

Sustainable community-managed and labour-based upgrading of urban low-income settlements

Handbook



Hamish Goldie Scot
Jan Fransen - Wilma van Esch

**International Training Course
For Engineers and Town Planners**



ASIST

**Sustainable
community-managed and
labour-based
upgrading of urban
low-income settlements**

Handbook for
Town Planners and Engineers

Jan Fransen - Hamish Goldie Scot - Wilma van Esch

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ILO ASIST Africa Regional Programme
Jan Fransen, Hamish Goldie Scot, Wilma van Esch
*Sustainable community-managed and labour-based
upgrading of urban low-income settlements - Handbook*
Geneva, International Labour Office, 2002

ISBN 92-2-112815-6.

ILO Cataloguing in Publication Data

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Printed in Italy by the ILO Turin Centre

Preface

The ILO has promoted the concept of people's participation since the mid-seventies. Participation of local communities in development decisions affecting their lives is indeed a precondition to economic, social and political changes required to achieve better working and living conditions for the low-income groups in society. During the 1990s, efforts to materialise "participation" were undertaken in a number of grassroots programmes, resulting in the development of "community-contracting" as a policy tool to define roles, rights and obligations of each party concerned - e.g. local government and a community-based organisation -, and to introduce the principles of organisation and negotiation in the weakly organised and informal urban or rural areas.

Experience in the field projects, particularly with community-managed labour based upgrading schemes in urban low income areas, revealed that, for local government to effectively deliver its part of the contract, the municipal staff needed and actually requested support to improve and update their qualifications. Consequently, in 1999, a training needs assessment was carried out by ASIST* in Tanzania and Kenya, with a view to evaluating the needs for training of municipal engineers, technicians and foremen. The training material developed on the basis of this assessment consists of two parts:

- ❖ *A training course for engineers and town planners, Sustainable community-managed and labour-based upgrading of urban low-income settlements; it has three components: i) Trainer's notes; ii) Workbook; and iii) Handbook; and*
- ❖ *A site supervisor course for labour-based and community-managed upgrading of urban and low income settlements; this course consists of I) Training manual: Basic course; ii) Training manual: Skills course; and iii) Handbook.*
(This site supervisor course addresses the needs of both foremen and technicians).

* ASIST: Advisory Support Information Services and Training, is the regional support programme of the ILO's Employment-Intensive Investment Programme.

Obviously, the present training material must be completed by similar training material addressing the needs of the communities themselves, i.e. their technical and managerial capacity, and their organisational and bargaining capacity**.

It is hoped that this package will enable local communities and local government to improve their ability to effectively cooperate and succeed in their efforts to upgrade the economic and social conditions of those who so often lack access not only to economic opportunities and basic social services, but also to the so much needed technical support.

The present Handbook for the International Training Course for Engineers and Town Planners has been prepared by Jan Fransen, Hamish Goldie Scot and Wilma van Esch.

I would like to thank the authors for this useful handbook, and express my gratitude to DANIDA and Italy for their financial assistance.

Jean Majeres
Head,
Employment-Intensive Investment Branch

** ref.: "Community Contracts In Urban Infrastructure Works, Practical lessons from experience" by Jane Tournee and Wilma Van Esch. 2001.

Foreword

This *handbook* provides a concise overview of key principles of community-managed and labour-based upgrading in urban low-income settlements. It is aimed at town planners and engineers attending an intensive three-week training course with a strong practical emphasis. This course has successfully been piloted in Dar es Salaam in November 1999. The handbook can also be used as reference material without attending the course.

The handbook **does** not attempt to provide detailed information on how to prepare and implement such works. Rather, it seeks to increase confidence in applying existing skills and experience in the new and challenging context of a community-managed and labour-based approach. Additional reference material is listed in the annexes.

The handbook is accompanied by a workbook. *Sustainable community-managed and labour-based upgrading of urban low-income settlements*, which guides participants through the development of a project proposal.

Lecturers are advised to use the *lecturers' notes* prepared for the course in addition to the handbook and workbook. This provides detailed information on the course content and methodology, as well as on training methodology. Jointly, the three documents provide a full overview of the course.

This training package is part of the ILO employment promotion programmes, aiming at:

- ❖ Infrastructure provision: labour-based technology creates employment during construction and maintenance. In addition the infrastructure itself may support social and economic development, resulting in employment.
- ❖ Promotion of local economic development.
- ❖ Creation of a conducive regulatory environment for productive and fair employment.
- ❖ Improvement of the living and working conditions through partnerships.
- ❖ Community organisation and capacity building.



Abbreviations

During the course, participants are likely to encounter the use of the following abbreviations, not all of which are used in these notes.

ASIST	Advisory Support, Information Services for Labour-based Infrastructure Programmes (ILO)
ABO	Area Based Organisation
CAP	Community Action Plan
CBO	Community Based Organisation
CDA	Community Development Association
CDC	Community Development Committee
CIP	Community Infrastructure Programme (DSM)
CM	Community Management
DSM	Dar-es-Salaam
HN	Hanna Nassif (DSM)
ILO	International Labour Organisation
KTC	Kisii Training Centre, Kenya
LBCM	Labour Based and Community Managed
LBT	Labour Based Technology
NCC	National Construction Council, Tanzania
NGO	Non Governmental Organisation
NIGP	National Income Generation Programme
PRA	Participatory Rapid (Relaxed) Appraisal

PROSPECT	Programme of Support for Poverty Elimination and Community Transformation by Care Zambia (Lusaka)
PUSH	NGO for Peri Urban Self Help (Lusaka)
SLP	Sustainable Lusaka Project
UCLAS	University College of Lands and Architectural Studies (DSM)
UNHCS	United Nations Centre for Human Settlements
WAC	Welfare Advisory Committee
WEDC	Water, Engineering and Development Centre
WHO	World Health Organisation

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Key concepts are:**Low-income settlements**

Most urban poor live in settlements where the average income is insufficient to cover basic needs. Un- and underemployment are rampant and public infrastructure and services tend to be of poor quality. Many inhabitants are tenants and the community tends to be diverse.

Unplanned settlements

Settlements that lack planned infrastructure and services. Often, such settlements are highly congested and in various cases they are illegal.

Community management

Community representatives take the leading role in the planning, implementation and operation of public infrastructure and services. Thus, community management allows for more responsibility within the community than community participation, where another agency may take the lead but involve the community in the exercise.

Labour-based technology

Construction and maintenance takes place with local labour, supported by light equipment in a cost-effective manner and up to the required standard and quality. Local materials are used when possible.



Advantages of community-managed and labour-based approaches to upgrade urban low-income settlements are:

Training

Experience however suggests that such an approach is often at odds with the instincts and experience of the Planners and Engineers involved. They are unaware of:

- ❖ Community participation approaches
- ❖ Community contracting
- ❖ Labour-based technology
- ❖ Appropriate standards



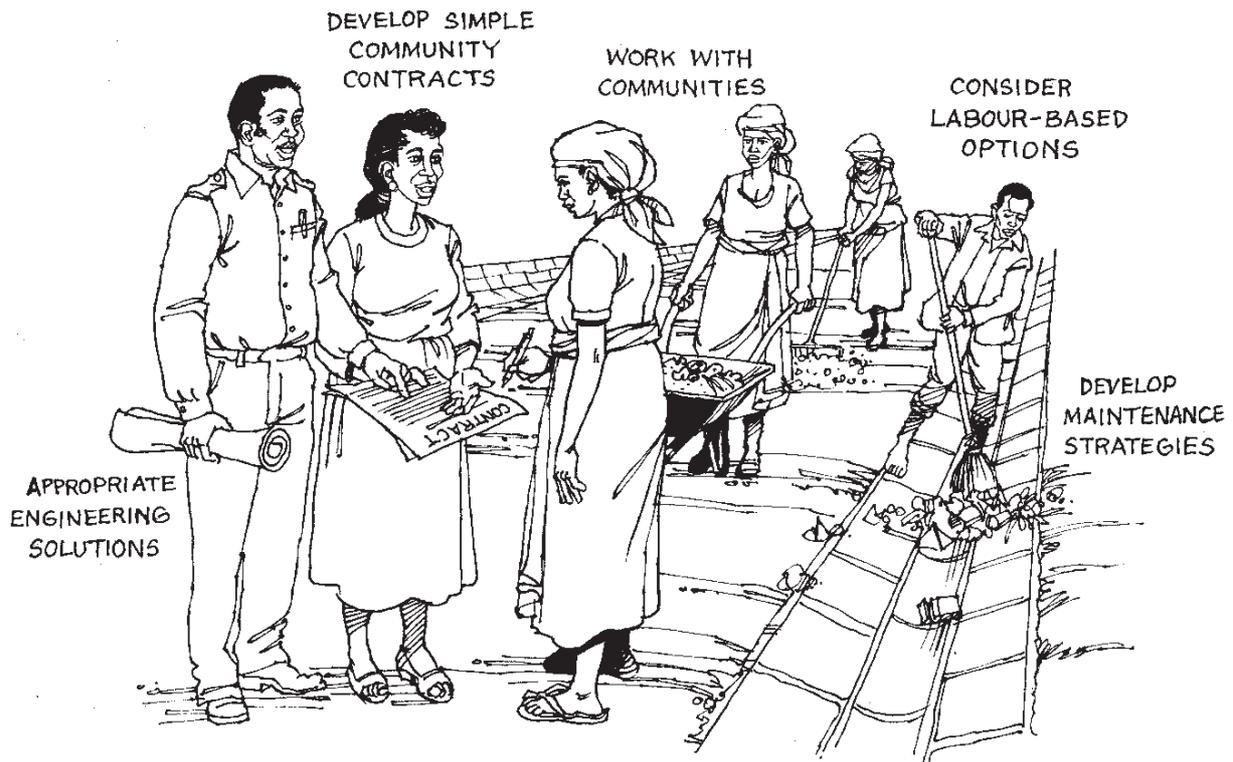
Timing

The timing is right to introduce the approach, since:

- ❖ Urban poverty is receiving increasing attention.
- ❖ Political support is growing for a more participatory approach to urban upgrading.
- ❖ Legal recognition for informal settlements is more and more considered.
- ❖ Donors are becoming more willing to get involved.

Learning objectives

By the end of the course, engineers and planners should be able to:



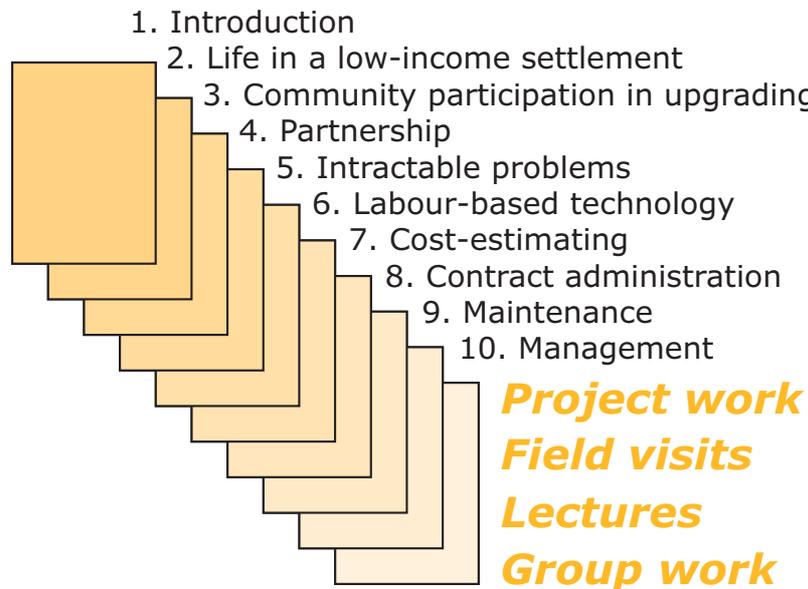
Course outputs

The key output of the course is participants with a better understanding of community-managed and labour-based upgrading. However, a better understanding is useless if it is not put into practice. Therefore, the course has added two specific outputs:

- ❖ Project document on community-managed and labour-based upgrading of a low-income settlement, prepared in project assignments.
- ❖ Individual action plans.

Course structure

Lecturers will introduce the following modules, based on case studies and theory.



Each module will also include practical assignments. These assignments may be:

- ❖ **Group work:** Participants will be given assignments to practise skills and consider innovative options.
- ❖ **Field visit:** Participants will visit a well-managed labour-based and community-managed site.
- ❖ **Project work:** Each module will relate to a specific assignment for the project work of participants (see handbook). In the project work, participants prepare a project document for a low-income settlement, based on a real-life situation. They will visit the settlement, meet community leaders, assess needs and cost options.



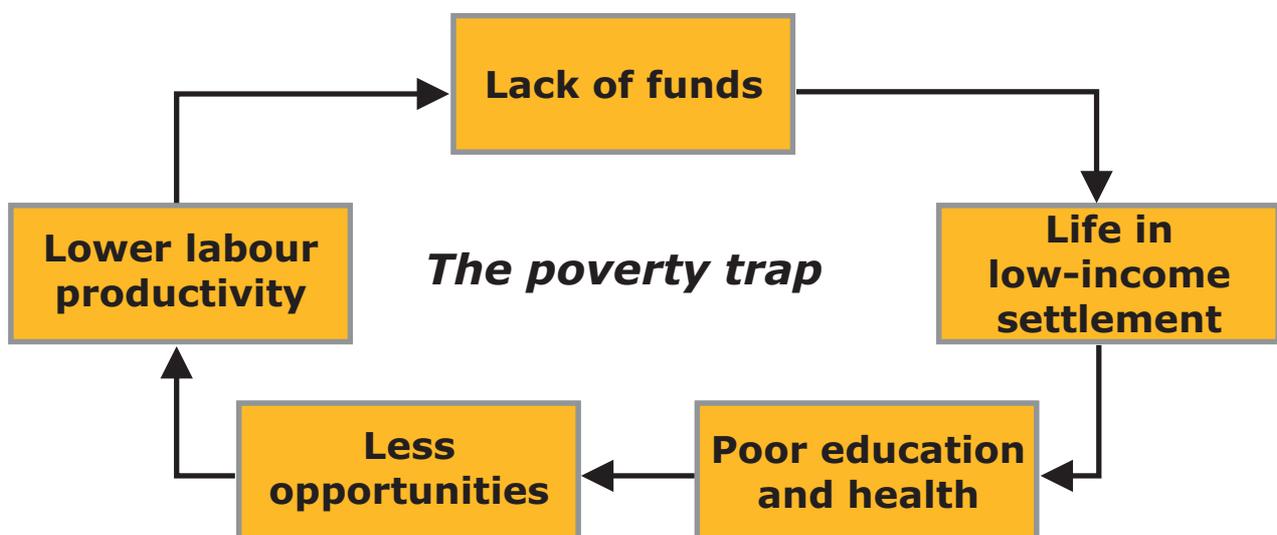
Learn by doing, but where should we start? Problems are all interrelated and urgent. Flooding, poor access, heaps of garbage, lack of maintenance, poor sanitation and unsafe drinking water all require immediate attention.

Urban poverty

Almost half the world’s population lives in cities. In many African cities, more than half of the population live in unplanned settlements.

Poverty is a common feature of many unplanned settlements. While characteristics of specific cities vary considerably, poverty is always reflected in severely limited choices and suppressed human potential. For many, each day is a matter of survival. Typically, such settlements enjoy virtually no provision of basic infrastructure and services.

Statistics	
World population:	6 billion (1999)
Urban population:	3 billion (1999)
Incidence of urban poverty:	27% (0.8 bill.)
Urban population in Africa:	133million (88)
Urbanisation level in Africa:	35% (1995)
Urban poverty in Africa:	40%





Not maintained site and service scheme

Site and service schemes

In responding to such problems, town planners and engineers have tended to develop new settlements, either public housing or site and service schemes. Such an approach has often failed, due to:

- ❖ High cost
- ❖ Lack of operation and maintenance
- ❖ Improper use of services
- ❖ High rents

Upgrading settlements

The alternative is to accept the existence of unplanned settlements and to find ways of improving them. To do this it is necessary to understand the viewpoint of the residents.

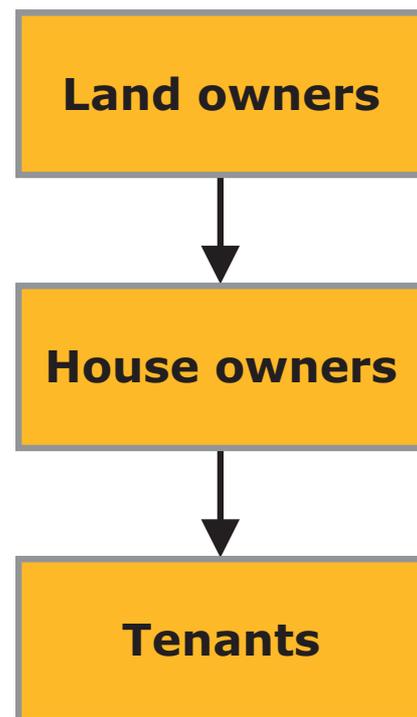
Viewpoints of residents

- ✓ *What is it like to live in a flood-prone area without adequate water supply, sanitation or road access?*
- ✓ *What are the priorities of the residents?*
- ✓ *What standards of infrastructure and services are required?*
- ✓ *To what extent and how can residents contribute in some way from their own scarce resources?*

Internationally, there are many examples of success when communities become directly involved in upgrading their settlement.

Land ownership

Many low-income settlements are highly congested. Land is often illegally occupied, with complex linkages between land owners, house owners and tenants – the majority of the residents. Public facilities that require land compete for scarce land. Upgrading may increase land values benefiting land owners, while increased rents may cause an exodus of the poor. This requires close attention and agreements on protection of tenants before upgrading a settlement. Participation of all partners, from the start of an initiative, is thus a must.



From coping strategies to development

There is a common misconception that people living in low-income settlements are lazy, individualistic and criminal. Nothing could be further from the truth. In fact, families and individuals have to adopt and develop a range of survival strategies that call for great resourcefulness, creativity and hard work. Often it is only by working in partnership with each other that families can cope. Councils can make use of these and other resources within settlements in upgrading the settlement and operating services.

Participatory tools

These are methods to involve the community in appraising the existing situation and identifying options for action. Many fall under the umbrella of Participatory Rural Appraisal (PRA). The starting point is that communities are not ignorant, but know their own environment better than outsiders. Care must still be taken to actively ensure that all views are represented in a fair manner.

De-mystifying common PRA tools



✓ Key informant interview

Interview in which the interviewee raises issues and comments within a framework set by the interviewer. Helpful for identifying issues.



✓ Focus group discussion

Guided discussion with a selected group – such as female headed households – in which community groups have freedom to contribute.



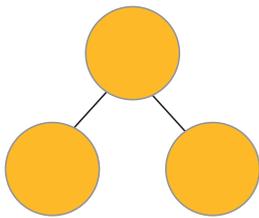
✓ Transect walks

Mixed groups of professionals and community members walk through the proposed project area to observe and discuss.



✓ Community mapping

People develop their own maps of the area, reflecting what they view as being important.



✓ Chapati diagrams

Problem or solution trees, in which one problem or solution is seen as a round plate (chapati).



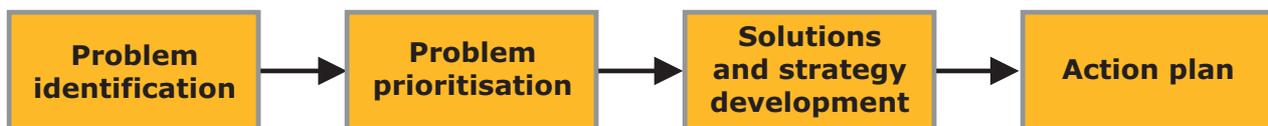
✓ Preference/ wealth ranking

Compare wealth or preference based on indicators, set by the community.

Note: the community provides the information, while an outsider guides the discussion.

Community Action Planning (CAP)

In CAP a community group identifies their priorities and explores alternative ways of achieving them. PRA techniques are used in the process. CAP may be regularly updated, since priorities continuously change.



Community organisation

CBO's need to be strong and sustainable to play a role in construction, operation and maintenance. Key features include:

- ❖ **Size of organisation.** Larger organisations tend to have more dynamic but less representative leaders.
- ❖ **Formal or informal.** Registration and having a bank account may be pre-qualifications before a CDA can provide work in partnership with councils or donors.
- ❖ **Informal management.** CBOs are typically structured around a committee of elected volunteers. How sustainable is the CBO? Who provides long-term support for newly elected leaders of democratic CBOs?
- ❖ **Democracy.** Regular elections and continuous awareness creation are essential but time consuming.
- ❖ **Membership.** care should be taken to ensure that the CBO represents all inhabitants.
- ❖ **Conflict management.** Structures must be set up within the community and with councils to manage conflicts.

If projects are to be responsive to genuine needs, the affected communities must be involved in all stages of the project cycle.

Identification and planning stages

Community Action Plans are owned and enacted by residents themselves

The use of simple PRA techniques should ideally lead to a CAP through processes which:

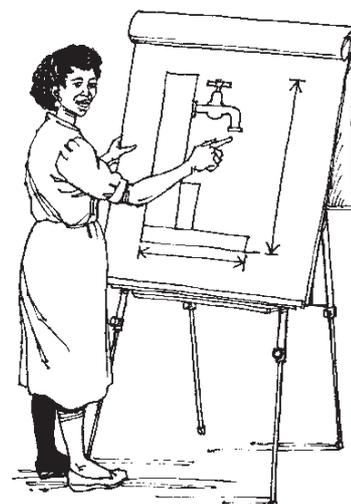
- ❖ Involve all stakeholders, including those responsible for implementation;
- ❖ Prevent domination by any one party;
- ❖ Convert plans into actions;
- ❖ Provide feedback to allow for plans to be improved

Design stage

Designers will learn much from observing current activities and solutions to related problems. Careful consideration should be given to the adoption of appropriate standards, and the trade-off between start-up and operational costs.

After initial meetings and transect walks with the community, the designers must first propose rough options to the community (with calculated costs and benefits). Based on those, the partners may select the best option for the designers to work out. Technical designs must be 'visualised' for the community through realistic large-scale maps, models, walk arounds etc.

Visualisation for the community



Implementation stage

Potential forms of community participation include:

- ❖ Paying for infrastructure or services;
- ❖ Providing labour (whether paid or unpaid);
- ❖ Procuring services (as client); or
- ❖ Supervising works (as engineer); or
- ❖ Constructing infrastructure (as contractor)
- ❖ Operation and maintenance

An arrangement in which a contract is awarded to a group representing the community carries both advantages and disadvantages:

Advantages	Disadvantages
<ul style="list-style-type: none">✓ <i>Resources stay in community</i>✓ <i>Local knowledge makes implementation easier Profit margin eliminated or reduced</i>✓ <i>Skills created for maintenance</i>	<ul style="list-style-type: none">✓ <i>Limited technical knowledge may increase costs for training and supervision</i>✓ <i>Process can be controlled by powerful groups</i>✓ <i>Lack of competition may increase costs</i>



Operation and maintenance

The role of the community may range from providing only labour for maintenance to its full management. In all cases, local organisation, skills and funding are the key to sustainability. Recurrent funding for maintenance, at community or council level, should be identified before construction. In addition, the community needs clear maintenance guidelines.

Monitoring and evaluation

The users of facilities should play a central role in monitoring and evaluation to ensure the approach is appropriate. Monitoring and evaluation needs to be done at various levels: policy, project and community level. The community organisation may monitor and evaluate the service provision themselves.

Definition

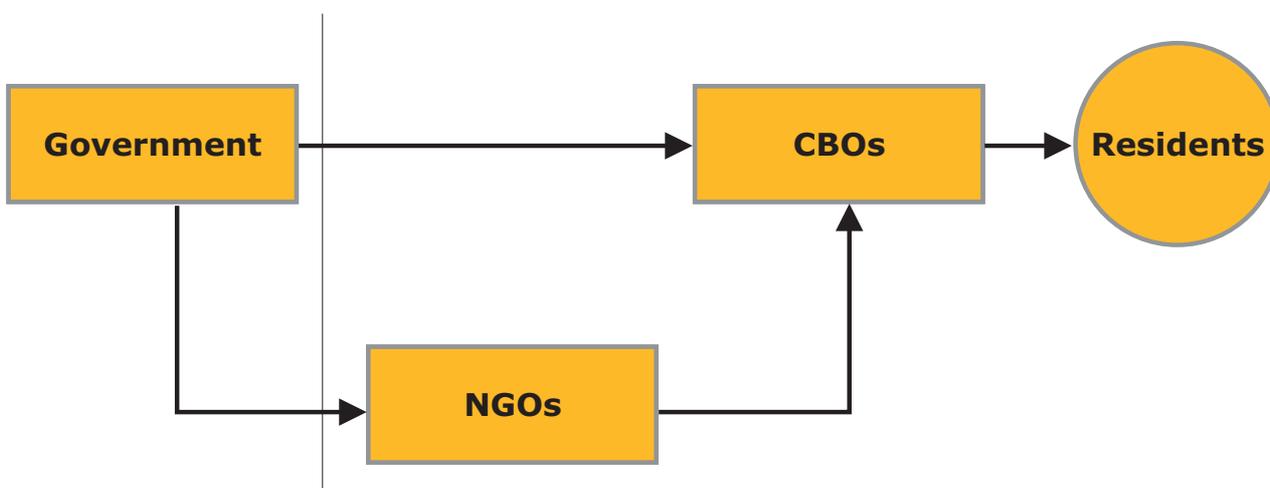


A partnership is a relationship in which people work together to achieve a common goal. Governments can work in partnership with civil society organisations, private companies, and, to a degree, with individual households and people.

Together achieve a common objective

Why?

NGOs and CBOs may provide a bridge to link local governments to its residents – a link which tends to be rather weak.



Typical forms of partnerships

- ❖ Consumer-provider
... the Council provides all services.
- ❖ Division of responsibilities
... the council provides services together with its partners
- ❖ Cost sharing
... all partners contribute financially to the delivery to services.

Typical Contributions:
Government brings skills in planning, engineering and required procedures.
Residents bring local knowledge about needs and local conditions. Their early involvement can help achieve sustainability.
Private sector implements (part of) the works.

Degree of community participation

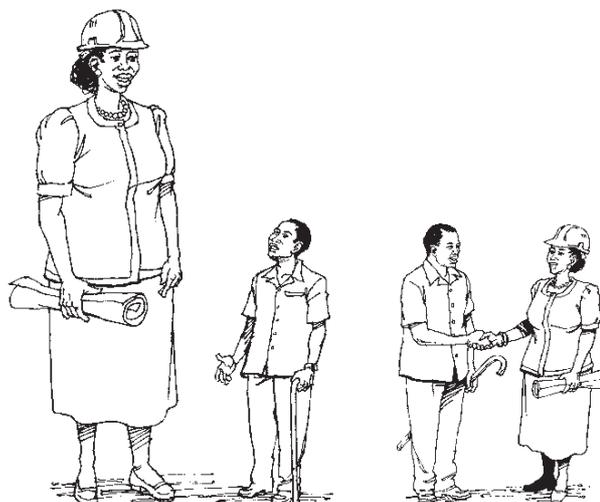
- ❖ Information provision
- ❖ Consultation
- ❖ Provision of labour
- ❖ Participation in decision making
- ❖ Full community management



Equality

For partnerships to be effective, a reasonable degree of equality and trust should exist between partners. This requires a common understanding of objectives, transparency and a clear definition of respective roles and responsibilities.

From inequality to partnerships



Initiating partnerships

Partnerships rarely happen spontaneously. In practice, considerable effort is needed to

- ❖ Bring households together in CBOs in support of shared aims.
- ❖ Facilitate the development of partnerships between CBOs, NGOs and Government.

The partners

Local government is the tier of government closest to the people. To effectively function in a partnership, responsibilities and funding need to be decentralised.

CBO's represent heterogeneous urban communities. People may have come together to solve a community problem, or may be organised from the outside. Other interest groups may exist within urban communities as well.

NGO's aim to solve particular community problems, often adopting participatory approaches. While many *NGO's* are professional, others are not. Their challenges include insecure funding.



Residents and businesses are the final beneficiaries and may be active players through their organisations. The poorest and weakest groups tend to be ignored, even by their community organisations.

Innovativeness

Town planners and Engineers are trained to solve problems. However, most formal training is centred around 'standard' solutions to 'standard' problems. This can leave them unprepared to cope with situations in which there appears to be no ideal solution.

It is important to approach such situations with an open mind, and to accept that there is bound to be some realistic 'solution' that is at least better than no solution at all.

Key rules

- ❖ Achieve consensus in defining the problem
- ❖ Consider **all** available options
- ❖ Don't start looking at details of the solution until the overview is clear.
- ❖ Consider technical, institutional, political and social causes and solutions.

Technical solutions

- ❖ *Consider what standards are appropriate.* In most cases what is 'normal' for planned settlements is unrealistic in unplanned settlements.
- ❖ *Differentiate between best practice and essential practice.* The Engineer has an important role in ensuring that solutions proposed by the community are technically feasible.
- ❖ *Consider unusual solutions that will make use of available resources.*

Lusaka Water Supply

Following a problem analysis on a community managed water supply project in Lusaka, consideration is being given to asking the City Council to disconnect existing services in which water is provided for free.

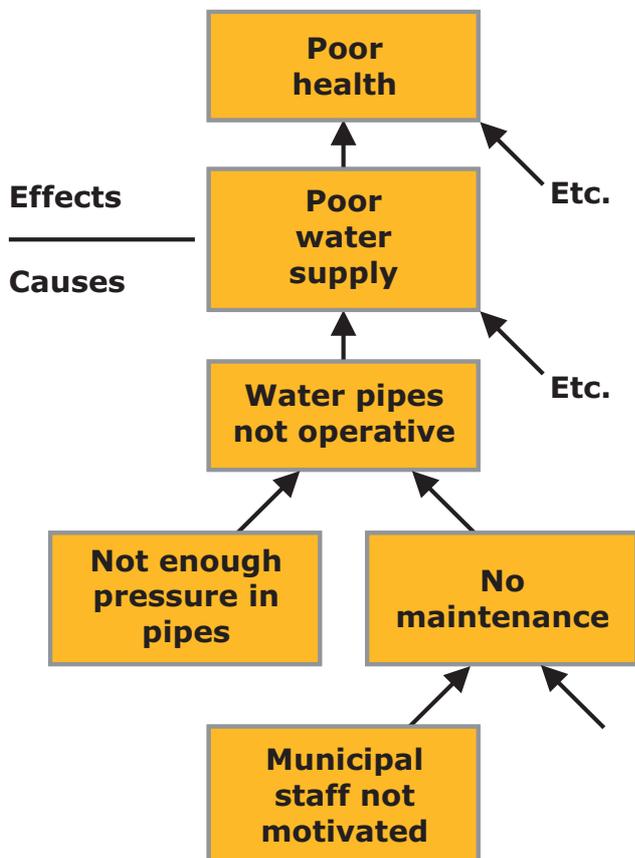
Institutional solutions

Allow the logic of the problem tree to lead you to ideas

to solve the causes of the problem. For example: the cause of poor water supply may include that municipal staff lack motivation to maintain water pipes (see problem tree). How can staff motivation be improved? While

some solutions may prove impractical or un-acceptable, they can still serve to clarify the issues and lead to solutions.

Sample problem tree



Political solutions

It is important at an early stage to identify and involve those able to influence policy. When preparing a case for policy change, remember that politicians will willingly support policy changes when they see it as being in their own interest to do so. This will require careful and patient development and presentation of arguments through the widest possible range of channels.

Social targeting

- ❖ Targeting the poor in service provision requires foremost acceptance and prioritisation of low-income settlements.
- ❖ The principle 'the user pays' promotes sustainability. However, the urban poor often pay more for services than the rich. Cross subsidies might be considered.
- ❖ Targeting employment to the poor may be done through job selection procedures or appropriate incentive schemes. Labour standards should be taken into account.

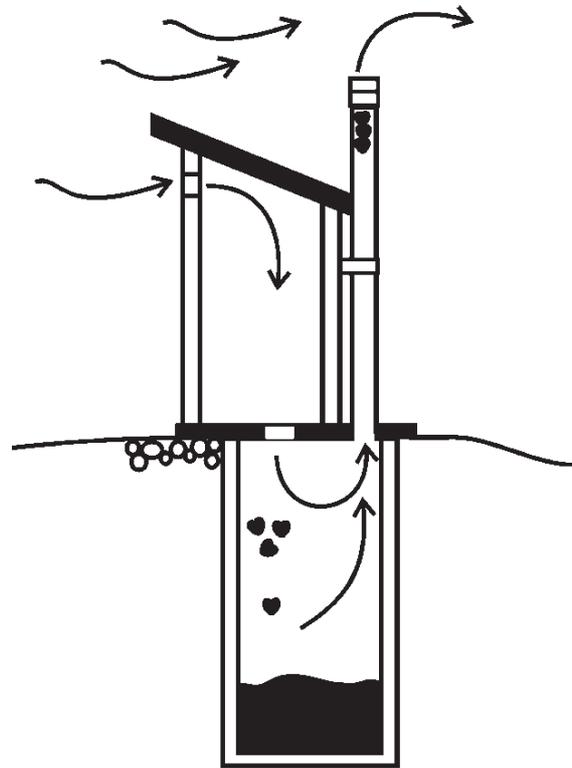
Typical technical options to be considered

Sector	Technical Options	
Drainage	<ul style="list-style-type: none"> ✓ <i>Lined channels</i> ✓ <i>Unlined channels</i> ✓ <i>Open channels</i> ✓ <i>Covered channels</i> ✓ <i>Pipes</i> 	<ul style="list-style-type: none"> ✓ <i>Use road as drain</i> ✓ <i>Storage of storm water</i> ✓ <i>Scour checks</i> ✓ <i>Tree planting</i>
Roads and Access	<ul style="list-style-type: none"> ✓ <i>Varied standards</i> ✓ <i>Unpaved</i> ✓ <i>Gravelled</i> ✓ <i>Sealed</i> ✓ <i>Paving stones</i> 	<ul style="list-style-type: none"> ✓ <i>Other surfaces?</i> ✓ <i>Promote Non Motorised Transport</i> ✓ <i>Whether to widen</i> ✓ <i>Whether to realign</i>
Water Supply and distribution	<ul style="list-style-type: none"> ✓ <i>Community manager ground water supply</i> ✓ <i>Supply by City authorities</i> ✓ <i>Distribution to yard taps</i> 	<ul style="list-style-type: none"> ✓ <i>Distribution to kiosks</i> ✓ <i>Collection from tanks</i> ✓ <i>Metering</i> ✓ <i>Pipes on surface</i> ✓ <i>Buried pipes</i> ✓ <i>Leakage problems</i>
Sanitation	<ul style="list-style-type: none"> ✓ <i>Pit latrines</i> ✓ <i>Wcs to Leach pits</i> ✓ <i>Other on-plot options</i> 	<ul style="list-style-type: none"> ✓ <i>Sewerage</i> ✓ <i>Interceptor tank Systems</i> ✓ <i>None of above</i>
Solid Waste Management	<ul style="list-style-type: none"> ✓ <i>Local transfer stations</i> ✓ <i>Privatised local collection</i> 	<ul style="list-style-type: none"> ✓ <i>Bury or burn on site</i> ✓ <i>Recycle</i>



Water supply

Public standposts provide a cheap solution, but how can we ensure their operation and maintenance?



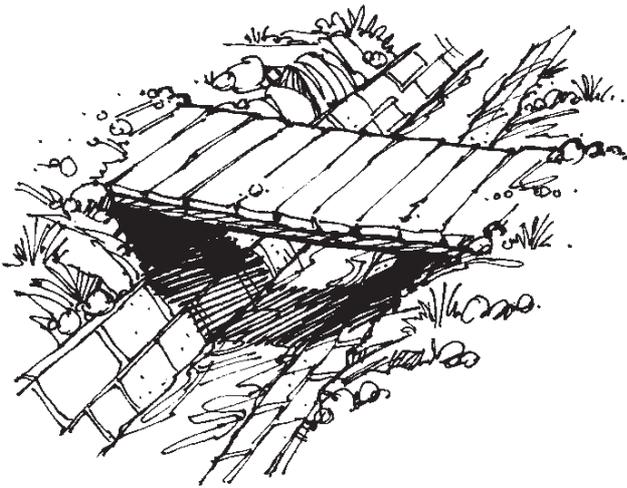
Sanitation

A VIP latrine offers higher service than a normal latrine, but is also more expensive [Cotton and Franceys, 1991, Services for Shelter, Liverpool University Press].



Drainage

Open, lined drains may meander through the settlement. What are the health consequences?

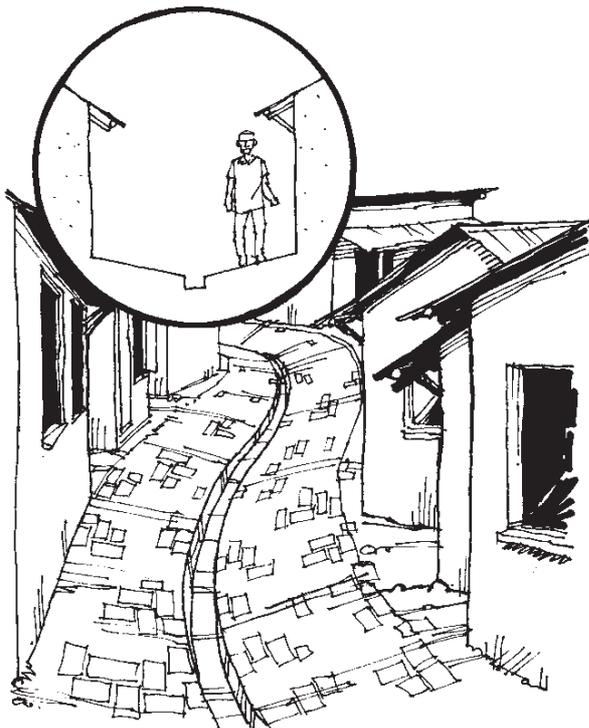
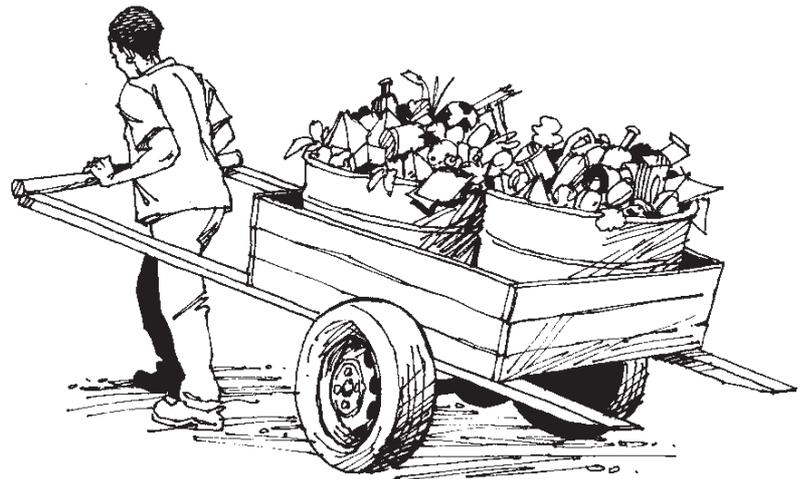


Access

Footbridges and paths provide access for pedestrians. Will this be sufficient for most residents and businesses?

Solid waste management

Local micro enterprises can transfer waste from households to transfer stations. Are all households able and willing to pay?



Roads and drains

Stone paved road and footpaths can be used as drains. Can you think of more innovative solutions?

Objective

The main objective is to achieve a high quality technical result to an appropriate standard, while employing local labour in a predictable and cost effective manner.

Management-intensive

Labour-based technology works, provided considerable management effort is directed at:

- ❖ Planning of activities
- ❖ Site supervision
- ❖ Motivation and welfare of supervisors and labourers
- ❖ Suitable tools and equipment

Additional benefits

The use of LBT can lead to additional social, technical, economic and political benefits. These include employment creation, skill development and local economic development. Important as these are, they are not the central reasons for choosing this approach.

Define simple activities

A key feature of a site using LBT is that every man or woman on site knows exactly what is expected of them. Wherever possible, jobs are broken down into defined activities, which are simple and repeatable.

Steps in labour-based road-works

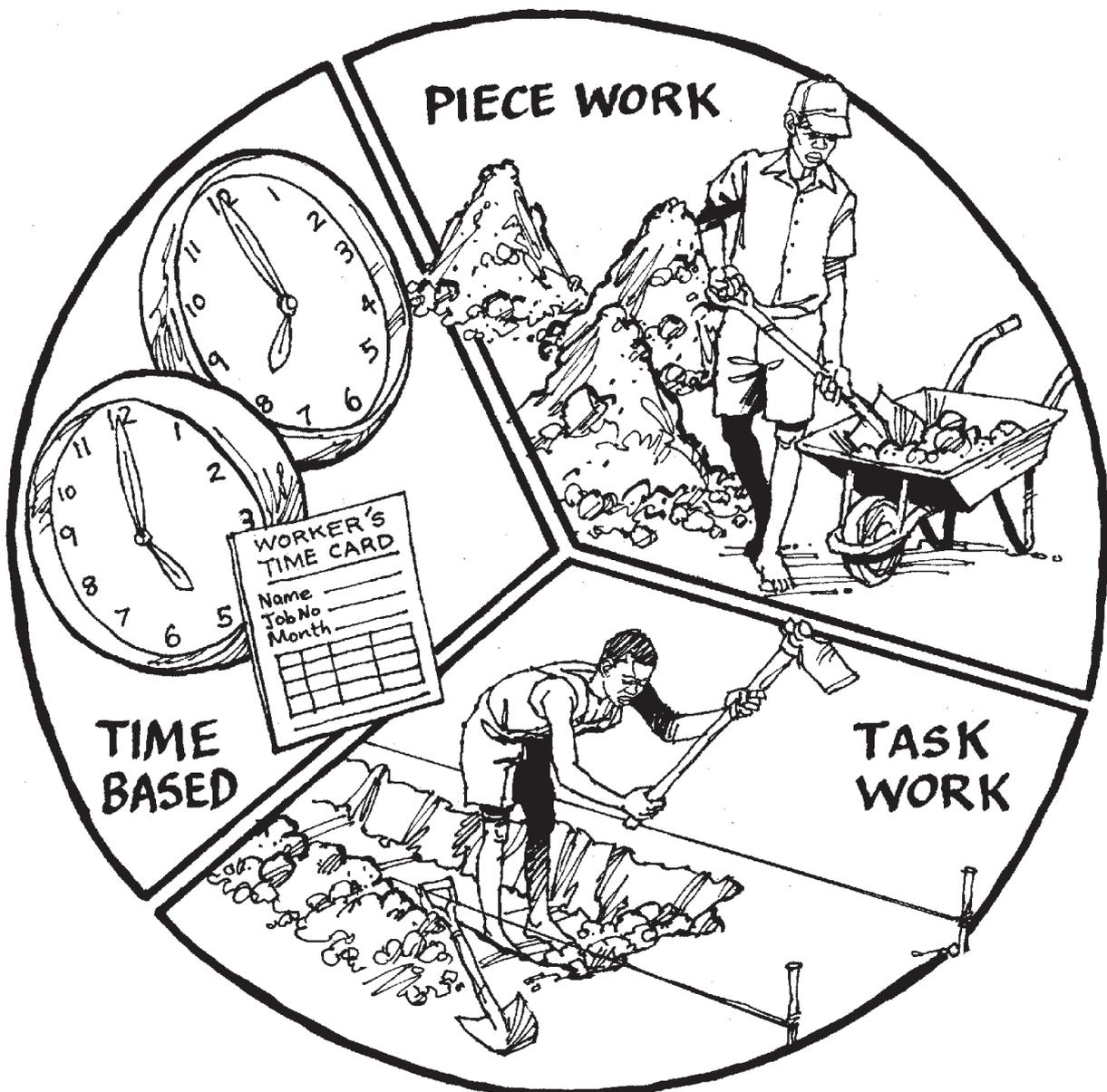
- ❖ Setting out
- ❖ Clearing and grubbing
- ❖ Road formation
- ❖ Compaction
- ❖ Construct drainage
- ❖ Surface the road and compact where appropriate.



Labour-based construction of drains. Management and organisation are the key to success.

Typical incentive schemes

- ❖ Taskwork, where the worker is free to go when he or she has completed a defined task to the required quality.
- ❖ Piecework, where the worker is paid according to the amount of work produced. It is more complicated to manage piecework than taskwork.
- ❖ Daywork, where the worker is paid for attendance rather than output. This makes it very difficult to predict and control costs and timing.



Urban application of labour-based technology

Across Africa, LBT has been applied with great success in rural road projects, which entail large amounts of highly repeatable activities. Within the urban context, the experience is rather different. This can be attributed in part to:

- ❖ Smaller amounts of repeatable work;
- ❖ More varied work (not only roads);
- ❖ Limited work space and tighter tolerances;
- ❖ More skilled labour available; and
- ❖ Availability of specialist services.

Tapping the urban potential

Experience suggests that there is vast untapped potential for the adoption of more LBT in urban works. Requirements are:

- ❖ Demonstrate that LBT is technically and economically viable.
- ❖ A high level of political commitment.
- ❖ Training.

However, LBT is not an end in itself. It should only be adopted where the conditions suit its use, which will not always be the case.

One feature of well managed labour-based projects is the ability to predict costs accurately. This enables all the partners involved to plan with confidence.

For this to be achieved, it is necessary to have reliable historical data upon which to base future cost projections. In some cases, such data is readily available. More commonly, the data is collected during a pilot phase, which enables full-scale implementation to be planned in an increasingly precise manner.

What information do you think is important for predicting costs?

Costing of contract partners

All partners make costs. Hence, costs can be divided into:

- ❖ Client costs
- ❖ Consultancy costs
- ❖ Contractor costs

Costing categories

Do you know how much the maintenance will cost?!

Indirect costs

- ❖ Staffing
- ❖ Financial management
- ❖ Housing and transport
- ❖ Access to land
- ❖ Services and permits
- ❖ Monitoring and evaluation
- ❖ Design
- ❖ Planning

Capacity building

- ❖ Training
- ❖ Contractor development
- ❖ Organisation building
- ❖ Community participation

Direct construction costs

- ❖ Labour
- ❖ Materials
- ❖ Haulage
- ❖ Tools and equipment
- ❖ Profit on contracts

Direct construction costs: bill of quantities.

Labour costs: Ideally, labour costs are based on standard productivity norms. These are known for rural roadworks. For instance:

Productivity norms for excavation (rural roads in m ³ per worker day)				
Soft soil	Medium	Hard	Very hard	Rock
5.0	3.5	3.0	2.0	0.8

Labour costs for excavation are then calculated by:

- ❖ Measuring the volume to be excavated
- ❖ Dividing the volume by the standard productivity
- ❖ Multiplying that with the labour cost

Due to inevitable site inefficiencies, the actual labour inputs required for each activity will however be higher. As a general guide, a site efficiency of 65% can be assumed, though this could vary.

Material costs: Material costs can be calculated once the quantity is known. The effective cost of materials is higher than the purchase price, due to spoilage and theft. Transport costs and overheads such as security and insurance are covered separately.

Useful weights and measures		
Item	Unit	No per m3
Bucket	0.014 m3	71
Watering can	0.008 m3	125
Wheelbarrow	0.065 m3	15
Cement pkt	50 kg	25
Lime pkt	25 kg	22

Tools and equipment: Proper hand tools increase productivity (specifications are available). Equipment costs tend to be higher than estimated due to unproductive time.

Contributions

The contributions of all partners should be spelled out. Equally important, long term contributions for operation and maintenance should be assured.

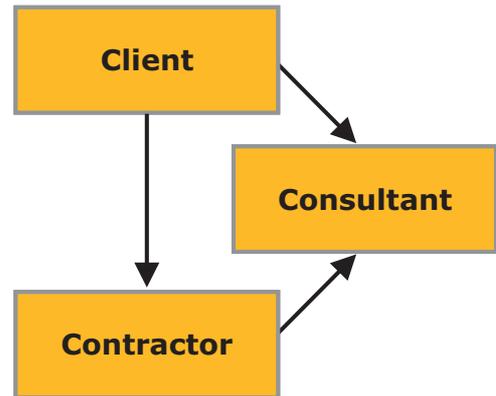
The purpose of any contract is to clarify the relationship between and protect the interests of the client and contractor.

Contract partners

Client: wants to be assured that the contractor will produce work to the required quality, in the stated time, at the agreed price.

Consultant: Normally hired by client to control quality.

Contractor: wants to be assured that payment will be made on time and that he or she will be able to make a reasonable profit.



Difficulties arise when one party clearly has the upper hand, such as when a contractor has only one potential client.

Contracts

Many contracts are inadequate:

- ❖ Too simple: contracts may have no adequate provision for common eventualities.
- ❖ Too complex: they are not understood by either party.

In both cases, contracts are not used to clarify roles or solve conflicts.

- Typical contract:**
- ❖ Agreement
 - ❖ General conditions
 - ❖ Specific conditions
 - ❖ Specifications
 - ❖ Priced bills of quantity
 - ❖ Work programme
 - ❖ drawings

Standard contracts: For conventional client-contractor relationships involving emergent contractors and minor scope of works, internationally recognised contracts such as the FIDIC Short Form of Contract, the NEC Short Contract, World Bank short contract or the Minor Works contract may be suitable.

Contract administration requires:

- ❖ A work plan, against which financial and physical progress can be measured.
- ❖ A simple and effective reporting system.

A good reporting system provides feedback to those completing the reports

Financial management

This is particularly important when LBT is used, as a significant proportion of funds may be required to pay wages. The contractor and the client should ensure that it is always possible to pay labour on time.

Community procurement

The community and its representatives have no formal role in conventional contracts. However, the 'community' can:

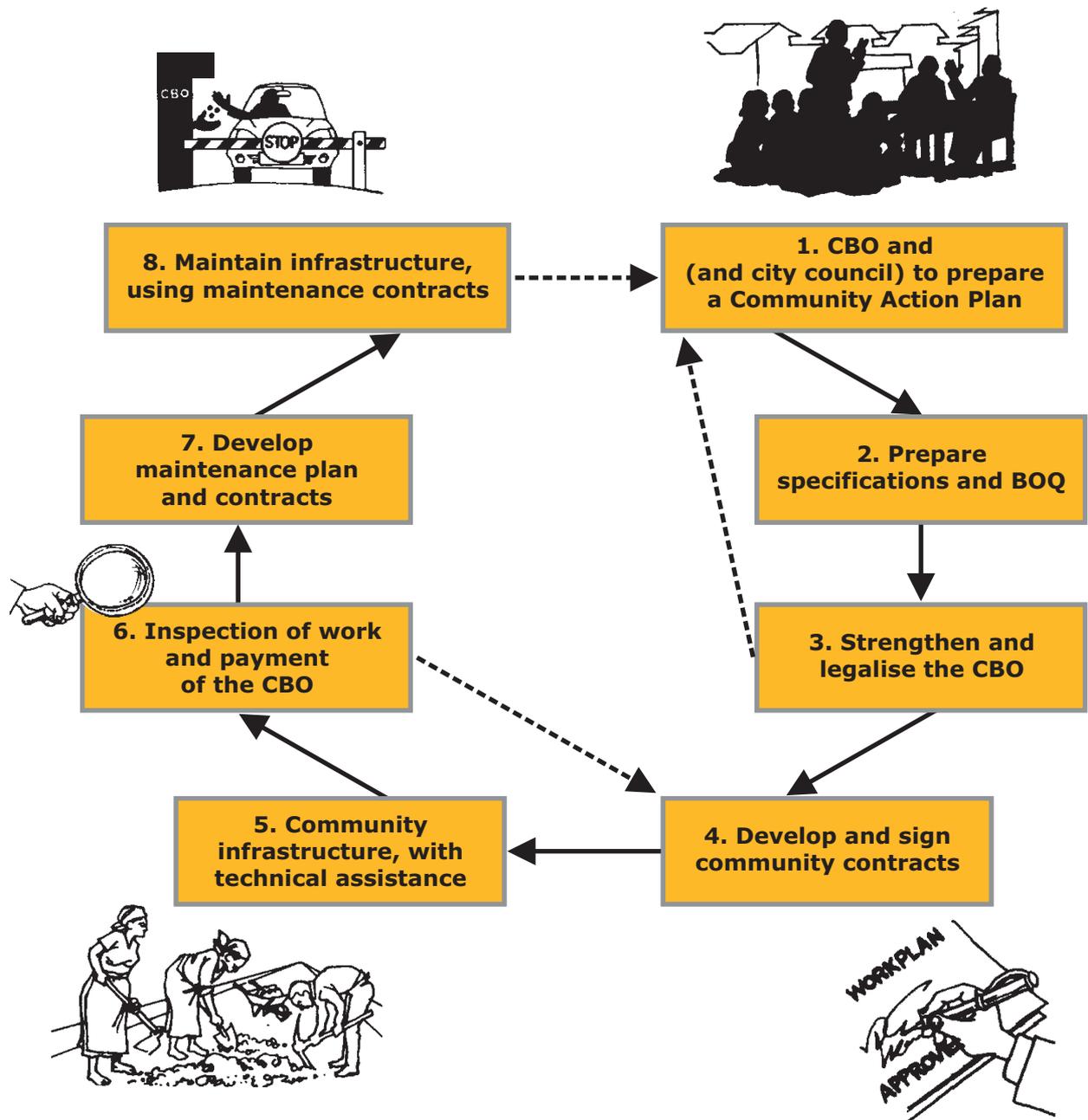
- ❖ Act as the client; or
- ❖ Be responsible for supervision; or
- ❖ Be the contractor

This may entail some complexity in relationships. When a CBO is the client, it may perform this role jointly with a government body. Where it is the supervisor or contractor it may require technical support and training.

Risk management

Community contractors can carry less risk than private contractors. For example, community contractors are not likely to obtain bank guarantees, insurance bonds or collateral. They may need advance payments. There is a need to avoid a situation in which the client carries all the risk. For those reasons, community contracting procedures are not compatible with tendering procedures adopted by most governments.

Community contracting step-by step



CBO = Community Based Organisation

Three kinds of community contracts

- ❖ Labour only: this is the simplest contract, in which representatives of the community employ local labour. All other activities will be undertaken by an external team in consultation with the community.
- ❖ Labour and material: the community contractor employs local labour and purchases material needed for construction and/or maintenance.
- ❖ Full contract: the community contractor performs all functions, including employing and managing labour, purchasing materials, and purchasing/hiring equipment and tools. They may subcontract (part of) the work.

Advantages of community contracting

- ❖ Resources are retained within the community
- ❖ Quality is likely to be maintained
- ❖ Local consultation is more readily achieved
- ❖ There are possible cost savings.

Content of a community contract

General

- ✓ *Contract number and date*
- ✓ *Title and address of client (funding agency) and contractor (community representative)*
- ✓ *Short description of the work to be executed*
- ✓ *Contract sum*

Obligations of contractor

- ✓ *To carry out all works mentioned in this contract*
- ✓ *To provide tools, equipment and/ or material*
- ✓ *To adopt fair labour management*

Obligations of client

- ✓ *Pay timely*
- ✓ *Inspect works*

Obligations of technical assistance

- ✓ *Supervise work, on behalf of client*
- ✓ *Ensure efficient work up to the required standard by the CBO*
- ✓ *Train community members*

Contract price and mode of payment

- ✓ *Community contractors require an advance payment*
- ✓ *Procedures for final payment*
- ✓ *Required inspection before payment*

Commencement, duration, and termination

- ✓ *Starting date and duration*
- ✓ *Conditions to terminate the contract (misconduct, notice period, end of contract)*

Settlement of disputes**Bills of Quantity**

- ✓ *Required worker days for each activity*
- ✓ *Task rates*
- ✓ *Required material and material costs*
- ✓ *Costs of tools and equipment*
- ✓ *Other costs (transport; unexpected costs)*
- ✓ *Profit margin*

Specifications

- ✓ *Simple but complete description of all work to be executed (including drawings)*
- ✓ *Copies of the designs*
- ✓ *Work plan and an organisational structure can be added*

Lack of early attention to maintenance lies behind the failure of many urban infrastructure projects. By the time the construction phase starts, it is already too late to start thinking about maintenance.

If it is not maintainable, don't build it!

The starting point should always be:

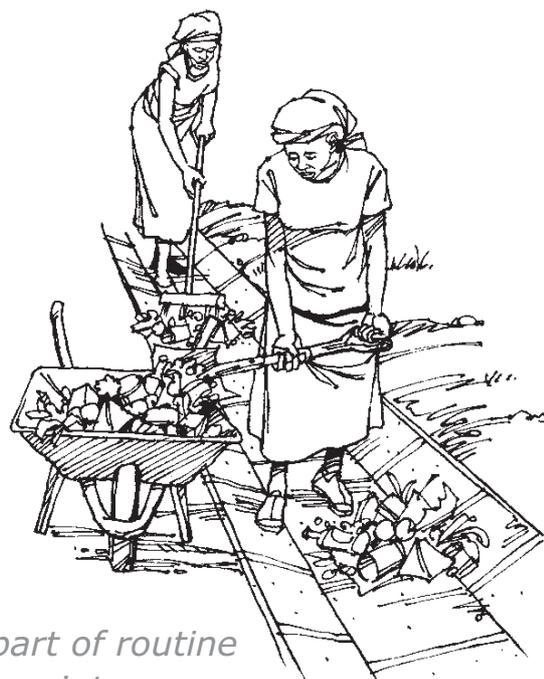
- ❖ What maintenance activities will be required?
- ❖ Who will be responsible for maintenance?
- ❖ How will it be carried out and monitored?
- ❖ What funds are available, and from what sources?

Only when these questions have been answered is it possible to start considering what constitutes 'maintainable' infrastructure.

Maintenance activities

Maintenance is intended to protect the investment made in infrastructure by prolonging its lifespan. Activities can be broadly grouped into three categories:

- ❖ *Routine maintenance*
Small-scale interventions carried out at frequent regular intervals irrespective of perceived needs.



Cleaning is part of routine maintenance.



- ❖ *Periodic maintenance*
Regular large-scale maintenance, which requires additional funding and skills.
- ❖ *Emergency maintenance*
Unplanned repairs that are required to repair damages.

Regravelling is required periodically.

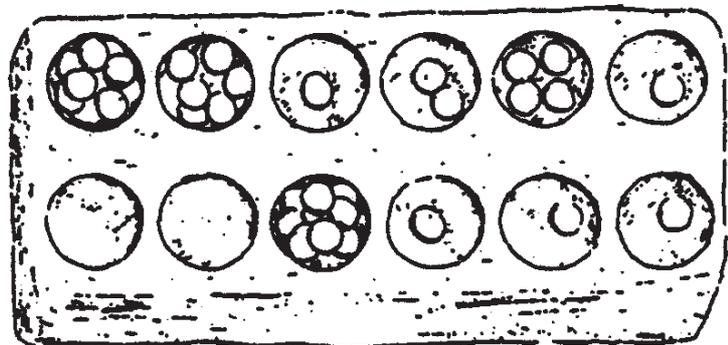
Routine and periodic maintenance tend to be neglected as they are preventative rather than curative. However, such a view is entirely mistaken, as it is much more expensive to have to repair or rebuild infrastructure than to maintain it well.

Maintenance steps

Planning

The first stage in maintenance is to **think ahead**, to plan the required activities under each of the maintenance categories, taking account of seasonal factors if necessary.

This popular African board game requires clear planning.



Outline costs

When the resource requirements are known, outline costs can be derived for each type of maintenance.

Ensure recurrent funding

Potential funding agencies are:

- ❖ Users
- ❖ CBO's or NGO's, through income generating activities
- ❖ Government (e.g. through fuel levy funds or levies)

Cost recovery should, where possible, seek to ensure a close linkage between the receipt of benefits from infrastructure and contributions to its maintenance. However, **cross subsidies** may reduce the financial burden of the urban poor.

Develop a maintenance plan or manual

This sets out the responsibilities and obligations of each party and details the tasks and resource requirements.

Arrange work organisation

To what extent can or should the CBO be involved in operation and maintenance and in what capacity?

Training

Train all partners in their roles.

The specific maintenance and cost recovery issues affecting each different type of urban infrastructure and services are addressed in section A to E.

You will derive no lasting benefit from this course if you lack the management skills needed to put into practice what you have learned.

Clear division of work

At the heart of what is required is a clear and common understanding of the roles and responsibilities of each party, including planners, community development officers, engineers and others. This can be achieved through participative processes. The role of the manager is then to ensure that each person implements his or her work. This requires that:

- ❖ Each person has the skills and resources necessary to carry out defined functions.
- ❖ Reporting and monitoring systems are in place.
- ❖ Corrective action is taken in time to ensure targets are met.

Management styles

Not everyone is a good manager, though many management skills can be taught. In preparing a project, it is important to recognise where the management strengths and weaknesses lie, and to plan accordingly.

Autocratic manager:	Lax manager:	Democratic manager:
<ul style="list-style-type: none"> ✓ <i>Mistrusts others</i> ✓ <i>Relies on status to force through decisions</i> ✓ <i>Loses respect and cooperation.</i> 	<ul style="list-style-type: none"> ✓ <i>Allow others to make decisions</i> ✓ <i>Ignore problems, even when serious</i> ✓ <i>Not care about meeting targets</i> 	<ul style="list-style-type: none"> ✓ <i>Provide leadership while listening to others</i> ✓ <i>Help others to do their job well</i> ✓ <i>Be relaxed, open, enthusiastic and disciplined</i>

It is very rare to find someone who falls entirely into one category, though one tends to dominate. The partnership approach advocated in this document requires democratic management. At times, other management styles will be required as well.

Discipline does not mean punishment!
Leadership does not mean bullying!

Management tools

When **instructions are given**, they should be reasonable, clear, and to an appropriate level of detail. Key instructions should be put in writing, using a duplicate book so that a record is kept.

Complaints should be handled in a manner that shows a willingness to listen. It is rare for complaints to be either entirely justified, or wholly unjustified.

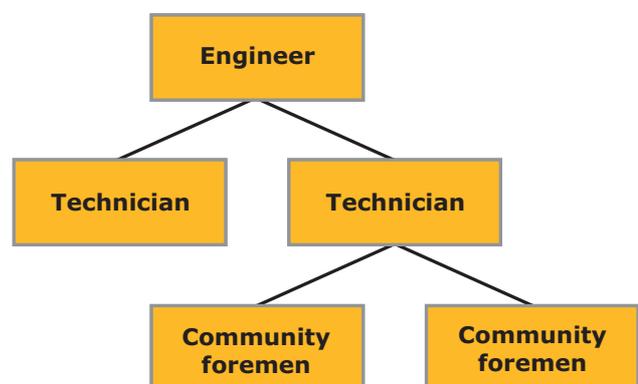
Delegation provides an opportunity for others to take responsibility, though in an accountable manner that must still be monitored.

Reporting should provide clear information required for monitoring and further planning.

Site management

Typically, community site supervisors manage a group of workers, technicians manage a site and engineers manage more sites.

At the site, labour, material, tools and equipment must all be available when required. This requires careful planning. In an urban setting, theft of material and congested sites make management more difficult.



Labour management

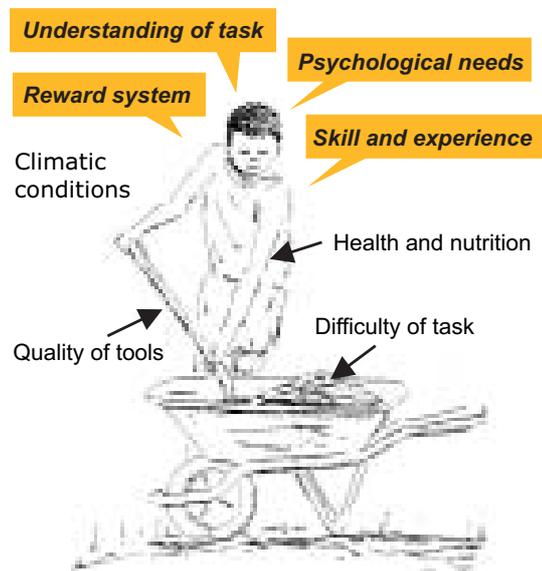
Motivating and rewarding labourers increases labour productivity, also in community works. Key issues to consider are:

Wages

Labourers may be paid, receive food incentives or be unpaid. The burden on the poor is likely to increase if they are not paid for their work. Local partners should agree on the most appropriate method of payment, taking due care of labour standards.

Payment may take the form of daily pay, task work and piece work (see module 6). In addition, labourers may receive bonuses or incentives for timely and good quality work.

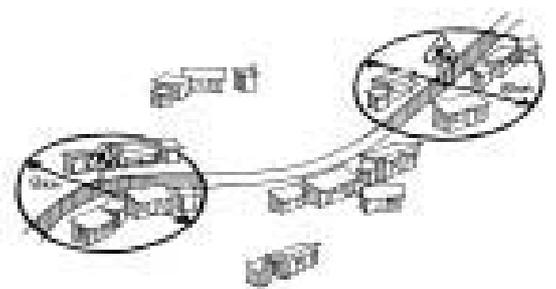
What factors affect the productivity of a labourer?



Recruitment

Local labour from each settlement can be recruited.

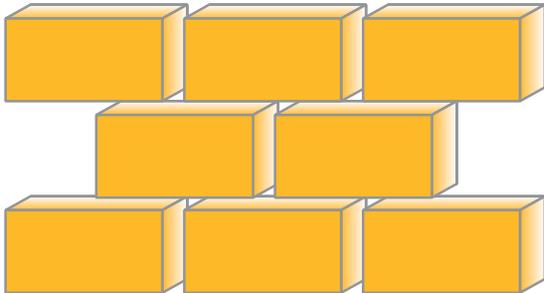
A sufficient number of labourers should be available, with equal opportunities for men and women. Unpaid community labour may be forced labour, if it is not voluntary. Labour standards should be adhered to.



Safety and health

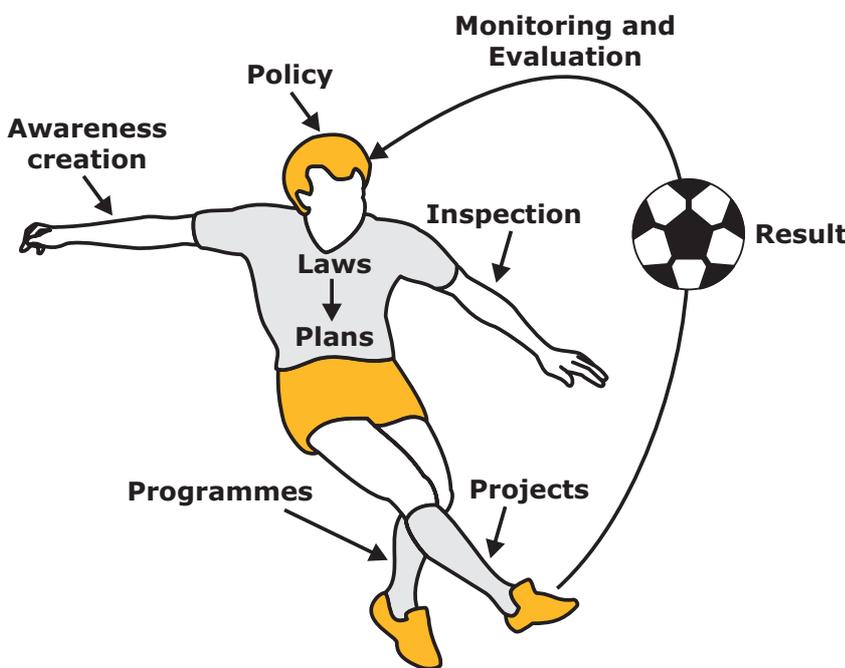
A first aid kit and drinking water on the site are key issues. A community contractor should consider health/accident insurance. Safety and health regulations may be included in the contract.

Programme management



A programme is like a wall comprising many bricks (projects). However, like a wall is more than a number of good bricks, a programme is more than a number of projects. It also requires political commitment, policies and laws, good governance and good management.

From policy to practice



Political commitment

Policy makers need to appreciate the advantages and disadvantages of CMLB upgrading. Pilot projects may help through study tours and workshops for them. More importantly, policy makers should fully be involved in CMLB initiatives.

Policies and laws

Policies and laws commit stakeholders to CMLB programmes. Policies should be SMART:

Laws guide the implementation of policies.

- Straight forward
- Measurable
- Attainable
- Relevant
- Time related.

Good governance

The development of laws and policies requires good governance. That is inclusive, open and transparent systems of decision making. CBOs, NGOs and other partners have a role to play in policymaking and law setting.

Good management

Programmes need to be implemented effectively and efficiently. This requires good management: committed, capable and well-organised institutions, linked through proper partnership arrangements.

Urban Infrastructure

Problem

Many unplanned low-income settlements are located on low-lying or steeply-sloping land, where stormwater creates flooding and erosion.

Objective

Reduce the frequency, duration and extent of flooding, so that it does not damage roads and houses. Some temporary flooding may have to be accepted, but this should be concentrated where it causes least damage – in streets and on open ground rather than in houses.

Design information needed

Start with what exists:

- ❖ Are existing or natural drains blocked/ encroached?
- ❖ Where does flooding occur at present?
- ❖ Are there any obstacles causing local flooding?
- ❖ Can other problems be traced to poor off-site drainage or topography?

Catchment and rainfall characteristics:

For local facilities, assumptions on rainfall intensity and run-off may be sufficient. Develop tables to assess the carrying capacity of standard drains and road cross-sections to the slope and, in the case of roads, depth of flow.

Land availability: this influences the channel routes.

Organisation of drainage works

Community labour: Drainage works are potentially very labour-intensive.

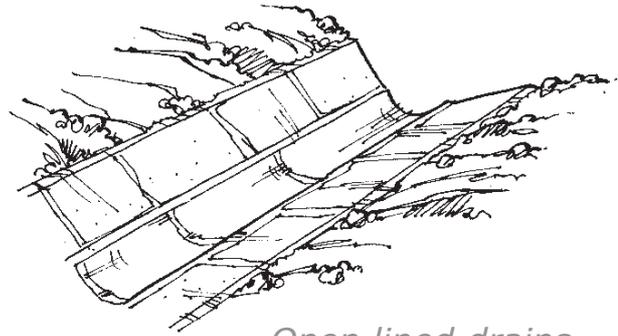
Community contracting:

- ❖ Primary drains (main drain): Construction may be technically complicated, which may limit community involvement.
- ❖ Secondary and tertiary drains: Community involvement is easier in these smaller drains.

Community management: The community should be able to influence the route of drains.

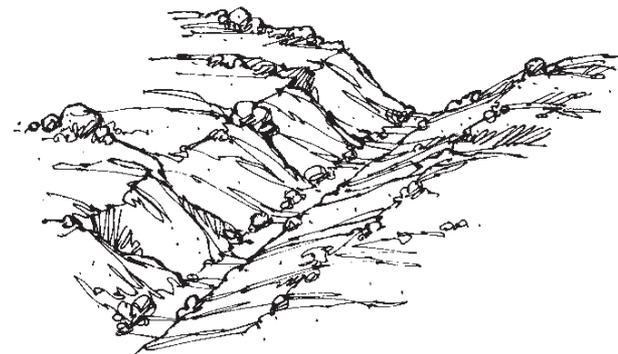
Technical options

Open or covered drains: Covering drains reduces the entry of solid waste and silt that might block the drain. Against this, cleaning covered drains is much harder than that of open drains. Avoid covered drains smaller than about 400mm by 400mm in cross-section.

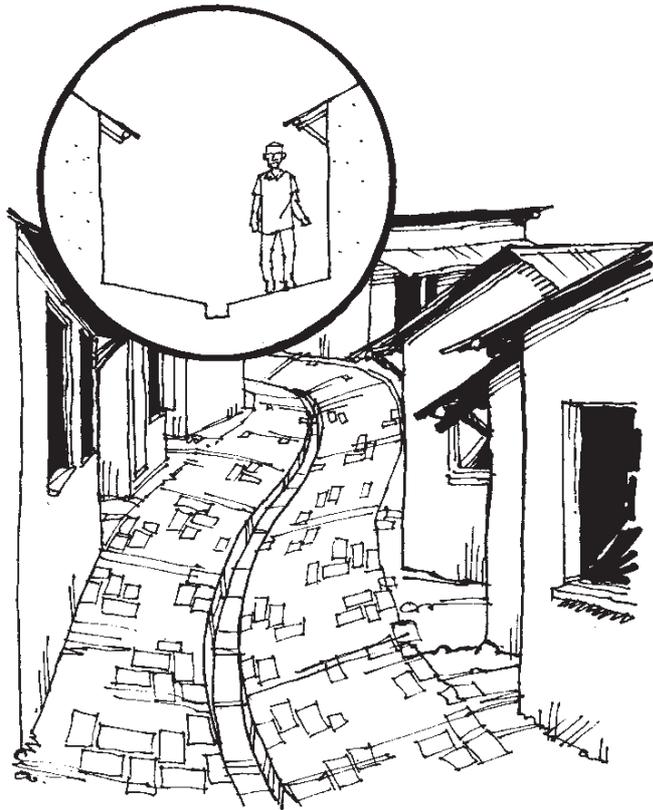


Open lined drains.

Lined or unlined drains: Lined drains are likely to be more durable and require less maintenance than unlined drains.



Open unlined drains.



Open lined drains with overflow on roads.

Stormwater and sewerage: Some discharge of stormwater to foul sewers is almost inevitable. Sewers can be utilised in drainage schemes provided that the flow is restricted and silt is removed before the flow enters the sewer.

Simple gully-cum-soakaway arrangements may achieve these ends but remember the need for maintenance and think who would be responsible.

Water storage: Flow capacity can be increased if even a little overflow or storage is permitted. Water storage is particularly relevant if drainage capacity downstream of the settlement is limited.

Maintenance

Cleaning: Continuous cleaning of drains may be undertaken by unpaid household work or paid labour. Unpaid work might not always work in heterogeneous communities. Often women are taking the burden of unpaid work.

Solid waste management: waste is likely to end in the drains, when no system is in place.

Encroachments: These are best dealt with in cooperation with the community.

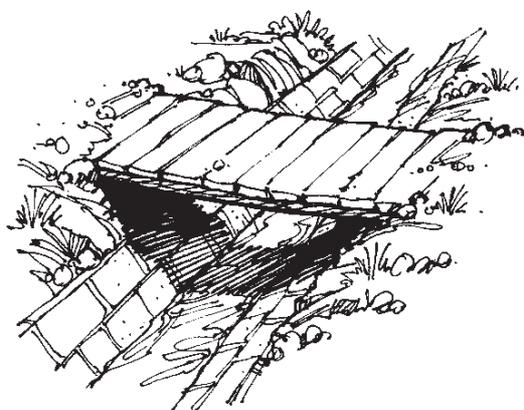
Periodic and emergency repairs: arrangements should be made.

Problem

Access is an important concern for residents of informal areas. It is also important to ensure access for public purposes such as fire fighting, solid waste collection, ambulances, supply trucks and infrastructure maintenance.

Objective

Better access may be provided by improved transport infrastructure, better transport facilities and relocation of services closer to people. Remember that most people are likely to walk within low-income settlements. Access needs by car are likely to be limited.



Small footbridge.

Information needed

- ❖ Access needs
- ❖ Existing overall transport infrastructure lay-out
- ❖ Longitudinal and vertical allignments
- ❖ Travel data (vehicular and not vehicular)
- ❖ Land availability and natural drainage way.

Overall lay-out

In low-income settlements, the scope for creating a more logical layout of access roads, minor roads, bicycle tracks and footpaths is likely to be limited. Start by considering the access hierarchy, which should be upgraded based on needs. Upgrading paths to roads to allow vehicular access may cause demolitions and may increase the value of houses. This might increase rents.

Organisation of works

Labour: Road works are very labour-intensive. Use can be made of considerable rural experience in labour-based works.

Community contracting: Unpaved roads and roads with unbound pavements or stone paving can be undertaken by a community contractor with technical assistance.

Community management: The community should be involved in establishing the overall lay-out, particularly in the case of demolitions of houses.

Technical options

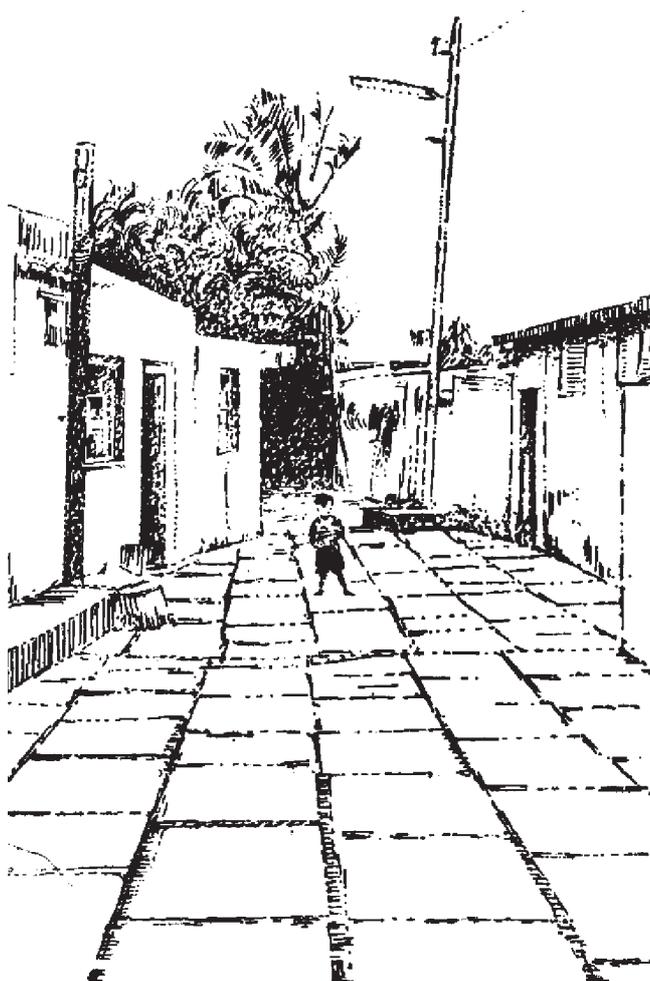
Drainage: Poor drainage hampers all year access and will rapidly lead to problems with street surfacing. Drainage provision in itself is likely to improve all year access.

Road width: The width of roads and paths may differ, with only limited access by car. For narrow streets and lanes, it will normally be best to pave the whole width. For wider rights of way, only a strip may be paved.

Pavement options:

- ❖ Unsurfaced roads: cheapest option, but the least durable.
- ❖ Unbound materials such as gravel and laterite, possibly improved by stabilisation using cement or lime. This is relatively cheap. Stone or block paving might also be an option.

Stone paved roads



Minimum standards

A 50mm asphalt carpet worked well for upgrading projects in Pakistan. In Chennai, India, a 25mm carpet was deteriorating within a year of being laid. This suggests a minimum standard greater than 25mm but perhaps less than 50mm.

- ❖ Sealing the surface with a bitumen-based surface treatment but this requires careful compaction and is unlikely to be necessary for low traffic lanes.

The choice depends on:

- ❖ the nature and volume of the traffic
- ❖ Construction cost
- ❖ Likely ongoing maintenance costs: these

Maintenance

- ❖ Construction standards: low standards with high traffic will seriously reduce the life span of roads.
- ❖ Lengthmen or community contractors: Routine maintenance and to a lesser extent periodic and emergency repairs can be undertaken within the community.
- ❖ Funding: Recurrent funding is the key challenge.

Problem

Water is basic to life. Poor quality or an inadequate quantity negatively affects health.

Objective

The aim should be to provide at least 20 litres of potable water per person per day (l/hd) where dry sanitation is used, increasing to 30 l/hd where WCs discharge to septic tanks or leach-pits. Sewers require more water. Water should be available at affordable prices.

Level of service

The level of service is normally stated in terms of the average per-capita quantity of water available to users. This will not be achieved automatically but depends on:

- ❖ Location of the supply – the amount used is unlikely to exceed 15 l/hd if the return trip to collect water takes longer than about 5 minutes
- ❖ Period over which water is available (24 hour per day service will not be possible in many areas)
- ❖ Pressure of piped systems
- ❖ Effort required in obtaining water (most important in the case of handpumps)
- ❖ Reliability of the service
- ❖ Cost of water.

Technical options

Local sources or central system: Water may be obtained from local sources or from the central town water supply system. Local sources include rainwater obtained from roof catchments, shallow and deep groundwater. Local sources, if available, may be more controllable by local people. However, the management arrangements, reliability and quality of these need to be carefully considered. Note the possibility that people rely on more than one source.

Decentralised provision

In the PUSH project in Lusaka, the decision has been made to rely on local water supply systems linked to borehole supplies. The system has been designed so that it can be linked to the city system at a later date if so desired.

From kiosks to in-house connections: Options for water supply are likely to vary from kiosks and standposts through yard and compound taps to in-house connections, depending on the amount of water available and the income of residents. Consider where people obtain water at present when planning new facilities. People will not go from a higher level of service to a lower level (for instance, there is probably no point in introducing public standposts when people already have on-plot connections).

Local material: Locally available materials should be used whenever possible. Avoid complex items such as self-closing taps unless they are available in the local market. Good quality materials and workmanship are essential if leakages and higher operating costs are to be avoided.

Organisation, operation and maintenance

Labour: The operation of water kiosks is very labour-intensive. On the other hand, the use of labour-based technology in construction is restricted to excavation, pipe laying and construction of kiosks.



Pipe laying is labour-intensive.

Water kiosks: Private operators or community groups may manage kiosks and other local facilities. When such facilities link with public systems, it is important to define roles, responsibilities and financial arrangements.

Private or community management

A study by local consultants in Lesotho revealed a user preference for kiosks to be run by private enterprises rather than community organisations. They believed the former would be more reliable.

Community management: Those responsible for managing systems should, at the very least, be consulted at the design stage.

Cost recovery: Water supply systems that do not recover their costs will fail sooner or later. There may be problems in obtaining cost recovery from public standposts. The cheapest, yet most durable solution needs to be identified.

Metering can reduce water wastage but consider whether it is feasible, given available institutional resources.

Problem and objective

Waste is unpleasant and harmful for health and may harm the wider environment. Improved sanitation thus has important health and environmental benefits.

Health education

Improved sanitation will only be successful if there is a demand for change. Potential users may be concerned about increased convenience and the improvements that it brings to their local environment. Such concerns may be a starting point for improving sanitation but awareness of potential health impacts should also be created among users.

Start with the present situation

- ❖ How do people deal with sanitation and sullage disposal needs at present?
- ❖ Can anything be learnt from previous attempts to improve sanitation?
- ❖ Which organisations are responsible for sanitation and/or sullage disposal and which organisations are actually working to bring about change?

Sanitation in Juba, Southern Sudan

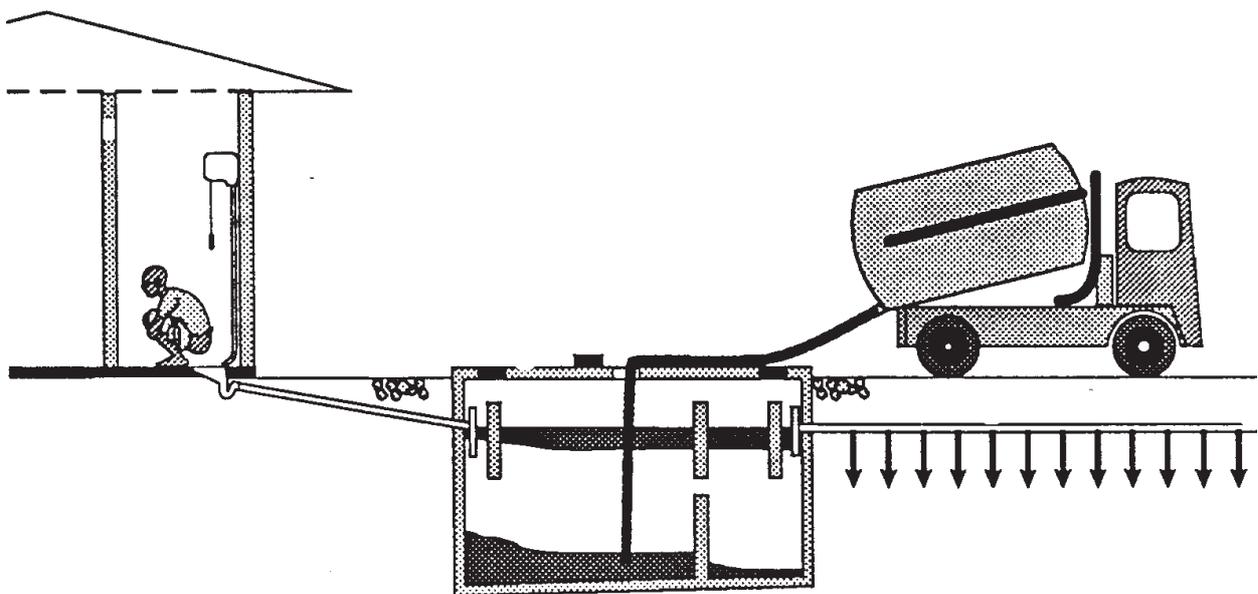
A survey of Juba in the early 1980s showed that only 20% of people had pit latrines on-plot. Significantly, another 20% had tried and failed to build pit latrines. Understanding the reasons for their failure (lack of technical knowledge and inappropriate regulations) enabled planners to devise a plan to improve the situation.

Organisation

Household, shared or communal facilities (shared facilities are available only to specified users while communal facilities are open to all). Household facilities are best, followed by shared facilities. Communal facilities will only be hygienic if they are well managed. They are most suitable for public places such as markets. A small fee pays for operation and maintenance.

Community management: Management of on-plot facilities should be the responsibility of the household. Communal management of local facilities such as toilet blocks and tertiary sewers is possible but may require alterations in legislation and procedures.

Technical options



*Wet system with septic tank**

Wet systems (using water): most are based on the use of pour-flush WCs. They will normally only be feasible where water is available on or near the plot. Waste is disposed to:

- ❖ *Leach-pit or septic tank* on or near the plot. This may work when levels of water use are fairly low so that the ground can absorb wastewater.

* Cotton & Franceys, 1991, *Services for Shelter*, Liverpool University Press.

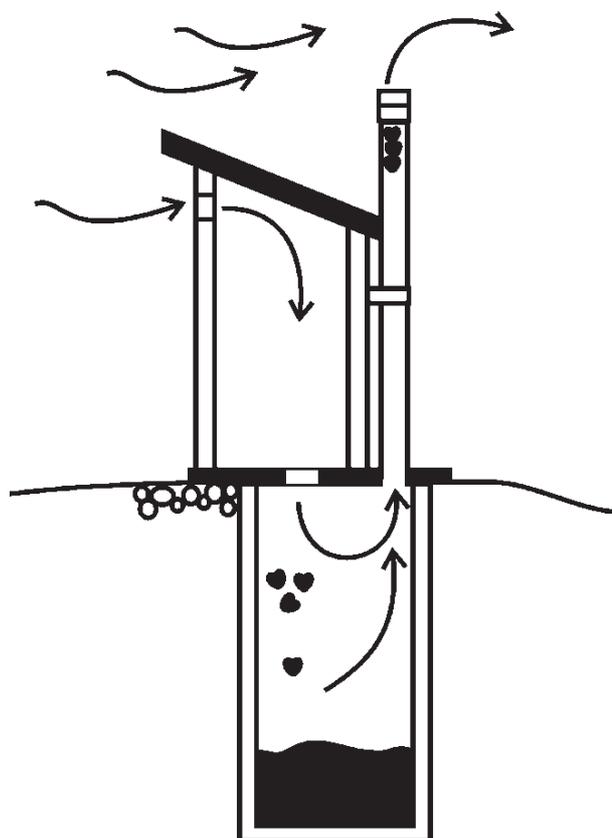
- ❖ *Sewer.* Sewers are expensive, but their cost can be reduced by adopting appropriate standards (shallow depths, smaller chambers etc.).
- ❖ *Interceptor tank systems.* This holds solids in tanks and discharge liquids to small-bore sewers, which may be appropriate where falls are not enough for conventional sewers. Disposal of wastes is an issue for all sewer systems.

Dry systems: all involve some form of pit or chamber. Where groundwater levels are high and groundwater is used for drinking, there may be a danger that pit latrines and leach-pits pollute the groundwater.

- ❖ *Pit latrines* are common in Africa, but suffer from insect problems if the hole to the pit is not covered when not in use.

- ❖ *Ventilated Improved Pit (VIP) latrines* offer a possible higher level of service but are likely to be more expensive.

- ❖ *Composting latrines* require that additional organic material is added to the pit to improve decomposition of faeces. They require more care from users and do not seem to offer definite advantages over pit latrines.



*VIP latrine **

* Cotton & Franceys, 1991, *Services for Shelter*, Liverpool University Press.

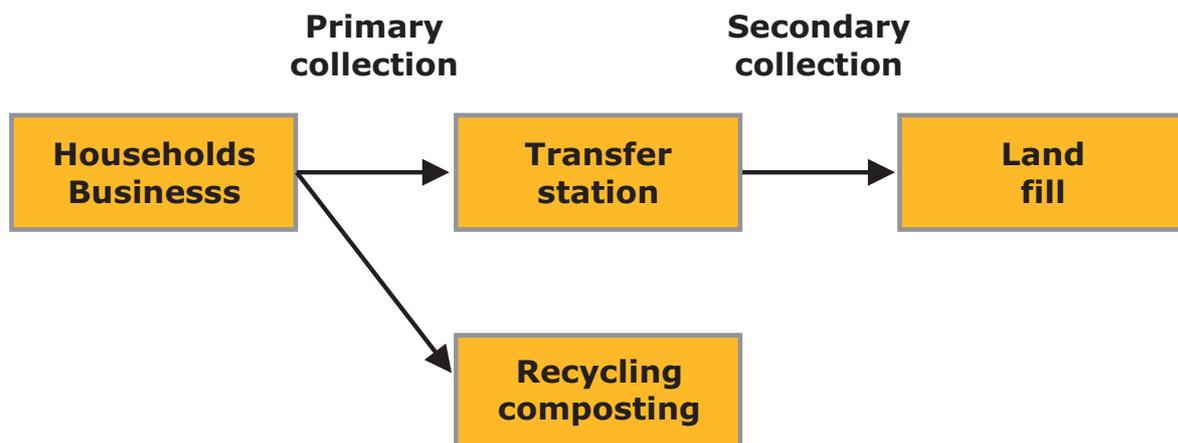
Problem

Solid waste management is a big problem in rapidly growing cities. Uncollected solid waste quickly creates a nuisance, encouraging breeding of insects and other pests, creating smells, blocking drains and generally harming the environment.

Objective

Waste has to be collected from houses and businesses and transported to a disposal point. The objectives are:

- ❖ collect solid waste regularly and reliably
- ❖ eliminate solid waste from drains, roadsides, empty plots and around solid waste collection and transfer facilities
- ❖ dispose of waste in an economic and hygienic way
- ❖ allow recycling of useful materials.



Health education

People may get used to poor waste management and it may be necessary to develop a demand for change and to show people how change may be achieved. This may not be obvious in places where there is no municipal system and no apparent prospect of getting such a system. Health education is a continuous process.

Primary collection

Organisation: Transport from households or businesses to a local collection point is often the responsibility of householders or local collectors. Local collectors may be CBO's, NGO's, scavengers or local private enterprises. Collectors may directly charge a fee from households. This may require changes in the laws. Collection bins may be required.

*Transport**: Waste may be picked up from local collection points using hand, bicycle or donkey carts. These have a limited range so transfer to vehicles will be required unless local disposal is possible.

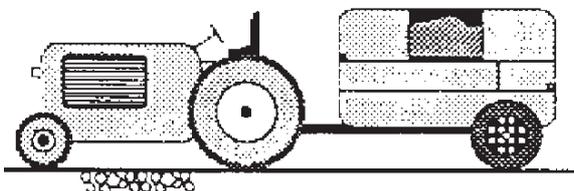


Handcarts may be used.

Employment: considerable employment can be created, targeted at the poorest since waste collection is a low-status job.

Transfer stations

The biggest problem with collection and transfer points is where to site them. No one is likely to want the transfer or collection point near their house.



Transport: a range of options.

Secondary collection

Organisation: secondary transport (from a transfer station to a landfill) is the responsibility of local government, which may contract a private firm.

Transport: Collection vehicles may be specially designed or modified trucks for easy loading from transfer stations. Tractors and trailers may be useful if the distance to the disposal point is not too far.

* Cotton and Franceys, 1991, *Services for Shelter*, Liverpool University Press.

Landfill

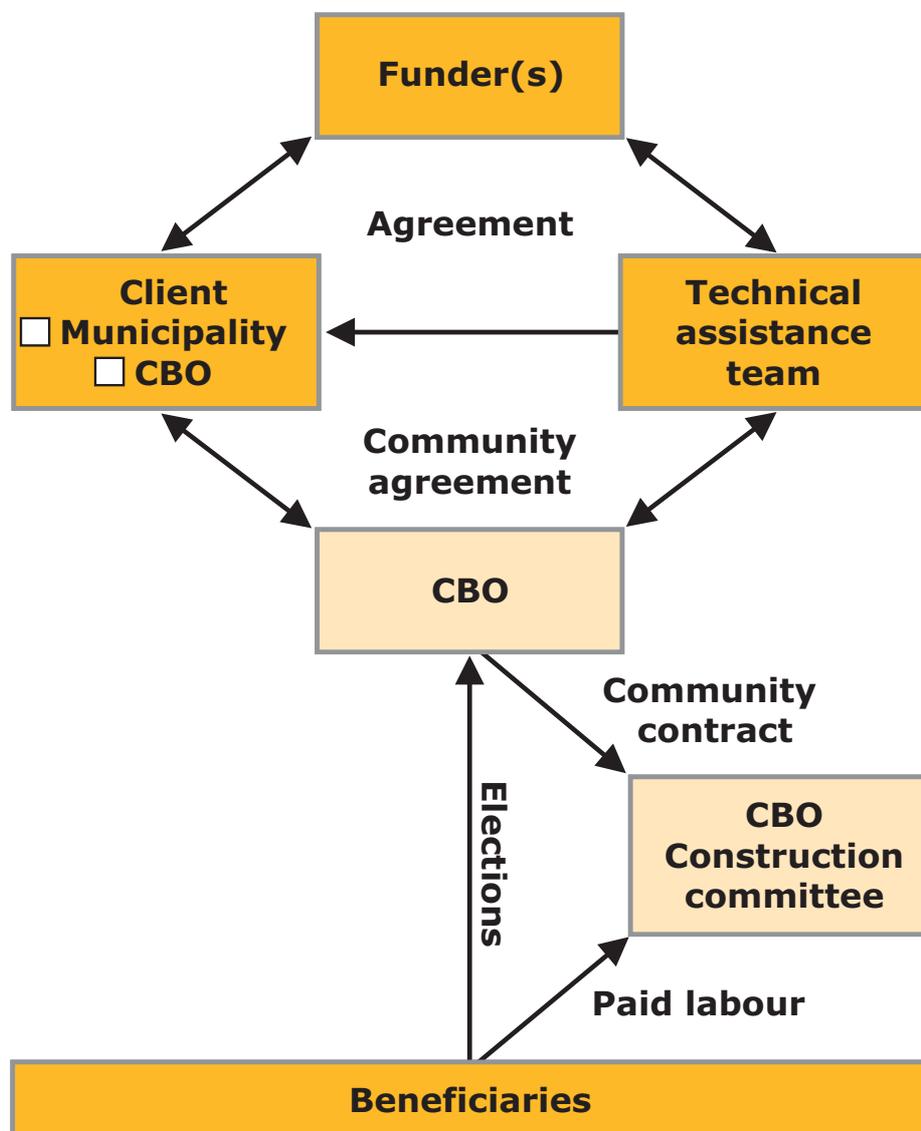
In many cases, disposal consists of nothing more than dumping. Proper land-filling is desirable and there have been experiments with composting.

Recycling and composting

Recycling and composting can create considerable local employment and income. However, waste in low-income settlements tends to be of low value; recycling is thus likely to be more useful in higher income areas. Composting requires a local market, since transport of heavy compost is expensive. Reductions in waste generation may also be considered.

Case Studies

Institutional set-up



Community contracting in a pilot project

Background

Hanna Nassif is a low-income settlement, 4 km from the city centre. After a severe flooding in 1991, the community organised itself and looked for support. The

community approach differed radically from previous government attempts to upgrade the settlement, which failed due to lack of funds and the need to demolish houses. The community insisted that houses would not be demolished.

Community priorities

Based on community action planning, the identified priority needs related to infrastructure were:

- | | | | |
|---|-------------|---|------------------------|
| 1 | Flooding | 3 | Garbage |
| 2 | Poor access | 4 | No safe drinking water |

Key social problems were unemployment and lack of credit. Phase one of the project concentrated on the first two needs (1994 – 1996), while phase 2 included the remaining problems (1997 – 2000) and credit

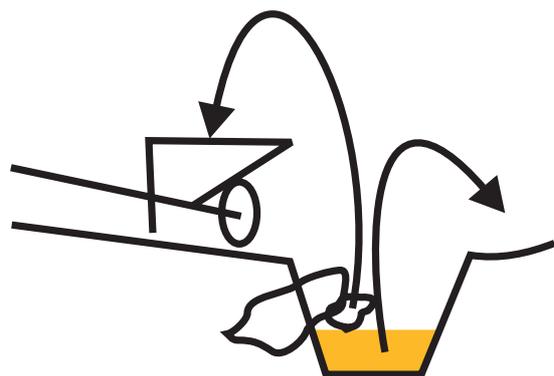
Community management

The CBO was given final decision-making power, but both CBO and the city council needed to sign cheques. Funding for community organisation and the credit scheme was given directly to the CBO. A technical support team provided assistance in community organisation, awareness raising and labour-based community contracting.



Community contracting

The Construction Committee of the CBO functioned as full contractor, responsible for labour, material, tools and equipment. They were given 90% advance payment, while the remaining 10% were profits, reserved for maintenance on a community account. The CBO and city council jointly functioned as client.



Maintenance

The CBO was strengthened and trained in labour-based construction and maintenance. Recurrent funding arrangements were considered, but have not yet been finalised. A road toll functioned well for some time.

A community maintenance manual was developed.

Scale of costs and benefits

Costs

- ✓ US\$ 60 per household
- ✓ Community unpaid time

Benefits

- ✓ Less house repairs
(US\$ 10 per year per household)
- ✓ Less water born diseases
(US\$ 8 per year per household)
- ✓ Community started other activities
- ✓ Employment creation

Lessons learned

- ✦ CBO can maintain assets and initiate new activities after being trained.
- ✦ Community contracting is not more expensive than normal contracting.
- ✦ Services adapted to needs community
- ✗ Community participation is time consuming.
- ✗ Community conflicts are likely to occur.
- ✗ Community contracting requires considerable technical and social support.

Labour-only community contracts.

Background

Kalerwe is a low-lying unplanned settlement in Kampala, Uganda, where the inadequate drainage network resulted in severe flooding in the rainy season. The flooding, which resulted in water-borne diseases and damage of properties, was mainly caused by the absence of a primary storm water drain. The project constructed the drain with community labour.

Project team

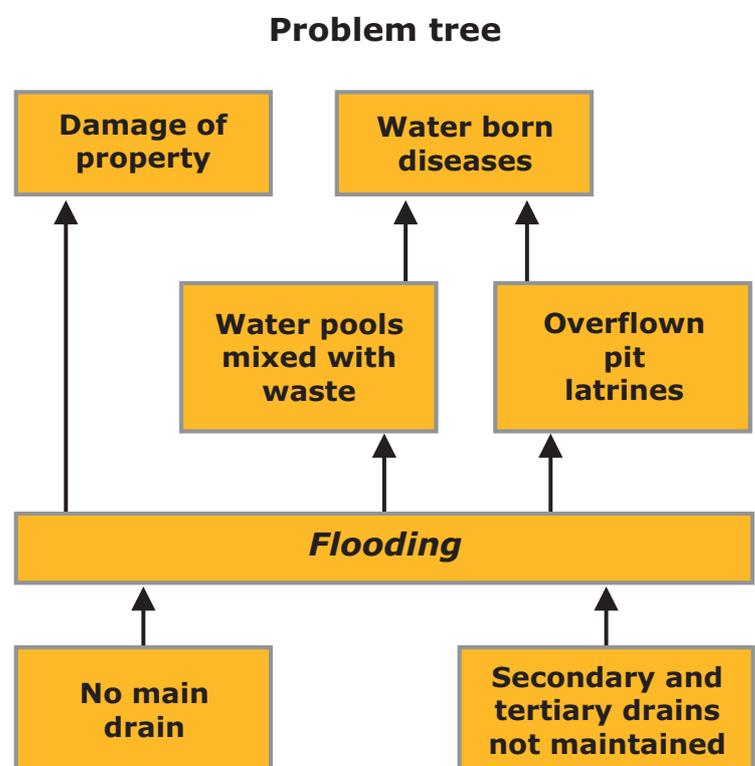
The funds were channelled through a project team, comprising representatives of the community, local government and central government. The team was temporary, leaving no institutional framework for maintenance. City Council, which promised to maintain the created assets, claimed they lacked recurrent funding after the project ended.

Labour only community contracts

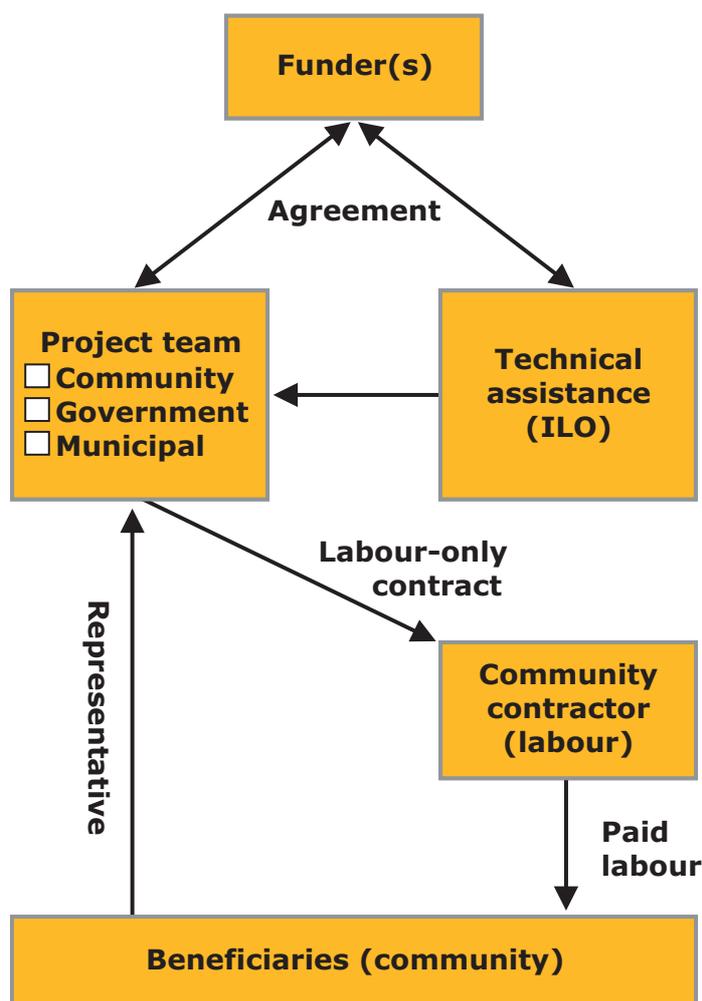
Community residents in which the drain was constructed formed an informal local community contractor. The contractor employed local labour, while the project team, with technical assistance, procured material and equipment. A project engineer supervised works.

Community contributions

Work on the main drain was treated as major works and no community contributions were expected. The community was expected to contribute 33% of labour-costs for the secondary drains.



Institutional set-up



Labour-based technology

Unemployment was (and is) very high in the congested settlement of Kalerwe, while excavation for drainage had the potential to create a lot of employment. Works were therefore carried out using labour-based approaches.

Efficient construction

The drains, totalling 3.8 km, were constructed within one year and remained below the cost estimates of the government. Capacity building of the community in initiating and planning was only a minor aspect of the project. In addition, the community lacked a

representing organisation. As a result, the community was not in a position to respond to the government’s lack of maintenance funds.

Lessons learned

- ✦ *Urban labour-based construction can be efficient and cost effective.*
- ✦ *Community contracting can work.*
- ✗ *Attention to capacity building is essential for maintenance.*
- ✗ *One year is too short to build in sustainability.*
- ✗ *Recurrent funding is needed for maintenance and must be assured before the project commences.*

Appropriate standards of infrastructure

Background

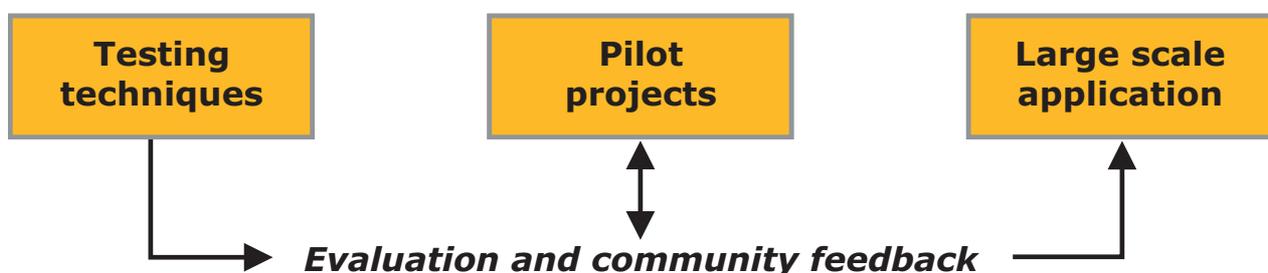
Lahore is the second city of Pakistan. A donor agency funded the North-East Lahore Upgrading Project from 1986 to 1994, which is a supply-sided initiative to upgrade a settlement of 270 hectares housing 150,000 residents and industries. The services in the densely populated settlement were among the worst in Lahore.

Appropriate standards

The project developed appropriate standards and specifications, based on techniques already used in the settlements. The standards were considerably lower than government standards. For example:

- ❖ *Roads*: brick paving is the standard in low-income settlements and was used by the project. However, techniques were improved by cement grounding bricks and providing a mortar or sand bedding. This increased the life span of roads.
- ❖ *Sewers*: since lanes were too narrow to carry vehicular access, sewers could be laid at shallow depths. Small inspection chambers could thus be used instead of conventional manholes.
- ❖ *Drainage*: Street surfaces were used as part of the drainage system.

Piloting techniques



Community considerations were taken into account in the evaluations of technology testing and pilot projects. For example: the length of storm water drains was considerably reduced, since secondary drains in the pilot area tended to block sooner rather than later.

Integrated approach

A special unit within the Metropolitan Planning Wing (MPW) was responsible for design and supervision of all contracts to upgrade the settlement. However, this was not sustainable. For example, larger sewers and water drains were provided by the Lahore Water and Sanitation Agency, which was reluctant to adopt the appropriate standards and faced logistical and financial difficulties in implementation. The integrated approach did not survive the ending of World Bank funding, since it differed strongly from the approach of line governments.

Technical skills

The designs were technically complex. For example, North-East Lahore is very flat and it is difficult to design a system that avoids pumping. Since street surfaces were used as drains, longitudinal falls had to be carefully considered. Cross-falls on wider streets would affect the drainage as well. Due to these technical complexities, it is doubtful whether the approach can be replicated on the large scale required to upgrade all similar areas.

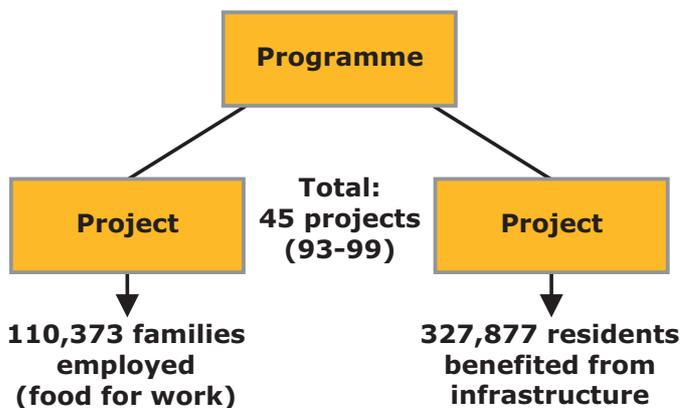
Contract documentation

Contract documentation was simplified to make it easily intelligible to the relatively small local contractors who tendered for work on the project. For each manhole, for example, the location, existing and proposed street levels and proposed invert levels were given. Simple schedules – in effect mini-bills of quantities were prepared for frequently repeated items such as manholes. The contracts were thus specific yet simple.

Large scale labour-based programme by an NGO

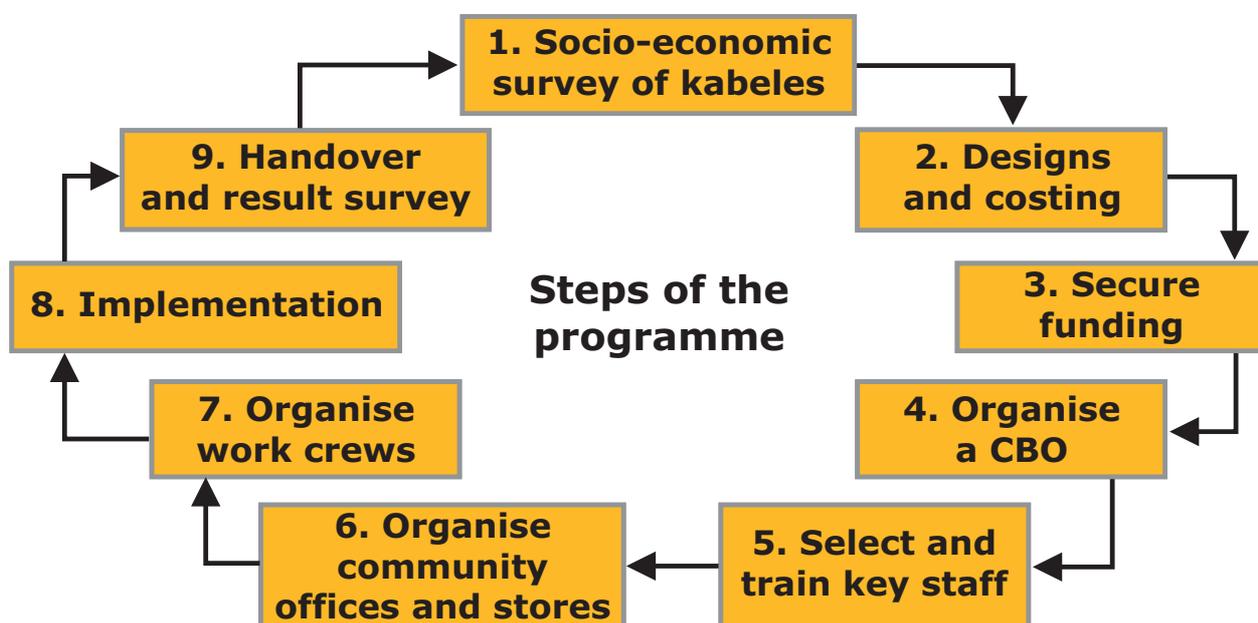
Background

An international NGO manages an urban food-for-work programme to improve community infrastructure in low-income settlements since 1993. The programme has worked in 45 kebeles (settlements) to date, constructing a total of 94 km of stone paved roads, 82 kms of surface drainage and pipes, 68 communal latrines, 3 natural springs and bridges, culverts and foot crossings. All construction is labour-based, employing 118,479 residents from '93 to '99.



Programme approach

The programme employs a manager, community worker, engineer and technicians and collaborates with other agencies such as city council. The programme operates at about six kabeles simultaneously, making cost-effective use of its staff. Funding is received from a range of donors. The programme adopts strict and efficient steps in identifying and implementing its projects:



Standards

Roads are paved with natural stone, strong enough for a Boeing 747 to land, yet cheap. Communal latrines are durable as well, using compressed earth block technology and locally manufactured cement hollow blocks. The Care engineer controls quality in all settlements, and supervises technicians for each settlement and community gangleaders for each work crew (40 labourers and 8 masons).

Unskilled, semi-skilled and most skilled labourers are employed from within each kabele. Approximately 60% are women.

Future

Care Ethiopia aims to strengthen various components, without losing its strengths in large-scale cost-effective and labour-based construction:

- ✓ *Community organisation and maintenance: these elements receive relatively little attention. The project focuses on physical improvements.*
- ✓ *Solid waste management: both to create environment and improve the living and working environment.*
- ✓ *Promote income-generating activities.*
- ✓ *Promote population control and AIDS programmes.*

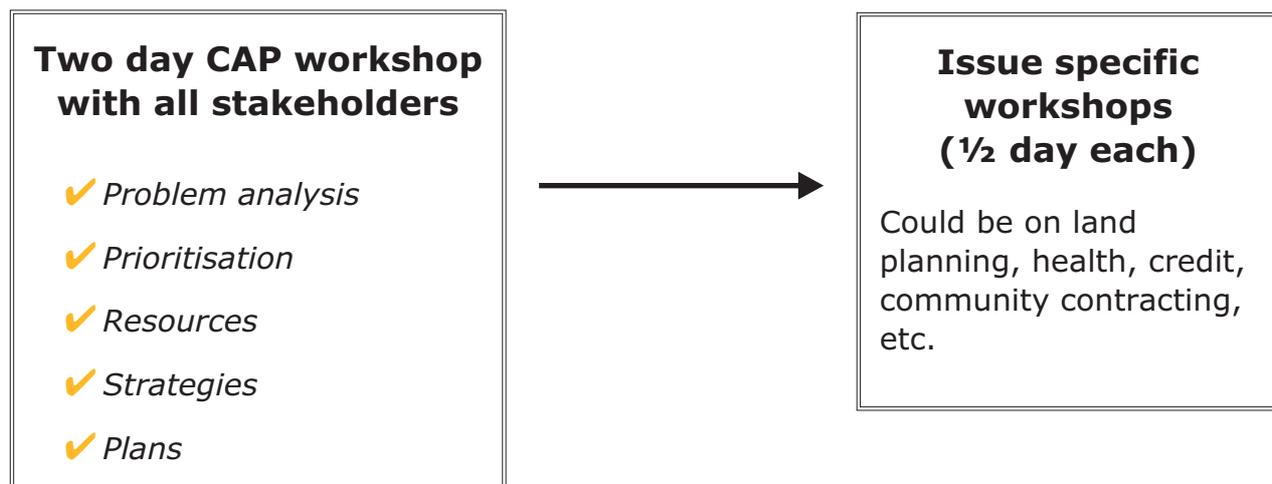
Large-scale community contracting programme

Background

Community contracting was first piloted in Sri Lanka in 1986, by the National Housing Development Authority (NHDA), with technical support. From 1986 to '88 alone, 83 community construction contracts were awarded to a total of 70 CBOs, mainly concerning minor works.

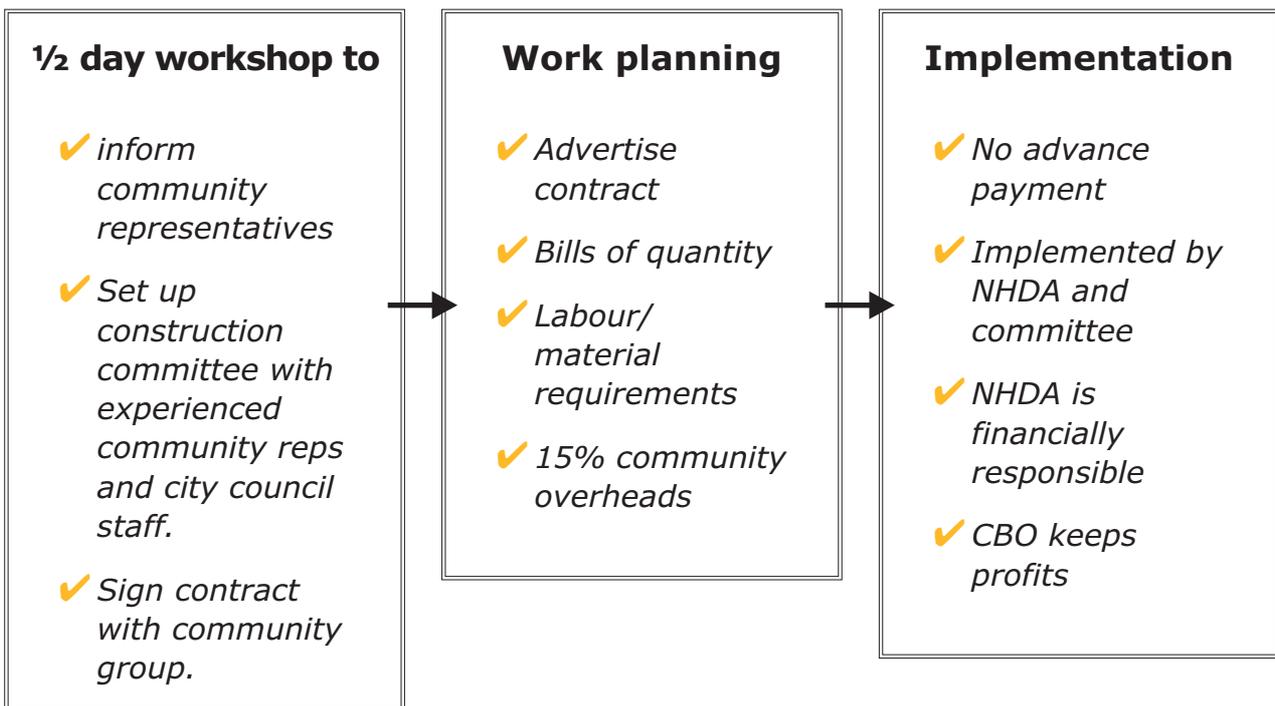
Community Action Planning (CAP)

CAP consisted of a two-day workshop, followed short specific workshops if and when required.

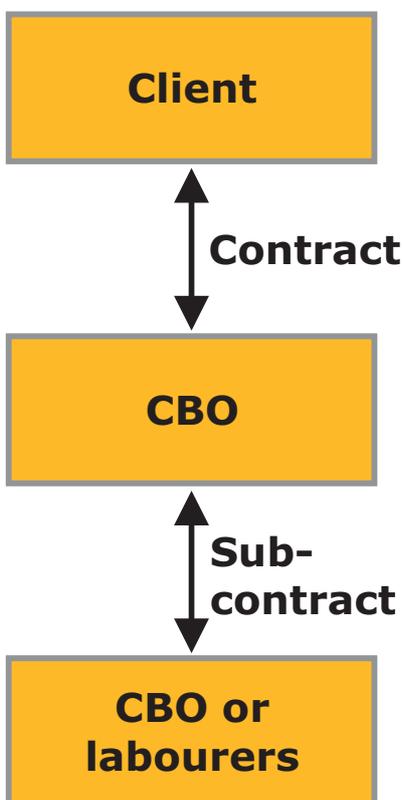


Community construction contracts

The approach built on the traditional approach of *shramadana* or the donation of labour for a worthy cause. It aimed to overcome the poor quality services of private contractors. Depending on the level of community organisation, they could work on their own or receive assistance from an NGO. NHDA provided technical assistance.



Technically complicated works or work in poorly organised communities was given to private contractors.



Community subcontracting?

NGO support to enable weak CBO's was not forthcoming. Instead, weak community groups employed paid labour or subcontracted work to private contractors. The subcontractors were small local contractors or well-organised CBO's.

Community organisation and maintenance

As the local authorities had fewer and fewer resources, users had to take over maintenance and operation of the assets. This worked well in strongly organised communities, which employed a labourer or rotated cleaning on a voluntary basis. Most communities were however not well organised.

Community ownership was enhanced by community contracting, but since the construction was fully funded by the government, the communities maintained the perception that the government was the provider.

Praja Sahayaka

Community organisation required continued support after construction, which was not provided by community development councils. Since each community had one or two active members, these persons were recognised as community assistant (praja sahayaka).

A praja sahayaka worked as a part-time extension agent in his/her and other communities. He/she also functioned as a 'role model' refraining from excessive drinking, gambling, etc. To become more independent, the NGO 'Praja Sahayaka Service' was established. Its members are community leaders, which devoted up to 10 days per month to support other low-income settlements.

Linking national, city and settlement planning

Large cities programme

The Government of the Netherlands initiated the Large Cities Programme in the '90s, in a response to top-down urban planning which dominated the '80s. The top-down approaches were considered to be expensive and not problem focused. The programme aims to integrate development at settlement, municipal and national level.

At **settlement level**, needs are prioritised through community participation and organisation. Small budgets are available for community initiatives that can be implemented within a year in some cities. Settlement plans are developed for the long term.

At **city level**, long and short term plans are developed and funding is requested from central government for implementation.

At **national level**, city proposals are considered, funding provided and implementation monitored. City plans are integrated into policies, while laws are deregulated to the extent possible.

National level

- ✓ Approval of plans
- ✓ Policies
- ✓ Funding



City level

- ✓ Visions
- ✓ Preparing proposals for funding
- ✓ Enable implementation



Settlement level

- ✓ Prioritise needs
- ✓ Fund community activities
- ✓ Prepare long-term settlement plans

Deventer neighbourhood approach

Deventer is one of the very active participating towns. In Deventer, an NGO, Raster, was contracted to initiate and support CBO's, through community development work. Various agencies were involved in the partnership: CBO's, City Council, Raster, police, educational centres, etc. Training and awareness programmes were developed for staff and residents. At community level, steering committees were formed comprising Raster, community representatives and a municipal representative. After a short pilot, this approach was applied in the whole city.

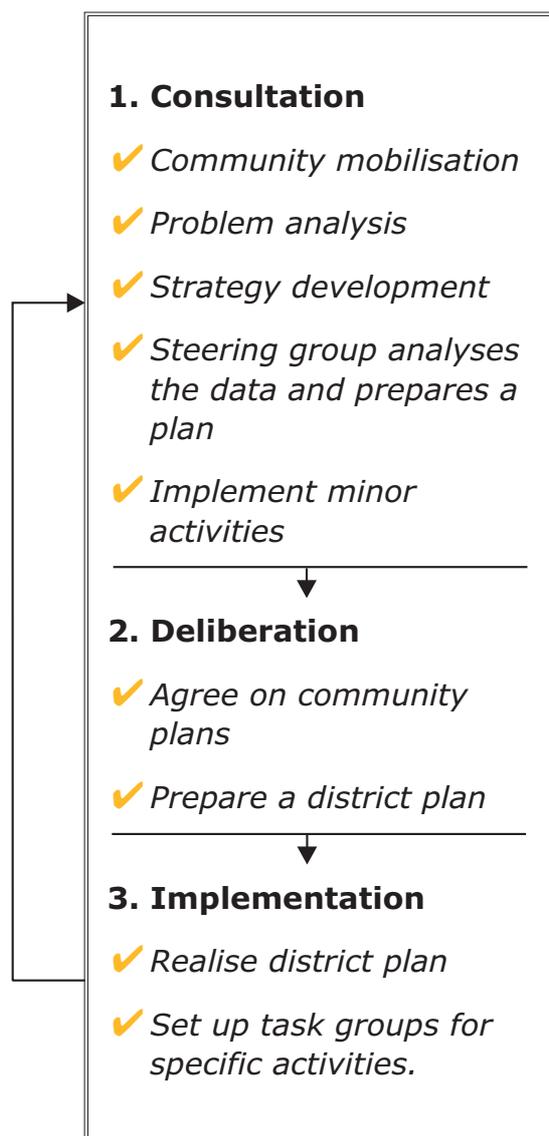
Three phases

The community approach consists of three evolving phases: consultation, deliberation and implementation.

In the *consultation phase*, Raster meets formal and informal community organisations in each settlement to obtain a fair representation from the whole community. Around 40 to 70 meetings are held in each community, using innovative methods to meet people from all walks of life. A steering group of Raster, the council and community representatives analyse the data and prepare a plan. Short-term plans may be implemented immediately by community groups or NGO's. Limited government funds are available (ca. US\$ 50,000/ year for each settlement).

In the *deliberation phase*, the plans are agreed upon in consultation with community groups. After that, community representatives and active NGO's are asked to fine-tune the plans into a district level plan.

In the *implementation phase*, the district plans will be implemented through specifically set-up task groups. A task group on insecurity may, for example, involve the police, youth groups, city council and an NGO.



Examples	Results (1995)	
<ul style="list-style-type: none"> ✓ <i>Street lightning</i> ✓ <i>Street cleaning</i> ✓ <i>Playgrounds</i> ✓ <i>Community integration</i> 	<ul style="list-style-type: none"> ✓ <i>Residents were more positive about settlement.</i> ✓ <i>93% of residents knew approach</i> 	<ul style="list-style-type: none"> ✓ <i>54% of residents felt their influence on policy increased.</i> ✓ <i>59% said neighbour-hoods had improved.</i>

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