COMMUNITY INFRASTRUCTURE IN URBAN AREAS

CREATING JOBS WHILE IMPROVING LOW-INCOME SETTLEMENTS

Regional Office for Asia and the Pacific
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<td>Asian Coalition for Housing Rights</td>
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<td>ADB</td>
<td>Asian Development Bank</td>
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<tr>
<td>BDC</td>
<td>Barangay Development Council</td>
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<tr>
<td>CBO</td>
<td>Community Based Organisation</td>
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<tr>
<td>CBR</td>
<td>Community Based Rehabilitation</td>
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<tr>
<td>CDA</td>
<td>Cooperative Development Authority</td>
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<tr>
<td>CDA</td>
<td>Community Development Association</td>
</tr>
<tr>
<td>CDP</td>
<td>Centre for Disaster Preparedness</td>
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<tr>
<td>CENRO</td>
<td>City Environment and Natural Resources Office</td>
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<td>CEO</td>
<td>City Engineers Office</td>
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<tr>
<td>CFW</td>
<td>Cash-for-Work</td>
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<td>CHO</td>
<td>City Housing Office</td>
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<tr>
<td>CLIFF</td>
<td>Community Led Infrastructure Finance Facility</td>
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<td>CPDO</td>
<td>City Planning and Development Office</td>
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<tr>
<td>DMC</td>
<td>Developing Member Country</td>
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<td>DPUCSP</td>
<td>Development of Poor Urban Communities Sector Project</td>
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<tr>
<td>DSWD</td>
<td>Department of Social Welfare and Development</td>
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<td>EIIP</td>
<td>Employment Intensive Investment Programme</td>
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<tr>
<td>EPA</td>
<td>Environmental Preservation Area</td>
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<tr>
<td>FAQs</td>
<td>Frequently asked questions</td>
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<td>FDUP</td>
<td>Foundation for the Development of the Urban Poor</td>
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<tr>
<td>FIDIC</td>
<td>International Federation of Consulting Engineers</td>
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<tr>
<td>HDFP</td>
<td>Homes Direct Financing Program</td>
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<tr>
<td>HOA</td>
<td>Home Owners Association</td>
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<td>HPFP</td>
<td>Homeless People's Federation of the Philippines</td>
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<tr>
<td>HPFP-NCR</td>
<td>Homeless People's Federation of the Philippines-National</td>
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<tr>
<td>ICPCO</td>
<td>Iloilo City Population Commission Office</td>
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<tr>
<td>ICUPFI</td>
<td>Iloilo City Urban Poor Federation Inc.</td>
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<tr>
<td>ICUPN</td>
<td>Iloilo City Urban Poor Network</td>
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<td>IFCA</td>
<td>Iloilo Federation of Community Associations</td>
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<td>IFCP</td>
<td>Iloilo Flood Control Project</td>
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<td>ILO</td>
<td>International Labour Organisation</td>
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<tr>
<td>ILO/ASIST-AP</td>
<td>ILO Advisory Support Information Services and Training</td>
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<tr>
<td>Abbreviation</td>
<td>Description</td>
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<tr>
<td>IRAP</td>
<td>Integrated Rural Accessibility Planning</td>
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<td>JICA</td>
<td>Japan International Cooperation Agency</td>
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<td>LBES</td>
<td>Labour-Based Equipment Supported</td>
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<td>LBT</td>
<td>Labour-Based Technology</td>
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<tr>
<td>MDG</td>
<td>Millennium Development Goals</td>
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<td>MMDA</td>
<td>Metro Manila Development Agency</td>
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<td>MoU</td>
<td>Memorandum of Understanding</td>
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<td>MWSS</td>
<td>Metropolitan Waterworks and Sewerage System</td>
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<tr>
<td>NGO</td>
<td>Non-Government Organisation</td>
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<td>NHA</td>
<td>National Housing Authority</td>
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<td>NHMFC</td>
<td>National Home Mortgage Finance Corporation</td>
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<tr>
<td>O&amp;M</td>
<td>Operation &amp; Maintenance</td>
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<tr>
<td>Pedicab</td>
<td>Bicycle taxi</td>
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<tr>
<td>Php</td>
<td>Philippines Peso</td>
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<tr>
<td>PO</td>
<td>People’s Organisation</td>
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<tr>
<td>SDI</td>
<td>Slum Dwellers International</td>
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<td>SEWA</td>
<td>Self-Employed Women’s Association, India</td>
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<td>Sikad</td>
<td>Bicycle taxi</td>
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<tr>
<td>SIYCB</td>
<td>Start and Improve Your Construction Business</td>
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<td>SKAT</td>
<td>Swish Resource Centre and Consultancies for Development</td>
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<td>SSWP</td>
<td>Small Scale Water Providers</td>
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<tr>
<td>TA</td>
<td>Technical Assistance</td>
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<td>ToR</td>
<td>Terms of Reference</td>
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<td>UNCHS</td>
<td>United Nations Centre for Human Settlements</td>
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<td>UNDP</td>
<td>United Nations Development Programme</td>
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<tr>
<td>UNEP</td>
<td>United Nations Environment Programme</td>
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<tr>
<td>UN-HABITAT</td>
<td>United Nations Human Settlements Programme</td>
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<td>UPAO</td>
<td>Urban Poor Affairs Office</td>
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<td>UPC</td>
<td>Urban Poor Colloquium</td>
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<td>UPDF</td>
<td>Urban Poor Development Fund</td>
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<tr>
<td>USD</td>
<td>United States Dollar</td>
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<tr>
<td>WD</td>
<td>Work Day</td>
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This document is the output of an initiative by the ILO Regional Office for Asia and Pacific (ROAP) and the Employment Intensive Investment Programme (EIIP), with the purpose of developing tools and guidelines for community infrastructure development in low-income urban settlements. The emphasis is on the use of local resources in settlement upgrading such as labour, materials, skills and contractors.

The initiative consisted of the implementation of a number of pilot projects in urban areas in Cambodia and the Philippines and the preparation of a generic Guide for use in the Asia Pacific region.

A diverse team of experts provided the necessary inputs to the first version of this guide based on their current and previous experiences. They have produced the designs, contracts and other materials for the pilot projects in cooperation with local government and the benefiting communities. They have also documented the experiences gained during the process. The project reports have formed the basis of the project descriptions and results reproduced in the guide.

Sincere gratitude is extended to:

The communities in which the infrastructure works took place, their leaders and the workers in:

- Chamka Samrong Muoy Settlement Area in Battambang, Cambodia
- Purok Albacia, Zone 4, Barangay San Isidro, La Paz District, Iloilo City, Philippines
- Urban Family, Barangay M. V. Hechanova, Jaro District, Iloilo City, Philippines
- Project 5 Sooc Relocation Site, Arevalo District, Iloilo City, Philippines

The government officers in Battambang, Cambodia and Iloilo City, Philippines.

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Jonathan Price, Reynaldo M. Asuncion and Nori T. Palarca, - ILO team in the Philippines

ILO staff members in the Employment Sector in Geneva, the Regional Office in Bangkok and Sub-regional office in Manila.

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Urban colleagues who have commented on the draft document.

This is the first version of the Guide. The document will be deepened and enriched as more experiences are gained.
The world goes urban!

People used to live in villages, growing food, looking after their animals and trading products. This is all changing. In 2008, the proportion of the world population living in cities will pass the 50% mark.¹ People are drawing together for practical reasons in today’s world. The result is urbanization. Cities continue to grow in number and size. Within ten years the world will have nearly 500 cities of more than 1 million people. Whatever the particular causes of urbanization may be, the rapid growth of the urban population poses some real challenges for the people who will have to deal with it.

In the less developed countries, a large part of the urban population lives in slums. A slum, as defined by UN-Habitat is a run-down area of a city characterized by substandard housing and squalor and lacking in tenure security. The term has traditionally referred to housing areas that were once respectable but which deteriorated as the original dwellers moved on to newer and better parts of the city, but has come to include the vast informal settlements found in cities in the developing world². Although their characteristics vary between geographic regions, they are usually inhabited by the very poor or socially disadvantaged. Slum buildings vary from simple shacks to permanent and well-maintained structures. Most slums lack clean water, electricity, sanitation and other basic services and have poor access.

Many inhabitants oppose to the description of their communities as 'slums'. This document therefore uses the term low-income settlements to indicate that the settlements are there on a permanent basis. Somebody is responsible for ensuring that the dwellers in these settlements receive the same level of service as the better off parts of the city. Clean water, electricity, sanitation and proper access are basic needs and low-income settlement dwellers also have a right to these services.

In the Asia Pacific region, already one third of the region's population lives in urban areas. The forecast is that by 2030 half of the region's population will live in cities.³ With the current rapid expansion, many Asian cities face deteriorating sanitation and environmental conditions, inadequate housing

¹: The Economist, 5th May 2007
and infrastructure, unemployment and other problems.

One particular issue is under and unemployment. Millions of people living in low-income settlements survive through the informal economy, where they just earn enough to survive. Cities have difficulties in coping with problems such as unemployment. The ILO yet sees low income settlements also as places of opportunity. Improvements in infrastructure, including shelter, and services can directly and indirectly improve the lives of large numbers of people. The creation of employment opportunities would bring more wealth into these settlements, which would in turn alleviate poverty in a sustainable manner.

The ILO has been successful in combining the objective of improving infrastructure and services with the objective of creating employment and income. A set of specific tools has been developed for use in rural areas. Today, more than 50 countries are applying procedures and tools developed by the ILO in the areas of community participation and planning, labour-based or local resource-based technology and small-scale and community contracting. Tools are applied within the context of poverty reduction and crisis response. Most of this work takes place in rural areas.

The proportion of poor people in the Asia Pacific region has fallen in recent decades but the region still accounts for two-thirds of the world’s poor, of whom 250 million live in urban areas. Recent economic growth has largely bypassed the urban poor as the benefits of growth do not always trickle down very fast. Special policies and programmes are needed to tackle urban unemployment and poverty. To contribute to the aim to reduce poverty in urban areas, the ILO’s Regional Office for Asia and the Pacific allocated resources to review the rural tools developed by the organization and modify and pilot test these to be used in an urban context. This work took place during the second half of 2007. The results are very positive and summarized in this Guide.

The Guide describes the application of modified tools in selected urban communities in the Philippines and Cambodia and describes the different components of an effective approach to improve community infrastructure in low-income settlements and ...creating employment in the process...

The Guide is a living document and will be improved as more experience from additional work in low-income settlements becomes available.

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3: Asian Development Bank
4: Cities at Work, ILO 2004
5: ILO, Employment Intensive Investment Programme (EIIP)
Over the years, the ILO has developed a set of technical tools to increase the impact of investments in rural infrastructure on local development, poverty reduction and employment creation. These tools belong to four technical fields of operation: local development planning; local resource-based technology; small-scale contracting; and infrastructure maintenance. The tools contribute to building local capacity to provide such services by increasing the efficiency and effectiveness in terms of how rural infrastructure is planned, designed, implemented and maintained.

Similar improvements are necessary in many urban areas. The intention of this Guide is to offer complimentary tools for addressing similar needs for local infrastructure in urban areas. The Guide sets out an alternative approach for the improvement of low-income urban settlements based on practical experience.

**Target Audience for this Guide**
The aim of the Guide is to provide advice to government planners, engineers, policy and decision makers, as well as NGOs, federations and institutions of learning on options for improving low-income urban settlements through local infrastructure development and improved service delivery. The Guide provides guidance on opportunities for creating consensus in planning for improvements to urban areas; to increase the employment opportunities for the community both during and after construction of the planned infrastructure; and by maximising the use of local resources both human and material, relying on sound and basic work methods and technology to effectively build and maintain the infrastructure.

**Scope and Purpose of this Guide**
The Guide describes appropriate and effective approaches to develop community infrastructure through the use of local resources and at the same
time creating additional employment opportunities. Local resources include local labour and skills, local materials, suppliers and local contractors.

The Guide deals with the four main aspects of this type of work:

- participation and planning with communities;
- local resource-based technology;
- small-scale and community contracting; and
- operation and maintenance.

This Guide is intended as a living document to be enlarged and improved upon as more experience is gained. This first edition is based on ILO experience from the implementation of a series of pilot projects in the Philippines and Cambodia with additional examples from development projects in other countries and reconstruction efforts in post-crisis situations. Reference is also made to knowledge gained from work in other regions.

**How to Use this Guide**

Each section within the Guide is planned so that it can be consulted separately, and so that practitioners can dip into the sections that are relevant for their work and involvement with communities and their partners. By combining the different sections together in one Guide it also offers the chance for each partner to learn more about the whole cycle of planning, designing, implementing and maintaining improvements and services in low-income urban settlements.

Apart from Section 2, which provides case study examples and Section 7 that looks at special considerations for crisis affected areas, the sections are laid out following the standard project cycle as shown in the adjacent figure. This offers practitioners the possibility to consult this guide at any point during planning or implementing a project.
Structure of this Guide
The guide has seven sections as follows:

1. Introduction
2. Main Case Studies
3. Planning with Communities and Municipal Authorities
4. Technical Options and Solutions
5. Implementation through Partnerships and Contracting
6. Management, Operation and Maintenance
7. Special Considerations for Crisis Situations

Section 2 introduces the main case studies of the pilot projects for rapid implementation of up-grading activities undertaken by the ILO in Cambodia and the Philippines in 2007. The description of the communities, the activities and results are set out and are used as illustrations in subsequent sections of the document.

Section 3 provides a guide to municipalities on how to select and prioritise which communities to partner in improving their living and working environment and subsequently how to plan together with these communities.

Section 4 offers a variety of commonly used technical solutions for the improvement of infrastructure and services, which can be adapted to suit the specific needs of the communities and their projects.

Section 5 proposes different implementation modalities using contract agreements, with additional advice on work organisation for the effective use of local resources including labour.

Section 6 presents possible arrangements for managing and implementing the operation and maintenance of the infrastructure that has been created.

Section 7 deals with the special considerations for crisis situations (e.g. conflict and natural catastrophe) with examples.

The Guide provides advice on the meaningful involvement of communities in the planning and implementation of the improvement of their living and working environment. The Guide also places great importance on the optimisation of employment opportunities, for the community and local small enterprises, during the construction and maintenance phases.
1.1 Urban Development and Poverty

Until recently many governments and development agencies have focussed on improving the conditions of the poor in rural areas. Although the challenges related to urban poverty are not new, there has been an increased awareness in recent years that development assistance in urban areas can no longer take a back seat and that municipal authorities need support in meeting the challenge of improving the conditions of the urban poor.

Hundreds of millions of urban poor in the developing and transitional world have few options but to live in squalid, unsafe environments where they face multiple threats to their health and security. Slums and squatter settlements lack the most basic infrastructure and services.

Urban Population Growth

In 2004 in Asia about 38% of the population lived in urban areas. By 2020, it is estimated that more than half the population of developing countries will be urban. This will increase to more than 50% by 2015, and there will be a doubling of the urban population before 2025. The rapid growth of the urban population is due both to natural increase and to the influx of migrants from rural areas.

Source: City Development Strategies to Reduce Poverty, Asian Development Bank, June 2004

Their populations are often marginalized and largely disenfranchised. They are exposed to disease and crime and are vulnerable to natural disasters. Slum and squatter settlements are growing at alarming rates, projected to double in 25 years.

The rapid rate of urbanisation creates not only challenges but also opportunities. Cities have the potential to foster economic growth, social development and improvements in the quality of life. They can create openings for jobs, employment and livelihood development.

Key Issues and Trends in Urban Areas

- Rapid urban population growth. In 2003, Asia’s urban population was 1.5 billion, which is 20% of the world’s population - one in three Asians lived in cities. It is growing at 40 million a year, and by 2030, it may reach 2.7 billion, which is 30% of the world’s population - one in 2 Asians will live in cities.
- Rise of mega-cities. Urban centres are increasing in size and number. At the beginning of the last century, there were only 11 mega-cities in the world with populations of more than 1 million each. By 2030, the UN predicts that there will be more than 500 cities in the world with populations of more than
International Cooperation and Strategies

Several agencies, including the ILO, recognise the need for addressing poverty in urban areas. Various initiatives such as through the Habitat I and II conferences, an internationally agreed approach for urban improvements are being developed. The goal of improving the lives of the urban poor has also been substantially strengthened through its inclusion in the millennium development goals.

Urban Sector Activities

Many international agencies, NGOs and community-based organisations have been and continue to be actively involved in improving living conditions of the urban poor. The table below, compiled by the World Bank and subsequently edited, lists organisations actively engaged in supporting community up-grading for low income urban settlements in Asia and the Pacific. This table is not exhaustive, but indicates the widespread support to the urban poor.

Annex 1.1 provides a brief overview of some organisations operating in Asia and the Pacific, and the strategies, programmes and projects they are supporting. This overview does not include the many bilateral agencies whose work contributes to the improvement of the lives of urban poor. Annex 1.2 describes the work of the ILO in the urban sector.
<table>
<thead>
<tr>
<th>Organization Name</th>
<th>Website</th>
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<tbody>
<tr>
<td>APCF: Asia Pacific Cities Forum</td>
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<tr>
<td>CARE: Cooperative for Assistance and Relief Everywhere, Inc.</td>
<td><a href="http://www.care.org">www.care.org</a></td>
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<tr>
<td>CIDA-ACDI: Canadian International Development Agency</td>
<td><a href="http://www.acdi-cida.gc.ca">www.acdi-cida.gc.ca</a></td>
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<tr>
<td>Cities Alliance</td>
<td><a href="http://www.citiesalliance.org">www.citiesalliance.org</a></td>
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<tr>
<td>CONGO: The Conference of NGOs</td>
<td><a href="http://www.conferenceofngos.org">www.conferenceofngos.org</a></td>
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<tr>
<td>DFID: Department for International Development (U.K.)</td>
<td><a href="http://www.dfid.gov.uk">www.dfid.gov.uk</a></td>
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<tr>
<td>ESCAP: Economic and Social Commission for Asia and Pacific</td>
<td><a href="http://www.unescap.org">www.unescap.org</a></td>
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<tr>
<td>Ford Foundation</td>
<td><a href="http://www.fordfound.org">www.fordfound.org</a></td>
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<tr>
<td>GTZ: German Agency for Technical Cooperation</td>
<td><a href="http://www.gtz.de">www.gtz.de</a></td>
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<td>Habitat for Humanity (US)</td>
<td><a href="http://www.habitat.org">www.habitat.org</a></td>
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<td>IDRC: International Development Research Center</td>
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<td>INTERTEC</td>
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<td>Islamic Development Bank</td>
<td><a href="http://www.isdb.org">www.isdb.org</a></td>
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<td>IT: Intermediate Technology Development Group</td>
<td><a href="http://www.oneworld.org/itdg">www.oneworld.org/itdg</a></td>
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<td><a href="http://www.itdg.org.pe">www.itdg.org.pe</a></td>
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<tr>
<td>IULA: International Union of Local Authorities</td>
<td><a href="http://www.iula.org">www.iula.org</a></td>
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<tr>
<td>JICA</td>
<td><a href="http://www.jica.go.jp">www.jica.go.jp</a></td>
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<tr>
<td>KfW: Kreditanstalt für Wiederaufbau</td>
<td><a href="http://www.kfw.de">www.kfw.de</a></td>
</tr>
<tr>
<td>(Information contributed by Organization.)</td>
<td></td>
</tr>
<tr>
<td>MYRADA (India)</td>
<td><a href="http://www.myra.org">www.myra.org</a></td>
</tr>
<tr>
<td>Save the Children, US</td>
<td><a href="http://www.savethechildren.org">www.savethechildren.org</a></td>
</tr>
<tr>
<td>Swiss Agency for Development and Cooperation (SDC)</td>
<td><a href="http://www.sdc-gov.ch">www.sdc-gov.ch</a></td>
</tr>
<tr>
<td>Sida: Swedish International Development Cooperation Agency</td>
<td><a href="http://www.sida.org">www.sida.org</a></td>
</tr>
<tr>
<td>SKAT: Swiss Centre for Development Cooperation in Technology and Management</td>
<td><a href="http://www.skat.ch">www.skat.ch</a></td>
</tr>
<tr>
<td>The CONGO Committee on Human Settlements</td>
<td><a href="http://www.infhabitat.org/ngochs">www.infhabitat.org/ngochs</a></td>
</tr>
<tr>
<td>The World Bank</td>
<td><a href="http://www.worldbank.org">www.worldbank.org</a></td>
</tr>
<tr>
<td>United Nations</td>
<td><a href="http://www.un.org">www.un.org</a></td>
</tr>
<tr>
<td>UNCHS (Habitat): The United Nations Centre for Human Settlements</td>
<td><a href="http://www.unchs.org">www.unchs.org</a></td>
</tr>
</tbody>
</table>
1.2 Upgrading Urban Poor Settlements

Why Settlement Upgrading?
Upgrading of un-serviced settlements is justified as the centrepiece of a global strategy for improving the living conditions of the urban poor. Providing such assistance to the urban poor forms part of securing basic human rights, which need to be extended to the entire population. Basic requirements such as access to clean water, education, adequate health services and safe shelter in a healthy environment needs to be extended to include the poor and marginalized living in informal settlements in urban areas.

Secure tenure alone will not improve the living and working conditions of the urban poor. Even in relatively new relocation sites, improvements in living and working conditions will not be achieved if proper infrastructure and amenities are lacking.
Upgrading makes a highly visible, immediate, and large difference in the quality of life of the urban poor - for example by correcting sources of communicable disease which impose a particular hardship on inhabitants of slums and squatter settlements. Infant deaths in Manila’s squatter settlements are three times the level of serviced, legal settlements.

Investment in local public goods through upgrading also catalyses private investment by residents, unleashing their vast productive energy and leveraging private capital. To ensure that the poor residents, including tenants, enjoy these benefits and are not simply edged out into newer slums, upgrading efforts need to extend beyond a few favoured sites to address all un-serviced areas of a city - that is, scaled-up citywide.

Upgrading not only has significant benefits, it is also a community-based strategy that development agencies know how to support. Experience has shown that the problem of getting basic services to slums can be solved at very reasonable costs if done properly.

What is Settlement Upgrading?
Settlement upgrading consists of physical, social, economic, organizational and environmental improvements undertaken cooperatively and locally among citizens, community groups, businesses and local authorities. Actions typically include:

- installing or improving basic infrastructure, e.g., water reticulation, sanitation and waste collection, rehabilitation of circulation, storm drainage and flood prevention, electricity, security lighting, and public telephones
- removal or mitigation of environmental hazards
- providing incentives for community management and maintenance
- constructing or rehabilitating community facilities such as nurseries, health posts and recreational areas
• regularising security of tenure
• home improvement
• compensation for the small number of residents dislocated by the improvements
• improving access to health care and education as well as social support programs to address issues of security, violence, substance abuse, etc.
• enhancement of income-earning opportunities through skills training and micro-credit
• building social capital and the institutional framework to sustain improvements.

Decentralisation and Urban Participatory Planning
Most governments in Asia and the Pacific have a decentralised structure. The process of decentralisation is being complemented by efforts to achieve good governance and transparency. Decentralisation strategies provide a framework for the introduction and use of inclusive community-based planning methods. These methods can be stand-alone for identifying priorities within a community, or they can be tailored to feed into local government planning and decision-making processes.

With decentralisation, the foundations are laid for the greater inclusion of people in making decisions that affect their lives. Rural participatory planning is well recognised and being practiced in various forms. The same principles of participatory planning can equally be applied in urban communities.
1.3 End Notes

In terms of implementation of infrastructure works, the ILO is perhaps best known for guidance on works organisation and skills development in relation to the efficient and technically competent use of labour-based approaches, as well as their combination with locally available materials and equipment. This knowledge and approach has also been successfully applied in the urban setting, and together with appropriate planning methods, designs and maintenance, provides an informed approach to urban up-grading and infrastructure improvements.

There is a large amount of information on urban improvements available on the internet. Below is a selection of sites of interest relating to improving the living conditions of the urban poor.

Further Reading
Information on the Asian Development Bank site can be found at:
www.adb.org/urbandev

One of the themes listed under topics on the World Bank website is Urban Development www.worldbank.org/html/extdr/thematic

Under the heading themes on the GTZ English language site is Good Governance and within this theme is information on urban development www.gtz.de/en

Information on the Work of UN-Habitat and the Cities Alliance are found under www.unhabitat.org and www.citiesalliance.org respectively.

Slum Dwellers Association - information can be found under www.sdinet.org

Sida has been working in the rural and urban setting in many partner countries in the world. Information on urban activities can be found under its web page on Urban Development www.sida.se/sida/asp/sida.asp?d=668&language=en_US


2.1 Objectives of this Section

This section describes the pilot projects used as case studies. Together with partners in Cambodia and the Philippines, the ILO has supported several communities to plan and implement infrastructure works to improve the living and working environment. The community background, the planning, implementation and the results of the projects are presented here in their entirety, so as to provide a complete picture of the process and the resulting employment and costs. Some aspects of these case studies appear again in the relevant sections of this guide and are substantially augmented with other examples.

Technical details and supplementary information are provided separately in Annex 2.

2.2 Results: Infrastructure, Employment and Costs

The projects presented in this section were undertaken in partnership with the communities of:

- Chamka Samrong Muoy Settlement Area in Battambang, Cambodia
- Purok Albacia, Zone 4, Barangay San Isidro, La Paz District, Iloilo City, Philippines
- Urban Family, Barangay M. V. Hechanova, Jaro District, Iloilo City, Philippines
- Project 5 Sooc Relocation Site, Arevalo District, Iloilo City, Philippines

The combined results of the projects were as follows:

Total costs for the different projects amounted to USD 69,265.¹

¹: Costs include all local consultant costs, but exclude the costs of the international supervision.
Total number of workdays created during implementation of the projects was 6,816 workdays.

The projects demonstrated that the cost of employment lies between USD 6.00 and USD 21.00 for each workday. Average cost of employment = 69,265/6,816 = USD 10.20 per workday.

Average cost per beneficiary for the improvements amounted to USD 24.00.

The projects contributed to the Millennium Development Goals as shown below.

<table>
<thead>
<tr>
<th>MDGs</th>
<th>Targets</th>
<th>Linkage to pilot project interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Halve the proportion of people living on less than a dollar a day and those who suffer from hunger.</td>
<td>Successful demonstration of employment creation through local resource based approaches.</td>
</tr>
<tr>
<td>3</td>
<td>Eliminate gender disparities</td>
<td>Community empowerment through their involvement in defining and prioritising their needs</td>
</tr>
</tbody>
</table>
|      | Empower women | • Women leadership and participation in the Committees for supervision and monitoring of works  
| 6    | Halt and begin to reverse the spread of HIV/AIDS. | HIV/AIDS awareness training organised for the community, contractors and the workers employed. |
|      | Halt and begin to reverse the spread of Malaria and other major diseases. | Improved drainage, water and sanitation would lead to significant reduction in malaria dengue and other diseases. |
| 7    | Achieve significant improvement in the lives of at least 100 million slum dwellers by 2020. | Successful demonstration of how to improve living conditions in urban communities and at the same time create productive employment through improvement of basic infrastructure. |

The results of each of the individual projects are provided within each case study.
2.3 Checklist for Community Project Selection

For the initial projects, a checklist was compiled to guide the community selection process to enable a timely and smooth implementation process. This checklist was used as a guide for the pilot projects only and therefore would require amending for projects and programmes with planning cycles that allow more time for the identification phase. Section 3 of this document looks in more detail at the planning and selection process.

Choice of Community
The following criteria were applied when identifying the communities:

- The target community must be living in a poor unplanned settlement or resettlement with poor households.
- The community should be in a settlement with no contentious land issues.
- The preference would be to work in an upgrading site, but a resettlement site is also acceptable depending on the project.
- The community should have an established representative organisation (CBO).
- The community has already prioritised its needs – and among the top priorities there is a reasonable need for infrastructure. Or there are obvious needs within the community, which can be quickly agreed as priorities.
- It would be preferable that there is a CBO, NGO, or such organisation which has developed a relationship with the community and could introduce the ILO to the community leadership.

Relationships
- There should be good relations within the community.
- There should be a good and cooperative relationship between the community leadership and local representatives of the urban authority or local government (the Barangay and the Barangay Captain – Philippines).
- There should be no difficulties between the community, and the office of the urban authority dealing with their community (Barangay and the Urban Poor Affairs Office (UPAO) – Philippines; Provincial Development Office, Cambodia).
- The urban authority and their representatives are supportive of the project idea and willing to cooperate with the project.
Participation
There should be sufficient people willing to work (paid labour) on the project within the community.

Design of Improvement works
- The City Engineer and other responsible officers should be willing to adopt an incremental approach to upgrading (if needed) and not insist on full planning standards which might necessitate demolitions or inappropriately expensive solutions.
- There are no negative environmental impacts resulting from the project chosen.
- The project can be designed to make optimal use of local resources and labour-based, equipment supported methods.

Payment of Workers
There is an agreement that people are paid for their labour inputs when participating in the construction of public infrastructure. Fair contribution of voluntary inputs (or part of these inputs) for the creation of assets regarded as in the ownership of individuals or a limited group of users can be negotiated and agreed upon.

Where a wider programme of works is envisaged and a rolling programme of planning and implementation is in place, then consideration can be given to reaching out to communities who require greater strengthening of their own organisations and planning processes.

The following is a presentation of the four pilot projects, which were selected based on the above checklist.
2.4 Chamka Samrong Muoy Settlement, Battambang

City Background
Battambang is one of the five largest urban centres in Cambodia. Newer estimates suggest that Battambang is actually the second largest city in Cambodia and has a population of over 160,000 inhabitants. Battambang Province is located in the western half of Cambodia and has a common border with Thailand.²

Community Background
The Chamka Samrong Muoy Settlement Area is home to 209 households with a population of 1,585 (634 Male + 951 Female). This entire settlement, on the outskirts of Battambang, comprises people who were repatriated and resettled from refugee camps in Thailand in 1992. The Government provided land to individual households through registered land title deeds. Very little infrastructure is in place and the settlement population is very poor.

Baseline Community Conditions
The settlement is located in a low-lying area and suffered from poor drainage and sanitary conditions. Drainage and sanitary conditions were worse during the rainy season as the rainwater and household effluent remained stagnant in low lying areas thus breeding mosquitoes and posing health hazards for the residents. The settlement is connected to the city electricity supply system but only a fraction of the households use electricity, as they cannot afford it.

Water supply in the settlement is catered for by three shallow wells and hand pumps and at least one of the wells is most likely contaminated. A solid waste disposal system did not exist in the area, and all the solid waste was disposed

of at the periphery of the settlement. The nursery school was in a poor condition without functional toilets and other essential facilities.

Community Structures
A community committee was in place before project activities commenced. During an initial meeting to present the project, a "Community Task Force" was elected. The task force comprised of four persons: two women and two men. The terms of references, laying out the responsibilities of the task force, are provided in Annex 2.1-1.

Project Planning
The community was involved in all stages of the planning and design of selected pilot initiatives so that no conflict of interest occurred, and the identified infrastructure works represented the real needs of the residents. The needs and priorities were established during an open meeting of the community held in the nursery school yard. It was proposed to carry out physical improvements in the following areas:

- roads and streets,
- storm water drainage,
- sanitation,
- potable water,
- solid waste disposal,
- rain water harvesting,
- recreational activities and
- street lighting.
As many households had inadequate sanitation, latrines were planned for fifteen of the poorest households. The community would have preferred to increase the number, but the budget was insufficient. The selection of households to be provided with latrines was carried out in an open and transparent manner by the community task force. The ILO technical assistance team and the Provincial Department of Development (PDRD) facilitated the planning process.

**Survey and Design**

Surveys were carried out by a local consultant appointed by the ILO as part of the technical assistance team. Community Task Force members accompanied the consultant during the survey, and identified the widths of the road and path reserves. The task force also discussed with individual homeowners the removal of obstacles from the road and path right of ways. No major structures needed to be moved.

Design standards were tailored to suit the ground realities, especially for the roads and drainage works. Prevailing design standards of the Provincial Department of Rural Development (PDRD) for road, drainage and sanitation works were adopted (despite being an urban development scheme, many decisions on matters within urban areas remain with the PDRD).

<table>
<thead>
<tr>
<th>Description of the Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road Works</td>
</tr>
<tr>
<td>A description of the labour-based road works in the settlement area</td>
</tr>
<tr>
<td>is provided in Annex 2.1-2 together with the layout plan.</td>
</tr>
<tr>
<td>Drainage Works</td>
</tr>
<tr>
<td>These consisted of roadside drainage together with the necessary</td>
</tr>
<tr>
<td>culverts, as well as flood control gates at the drain outlets.</td>
</tr>
<tr>
<td>Potable Water</td>
</tr>
<tr>
<td>It was initially proposed to construct four new water wells with</td>
</tr>
<tr>
<td>hand pumps and to improve household level rainwater harvesting</td>
</tr>
<tr>
<td>systems. Drilling efforts however failed to find potable water and</td>
</tr>
<tr>
<td>it was agreed by consensus to improve access to existing water</td>
</tr>
<tr>
<td>sources instead.</td>
</tr>
<tr>
<td>Sanitation</td>
</tr>
<tr>
<td>Pour flush latrines were constructed in identified poorest</td>
</tr>
<tr>
<td>households, to improve the sanitation in the area.</td>
</tr>
<tr>
<td>Solid Waste Disposal</td>
</tr>
<tr>
<td>The community was provided with training and tools and facilities</td>
</tr>
<tr>
<td>for the burning of solid waste on a sustainable basis.</td>
</tr>
<tr>
<td>Recreational Facilities</td>
</tr>
<tr>
<td>Recreational facilities for the nursery school in the settlement</td>
</tr>
<tr>
<td>area were improved.</td>
</tr>
<tr>
<td>Street Lighting</td>
</tr>
<tr>
<td>Street lighting was provided to improve the security of the residents</td>
</tr>
<tr>
<td>during the hours of darkness.</td>
</tr>
</tbody>
</table>
The designs were discussed with the relevant government departments. Details of the designs and budget are provided in Annex 2.1-2.

Contracts and Bidding Process

The implementation of the works was organised through the engagement of local small-scale contractors. The contractors were locally based with adequate experience in infrastructure works and working for donor-funded projects. The contracts were awarded through competitive bidding. Bids were solicited from a minimum of three contractors for each piece of work and awarded to the lowest bidder. A selection panel, composed of the ILO project team in the presence of the contractors, opened the bids. The community was informed when the contracts were awarded. A sample contract is provided in Annex 2.1-3. The contract document used was selected to streamline the administration of the contracting process in the ILO. It is however not a recommended form of contract for this type of work. Alternatives are discussed in Section 5 of this document.

Implementation

The contractors received an advance payment upon signature of the contract to assist them in mobilising and purchasing initial materials. Once the contracts were awarded, the contractor set up on site and recruited workers from the local community.

The selection of workers from the community was done by the contractor in partnership with the Community Task Force. The contractors rejected some workers whom they considered too weak or frail to carry out the tasks required. Both women and men were employed, with women accounting for 55% of the workdays in the first phase of construction.

Wage Rates

Unskilled workers were paid a daily wage rate of USD 2.00, while USD 3.00 per day was paid for skilled workers.

The construction of culverts, latrines and roads was organised as task work. Work was organised as daily paid work for minor repairs, spreading and re-shaping of drains.
A local consultant engaged by the ILO was responsible for the supervision of the contractors and approval of works for payment.

Health and Safety
There were no safety incidents or accidents during the construction. An HIV/AIDS awareness seminar was held as a part of the project support for the community.

Material Supplies
Materials such as bricks, cement, pipes, hand tools and reinforcement steel were sourced to the extent possible from Battambang. Sand, laterite and stone chippings were obtained from outside the area.

Physical Results
The results clearly show an improvement of the living and working environment for the families living in the Chamka Samrong Muoy Settlement. Proper access was provided through new roads and streets and improved access to clean water by improving the walkways leading to the wells. Furthermore, security was improved - at an affordable price - through street lighting. Demonstrations of improved latrines and water harvesting contributed to local hygiene. Reduced risk from flooding was achieved through improved drainage and by installing floodgates on the drainage channels.

There were some alterations to the original agreed list of priorities. In particular, the drilling for new deepwater wells was unsuccessful (drilling down to 60m depth without finding water). In discussions with the task force, it was then decided to use the remaining water supply funds to improve the access and sanitary conditions around the two main existing water sources.
The photographs below illustrate the extent of the improvements to the infrastructure and service provision that was achieved.
Employment Created
The total population benefiting from the improvements numbered 1585. On average the improvement of the living and working conditions of the community cost about USD 33.00 per resident.

Women accounted for 52% of the workforce, in terms of workdays. All together 5,216 workdays of employment was created. The cost of the works was USD 52,475:- (including local consultants and supervisory inputs). As a result, the average cost of one day of employment was USD 10.10.

Operation and Maintenance
The Community Task Force agreed to take responsibility for the maintenance of all the improved infrastructure. The community will organise the following tasks as part of the routine maintenance:

- regular cleaning of road side drains and pipe culverts;
- maintenance of the roads;
- regular disposal of solid waste to the newly built waste disposal sites through introduction of appropriate user charges payable by the households to the people employed to do this task on a regular basis;
- street lighting through appropriate user charges by the households. Each of the 12 street light poles was supplied with separate electric meters, and the Community Task Force will collect funds from each household to pay the electricity bills. The bill per household is estimated to US$ 1/month.
The project organised training for the Community Task Force on effective maintenance of roads and drainage works using labour-based methods.

**Community Assessment**

The community were satisfied with the quality and speed of construction. They were also content to see the work being carried out by local contractors, albeit under the supervision of the project staff and their own taskforce, and with opportunities for community members to earn income. Project staff received excellent feedback from NGOs working in the area and were commended for being able to effectively improve living and working conditions in a relatively short period of time (4 months).

<table>
<thead>
<tr>
<th>Description/Activity</th>
<th>Planned</th>
<th>Actual</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>F</td>
<td>Total</td>
<td>M</td>
</tr>
<tr>
<td><strong>Employment Creation (workdays)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RC Pipe Culvert Construction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Pipe culverts for with water gate (Ø600mm, 7.0m length)</td>
<td>70</td>
<td>80</td>
<td>150</td>
<td>59</td>
</tr>
<tr>
<td>14 pipe culverts for road crossing (Ø500mm, 5.0m length)</td>
<td>155</td>
<td>245</td>
<td>400</td>
<td>125</td>
</tr>
<tr>
<td>166 pipe culverts for every house entrance (Ø400mm, 2.0m length)</td>
<td>280</td>
<td>423</td>
<td>703</td>
<td>269</td>
</tr>
<tr>
<td><strong>Road Works and Side Drains</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site preparation works</td>
<td>75</td>
<td>60</td>
<td>135</td>
<td>89</td>
</tr>
<tr>
<td>Side drain excavation</td>
<td>68</td>
<td>117</td>
<td>185</td>
<td>51</td>
</tr>
<tr>
<td>Road works: earthworks and gravel surfacing</td>
<td>330</td>
<td>1,002</td>
<td>1,332</td>
<td>322</td>
</tr>
<tr>
<td><strong>Pour Flush Latrine Construction (15 No.)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sub-structure (soil digging, pipe ring installation, ground basin and back fill)</td>
<td>25</td>
<td>20</td>
<td>45</td>
<td>25</td>
</tr>
<tr>
<td>Super-structure (floor, wall, door, roof, and painting)</td>
<td>120</td>
<td>141</td>
<td>261</td>
<td>135</td>
</tr>
<tr>
<td><strong>Other Civil Works</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Street lighting</td>
<td>24</td>
<td>12</td>
<td>36</td>
<td>30</td>
</tr>
<tr>
<td>Water harvesting</td>
<td>30</td>
<td>23</td>
<td>53</td>
<td>36</td>
</tr>
<tr>
<td>Path way – water well</td>
<td>70</td>
<td>108</td>
<td>178</td>
<td>81</td>
</tr>
<tr>
<td>Additional road works</td>
<td>250</td>
<td>305</td>
<td>555</td>
<td>280</td>
</tr>
<tr>
<td>Lining side drains and solid waste</td>
<td>220</td>
<td>250</td>
<td>470</td>
<td>250</td>
</tr>
<tr>
<td>Add for supervisors, operators, etc</td>
<td>780</td>
<td>0</td>
<td>780</td>
<td>737</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2,497</td>
<td>2,786</td>
<td>5,283</td>
<td>2,489</td>
</tr>
</tbody>
</table>
2.5 Purok Albacia Community

_Purok Albacia, Zone 4, Barangay San Isidro, La Paz District, Iloilo City, Philippines_

City Background

Iloilo, with a population of 396,127 inhabitants, is the ninth largest city in the Philippines in terms of population. As a low-lying coastal city, crossed by two rivers and other tributaries, Iloilo is prone to flooding. Data about the urban poor population varies, with a census of 2004 putting it at 47% (37,635 households out of 79,409) and the City Planning Development Office Annual Report 2004 citing it at 72%.

The city’s main approach to addressing shelter needs for informal settlers is in-city relocation, with 3,435 home-lots awarded as of 2004, two Socialised Housing Zones generating around 11,000 home-lots and plans to purchase a further 33ha to resettle around 3,400 families expected to be displaced as a result of the Iloilo City Flood Control Project. Due to a lack of resources the city has not been able to fully service the resettlement sites and many have been occupied with little or no infrastructure in place.

Communities in informal settlements have also used their own means to acquire land either by direct purchase, by buying a suitably affordable property within the city or by availing of the Community Mortgage Programme (CMP). Upgrading of basic infrastructure in informal settlements is done incrementally by barangays, but with the huge task faced and minimal resources progress is slow and somewhat haphazard.
In 2005, the Homeless People’s Federation of the Philippines-Visayas (HPFP) initiated the formation of the Iloilo City Urban Poor Council (ICUPC) which later evolved into ICUP Network (ICUPN) and which comprises three urban poor federations with about 140 community associations or homeowners associations participating. Through the network the federations hope to create a unified representation of the urban poor sector. The three federations are HPFP, ICUPFI (Iloilo City Urban Poor Federation Inc.), and IFCA (Iloilo Federation of Community Associations).

**Community Background**

Purok Albacia Community is located in Zone 4 of Barangay San Isidro in La Paz District in Iloilo and is affiliated with ICUPFI. The community comprises 60 households on-site and 110 off-site (not yet occupying their lots). The community originally relocated when the landowner of the land they were occupying sold it. The people were first hesitant to transfer to this location because the site is far from the main road and they were concerned about transportation costs, lack of lighting along the road and an unfinished access-way.

The Home Owners Association (HOA) was originally organised in 2001. It is intended that the National Housing Authority (NHA) will purchase the land from the private landowner. When the process is finalised the residents will buy the land from NHA, using the Community Mortgage Programme (CMP) process over a period of 25 years. The local authorities have been supportive in the association’s undertakings towards securing land tenure.

The Home Owners Association is already running a savings scheme and has successfully erected street lighting using a loan facilitated through the Homeless Peoples Federation of the Philippines (HPFP) from the Asia Coalition for Housing Rights (ACHR). The Barangay Captain 5 has agreed to pay for the electricity for the street lighting from his budget.

---

5: Village leader
Baseline Community Conditions

Housing is mostly single storey wooden and bamboo buildings. The community has electricity and partial street lighting. Water is supplied through shared deep wells or purchased from vendors. Access to the housing is provided through narrow concrete footpaths. Access to the settlement area is provided through an un-engineered access way that is unsuitable for vehicles becoming impassable for pedestrians during the rains.

A lack of good access to and from the community creates difficulties for market and informal vendors, children going to school and generally all members of the community.

Community Structures

The HOA for Purok Albacia is formally registered with the Securities and Exchange Commission and has set up a bank account for savings. A separate bank account was opened specifically for the project. A copy of the registration certificate is provided in Annex 2.2-1.

Project Planning

The project was originally identified in a Homeless People’s Federation of the Philippines exercise to identify possible communities for an upgrading programme. Not all projects were pursued because the upgrading programme required the community to take a loan to finance all the building materials and provide the labour at their own cost – which is not always possible depending on the nature of the proposed scheme.

The community had been involved at all stages in the planning and designing of the prioritised pilot initiative, and its continued priority was reconfirmed, to make sure that the chosen infrastructure works still represented the real needs of the residents.

The main priority was to improve the main roadway accessing the community which is often muddy and slippery and cannot be accessed by tricycle or sikad (pedicab).

The new roadway is not on land owned by the community or the Barangay, however the landowner has agreed to its continued use by the community.
Should an alternative route into the community be planned in the future, the slabs can be re-used on the new site. It was proposed to carry out physical improvements in the following areas:

- community access road,
- installing culverts to improve drainage around the access road, and
- the reconstruction and widening of an existing concrete footpath.

**Survey and Design**

Survey and design works were carried out by a consultant engaged by the ILO. The consultant was assisted by community during the survey, and they identified the length and width of the access road and the path.

The designs were developed in discussion with representatives of the Home Owners Association and based on the space available on site, the standards anticipated by the city authorities and the expectations of the community. Given that the road may have to be moved in the future, a flexible and re-useable design was adopted.

The terms of references, laying out the responsibilities of the Construction Committee of the Home Owners Association for the proposed project are provided in Annex 2.2-2.

The community worked closely with their Barangay as the closest representative of the city government. The letter of endorsement certifying the support of the Barangay for the project is shown in Annex 2.2-3. The Barangay, in future, would also be prepared to sign an MoU that would expand upon the roles and responsibilities of the different parties involved in the project and the objectives of the project.

**Description of the Selected Interventions**

**Community Access Road**

A new 80m long 1.8m wide entrance roadway was built with 60x60cm reinforced concrete slabs cast in-situ on a sand and gravel bedding. The road was designed to take the load of a tricycle or sikad. The road surface level was raised using 30 cm of gravel to bring it above the level of the surrounding area. The width of the road was determined by the width required for a
tricycle (motorbike with sidecar), while maintaining a narrow enough road to discourage larger vehicles.

**Culverts**

At least four transverse concrete pipe culverts were originally planned but the landowner eventually only agreed to the construction of one culvert under the new roadway to ease the flow of surface water between the two adjacent low lying fields.

**Concrete Footpath**

The improvements to the footpath consisted of reconstruction and widening the path from 1.3m to 1.8m, over a distance of 68m.

The bills of quantities, cost estimate and the drawings showing the layout of the works are attached in Annex 2.2-4.

**Contracts and Bidding Process**

The community was well organised and had a strong sense of what their priorities and needs were. Through the successful implementation of a previous street lighting project, they had demonstrated that they could manage construction work and the necessary finances. They had learnt a lot through their experience from earlier construction work and were in a good position to take on a community contract.

It was therefore agreed that the implementation of the project would be through a contract, where the community itself would be the contractor.

Rates for the work were agreed with the community. The community association obtained prices for materials and tools from three independent suppliers, selecting the cheapest option, whilst ensuring that the quality was adequate.

All materials were sourced locally by the Construction Committee. The contract signed by the community was of the same type as used in Battambang.
Implementation

The community took on the role of the contractor and as such organised a construction committee. The construction committee consisted of six members and was led by the Home Owners Association President. A full description of the members of the construction committee is provided in Annex 2.2-5. As the community had limited financial means, the contract included an advance payment of 50% for the initial purchase of materials and payment of construction activities. Also included was an administration fee (Php 1,000 per week) for temporary storage facilities, some basic tools plus a contingency amount of 5%.

Wage Rate

The daily wage rate for unskilled workers was agreed between the consultant and the community at Php 200 (about USD 4.50). The skilled daily wage rate was Php 250 (about USD 5.70).

The construction committee was well organised and motivated to finish the work well and on time. The enthusiasm for completing works as quickly as possible placed demands on the contract partners to provide a responsive financial and administrative system.

Support for Works Implementation

The role of the engineering consultant was explained to the community. This consultant would carry out regular site inspections during construction (at least two visits per week). He would prepare site visit reports detailing any problems, instructions to the contractor, assist
during measurements of work for interim payments (with the Construction Committee foreman and ILO urban consultant), prepare measurement reports on completed work in relation to the bill of quantities and calculation of due payments. The site inspections and instructions issued by the engineering consultant proved to be necessary to ensure that the quality of the work was up to standard.

Technical assistance during construction was also provided by a local urban consultant engaged by ILO. The Construction Committee was provided a copy of the terms of references for the engineering consultant and the role and responsibilities of the consultant were explained during meetings. The ToR for the consultant is shown in Annex 2.2-6.

Physical Results
The concrete slab road (80m x 1.8m) and the slab pathway widening (68m x 0.5m widening) were completed as planned. The only alteration was in the number of culverts. The landowner of the property at the edge of the road would give his agreement to only one culvert.

Employment Created
The direct cost of the project was Php 207,225 (USD 4,820). Together with local support costs the total expenditure amounted to USD 5,070.

The population of the area is approximately 300 people. When all plots are occupied it will increase to 620 inhabitants. Therefore, the improvement in the living conditions and access for the community cost USD 16.90 per person at present but will reduce to USD 8.20 per person, when all plots are occupied.

Selection of the workers was done by the Home Owners Association together with the Construction Committee. Over a total number of 21 days, 52 skilled workdays and 184 unskilled workdays giving a total of 236 workdays of employment were created. All skilled workers were men. Women's participation as a percentage

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6: Exchange rate USD 1.00 = Php 43.00
of the unskilled labour force was 27% (16% of total workers).

The average cost of one day of employment was USD 21.50.7

Community Assessment
The Homeowners Association were satisfied with the finished works and due to completing on time and within budget, they were pleased to have made a small profit. The HOA decided to use the profit to make additional reserve slabs and other improvements to the community such as a waiting shed. The majority of those who worked on the project were previously unemployed and the unskilled workers had the chance to learn some construction skills (such as how to mix concrete). No one had found more work as a result but they think some may be able to get labour work on the construction of a nearby housing subdivision that is being planned. Workers were satisfied with their salaries of Php 200 per day, which was slightly higher than in a nearby construction site.

The community felt that they had no need of an outside contractor. The Home Owners Association (HOA) was very confident about their ability to manage such projects and encountered no problems in managing the work. They believe it is better to contract the community as they can deal with their own people more easily – as well as helping their own community by providing people with jobs. Among the many people seeking work on the project, the HOA prioritised the unemployed first. However by the time the project started there was other recently unemployed candidates lining up for work to whom there were no employment opportunities. The HOA managed to resolve the issue without any major problem.

Sikad and tricycles now transport people right into the community, as the access road is no longer muddy. This also benefits children and the elderly who avoid the risk of slipping in the mud. The road can also be safely used at night as it now has a firm surface and streetlights (provided under the ACHR-HPFP community led upgrading project). One woman noted that she used to pick up her kids from school and help them home along the bad road – now they can go home by themselves, even on rainy days.

It was agreed that the Home Owners Association would take responsibility for the maintenance of the improved infrastructure.

7: The above calculations do not take into account overheads, personnel and administrative costs incurred by the ILO offices in Bangkok and Manila and the consultant fees.
2.6 Urban Family, Barangay M. V. Hechanova, Jaro District, Iloilo City, Philippines

Community Background
This community is located in Barangay M.V. Hechanova in Jaro District, Iloilo City and is affiliated with IFCA. The immediate community comprises only 21 households. They have been working closely for several years with a local NGO called Iloilo Peoples Habitat Foundation Inc. in order to participate in a mortgage programme for the purchase of the land from a local bank. Adjacent to the Homeowners Association is another community of about 20 families who are in the process purchasing the land they occupy, who also benefited from the infrastructure improvements. The Barangay recently assisted the community by constructing a narrow concrete foot-walk in one part the community and with some street lighting.

Baseline Community Conditions
The community lacks proper surface water and grey-water drainage and a reasonably sized access way into the community as the existing foot-walk is narrow and does not reach the wider road leading to the community. Drainage at present is provided by an open ditch, which is unsanitary and does not connect to a proper outfall. Access into the community is only possible via a muddy and slippery path running adjacent to the open ditch.

Community Structures
Their homeowner association is formally registered with the Housing and Land Use Regulatory Board and the Securities and Exchange Commission, and has set up a bank account for savings. Copies of the registration certificates are shown in Annex 2.3-1.

Similar to the arrangements made in Albacia, terms of references, laying out the responsibilities of the community construction committee, were agreed to as part of the contract entered into by the ILO and the community.
Project Planning
The project was originally identified in a Homeless People’s Federation of the Philippines - exercise to identify possible communities for an upgrading programme. Their priorities were reconfirmed, to ensure that the chosen infrastructure works represented the real needs of the residents.

The proposed infrastructure improvements consisted of the construction of a new drain and the extension of the existing concrete footpath.

Survey and Design
A consultant appointed by the ILO carried out the survey and design. The community assisted the consultant during the survey, identifying plot boundaries and the widths of the road and path reserves.

The design options were extensively discussed with the Home Owners Association. There was much debate about the most appropriate type of drain, with some members preferring a concrete pipe with manholes as it could be cheaper and in future a road could be built over it. However a channel type was eventually preferred by the majority as it gives best end result – it is effective at draining surface water, is easier to clean, is easier to make household connections and could effectively widen the narrow pathway making it adequate for a sikad (a pedicab). A decision was also made to route the drain on the topside of the footpath to avoid removing a large tree.

Drawings showing the layout of the works are provided in Annex 2.3-2.

Contracting Arrangement
The community was well organised and had a strong sense of their needs and priorities. This community also had members with previous construction work experience. The work was therefore implemented through a contract with the community.
Rates for the work were agreed with the community. Procurement of tools and materials was based on quotes obtained from three independent suppliers. An example of a price quote on materials is shown in Annex 2.3-3. The contract signed by the community was of the same type as used in Battambang.

Implementation
The construction committee consisted of four members and was led by the Home Owners Association President.

The Home Owners Association received an advance payment of 50% upon signature of the contract to assist them in purchasing materials and starting the works.

Recruitment of Workers
Recruitment of workers was done by the Home Owners Association together with the Construction Committee. 100% of the workers were men, reflecting the availability of skills among men and the bias towards recruiting men for construction activities.

Wage Rate
The daily wage rate for unskilled workers was Php 200 (about USD 4.50), while the skilled wage rate was Php 250 per day (about USD 5.70).
Work Supervision
The ILO urban consultant provided supervision during construction. The Home Owners Association and the Construction Committee were provided a copy of the ToR for the local engineering consultant and the role and responsibilities of the consultant was explained to the community.

Physical Results
The community constructed:

- 118 metres of lined and covered drains,
- a 36 metre extension to the footpath and
- 100mm PVC ducts as crossing points at 10m intervals for future services.

Employment Created
The direct cost of the project was Php 213,693 (USD 4,970). Together with the local support costs this amounted to USD 5,220.

The population of the Urban Family community is relatively small, as the parcel of land they occupy is a small area set between other landowners. The facilities serve Urban Family and act as a link for a neighbouring community. The immediate beneficiaries are approximately 105 inhabitants, with a further 100 people benefiting indirectly. Applying figures for the immediate population only, the improvement in the living conditions and access for the community cost USD 49.00 per beneficiary, or for the wider population USD 25.00 per person.

During a period of 26 workdays, 132 skilled workdays and 122 unskilled workdays of employment were created, giving a total of 254 workdays. All workers were male. Of the unskilled workdays, 30% were provided to youth. Because of the nature of the infrastructure and the need for masonry and concreting skills, the number of skilled workdays is larger than for the unskilled.

The average cost of one day of employment was USD 20.60.\(^8\)

\(^8\): Not including costs of management support from the ILO offices in Bangkok and Manila or consultant fees.
In addition to the above employment, there were additional benefits for three sikad operators who are using the improved community access for transporting goods and passengers.

**Community Assessment**

The community were satisfied with the improvements and thankful for the jobs. Especially as there were no conditions attached to the funding of the project in that it was a grant. Unskilled workers had a better income than normal during the project (for skilled workers it didn't make much difference to their income as they could normally find employment outside). In particular, three housewives had an income during the project, which they did not have before.

The project brought a double benefit in the improved path and drainage, but also through the job opportunities created during the construction. The community claimed that hiring a contractor from outside would not have made the work any easier. As most of the people employed by the project have worked for outside contractors anyway, the community possessed the required skills to carry out the work. It was claimed that an outside contractor would have demanded a larger profit, as opposed to the community members who were content with the limited profit allowed for.

The access to the houses is now more comfortable. Before the improvement, it was muddy so the drainage is very useful. Three new houses have also connected their "grey" water to the drain. In the future, new houses will definitely connect to the drain. Before residents had to drain their grey water into pits dug somewhere on their plot. Sikads can drive directly into the community, and transport services are now available.

It was agreed that the Home Owners Association would be responsible for the maintenance of all the infrastructure works.
2.7 Sooc Project 5 Homeowners Association

Project 5 Sooc Relocation Site, Arevalo District, Iloilo City, Philippines

Community Background
This Home Owners Association is a member of ICUPFI and comprises 180 families living in a development of 295 plots, in an area of 2.5ha in Arevalo District. Infrastructure, apart from rough access roads, is yet to be installed by the City. All plots have been assigned to relocated families but not all of them have moved to the site.

Baseline Community Condition
The area suffers from flooding which at times reaches 2 metres high. Although the city has committed itself to providing infrastructure the community realised that this would not take place immediately.

Thus in August 2006 Sooc Project 5 Home Owners Association agreed to take a loan from the Urban Poor
Development Fund to buy bamboo to build footbridges in their community. Community members constructed the bridges on Sundays, on a block basis with men, women and youth taking part in different tasks. The resultant bridges mean that people can always access their houses without having to wade through muddy and unsanitary water.

A new project was put forward by the community, and supported through a document previously prepared by the Iloilo City Urban Poor Affairs Office together with the Iloilo City Urban Poor Federation Inc. This document was based on an investigation of the creek adjacent to the community and the flooding in the Sooc 5 Area.

The investigation ascertained that one of the causes of the flooding was that for a 1-2 km long section of the 8 km long Calajunan Creek (about 1.5km upstream from where it joins the Iloilo River) the flow of water along the creek was impeded by nipa palms and shrubbery growing along the upper bed of the creek. The creek was also blocked with fish traps and nets. This bottleneck (where the creek is only 7 metres wide due to the growth of vegetation, instead of the ideal 20m) causes the upper areas of the creek to overflow during high tides and the rainy season – with the floodwaters eventually ending up in the Sooc Project 5 Area. Work on dredging the creek is not included in the current city plans.

Community Structures
The Sooc Project 5 Homeowners Association is formally registered with the Presidential Commission for the Urban Poor, and has set up a bank account for savings. A copy of the registration certificate is provided in Annex 2.4-1.

Project Planning
The community was involved at all stages in the planning and design of the prioritised pilot initiative so that the chosen urban infrastructure works represented the real needs of the residents. It was proposed to carry out physical improvements in the following areas:

- A length of approximately 600m of the creek needed to be cleared.
- Efforts would focus on critical areas within a 2 km stretch as determined by the engineer from the UPAO and the urban consultant.
Survey and Design
An assessment of creek conditions and the work required was carried out by an engineer from ICUPAO, the community foreman, the ILO urban consultant and an environmental officer. The following was noted on a map:

- Priority areas / largest bottlenecks for clearing first.
- Low spots on dikes, which can be built up with materials from clearing silt in bends.
- High tidal points if any – to determine if water will flow at high tide (ascertained by hearsay where no other information was available).
- Any points where bank or dike is suffering from erosion (and any remedial action to be taken if serious).
- Areas where silting on inside edge of bends can be cleared.
- Cross-sections and dimensions of the creek where it changes in width.

The drawings showing the layout of the creek and the scope of the works are provided in Annex 2.4-2.

Contracts and Bidding Process
The community was well organised and had a strong sense of what their priorities and needs were. The community also had members with previous construction work experience, so it was agreed that the works would be implemented through a contract with the community. The community association also solicited prices for tools and materials and carried out the purchases. The contract signed by the community was of the same type as used in Battambang.

Implementation
The construction committee consisted of four members and was led by the Home Owners Association President. The contract included an advance payment of 50% for the initial purchase of tools and protective clothing, and
payment for construction activities. The power tools the community had hoped to purchase to assist with the clearing work were not available and therefore more work had to be done with hand tools.

**Selection of Workers**
At first women thought they would not be eligible for the work, before it was announced that opportunities to work on the project were open to both men and women.

**Wage Rate**
The daily wage for unskilled workers was set at Php 200 while skilled labour was paid Php 250 per day.

**Health and Safety**
As the water in the creek could not be guaranteed as safe, despite fish being found in the creek (the city have a rubbish dump site upstream), it was essential that protective clothing was provided for the workers – especially those actually working in the creek. As part of the procurement, waders, and gloves were purchased. However, there were some difficulties in ensuring that these were available in sufficient numbers and worn.

**Support for Community Implementation**
The Iloilo City Urban Poor Affairs Office (ICUPAO) offered one of their engineers to provide engineering supervision during works implementation. The role of the engineer was explained to the community. The ILO also provided supervision during construction.

**Physical Results**
The final inspection was conducted with the Home Owners Association President, foreman, ICUPN representative and a student volunteer from University of Philippines - Iloilo. The group walked from the downstream (end point) to upstream (start point) - a distance of more or less 2 km. Measurements were taken at different points of the stretch. The inspection results showed that over a two kilometre stretch a total area of 12,460 m2 was cleared. The width cleared on the banks ranged from 2m to 6m.

Some bamboo and nipa plums (palm roots) were not cut and uprooted because:
they would serve as bank protection,
unavailability of power tools and
some property owners would not allow them to be cut.

**Employment Created**
The direct cost of the project was Php 268,635 (USD 6,250). Together with local support costs this amounted to USD 6,500.

The population of the Sooc 5 community is currently 900 inhabitants and will eventually expand to approximately 1,475 once all the reallocation plots are occupied. Considering only the figures for the immediate population, the cost of the creek clearing to reduce the risk of flooding is USD 7.20 per inhabitant, or for the wider population USD 4.40 per person.

During a period of 21 days, 84 skilled workdays and 1,027 unskilled workdays giving a total of 1,111 workdays of employment were created. Of the unskilled workdays, 42% were women, and 28% were youth (men and women).

The average cost of one day of employment was USD 5.90.9

**Operation and Maintenance**
The Iloilo City Urban Poor Network together with Iloilo City Urban Poor Affairs Office (ICUPAO) will endeavour to engage all the communities along the creek (Sooc Project 5 is not the only community affected by the flooding,

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9: Not including overheads, personnel and administrative costs that occurred in the ILO offices in Bangkok and Manila or for consultant fees. The cost of the supervision provided through the ICUPAO is also not included.
it just happens to be the one that is well organised) to develop a programme of regular maintenance, along the length affecting all the communities.

An ordinance already exists (which ICUPAO can provide a copy of) restricting the setting of fish traps and the width of the river that they can take up. However this may cover only on the Iloilo River or may depend on a definition of the width of the watercourse, and needs to be checked.

Through the construction process the work organisation and skills are there for keeping the creek clear, and the tools and protective clothing remain in the community for use in the maintenance works.

Community Assessment
The Home Owners Association reported that people were content with the amount they were paid for working on the creek clearing contract. As sikad or tricycle drivers they can only earn Php100/day. They feel that the work on the creek project was good for them and their families. The HOA did not make as much profit as they had hoped because they had to buy more protective gloves (a further Php 5,000), as the first lot wore out when removing some of the blockages and islands of twigs and rubbish.

The HOA was pleased to take on the role of the contractor. One lesson learnt is however not to get the labourers to work unless the community has received the necessary funds for it in advance. Due to late arrival of funds, the HOA had to use their savings and the President had to borrow Php 25,000 to advance salaries.

The creek clearance made a significant impact. On the night of 14 January 2008, it rained heavily and the rice fields near the community flooded, however the community itself did not flood. Clearing the creek seems to have had an effect on the flood patterns. Keeping the creek clear from now on is the major challenge. Some landowners bordering the creek have suggested that two or three persons should visit the creek every two weeks to maintain it and clear blockages. Rubbish from the upstream dumpsite is already falling into the creek and gathering at blockages.
2.8 End Note

The pilot projects have clearly demonstrated that good quality improvements to local infrastructure can be made when working in partnership with communities to improve their living and working environment, and that there can be flexibility in the modes of implementation depending on the capacity of the communities and the type of support available to them. Considering the short construction period and the quality of the outputs, the pilot projects demonstrated the effective involvement of both small-scale local contractors and communities operating as contractors.

One of the lessons learnt was that the timely flow of funds is critical to ensure prompt payment of wages and suppliers. Delayed payment of works will lead to difficulties for the communities and small contractors.

Overall, the experience of the communities, contractors, local authorities, support teams and support organisations was very positive.
PLANNING WITH COMMUNITIES AND MUNICIPAL AUTHORITIES
3.1 Objectives of this Section

This section presents a background to poor communities living within an urban setting, how to assist municipal authorities and city councils to identify the communities which are most in need, and introduces examples of participatory planning methods for the improvement or provision of infrastructure in urban low-income settlements. The identification of priority settlements is intended to allow the municipalities to plan the use of their limited resources for infrastructure improvements through effectively targeting the poorest areas within their boundaries. This section also introduces examples of participatory planning through effective partnership with the communities living in the targeted settlements.

3.2 Introduction and Background

Urban Communities

In the Merriam-Webster's Collegiate Dictionary, "community" is defined as "a group of people with a common characteristic or interest living together within a larger society". In rural areas, communities are often defined geographically - i.e. all inhabitants of a village are considered to live together in one community.

It is often suggested that there is less sense of community in urban areas than there is in rural areas. However the sense of belonging to a community can vary depending on the settlement. Urban communities are also willing to come together and work together if the purpose of their efforts is a priority for
In 1970, the first family arrived in Golden Shower area in Quezon City in Manila. The numbers increased until in 2000 the population numbered 2,500 in 502 households. The majority of families originated from two provinces and speak the same language. A minority group originates from other provinces. The first association in the community was formed as early as the 1970s.

Source: Partnerships for Slum Improvements, Cynthia C. Veneracion, Institute of Philippine Culture, Manila University, 2004

**National Federations**

There are two distinct poor people’s federations active in Nepal: the National Federation of Squatter Communities (Nepal Baso Bas Basti Samrochan Samaj) and the National Federation of Women’s Savings Collectives (Nepal Mahila Ekta Samaj). The two federations have worked together – and with a growing list of local government and NGO partners - to host several milestone events, including Nepal’s first Model House Exhibition in November 1999, the establishment of the Kathmandu Urban Poor Support Fund in May 2004 and the implementation of Nepal's first community-driven and municipal-supported housing relocation project for river-side squatters at Kirtipur in the Kathmandu Valley. The squatters’ federation continues to focus on land tenure issues and the women’s federation on savings and credit for income generation – but is increasingly tackling issues of housing, infrastructure and land tenure. The federations are supported by Lumanti Support Group for Shelter, a Kathmandu-based NGO established in 1993.

Source: http://www.sdinet.org/countries/nepal.htm

all. The example below from Manila illustrates that urban communities can organise themselves and function as one community.

In many cases urban communities have formed their own community-based organisations (CBOs) or are working in partnership with federations or NGOs as the example below from Nepal shows.

Despite the organisation and good relations within communities, they are not homogenous. In any unplanned settlement there will be relatively wealthier and relatively poorer members of the community and different sections of the community may share similar needs and interests but in some cases they may have opposing priorities and concerns.

**Community-based Organisations**

Community members coming together to discuss issues of mutual concern and to seek solutions can result in the formation of a community-based organisation (CBO). CBOs need to be strong and sustainable to represent their own community successfully and to be able to participate within the
framework of improvement partnerships and programmes.

**Key features of CBOs 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 a pre-qualification before a CBO can 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:* Is there provision for regular elections and continuous awareness creation, which are essential, but time consuming?

*Membership:* Is the CBO representing all inhabitants?

In some communities the addressing of a problem or need of importance to all families can be a catalyst for bringing the community together and improving the sense of community and the ability to act together to reach their combined goal.

**Low-income Settlements**

Many low-income settlements (often referred to as slums) within urban areas are unplanned and suffer from a lack of services. They are often cramped with little space remaining for access and for service provision. The communities living in these areas and their representatives are very aware of the challenges their living environment poses. In order to effectively plan for the improvement of such settlements, engineers and planners need to gain an insight and understanding of these challenges together with the community before seeking appropriate and affordable solutions.
Even in the case of planned areas such as resettlement schemes for families who have had to relocate, the government is often behind with the provision of basic services and infrastructure, and communities would welcome the chance to improve their living and working environment.

**Urban Areas as Living and Working Spaces**

Unplanned settlements are not only spaces for living, but also spaces for working. Many urban poor work in the informal sector and work from home or from premises in their local area. Improvements to housing and services should consider not only the improvement of the living environment, but also the effects of improvements on businesses and employment. For example, are there income-earning activities that can be carried out from the home, but which will become more difficult due to rigid housing designs or relocation.
of families. Many urban unplanned settlements exist near city or town centres and their removal to the outskirts can have a negative effect on earning opportunities for the community members.

**Landownership**

The growth of squatter areas has resulted in many new low-income settlements. These unplanned communities are often located in proximity to locations where income opportunities exist. The families living in these settlements will not actually own the land on which their houses are sitting. They are squatters. There will be no plot allocations and if families do have plots, these will have been "bought" often without a legal status or a questionable legal status. Some of the families living in the settlement may be renting accommodation.

Some low-income settlements have sprung up on land that is deemed dangerous for housing such as those with overhead high-voltage power lines, in areas subject to severe flooding, in danger from land/mud-slides or close to railroads, highways and airports. Each of these cases must be looked at individually to see what can be done to improve the safety or whether relocation is the only option. Whatever is being discussed, it must be done together with the affected community.

Providing secure land tenure is a core achievement in the effort to improve the living conditions of the urban poor. However, the provision and improvement of infrastructure can be started in advance of secure tenure or be developed in parallel if necessary. Land tenure issues are not the main concern of this document, but must be borne in mind at all stages to avoid negative impacts on communities and their members.

**Affordable Services**

Urban households often need to pay to access basic infrastructure services. Unlike the poor in rural areas where a water supply and sanitation is either present or not, in urban areas water may be present but may not be affordable for the poorest residents, and crowded conditions may not make the provision of household sanitation possible.
Investments in Housing and Services

Although housing areas are unplanned and the households do not own the land, families still invest in housing, small trading stands, workshops, etc. When a choice is to be made between upgrading an existing area or the complete re-planning and re-plotting of an area, the effects of the choice on already made investments needs to be taken into consideration. It may be possible to allocate plots and provide infrastructure with a minimum of demolitions and a maximum retention of people's properties.

Purchasing Clean Water

Households who relied on vendors for their water needs paid ten times the rates of Metro Manila Water and Sewerage System (MWSS). Those who paid the most for water access were those who were in low-income settlements (viz. those who purchase from vendors and from public faucets and those from the lowest income classes).

Additional cost is likewise borne by households in procuring water from external sources as they still need to transport water to their homes. Time is also reduced for household and productive activities.


Rebuilding and Moving

In Sitio Pajo, Baesa Barangay, Quezon City, Manila, the Urban Poor Affairs office has assisted the community in re-blocking the site they are occupying in a grid pattern of housing with the regulation of street widths and percentage of open areas. The whole area will be demolished in stages and new houses and roads built to a uniform plan.

In another area of Quezon City, Golden Shower, the community have agreed to the demolition of houses only when they are situated in the planned roadway. All other houses remain and plots have been measured based on the position of the owners existing house and their ability to pay. Plots have also been allocated for the owners of the demolished properties. The plot sizes vary: 32, 40 or 60m_. As a result, the current investment in housing is not lost in the improvement process and small businesses can continue from home or from their existing premises.

Both options offer great improvements for the beneficiaries, who have eagerly embraced these opportunities to regulate their land tenure and improve their homes and living environment. The second option however takes account of the community's own modest investments.

Source: ILO Project Team

National Policies and Nationwide Programmes

National policies set the framework within which cities develop. Through these policies, they are both encouraged and enabled to address issues of urban
poverty and improvement of slum areas or not.

Positive examples of national policies:

- demonstrate political will,
- set targets,
- establish budget allocations,
- implement policy reforms,
- ensure open and transparent land markets,
- mobilise non-public sector resources, and
- prevent the growth of new slums

**Urban Authorities**

The size and number of unplanned settlements (slums) presents a huge challenge to urban authorities in Asia. Cities and towns are developing strategies to try and address the situation.

A prerequisite for any community planning is that there is a consensus within the city or municipal authority, within whose boundaries the communities live, that is supportive of the aims of improving the living and working conditions within low-income settlements. It is also necessary that within the city or municipality there is an acceptance of the participation of the communities in determining the types of improvements to be carried out and a willingness to marry community choices with municipal planning goals.

The planning presented in this section, is designed to fit within city and town strategies, but with particular focus on working with the communities living in low-income settlements to find appropriate solutions to their needs.

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</tr>
</thead>
<tbody>
<tr>
<td>Eastern Asia</td>
<td>150,761</td>
<td>194,078</td>
<td>212,368</td>
<td>238,061</td>
<td>266,863</td>
<td>299,150</td>
</tr>
<tr>
<td>South-central Asia</td>
<td>207,501</td>
<td>262,441</td>
<td>285,713</td>
<td>317,858</td>
<td>353,620</td>
<td>393,405</td>
</tr>
<tr>
<td>South-eastern Asia</td>
<td>48,986</td>
<td>56,799</td>
<td>59,913</td>
<td>64,073</td>
<td>68,521</td>
<td>73,279</td>
</tr>
<tr>
<td>Western Asia</td>
<td>29,524</td>
<td>41,356</td>
<td>46,709</td>
<td>54,426</td>
<td>63,418</td>
<td>73,896</td>
</tr>
<tr>
<td>Oceania</td>
<td>350</td>
<td>499</td>
<td>568</td>
<td>668</td>
<td>786</td>
<td>924</td>
</tr>
</tbody>
</table>

Source: [www.unhabitat.org](http://www.unhabitat.org)
3.3 Community Identification within a City Development Strategy

Through the creation of a vision and development strategy for a city, certain priorities and approaches have been established. It is therefore important that this is the starting point for any planning at a lower level. As part of the elaboration of the development strategy, the city may have identified areas for the purchase of land for the resettlement of slum dwellers living in hazardous areas and identified areas where the plots could be legalised and the slums upgraded.

Whether a city development strategy exists or not, there will often be zone plans which have to be respected.

Selection of Community to Improve Living and Working Environment

There are examples of planning systems being adopted in many municipalities and cities (e.g. Barangay development planning manual in Butuan City in the Philippines). Where no such system exists, the following can be used as a quick method of identifying priority communities and matching their needs against citywide and international standards.

The following is a checklist of information that the local authority and its development partners could use to determine the sections of the urban population most in need and the priorities for community-based upgrading of slum areas.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Sources of information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>Census</td>
</tr>
<tr>
<td>Poverty rating</td>
<td>Census, random sampling techniques</td>
</tr>
<tr>
<td>Land status, ownership, purchasing options, city plans</td>
<td>City plans</td>
</tr>
<tr>
<td>Hazards</td>
<td>City plans, site inspections, environmental plans</td>
</tr>
<tr>
<td>Present service levels</td>
<td>Utilities providers, city engineering, planning department, site inspection</td>
</tr>
<tr>
<td>Presence of a community-based organisation</td>
<td>CBO registration</td>
</tr>
<tr>
<td>Presence of potential partners in upgrading</td>
<td>Municipality, NGO, Federation or private sector partner</td>
</tr>
<tr>
<td>Sufficient labour (unskilled and if possible skilled) to work on the chosen project as paid labour</td>
<td>Community leadership</td>
</tr>
</tbody>
</table>
It is difficult to suggest more than a basic decision mechanism, as the statistics and information available varies from city to city and town to town.

The diagram below is a decision chart for improving infrastructure and access to services. It concentrates on identifying those areas that can be assisted immediately to improve their living and working conditions. Low-income settlements that are not prioritised (e.g. communities living on hazardous sites) should not be ignored, but other solutions need to be sought for their particular situations, that are not part of this planning process (e.g. relocation, improved safety in the original area, etc.).
There is a natural desire to move quickly forward with a city or municipal-wide programme of improvements to unplanned settlements. If there is a cycle of planning, funding and implementation, then a legitimate starting point can be to work with poor communities that are already well organised and have clear priorities for the improvement of their own area. However, it is vital that the second round planning be based on needs in terms of poverty ratings and lack of services, to ensure that marginalized and less organised communities have the opportunity to gain from a programme of improvements, not just those communities who have had the luck to have progressive leadership, or to have been previously targeted by an NGO or federation.

Where low-income settlements (slums) are very large (e.g. 1 million population), there will be need for a formal planning approach to ensure that services are coordinated and consultations are held at a higher level of community representation than for smaller communities. It is however important that the priorities of the different groups and areas within the settlement are taken into consideration in this process. Also, once an overall plan has been prepared, it is possible to work on priority areas with sections of the community living in sub-sections of a large settlement.
3.4 Planning with the Community – Establishing Priorities

There are many participatory techniques available for planning together with communities. Below are just some of the techniques commonly used:

**Transect walks:** the resource person walks with community members along a particular stretch within the community, such as a road or along a river. The person notes down the specific characteristics mentioned by the community group. A transect walk may concentrate on environmental problems, social characteristics, access to services, etc.

**Problem trees:** in a moderated group discussion, a problem is analysed to identify its causes and results. On that basis, the problems of a community can be linked and its causes identified. Normally, diagrams are used to illustrate the problem.

**Chappati diagrams:** intended to provide information on relationships. A chappati is round Indian bread. By linking issues, relationships can be visualised.

**Community mapping:** community groups draw a map of the environment as they see it. They may note down specific problem areas, social or economic information, etc.

**Resource analysis:** all resources of a community can be listed as a first step to identifying local solutions.

**Wealth ranking:** ranking who is rich and poor according to indicators of the community. Indicators may be the size of houses, number of wives, etc. (note: rich and poor are used as relative terms)

**Seasonal calendars:** These enable the engineers and planners to see what services and facilities are important or come under strain at what points of the year, and why.

**Timelines:** similar to seasonal calendars.

**Focus group discussions:** open discussions with specific community groups, such as female headed households and unemployed youth.

Open ended interviewing.¹

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¹ Adapted from International training course for Engineers and Town Planners – Sustainable Community-managed and Labour-based Upgrading of Urban Low-income Settlements, Hamish Goldie-Scot, Jan Fransen and Wilma van Esch, ILO, 2002.
It is not the intention to examine further the individual participatory tools, but to provide guidance on how to ensure an inclusive process, and on provision of the necessary support that will result in the community being at the centre of the planning process.

Partners and their Roles in the Planning Process:

<table>
<thead>
<tr>
<th>Partners</th>
<th>Roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community representatives (CBOs)</td>
<td>To give initial indications of areas of concern among the community.</td>
</tr>
<tr>
<td></td>
<td>Also to identify positive assets and strengths in the community</td>
</tr>
<tr>
<td>Community groups</td>
<td>To provide information as to their perception of constraints and</td>
</tr>
<tr>
<td></td>
<td>opportunities of specific importance to their group</td>
</tr>
<tr>
<td>Whole Community</td>
<td>To discuss and agree on priorities for the community in terms of</td>
</tr>
<tr>
<td></td>
<td>improvements and development</td>
</tr>
<tr>
<td>Civil Society Organisations, NGOs, Federations</td>
<td>As a facilitator in participatory planning approaches and as a trusted</td>
</tr>
<tr>
<td></td>
<td>link to the community</td>
</tr>
<tr>
<td>Municipal Planning Department</td>
<td>To make inter-community comparisons and identify priority</td>
</tr>
<tr>
<td></td>
<td>communities</td>
</tr>
<tr>
<td></td>
<td>To support the community and partners in the planning process and to</td>
</tr>
<tr>
<td></td>
<td>check the outcomes against city-wide priorities, MDGs etc.</td>
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<tr>
<td></td>
<td>Can also act as facilitators of the community planning process</td>
</tr>
<tr>
<td></td>
<td>Ensure integration with master plans</td>
</tr>
<tr>
<td>Other Municipal departments with responsibility for low-income</td>
<td>Contribute their knowledge and experience in support of the</td>
</tr>
<tr>
<td>settlements or poverty reduction</td>
<td>community planning process</td>
</tr>
<tr>
<td>Public Utility Providers</td>
<td>Can be brought in for planning advice specifically related to the</td>
</tr>
<tr>
<td></td>
<td>utilities they are providing and operating</td>
</tr>
<tr>
<td>Private Sector</td>
<td>Can be used as facilitators of the community planning process and</td>
</tr>
<tr>
<td></td>
<td>for additional professional planning advice</td>
</tr>
<tr>
<td>Universities and other institutes of learning</td>
<td>Can provide expertise in community planning and design, and assist</td>
</tr>
<tr>
<td></td>
<td>in recording the processes and outcomes to integrate them in future</td>
</tr>
<tr>
<td></td>
<td>learning programmes</td>
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<tr>
<td></td>
<td>Training of municipal and NGO staff.</td>
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<tr>
<td>Law societies</td>
<td>Provide free or inexpensive legal assistance</td>
</tr>
<tr>
<td>Development Agencies</td>
<td>Funding of the planning process</td>
</tr>
<tr>
<td></td>
<td>Funding of training</td>
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<tr>
<td></td>
<td>Technical advisory services</td>
</tr>
<tr>
<td>Politicians and political parties</td>
<td>Can provide support and encouragement for improvements within their</td>
</tr>
<tr>
<td></td>
<td>own wards and constituencies</td>
</tr>
</tbody>
</table>

From Priorities to Solutions and Action Plans
In Community Action Planning (CAP) a community group identifies their priorities and explores alternative ways of achieving them. Participatory appraisal techniques are used in the process. The CAP may be regularly updated, since priorities continuously change.
Problem identification:

(a) Check the legitimacy and status of any group (CBO) acting as the representatives of the community.

(b) If the community has already established a list of priority needs, check these at an open meeting and carry out a participatory ranking process to check that the priorities have not changed. Check needs of special groups such as poor households, women, youth and child-headed households.

(c) If no priorities have been established, use participatory methods to discuss problems, needs and constraints; include capacities and skills in the community, and support the community in deciding on their own priorities for improvements to life in their community.

(d) Together with the community discuss possible solutions to the problems or needs.
Finding the Right Solution
A community was suffering from a high prevalence of dengue fever. This was established as a problem and placed very high on the community’s list of priorities. The proposal that came from the community on how to deal with this problem was to build a clinic to treat the patients, rather than having to take them to the nearest city hospital. When discussed with planning experts at a community meeting, the proposal changed. It was decided to deal with the root of the problem - poor drainage and pools of water where mosquitoes were breeding. So instead of a clinic the community proposed a drainage scheme, the result of which was a decrease in the prevalence of disease in the settlement. The community’s priority had not changed, but with the support of professional advice they had arrived at a better solution.

(e) Check that the solutions established with the community actually address the problem they are facing.

(f) Grouping of project proposals
The grouping of project proposals is not important for the community, but is useful as a tool to consider how the projects are designed and supported. The following are three possible categories:

(i) community infrastructure construction and improvements, and waste management

(ii) private (household) building improvements

(iii) other needs (credit, saving, awareness campaigns, legal advice)
The source of support and the conditions for working with partners vary depending on whether the improvements are for the benefit of the community or whether they benefit individuals and their families (a school building as opposed to a house). In the remaining sections of this guide, the category (i) from above will be further elaborated. It is not the intention in this guide to put forward suggestions on how to deal with the subjects in number (ii) and (iii).

Where a community has a variety of priorities, these must be looked at as a whole to see how they best combine to create the maximum benefit. For example the improvement of a market space alone may benefit the community, but if combined with savings and credit, this could provide a boost to the small businesses and further increase the benefits to the community. It is important that individual priorities are not considered in isolation but that synergies are sought as part of the whole improvement process.

(g) Ascertain which department or partners are best placed to deal with the priorities

Given the wide variety of priorities which can emerge from the community and the wide number of departments, providers and partner organisations available to provide support, it is important for the community together with the planners and facilitators to decide where to seek assistance. It is also important to bear in mind that regardless of the source of support, planning permission or other authorisation from the municipality or city is necessary.

(h) Technical support for preliminary survey and concept

At this stage, there is a need to bring in technical advice and to carry out preliminary survey work. This should be done together with the community who are best placed to advice on problem areas, and the location of existing infrastructure. The more the community are directly involved in the survey, the more likely it is that difficulties will be immediately identified and can be taken into account when working on a solution.

(i) Ensure that the proposed project is in line with the local authorities plans for the area. Whatever priority project is decided upon, it is important to check this against city or municipality plans to see that it is not in conflict with such plans. In the case of infrastructure such as water and sanitation, electricity, solid waste management, where linkages
to existing infrastructure and services are anticipated, it is important to involve the relevant authority to ensure that they are in agreement with the concept and to check what influence their requirements will have on the design process. Linkages to existing services are further discussed in Section 4: Technical Options and Design Solutions.

It is important for the authorities to consider the proposals in the light of their strategies for improving low-income settlements. If an incremental approach is acceptable, the standard of the infrastructure does not need to immediately comply with strict planning standards but can be improved gradually over time to eventually reach the final required standard. The incremental approach lends itself to gradual improvement of communities living conditions at affordable costs and without extensive loss of property (i.e. demolitions within the community).

(j) Together with the community, ascertain skills and assets available from within the community. Especially relevant are experienced tradesmen, small construction enterprises and bookkeepers. It should also be ascertained if there is enough labour available and willing to work on the prioritised improvements, and if there is insufficient in the community – why that should be and where the labour might be sourced for the work?
(k) Prepare plan and costing for the project

(i) Prepare together with the community some preliminary designs and cost estimates as a basis for discussion as to the best option. Consider their implications for:
- the level of service to be provided,
- affordability – what can the different members of the community afford to pay for, and
- ownership, management, operation and maintenance of the created assets.

(ii) Look at community/partnership/government responsibilities for funding, staffing, equipment, furniture and maintenance. If a school or pre-school is to be built, make sure the community has sufficient funds to provide the desks and chairs. What are the financial contributions of the authorities in charge of delivering educational services? Has the education authorities agreed to staff the school and pay the teachers' salaries, or must the community also budget this cost? Explore whether arrangements on cost sharing can be made so that the poorest members of the community will benefit from the new school. Who will organise and pay for repairs and regular maintenance?

(iii) Check plan and costing for affordability including the costs of support to the community for planning and design, during construction, and for planning the maintenance.

(iv) Check for adherence to standards (where applicable) and minimum levels of service acceptable internationally and within the municipality.

(l) Develop a community action plan for implementation of the project, for presentation to the whole community for their endorsement and for presentation to the municipality. It should be emphasized here that local authorities often have the responsibility to provide various services to the community and do have financial obligations here.

The action plan should also include decisions on the mode of implementation. Taking into account the skills available within the community and of the partners available to support the community, part of the action plan will be a decision on how best to implement the project. Implementation and contracting options are dealt with in Section 5 of this guide.


3.5 Costs and Employment Creation Estimates

Whatever design option is chosen, the next step is to prepare an estimate of the costs and the expected employment creation resulting from the works. These should be reasonably accurate estimates, but should not take up a lot of time in their preparation. The aim is to strike a balance between accuracy and timeliness. What is needed?

(a) Describe the tools and equipment required and supervisory arrangements (gang leaders, technicians, engineers).

(b) Employment creation: calculate the employment creation in construction for unskilled and skilled labour. Add supervisors. This requires calculation of excavation, transport, materials handling, etc.

(c) Direct costs: calculate the direct costs of each intervention. Add a 10 percent \(^2\) "profit margin". Private contractors have to make a profit, and even the community, if it implements the works by themselves, as the contractor, should make a profit – if they are efficient.

Where can information on costs be obtained? Government departments may have schedules of rates (task rates) and recent bills of quantities with comparable unit costs. Local contractors and masons have a good idea of the cost of basic activities such as brickworks and concrete works. When considering the price of works, it is always worthwhile to carry out a proper cost breakdown to check that prices are reasonable and reflect the true costs of the works.

(d) Project budget: direct construction costs are only one of the project costs. Others include indirect construction costs and costs related to community mobilisation and capacity building.

(e) In some programmes, communities are asked to contribute in monetary or other terms to the cost of the project. These contributions detract from the opportunity to inject cash into the community through wages. If a contribution is expected then it must be valued and added to the cost of the project during the cost preparation.

The contribution of each partner must be specified. For instance: the community may contribute material (e.g. stone, sand) or storage space, city council contributes supervisory staff and transport facilities, university monitoring and organisation support for the community, etc.

An example of a cost and employment calculation sheet is provided in Annex 3.1, and an example of the planning of unskilled worker-days for part of the road and drainage works in Chamka Samrong Muoy Settlement in Battambang is provided in Annex 3.2.

\(^2\): This percentage may vary.
3.6 End Notes

The size of the challenge facing many municipalities and cities in terms of improving the living and working conditions of the urban poor is extremely daunting. Given that the resources available are not sufficient to address all problems, the importance of a transparent decision-making process as to which communities to support in improving their settlement areas is vital. What has been presented in this section is one option for consideration.

Further Reading


Planning and Implementing Local Infrastructure Works - Guidelines for Tambon Administrations, CTP 168, ILO ASIST Asia Pacific 2004

Review of Urban Development Issues in Poverty Reduction Strategies, Judy Baker and Iwona Reichardt, Urban Sector Board, World Bank


Jane Tourne and Wilma van Esch, Community Contracting in Urban Infrastructure Works – Practical lessons from experience, ILO, 2001
TECHNICAL OPTIONS AND DESIGN SOLUTIONS
4.1 Objective

The objective of this section is to set out parameters and design options for community infrastructure for low-income settlements. This section starts with some general recommendations on design choice and then considers categories of infrastructure, separately in terms of the purpose, site, design, materials, construction techniques, operation and maintenance, and safety. The aim is to assist municipal planners, engineers, and their partners to make design choices which best suit the community, and are of an acceptable standard for the municipality.

Actual technical calculations are not included in this section, but references are provided for further reading.

4.2 Use and Adaptation of Standard Plans and Designs

Wherever practical, standard designs that have been developed and approved by the technical authorities should be used. However, planners and engineers must be open to the idea of adapting the standard designs to suit the community needs. What should influence this decision?

- Affordability of the services provided, by the poorest section of the population;
- Avoidance of unnecessary demolition of existing property and investments;
- Different standards for different planning zones in the city;
- Opportunities for incremental up-grading (i.e. the city standard may be for a concrete lined drain – but with the limited funds available, the community would rather complete the drain and only line the base for ease of maintenance – the side walls could be lined at a future date).
• Standards needed if the community infrastructure is to link into existing municipal services (waste management, drainage, water supply, etc.);
• Suitable for implementation using local resources, including the use of labour-based work methods;
• Who will have ownership?
• Who will be responsible for operation and maintenance?
• Is the design safe for a busy urban area?
• Will there be any negative environmental impact, and how can this be avoided?

Care should be taken when introducing new technologies or designs, as they may turn out to be inappropriate for the local setting and there is the danger that communities instead of leading the development process become part of an experiment which may or may not turn out to be successful. It is often better to base designs on tried and tested locally common solutions.

**Relying on Basic Technology**
Technology is not the objective: municipalities and enterprises are responsible for ensuring safe, reliable affordable and sustainable water and sanitation services. The function of technology is solely to help achieve this objective - there is no inherent advantage to any particular or "advanced" technology. For example, most cities in developing countries have leaky intermittent systems that cannot be trusted to deliver safe water. Highly sophisticated water treatment processes will not solve this, but simple measures to control unaccounted-for water could double the supply available to users and make the systems much safer.

Similarly, simple onsite sanitation can protect people's health as effectively as a sewer system. Generally, planners, designers and engineers should aim for systems, technologies and institutional arrangements that depend on readily available local resources and expertise, rather than sophisticated and/or imported ones.


### 4.3 Labour-based Approaches

Labour-based approaches rely on local resources, and ensure that employment is created for the community during the improvement of their infrastructure. Designs need to reflect this premise. In other words designs that specify materials or expertise that must be sourced externally to the local area should be carefully examined before being chosen as a preferred option. In practice, conditions in many urban areas are cramped, and the option of using heavy equipment does not arise.
4.4 Types of Infrastructure

In considering the design options for various infrastructure types, the problems to be tackled at community level should be manageable and the solutions attainable.

Checks should always be made against municipal or city plans to see if improvements for an area are already planned or not. If improvements are planned, a realistic assessment must be made as to the timing and budget available for the improvements, and the likelihood of the works actually being carried out in the foreseeable future. Often improvements are planned, but unfortunately the budget is insufficient to implement all the projects.

If the community area is subject to flooding, but the flooding affects the whole of the centre of the city, it is unlikely that the problem can be solved through a small community project. However, there may be ways of reducing the problem for the community without adversely affecting their neighbours and the environment, e.g. ensuring drainage channels are unblocked to increase the flow of water and allow the floods to recede more quickly.

The municipal or city authorities need to make an honest assessment of the situation together with the community concerned.

The following is an overview of the design considerations for different categories of infrastructure. Throughout this section (especially water and sanitation) extensive use has been made of the publication "Services for the Urban Poor - Technical Guidelines for Planners and Engineers" by Cotton and Tayler, WEDC, Loughborough University, 2000.

Drainage and Outlets

The purpose of the infrastructure is to drain water away from houses, buildings, access roads and paths, to avoid or reduce as much as possible flooding and/or erosion, to remove standing water that can lead to disease and to safely discharge water without causing damage to neighbouring areas or water courses.
### Site Information
An accurate prediction of the catchment area and rainfall. Special attention to steep or flat areas (to avoid flooding and erosion). Determination of the lowest areas in the settlement. Is there risk of flooding from rivers or main drains backing up into the area?

### Design Parameters
The drains should not be higher than the surrounding house floor levels. Water surrounding the houses should be able to run-off into the drain not into the houses. Sufficient gradient to avoid excessive silting and debris build-up in the drain. Although straight drains are preferred, curves and bends are acceptable along the sides of roads and to avoid existing houses.

### Design Choices (frequently used options)
Lined, open shallow drains running along the side of the road and paths (good quality concrete, stone lining, slabs, bricks, concrete blocks). Use of surfaced roads as drains (concrete roads, stone surfaced, gravel with a stone-lined dipped centrepiece acting as a drain). Concrete pipes, where open drains are too deep and covered drains too costly. Piped culverts for home and business access. Existing drain enlargement and lining. Protection of drainage outlets to avoid erosion using gabion baskets or culvert walls and aprons (either masonry or concrete). A debris catcher should be placed before the underground pipe entrances to avoid the accumulation of debris in the pipe where it is more difficult to clean.

### Dealing with Services in the Ground - or Planned
In urban areas there are many water connections crossing roads and drainage channels. PVC pipes can be placed at regular intervals under the drainage channel to accommodate the existing crossings but also to allow for water and other connections at a future date. If the drains are being planned as a first priority it is important to look at planning the access roads and paths at the same time to ensure that there is space for both in narrow areas.

### Operation and Maintenance
Cleaning of drainage channels and pipes. Setting up of a solid waste management system to reduce the amount of debris landing in the drainage system.

### Safety Considerations
Deep excavations need to be properly shored to avoid the risk of collapse, even in relatively stable ground. Care needs to be taken when excavating close to existing buildings that they are properly protected from damage. Open drains deeper than 400mm are a safety hazard for children.

### Employment Potential
The excavation and lining of drains and outlets provides high employment potential for skilled and unskilled workers.

### Further Reading
- Site Supervisor Course for Labour-Based and Community-Managed Upgrading of Urban Low-Income Settlements, Beusch and Winsvold, ILO, 2002

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**Examples of Open and Covered Drains**

Whenever they are used, open channel drains take up space and pose a hazard to road users and residents, especially if the drain is very wide or deep or passes through a busy area. If this situation can be avoided and resources are available, then drains should be constructed covered with removable slabs, allowing access for the rainwater and sullage.
When little water flows through the drain, only the narrow bottom of the drain is used. This is particularly suitable for sullage discharge. When the water rises higher, e.g. during rains, a larger section of the drain is used. The advantage is that the water will have a steady flow speed and will keep the channel clean whether the water level in the drain is low or high. Water in this section flows most evenly, reducing deposits of dirt to a minimum.

However, the parabolic shape at the bottom is relatively expensive to construct.

This section is often used for drains in narrow roads and next to houses. The vertical sides allow drains to occupy less than half the surface that “V” drains use. It is also much easier to provide “U” drains with a cover or to build approaches to houses as the span is reduced.

Instead of brick wall drains they can also be constructed with in-situ cast concrete.

In cases where sullage has to be carried by the “U” drains, it is advantageous to provide the drain with a semi-circular invert, for the same reason as the V-section.

Source: Site Supervisor Course for Labour-Based and Community- Managed Upgrading of Urban Low- Income Settlements Â† Supervisor’s Site Reference Handbook, Beusch and Winsvold, ILO, 2002

**Flood Protection**

The purpose of the infrastructure is to protect the community from flooding, to reduce damage to housing and businesses, to reduce diseases resulting from floodwater and generally maintaining a healthy environment in the community also during the rainy season.

In the Chamka Samrong Muoy Settlement Area of Battambang the community adopted a unique solution...
to control flooding. The severest flooding was caused by water backing up from a nearby canal and flowing into the settlement area. The engineer suggested that gates be constructed at the end of the drainage channels, which could be closed against the water in the canal when the water level rose and there was a danger of water flowing back into the community and flooding around the houses.

Roads, Streets and Access Paths
The purpose of this type of infrastructure is to provide access to housing, public buildings, markets and workplaces as well as public facilities such as schools, clinics, wells, standpipes, public toilets, etc. With the installation of proper drainage along the roads and paths, these interventions also contribute to the general drainage situation of the neighbourhood, providing an effective measure for cleaning up muddy areas and pools of stagnant water.

Some examples of typical cross-sections for streets are provided in Annex 4.

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1: Advice needs to be sought from an environmental officer before clearing river or canal areas. As a general rule no vegetation should be up-rooted in the area of the banks, but only cut down, so as to reduce the risk of erosion.
| Site Information | Location of roadways.  
Clear width between building and plot boundaries.  
Minimum access requirements (e.g. fire truck access).  
Number of houses served.  
Traffic and transport  
Position of drains.  
Any business access needs. |
|------------------|----------------------------------------------------------|
| Design Parameters | The width and construction should reflect the type access needed: road (trucks or cars), motorcycles, bicycles, handcarts, pedestrians  
Soil conditions in the area.  
Low lying areas of the roadway should be raised if this does not adversely affect the surrounding houses.  
Layout to reflect access, without encouraging through traffic.  
Elevation of the area (flat, steep or side-sloping terrain). |
| Design Choices  
(frequently used options) | Gravel surfaces often provide cost-effective solutions.  
Alternative surface materials include the use of stone, bricks, concrete and bitumen based materials.  
Aligning the roads along contours where the ground is sloping.  
Road surface designed with cross-fall with a drain on one side of the road to reduce the total width needed.  
Use camber on wider – main access roads.  
Raise road surface level above the current ground level.  
Layout should minimise demolitions. |
| Dealing with Services in the Ground - or Planned | Provide marked pipe (or similar) crossings under the roads at regular intervals and at each junction. This caters for future house water connections without digging up the road. |
| Operation and Maintenance | A proper regime of maintenance is essential if roads and streets are to continue to provide a good level of service.  
Essential to road maintenance is drainage clearing and repair. |
| Safety Considerations | If the road being constructed is already in use, then proper safety measures must be taken to slow traffic and protect the workers. |
| Employment Potential | Road works provide a varying degree of employment depending on the design and construction techniques adopted. (e.g. a gravel road constructed using labour-based techniques supported by appropriate equipment will result in high levels of employment – for other options such as concrete roads the employment levels may be slightly less). |
| Further Reading | Building Rural Roads, Johannessen, ILO 2008  
Roads department and ministry manuals for labour-based roads. |
Bus Stops and Parking Areas

The purpose of the infrastructure is to provide proper stopping, parking, and loading facilities for public and private transport.

Stone surfaces can be constructed using naturally shaped or dressed stone. The stone acts a surface layer and is placed on a firm foundation. Depending on the quality of the sub-grade, the foundation would include a 20 to 30 cm layer of compacted gravel. The stone is set by hand in a thin layer of sand. The sand bedding fills in any voids between the stone and the base course. A similar design approach is applied when using concrete blocks as a surface treatment.

| Site Information | Location is critical to endure proper use of the facilities (adjacent to markets within the community) or at the junction with main roads leading to the town centre, schools, clinics or industrial areas. If the parking or bus stop area is wrongly chosen it will not be used because it is too inconvenient. |
| Design Parameters | The biggest constraint is to identify a suitable site in the correct part of the community with enough space. Drainage and services in the area will need to be put through ducts or diverted. Soil conditions and locally available materials determine the base and paving of the areas. |
| Design Choices (frequently used options) | Paving and draining of a suitable area adjacent to the centre and/or market. Adequate footpath areas around the parking site. Use stone, block paved surface or concrete – based on local practices and materials. Piped, covered or open drainage depending on the site conditions. |
| Dealing with Services in the Ground - or Planned | Lay marked ducts along the edges of the area for future water supply pipes, etc. |
| Operation and Maintenance | Provide extra blocks or bricks to allow replacement of broken blocks Clearing of drainage. |
| Safety Considerations | Mark parking bays and access ways to encourage proper use and reduce the risks to pedestrians in the area. |
| Employment Potential | The excavation and lining of drains and outlets provides working opportunities for skilled and unskilled workers. |
| Further Reading | Stone Paving – Blocks, Quarrying, Cutting and Dressing, SPWP Booklet No. 8, ILO 1992 |

Stone surfaces can be constructed using naturally shaped or dressed stone. The stone acts a surface layer and is placed on a firm foundation. Depending on the quality of the sub-grade, the foundation would include a 20 to 30 cm layer of compacted gravel. The stone is set by hand in a thin layer of sand. The sand bedding fills in any voids between the stone and the base course. A similar design approach is applied when using concrete blocks as a surface treatment.
joints filled with sand or mortar

12 mm max spacing

4 - 5 cm sand bedding

base course

sub-grade
### Water Supply
The purpose of this infrastructure is to deliver safe potable water to the community at an affordable price.

<table>
<thead>
<tr>
<th>Site Information</th>
<th>What existing water supply is in operation? What water sources are being used? Where is the nearest municipal water supply? Are there difficulties with water pressure and reliability?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Parameters</td>
<td>Direct household supply based on 100-150 litres per person per day. Standpipe supply based on 40 litres per person per day. Standpipes to be no further apart than 200m (approximately 100m from the furthest household to the standpipe). The normal minimum standard for a tertiary main is 75mm diameter. Quality of water for bathing, cleaning and laundry is less critical than for drinking and cooking. How many public standpipes are needed? As a rule of thumb, the number of people served by a single <em>inch tap should be limited to 125^2</em>. Where should they be placed?</td>
</tr>
<tr>
<td>Design Choices (frequently used options)</td>
<td>Knowledge of the water source and operator: municipal, private agency, community. The design is influenced by the water source and water supply into the area. Where the supply into the area is inadequate, increasing access to taps will not solve the community’s problem. This problem lies at a higher level. Where the municipal water supply does not reach the community area, shallow wells and boreholes are options, but both sources of water need to be tested to see if they are safe. Systems served by a single tube well should be avoided as they fail completely in the case of a pump breakdown. Will the water be supplied to households or to communal water points? Water kiosks. Install apron and soak away to drain spill water away from the well to avoid unhygienic conditions. Care should be taken to lay pipes away from drains as intermittent water supply is prone to pollution from back siphoning. There should be sufficient cover to avoid cracking or breaking of the buried water mains (main access roads 900mm and roads less than 3m wide 600mm). Encourage rainwater harvesting whenever possible.</td>
</tr>
<tr>
<td>Construction Techniques</td>
<td>Water supply systems lend themselves to labour-based work methods.</td>
</tr>
<tr>
<td>Dealing with Services in the Ground - or Planned</td>
<td>Water mains and major supply pipes should be placed away for any drains or planned drains. If they are placed in a planned roadway, they must have sufficient cover to ensure that once the road is constructed the traffic will not damage the pipes.</td>
</tr>
<tr>
<td>Operation and Maintenance</td>
<td>The maintenance depends on the system ownership. If the community owns or operates the water supply, they must manage the operation (or contract a small enterprise with enough profit to allow for maintenance and repairs). Even if an agency or the municipality manages the water supply, the community need to ensure that someone has a budget for maintenance and repair. If the budget of the municipality is too stretched, then it is in the interest of the community to have their own maintenance committee and plan.</td>
</tr>
<tr>
<td>Safety Considerations</td>
<td>Examine soil conditions and provide adequate support against the possible collapse of the walls during excavation and construction when excavating shallow wells.</td>
</tr>
</tbody>
</table>

---

2: The World Health Organisation recommends that there should not be more than 250 persons served by one tap.
<table>
<thead>
<tr>
<th>Employment Potential</th>
<th>The excavation and laying of pipes provides employment opportunities for skilled and unskilled workers, the kiosk and house connections require</th>
</tr>
</thead>
</table>

Source: Adapted from Services for the Urban Poor – Technical Guidelines, Cotton & Taylor, WEDC, Loughborough University, 2000

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**Diagram:**

Water Pipe, Top and Outlet as per specifications

Source:

Sanitation

The main purpose of the infrastructure is to provide hygienic and culturally acceptable toilet facilities and safe disposal of human excreta and to reduce health risks associated with the transmission of disease through contact with excreta.

| Site Information                                    | Location of shallow wells. 
| Is there a city sewerage system in the area?        |
| Density of the housing and space available for the sanitation. |
| Design Parameters                                   | What type of latrine is commonly used? 
| Pour flush can only be used where water is used for cleaning rather than solid objects such as leaves, sand and stones. 
| Water needs to be available to operate the pour flush system (1 to 6 litres per flush). 
| In areas prone to flooding, the whole pit may have to be raised to avoid it filling with water and polluting the area during floods. |
| Design Choices (frequently used options)            | Pit latrines and vented improved pit latrines. 
| Pour flush pit latrines are more commonly used in Asia. They allow for a more flexible positioning of the pit as it can be constructed off to one side. 
| Flush toilet with septic tank (relatively expensive). 
| Connection to sewerage system (relatively expensive). 
| Communal latrines (only for areas with acute space shortage). 
| Pit linings can be made from concrete rings, brickwork, blocks or stone, cast in-situ concrete or ferro-cement 
| The pit slab can either be reinforced or cast in a dome shape to take the weight of a large adult. 
| Piped sewage systems require relatively sophisticated design and need to be compatible with the municipal system into which they flow. |
| Dealing with Services in the Ground or Planned      | Latrines should be at least 15m away from the nearest water source. 
| Water supply pipes should always be above the level of the porous elements in the pits and any piped connections |
| Operation and Maintenance                           | A pour flush system with two pits is more hygienic than one pit, as the pits can be sealed off for a period before emptying. The pits can be shallower as they do not need the same capacity if they can be regularly emptied. Regular safe emptying of pits is needed in all cases. |
| Safety considerations                               | Excavation of pits should be shored from a depth of 1.2 metres. Concrete rings lend themselves to shoring up the soil during excavation. |
| Employment Potential                                | Depending on the technology choice for the sanitation, the employment potential varies. Extensive sewer works provides a lot of opportunities for unskilled workers as will the excavation and lining of pits. |
| Links to further reading                             | Services for the Urban Poor - Technical Guidelines for Planners and Engineers, Cotton and Tayler, WEDC, Loughborough University, 2000. 
| Water Aid Technology Notes, www.wateraid.org        |

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3: Adapted from Services for the Urban Poor, Cotton and Tayler, WEDC, Loughborough University, 2000
Double Pit Ventilated Improved Latrine:

Alternate pit squat hole temporarily sealed

Removable cover slab

Alternate pit vent pipe hole

Sludge safe for manual removal after one year

Pit in use

Fly screen

Vent pipe

Pour Flush Double Pit Latrine:

Manhole: the outlet to the pit not in use is blocked off

Filled pit not in use-sludge is safe for removal after one year

Pit in use

Manhole

Pit in use

a: Section

b: Plan

This first pit is used until it is full, and the second pit is then put in use. When the second pit is full, the first can be emptied safely because the contents will have been digesting for at least one year.

Source: Site Supervisor Course for Labour-Based and Community-Managed Upgrading of Urban Low-Income Settlements | Supervisor’s Site Reference Handbook, Beusch, and Winsvold, ILO, 2002
**Solid Waste Management**

The purpose of solid waste management is to improve the living and working environment in the settlement and to reduce health risks from disease.

<table>
<thead>
<tr>
<th>Site Information</th>
<th>To collect waste and sort into recyclable waste, composting waste and waste to be disposed of. The waste to be disposed of has to be brought to an agreed secondary collection point to be transported to the city dump. The location of a collection point may be controversial as no one wants it in their backyard.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Parameters</td>
<td>There is need for “customer research” to establish the awareness on rubbish removal and the willingness to pay for collection services. Coupled with this would be an estimate of the possible earnings from recycling.</td>
</tr>
<tr>
<td>Design Choices (frequently used options)</td>
<td>The design depends on the interaction with local authorities and their waste management system. One option is to bring waste from the community or separate parts of the community to agreed secondary collection points where it is routinely emptied by the municipal authority or their contractor.</td>
</tr>
<tr>
<td>Construction Techniques</td>
<td>Techniques are more related to tools and transport. The only design issue is for the secondary collection points and the design depends on the emptying mechanism used by the municipal authorities.</td>
</tr>
<tr>
<td>Location</td>
<td>The site should be situated at least 15 m away from any shallow wells.</td>
</tr>
<tr>
<td>Operation and Maintenance</td>
<td>Plans must be made to allow for wages, and a small profit for the replacement of transport (handcarts) and tools if the collection is operated by a community group. Small private enterprises can form around solid waste management services and can be supported by training and business advice.</td>
</tr>
<tr>
<td>Safety Considerations</td>
<td>Proper protective clothing physical ones: long working hours, lifting heavy loads, walking long distances, traffic accidents, working position (sitting on the floor or tables), noise produced by machinery, etc. chemical ones: the influence of hazardous substances to the skin, the fumes and emissions from such substances and/or production processes, the lack of ventilation which causes inhalation of hazardous fumes, no or insufficient clean water and sanitation, etc.</td>
</tr>
<tr>
<td>Employment Potential</td>
<td>The formation of local solid waste collection enterprises and the use of properly designed collection points provide long-term employment.</td>
</tr>
</tbody>
</table>
Walls; min 25cm thick for bricks or blocks minimum 30cm for stone masonry – increase width of foundation to 110cm.

Plaster inside and wall crown.

Timber board along foundation trench, kept in place with pegs.

Foundation; constructed with stones, bricks, blocks or concrete

Lean concrete blinding, 5 cm

The capacity of a communal container
\[ C = N \times R \times I \]

N = number of users,
R = water generation Rate (litres per day)
I = emptying intervals (days)

Source: Site Supervisor Course for Labour-Based and Community-Managed Upgrading of Urban Low-Income Settlements | Supervisor’s Site Reference Handbook Beusch and Winsvold, ILO, 2002
Environment: Open Areas, Play Areas, Parks and Tree Lots

The purpose of improving and preserving the environment in urban settlements is to improve the living standard of the community and to ensure the preservation of open spaces and green areas.

<table>
<thead>
<tr>
<th>Site</th>
<th>The site needs to be agreed with the community. Should be away from any hazards. Greening of areas can be done around public or community buildings such as trees and flowers around the school or nursery.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Parameters</td>
<td>Open recreation areas should offer something for all age groups in the community. What are people interested in? Swings and slide Basketball or football area Park benches Paths and walkways Trees and plants Source of water for the plants. The land can be drained.</td>
</tr>
<tr>
<td>Design Choices (frequently used options)</td>
<td>Robust and vandal proof furniture. Robust local trees, shrubs, and grass, Gravel surfacing for sport areas, Paving for walkways, Drainage for the sports field, Fencing.</td>
</tr>
<tr>
<td>Operation and Maintenance</td>
<td>Care of the plants and recreational facilities. Payment of water bills.</td>
</tr>
<tr>
<td>Safety Considerations</td>
<td>Safety of children using the area. If plants are part of an urban-agriculture initiative, then water source and fertilisation need to be checked for safety.</td>
</tr>
<tr>
<td>Employment Potential</td>
<td>The employment potential is rather low as there are more materials involved in fencing and park/sport furniture, less extensive construction works.</td>
</tr>
</tbody>
</table>
## Community and Public Buildings

The purpose of these buildings is to serve as meeting place for social events, savings groups, community meetings, shelter during floods or other natural disasters.

<table>
<thead>
<tr>
<th>Site</th>
<th>On ground not at risk of severe flooding, accessible to the whole community, on public or community owned land (not private).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Parameters</td>
<td>Weather – heat, wind, cold, rain, flood, earthquake, soil conditions.</td>
</tr>
<tr>
<td>Design choices (frequently used options)</td>
<td>If the building is to be a school, clinic, police post or other such building it must be built to the current government design standard assuming that the design standards are affordable and appropriate for the community. Community halls and meeting places must be designed around the community’s needs, the budget and locally available building materials. If the community hall is to be used as shelter in times of danger it must be suitably strong and designed to withstand the risks prevalent in the area. Care should be taken that sun and prevailing wind direction are taken into consideration and general climate suitability.</td>
</tr>
<tr>
<td>Materials</td>
<td>Building materials are many and organisations such as SKAT have very good publications on appropriate building materials and options. All materials should be quality checked to ensure that they meet the standards needed.</td>
</tr>
<tr>
<td>Services</td>
<td>Toilet facilities will need to be provided. Depending on the use of the building, an electricity connection may be necessary.</td>
</tr>
<tr>
<td>Operation and Maintenance</td>
<td>Payment of electricity and water bills. Cleaning Replacement of broken windows, repainting and minor repairs to buildings</td>
</tr>
<tr>
<td>Safety Considerations</td>
<td>Protective clothing where needed Proper design of scaffolding</td>
</tr>
<tr>
<td>Employment Potential</td>
<td>The actual construction work has only a moderate employment potential, but the manufacture and provision of building materials such as cement blocks, has a larger employment potential.</td>
</tr>
<tr>
<td>Links to Further Reading</td>
<td><a href="http://www.skat.ch">www.skat.ch</a> Building Materials and Construction Technologies, Annotated UN-Habitat, Bibliography <a href="http://www.unhabitat.org/pmss">www.unhabitat.org/pmss</a> Local authority and ministry standards</td>
</tr>
</tbody>
</table>

## Electricity

Electricity is for private and public use (street lightning is described separately).

<table>
<thead>
<tr>
<th>Design Parameters</th>
<th>Who will be the end user and can they afford the charges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design choices (frequently used options)</td>
<td>Individual house supplies Common facilities such as community buildings</td>
</tr>
<tr>
<td>Operation and Maintenance</td>
<td>The supply lines are the property of the electricity company or network company.</td>
</tr>
<tr>
<td>Safety Considerations</td>
<td>Connections should be made by an experienced electrician</td>
</tr>
<tr>
<td>Employment Potential</td>
<td>The supply of electricity requires experienced technicians and apart from some pole erection, there is little employment potential for unskilled workers.</td>
</tr>
<tr>
<td>Links to further reading</td>
<td>Safe electricity for slum residents A pilot project in Paraisópolis, São Paulo, Brazil, Leonardo Energy, Interview Programme, Bruno de Wachter and Clothilde Wattel, in interview with Glycon Garcia <a href="http://www.leonardo-energy.org/drupal/node/2096">www.leonardo-energy.org/drupal/node/2096</a></td>
</tr>
</tbody>
</table>
Street Lighting
The main purpose of providing street lighting is to provide safety and security.

<table>
<thead>
<tr>
<th>Site</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>At road junctions.</td>
<td></td>
</tr>
<tr>
<td>At areas of importance to the community – location is a community decision.</td>
<td></td>
</tr>
<tr>
<td>Availability of electricity supply.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Design Parameters</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height of the lamp posts, number and spacing of posts and spacing, number of lights on each post.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Design Choices (frequently used options)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reinforced concrete poles.</td>
<td></td>
</tr>
<tr>
<td>Treated timber poles.</td>
<td></td>
</tr>
<tr>
<td>Locally available lamps.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Operation and Maintenance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payment of electricity bill, replacement of lamps, repairs to any damage to the posts.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Safety Considerations</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper anchoring of the posts in the ground.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employment Potential</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>The supply of electricity requires experienced technicians and apart from the erection of poles, there is limited employment potential for unskilled workers.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Links to further reading</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up-grading Urban Communities, A Resource for Practitioners</td>
<td>web.mit.edu/urbanupgrading/upgrading/issues-tools/issues/Alternative-in-Service. html#Anchor-Physical-26703</td>
</tr>
</tbody>
</table>
4.5  End Notes

As can be seen from the above descriptions and examples, there is no single correct solution. Only when accurate information is gathered and the communities are involved in the design decisions, then the best design solutions can be identified in line with available budgets. Locally acceptable designs and government standards should be used when appropriate. Communities should not be "experimented upon" but offered viable and proven design solutions.

Further Reading

Building Roads By Hand, Antoniou, Guthrie and de Veen, International Labour Office, 1990


Stone Paving – Blocks, Quarrying, Cutting and Dressing, Special Public Works Programmes, Booklet No. 8, International Labour Organization, Geneva 1992


The Housing Concrete Handbook, Cement Concrete & Aggregates Australia, 2000

Training videos on Labour-based Road Construction and Maintenance, ILO 2001


Site Supervisor Course for labour-based and community-managed upgrading of urban low-income settlements Basic Course Manual: Skills Course Manual and Supervisor’s Site Reference Handbook, Andreas Beusch, Marie Winsvold, ILO ASIST Africa, 2002

Concrete Basics, A Guide to Concrete Practice, Cement Concrete & Aggregates Australia, 2004

Basic Construction Training Manual for Trainers, Heini Müller, Skat Foundation, St. Gallen, 2004

Building Rural Roads, Johannessen, ILO 2008

National technical manuals and specifications
IMPLEMENTATION THROUGH PARTNERSHIPS AND CONTRACTING
5.1 Objectives of this Section

This section looks at ways of implementing the priority projects identified by the community and designed together with them. It also explains different forms of contracting and arrangements which best benefit the community and assist in successfully completing the chosen project. This section also highlights the use of labour-based methods and the resulting work organisation and employment creation.

5.2 Contracting

Contracts form the legal agreement between two or more parties for the procurement of goods or services. In the field of civil works, the contract relates to the construction of some facility. The size, complexity and cost of such facilities vary widely. All contracts need to be legally valid and need to cover certain fundamental requirements to effectively serve their purpose. With care, they can be written to cover the basic essentials in appropriate detail to the size and complexity of the works to be undertaken. Contract agreements can also be used to facilitate a fair distribution of the risks in a construction project.

Contract Documents

Contract documents are either prepared by the client’s representative or a private consultant engaged for this specific purpose. If the client is a technical agency such as the engineers department of the city council, the preparatory work is often carried out by in-house technical personnel. In other cases,
the supervising engineer is a private consultant appointed before the works commence and who may also be engaged to prepare the contract documents. Alternatively, a design engineer is engaged to carry out this work as the final task of his/her assignment. Normally, the contract documents comprise of:

![Bidding Documents](image)

Most of the documents are the same for both the bidding and construction stages of the project - the main difference is that the invitation and the instructions to bidders are not part of the contract agreement.

Contracts essentially describe the type and amount of works to be provided and the price agreed for such services. In addition the parties agree to a set of general conditions under which the contract is executed. In order to meet some basic requirements, the conditions of contract should contain information relating to:

- definitions and responsibilities of those involved in the contract,
- general obligations of the parties to the contract,
- undertaking of works (start, completion, work standards and methods, defects),
- payment procedures (by whom, when, what basis, retention),
- liabilities and insurances (responsibilities of each party),
- settlement of disputes.

Various standard conditions of contract have been developed by different organisations. In addition to the standards applied by various governments, the most common ones which are relevant to small-scale contracting are:

- Conditions of Contract for Construction for Building and Engineering
Most parties in the construction sector prefer to use standardised general conditions. Similar to standard work specifications, well established conditions of contract have the advantage of being familiar to all parties and the wording is clearly understood. By using standard documents time is saved during preparation instead of redrafting the conditions for each project. Furthermore, these standardised conditions have often been tested in court so that the legal interpretation is known.

When applying standard conditions of contract, there is normally no need to make any changes from one works contract to another. These documents only contain general clauses, which relate to all works contracts. Any details relating to a specific contract are referred to and contained in the Contract Data or Appendix to Conditions of Contract¹.

**Special Conditions of Contract**

Some projects do however have specific concerns that need to be mentioned in the contract. Instead of changing or adding to the contents of the general conditions, the normal practice is to place additional clauses in a separate document referred to as the special conditions of contract.

When applying labour-based works technology, this imposes certain contractual constraints which need to be clarified. The proper place for this is in the Special Conditions of Contract. The issues that need to be covered are:

- the application of labour-based techniques for the implementation of works,
- the importance of a detailed work programme showing the mix and balance of labour and equipment, subject to approval by the engineer before commencement of works,
- the authority of the engineer to limit the contractor's use of plant and equipment on site during the construction,
- the need for the contractor to keep comprehensive and accurate employment records,
- the system for the recruitment of workers to be on a local basis (e.g. from the urban settlement)

¹ Source: Contracting Local Infrastructure Works, Johannessen, ILO, 2008
• the access of the engineer to inspect labour records and payment sheets,
• the power of the client in the event of a default by the contractor in paying the workers' wages,
• the power of the client to deduct directly from the monies owed to the contractor any agreed repayment instalments for materials and tools provided to the contractor under the contract,
• the conditions covering the use of sub-contractors.

Choice of Contracting Arrangement
The advantage of a contractual agreement is that each party to the agreement knows exactly what is expected of them and what they in turn can expect from the other signatories. For infrastructure development works in low-income settlements, various methods of contracting are possible. In particular, the community must consider with its partners what type of contract arrangement is best for a particular construction project. Options include engaging the community as the contractor, mobilising groups within the community as contractor or using the conventional approach of hiring the services of small or large construction companies.

In the case studies presented in Section 2, the community in Battambang agreed to use local small-scale contractors with relevant construction experience. In all of the projects in Iloilo City, the community operated as the contractors.

The possible parties to a community-based contract for urban infrastructure works are:
### Contracting Options

The following is a listing of various contract arrangements that can be adopted for urban infrastructure works in low-income settlements. The list includes a description of when different contract types are used and the advantages they offer as well as the disadvantages. The list also includes contracts for purchasing tools and equipment, and for employing technical assistance.

<table>
<thead>
<tr>
<th>Actors</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office bearers of the community-based organisation (CBO)</td>
<td>The beneficiaries, community, represented by the CBO.</td>
</tr>
<tr>
<td>The contractor</td>
<td>The community through the CBO or a group from within the community experienced artisans, small and large contractors.</td>
</tr>
<tr>
<td>The contracting authority</td>
<td>Municipal authority, funding agency, private company, or community with their own funds.</td>
</tr>
<tr>
<td>The technical support providers</td>
<td>Municipal engineers and planners funding agency project team, private sector, federation or NGO.</td>
</tr>
<tr>
<td>The funding body</td>
<td>Government programme, municipal authority, funding agency,</td>
</tr>
</tbody>
</table>

### i. No contract - Use of Force Account

An agency or government department organises the construction work including tools, materials, equipment and supervision. The community provide labour only which is managed and paid for by the agency. No contract is signed between the parties.

<table>
<thead>
<tr>
<th>When to Use</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Useful for quick implementation of projects (i.e. post-crisis); Where government departments have considerable force-account experience.</td>
<td>Quick delivery if well organised.</td>
<td>Little or no responsibility or ownership within the community. They are participating in a government project although it is in their own community area.</td>
</tr>
</tbody>
</table>

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2: The contracting authority is defined as the agency that issues the contracts. As such it can be the city council, municipal authority, a line ministry, an NGO, a project technical team or a combination of these. Communities can also be identified as the contracting authority, especially when they are in control of the funds and are managing the process.

ii. Labour-only Community Contract
The community is responsible for the provision and organisation of the paid labour input. The contracting authority such as a municipality, agency or NGO is responsible for the timely provision of materials and equipment in sufficient quantity and quality.

<table>
<thead>
<tr>
<th>When to Use</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where the community organisation is weak, where the community has few members with experience from the construction industry, or where considerable technical expertise and skills are needed, which the community cannot provide.</td>
<td>Relatively simple for the community to organise.</td>
<td>Management of funds, materials and technical direction have to be provided by one of the other partners, and the experience will not remain within the community.</td>
</tr>
</tbody>
</table>

iii. Labour and Material Community Contract
The community is responsible for both the paid labour and material input for a certain construction activity.

<table>
<thead>
<tr>
<th>When to Use</th>
<th>Advantages</th>
<th>Disadvantages</th>
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</thead>
<tbody>
<tr>
<td>When the community is sufficiently well organised to efficiently manage the purchase of goods and materials, but may lack certain skills or equipment necessary for carrying out the full contract.</td>
<td>Fewer tasks for the municipal authority and other partners. Communities gain more experience in organisation and management. Tendency to use local suppliers, which boosts the economy in the area.</td>
<td>Materials have to be carefully checked for adequate quality. Technical assistance is needed for all other elements of the construction works from the municipal authority, private sector or NGO.</td>
</tr>
</tbody>
</table>

iv. Full Community Contract
Under a full contract the community is responsible for providing paid labour, materials, equipment and the overall management of the construction project including any sub-contracting.

<table>
<thead>
<tr>
<th>When to Use</th>
<th>Advantages</th>
<th>Disadvantages</th>
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</thead>
<tbody>
<tr>
<td>When the community is internally well organised and capable (with support if necessary) of managing the contract. The works should be labour-based and relatively simple to construct.</td>
<td>All responsibility for management and execution of the works passes on to the community. This limits the burden on the municipal authority – unless they offer to take on the role of technical advisors.</td>
<td>Can only be done by the community if they have technical assistance (private sector, municipal authority, NGO). Communities do not always appreciate the need for and cost of technical assistance.</td>
</tr>
</tbody>
</table>

v. Contract with a Small-scale Enterprise from within the Community
A person or a small enterprise with the required skills is hired to carry out a certain activity as part, or all the works. (i.e. skilled work such as masonry, carpentry, tiling, electric wiring, etc).
vi. Contract with Community Groups

This is similar to a petty contract, where a group (women, youth, veterans, etc.) take on a specific task. This is particularly useful for maintenance works and waste management. It can be designed as a contract covering certain activities over a set period of time (e.g. a one-year contract for drainage clearing).

<table>
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<tr>
<th>When to Use</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>To bring in specific skills for specific tasks. A contract can be issued either by the community as a sub-contract or by the contracting authority</td>
<td>If the artisan is from within the community a very simple sub-contract document will suffice.</td>
<td>There may be little competition if very few skilled artisans are in the community. There will be a need for careful negotiation if “single sourcing” a petty contractor.</td>
</tr>
</tbody>
</table>

vii. Contract with a Small-scale Enterprise External to the Community

An enterprise from the local area is hired to carry out construction work, which requires special skills or equipment (i.e. borehole drilling, piling works, etc.).

<table>
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<tr>
<th>When to Use</th>
<th>Advantages</th>
<th>Disadvantages</th>
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</thead>
<tbody>
<tr>
<td>This type of contract can be used to target specific groups within the community such as youth. The contract provides work and income for the group.</td>
<td>The group is from within the community and the community’s representatives monitor its work. Longer-term employment stays within the community.</td>
<td>Need for a very transparent selection process to avoid favouritism. Requires assistance from outside for support.</td>
</tr>
<tr>
<td>When the skills needed are not available in the community or where specialised equipment is required.</td>
<td>Can be stipulated in the contract that at least the unskilled labour is from the community. Should there be specialised maintenance needs, the contractor is still in the area.</td>
<td>May not carry out the works to the satisfaction of the community. Requires sound and professional supervision from skilled technical staff.</td>
</tr>
</tbody>
</table>

viii. Contract with a Large-scale Contractor

Appropriate for the completion of major works or linkages into the main municipal services (i.e. large diameter sewage pipes connecting to the main city sewer system).

<table>
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<tr>
<th>When to Use</th>
<th>Advantages</th>
<th>Disadvantages</th>
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</thead>
<tbody>
<tr>
<td>When the community have prioritised a project which requires considerable technical expertise or specialised equipment, or the project addresses the needs of a much larger area and therefore is too large for a single community to tackle.</td>
<td>The experienced contractor can easily mobilise the necessary skills, equipment and materials.</td>
<td>Less social pressure to perform well. As the contractor does not belong to the community (or even the local area), there could be more problems associated with working in confined spaces and inconveniencing individual house owners. Not locally available for urgent maintenance or problem solving.</td>
</tr>
</tbody>
</table>
ix. Procurement Contract

This contract is purely for the supply of materials or goods to be delivered within a certain time period and of a certain quality (e.g. supplies of cement, sand, bricks, pipes, etc.).

<table>
<thead>
<tr>
<th>When to Use</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>This type of contract is used to target specific producer groups that may or may not be within the community.</td>
<td>Boosts local employment in material production.</td>
<td>Need for careful control of the quality of materials or goods being supplied.</td>
</tr>
</tbody>
</table>

x. Technical Support or Training Contract

Depending on the capacities of the partners to a contract – particularly when the community operate as contractors, it may be necessary to hire additional technical assistance through an institution or the private sector. This type of contract can also be used for the planning and design works. A similar contract can be used for classroom and on-the-job training.

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<tr>
<th>When to Use</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the community carrying out the contract needs assistance in setting out, work organisation and supervision, then either this can be supplied through the local authority or this assistance must be brought in from the private sector or support institution. Where skills development can provide longer-term employment for the community members (i.e. at the start of a housing programme). Small-scale contractors may also need training and technical support – not just communities.</td>
<td>The tasks, level of inputs and outputs can be clearly defined and agreed by all. Avoids the problem of ‘volunteer’ assistance from the municipality, NGOs or agencies not performing due to other commitments and thus delaying the progress of the project.</td>
<td>Can be an expensive option for providing technical support.</td>
</tr>
</tbody>
</table>

In relation to selecting the appropriate contracting arrangement, decisions need to be made concerning who will be the contract partners:

- Who will supervise the works?
- Who will select the labour force?
- Who will own tools and equipment?
- Who will inspect and approve the works for payment?

The answer is dependent again on which parties to the contract there are, their capacities and the nature of the works. Contracts for household level facilities may involve households as direct parties to the contract (i.e. water, electricity, etc.).
5.3 Small-scale Contractors

There are several issues of vital importance to the survival of the small-scale contractor. A key concern for any contractor is related to maintaining a healthy cash flow, both in terms of continuity of work opportunities and timeliness of administration and payments. The following list provides a guide to important factors for small construction enterprises:

- Timely inspection of work
- Preparation of certificates of work for payment
- Timely payment
- Assistance for managing cash flow
- Appropriate contract size
- Continuity of work
- Diversity of work

Many of these issues need to be addressed by the contractor, but many are dependent on the administration of the contract and therefore on the administration of the contracts and programmes of work by the local authority or development agency.\(^4\)

5.4 Community Contracting

Community contracting is a term used to describe the direct involvement of the community in their own infrastructure improvement works. The extent of the community's responsibilities varies depending on the situation and the contracting model used, as demonstrated above. The aim is not only to assist the community in accessing improved services and infrastructure, but to promote capacity building in the community and to provide experience in negotiation with government and non-government partners, and in the responsibilities of organising and contracting.

Unlike conventional contracting, in a community contract, the contractor is either the whole community or a group within the community or a small enterprise from within the community. Therefore the contractor is at the same time a beneficiary of the created assets. Representatives of the community may act as representatives of the beneficiaries and also as the contractor. As this overlapping of roles and responsibilities may lead to conflicts of interests, a community contract is a very important instrument to define the relationship

\(^4\): Adapted from: Employment Intensive Infrastructure Programmes: Capacity Building for Contracting in the Construction Sector, Bentall, Beusch and de Veen, ILO, 1999
between the different actors involved in urban upgrading works, and to clarify their respective roles, rights and obligations.

There are several options as to how community contracts should be set up. The answer will usually be found in consideration of the capacity of the community, the levels of support available to the community, the alternative sources of service provision, the technical complexity of the infrastructure to be provided, and the responsibility of the municipal authority.

In utilising community contracting, funds can be channelled through a support agency, or funds can be transferred directly to the community. The funding mechanism often influences the roles and responsibilities of each contract partner. Community contracts can also be used where an infrastructure facility has been designed by an agency, and that agency chooses to award the construction contract to the community rather than a private contractor. This is particularly applicable to small-scale infrastructure and maintenance works.

In order to keep contracts to a manageable size and to ensure the satisfactory completion of works, it is often decided to split the works into small sized packages and to issue separate contracts for each of these packages. In such a case, the initial agreement with the community can take the form of a Memorandum of Understanding (MoU), establishing the partnerships and roles for the whole programme of improvements. An example of an MoU is provided in Annex 5.1.

**Appropriate Contract Components**

The contract document contents introduced above are for engaging small-scale contractors in the execution of infrastructure works. However a simpler form can be adopted for community contracting through negotiation and a clear understanding of the partnership, roles and responsibilities of each partner. Although different contracts all require their own specific contract documents, there are some considerations which are all the more valid for community contracts. In all cases community contracts should:

- be well discussed between the contract partners with a full agreement on the final outputs;
- be simple and transparent;
• have a very specific and measurable description of the final output;
• have clearly defined incentives and sanctions;
• have clearly defined responsibilities for quality control and approval of the completed work;
• have a reasonable time frame to allow for training, community mobilisation and participation.

An example of a community contract is provided in Annex 5.2-1. The following paragraphs consider some of the specific issues of importance in a community contract.

i. Single Sourcing
In most contracting processes, a contract is prepared and put out to tender through competitive bidding. In the case of a community contract – the contractor has been pre-determined. Instead of preparing a contract for tendering, the contract rates need to be established as part of a negotiation between the community, contractor (if a group within the community or artisan) and the contracting authority. For many organisations and government departments, there needs to be a special dispensation for this type of negotiation. In the case of a citywide or a nationwide programme this dispensation can be sought at the start of the programme.
ii. Schedule of Rates
The quantities of work to be carried out under a contract are measured and prepared as part of the design phase. The community is then in a position to know exactly what work is required for each task. A schedule of rates can be prepared to cost out the work for each activity, including profit. A negotiated and agreed schedule of rates means that any contract can then be priced based on the quantities and the agreed rates for the specific activity. It also means that any additional work can be fairly priced based on the existing rates. It is important that if schedules of rates are prepared that they are regularly up-dated to keep pace with any changes in costs of materials, equipment or labour.

iii. Advance Payments
Communities do not have start-up capital. It is therefore important that a sufficient advance payment is made on signing of the contract. This allows for the purchase of tools and materials. It is also important that progress is regularly monitored and interim certificates of payment prepared and paid in a timely manner. The contract sums will be relatively small, and continued payments are dependent on satisfactory progress, therefore there is little risk in providing an advance payment.

Note: There is often a similar need for advance payments for small-scale contractors.

iv. Profit Margin
The aim of every commercial contractor is to make a profit. Therefore the pricing of the bill of quantities by a contractor in a tendering process has a profit margin built in. By providing a modest profit on community contracts, this allows the community a small cushion of funds should the works run over-budget and can be used either to continue with other activities they have planned or be used as seed money for maintenance activities, if these are not the responsibility of the municipal authority.

Community Contributions
Part of the aim of supporting the community to implement the works is to provide paid employment and to bring cash into the local economy. It is also anticipated that the communities capacity will be increased and skills retained in the community. Depending on the funding arrangements or the way in which an improvement programme is formulated, there may be a stipulation that the community should provide a contribution. The size and nature of any community contribution should be in harmony with the resources and existing commitments of the community. Any contribution must be clearly set out in the MoU and in each of the contracts entered into under the MoU.
If a community contribution is specifically requested by one of the partners, this should be carefully organised so that each member of the community contributes, and in the case of the poorest of the poor, to the extent that they are able. In the case of better-off members of the community who are busy with their own work or businesses, contributions in cash or kind must be gathered to ensure that it is not just the poor and unemployed who contribute. If well organised, cash contributions from wealthy members of the community can be used to pay for the work of others from the community.

**Special Considerations for Solid Waste Management**

In terms of access and equipment, small local service providers are often better placed to deliver services within low-income settlements. In high-density, low-income areas, lack of basic infrastructure prevents large trucks from entering, while community waste collection groups can use intermediate transport vehicles like handcarts and motorbike carts.

Small providers vary greatly in terms of capital and labour intensity, legal status and purpose. They often provide entry points in the labour market for unskilled women and youth. Local service providers often operate informally, and not as part of a city-wide system. Lack of a formal system can result in problems of coordination, for example with primary waste collection and secondary transport and disposal activities, and with respect to monitoring service levels and job quality. However, formalisation may result in added burdens to local service providers, including increased costs from license fees and higher service requirements, and even displacement of informal providers by formal. It is therefore important that the system of formalization is pro-poor.

A franchise system under fee levels can be developed to protect both the franchisees (to cover operating costs and make a profit) and the customers (to have access to affordable service delivery).

The fees need to be determined based on research and discussions with franchisees and local community leaders. Different areas have different fees based on income and service level.5

5: Source: Growing out of Poverty, SEED Working Paper no. 47, Kuiper and van der Ree, ILO, 2005
5.5 Capacity Building

The most effective capacity building for contracting works is when capacity building is carried out together or in parallel for the contract authority and the contractors. This ensures that each partner to the contract understands the process and the aspects which are important to each partner in the contract preparation and implementation.

Capacity Building for Small-scale Contractors

Even where small-scale contractors have sufficient construction skills to take on a contract, often what is missing is experience in managing their businesses and in managing contracts. It is not sufficient for the running of a small construction enterprise that the contractor can just manage the individual contracts. Knowledge of how to run a construction business is also essential, and to this end, several training courses have been developed tailored to the
specific needs of the contractors including both country specific and generic literature such as the ILO’s Start and Improve Your Construction Business (SIYCB).

**Capacity Building for Communities**

A participatory process is often a learning process by itself. Community participation in all aspects of the works leads to improved capacities, in the field of organisational and technical skills, and also in terms of bargaining skills.

However, there are limitations to the organisational and technical capabilities of community-based organisations. Their capacities should not be over-estimated or over-stretched to avoid disappointments with both the community and local authorities. Therefore, technical support needs to be well thought through, leaving room for initiatives while strengthening communities in the fields of management and organisational skills, information sharing within the wider community, etc. Capacity for implementation in particular, can be addressed through the use of small contractors from the local area, rather than a construction committee from the community.

In the case of community-managed works using labour-based methods, communities should understand the basics of contractual relations. In general, urban poor have little or no experience in setting up and working according to written agreements. The entire concept of contracts needs to be well explained and discussed before an agreement is signed.

It is important that the community-based organisations recognise their own limitations and know where to get assistance. In most countries NGOs and federations play a prominent role in the strengthening of organisational capacities at community level; however they may or may not have the capacity to assist the communities in dealing with labour-based construction, hiring technical consultants or working with different technical departments within local government.

Training of communities may be required in the following fields:

- Training in the construction of the planned infrastructure improvements;
- Training in monitoring of contractors and their progress;
- Training for operation and maintenance of the created asset;
- Training of committees in organisational and bargaining skills, management and bookkeeping.
A community organisation should be able to set objectives, prepare community action plans, run meetings, do bookkeeping, and prepare budgets and contracts. Where support and training are needed for these tasks, conventional classroom training should be avoided and the training should focus on "on the job training", workshops and exchange visits to settlements already working with contracts.

For the implementation of labour-based works it is important that the works are well organised, especially the labour force. Each group of workers needs a foreman (gang leader) to supervise the work. These foremen need to be trained in labour-based methods and should have an understanding of the basic technical issues. In community contracting this supervision task is particularly important as the workforce often consists of community members with no prior experience in construction works. If a balloting system is used, the workforce will rotate regularly to employ the largest number of individuals during the construction works. The foremen can receive on the job training from the responsible site engineer or senior technician, but their participation in a training programme on labour-based construction could considerably facilitate the learning process.

Although permanent employment for the majority of the participants, as a result of the project, will be difficult to achieve, training can improve skills and therefore increase employment opportunities. There is evidence to suggest that a certain proportion will gain enough skills to begin or expand small enterprises, and that individuals will gain employment beyond the community works. Complementing an upgrading programme with a skills training element improves these opportunities for community members.

Consultants (NGOs or private sector) can be contracted to provide the necessary training to the community on site, in the various issues discussed above.⁶

**Capacity Building for Government and Local Authorities**

There may be the need to re-orientate municipal council staff towards the creation of an enabling environment through training in appropriate technologies and their application, suitable planning standards, preparation of

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⁶: Adapted from Community Contracts in Urban Infrastructure Works – Practical Lessons from Experiences, Tourneé and van Esch, ILO, 2001
standard approved plans, community participation, providing assistance in the development of community action plans, and financial management suitable for community contracts.

Although the community may hire design and planning services from the private sector, the municipal authorities require guiding standards against which proposals can be judged. Reorientation of municipal authority staff is vital to the institutionalisation of contracting with communities.

In a community contract situation, local government officials have to deal directly with communities. This requires simple and appropriate contracts. Construction works have to be quantified, priced and grouped into single activities. Labour-based methods have to be developed to make the work cost effective, to ensure a high quality and to create an efficient work organisation. Labour-based works, especially in unplanned settlements, require detailed planning, design, supervision and monitoring skills.

Due to the fact that community participation and appropriate technology have mostly been applied in construction works in rural areas, training has also been targeted very much at staff responsible for rural works. City council staff normally did not attend these courses.

Urban training materials for community contracting have been developed for other regions but could be adapted to suit the Asia-Pacific region or specific countries and municipalities within the region.
5.6 Monitoring Contracts

Monitoring for the timeliness of completion, quality, quantity and costs involves site inspections, progress reports, investigations of complaints, as well as technical and financial audits. Where the community is the contractor, they may be inexperienced in implementing infrastructure works, and therefore a strong emphasis should be put on the proper monitoring of the process. Monitoring is not only important for the contracting authority, but also for community beneficiaries to be regularly informed on the progress and problems encountered. Lack of information can hamper community participation. Dissemination of information on the progress of a collective action will help to ensure transparency and strengthen community involvement.

Monitoring also provides an opportunity to document lessons learned and to profit from contracting experiences in the urban setting.\(^7\)

5.7 Examples of Suitable Work

Below are examples of the types of work suitable for implementation through contracts with small-scale contractors and community contractors.

- Provision and improvement of access for motorised and non-motorised transport such as access roads, improved footpaths and cycle/handcart paths, small bridges, concrete block or stone paving, gravelling.
- Storm water drainage: lined open drainage channels, culvert crossings and small bridges.
- Community water facilities: water distribution schemes, water storage tanks, water kiosks, wells, public washing facilities.
- Community sanitation facilities: public toilets, appropriate sewerage schemes, emptying pit latrines, sedimentation ponds.
- Buildings: classrooms, pre-school buildings, multi-purpose community halls (all buildings should be single storey or maximum 2 stories), health centres, markets.
- Environmental protection and improvement: erosion protection, fencing of public areas, improvement of market areas, forestry, orchards, recreation areas.
- Solid waste management: cleaning of public areas, household garbage collection, separation and recycling and composting of solid waste

\(^7\): Ibid.
5.8 Applying Labour-based Work Methods

What are the special conditions to be taken into consideration when planning and developing community infrastructure in low-income urban settlement areas, using labour-based work methods?

- Physical obstacles in the urban setting: not unsurprisingly, in the urban setting there are very many service connections (both legal and illegal). These services either exist or will hopefully be brought into the area. It is therefore important when planning improvements that the disconnection and reconnection of services such as water supplies are planned for, and additional provision for future connections. The use of labour-based methods allows for the careful excavation in areas with services that may or may not be shown on the location plans.
- Restricted space in unplanned settlements: due to the building density, it is often impracticable to use anything other than labour-based work methods, as the space for large machines is simply not there.
- Health and safety: the need to protect workers and proper safety clothing for jobs such as rubbish clearing, proper shoring of excavations, and other safety measures are important, especially in areas where contamination through rubbish or sewage is suspected.

Work Organisation

Independent of the infrastructure being created, many of the steps in the construction process are similar. It is immaterial if excavation is carried out for a water pipe, sewage system, drainage or foundations. The principles of organisation remain the same.

Work programming is the method of arranging and distributing the construction works between the gangs of workers in such a way that the best use is made of the available labour, material, tools and equipment. This includes planning the works, taking the following items into account:

- in which order work operations and activities should follow, the construction sequence,
- the numbers of workers in each group, i.e. gang size and balancing,
- how to motivate the labour, using incentives, such as task work, and
- how instructions are given and received in an efficient manner, avoiding misunderstandings and incorrectly executed works.
**Typical Construction**

A construction project can be broken down in a sequence of activities. A road project for example consists of:

- setting out
- site clearing – removal of obstacles and rubbish
- detailed setting out
- excavation
- drain lining
- backfilling (if needed)
- watering and compacting
- surfacing works

**Site Supervisory Staff**

Trained supervisors, responsible for a site, are usually capable of effectively controlling a labour force of 100 to 150 workers. Gangs, formed for the different operations, normally range from 10 to 25 workers, depending on the nature and volume of works to be carried out. Among the workers in each gang, one person is appointed their leader, the gang leader. This person receives the work instructions from the site supervisor and hands them on to the workers in his/her gang. Since each gang will become more and more skilled the longer they do the same type of job, it is good practice to let the gangs work on the same operation throughout the period they are employed. In this way, a maximum benefit can be derived from the acquired skills (e.g. a pipe laying gang).

**Daily Work Planning**

A supervisor must always plan ahead by at least one day. After the workers have completed their daily work, the supervisor records the outputs achieved on each of the activities. Based on the production achieved and the overall plan for the project, a work schedule is prepared for the following day. This plan sets the daily production targets for each of the planned activities. To prepare proper work plans, the supervisor needs to know what has happened on the site during the day. Without information such as what resources were needed to produce a given output, why certain targets were not met, etc., proper planning is impossible. To get the right information on time, a well functioning reporting system is required.

**Gang Balancing**

Balancing of gang sizes, i.e. ensuring that the labour and equipment are used in the most efficient way, and that each of the operations on average proceeds at the same pace, is the responsibility of the site supervisor. Good gang balancing is important because it determines whether one group of workers are going to be held up because the previous activity has not been completed.
For example, if the trenches are not being dug fast enough, then the pipe-layers cannot lay the pipes and will stand idle while waiting for the excavation gang to complete their work.

Finally, workers should not be given too monotonous and strenuous tasks. Experience has shown that certain tasks such as hand ramming for compaction of trenches are difficult for a worker to carry out the entire day. This can be avoided by combining different tasks - for example combining hand ramming of backfill with the pipe-laying works.⁸

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**Work Payment Methods**

Payment of works can be organised in various forms, depending on the nature of work and type of funding. It is necessary to investigate which incentives can be used and which systems are the most effective. Also, the workers have to understand and support the system which is introduced. The workers must regard the system and the applied rates as fair and reasonable.

**Daily Paid Work**

Daily paid workers are paid a fixed sum for each day in return for a fixed number of working hours regardless of his/her work outputs. This system is often used when starting up a new project before the targets for an incentive scheme has been established. It is also used for most site support activities, such as store keeping, the watchman and providing drinking water.

**Task Work**

Task work is the most commonly used incentive scheme on labour-based projects. Task work implies that the labourer is given a clearly defined amount of work to be completed in one day, where after he is free to go. This incentive is popular among the workers, because it enables them to leave earlier thereby allowing them to tend to other obligations at home during the rest of the day.

**Group Tasks**

In this system a group of workers are given a certain task, which may take several days to complete. The incentive here is that if the group so decides they can work harder and finish in a shorter time but still with the agreed amount of money to take home.
**Piece Work**

On piece work each individual worker is paid per unit of output. The "pieces" are normally equivalent to one to three times the output expected on daily paid work. Activities such as production of setting out pegs, collection of stone, sharpening tools, building of masonry or skilled items of work, are best organised as piece work. Piecework can also be set to most activities where task work can be used. However, piecework is more difficult to organise and more complicated to monitor.

**Payment in Kind**

In areas where food supply is limited, payment in kind may act as an effective incentive. However, there are certain international standards that must be observed when using food as payment for work. Unless the Government declares an emergency situation in the area, the food payment should be combined with at least 50% of the wage paid in cash.

**Task Rates**

To be effective and fair, the tasks must be estimated correctly and set out properly. The supervisor therefore needs to know in detail how to set out task work and which task rates to use for the various activities in different circumstances (hard or loose soil, wet or dry soils, rubbish clearing, etc.).

Task rates or piece rates can be set on most activities. In general, it is better to set a poor task rather than organising the workers on daily paid work.

The following activities should always be organised as task work:

- rubbish removal, grass and topsoil removal (grubbing),
- excavations,
- spreading and shaping of soil,
- gravelling,
- pipe and culvert laying.

For skilled activities such as building walls, stone or slab paving or concreting work either task rates can be set or payment can be based on piece rates (i.e. the work is paid per m_ or m_ completed).

It is the responsibility of the site supervisor to calculate and set the tasks and pieces. For this, it is necessary to establish (i) the quantity of works (area, volume or numbers) and (ii) the difficulty of the work (loose or hard soil, etc.). The correct amount of work one worker has to complete in one day, is established through detailed monitoring of productivity under various
conditions. For this, the daily and weekly reporting system provides good support for the supervisor. When a new site is established, it may initially be necessary to organise some of the work on a daily paid basis. Based on the productivities during the first couple of weeks, it is possible to establish and refine the task rates on the work site. A correctly set task should allow the average worker to finish their day’s work in approximately 75% of the normal working hours.

The following list provides some ranges for task rates, which can be used as a starting point, before specific project rates have been established.

<table>
<thead>
<tr>
<th>Task Rates</th>
<th>Rate</th>
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<tbody>
<tr>
<td>Clearing and removal of rubbish</td>
<td>50 - 150 m²/wd</td>
</tr>
<tr>
<td>Drain/ ditch / trench / foundation Excavation</td>
<td>1.5 - 3.0 m³/wd</td>
</tr>
<tr>
<td>Levelling of soil</td>
<td>1.5 - 3.0 m³/wd</td>
</tr>
<tr>
<td>Camber Formation</td>
<td>75 m²/wd</td>
</tr>
<tr>
<td>Earth Excavation and up to 20m transport</td>
<td>1.5 - 2.5 m³/wd</td>
</tr>
<tr>
<td>Turfing</td>
<td>10 - 20 m²/wd</td>
</tr>
<tr>
<td>Hand Compaction</td>
<td>100 m²/wd</td>
</tr>
<tr>
<td>Gravelling (spreading and levelling)</td>
<td>5 - 10 m²/wd</td>
</tr>
<tr>
<td>Stone masonry (mortar mixing and preparation of stones is not included)</td>
<td>2-2.5 m³/wd</td>
</tr>
<tr>
<td>Road Stone Paving (includes all preparation phases)</td>
<td>0.4-0.8 m²/wd</td>
</tr>
</tbody>
</table>

It is the responsibility of the site supervisor that the workers receive their tasks in the morning immediately when they arrive, and that the amount of work is fair and just. The size of the task must therefore be carefully monitored to ensure that the work allocated to each worker is neither too little, nor too much. Above are some average task rates, however, these should only be used in an initial phase, before more appropriate quantities have been determined through site trials. Once agreed, the workers should stay on site until their task is completed and inspected as satisfactory by the supervisor.

To check progress in relation to the budget and materials used, proper site records must be kept. Workers attendance must be recorded to ensure a transparent and correct payment process. The amount of work generated and the amount paid in terms of wages is an important factor in determining the contribution the construction of the infrastructure is making in terms of immediate employment opportunities.\(^9\)

\(^9\): Source: Range of ILO/EIIP manuals and literature
5.9 Labour Standards and Working Conditions

There are a number of basic labour standards that should be respected in all cases, whether the works are executed directly by government, by private contractors or through community contracts.

These comprise minimum wage, minimum age (prohibition of child labour), non-discrimination (of women, religious or ethnic groups etc.), prohibition of forced labour, workers’ compensation for work accidents, safety and health, and conditions of work for casual labour.

A basic requirement is that all sites have available a first aid kit and clean drinking water for the workers.

In standard contracts, the contractor is expected to take out insurance against any accidents, damage or loss resulting from the contractor’s performance. The contractor is also expected to carry insurance against any accident or injury for all workers employed by the contractor.

Although in community contracts the community may feel a collective responsibility to anyone who is accidentally injured, by paying hospital or clinic bills, there is often no formal arrangement for paying for medical bills or for compensating lost wages.

Likewise, there is often no formal arrangement for insuring against damage to property during construction or afterwards. This lack of insurance and reliance on technical guidance from support agencies or local authority staff could lead to serious problems if a claim against the community (as contractor) or an individual engineer was to emerge.

Therefore, whether the works are executed by private contractors or through community contracts, the contract should include clauses related to insurance and basic safety and health on the worksite (medical kit, protective clothing etc.), and the costs of these clauses should be covered by the contract.

It may be noted also that the community contract approach directly promotes the application of the basic human right to organise and to negotiate among low-income groups in the informal and unorganised sectors of society.

Labour Policies in "Self-help"

In making a distinction between wage-labour projects and those "self-help" projects that do not involve an employment relationship, the main points to
be considered are outlined below. As a starting point, it should be understood that calling a project "self-help" does not automatically mean that workers in the project are outside of an employment relationship. Consideration must be given to:

- the distinction between persons working for their own immediate benefit and persons working for the benefit of third parties. This is important mainly in connection with work relating to land, such as schemes for soil conservation or improvement, irrigation and afforestation. When such work has been undertaken by the owners or users of the land (whether held under individual or communal tenure) then a self-help approach is one option open to the beneficiaries;
- the distinction, in local communal works, between the members of the community which is to benefit from those works and persons not belonging to that community;
- the distinction between local works in the direct interest of the community concerned and works of general public interest. Questions relating to this distinction have most frequently arisen in connection with projects involving roads and buildings such as hospitals and secondary schools not within the immediate community. Where relatively short stretches of link roads or internal settlement roads are concerned, intended to meet the specific needs of the local community, their execution on a communal basis using self-help does not give rise to any objection. The situation is different where more important components of the national road network, and particularly main roads, or public buildings are involved. Even if the communities providing labour are likely to derive some benefit from such projects, the specific local interest is outweighed by the benefit accruing to the wider community, and provision should accordingly be made for payment of a cash wage.\(^{10}\)

5.10 End Notes

The opportunity to create employment during the provision of appropriate and technically designed urban infrastructure will be realized through proper organisation and implementation. Partnering of communities in the improvement of the infrastructure in their area will vary according to the partners available, the nature of the improvements and the relationship with local government, federations, NGOs, and the private sector. The most appropriate contract arrangement depends on the contracting and management experience available within the local construction industry, the beneficiary community, and their partners. The need for training and capacity building cannot be ignored if such urban improvement works are to be carried out on a wide scale.

Further Reading

This section has dealt with contracting and work implementation. There are several sources of material on both subjects and a selection is provided below. Unless otherwise referenced, the ILO documents can be accessed on the ILO/EIIP website.


Tourné and van Esch, Community Contracts in Urban Infrastructure Works – Practical Lessons from Experience, [www.ilo.org/eiip](http://www.ilo.org/eiip)


Contracting Local Infrastructure Works, Johannessen, ILO ASIST-AP 2008, [www.ilo.org/eiip](http://www.ilo.org/eiip)

Site Supervisors Course (Basic Course, Handbook and Skills Course) for Labour-based and Community Managed Upgrading of Urban Low-Income Settlements, Beusch and Winsvold, ILO, 2002, [www.ilo.org/eiip](http://www.ilo.org/eiip)

Training Modules on Labour-based Road Construction and Maintenance, Video CDs, ILO, 2001

