or less and the suggested participatory planning methodology presented reflects this fact. The methodology is not necessarily very applicable for cities such as La Ceiba with populations of over 100,000. The one exception to this might be in the case of peri-urban and/or semi-rural communities that may be isolated from the main urban centre and therefore need to be considered and planned for separately from the core waste management system.

The third section provides tools for the estimation of costs of service provision and ideas for sources of financing. The final section looks at environmental impacts as well as the health and safety aspects of waste management systems. Again the manual is designed for application in small communities and hence may have limited applicability to the city of La Ceiba.

The publication has two annexes. The first contains a form aimed at conducting a simple survey during the needs assessment phase of a solid waste management planning exercise (equivalent to Step 2 of the Strategic Planning Guide) and the second to keep records of the amounts and types of waste collected and dumped at the final disposal site (equivalent to Step 7 of the Strategic Planning Guide).
Abstract

This document analyses the process of privatisation in the municipal solid waste management sector in Latin America and the Caribbean. It indicates that these processes are not isolated and rather come about as a consequence of the globalisation of the economy and the neo-liberal development models adopted by the majority of countries in the region. The objective of the investigation is to provide orientation to municipalities that want to privatise their solid waste management services and initiate a process of evaluation to observe if this process is closing or widening the breach of inequality in the delivery of services to the poorest communities in cities.

Comments

The document is split into six sections with the most relevant sections being the presentation of the range of service delivery models currently operating in Latin America (Section III) and regional examples and analysis of success of these models in practice (Section IV).

The document discusses the advantages and disadvantages of different service delivery models and as such it is not really a tool for solid waste management planning but rather a reference document that could be referred to when discussing possible alternatives for service delivery in the target city.

Since models for private sector participation continues to be a key issue in La Ceiba, this document may potentially be useful as a reference during the project period.
LAM-3  RESIDUOS SOLIDOS MUNICIPALES. GUIA PARA EL DISEÑO, CONSTRUCCION Y OPERACION DE RELLENOS SANITARIOS MANUALES

<table>
<thead>
<tr>
<th>Title</th>
<th>RESIDUOS SOLIDOS MUNICIPALES. GUIA PARA EL DISEÑO, CONSTRUCCION Y OPERACION DE RELLENOS SANITARIOS MANUALES, PROGRAMA DE SALUD AMBIENTAL, SERIE TECNICA NO. 28</th>
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<tr>
<td>Writer(s)</td>
<td>Jaramillo, J. adapted and edited by Francisco Zepeda</td>
</tr>
<tr>
<td>Published By</td>
<td>PAHO, Washington DC, United States</td>
</tr>
<tr>
<td>Year</td>
<td>1991 (Re-published 1997)</td>
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<tr>
<td>Language</td>
<td>Spanish and English</td>
</tr>
<tr>
<td>Case Studies</td>
<td>Municipality of Antoquia, Medellin, Colombia</td>
</tr>
<tr>
<td>Pages</td>
<td>214</td>
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<tr>
<td>Availability</td>
<td>Can be ordered from CEPIS website for US$15. Also available in downloadable form from CEPIS website</td>
</tr>
<tr>
<td>ISBN</td>
<td></td>
</tr>
<tr>
<td>Funds from</td>
<td>Agencia Española de Cooperación Internacional (AECI)</td>
</tr>
</tbody>
</table>

Abstract

Easy reading manual where the basic principles of sanitary manual landfilling, applied in the first stage of the Urban Cleansing Programme conducted by the Government of Antioquia (Colombia) in the Municipalities of Antioquia (Medellin), as some shared experiences with different techniques in different countries visited during the study carried out in 1989.

Comments

The manual is written in language that is accessible for local decision-makers and technical staff to whom it is mainly directed. The document has seven sections that lay out the basic principles of sanitary landfilling and run through site preparation and construction, design methodology, operation and maintenance and administration and control. The manual includes worked examples for each stage of the development process.

Also included are a glossary of terms and four annexes (worked designs, drawing and topography methods, monitoring methods and municipal agreements for the construction and operation of manual sanitary landfills). Overall, the document provides a useful guidance manual for practitioners in the region and could be used alongside the planning guide (Steps 1 to 7). The manual is published in Spanish and can be ordered from the CEPIS website. It is also available in downloadable form from the CEPIS website.

However, it is important to note that manual sanitary landfills are designed for use in communities of less than 40,000 inhabitants who produce less than 20 tonnes of waste per day. As such the manual is not directly applicable to the case study city of La Ceiba where waste generation rates are estimated as closer to 180 tonnes/day.
LAM-4 PROGRAMA DE COSTOS SEGÚN SERVICIOS PRESTADOS

Abstract

Technical guidelines explaining the use of the computer programme COSEPRE (Costos según Servicio Prestado) that determines the annual and unit cost of each service taking as a base the information entered by the user. The programme (in diskette) analyses the following services: manual and mechanical street sweeping, collection, transfer and transport and final disposal. It examines the necessity to implement a transfer station taking as the basis for the decision on and the analysis of the unit cost, including cash flow for the installation of a sanitary landfill that offers the user the possibility of calculating the useful life of this infrastructure, amongst other information. The users manual facilitates the installation, operation and maintenance of the database. It explains in detail the modules that appear in the principal menu of the program.

Comments

The COSEPRE model is available on diskette and operates on an IBM compatible PC of at least 1024 K RAM, and 4 MB hard drive. The computer also requires DOS, Version 3 and above.

The model is designed to estimate both unit and annual costs for key solid waste management services. It requires the user to enter a range of data including estimates of capital costs; operation and maintenance costs; personnel costs; and administration and financial costs. Hence it could only be used at the point where technical staff have developed a range of operating models and want to compare the costs of these scenarios (Steps 4, 5, 6 of the Strategic Planning Guide). The model carries out a purely financial analysis and does not take into account other aspects that are considered in an integrated waste management planning process e.g. economic, environmental and social aspects.

The diskette can be purchased via the CEPIS website and is accompanied by two downloadable manuals: the Technical Guide and the Users Manual.
The publication provides a useful tool for the calculation of unit costs. However, it represents only one element of the analysis required for the development of a waste management strategy and action plan.
Abstract

This is the principal Brazilian publication about how municipal governments should manage municipal waste in their cities. The publication covers the following aspects of waste management:

- Collection of waste and route planning
- Hospital waste
- Closure and remediation of dumpsites
- Siting, construction and operation of sanitary landfills
- Use of compost
- Separate collection
- Recycling
- Incineration
- Legislation

The publication was launched in 1995 in partnership with the Institute of Pesquisas Technologies of Sao Paulo and revised and widened in 2000. It was distributed in all parts of Brazil and is used as a reference work throughout Brazil.

It has been translated into Spanish for application in other Latin American Countries and is being used as a base for the development of a future World Bank publication for waste management in developing countries.
Abstract

This publication outlines a range of methodologies and techniques directed at facilitators of group processes. It is directed to organisations and institutions interested in promoting change through democratic and participative processes.

Comments

This document is not directly related to solid waste management planning or implementation rather it could be used to complement the tools for participatory planning outlined in the ERM Strategic Planning Guide.
LAM-7 PLANEACIÓN ESTRATEGICA

<table>
<thead>
<tr>
<th>Title</th>
<th>Planeación Estrategica</th>
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<tbody>
<tr>
<td>Writer(s)</td>
<td>Lopez Escoto, Douglas Antonio and Zelaya</td>
</tr>
<tr>
<td>Published By</td>
<td>EDUNITEC Universidad Tecnológica Centroamericana (UNITEC)</td>
</tr>
<tr>
<td>Year</td>
<td>1996</td>
</tr>
<tr>
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<td>Case Studies</td>
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<td>Pages</td>
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<td>ISBN</td>
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<tr>
<td>Funds from</td>
<td>USAID</td>
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</tbody>
</table>

Abstract

This document is a guide for decision-makers and technical staff responsible for strategic planning in Honduran municipalities. It is made up of course materials used in training workshops aimed at members of municipal corporations and municipal governments. This course was part of the Municipal Development Project of the Municipal Capacity Building Programme of the Central American Technological University. It was undertaken with funds donated by the office for Municipal Development and Democratic Initiatives of USAID.
The objective of this document is to provide basic instruments to mayors of middle sized municipalities in Guatemala for the development of municipal plans for solid waste management. In order to facilitate the reading process, the document is organised in eight independent modules that cover the following subject areas:

Section 1: Policies for Municipal Authorities
Section 2: Technical Aspects
Section 3: Legal Aspects
Section 4: Economic and Financial Aspects
Section 5: Administrative Aspects
Section 6: Social Participation Aspects
Section 7: Analysis of solid waste in the main cities of the country.

The document contains graphics and drawings that illustrate the technical aspects of solid waste management just as they have model documents and format for the legal aspects (agreements and contracts).

Comments

The document is directed to municipal workers working in a medium-sized municipalities, as is the case of La Ceiba and hence could be of use in the development of the project especially in terms of the technical, administrative, financial and legal aspects. It provides a practical instrument for the calculation of tariffs, costs, losses and gains. In some aspects the document refers specifically to the Guatemalan reality, for example, with regards to the legal aspects but otherwise could serve as a useful reference document.

It also provides instruments to promote community involvement in the planning process although this is not covered in much depth.
Title: Administración del servicio municipal de basura

Writer(s): Garcia, Leonardo

Published By: Fundación Friedrich Ebert Stiftung, DEMUCA – Cooperación Española y Asociación de Municipios de Nicaragua

Year: 1995

Language: Spanish

Case Studies: 32

Pages: Can be requested from the Fundación Friedrich Ebert offices in Managua, Nicaragua. Tel: 00-505-668505 or 668506, Fax: 00-505-668508 Available in the ACEPESA Documentation Centre, San Jose, Costa Rica

ISBN: Funds from Fundación Friedrich Ebert, AECI

Abstract

The document is written in a simple form and is directed towards municipal employees working in different elements of the urban cleansing services including final disposal. It has a large number of illustrations and photographs as well as precise instructions for the calculation of waste generated, tariffs etc.

The most important elements of the document are: a conceptual definition of waste, analysis of the generation and composition of waste in Nicaragua. It also covers the organisation of the public cleansing services in the following areas: setting up a basic information system, service planning, calculating service tariffs, control and monitoring of service and effective service management. It also contains a section about community participation and environmental education.

Comments

Since the publication is aimed at municipal workers in intermediate and small cities in Nicaragua, it could be useful for work in the municipality of La Ceiba especially the capacity building of the people responsible for service provision in the city, as well as the waste collectors.
Abstract

The publication uses a mainly engineering orientated approach to solid waste management. It includes diverse aspects of solid waste management, starting with the consequences of poor management followed by classification storage, equipment to use in different circumstances as well as legal and institutional aspects.

It also looks at incinerators and sanitary landfills including technical criteria for site selection, construction and management. The document also includes a case study about a sanitary landfill in a Colombian city.

Comments

The document could contribute to the needs assessment phase for the waste generated and the selection of alternatives for waste management. This information could support the needs assessment process being carried out in La Ceiba.

In addition, the fact that it is produced in a clear and illustrative style means that it could also be used to support the capacity building process of the stakeholders in the technical aspects of solid waste management.
La solución está en nuestras manos: Cómo diagnosticar y organizar a la comunidad

Abstract

The document is aimed at community leaders for the establishment of organisation mechanisms and strategies to reduce bad habits and the inadequate management of solid waste management. It uses a tree methodology and strong and weak points analysis to develop a work plan in the community.

Comments

The document consists of teaching material for easy understanding for people with a relatively low academic level. It forms part of a set of five modules designed for work with communities in Costa Rica. This document could be used to work with communities during the needs assessment phase of the planning process when working directly with inhabitants of affected neighbourhoods in the identification and development of proposals. It allows for capacity building of community leaders such that they can promote their own analysis and development of projects. It has been used in rural communities and neighbourhoods similar to those in La Ceiba, Honduras.
Abstract

The document shows how to organise the adequate and efficient collection of waste in poor urban neighbourhoods and final disposal without contaminating the environment.

The document concentrates on the creation of micro-enterprises for solid waste management. The contents are: how to face the challenge of solid waste management in the poorest neighbourhoods, requirements for the successful creation of micro-enterprises as an alternative, presentation of the micro-enterprise creation process.

Comments

This is a very basic guide that aims to promote the creation of micro-enterprises in poor communities in South America. It could be useful in the implementation phase of the project in La Ceiba if it turns out that the formation of micro-enterprises is a way to provide a collection services to the least accessible neighbourhoods of the city. It would need to be adapted to these purposes.
LAM-13 PLANIFICACION PARA ORGANIZACIONES DE DESARROLLO

<table>
<thead>
<tr>
<th>Title</th>
<th>Planificación para organizaciones de desarrollo. Herramientas metodológicas</th>
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<tr>
<td>Writer(s)</td>
<td>Mendonca F. y Arroyo J.</td>
</tr>
<tr>
<td>Published By</td>
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<tr>
<td>Year</td>
<td>1993</td>
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Abstract

This is a practical guide for the development of strategic plans. The guide covers the following subjects: planning concepts; outline of planning methodologies; how to develop a workplan for the process; how to establish the direction of development, determine the problems, how to find solutions, how to identify priority projects, how to determine the mission, the lines of action and develop the operating plan. In addition, it contains a glossary of the most important terms used in the document.

Comments

This is specifically designed as an instrument to be used at the moment a Planning Workshop is being held as part of the overall planning process. It could potentially compliment the methodology laid out in the ERM Strategic Planning Guide.
Abstract

Practical guide directed at municipalities, analysing the problems associated with solid waste management from the environmental, health, sanitation and political perspective. It presents a model for integrated solid waste management from waste collection to final disposal within a general management framework for wider municipal services.

The guide contains a section that outlines the effects of poor waste management. This is followed by an analysis of the waste collection service, the type of equipment used and a methodology for carrying out the waste collection route analysis. The alternatives for waste disposal and management of the disposal site are discussed.

The publication also covers management issues for service delivery including service planning. Finally models for regulations, statures and other basic instruments for solid waste management are also provided.

Comments

This publication has a eminently sound technical basis which will provide useful support material for the capacity building process for stakeholders in the city of La Ceiba, Honduras.
Regional Literature Review: India

Compilation: Anjana Iyer

IND-1 “Manual on solid waste management”

<table>
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<th>Title</th>
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<tbody>
<tr>
<td>Author(s)</td>
<td>Edited by Dr. Sneha Palnitkar</td>
</tr>
<tr>
<td>Publisher</td>
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<td>Year</td>
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</tr>
<tr>
<td>Funder</td>
<td>All India Institute of Local Self Government, Mumbai, India</td>
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Abstract and comments

This manual is meant to guide the development of an effective solid waste management policy for large cities. It is based on the hypothesis that:

- Keeping a city clean is not only about operating expensive machines but about simple changes such as the design of a broom.

- Communities must be involved in the development and implementation of the system.

- The informal sector actors (waste pickers etc) must be given the attention they deserve.

- A system of collection, transportation and disposal of waste cannot be transplanted from another place where it has been successful – rather it should be adapted to local conditions.

- Trade unions must be taken into confidence for a system to be effective and smooth.

- Waste disposal mechanisms must be financially and environmentally sustainable.

The manual begins with a description of the types, sources and characteristics of municipal solid wastes, as well as quantities and rates of waste generation in India. What follows are operational aspects of key functions of the process of solid waste management – street sweeping, door-to-door collection of waste, storage of wastes, transportation and treatment of wastes. The operational aspects focus on man-power requirements, equipment design, norms to measure performance of workers, and work systems for different types of locations – commercial, residential, high-rise buildings, slums.
and so on. Analysis is also available on the cost and durability of the various equipment. All
data presented reflect equipment that is currently in use in different cities as well as
suggestions on improved or new versions. The comparative data are very useful and relevant.

Chapter 6 focuses on waste disposal options starting from open dumping to sanitary
landfilling, composting, incineration, pelletization, pyrolysis and hydropulping. Composting
receives a lot of importance as a treatment method as Indian wastes are highly suited to this
method. Decentralised composting operations are encouraged with the cost estimated to be
about Rs. 1300 per metric tonne. The descriptions focus more on the standards and
operational procedures that are accepted world-wide and no local case studies have been
included.

The essay on waste recycling in practice gives an overview on the different actors involved in
waste recovery and recycling, the types of materials being recovered and the market prices in
each segment. It is a very useful note for those who wish to understand the dimensions of the
informal recovery sector.

The chapter on hospital waste management outlines the types of hospital waste and
emphasises that the start of a good system lies in segregation. The guidelines for the different
categories for segregation, disinfection, storage collection and treatment are extracted from
the Bio-Medical & Hazardous Waste Rules (1998). A useful part of this essay is the elements
of a hospital waste management plan – this gives the framework for all those involved in
hospital waste management.

A separate but brief chapter is dedicated to the management of waste from eateries and hotels.
This waste stream is seldom given the importance it deserves – it states how (but not in great
detail) this largely organic type of waste can be effectively collected and used.

The section on the legal framework is quite exhaustive focusing both on statutory obligations
of municipalities and waste generators, as well as standards for different operations in
municipal solid waste management. What is especially useful are prototype agreements
between municipalities and contractors for the installation of treatment plants, or in providing
services associated with municipal solid waste management.

The section on community participation explains the roles and inter-relationships between the
stakeholders, while the chapter on man-power planning has well illustrated guidelines for
planners and municipality functionaries.

Last but not least, a chapter on training and capacity building – an aspect that no decision-
maker in municipal solid waste management can afford to ignore.

The manual on solid waste management is a well written, concise book and can be put into
practice in Indian cities in the area of municipal solid waste management.
The introduction and historical perspective on solid waste provides the reader with some interesting facts on the generation of waste in different countries and their socio-economic criteria. There is a detailed explanation of a methodology to quantify and classify waste. Also there is an explanation of why quantification of waste is important: the data are important (for example, the density of waste generated in India) for the planning and design of a cost effective collection and disposal system. An added useful component is the seasonal variations in the quantity of waste generated. This again has a bearing on the design of the collection system. The chapter on industrial waste briefly describes the generation and treatment of several types of waste including waste from oil refineries and steel plants.

The manual, while dealing with the operational aspects of waste collection, storage and disposal details certain techniques such as Motion - Time - Measurement - Technique (MTM) to determine the sequence of activities that are needed to complete a repetitive task within the shortest time and in the most ergonomic manner.

The manual describes the tools and equipment best suited to local conditions and suggests designs that are useful and cost effective under Indian conditions. Drawings have been provided for different types of waste handling equipment. Although it describes certain expensive equipment such as mechanical sweepers, the manual does not recommend this for Indian cities against the more effective option of manual sweeping.

One of the important aspects of this manual is the section on the Environmental Impact Assessment techniques for solid waste management and criteria to be used. This is especially useful as EIAs is only now getting the recognition it deserves in India and more so in the case of solid waste management.

There are two brief sections on the financial and legal aspects of solid waste management, while the sections on standards for different processes of treatment and disposal are detailed and explicit.
This manual is more useful in the areas of EIA and process control of waste treatment and disposal etc. than in the area of decision-making by municipal functionaries.
This book is a compendium of best practices and case studies from different parts in India on practices and systems in solid waste management. It is intended for practitioners in solid waste management, whether at the micro or macro level, in an informal or a formal situation.

One of the most valuable lessons is that even within a country such as India, diversity exists: cost of collection of domestic solid waste was found to vary from Rs. 95 per ton to Rs. 895 per ton.

The comparison of different kinds of collection, storage and transportation systems is based on well-recorded experiences in the field. It even includes the results of a feedback survey of a particular collection system in an Indian city. Design modifications are suggested to overcome some of the practical problems experienced during the process of collecting and transferring waste and the simple descriptions are fairly easy to understand.

The sample tender documents serve to highlight how municipal services can be contracted out effectively to the private sector.

The institutional, managerial and social aspects place some new perspectives on solid waste management – for example, can one consider a career in solid waste management? How can the informal and NGO sector be integrated into the picture of solid waste management? The book ends with views elicited from officials on different stakeholders and aspects of solid waste management – a sort of “view from the top”. This section emphasises that several inter-relationships within the framework of solid waste management are important but are nevertheless sensitive, for example, the rapport that a municipal official has with the sweepers’ union or an elected representative.
Regional Literature Review: West Africa

Compilation: Modibo Keita and Nadine Dulac

MAL-1 “Methodological Manual for Planning Municipal Development”

<table>
<thead>
<tr>
<th>Title</th>
<th>“Methodological Manual for Planning Municipal Development = Guide Méthodologique de Programmation du Développement Communal”</th>
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<tr>
<td>Author(s)</td>
<td>Mission for Decentralisation and Institutional Reorganization</td>
</tr>
<tr>
<td>Publisher</td>
<td>National Direction for Local Authorities</td>
</tr>
<tr>
<td>Year</td>
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<td>Languages</td>
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<td>Case-studies</td>
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<tr>
<td>Pages</td>
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<td>-</td>
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<td>Funder</td>
<td>Mission for Decentralisation and Institutional Reorganization</td>
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</table>

Abstract

This manual is used as the baseline document for the design of municipal development programmes. It is easy to use and it is suitable for most users, represented by municipal officers. This document is meant for every person involved in the process of planning sustainable development. It contains 3 sections. Among them, Section 2 is dealing more precisely with planning. With the different steps of the planning process, let us mention the stakeholders participation and in particular, the consultation of the future beneficiaries through the heads of villages or neighbourhoods.

The document is organised as follows:

- Section 1 is dealing with preliminaries necessary for successful planning. In particular, this section gives the users, sufficient information and advises on how to settle their planning intervention. Among the preliminaries, we can list: methodology on participatory meeting, management of time, facilitation of people’s talks.
- Section 2 describes the planning process itself. It is divided into 7 steps: the awareness and information campaigns for the population, the assessment and knowledge of the existing situation, the consultation and discussion with village representatives, the design of a municipal planning, the agreement of the planning proposal by the local authorities and last step, the restitution of the decision to the population. At every step, the manual is structured based upon the following order: objectives to achieve, list of the main stakeholders, estimate of the duration for the implementation of each step, expected results and tools available to execute the tasks.
- Section 3 is focusing on the implementation stage of the planning proposal. The implementation phase includes: the estimate of resources needed (both manpower, financial and equipment), the description of the actions planned and the monitoring modalities.
Comments

This manual has been designed to assist all public sectors involved in sustainable development. This is why some parts of this manual can be used for planning solid waste management. The more interesting parts of this manual are: the steps dealing with the assessment of the existing situation, the steps which focus on the awareness of the stakeholders and the steps presenting the importance of consultation and discussion. It is too bad that the third section of this manual is not in-depth enough. Therefore, another manual focusing on the implementation stage is necessary. The manual looks nice and attractive. It is made out of different colourful modules and it is easy to use. Another advantage is that this manual is known by a large majority of municipal officers, including Commune VI of the District of Bamako. And last but not least, the planning process requires the facilitation by external people and the users have to participate for the exercise to succeed.
Abstract

This document is complementing a document published previously. It is produced upon an initiative of the World Health Organisation. This document is not only dealing with the assessment and analysis of data but also with the analysis of the current problems and objectives, the economic estimate of the budget and the formulation of an operational plan. The approach consists in the realization of workshops based upon the PPO methodology, in other words, the planning of projects by objectives. This document has been made to update stakeholders involved in the sanitation sector, with information on the current situation, including legal, institutional and juridical framework in order to develop a sustainable operational plan.

This document includes:
- The presentation of the commune with all pertinent information
- The description of the current situation in the sanitation sector, with an assessment of the limitations of the current infrastructure (leading to need assessment)
- The operational plan itself

The most interesting phases of this planning are:
- The investigations together with site visits and evaluation to assess the situation within the boundaries of Commune I
- The organisation of a workshop with all stakeholders involved in sanitation

The main steps of the workshop are:
- The listing of strengths and weaknesses by actor
- The analysis by different topics for every problem: main problems, main causes, impacts, measures and actions to be taken
- The analysis of objectives: specific objectives, success indicators, main activities, sub activities, responsible, and scheduling
• The realization of a plan: including specific objectives, success indicators, main activities, responsible, scheduling, means and financial resources

Comments

This approach is a variant of the PPO methodology. This methodology allows to create a favourable environment between people engaged in the planning process, based upon trust and social understanding during and after the workshop. Another advantage is that all participants receive the same information. This methodology allows to bring many people together in a short time. The visualisation (on board) of all findings or results allows a better understanding and increase communication between stakeholders. In practical, this methodology allows to identify specific topics for analysis together with the problems and the measures to be taken. This approach is usually followed by the creation of a committee, responsible for the finalisation of the process. The weak point lies in the lack of implementation and monitoring stages. Financial resources are listed but no financial set-up is available for example. In the case of infrastructure, the plan only gives total costs for the construction of a final disposal site and intermediate transfer sites, without any pre-feasibility study and cost analysis (investment/operational).
MAL-3 “Planning of basic sanitation activities in every Commune of the District of Bamako"

<table>
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<tr>
<th>Title</th>
<th>“Planning of basic sanitation activities in every Commune of the District of Bamako = Planification des activités d'hygiène et d'assainissement de base dans les communes de Bamako&quot;</th>
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<tr>
<td>Author(s)</td>
<td>Regional offices for health, CREPA</td>
</tr>
<tr>
<td>Publisher</td>
<td>Every municipality (6 in total)</td>
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<tr>
<td>Year</td>
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<td>Case-studies</td>
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Abstract

This document has been elaborated thanks to WHO and the Health Regional Office in Bamako. This document is a variant of the PPO methodology. This planning has been made based upon preliminary discussions, consultation and meetings among all stakeholders. The planning of basic sanitation activities has been made for 5 years. This document is constituted of 3 parts: the synthesis on the findings on the current situation in the sanitation sector, the findings from the workshop and the conclusion.

People have been asked to work on the following aspects:

- Identification of problems: field of intervention, main problems
- Identification of objectives: field of intervention, overall objectives, specific objectives
- Elaboration of a logical framework: specific objectives, results, indicators, critical conditions
- Activities and schedule: specific objectives, activities, responsible, financial resources, schedule, special comments.

This document is therefore a five-year plan for integrated actions in basic sanitation. This document should allow stakeholders and municipality to work together in the implementation stage.

Comments

This planning has to be followed by the completion of an operational plan. This planning process has shown that it is important to link sanitation planning with other planning activities at local or regional level. Unfortunately, this document is lacking a pre-feasibility study and until now is not responding to the expectation of the people.

In general, the PPO methodology is composed by the following steps:
- Analysis of the participation
- Analysis of the problems
✓ Analysis of the objectives
✓ Analysis of alternative strategies
✓ Elaboration of a logical framework.
The approach is at any time participatory.
Abstract

This document has been produced upon the request of the Agency for Community Development in Commune I. It allows the Committee for Participatory Development (also known as CDP in French) to improve its role. It also supports CDP in mobilising the participation of the people in local issues.

The document includes general information on the Commune I, the findings from the institutional analysis, the planning for institutional support, and also the suggestions and recommendations followed by the conclusion. For the completion of the planning, the following approach has been selected:

- The participatory diagnosis of the Committee for Participatory Development was made using analytical grids for the identification of the problems with their priorities and the identification of solutions with their priorities.
- The restitution of the results with the use of a combined analytical grid, identifying strength and weaknesses of the Committee for Participatory Development together with the synthesis of the existing situation.
- The completion of the planning in assembly using the following analytical model: field of intervention, objectives, activities, actors and responsible, scheduling, costs, external/internal financing.
- The last activity consisted in the definition of the tasks and responsibilities of actors using another analytical model, with two inputs (actors, task).

Comments

This document as such cannot be used in the context of solid waste management planning. But this document is presenting an interesting set-up, the Committee for Participatory Development. This set-up allows the public to participate in some municipal management planning and social services. In this case, the Committee for Participatory Development can play its role in the solid waste management planning process although it seems that the CDP is not strong enough in the social network and its capacity for planning is weak. The strong point is that the CDP is mainly constituted by young people and that the CDP is accepted by village representatives. Another advantage is that CDP allows to mobilise and increases the
synergy of efforts aiming for a sustainable development at the municipal level. This role is even stronger in this period of time, when a multitude of organisations, initiatives and projects are taking place, creating confusion and some times, waste of energy, time and resources.
WHAT IS INTEGRATED SOLID WASTE MANAGEMENT (ISWM)?

The concept of ISWM is based on the assumption that improvements to solid waste management depend on many factors and not just the technical solutions (Klundert and Anschütz, 2001). ISWM is an umbrella term which takes into account various social, economic, technical, legal and political aspects which are necessary to consider at the planning stage. An ISWM approach gives an overview of various aspects in different stages from generation to disposal of solid waste. Often it is challenging to satisfy all the aspects and create a balance between them during the implementation. However, what seems possible is to develop the tools which could analyse the situation and inform the key stakeholders. So far, there are very few tools and very little research has been done to operationalise the concept of ISWM for practitioners. The current KaR project by ERM and WASTE could work in this direction.

The current literature on ISWM covers a number of aspects of integration and sustainability in solid waste management. Some of the common aspects mentioned in all the literature are:

1) Involvement of all the stakeholders, with a special focus on the weaker members, for example, waste pickers, waste collectors, women and children.

2) Consideration of all the stages in waste management from waste collection to disposal.

3) A careful analysis of the problem before developing solutions. Further, development of local solutions rather than copying models from the high-income countries.

4) Entitlement of weakest groups of population such as waste pickers, residents of low-income areas to have a service.

5) Considering waste as a resource rather than a problem and to promote recycling and reuse.

6) Financial sustainability with a focus on the efficient use of finances and cost recovery.

7) An integration of solid waste management with other infrastructure and services, for example, urban drainage, wastewater treatment, energy provision etc.

If adopted, the ISWM approach promises the following:

a) Lower costs of waste management and reducing the risks of clean-up cost later.
b) Less environmental pollution of soil, water and air.

c) Conservation of raw materials.

d) Better co-ordination of urban services.

e) More active citizen participation, who contribute to urban development.

f) Greater citizens’ satisfaction with the services provided.

g) Better image of the city and fewer health hazards.

h) Better financial management and higher cost recovery.

i) Better performance of waste management departments.

j) More income from tourism, fishing and agriculture.

What are the issues?

- The concept of ISWM is very broad and encompasses a wide range of aspects. While this is a strength for planning, the broadness of the concept makes it less practical and difficult to market ISWM as a product to practitioners. For example, if municipal officers agree on all the principles of ISWM and ask for practical advice, the literature and examples are rather thin.

- Most of the examples quoted previously, for example in the WASTE toolkit, actually deal with one or two aspects of integrated solid waste management. The focus of most of the examples is on the involvement of the poorest citizens. More examples of using ISWM as a planning tool and its relative advantages over existing methods are attempted at in the ERM Strategic Planning Guide.

- A number of aspects of ISWM are beyond the boundaries of local authorities responsible for infrastructure and services. Many of these aspects need a wider collaboration of official agencies, private sector and citizens. Such collaboration may increase the cost and further centralise the implementation process.

- Planning of Solid Waste Management in low-income countries takes place when it is linked with a project and when funds are available. Generally, local authorities do not plan solid waste management systems for cities as a routine or for the sake of data and information collection. It is necessary to think carefully about the incentives to local authorities for ISWM planning.
WHAT IS CAPACITY BUILDING?

Capacity building is a term that is widely used in development literature and is subsequently defined in many different places. It is considered as a way to set the conditions right for the resources to work effectively (Peltenburg et al. 1996).

Capacity building targets to strengthen and improve the management in terms of building technical, financial and managerial capabilities. It upgrades institutional and technical capacities of the key actors to help identify, understand and evaluate complex urban environmental problems such as solid waste management (Frank and Edelman, 1997). It is often used to refer to the development of human or organisational resources. However, capacity building cannot be seen or undertaken in isolation. It is part of the social, economic and political environment. It is also difficult to undertake one component as a capacity building initiative without taking into account the other parts. Capacity building is not ‘doing development’ and is not risk free. It is about long-term investment in people and organisations and a commitment to the various processes to better their lives (Eade, 1997). Capacity building is designed to promote change and reach beyond the project based interventions themselves and over wider social and economic grounds.

Capacity building in Integrated Solid Waste Management is ideally the strengthening of the local organisations and individuals through providing them the right type of conditions. The conditions could only be right through a gradual process which will involve:

- Documentation and sharing of information
- Developing and testing appropriate tools
- Training and workshops
- Developing sustainable systems of resources

Since capacity building and integrated solid waste management are both fairly broad terms, there may be a certain number of pre-requisites for the project:

- A very clear description of integrated solid waste management and its various components
- An understanding of various organisations who are responsible or who could contribute to various components
- Working out what could be initiated during the project period and how it could be sustained
- How to measure the success of the above
- What lessons could be shared with others

Conventional tools for capacity building:

There are few common tools being used for capacity building. The choice of tools depends upon the requirements, available resources and target group. The common capacity building tools are:

Research, publication and dissemination
Training and workshops
Networking
Education

In the last few years WEDC has worked on a number of ISWM aspects. The following sections give a review of WEDC’s projects with a focus on capacity building components:
REVIEW OF CAPACITY BUILDING COMPONENTS IN THE PAST WEDC’S PROJECTS ON INTEGRATED SOLID WASTE MANAGEMENT:

Appropriate Landfilling

*R 6842, Appropriate landfilling of solid waste* was awarded as a DFID’s Technology Development and Research (TDR) project in 1997 for a duration of 15 months. The purpose of the project was to contribute towards the improvements in disposal practices of solid waste. The fieldwork was carried out in collaboration with the local partners from NED Engineering University, Karachi, Community Action Programme and Municipal Corporation Faisalabad and Arba Minch Water Technology Institute in Ethiopia. The findings of the project were compiled as “*Down to Earth*”, the major output of the project. In addition, a paper was published in the journal of the Institute of Wastes Management (IWM) and DFID’s newsletter, *Earthwork*. The project outputs are also available on WEDC’s web site and other relevant sites such as ID21. Most of the outputs were paper based with contributions from local collaborators.

Capacity Building Lessons

The following lessons were learned in relation to capacity building:

a) The local needs in the three locations were context specific and different. While local authorities agreed on the general principles to have a landfill site etc. it was beyond the scope of the project to provide inputs on the specific local needs, for example, design components, land surveys etc. Most of the local authorities were extremely short, both in terms of human and financial resources, in carrying out these tasks.

b) The pressure to address local needs often demands immediate solutions. This is how the work is generally undertaken in low-income countries and to change this pattern needs long-term commitment. The landfilling research was targeting for a single major output, which was due after 18 months. While local collaborators were expecting researchers’ input on their immediate needs. The research process should have a mechanism to address both the local problems and research material.

c) Working with local partners is an effective way of enhancing their capacity and learn from them. This component was not so strongly built into this research.

d) Publication of outputs and their effective dissemination is an important aspect of local capacity building. The publication “*Down to Earth*” is in the list of resource books for various universities in the UK and in low-income countries. This will help in the long-term capacity building of professionals.

e) The research had a budget of 100 complimentary copies, which were distributed in the year 1999. The publication is now priced at £20 per copy. This price is beyond the capacity of many practitioners and researchers in low-income countries. As a result most of the copies are being purchased by international organisations. An important point here
is the need for further consideration on how to make publications accessible to practitioners in low-income countries.

**Micro-enterprise Development**

*R 6540, Micro-enterprise development for primary collection of solid waste* was awarded in March 1996 for a period of 24 months. The purpose of the project was to demonstrate the feasibility of micro-enterprises as part of a privatisation strategy through institutionalising some existing practices by municipal and private sweepers without undue socio-cultural disruption or increase in poverty and/or unemployment. The project collaborators were ICDDR,B Bangladesh and Community Action Programme (CAP), Faisalabad. The project was based on WEDC’s earlier work on sweepers in Karachi. During the project, more than 80 local initiatives were documented in the cities of Dhaka, Karachi and Faisalabad. Male and female sweepers were interviewed. The preliminary findings of the project were discussed in an electronic conference organised in December 1997. The background paper was prepared and also discussed in the conference. A paper was presented in the WEDC’s conference and the project findings were compiled as a publication, “Sweeping Business”. Copies of the publication are available on WEDC’s and other relevant web sites.

**Capacity Building Lessons**

The following lessons were learned in relation to capacity building:

1) Working with local partners is an effective way of enhancing their capacity and learn from them. Their research capacity and a better understanding of issues could be developed. Networking activities were initiated in the cities of Dhaka and Karachi through existing groups.

2) Local authorities remained reluctant to buy the idea of micro-enterprises. Questions were asked about the management cost and effectiveness of micro-enterprises etc. Such data is not readily available and could vary from one situation to another.

3) The idea of supporting micro-enterprises to benefit the poorest of the poor was not entirely agreed by public health officials, where the responsibilities are taken to keep the city clean and to protect public health.

4) The project has collected significant quantities of information, but never had time to analyse and publish them all.

5) The project outputs had generated a lot of interest in the issue and the research was considered as original in findings by peer groups.

6) An electronic consultation was carried out to discuss the preliminary findings. One of the added advantages of the consultation was to bring the participants closer.
Capacity Building for Primary Collection of Solid Waste

R 7143, Capacity building for primary collection of solid waste was awarded in April 1998 for a period of 24 months through DFID’s KaR programme. The purpose of the project was to enhance the capacity of government and NGOs to improve the primary collection of solid waste by promoting micro-enterprises. The project approach was to produce outputs for the target audience, based on the research carried out earlier in the project R 6540. Water and Sanitation Programme (WSP), International Training Network (ITN) Bangladesh and Karachi Administrative Women Welfare Society were included as the local collaborators in addition to the previous collaborators. A number of outputs have been prepared and distributed over the project duration. The project approach was to produce outputs based on the knowledge already available. The following outputs were produced and distributed:

1) Citizens guides were produced to promote local initiatives in primary collection. The guides were produced both in English and local languages for the cities of Dhaka, Karachi and Faisalabad. These short guides of approximately 40 to 50 pages have been successful in transferring knowledge and building confidence of community groups in initiating and sustaining primary collection programmes.

2) Synthesis material was produced on the key issues in solid waste management. The material covered the topics of Success and Sustainability Indicators, Gender and Waste, Micro-enterprise Development, Vehicles for Primary Collection and the Role of Community Based Organisations. These synthesis documents were well illustrated with short summaries of already available material.

3) A booklet on “Success and Sustainability Indicators” was prepared. Earlier the indicators list was prepared and field tested in Khulna, Bangladesh.

4) A separate output on the process of change was prepared and distributed. This publication documented and analysed the changes in solid waste management systems in the research cities.

5) A weeks training was organised in Dhaka in partnership with International Training Network (ITN) on the topic of Integrated Solid Waste Management (ISWM). Later the impact of the training was assessed by interviewing the trainees in their work environment.

Capacity Building Lessons

This project was focused on capacity building and there are many important lessons learned in terms of needs assessment, knowledge products, dissemination pathways, up-take of knowledge and its impact. Some of these findings are included in other sections of this paper. Initiatives like, Success and Sustainability Indicators could be taken further in the new KaR on Integrated Solid Waste Management. Following is the Abstract of lessons learned:

1) Short outputs like synthesis notes have been very popular among practitioners. They have played an important role in introducing new topics and raising awareness. Some of the concepts, though very well known among donors and researchers in international
development, are relatively new to the municipal staff in low-income countries. Synthesis notes were written in an attractive format.

2) Capacity building initiatives must be well integrated with the actual decision making process. The process of change and power structures are often the product of social and economic context and capacity building on sub-sectors such as Solid Waste Management could not influence them easily. Depending on the nature of the topic, capacity building could only follow the existing hierarchy.

3) A pilot training on ISWM was conducted with participants from NGOs and local authorities at the International Training Network (ITN), Dhaka. The training was attended by 24 participants and a number of themes from ISWM, for example, finance, livelihoods, micro-enterprise development etc. were introduced to the participants. ITN researchers conducted a detailed impact assessment 6 weeks after the training. According to ITN’s findings, more than 90% of participants felt motivated and considered the training useful for their future assignments. However, around 40% of participants did not see a direct use of training skills because of the existing environment in the local authorities. Some of the adverse factors are existing organisational structure, financial constraints and the political context.

4) As a result of our continuous work and local needs, the networking activities in three cities were further developed. In Karachi, Dhaka and Addis Ababa, local networks formed to discuss the issues in solid waste management. Networks are only successful and sustainable if the cost of contributions is equivalent or less than the benefits to each member. However, there are also other inputs required to maintain the networking activities, for example, leadership, finances, enthusiasm and most important the common cause of network members. Networking activities could also be undertaken by professional bodies, where the membership is often compulsory to enable professional practice in certain disciplines. In integrated solid waste management, professionals from a number of backgrounds are expected to be involved and it is not possible for a single body to initiate networking activities. In low-income countries, often networks around solid waste management are weak or non-existent. Often the networks formed around some recent issues fizzle out after a while. There is a need to initiate and support sustainable networks for capacity building. Alternatively, existing professional networks could be introduced with the ideas of Integrated Solid Waste Management (ISWM). Recently, electronic networks and their low costs have become more popular.
REVIEW OF SOME CAPACITY BUILDING OUTPUTS

WEDC-1  “The Sweeping Business”

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<tr>
<th>Title</th>
<th>“The Sweeping Business”</th>
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<tbody>
<tr>
<td>Authors</td>
<td>Mansoor Ali and Andrew Cotton</td>
</tr>
<tr>
<td>Publisher</td>
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</tr>
<tr>
<td>Year</td>
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Abstract

This book has been written for practitioners, municipal staff, non-government organisations and students interested in promoting micro-enterprises for the collection of solid waste. It includes guidelines and cases on the promotion of micro-enterprises for waste collection. It also includes roles and responsibilities of different stakeholders.

Comments

NGOs and municipal agencies will read the publication and make use of the findings in their day-to-day work, planning and implementation of new projects.

This is a useful tool but very difficult to disseminate and up-take. Micro-enterprise is not high on agenda in low-income countries. More than 100 copies were distributed as complimentary copies and now the book is available at a price. An accessible copy is also available on the web site.
### WEDC-2 “Process of Change – Field Notes”

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<tr>
<td><strong>Authors</strong></td>
<td>Mansoor Ali and Andrew Cotton</td>
</tr>
<tr>
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### Abstract

This book presents the findings of a focused research on the actual process of change. A number of changes in solid waste were traced back to explore the actual motivation for change in the cities of Dhaka, Karachi and Faisalabad. The findings are useful for the individuals and organisations concerned with the capacity building in primary collection of solid waste.

### Comments

Donors, NGOs and municipal agencies will read the publication and make use of the findings in planning new projects on capacity building. The analysis of already happened changes was useful as it gives an insight into the process involved. More than 50 copies have been distributed free of charge plus an accessible copy is available on the web site.
**Title**

“Synthesis Notes:

1) The role of community based organisations in solid waste management
2) The role of micro-enterprises in solid waste management
3) Recognising livelihoods from urban waste
4) Recognising gender issues in the management of urban waste
   Success and sustainability indicators for primary collection of solid waste”

**Authors**
Jenny Appleton, Jo Beall, Mansoor Ali and Andrew Cotton

**Publisher**
WEDC, Loughborough University - UK

**Year**
2000

**Languages**
Available in English only

**Case-studies**

**Pages**
4 pages per topic

**Availability**
downloadable from WEDC website

**ISBN**
-

**Funder**
DFID

**Abstract**

These notes are prepared from already available research. They are useful for experts and non-experts who have an interest in solid waste management.

**Comments**

Simple to read notes could be more popular with the busy staff in solid waste management. The notes are also available on WEDC’s web site in a downloadable form. The simple to read notes have been very popular. They have successfully introduced various concepts in integrated solid waste management, however, authors are not sure about their uptake and impact.
**Abstract**

These Citizens Guides were mainly written for local community based organisations to assist them in initiating primary collection programmes.

**Comments**

Community based organisations will read the guides and make use of them. Local authors will acquire capacity to write and disseminate the guides. The number of guides distributed in each city was more than 500. They were also placed on web-sites in Karachi and Dhaka. As the guides were written on local issues and in the local language, they proved extremely popular and contributed significantly in capacity building of local groups.
WEDC-5 “Down to Earth”

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<tr>
<td>Authors</td>
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<tr>
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Abstract

The book is written for policy makers and professional staff of urban governments, development agencies and non-government organisations in low-income countries. The book covers social, environmental, technical factors around waste disposal. One of the sections, include guidance on appropriate landfilling.

Comments

Municipal officials and other practitioners will read the book and make use of the findings. The book describes an integrated approach to waste disposal. As the book is comprehensive in terms of subject coverage, it is extremely popular at universities.
**Abstract**

This booklet is about waste pickers in Dhaka, who make their living by selling recyclable items from waste. The booklet is based on a fieldwork in Dhaka, using DFID’s sustainable livelihoods approach.

**Comments**

This booklet was mainly targeted to academic community and practitioners. The use of DFID’s sustainable livelihoods approach is comprehensive enough to introduce the concepts of integrated approaches. A few copies have been distributed free of charge and more than 50 copies are sold in the first 12 months of its publication.
WEDC-7 “International Source Book on Environmentally Sound Technologies for Municipal Solid Waste Management”

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<td>Authors</td>
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Abstract

This book is a comprehensive document which discusses both sound practices and regional overviews. Each regional overview also includes a list of information sources with contact details.

Comments

The readers will acquire a basic understanding of the subject from the source book. If they need further information, sources of information could be contacted. Some examples of sound practices are included, but there is no detailed case study. The Source Book is one of the most comprehensive tools available. It is easy to read and well structured. A readable copy is available on the UNEP’s web site. A printed version of the book is available at a price. The sections on the sources of information are useful but need frequent up-dating.
WEDC-8  “Planning for Sustainable and Integrated Solid Waste Management”

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<tbody>
<tr>
<td>Authors</td>
<td>Dr Adrian Coad [Editor] for Collaborative Working Group on Solid Waste Management in Low and Middle Income Countries</td>
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<tr>
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Abstract

This document is the proceedings of the one-week workshop, which took place in Manila, Philippines from 18th to 21st September, 2000. The document includes papers, their summaries, discussion and key issues from this Collaborative Working Group (CWG), meeting.

Comments

This document covers a number of aspects of Integrated Sustainable Waste Management (ISWM). It is useful for practitioners who are interested in ISWM. Most of the papers talk about certain aspects and contexts, which could be considered as case studies. This tool is useful as it discusses a number of practical aspects of ISWM. It covers a number of different perspectives and geographical areas.