International
Labour
Organization

COMMUNITY INFRASTRUCTURE IN URBAN AREAS

CREATING JOBS WHILE IMPROVING LOW-INCOME SETTLEMENTS

Regional Office for Asia and the Pacific

TABLE OF CONTENTS

ABBREVIATIONS

ACHR	Asian Coalition for Housing Rights
ADB	Asian aDevelopment Bank
BDC	Barangay Development Council
CBO	Community Based Organisation
CBR	Community Based Rehabilitation
CDA	Cooperative Development Authority
CDA	Community Development Association
CDP	Centre for Disaster Preparedness
CENRO	City Environment and Natural Resources Office
CEO	City Engineers Office
CFW	Cash-for-Work
CHO	City Housing Office
CLIFF	Community Led Infrastructure Finance Facility
CPDO	City Planning and Development Office
DMC	Developing Member Country
DPUCSP	Development of Poor Urban Communities Sector Project
DSWD	Department of Social Welfare and Development
EIIP	Employment Intensive Investment Programme
EPA	Environmental Preservation Area
FAQs	Frequently asked questions
FDUP	Foundation for the Development of the Urban Poor
FIDIC	International Federation of Consulting Engineers
HDFP	Homes Direct Financing Program
HOA	Home Owners Association
HPFP	Homeless People's Federation of the Philippines
HPFP-NCR	Homeless People's Federation of the Philippines-National
ICPCO	Iloilo City Population Commission Office
ICUPFI	Iloilo City Urban Poor Federation Inc.
ICUPN	Iloilo City Urban Poor Network
IFCA	Iloilo Federation of Community Associations
IFCP	Iloilo Flood Control Project
ILO	International Labour Organisation
ILO/ASIST-AP	ILO Advisory Support Information Services and Training

IRAP	Integrated Rural Accessibility Planning
JICA	Japan International Cooperation Agency
LBES	Labour-Based Equipment Supported
LBT	Labour-Based Technology
MDG	Millennium Development Goals
MMDA	Metro Manila Development Agency
MoU	Memorandum of Understanding
MWSS	Metropolitan Waterworks and Sewerage System
NGO	Non-Government Organisation
NHA	National Housing Authority
NHMFC	National Home Mortgage Finance Corporation
O&M	Operation & Maintenance
Pedicab	Bicycle taxi
Php	Philippines Peso
PO	People's Organisation
SDI	Slum Dwellers International
SEWA	Self-Employed Women's Association, India
Sikad	Bicycle taxi
SIYCB	Start and Improve Your Construction Business
SKAT	Swish Resource Centre and Consultancies for Development
SSWP	Small Scale Water Providers
TA	Technical Assistance
ToR	Terms of Reference
UNCHS	United Nations Centre for Human Settlements
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UN-HABITAT	United Nations Human Settlements Programme
UPAO	Urban Poor Affairs Office
UPC	Urban Poor Colloquium
UPDF	Urban Poor Development Fund
USD	United States Dollar
WD	Work Day

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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.

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- 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

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

FOREWORD

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 world[2]. 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
2: Wikipedia

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.[4] 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.[5] 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.

3: Asian Development Bank
4: Cities at Work, ILO 2004
5: ILO, Employment Intensive Investment Programme (EIIP)

SECTION 1

INTRODUCTION

INTRODUCTION

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:

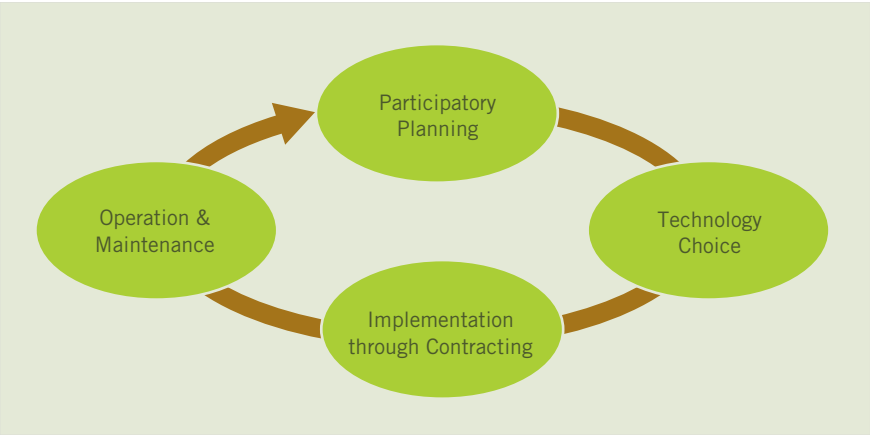
- participation and planning with communities;
- local resource-based technology;
- small-scale and community contracting; and
- operation and maintenance.

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

1 million each; more than half of these cities will be in Asia. In addition, the peri-urban areas in many big cities are rapidly expanding.

- High urban poverty level. Asia's poor represent about 70% of the world's poor - nearly one in three Asians is poor. Almost 25% of Asia's urban population is poor, and the rate is increasing, as there is a continuous influx of poor people into cities.
- Inadequate basic services. A large number of Asian cities cannot adequately provide urban basic services to the increasing number of urban residents. Less than half of the population in cities is provided with proper water supply. A number of cities do not have efficient systems of solid waste collection. A majority of the cities in developing countries do not have sufficient sewerage system connections and sanitary landfill facilities.
- Environmental degradation. With an increasing population density, especially in slum areas, environmental and health problems are rising. In addition to mitigating air and noise pollution and controlling waste, managing the consumption of non-renewable resources have become more serious concerns.

Source: FAQs, Urban Development, Asian Development Bank, 2007

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.

Millennium Development Goal Number 7:
Ensure environmental sustainability

Target 11:
By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers.

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.

Organization Name	Website
ADB: Asian Development Bank	www.adb.org
APCF: Asia Pacific Cities Forum	
CARE: Cooperative for Assistance and Relief Everywhere, Inc.	www.care.org
CIDA-ACDI: Canadian International Development Agency	www.acdi-cida.gc.ca
Cities Alliance	www.citiesalliance.org
CONGO: The Conference of NGOs	www.conferenceofngos.org
DFID: Department for International Development (U.K.)	www.dfid.gov.uk
ESCAP: Economic and Social Commission for Asia and Pacific	www.unescap.org
Ford Foundation	www.fordfound.org
GTZ: German Agency for Technical Cooperation	www.gtz.de
GUO: The Global Urban Observatory at the United Nations Centre for Human Settlements	www.unhabitat.org/guo
Habitat for Humanity (US)	www.habitat.org
IDRC: International Development Research Center	
INTERTEC	www.intertec.dk
Islamic Development Bank	www.isdb.org
IT: Intermediate Technology Development Group	www.oneworld.org/itdg www.itdg.org.pe
IULA: International Union of Local Authorities	www.iula.org
JICA	www.jica.go.jp
KfW: Kreditanstalt für Wiederaufbau (Information contributed by Organization.)	www.kfw.de
MYRADA (India)	www.myrada.org
Save the Children, US	www.savethechildren.org
Swiss Agency for Development and Cooperation (SDC)	www.sdc-gov.ch
Sida: Swedish International Development Cooperation Agency	www.sida.org
SKAT: Swiss Centre for Development Cooperation in Technology and Management	ww.skat.ch
The CONGO Committee on Human Settlements	www.infohabitat.org/ngochs
The World Bank	www.worldbank.org
UNDP: United Nations Development Programme	www.undp.org
USAID: United States Agency for International Development	www.info.usaid.gov
United Nations	www.un.org
UNCHS (Habitat): The United Nations Centre for Human Settlements	www.unchs.org

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/jsp/sida.jsp?d=668&language=en_US**

Guide to City Development Strategies, Improving Urban Performances, Cities Alliance 2006 **www.citiesalliance.org/doc/resources/cds/cds-guidelines/cds_guidelines_final.pdf**

Sandra Yu: Infrastructure Development and the Informal Sector in The Philippines – **SETP12** ILO, 2002.

ILO, Cities at Work, 2004, **www.ilo.org/public/english/employment/recon/eiip/download/cities_at_work.pdf**

SECTION 2

CASE STUDIES

CASE STUDIES

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.

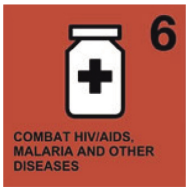
The projects demonstrated that the cost of employment lies between USD 6.00 and USD 21.00 for each workday. Average cost of employment = 69,265/6,816 = USD 10.20 per workday.

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

Infrastructure Created

- Gravel road (20cm laterite surfacing)
- Concrete road –(tricycle /pedicab path) including 300mm fill
- Concrete pathway
- Concrete pathway with covered drain
- Tiled pathway
- Lined side drains
- Lined drain with cover
- Pipe culverts
- Creek clearing
- Pour flush latrines
- Street lighting
- Water harvesting demonstration
- Solid waste collection containers
- Playground furniture

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

MDGs	Targets	Linkage to pilot project interventions
	Halve the proportion of people living on less than a dollar a day and those who suffer from hunger.	Successful demonstration of employment creation through local resource based approaches.
	Eliminate gender disparities Empower women	Community empowerment through their involvement in defining and prioritising their needs •Women leadership and participation in the Committees for supervision and monitoring of works •employment creation for women (47% of total workdays)
	Halt and begin to reverse the spread of HIV/AIDS. Halt and begin to reverse the spread of Malaria and other major diseases.	HIV/AIDS awareness training organised for the community, contractors and the workers employed. Improved drainage, water and sanitation would lead to significant reduction in malaria dengue and other diseases.
	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

2: Data Source: Urban-Rural Data: Commune Database 2004, The Atlas of Cambodia, National Poverty and Environment Maps, 2006

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).

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

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.

Access to Water Hand Pump

Access to Water Hand Pump

Condition of Hand Pump

Hand Pump Condition

Garbage Disposal

Garbage Dumping Site Constructed

Access to existing well

Improved access to well

Typical Condition of Road and Drainage

Condition of Road and Drainage

Typical Condition of Road and Drainage

Condition of Road and Drainage

Typical Condition of Road and Drainage

Condition of Road and Drainage

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.

Description/Activity	Employment Creation (workdays)					
	Planned			Actual		
	M	F	Total	M	F	Total
RC Pipe Culvert Construction						
2 Pipe culverts for with water gate (Ø600mm, 7.0m length)	70	80	150	59	72	131
14 pipe culverts for road crossing (Ø500mm, 5.0m length)	155	245	400	125	250	375
166 pipe culverts for every house entrance (Ø400mm, 2.0m length)	280	423	703	269	423	692
Road Works and Side Drains						
Site preparation works	75	60	135	89	45	134
Side drain excavation	68	117	185	51	102	153
Road works: earthworks and gravel surfacing	330	1,002	1,332	322	968	1,290
Pour Flush Latrine Construction (15 No.)						
Sub-structure (soil digging, pipe ring installation, ground basin and back fill	25	20	45	25	30	55
Super-structure (floor, wall, door, roof, and painting)	120	141	261	135	157	292
Other Civil Works						
Street lighting	24	12	36	30	10	40
Water harvesting	30	23	53	36	12	48
Path way – water well	70	108	178	81	93	174
Additional road works	250	305	555	280	290	578
Lining side drains and solid waste	220	250	470	250	275	525
Add for supervisors, operators, etc	780	0	780	737	0	737
Total	**2,497**	**2,786**	**5,283**	**2,489**	**2,727**	**5,216**

The project organised training for the Community Task Force on effective maintenance of roads and drainage works using labour-based methods.

Community Assessment

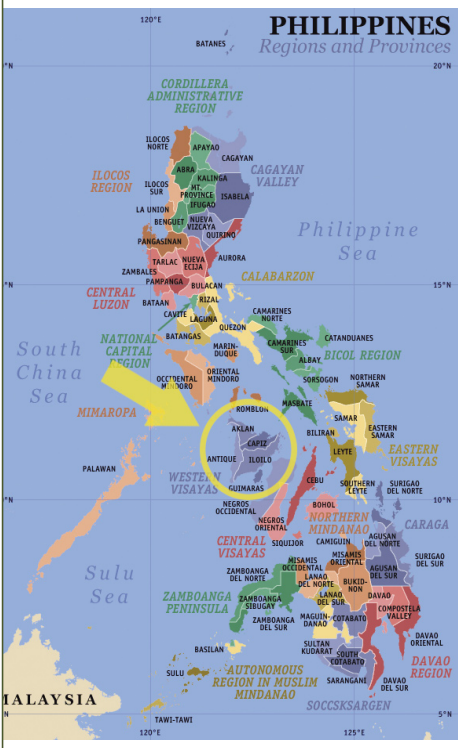
The community were satisfied with the quality and speed of construction. They were also content to see the work being carried out by local contractors, albeit under the supervision of the project staff and their own taskforce, and with opportunities for community members to earn income. Project staff 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).

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%.[3]



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[4], but with the huge task faced and minimal resources progress is slow and somewhat haphazard.

3: Source: Land and Shelter Initiatives in Iloilo City: Brief Profile and Prospects for a Community-Driven City Wide Upgrading, October 2006 (draft)
4: Village: lowest level of local government in the Philippines

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).[6] 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

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.

Description of the Proposed Interventions	
Storm Water Drain	A new 115m long channel type storm-water and grey-water drain. The cover of the drain will be designed to take the load of a Sikad (Pedicab).
Concrete Footpath	A 36m continuation of an existing 66cm wide concrete constructed footpath to reach the main roadway, designed to take the load of a Sikad (Pedicab).
Pipe Culvert and Outfall	The connection of the new drain via a catch-basin to the outfall with a 5.5m long concrete pipe culvert and an extension of the existing channel drain as well as cleaning of the existing drain. The cleaning and clearing of the existing Barangay roadside drain so as to ensure the new channel can efficiently drain the water away.
Service Crossing Points	100mm diameter PVC pipes crossing under the path and across the drain at regular intervals to allow for future water supply pipes (approximately 15m total length).

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,

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.

SECTION 3

PLANNING WITH COMMUNITIES AND MUNICIPAL AUTHORITIES

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. What ever 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.

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.

Source: Infrastructure Development and the Informal Sector in the Philippines, SETP No 12, Sandra O. Yu, ILO, 2002

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.

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.

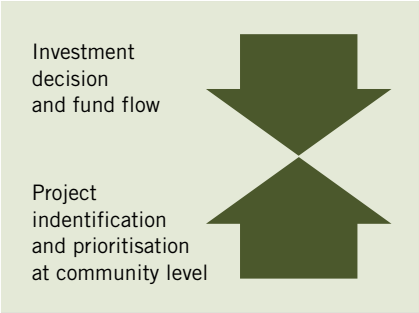
A prerequisite for any community planning is that there is a consensus within the city or municipal authority, within whose boundaries the communities live, that is supportive of the aims of improving the living and working conditions within low-income settlements. It is also necessary that within the 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.

Slum Population Projections 1990-2020						
(based on annual growth rate 1990-2001) Slum population in 1000s						
Region	1990	2001	2005	2010	2015	2020
Eastern Asia	150,761	194,078	212,368	238,061	266,863	299,150
South-central Asia	207,501	262,441	285,713	317,858	353,620	393,405
South-eastern Asia	48,986	56,799	59,913	64,073	68,521	73,279
Western Asia	29,524	41,356	46,709	54,426	63,418	73,896
Oceania	350	499	568	668	786	924

Source: 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.

Criteria	Sources of information
Population	Census
Poverty rating	Census, random sampling techniques
Land status, ownership, purchasing options, city plans	City plans
Hazards	City plans, site inspections, environmental plans
Present service levels	Utilities providers, city engineering, planning department, site inspection
Presence of a community-based organisation	CBO registration
Presence of potential partners in upgrading	Municipality, NGO, Federation or private sector partner
Sufficient labour (unskilled and if possible skilled) to work on the chosen project as paid labour	Community leadership

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.).

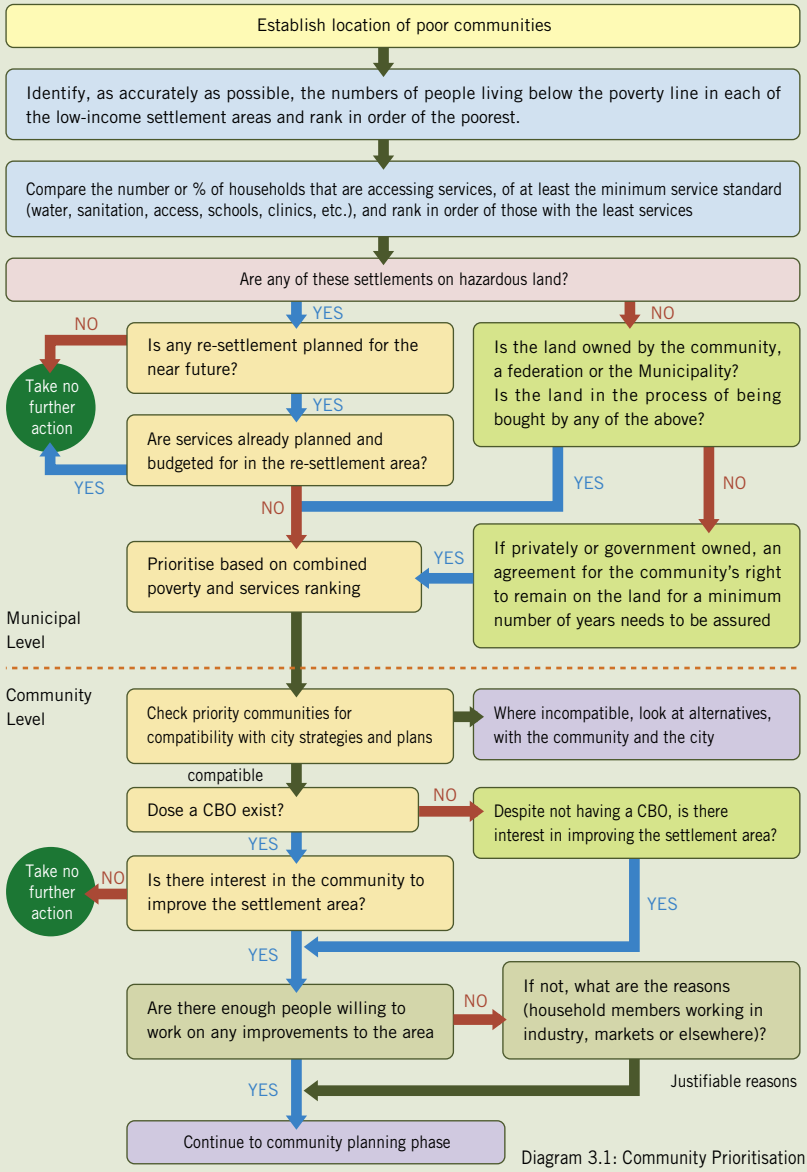


Diagram 3.1: Community Prioritisation

Notes:

- There may be such widespread poverty within low-income settlements that the numbers of poor are almost equivalent to the total population. This is not always the case, as some unplanned areas provide housing for individuals who have created a certain amount of wealth through business or trade.
- The prioritisation process described above is not intended as a route to securing land tenure or the legalisation of settlements. This process is intended as a prioritisation for infrastructure improvements and for the use of budgets set aside for this purpose. If the aim is to finance the legalisation of tenure and the regulation of unplanned settlements, then the existing city planning system or suitable alternatives need to be followed.
- In the decision-making process above, communities living on hazardous sites are excluded, as are those on private land. The final inclusion or exclusion of any community within the prioritisation process may depend on city policy and source of funds for improvements (some organisations cannot support improvements to private land). There are potential difficulties in including these communities in improvement works but also the possibility that, with their exclusion, the poorest of the poor continue to live in dreadful conditions. Resettlement may be a longer-term goal, but the financing and suitability of sites for resettlement may delay the implementation for a considerable time.
- Some planning exercises for plot allocation within the existing community boundaries or resettlement are based on home ownership. This immediately excludes anyone renting a room or a building in the area, although they may be long-term residents of the area. Long-term renters may indeed be some of the poorest members of the community and ways and means must be sought to include them as beneficiaries in any upgrading exercise. Precautions need also to be taken to avoid increase in rents and the displacement of the poor, once an area has been improved.

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]

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.

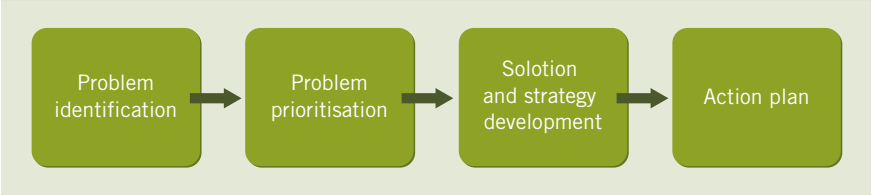
It is not the intention to examine further the individual participatory tools, but to provide guidance on how to ensure an inclusive process, and on provision of the necessary support that will result in the community being at the centre of the planning process.

Partners and their Roles in the Planning Process:

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

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

Guide to City Development Strategies, Improving Urban Performances, Cities Alliance 2006, www.citiesalliance.org

Urban Development Strategy and City Assistance Program in East Asia Final Draft Report, September 2000. Pacific Consultants International, ALMEC Corporation and Nikken Sekkei Ltd.

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

UN-Habitat, Partnership for Urban Poverty Reduction, (PUPR) - Phase II, www.phnompenh.gov.kh/projects/PUPRs

Barangay Development Planning Manual, UNDP, Habitat, City of Butuan, Philippines, 2007

Jane Tourne and Wilma van Esch, Community Contracting in Urban Infrastructure Works – Practical lessons from experience, ILO, 2001

SECTION 4

TECHNICAL OPTIONS AND DESIGN SOLUTIONS

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.

Source: Adapted from Urban Water Supply and Sanitation Programming Guide, PADCO Inc., United States Agency for International Development USAID, 2001

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.

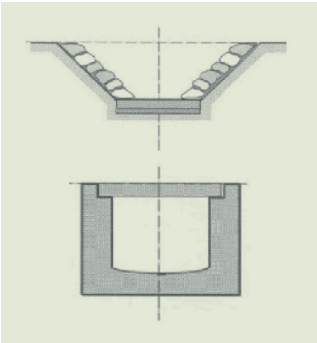
Drainage and Outlets

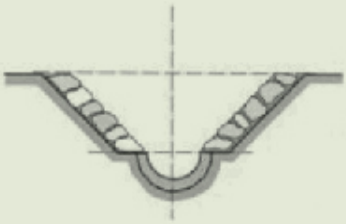
The purpose of the infrastructure is to drain water away from houses, buildings, access roads and paths, to avoid or reduce as much as possible flooding and/or erosion, to remove standing water that can lead to disease and to safely discharge water without causing damage to neighbouring areas or water 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	Services for the Urban Poor - Technical Guidelines for Planners and Engineers, Cotton and Tayler, WEDC, Loughborough University, 2000. Site Supervisor Course for Labour-Based and Community-Managed Upgrading of Urban Low-Income Settlements, Beusch and Winsvold, ILO, 2002

Examples of Open and Covered Drains

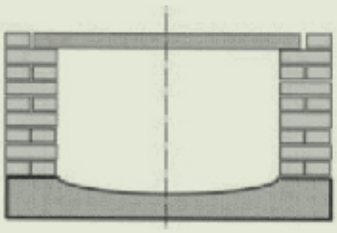
Whenever they are used, open channel drains take up space and pose a hazard to road users and residents, especially if the drain is very wide or deep or passes through a busy area. If this situation can be avoided and resources area available, then drains should be constructed covered with removable slabs, allowing access for the rainwater and sullage.





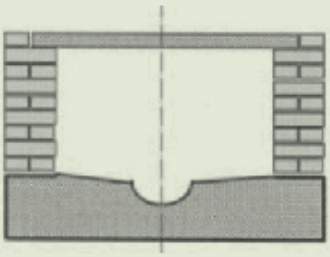
When little water flows through the drain, only the narrow bottom of the drain is used. This is particularly suitable for sullage discharge. When the water rises higher, e.g. during rains, a larger section of the drain is used. The advantage is that the water will have a steady flow speed and will keep 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 Âl 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

Site Information	Source of the floodwater. Extent of the problem (rain catchment area, flood levels and intensity). Cause of flooding (i.e. poor drainage, low river/drainage canal banks, tidal flows, general low lying area).
Design Parameters	Channel dimensions sufficient to cater for recurrent flooding and robust enough to withstand the effects of severe flooding. Bank construction must be compacted and sufficiently protected to avoid erosion and collapse. Mitigation of any adverse effects on the environment. Ensuring that the solution for one community does not create problems in another.
Design Choices (frequently used options)	Increasing the height of low points in flood defence banks. Improving flows in drainage channels, and natural creeks and rivers[1] through dredging and bush clearing. Building up banks using compacted soil with plant cover. Building defence walls in stone or reinforced concrete. Lining the channel and banks with local stone masonry, gabions, vegetation, depending on soil conditions. River training and bank protection works using groynes, fascine mattresses and revetments.
Operation and Maintenance	Regular clearing of drainage channels. Protection of any area suffering from erosion. Repair to damaged banks and linings. Maintenance of floodgates.
Safety Considerations	Protective clothing should be worn during clearing exercise if water contains waste products.
Employment Potential	Excavation works, short distance haulage and soil filling, stone masonry and gabion works provide additional employment for unskilled workers and masons.
Links to Further Reading	The Project on Riverbank protection works, JICA, Laos. SPWP Training Guide, Gabions, ILO 1986

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.

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 transpor 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

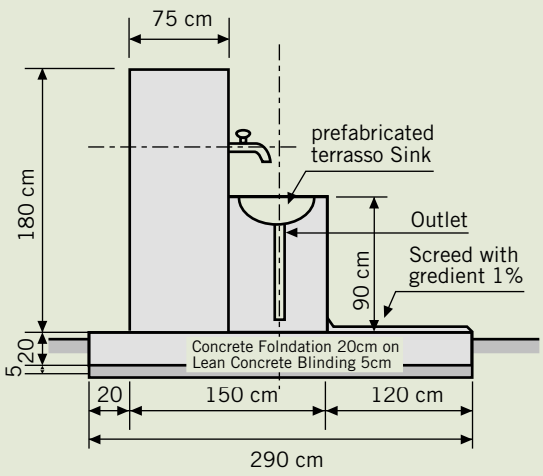
The purpose of this infrastructure is to deliver safe potable water to the community at an affordable price.

Site Information	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?
Design Parameters	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 _ inch tap should be limited to 125[2]. Where should they be placed?
Design Choices (frequently used options)	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.
Construction Techniques	Water supply systems lend themselves to labour-based work methods.
Dealing with Services in the Ground - or Planned	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.
Operation and Maintenance	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.
Safety Considerations	Examine soil conditions and provide adequate support against the possible collapse of the walls during excavation and construction when excavating shallow wells.

2: The World Health Organisation recommends that there should not be more than 250 persons served by one tap.

Employment Potential	The excavation and laying of pipes provides employment opportunities for skilled and unskilled workers, the kiosk and house connections require
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** Navigating Gender: A Rapid Gender Assessment Of The Cities Of Bhopal, Gwalior, Indore and Jabalpur In Madhya Pradesh, India **www.unhabitat.org** October 2001 - ILO/SEED Public-private Partnerships Programme; SIYB; ILO/ASIST Africa; - Training Materials **Start Your Water Distribution Service: A Step-by-Step Guide on how to Start a Community-based Water Distribution Service**

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



Water Pipe, Top and Outlet as per specifications

Source: Site Supervisor Course for Labour-Based and Community-Managed Upgrading of Urban Low-Income Settlements – Supervisor's Site Reference Handbook, Winsvold, ILO, 2002, www.ilo.org/eiip

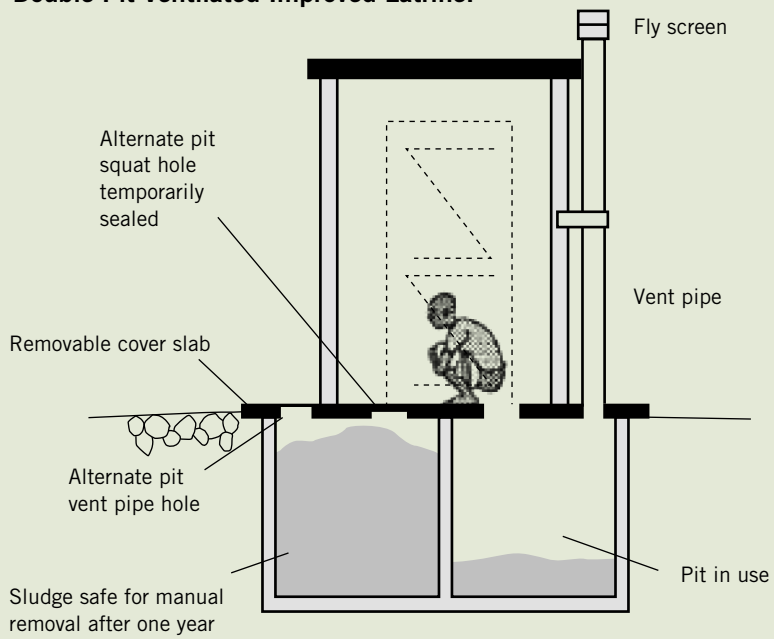
Sanitation[3]

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.

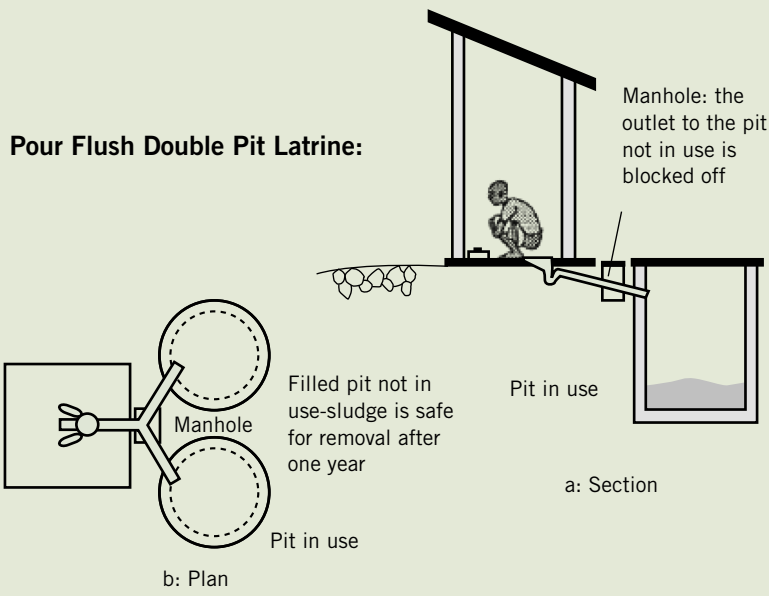
Site Information	Location of shallow wells. Is there a city sewerage system in the area? Density of the housing and space available for the sanitation.
Design Parameters	What type of latrine is commonly used? Pour flush can only be used where water is used for cleaning rather than solid objects such 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**

3: Adapted from Services for the Urban Poor, Cotton and Tayler, WEDC, Loughborough University, 2000

Double Pit Ventilated Improved Latrine:



Pour Flush Double Pit Latrine:



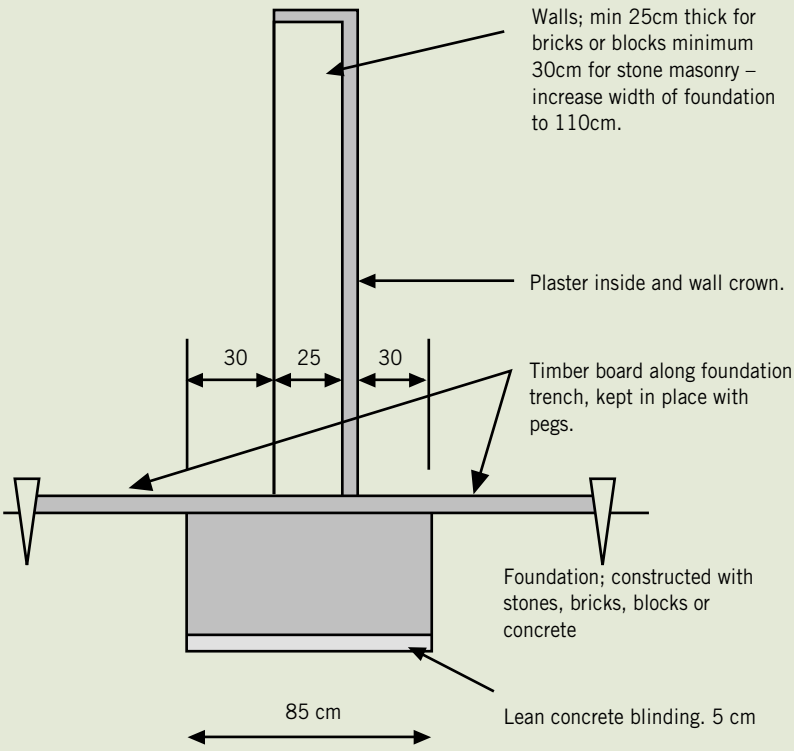
This first pit is used until it is full, and the second pit is then put in use. When the second pit is full, the first can be emptied safely because the contents will have been digesting for at least one year.

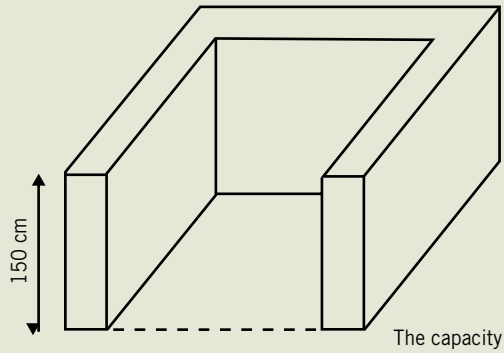
Source: Site Supervisor Course for Labour-Based and Community-Managed Upgrading of Urban Low-Income Settlements I Supervisor's Site Reference Handbook, Beusch, and Winsvold, ILO, 2002

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.

Site Information	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 a no one wants it in their backyard.
Design Parameters	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.
Design Choices (frequently used options)	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.
Construction Techniques	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.
Location	The site should be situated at least 15 m away from any shallow wells.
Operation and Maintenance	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.
Safety Considerations	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.
Employment Potential	The formation of local solid waste collection enterprises and the use of properly designed collection points provide long-term employment.
Links to further reading	Conceptual Framework for Municipal Solid Waste Management in Low-income Countries: UMP Working Paper Series 9, Schubeler, UNCHS, 1996 Sustainable community-managed and labour-based upgrading of urban low-income settlements – Handbook, Fransen, Goldie Scot, van Esch, ILO 2000 **www.ilo.org/eiip** Start Your Waste Recycling Business - Training Package (i) **Technical Handouts** (ii) **Business Manual** (iii) **Business Plan** and (iv) **Trainers Guide**





The capacity of a communal container
C = N x R x 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 I 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.

Site	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.
Design Parameters	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.
Design Choices (frequently used options)	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.
Operation and Maintenance	Care of the plants and recreational facilities. Payment of water bills.
Safety Considerations	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.
Employment Potential	The employment potential is rather low as there are more materials involved in fencing and park/sport furniture, less extensive construction works.
Links to further reading	The Potential of Urban Forestry in Developing Countries: A Concept Paper by E. Jane Carter. **www.fao.org** Urban and Peri-Urban Agriculture **www.fao.org**

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.

Site	On ground not at risk of severe flooding, accessible to the whole community, on public or community owned land (not private).
Design Parameters	Weather – heat, wind, cold, rain, flood, earthquake, soil conditions.
Design choices (frequently used options)	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.
Materials	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.
Services	Toilet facilities will need to be provided. Depending on the use of the building, an electricity connection may be necessary.
Operation and Maintenance	Payment of electricity and water bills. Cleaning Replacement of broken windows, repainting and minor repairs to buildings
Safety Considerations	Protective clothing where needed Proper design of scaffolding
Employment Potential	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.
Links to Further Reading	**www.skat.ch** Building Materials and Construction Technologies, Annotated UN-Habitat, Bibliography **www.unhabitat.org/pmss** Local authority and ministry standards

Electricity

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

Design Parameters	Who will be the end user and can they afford the charges
Design choices (frequently used options)	Individual house supplies Common facilities such as community buildings
Operation and Maintenance	The supply lines are the property of the electricity company or network company.
Safety Considerations	Connections should be made by an experienced electrician
Employment Potential	The supply of electricity requires experienced technicians and apart from some pole erection, there is little employment potential for unskilled workers.
Links to further reading	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 **www.leonardo-energy.org/drupal/node/2096**

Street Lighting

The main purpose of providing street lightning is to provide safety and security.

Site	At road junctions. At areas of importance to the community – location is a community decision. Availability of electricity supply.
Design Parameters	Height of the lamp posts, number and spacing of posts and spacing, number of lights on each post.
Design Choices (frequently used options)	Reinforced concrete poles. Treated timber poles. Locally available lamps.
Operation and Maintenance	Payment of electricity bill, replacement of lamps, repairs to any damage to the posts.
Safety Considerations	Proper anchoring of the posts in the ground.
Employment Potential	The supply of electricity requires experienced technicians and apart from the erection of poles, there is limited employment potential for unskilled workers.
Links to further reading	Up-grading Urban Communities, A Resource for Practitioners web.mit.edu/urbanupgrading/upgrading/issues-tools/issues/Alternative-in-Service.html#Anchor-Physical-26703

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 Masonry, Training Element and Technical Guide for SPWP Workers - Booklet No. 2, Special Public Works Programmes, International Labour Organization, Geneva, 1991

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

Services for the Urban Poor – Technical Guidelines, Cotton & Taylor, WEDC, Loughborough University, 2000. This guide contains detailed design criteria and step-by-step design procedure for, drainage, water supply, sanitation, access and paving.

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

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

Sustainable community-managed and labour-based upgrading of urban low-income settlements Handbook, Workbook and Trainers' Notes - Jan Fransen, Hamish Goldie Scot, Wilma van Esch, ILO ASIST Africa, 2002

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 Müler, Skat Foundation, St. Gallen, 2004

Building Rural Roads, Johannessen, ILO 2008

National technical manuals and specifications

SECTION 5

IMPLEMENTATION THROUGH PARTNERSHIPS AND CONTRACTING

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.

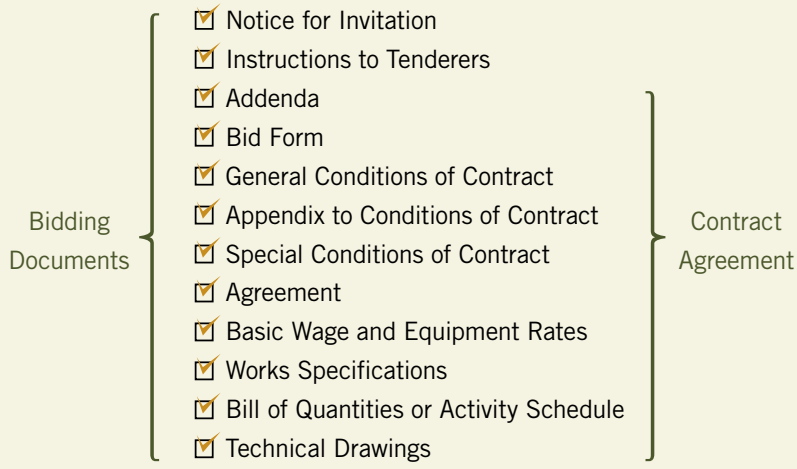
5.2 Contracting

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:



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

Works Designed by the Employer, published by FIDIC,
- Short Form of Contract, published by FIDIC,
- Standard Bidding Documents, Procurement of Works - Smaller Contracts, World Bank,

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 Contract[1].

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:

Actors	Description
Office bearers of the community-based organisation (CBO)	The beneficiaries, community, represented by the CBO.
The contractor	The community through the CBO or a group from within the community experienced artisans, small and large contractors.
The contracting authority[2]	municipal authority, funding agency, private company, or community with their own funds.
The technical support providers	municipal engineers and planners funding agency project team, private sector, federation or NGO.
The funding body	government programme, municipal authority, funding agency,

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.[3]

i. No contract - Use of Force Account

An agency or government department organises the construction work incl uding 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.

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

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.

3: Adapted from: Community Contracting in Urban Infrastructure Works – Practical Lessons from Experience, Tourneé and van Esch, ILO, 2001.

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.

When to Use	Advantages	Disadvantages
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.	Relatively simple for the community to organise.	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.

iii. Labour and Material Community Contract

The community is responsible for both the paid labour and material input for a certain construction activity.

When to Use	Advantages	Disadvantages
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.	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.	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.

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.

When to Use	Advantages	Disadvantages
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.	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.	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.

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).

When to Use	Advantages	Disadvantages
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	If the artisan is from within the community a very simple sub-contract document will suffice.	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.

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).

When to Use	Advantages	Disadvantages
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.	The group is from within the community and the community' s representatives monitor its work. Longer-term employment stays within the community.	Need for a very transparent selection process to avoid favouritism. Requires assistance from outside for support.

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.).

When to Use	Advantages	Disadvantages
When the skills needed are not available in the community or where specialised equipment is required.	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.	May not carry out the works to the satisfaction of the community. Requires sound and professional supervision from skilled technical staff.

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).

When to Use	Advantages	Disadvantages
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.	The experienced contractor can easily mobilise the necessary skills, equipment and materials.	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.

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.).

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

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.

When to Use	Advantages	Disadvantages
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.	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.	Can be an expensive option for providing technical support.

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 contactor. 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

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]

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.

8: Adapted from: Technical Manual Labour-based Road Construction Methods, Johannessen, ILO, 1997

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.

Task Rates	
Clearing and removal of rubbish	50 - 150 m^2/wd
Drain/ ditch / trench / foundation Excavation	1.5 - 3.0 m^3/wd
Levelling of soil	1.5 - 3.0 m^3/wd
Camber Formation	75 m^2/wd
Earth Excavation and up to 20m transport	1.5 - 2.5 m^3/wd
Turfing	10 - 20 m^2/wd
Hand Compaction	100 m^2/wd
Gravelling (spreading and levelling)	5 - 10 m/wd
Stone masonry (mortar mixing and preparation of stones is not included)	2-2.5 m^3 /wd
Road Stone Paving (includes all preparation phases)	0.4-0.8 m^2/wd

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]

10: Source: Labour Policies and Practices, Tajgman, and de Veen, ILO, 1999.

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.

Employment Intensive Infrastructure Programmes: Capacity Building for Contracting in the Construction Sector, Bentall, Beusch and de Veen, ILO, 1999, **www.ilo.org/eiip**

Employment Intensive Infrastructure Programmes: Labour Policies and Practices, Tajgman and de Veen, ILO, 1999, **www.ilo.org/eiip**

Contract Documents for Small Contracts in the Road Sector, Stiedl, ILO, 2000, **www.ilo.org/eiip**

Organisation, Contracting and Negotiation in Development Programmes and Projects - A Study of Current Practice at the Community Level, Oakley, ILO 1999, **www.ilo.org/eiip**

Tourneé and van Esch, Community Contracts in Urban Infrastructure Works – Practical Lessons from Experience, **www.ilo.org/eiip**

Community Driven Development: Community-Based Procurement, Contracting, and Financial Management, World Bank, **www.worldbank.org**

Growing out of Poverty, SEED Working Paper no. 47, Kuiper and van der Ree, ILO, 2005, **www.ilo.org/dyn/empent**

Contracting Local Infrastructure Works, Johannessen, ILO ASIST-AP 2008, **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**

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

Building Rural Roads, Johannessen, ILO ASIST-AP, 2008, **www.ilo.org/eiip**

Start Your Waste Recycling Business - Training Package, Technical Handouts, Business Manual, Business Plan and Trainers Guide

SECTION 6

MANAGEMENT, OPERATION AND MAINTENANCE

MANAGEMENT, OPERATION AND MAINTENANCE

6.1 Objectives of this Section

This section focuses on the need for properly planned operation and maintenance of the services and infrastructure that has been constructed or improved, and looks at ways of addressing the funding and management as well as carrying out the actual maintenance itself. This section emphasizes that operation and maintenance do not just happen, but that proper management is essential if they are to succeed.

The basic objective of maintenance is implicit in the word itself. It is done to ensure that the infrastructure that has been constructed or improved is maintained to the extent possible in its original condition. All types of infrastructure require maintenance as a result of the wear and tear due to

Maintenance: Why and who benefits?

The purpose of maintenance is to ensure that the infrastructure remains serviceable throughout its design life. Maintenance is important because it:

- prolongs the life of the assets by reducing the rate of deterioration, thereby safeguarding previous investments in construction and rehabilitation,
- lowers the operating cost and maintains high service levels for the users,
- keeps the infrastructure in continuous operation and as a result more reliable service provision, and
- sustains the social and economic benefits derived from the improved infrastructure.

The first purpose is primarily in the interest of the owners of the facilities. The last three are of more general interest to the inhabitants of the community who make use of the facilities.

its usage and the forces of weather. Even with the highest possible quality of construction, maintenance is essential to get optimum service from the structures during its life period. By applying preventive maintenance, the deterioration can be slowed down and thus postpone the need for costly investments in rehabilitation.

The benefits of infrastructure development clearly emerge when the communities take these assets into use. Improvement of infrastructure can bring about substantial economic and social benefits. Effective maintenance and operation of the created assets sustain and compound the benefits generated, while lack of maintenance results in a significant decrease in socio-economic benefits over time.

6.2 Overview

It is important to make a clear distinction between maintenance and repair works. Proper maintenance is clearly time-linked, and to be efficient is carried out before major damage takes place. This involves activities relating to supervision and monitoring of the infrastructure assets even while they are still in good condition. It also requires that whoever is in charge of the maintenance, is sufficiently responsive and capable of taking action when it is required - as opposed to a response in terms of repairing the damages after the facilities no longer serve their purpose. Timely and regular maintenance requires securing sufficient funding before repairs and maintenance become an urgent issue. The most effective form of maintenance is achieved when an organisation is capable and prepared to carry out appropriate interventions at an early stage of deterioration and thus limit the extent of damages. This implies that the responsible authority is furnished with the necessary human and financial resources to effectively manage all facets of the maintenance works.

Maintenance works can be split into three types, routine, periodic and emergency works. Routine maintenance is a regular activity carried out at frequent intervals, often several times a year. Being an early preventive measure, it is carried out when damages and rates of deterioration are still limited. With proper monitoring of the facilities, and scheduling this maintenance at strategic intervals when it is expected that need for action is essential, the required work inputs are normally very limited and of simple nature. Examples of essential routine maintenance is clearing of drainage and culverts, repairing minor leaks in roofs and water pipes, filling potholes in roads and streets and clearing bush and debris to allow the facilities to operate properly.

In addition to routine maintenance there is a need for more extensive overhauls of the infrastructure assets after a certain number of years. Such periodic maintenance involves more comprehensive and costly activities, requiring more skilled personnel to design and implement. Periodic maintenance can cover activities such as replacing culverts, major repairs of roofs and resurfacing of roads and streets.

Besides the scheduled maintenance activities, there is a need to make provisions for the occurrence of unforeseen damages caused by excessive floods or storms, landslides or other freak conditions. By definition, emergency maintenance cannot be forecasted and therefore does not figure in work plans. It is however useful to reserve a certain amount of funds for this purpose. Equally, there is a need for establishing contingency plans for such incidences, thus allowing for a timely reaction in order to limit the extent of damages and reinstate the services in a timely manner.

6.3 Who is Responsible?

Responsibility for maintenance lies with the owner of the infrastructure. This can be municipal authorities, communities or individuals. Responsibility may also remain with elected groups or representatives of the community (i.e. water management committee, market place users association, a CBO or housing federation). Whoever owns the infrastructure must take responsibility for funding and organising the maintenance. It cannot be assumed that communities maintain facilities that are owned by the municipal council or private sector enterprises. If municipal maintenance budgets are insufficient to serve all the needs, then the consequences of this must be discussed and partnership arrangements for maintenance sought. Equally, if communities improve facilities they will not necessarily be adopted by the municipal authorities and the responsibility for maintenance then needs to be arranged in a similar fashion.

Although responsibility for maintenance may rest with the municipal authorities or the private sector, the community still has the opportunity to remain active and involved in the maintenance process. This can be achieved through community inspections and alerting authorities as to maintenance needs, or contributing where the authorities' budgets and capacities are over-stretched. Such agreements need to be formalised through a memorandum of understanding.

Maintenance can be contracted out, or be part of an operation agreement with a private company or individual. The implementation of the actual maintenance however, relies to a great extent on how well organised those responsible for planning, managing and supervising the maintenance activities are.

6.4 Maintenance Funding

Maintenance requires funding, planning, implementation of the maintenance plan, inspection and payment. The ownership of the infrastructure or community asset, the source of funding and the management capacity all play a role in determining the best approach for reliable maintenance. Perceptions also play an important part in determining whether maintenance is carried out or not. If maintenance is not seen as important, then willingness to pay for services, or contribute to the maintenance and repair of assets and services, will be lacking.

With the planning for the creation or improvement of infrastructure and services, careful consideration must be given to the culture of maintenance within society and the efforts necessary to support well funded, planned and implemented maintenance.

The responsibility for funding maintenance can rest with the city council or municipal authority, a community CBO, NGO or federation, the private sector, or a combination of these.

A combined approach may be appropriate in certain conditions. For example, a community may be able to pay for and carry out routine maintenance but needs additional funding and outside technical assistance for periodic and emergency maintenance activities. For example: a community may routinely clean a lined drainage channel, but may need assistance from the local authority for the cost and transport of pipes to replace broken culverts.

Partnership arrangements including funding for maintenance must be clearly defined and are best detailed in a memorandum of understanding. Naturally, the MoU may also include aspects of responsibility for operation and maintenance, management, technical advice, materials, tools, and equipment.

6.5 Operation and Maintenance Arrangements

There are a variety of approaches that can be used to address the operation and maintenance needs of the diverse types of community infrastructure. The choice of approach is very much dependent on the nature and amount of maintenance required.

Some maintenance activities are simple to perform and require no particular technical skills, while other activities require the inputs of skilled and certified tradesmen. For example, the repair of electricity schemes can only be carried out by certified personnel. Equally, repairs to buildings may require skilled carpenters and masons. On the other hand, a large number of maintenance activities require limited experience and skills in order to extend the lifetime of the infrastructure facilities. For such activities it would be reasonable to engage the inhabitants in the communities for which the facilities are provided.

The most appropriate maintenance arrangements are also dependent on the amount of works required. Different types of infrastructure require varying levels of maintenance inputs. Equally, old infrastructure may require higher maintenance attention as compared to recently constructed facilities.

In any case, it should be noted that the amount and nature of maintenance required vary tremendously from one type of infrastructure to another. Equally, the quality of works and choice of materials during its construction also have a significant impact on the levels of maintenance required. Certain types of infrastructure require costly and considerable amounts of maintenance to the extent that it is difficult to rely on voluntary contributions from local

inhabitants (e.g. large drainage canals, roads and streets). It is simply too much to ask of the local population. Other infrastructure requires very limited inputs to remain well maintained and for this reason, it is practical to leave the responsibility with the users.

With this in mind it is important to acknowledge that effective maintenance arrangements are therefore specific to each type of infrastructure. This particularly implies that systems and approaches appropriate for one sector may not be applicable for other types of infrastructure.

Finally, it is also important to acknowledge that various types of infrastructure have different ownership structures. Streets, drainage, flood control and water distribution networks are public assets utilised by a large and disperse user group, as compared to sanitation facilities and water outlets only used by a very restricted group of users. Other facilities such as markets and parking areas are developed for commercial purposes. Equally, services such as waste collection and electricity supply can be organised as a commercial undertaking. The burden of maintenance would logically be distributed differently according to the type of users and nature of services.

Although the nature of maintenance varies, it is however important to ensure that the users of the assets are involved in its planning and implementation. Depending on the type of maintenance required this may include self-help inputs, paid employment or merely in a monitoring and control capacity.

Self-help Options

For many of the above types of infrastructure there is the option of organising maintenance through self-help initiatives. This frequently involves the use of volunteer (non-paid) labour. Where this option is chosen, care must be taken that the burden of work is equally and democratically shared, and that there are enough households willing to provide their contributions in cash instead of unpaid labour to allow the purchasing of spare parts, tools and materials. The management of voluntary labour in completing tasks is not always easy and neither is the control of participation. For the planning and management of maintenance it is often better to collect payment for services and to use the payments to cover the operation and maintenance needs.

The following chapters propose options for various types of services and infrastructure.

6.6 Drainage and Outlets

Drainage includes a multitude of infrastructure including major drainage channels, canals and rivers under the responsibility of the municipal authority. These drainage facilities pass through local communities; however, they normally serve a wider area.

At community level, there are also drainage arrangements catering for the runoff from roads, streets and pathways as well as other surfaces such as private and public properties.

Both of these categories of drainage structures are either lined or unlined.

Funding

Where a drainage channel serves a wider area than just one community the funding and organisation of maintenance is the responsibility of the relevant government authority. In the case where the community have built drains and they have not been adopted by the municipal council, then the community may need to fund and organise the required maintenance.

Management

Where the authorities remain responsible for the drainage system, they can contract the community or groups from within the community to carry out the maintenance – especially routine maintenance. The authorities will be responsible for planning the inputs, tasks and payments for the maintenance. The community or community group will be responsible for implementing the maintenance in accordance with the instructions and specifications of the authority. If the community have been involved in the construction or improvement of the drainage system they are familiar with the construction techniques required. It is however important to have an orientation for the community or community group to clarify how the basic maintenance operations can be carried out efficiently.

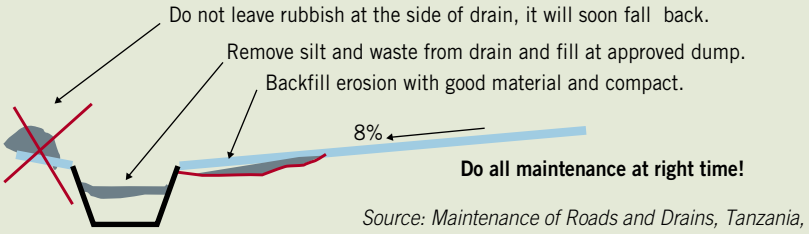
Where the community are responsible for the drainage system, then they are the ones who need to budget for the maintenance and organise the timing and extent of the maintenance activities. Experience suggest that it is best to see how each household can contribute in money terms for the up-keep of

the drainage system and to employ a team from within the community on a paid basis to carry out the maintenance. This is a more reliable system than trusting the use of "volunteer or free labour" on an irregular basis.

Management of the maintenance of the drainage system requires:

- a listing of what has to be inspected and maintained;
- preparation of a plan and budget for the maintenance activities;
- preparation of a plan and budget for routine and periodic maintenance and an estimate of the materials needed to ensure that the drains are kept in good condition;
- inspection of the drains on a regular basis, but especially prior to periods of heavy rains;
- contracting of an individual or local contractor to carry out the necessary maintenance and repairs;
- Inspection of the completed maintenance, and
- make payment for the work once it is completed to prescribed quality levels.

The maintenance of drains is simplified when a proper solid waste management system is in place in a settlement, thus reducing the amount of debris, which lands in the ditches. The most important routine maintenance activity for drains is to keep them clear of obstacles so that water can flow easily within the system and not back-up and over-flow. In the case of un-lined ditches and channels, it is important not to remove the roots of plants as they may be adding to the ditches stability. Their removal could result in erosion and the altering of the levels in the drains. Grass in particular should be cut back, but not removed. It is therefore recommended in urban areas to line the ditches to ensure that invert levels and drain widths remain as planned.



Source: Maintenance of Roads and Drains, Tanzania,

Where drainage discharges into canals, rivers, or creeks, maintenance inspections should ensure that erosion at the outlet is avoided and that there is no undermining of the outlet structure. After any rain, especially heavy rain or flooding, an immediate inspection of the drainage system and outlets needs to be made and remedial actions (emergency repairs) organised.

6.7 Flood Protection

Common flood protection measures include the construction of bunds, banks and dykes. Alternatively, the ground can be raised above highest flood level and floodwater can be diverted away from the populated areas. Strengthening riverbanks with surface protection is a common measure to avoid erosion during flood periods.

In coastal areas, sea walls are erected to protect harbours, boats and villages and to separate salt water from adjacent farming areas.

Flood protection comes in many forms with a variety of construction techniques. Banks can be un-lined, or they can be protected through vegetation, live fascines, stone pitching, gabion baskets and mattresses, etc. Walls can be made of a variety of materials such as stone masonry, reinforced concrete and gabion baskets.

Funding

As with other infrastructure, the maintenance funding depends on the ownership and the scale of the flood protection. Major flood protection schemes protecting large areas of a city are the responsibility of the city authorities and as such the maintenance should be funded and managed by the responsible department. If the flood protection is localised and answers the specific needs of a settlement, it may still be the responsibility of the authorities to maintain the structure. If however, the flood defences have been constructed by the community and the local authority has no maintenance budget allocated for their up-keep, the community may have to organise themselves as for other minor infrastructure works.

Management

If the community have been involved in the construction or improvement of the flood defences, then they are familiar with the construction techniques required. Communities are then in a position to carry out their own maintenance or offer their services under contract to maintain part of the authority's drainage system. It is important however, to have an orientation for the community or community group who will be responsible for the maintenance to clarify how the basic maintenance operations should be carried out. Effective maintenance requires:

- an accurate description of what needs to be inspected and maintained;
- preparation of a plan and budget for the maintenance activities;
- preparation of a plan and budget for routine and periodic maintenance and an estimate of the materials needed to ensure that the structures are kept in good condition;
- inspection of the walls and banks on a regular basis, but especially prior to periods of heavy rains and flooding, and in the dry season to see what repairs can be done;
- contracting of an individual or local contractor to carry out the necessary maintenance and repairs;
- inspection of the completed maintenance, and
- make payment for the work once it is completed.

From a maintenance point of view, care should be taken in the use of gabion baskets as they corrode badly in aggressive environments such as salt water and polluted drains and rivers.

6.8 Roads, Streets and Paths

Roads streets and paths are developed for various types of transport applying a wide variety of technical designs and building materials.

Transport access in urban communities include principal roads classified and under the maintenance of the municipality, internal community roads, pedicab and cycle ways, paths and walkways.

Funding

As with other forms of infrastructure, where a road serves a wider area than just one community, the funding and organisation of maintenance is the responsibility of the relevant government authority. In the case where the community has built roads and streets, and they have not been adopted by the municipal council, the community needs to fund and organise the maintenance.

Management

Part of the community maintenance management can be the control of the size and weight of vehicles using the roads within the settlement. This can be regulated through width restrictions at the entrance to the settlement or by building access ways designed only for pedicabs, motorcycles, bicycles handcarts and pedestrians, and not wide enough for cars and trucks.

The backbone of an effective road maintenance system is the timely provision of routine maintenance thereby providing effective damage control measures at an early stage. Common routine maintenance activities include erosion control on shoulders and slopes, clearing drains and culverts to allow free

passage of water, minor repairs to culverts, ditch linings and retaining structures, removing obstacles from the road surface and drains, bush clearing and pothole patching.

In addition, there is a need for periodic maintenance at intervals of 3 to 7 years, including works activities such as major repair of structures, reshaping and resurfacing, spot improvement of weak base courses, installation of additional retaining structures and soil erosion measures.

The maintenance of roads and streets needs to be carefully planned making sure that certain activities are carried out before the rains, some during the dry spells and some just after the rains when enough moisture is in the ground to facilitate compaction without extra watering.

The routine maintenance activities related to the drainage system should be carried out before heavy rains, and continually checked during the rainy period. At the end of the rains, any repairs to the surface layer should be carried out. In the dry season, any vegetation that has started to grow in the roadway and inside lined ditches should be removed and work on road repairs continued. As can be seen a major part of road maintenance is actually the maintenance of the side ditches and all other structures removing water away from the road.

The steps in managing the road maintenance are similar to those for the drains described above.

6.9 Markets, Bus-stops and Parking Areas

Markets and its adjacent areas are important economic areas and social meeting points for local communities. Good market layouts commonly include ancillary facilities such as bus stops and shelters, parking for taxis, pedicabs and private vehicles, as well as an unloading areas for goods supplied to the market. Finally, a properly organised market needs adequate water supply for its fresh produce section, proper drainage and sanitary facilities as well as a well-organised waste disposal system.

Funding

Markets and adjacent parking areas are often owned and run by the municipal authority and therefore the funding and provision of maintenance is their responsibility. Fees for usage are collected and at least a proportion of these should be set aside for funding maintenance. Where communities have opted to create such facilities themselves, and they have not been adopted by the municipal authorities, then charges need to be levied by the community to fund the maintenance.

Management

A manager or management committee for the market area or park must be set up to:

- prepare a plan and budget for running the facility;
- prepare a plan and budget for routine and periodic maintenance and an estimate of the materials needed to ensure that the facility is kept in good condition;
- manage or appoint a manager responsible for the operation of the market;
- gather fees for the use of the facility (parking fees, market stall fees, water supply, electricity, etc.), and be accountable for the money collected;
- inspect the facilities at regular intervals;
- ensure that sanitary conditions are maintained;
- contract an individual or local contractor to carry out the necessary maintenance and repairs.
- inspect the completed maintenance, and
- make payment for completed works.

There needs to be good coordination with solid waste arrangements within the community to ensure that market and bus stop rubbish is timely removed. In addition, adequate measures will have to be made for the regular cleaning of the facilities.

6.10 Water Supply

Water supply for household purposes can be provided through various arrangements:

- supplied through a private or government owned water company to individual households and businesses,
- supplied through a private or government owned water company to central standpipes or water kiosks,
- from a communal borehole or well,
- water from neighbours, or
- from water vendors.

Funding

The water company charges the individual user for the water and is responsible for maintaining the supply and thus has the responsibility for the maintenance of the main supply pipes. The individual plot owner with a direct supply is responsible for the maintenance internal to his/her plot and therefore this is not a community funding or management issue.

For the community, the issue of operation and maintenance depends on the distribution of the water inside the community. In a settlement area, each house may have an individual water connection and the water company issues a bill to be paid to each household. In situations where the water is supplied to central standpipes or water kiosks within the community, the community themselves may have a vital role in organising the funds for the operation and maintenance of the kiosks.

Funding for the operation and maintenance of the water kiosks (including payment of the water bills) must come from the water sold in the community. The charges for the water must be affordable, but also sufficient to replace and repair worn equipment and pay for the kiosk's operation. To establish the rate at which the water needs to be charged, an accurate forecast of the water usage, cost of the water and the cost of the operation and maintenance are needed.

Even where water is supplied through boreholes and wells, there needs to be a funding arrangement for routine maintenance and repairs, as well as for the cleaning and maintenance of the well and borehole area to avoid contamination of the water supply.

Management

Management of community water supplies can be in the hands of user groups

or CBOs or through local small enterprises or individual entrepreneurs. Even where the kiosk or standpipe is operated by a private enterprise, there is need for a user group to provide a monitoring role and to represent the community in their dealings with water companies and the municipal authority.

Management of a water supply system necessitates:

- preparation of a plan and budget for supplying the water;
- preparation of a plan and budget for routine and periodic maintenance and an estimate of the materials needed to ensure that the water kiosk, standpipes, wells, boreholes and the surrounding infrastructure are kept in good condition;
- appointment of a kiosk operator, if not appointed by the water company;
- monitoring of water usage and income;
- inspection of the water supply on a regular basis;
- contracting an individual or local contractor to carry out the necessary maintenance and repairs;
- inspection of the completed maintenance, and
- making payment for completed works.

6.11 Sanitation

Proper sanitation is essential for maintaining adequate levels of hygiene in a community. Sanitation is required both for households as well as in connection with public facilities such as schools, nurseries, clinics, community centres, markets and other assembly points. Common solutions include:

- households connected to the municipal sewage system,
- shared latrines and communal sewer systems, or
- household latrines with pits or septic tanks.

Funding

Funding of maintenance is often at the discretion of the homeowner as latrines are individually owned and sited on the housing plot. Pour flush latrines are widespread in South Asia.

For communal systems, the maintenance needs to be funded through the users, as is the case for a community water supply. In other words user charges must be sufficient to pay for the cleaning, servicing, regular maintenance and repairs including the connection to the sewer system or the regular emptying of the septic tanks / pits.

Management

Access to pit emptying equipment and small enterprises who undertake the work, together with the affordability of the service play a role in the maintenance of sanitary conditions in areas unconnected to the sewer system. Without such services households have to arrange for emptying of the pits themselves and the disposal of the contents.

A study compared the performance and effectiveness of three pit emptying technologies, i.e. large vacuum tankers, mini vacuum tankers and the Manual Pit Emptying Technology (MAPET). The study identified a set of parameters to guide the choice of technology for pit emptying in order to evaluate the effectiveness and efficiency of each service.

The accessibility to the latrines appeared to be the key parameter in selecting one of the three technologies. The study concluded that in a city with a wide variation in residential situations, different types of pit emptying technologies must be utilised. The responsible agency should therefore endorse and support the use of all technical approaches, in order to enjoy the advantages of each of the technologies in varying circumstances.[1]

The continued need to empty latrines is possibly one of the strongest arguments for low cost sewer connections whenever practicable.

6.12 Solid Waste Management

Solid waste management is an on-going process and therefore it is an operation. It does not require maintenance in the normal sense, but requires organisation and cooperation among partners such as the community, the private sector and the urban authorities. These issues are presented in Section 5.

6.13 Public Areas and Parks

Public recreational areas include facilities such as:

- parks and green areas,
- playgrounds,
- basketball courts and other sports grounds and
- other communal areas

Funding

If parks and play areas are on land belonging to the municipal authority, as owners they will be responsible for maintenance of the area. Although responsibility for maintenance may rest with the municipal authorities, the community often needs to remain active and involved in the maintenance process. Through community inspections and the alerting of the authorities as to maintenance needs, and also if needed by contributing financially and physically to the maintenance effort, the community needs to protect the assets within their area from deteriorating.

With open facilities it is not possible to collect "user funds" so maintenance must be organised through budgets from the municipality or funds raised by the community or sports groups.

1: Adapted from: Comparative Study on Latrine Pit Emptying Technologies (COMPET), Tanzania, 1991-1993

Management

Ideally there should be a maintenance plan as with all other types of facilities, but if the community are responsible for the area, maintenance will mostly be planned on a needs basis, e.g.:

- routine maintenance activities to ensure that litter is collected (especially litter which could be dangerous for children);
- inspection on a regular basis of fencing, paths, shrubs, playground and park furniture, concrete courts, sports equipment (e.g. basketball hoops);
- preparation of a repair plan and cost estimate;
- fund-raising;
- contracting an individual or local contractor or community group to carry out the necessary maintenance and repairs;
- inspection of the completed maintenance; and
- payment of completed maintenance works.

6.14 Community and Public Buildings

A number of social services such as schools, nurseries, clinics and community centres needs to be housed in proper buildings supplied with the necessary furniture and other equipment required for the services provided.

Maintenance Categories Relating to Buildings

Routine maintenance: cleaning and small repairs and replacement of items such as light bulbs and generally keeping the building in good order.

Periodic Maintenance: painting the building inside and out, repairing or replacing doors and windows, gutters, roofing sheets or tiles.

Emergency repairs - the replacement of roofing elements after a storm or the repair of damage to the foundations from flooding.

Funding

If we take the example of a community hall, the funding of maintenance can be financed through the letting of the building for private functions at a modest price (i.e. weddings and other celebrations, to user groups who meet in the community building). Of course, the purpose of a community building is that the community can use it for meetings without charge. General meetings and certain group meetings can be held free of charge if agreed by the community and their representatives. However, without a modest income it will not be possible to maintain the building and it will rapidly descend into a state of ill repair.

In the case of public buildings, such as schools or clinics, the municipal authority or a government ministry is responsible for the maintenance, however a realistic assessment needs to be made of the actual budget available and the relevant department's capacity to perform the maintenance. In cases where the government record on maintenance is poor, it is in the community's own interest to promote the maintenance of the buildings they are using, in agreement with the relevant government department.

Management

A manager or management committee for a community hall or building must be set up to:

- prepare a plan and budget for running the community hall (i.e. cleaning, electricity bill, water supply, management for bookings and operation);
- prepare a plan and budget for routine and periodic maintenance and an estimate of the materials needed to ensure that the building is kept in good condition;
- manage or appoint a manager responsible for the operation of the hall;
- gather fees for the use of the hall, and be accountable for the money collected;
- inspect the hall at regular intervals;
- contract an individual or local contractor to carry out the necessary maintenance and repairs.
- inspect the completed maintenance, and
- make payment for completed works.

In the case of a government owned building, the community should still be encouraged to give the responsibility to a group or manager (e.g. a school parent-teachers association) to inspect and alert the authorities to maintenance needs. If assistance is not forthcoming from the relevant authority, due to lack of funds or lack of capacity, then agreement must be reached between the relevant authority and the community as to the actions the community themselves can take to safeguard the school or clinic serving their area. This agreement can be formalised through a memorandum of understanding.

6.15 Electricity and Street Lighting

Electricity supply and lighting essentially consist of connections to private of public users. Street lighting is a public facility and will need a collective arrangement for its upkeep. In unplanned settlements one would commonly find a number of illegal connections made to public power distribution networks.

Funding

The most important part of the funding is the payment of electricity bills. Where the electricity for street lamps is to be paid by the community then the collection must be organised and the costs and payments to the electricity company open to all contributors.

Electricity supply to buildings is the responsibility of the building owners or occupiers. Any electricity supplied to public buildings are added to the operating costs of the building and are managed under the operation and maintenance of the building. The most difficult issue in payment for electricity is where there are many illegal connections. This is an area which is complicated and requires more consideration than can be given in this short summary.

Management

The management calls for the estimate of the operating costs, but also any repairs or maintenance to poles or other infrastructure. There may be the need for minor repairs or improvements that require an experienced electrician.

A committee for communal facilities such as street lighting needs to be set up to:

- prepare a plan and budget for the electricity bill, and minor repairs;
- gather fees for the use of the electricity and maintenance based on a transparent budget;
- inspect the infrastructure (poles, lights, etc.) at regular intervals;
- contract an individual or local contractor to carry out maintenance and repairs;
- inspect the completed maintenance;
- make payment for completed works, and
- make regular and timely payment of the electricity bill.

6.16 Training for Maintenance

As described in the earlier sections, there is a number of implementation arrangements which can be used for the provision of the local infrastructure services. These relate to both the construction and maintenance of the facilities. The main active partners have been identified as the users of the facilities, the private sector and municipal autho-rities. In order to install an effective maintenance system, it is important that the actual roles and responsibilities of each of these parties are carefully examined in order to establish their exact performance requirements. On this basis, it is possible to build the necessary capacity to effectively plan and implement maintenance and monitor its effects. Most maintenance work is not technically demanding. The real challenge is related to its management. This includes activities such as regular monitoring and inspection of the condition and performance of infrastructure facilities, planning, scheduling, organising and supervising maintenance works and finally evaluating the effects of the maintenance efforts. These activities need proper organisation and the persons in charge of its management also need adequate training in order meet the related performance requirements.

The advantage of involving the community in the actual construction of the infrastructure in their area is that tools and skills are retained in the community that can later be utilised for maintenance. This being said, the planning, budgeting and management of operation and maintenance of community assets needs agreement of ownership and agreement of respective responsibilities, and training to ensure that the operation and maintenance is properly carried out. Participation in construction is insufficient to ensure successful maintenance of the created assets.

6.17 End Notes

Maintenance arrangements are dependent on the ownership, budget, and partnership arrangements that are available to the community, the private sector and the municipal authorities. It is also important in the design phase to consider the implications for longer-term maintenance and to ensure that the community are not remaining with a large burden of maintenance and little support to carry it out.

Many of the maintenance options presented above only have a chance of success if there is sufficient support and commitment from the communities and their partners to plan, fund and implement the maintenance works.

Further Reading

Tools for Sustainable Operation and Maintenance of Urban Infrastructure, Tool 7A and Tool 10, Sohail and Cotton, WEDC, 2002

Rural Road Maintenance, Sustaining the Benefits of Improved Access, Donnges, Edmonds and Johannessen, ILO 2007, **www.ilo.org/eiip**

Manual on the Maintenance of Drainage and Roads, Hanna Nassif Community Development Project (Draft), Saetrum, ILO 2000, **www.ilo.org/eiip**

Rural Road Maintenance Management, Ministry of Rural Development, Johannessen, Cambodia 1999, **www.ruralworks.com**

Road Maintenance and Regravelling (ROMAR) using Labour-based Methods, Andersson, Beusch and Miles, ILO 1996

Labour-based Contract Maintenance Programme: Orientation Course for District Engineers, Course Notes, CTP 130, Beusch, ILO 1993

Maintenance Management for District Engineers, Transport Research Laboratory, 1987

International Road Maintenance Handbooks, Transport Research Laboratory, PIARC

Community Action Planning: Maintenance of Common Amenities UNCHS, National Housing Development Authority, Sri Lanka, 1994

National maintenance manuals (e.g. road maintenance).

SECTION 7

SPECIAL CONSIDERATIONS FOR CRISIS SITUATIONS

SPECIAL CONSIDERATIONS FOR CRISIS SITUATIONS

7.1 Objectives of this Section

The previous sections of this document propose various options for supporting poor urban communities in improving their living and working environment. This section takes a look at the special needs of areas suffering from crises. It considers the types of crises that can occur and their effects on individuals and their communities. It also looks at how to use the options proposed in Sections 2 to 5, to make them more responsive to the needs of urban communities suffering from the aftermath of a crisis.

7.2 Crisis Situations and their Impact

In today's world, crises are frequent occurrences. They are the result of:

- natural catastrophes (earthquakes, floods, draughts, volcano eruptions, cyclones, tsunamis),
- armed conflicts and wars,
- economic and financial downturns (a sudden collapse in the financial markets such as Asia experienced in 1997 when people lost their jobs and income), and
- political and economic transitions (these are changes in the political system of a country, i.e. more power to the provinces) - or economic changes (i.e. the closing of state-owned factories resulting in increased unemployment).

This section focuses on the first two types of crisis situations, resulting from natural disasters and conflicts.

The possible impacts of natural disasters can be sudden loss of life and injuries, damage or destruction of homes, essential infrastructure and transport routes; disruption of telephone systems; danger of disease, scarcity of water supply; loss of crops, livestock and food supplies; loss of tools or equipment; people facing difficulties in continuing their work; increase in prices; loss of traditional family and community safety nets.

The possible impacts of armed conflicts are large-scale loss of life and break up of families; large-scale displacement and break up of communities; large increase in the number of disabled persons; large-scale demobilization of soldiers; risks from mines and other remaining armaments; extensive damage to physical infrastructure; loss of tools, equipment, places of work, loss of employment and income; local government operating under difficult conditions, trading disrupted; insecurity, violence and lack of trust, lack of protection of human rights.[1]

The Asia Pacific region accounts for the largest number of natural disasters in the world. Disaster loss is on the rise with dire consequences for the communities affected. The situation is likely to be compounded by the consequences of the changing climate. Several countries in the region are suffering from internal conflict.

The vast majority of crises, that have a severe impact on the population, often

1: Adapted from "How Local Economic Recovery Can Integrate the Community Driven Development Approach, Draft ILO 2007".

take place in the poorer countries in the region. Vulnerable communities are the most affected and low-income settlements in urban areas are amongst the most vulnerable. This is due to their environmental and socio-economic situation. The impact of crises is worsened due to their poverty and social exclusion. The impact is also more serious when the greater area is underdeveloped and when the government presence is weak.

In a crisis situation, the way society works is seriously disrupted and in many cases support from outside the area is needed. Crises, whatever their causes, often lead to huge disruptions, with:

- civilian casualties,
- refugees,
- internally displaced persons,
- the collapse of government,
- breaking up of communities,
- lack of services (health care, schooling, etc.),
- lack of security and social protection, and
- people losing their work or means of earning an income.

It is important to understand the situation in the context of a crisis. Natural disasters mostly occur in a specific time period and geographic area, while armed conflicts can affect an area for a much longer period of time. The outcome or end of a conflict is uncertain, and it can affect a wide area, sometimes extending into neighbouring regions and neighbouring countries. Because the crises resulting from conflict and from natural disasters are not always the same, they may need to be dealt with differently. In conflict situations for example, support to affected communities does not have to wait until peace is established. It can be provided during the conflict. Options for community consultations may be severely limited, depending on the prevailing conditions, and therefore more reliance may need to be placed on public works programmes rather than community-based projects for infrastructure provision and employment.

The Gender Dimension

In the aftermath of a crisis, single parent, grandparent and teenage headed households may be among the most vulnerable if the main income earner or the main child-carer has been lost. Often female-headed households are the most vulnerable, but this is a generalisation and care should be taken to objectively assess the coping strategies of different groups and individuals.

A 2005 Amnesty International report identifies female-headed households as especially vulnerable. Globally, female-headed households are reported by the World Food Programme to make up the majority of those identified as the "chronically poor". Women and children often constitute the bulk of refugees and internally displaced people.

From Crisis Response to Recovery and Development

The reconstruction of crises affected areas generally takes many years. With all the constraints and limitations prevalent in disaster areas, it takes time to rehabilitate damaged private and public properties and infrastructure. Contrary to common belief and good intentions, the rehabilitation of severe disaster areas often require more than the period of 2 – 3 years for which assistance is commonly pledged.

In the immediate aftermath of a crisis the emphasis is on relief work and immediate assistance to victims (food, water, shelter and medicine). Communities may have lost their sources of income and during the first 12 months (early recovery phase) there is a need to inject cash into these communities through for example cash-for-work schemes (see chapter on cash-for-work below). Typically, these include general cleaning and debris removal, repairs to structures and buildings, improvements to dykes and pond structures, tree planting and replanting of coastal areas and repairs to embankments and roads.

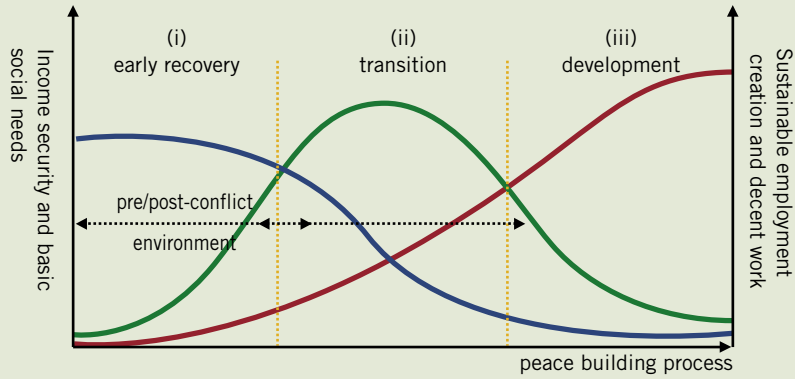
The main objective is to provide people with cash, thereby allowing them to actively participate in the reconstruction of both public and private infra-structure.

After the initial relief phase, reconstruction can start and although livelihoods are recovering, cash for work activities continue to be in demand but increasingly the complexity of the works increases as the infrastructure

repaired and rehabilitated needs to meet prescribed standards and work methods. Cash for work activities become more complex, need more technical inputs and supervision and therefore evolve into what we know as labour-based or local resource-based works.

The diagram below illustrates the progress from (i) immediate crisis response (early recovery) through (ii) the transition (recovery) phase leading to (iii) development. This diagram is specific to post conflict situations, but the stages in working out of crises created by natural disasters are similar.

From this diagram, it can be seen that the reconstruction of community infrastructure already begins in the early recovery phase as cash for work



- Food, health and personal security
- Physo-social assistance
- D&D
- Return
- Cash grants
- Cash for work
- Emergency employment services
- Short-cycle skills training
- Basic livelihood start-up grants
- Labour market assessment for recovery and reconstruction
- Basic labour standards

- Community infrastructure reconstruction and labour based approaches
- Business recovery:
  - Microfinance
  - Technical assistance
  - Training
- Focus on:
  - Food production
  - Basic services
  - Construction sector
  - Local trade networks
- Referral and labour inform. Services
- Employability and vocational training
- Restoring labour market institutions
- Strengthening socio-economic actors

- Decent working conditions
- Appropriate macro-economic environment
- Transparency, accountability, stability
- Trust in institutions
- Integrated LED activities, focus on:
  - Efficiency through infrastructure investments
  - Local firms development
  - Local skills development
  - Inward investments
- Expanded financial and other BD services
- Social protection
- Social dialogue

Source: Demand-Driven Approaches to Livelihood Support in Post-war Contexts, A Joint ILO-World Bank Initiative, Alfredo Lazarte Hoyle, ILO Geneva, September 2007

activities. This will increase in the transition phase, as more communities develop plans for their recovery priorities. They will in turn be part of the larger infrastructure investments that become available during the development phase. The cash for work activities eventually evolves into public (or private) works programmes during the development phase. The quality, price and timeliness of the assets to be rebuilt become more important as the crisis response process moves on.

Cash for Work

Cash for work programmes are an increasingly common element of the modern humanitarian assistance in food-insecure settings, disaster-affected areas and post-conflict environments. They were originally developed in famine and food-insecure regions and used as an alternative to food for work programmes. Use of cash for work was later expanded to post-disaster and conflict settings.

There are two main reasons of the success of this approach. First of all, it is clear that the cost of implementing cash for work is lower than food for work programmes because the heavy transaction costs associated with food delivery are avoided. Second, because in general, cash provides versatility and empowers people to make choices and act on their own decisions.

Measuring for debris clearing in Sri Lanka

Therefore, cash for work can be considered as a powerful tool to provide income, to contribute to community recovery and to spread positive social effects in conflict-affected communities. Furthermore, cash for work activities represent a logical response that provides a structured mechanism to engage people in low-skilled constructive activities while infusing cash into the economy.[2] Below is a table of suggested works suitable for cash for work programmes:

Examples of Common CFW Activities	
Work Category	Activities
Debris clearing	Removal of rubble from private buildings, recycling of building materials, general clearing works
Solid waste management	Cleaning streets and drainage, water collection and disposal, bush clearing
Sport and recreation facilities	Rehabilitation, re-equipping and reactivation of sport and recreation facilities
Cleaning Beaches	Debris removal, greening works
Cultural and historic sites	Site restoration, cleaning and maintenance
City parks	Cleanup and greening
Forestry	Reforestation activities
Agriculture	Rehabilitation of irrigation canals, debris clearing
Fishing	Manufacturing fishing nets
Water	Water pans, rock catchments, shallow well construction and rehabilitation
Health facilities	Cleaning and rehabilitating public health posts
Markets	Removal of destroyed stalls and general cleaning

Cash for work schemes have their limitations as far as technical, material and equipment inputs are concerned. The natural progression is to move away from cash for work towards the development of local resource-based work methods with emphasis on using local resources such as labour, materials and contractors.

Cash for Work – Timor Leste

During the first weeks of operation, the core of the activities organized by Servi Nasaun was related to the cleaning urban and peri-urban areas of Dili. Later the project management gradually scaled-up the sophistication of the work activities, giving priority to community projects that, being compatible with the defined criteria (labour-intensive, low skills and limited equipment and materials requirements), also presented a potential to contribute to the improvement of the living conditions of the population as a whole. The increased quality of the works promoted enlarged effects, resulting in benefits enjoyed by entire communities rather than only by the participating workers.

Source: Final report, Work for Conflict Prevention and Meeting Basic Needs, Servi Nasaun Project, December 2006, ILO Timor Leste

2: Adapted from: Timor Leste Cash for Work Programme, Policy And Operational Guidelines, Ministry Of Labour And Community Reinsertion

Urban Communities in Crisis

Crises affect urban and rural communities in different ways. Urban low-income settlements require location-specific strategies to recover from the social and economic impacts of the crisis. Activities depend on the nature of the crisis and its impact on the infrastructure, local economy and livelihoods.

What makes community works in urban settlements affected by a crisis different from those in a "normal" situation? Often, the needs for rehabilitation are larger and action is required more quickly. Infrastructure may be destroyed and livelihoods are lost. People need to rebuild their shelter and basic services need to be restored. During the recovery period, there is a need for cash injections into the local economy. Local governments may not adequately work anymore and there is a need for parallel systems to get the response going. The crisis also offers opportunities. International organizations and NGOs may come in and possibilities arise to rebuild the community in a better way.

Opportunities

Armed conflicts and natural disasters inflict tremendous losses to physical and human resource assets. On one hand, crises pose major challenges to the society and the economy of the affected area, especially when there is not sufficient local capacity to cope with it or when they are not adequately recognized, organized and exploited. There are also a number of opportunities rising from recovery and reconstruction. In the immediate aftermath of a crisis, the affected territory is likely to experience an out-of-ordinary inflow of investment capital for recovery and reconstruction. These generate an unprecedented opportunity for revitalizing the local economy, creating jobs for the affected communities and injecting cash into the local markets. Nevertheless, external resources that flood into an economy after a disaster can quickly leak away without leaving long-term benefits. Indeed, such an opportunity may be missed if local human and physical resources are not adequately capacitated and do not meet the requirements and needs coming from the demand for reconstruction, both in quantitative and in qualitative terms.

Source: ILO Crisis

As can be seen from the previous sections of this document, the ideal situation is to plan with these communities. However, in the aftermath of a disaster such as the tsunami which devastated large coastal areas of Southeast Asia, the families and communities are in a state of shock. Opinion is divided as to whether communities and individuals are in a position to plan for their future immediately. Their first concern is to find and assist survivors, find and bury in dignity those who have lost their lives, and to seek immediate shelter and food.

There may be no time or inclination to sit and plan, and immediate needs

must be catered for without requiring work or contributions in return, while time is taken to try and come to terms with the consequences and trauma deriving from the disaster. Once the initial shock wears off, people need something to occupy them – but is it time for extensive community planning? Probably not – therefore a programme of public works for clearing debris and restoring basic access and shelter is appropriate for early cash earning opportunities.

Although it is too early for a planning system to be introduced, this does not mean that the wishes of the community should be ignored and no consultations initiated. Consultations will require a light and sensitive approach from the agencies supporting the communities. Only once the basic needs are catered for and people are looking for ways to recover their income and rebuild their communities is it time to start a proper planning process. The following chapter deals with this.

7.3 Planning

In the immediate aftermath of a major crisis, relief activities tend to be scattered, fragmented and with limited coverage. Overall planning and coordination of the recovery often does not take place because of the limited capacity of local institutions. Sometimes, the national government may have to step in to define the strategy and take responsibility for reconstruction. Within this framework, international agencies and NGOs can then work with local authorities and communities to develop specific components. Community planning is an important step in this process but not always feasible as communities may be scattered, traumatized and unable to cope with participatory planning processes.

The government may be quick to prepare guidelines on the process of rebuilding or re-integrating, and any community planning process must take into account any support the government can offer or any regulations they have put in place concerning the recovery process. It is noted however, that in the aftermath of a major crisis, local government might not be functioning due to disruption and loss of personnel. Equally, the personnel working for local government agencies are themselves affected by the calamities which have occurred.

Planning the Reconstruction

In Aceh, the Rehabilitation and Reconstruction Agency (BRR) together with the provincial government prepared a reconstruction and rehabilitation master plan within one year after the tsunami. No major construction works could be implemented before the approval of this plan. The loss of employment and income resulted in many people having to face poverty and destitution. The master plan recognized that for the people to rebuild their livelihoods, the critical concern was to get people back to work. The master plan offered opportunities to combine the need for infrastructure rehabilitation and employment creation and work with local governments to identify priorities for reconstruction using local resource-based approaches. The ILO was able to work within the context of the masterplan and contribute to the rebuilding of Aceh using participatory approaches.

Planning with the community may be difficult if community survivors are no longer living together. They may also have been provided temporary shelter away from their home areas. In a post conflict situation there may be feeling of deep mistrust among members of the same community. There can be returning refugees, people who remained in the area but were caught up in the conflict and disarmed or demobilised soldiers all trying to rebuild their lives in the same area. In such cases there is often need for specialist support in conflict resolution and rebuilding of a trust basis.

Reconstruction in the Solomon Islands

The conflict during 1999-2003 in the Solomon Islands disrupted major productive activities and services in all sectors of the economy and destroyed social and economic infrastructure. The impact of the crisis on the national economy, social unity, government services, and on ordinary people's lives continues to be felt and is still seen today. The conflict led to loss of employment and livelihoods, thousands were displaced and transport and communication infrastructure destroyed.

The ILO Community-based Infrastructure Rehabilitation Project covered activities such as repair, improvement and provision of infrastructure such as roads, water supply schemes, community halls, schools and sports recreational facilities.

One of the more innovative sub-projects aimed at involving youth in city improvements. This sub-project employed local artists and young people to paint and decorate planter tubs and refuse bins and to install refuse bin stands along Honiara's main street.

The sub-project provided an ideal opportunity for the re-integration of people affected by the ethnic tension. It provided practical experience to the trainees and also allowed them to earn some income. The project made a definite impact to address Honiara litter problem by raising public awareness in rubbish bin use.

Finally, the project promoted Solomon Island culture, and subsequent lifting of moral and pride of the participating youth and local artists besides short-term employment.

Wherever possible, and where no obvious negative consequences can be foreseen, communities must be consulted and supported to decide about their own future. Simple questions about how and where people wants to live and how they see their future job opportunities need to be taken into consideration. Normal community participation techniques can be used for the identification and planning of solutions for priority needs.

Perhaps, of greatest importance in a post-crisis situation is the coordination of activities and the sensitivity as to when communities need to be left alone. Without coordination some communities may be overwhelmed with external offers of support, and with each offer comes a new planning and

implementing procedure. At the same time other areas and communities may be neglected. Therefore it is important when planning, to coordinate with other organisations and government representatives.

Other organisations' planning processes may not be ideal for planning community-based restoration and improvement of infrastructure, but they can be used in order to minimise the repeated questioning and answering on the part of the community.

As soon as communities are in a position to spend more time on planning and deal with longer-term development issues, the community planning procedures laid out in Section 3 should be used as a guide.

7.4 Design Considerations

The crisis offers an opportunity to rebuild communities and urban centres. This opportunity can be used to "build back better" or for "emergency plus" in terms of design and implementation of infrastructure works. This of course must be combined with improved disaster preparedness and early warning systems. Designs should be fully discussed with the community to reflect their living and working needs.

Rebuilding Private Housing
In Sri Lanka, after the devastation of the tsunami, there were extensive discussions on how to rebuild houses. Many of the surviving fishers and their families wanted to reconstruct their houses with the living area on the first floor elevated on pillars with an open area below for storing fishing gear.

The opportunity is also there to address specific needs of areas subject to typhoons, flooding, mudslides and earthquakes. Choice of design and building materials are especially critical in terms of stability, but also cost and affordability.

Earthquake Regions

Regions where seismic activity takes place may be subject to repeated earthquakes. Therefore the reconstruction process needs to recognise this and rebuild using designs aimed at reducing the level of destruction when future earth-quakes strike.

The following are a list of considerations when designing for earthquake regions:

- Building forms must be simple and symmetrical (both horizontally and vertically); complicated forms are possible, if subdivided into independent and simple components.
- Foundations should be of reinforced concrete, constructed on solid ground (preferably rock), maintaining uniform depth (no stepping on sloping ground) and having continuous reinforcement. On poor soils, strong slab foundations have the advantage of "floating" on seismic waves, thus avoiding damage.
- Walls should be relatively light (to lower the centre of gravity of the building and reduce the damaging effects of collapsing walls), capable of absorbing vibrations, but with rigid connections to foundations, adjoining walls and roof.
- Frame structures (timber, bamboo, reinforced concrete, metal) with light infill walls are most resistant to earthquakes; conventional masonry structures require a strong, continuous ring beam on top of the walls, to prevent them from falling apart.
- Openings should be small, not less than 50 cm from corners or other openings, glass panes should be avoided.
- Roofs song, flexible members, firmly tied to the supporting structure, compact symmetrical shapes with spans as small as possible. Roofs must be securely fixed to the ring beam of the building frame. Alternatively, roofs can be fixed to independent supports, structurally separated from the walls, which, in the event of failure, would not cause the roof also to collapse. Appendages (e.g. parapets, chimneys, water tanks), if they cannot be omitted, should be very securely fixed, to avoid being shaken off.
- Stone, earth and clay brick walls generally perform poorly in earthquakes. Improved resistance to collapse is achieved by strengthening and reinforcing corners. Ring beams are essential. Masonry walls and domes should be avoided in earthquake zones. Clay tile roofs need strong and heavy timber structures, which are a hazard when they collapse, and the tiles tend to fall down under vibration.
- Reinforced concrete and ferro-cement are ideal materials for seismic-resistant constructions, if the quality of cement, aggregate and workmanship are good and the metal reinforcement is protected from corrosion. Concrete frames and thin shell structures are best, but heavy ceiling and roof slabs must be avoided.
- Timber and bamboo frames with light infill walls or cladding provide optimum earthquake resistance, and cause less destruction than heavier materials in case of collapse, but represent a fire hazard, which is of significance during earthquakes (due to breakage of chimneys, power

and gas supply lines, etc.). Protection against biological hazards is essential to avoid weakening of the construction.

- Metal frames permit light, flexible constructions, but design and dimensioning should take into account the risk of buckling. Fire protection and good resistance to corrosion are essential. Metal sheet roofs generally perform well in earthquakes.
- General precautionary measures are in all cases good workmanship and regular inspections of critical parts for maintenance and repairs; also all protective measures against fire.[3]

During the reconstruction of government office buildings and schools destroyed as a result of the recent earthquake in Kashmir, the authorities introduced new building standards to improve their earthquake resistance.

Flood Areas

In areas prone to flooding, the houses can be raised on stilts. Where possible, public buildings should be built on sites where the ground level is above (or filled to above) the surrounding ground and above the anticipated flood level. Through careful siting of public buildings they can provide shelter in times

3: Source: Appropriate Building Materials, A catalogue of potential solutions, 3rd edition, Roland Stulz, Kiran Mukerji, SKAT, 1993

of need (i.e. if a school is rebuilt on ground or fill above the flood level, it will keep the pupils safe and can be used as a shelter for the local community when severe flooding is forecast).

Landslides

In general, building sites should not be on or close to steep hillsides due to the danger from landslides and mud-slides (avalanches in higher mountain regions with snowfall). Many poor people in urban areas have made their homes on hillsides or on filled ditches and watercourses. Land and mud slides can be incited by snowmelt, rain, poor excavation or earthquakes. They sometimes startle the unsuspecting homeowner with the ferocity of their rapid movement or the slow stretching of the once peaceful terrain.

Although the areas will remain dangerous there are mitigating actions that can be taken:

- Locate all water sources and provide waterways;
- Provide additional surface drainage;
- Use deep piled foundations for as many buildings as possible;
- Move schools, clinics, and other public buildings out of the valley or away from the bottom of steep slopes.

Fires

In urban areas, catastrophes can be localized, but with devastating consequences for the communities affected by them. Fires that quickly spread through a settlement can result in loss of life, and loss of home, workplace tools and other assets.

In the rebuilding process, the fire master and city planning department can provide advice on the width of access needed for fire-engines and the lengths of hosepipes, so that the fire-brigade can tackle fires down narrower side streets and paths using the hosepipes.

In the example described below, the opportunity to rebuild after a fire was used to not only replace the lost housing, but to reduce the risk of future flooding, which was a second problem facing the same community. In other words the opportunity as a result of a devastating fire was taken to "build back better".

General Precautions

In general, building sites should not be close to hillsides (danger of landslides, mudslides, avalanches), or near the sea (risk of tsunamis), or in areas subject to flooding (along major river banks and in food plains). Sufficient distance from neighbouring structures (danger of collapse), and downstream from reservoirs (danger of dam-burst) should be maintained. Many poor families in urban areas have little choice about the site where they make their homes, but remedial measures can be taken to improve the safety of these sites until a better long-term solution can be found.

Building Back Better - Philippines

On July 25, 2007, a big fire razed a low-income settlement in Mandaue City in Cebu. Fire victims were temporarily housed in tents at an evacuation centre and at a convent nearby. Three hours after the fire, the community organised themselves, re-occupied the land and began clearing and cleaning the area using their own resources with the local government unit assisting them with relief goods. The community and their leaders realised that this was also an opportunity to raise the level of the land, as the area was susceptible to flooding during heavy rain. The land was subdivided into plots for each family and filling work started. The private sector also became a partner in the process through SM City, a big commercial mall, providing free fill material. An NGO (PACSII) offered to provide the drinking water supply system.

Source: Engineer Reynaldo Asuncion, Philippines, 2007

7.5 Implementation

A major challenge facing the reconstruction phase in a crisis situation is to assemble sufficient capacity to plan, design and implement the necessary rebuilding works. Disasters not only affect private individuals. They also have a devastating impact on the ability of local authorities to perform their services. Equally, the capacity of the private sector, including local contractors, materials suppliers and other industries may have been severely curtailed. There is often an acute shortage of equipment, building materials and skilled labour in the areas struck by the disaster.

Furthermore, it is important to acknowledge the extent of the damages. Private and public infrastructure, which it took several decades to develop, may have been destroyed overnight. This all needs to be rebuilt in a very short time in order for the communities to start functioning normally again. Obviously, this requires intensive efforts beyond the capacity of local industries and authorities.

Reinstating Access

The reconstruction also needs to be organised in a manner which meets the immediate demands of the victims of the disaster. During the early stages of reconstruction, a major priority is to regain access into the disaster areas. In order for relief services to reach the areas where they are required, there is an immediate demand for providing transport access. This includes removing

debris from existing roads, rebuilding bridges and cross-drainage structures and repairing destroyed road sections. Providing emergency assistance involves major transport operations in order to supply victims with food, water, shelter and medical assistance. The level of access to the disaster areas determines how fast and efficient such assistance can be provided.

Providing Basic Services

Once immediate relief services have been provided, there is an urgent need to reinstate basic infrastructure services such as water supply, sanitation and power supply. Equally, there may be a demand for reinstating drainage systems to allow floodwater to be discharged, thereby limiting additional damage and improving access to land and properties. Although there is scope for local participation in these efforts, there is often a huge demand for outside assistance in order to reinstate basic access and services as soon as possible after these infrastructure facilities have been destroyed.

Adding Implementation Capacity

Reconstruction works, both during the early relief stages as well as during the period when livelihoods are restored, require an effective management organisation as well as effective organisations that can implement the actual works. A common feature in many reconstruction programmes is that the local capacity to manage and implement works is far too limited to deal with the real situation on the ground. In conflict areas, the local government offices may have ceased to exist and as a result needs to be rebuilt from scratch.

Rebuilding the capacity of local authorities to provide infrastructure services obviously needs to be part of the long-term reconstruction strategies. Local authorities and local representation in making priorities and being in charge of future infrastructure development is obviously the long-term goal. Equally, there will be a demand for maintaining the entire rebuilt infrastructure. Such services need to be managed by a competent locally based authority.

While local capacity is being rehabilitated, there is however, an immediate demand for management and implementation capacity, which needs to be imported. In addition, considering the considerable amount of the reconstruction works and the need to complete works within a limited period of time, there is a need for assistance from experienced organisations, which can take on substantial amounts of work on a short notice. Central government agencies, international and local NGOs, UN agencies and contractors and consultancy firms from other parts of the country can provide this type of external assistance. The government may also establish a dedicated reconstruction authority through which additional implementation capacity is provided.

Building Disaster Preparedness Capacity

Coastal towns in Bangladesh were severely affected by cyclone Sidr in November 2007. Ideally, the district administration should lead the coordination of the implementation of the disaster assistance. The current capacity however was not sufficient to effectively undertake this task. The ILO proposed a project that would strengthen the capacity of the districts to effectively coordinate and respond to crisis activities in their area with a focus on infrastructure works (and cash-for-work activities in general). The project would provide support to the local disaster emergency response groups and the local authorities. Activities would result in a higher level of disaster preparedness at the district level, which is helpful in future disaster response efforts. The ILO proposed to use modalities developed during the tsunami response in Sri Lanka to develop this district capacity. The entire South of Bangladesh is prone to annual floods, droughts and cyclones and disaster response is a regular phenomenon. Improved local capacity for cyclone and flood preparedness and mitigation will help to reduce the vulnerability of people at risk. Improved coordination will also contribute to a speedier recovery of affected areas.

A key performance criterion for assistance to a disaster area is the ability to mobilise sufficient implementation capacity on short notice. This includes being able to provide from outside the necessary equipment, materials and personnel, design and management capacity.

The response to large-scale disasters requires a concerted effort from several sources of assistance. With more actors on the scene, there is also an increased demand for coordination and as part of this ensuring that the basic infrastructure requirements are given priority. With several actors on the scene, it is also important to ensure that the main players, with considerable implementation capacity, are not out-crowded by smaller but more vocal organisations.

Developing Local Capacity

The implementation of local infrastructure works through community involvement and local contractors is possible once the skills levels have been regained and communities have recovered sufficiently to take on responsibility not just for the planning but also for the implementation of their own improvement and reconstruction works.

There may be need for considerable support to the community. Local authorities, project staff, NGOs or institutions of learning can provide this support. Contracts and implementation modalities presented in Section 5 can gradually be introduced when communities are in a position to play a more central role in the recovery and development efforts.

Involving Women in Reconstruction

"When we arrived here in February 2005, the job opportunities were and still are in the construction sector," says a specialist, in charge of an ILO vocational and enterprise development programme for women. "And women traditionally don't have that role, so the main challenge was to get the women somehow involved in Aceh's reconstruction."

To convince the women to do what is traditionally a man's job "was not a problem at all", she says. "A lot of them were bored in the camps, their husbands either dead or already working, and many had lost children, so they had nothing to do – they were begging us to give them some activities." The ILO started five-day training courses in activities such as building concrete blocks and tile manufacturing. By late August, about 150 women had been trained. Some of them were selected for a Start and Improve Your Business programme and started new businesses, often as a group. "As a consequence, the women were able to gain self-confidence," states the ILO specialist.

Source: Working Out of Disaster: Improving Employment and Livelihood in Countries Affected by the Tsunami, ILO, 2005.

7.6 Training for Construction Work

After a crisis, there is a huge need for reconstruction and often a resulting shortage of skilled labour to participate in the reconstruction effort. One area where women and men, who have lost their income source or the family breadwinner can be assisted, is in rapid training to be able to participate in the reconstruction effort both within their communities and in larger government or agency projects. The following example of such an experience is from Aceh Province, Indonesia:

Skills Development

Indonesia was seriously affected by the December 26, 2005 earthquake and tsunami. From field visits and assessments after the disaster, it appeared that there was a vast need for basic technical training linked to the immediate reconstruction of houses and other infrastructure. The ILO developed two crash courses, one for concrete and masonry works and another on debris removal supervision. A large number of local people in search of work were trained on site in Banda Aceh (the urban centre of Aceh Province). Participants used their improved skills both for professional and private purposes. Productivity and quality of infrastructure works (including private housing) improved and people were able to find work more easily. The training contributed both to the "build back better" and "back to work" objectives. Training materials were produced in local language and a pocket manual was distributed to trainees, NGOs and other international agencies.

Source: Tsunami Response – ASIST AP, ILO 2006

Another example of training for involvement in the recovery and rebuilding process can be found in the aftermath of the Gujarat earthquake in India. There was an urgent need to build the confidence of the local artisans in the new techniques for the disaster resistant construction that could withstand the annual monsoon, future earthquakes and cyclones.

A third example comes from Yogyakarta in Indonesia

Mobilising Women

The strategy was aimed at launching initiatives in collaboration with the Self Employed Women Association (SEWA) to address the needs for restoration of livelihoods. The strategy also focused on skills development of artisans, organising crash training courses for skilled workers to meet the immediate needs for shelter reconstruction in their own and neighbouring areas, and capacity building of SEWA to support its ongoing activities. Training was provided in building with masonry skills and the production of building materials. This was complimented by training on demonstration sites for the construction of earthquake resistant housing together with the Disaster Mitigation Institute and the Peoples Science Institute who had considerable experience in the field from many such disasters in India.

Source: Establishment of Temporary Training cum Production Centres, in Kutch District, ILO, 2001

Training for Rebuilding

The city of Yogyakarta in Indonesia was hit by a massive earthquake in 2006. In the aftermath of the quake, the Government provided cash grants to communities for the reconstruction of temporary shelters and the restoration of livelihoods. Ensuring that people can get back inside and return to work to support themselves and their families is one of the long-term challenges that such disasters present. Families were responsible for rebuilding their own shelter with the cash granted to them. A lack of construction skills was imminent and ILO quickly fielded a small team to train families on simple construction methods such as brick laying and concrete works. This type of crash courses proves to be very effective in disaster response, particularly in urban areas.

7.7 End Notes

Support activities should transform as quickly as possible from emergency relief to recovery and development and the approaches in Sections 3 to 6 can be introduced.

Further Reading

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Report 38456.The Mumbai Slum Sanitation Program Partnering with Slum Communities for Sustainable Sanitation in a Megalopolis, WSP, World Bank, Cities Alliance, 2006

Infrastructure Development and the Informal Sector in the Philippines, SETP No. 12, Yu, ILO 2002

Reference was made to the following websites:

- Asian Coalition for Housing Rights (ACHR) **www.achr.net/about_achr.htm**
- Asian Development Bank: **www.adb.org/urbandev/default.asp**
- Cities Alliance, **www.citiesalliance.org**
- DfID Millennium Development Goals **www.dfid.gov.uk/mdg/slumdwellersfactsheet.asp**
- GTZ, Good Governance, Urban Development, **www.gtz.de/en/**
- ILO/ASIST – Asia Pacific, **www.ilo.org/eiip**
- ILO-EIIP, Employment Intensive Investment Programme, **www.ilo.org/eiip**
- ILO-SEED, Boosting Employment through Small Enterprise Development (SEED), **www.ilo.org/dyn/empent/empent.portal?p_prog=S**
- ILO-CRISIS, Crisis response and reconstruction Programme, **www.ilo.org/crisis**
- Slum Dwellers International **www.sdinet.org**
- Sida Division for Urban Development **www.sida.se/sida/jsp/sida.jsp?d=883&a=17282&language=en_US**
- UN-Habitat **www.unhabitat.org**
- World Bank, Urban Development **www.worldbank.org**
- World Bank, Community Driven Development, **www.worldbank.org**
- World Bank, Massachusetts Institute of Technology, Up-grading Urban Communities a Resource for Practitioners **http://web.mit.edu/urbanupgrading/**

ANNEX

Annex 1.1

Cities Alliance

Cities Alliance is a global coalition of cities and their development partners committed to up-scaling successful approaches to urban poverty reduction. The alliance promotes cities as proven poverty fighters and engines of economic change. There are three groups of members in the Cities Alliance:

- Local authorities represented by United Cities and Local Governments (UCLG) and Metropolis;
- Governments of developing countries and development partner countries;
- Multilateral development agencies and financial institutions.

The Cities Alliance supports the formulation of City Development Strategies (CDS) and city-wide and nation-wide slum upgrading.

The Cities without Slums initiative of the Cities Alliance was instrumental in promoting the need for action on slums within the international development agenda. The Cities without Slums Action Plan calls for:

- challenging donors, governments and slum communities to improve the lives of 5–10 million slum dwellers by 2005 and 100 million by 2020;
- increasing Bank investments aimed at provision of basic services to the urban poor as a central thrust of its new Global Urban and Local Government Strategy;
- leading a worldwide effort to move from pilot projects to upgrading city-wide and nation-wide and to generate the required resources to do so; and,
- investing in global knowledge, learning and capacity in slum upgrading, and for reducing the growth of new slums.

The first item on the action plan led directly to the formulation of the millennium development goal target for improving the lives of slum dwellers.

The indicator (Indicator 32: Proportion of households with access to secure tenure) is designed solely to measure secure tenure. This is only one aspect of reducing poverty in urban areas, but has been selected as the indicator, as it is a particularly vital one. Secure tenure is the basis upon which households and governments will invest in improvements in housing and services.

Global Campaign for Secure Tenure

Security of tenure is an important component of the Habitat Agenda commitment to the full and progressive realization of the right to adequate housing. In line with this commitment, the campaign provides an innovative, rights-based approach to urban development, it assists governments to adopt and promote innovative systems of land tenure and land management that ensure the security of many urban poor populations living often in un-registered and quasi-legal residential circumstances. Security of tenure is directly linked to urban citizenship, as certainty of tenure can solidify the right of slum dwellers to exist in the city, organise, make claims on public resources, and co-manage settlement improvements with NGOs and public authorities.

Source: City Alliance: www.citiesalliance.org

World Bank

The World Bank has been involved in urban upgrading projects for the past 25 years, demonstrating that basic services to low-income settlements can be provided at a realistic cost if done properly. Four main activities are proposed for new emphasis in the World Bank's urban support:

- Formulation of national urban strategies - helping constituents understand and articulate how the urban transition can contribute to national goals of broad-based growth and poverty reduction, and identifying the economic roles and development requirements of different types of cities within the country.
- Support to city development strategies - facilitating participatory processes by which the local stakeholders define their vision for their city, analyse its economic prospects and identify priorities for action and for external assistance to implement the strategy.
- Scaling-up programs of services for the poor - including through upgrading of low-income urban neighbourhoods based on community-based initiatives supported by a wide coalition of public and private sector partners.
- Enhanced assistance for capacity-building - supplementing "retail" municipal management operations by supporting intermediary networks, such as municipal associations, as mechanism for "wholesaling" technical assistance, training and sharing of experience and providing direct advisory services outside of lending operations on a variety of urban management issues.

The above activities would be in addition to the World Bank's core business of urban development (lending and non-lending assistance for municipal management and municipal finance intermediation, housing and real estate

market development, urban environment, urban cultural heritage preservation, disaster management).

The World Bank is an active and founding member of the Cities Alliance.

Source: www.worldbank.org

Asian Development Bank

The activities of the Asian Development Bank (ADB) in the urban sector have expanded rapidly since the beginning in 1968, with the provision of 183 loans to 26 developing member countries, valued at $8.08 billion. In addition, some 309 technical assistance projects have contributed to urban project preparation, planning studies, policy reforms, and institutional development. Some 95 percent of this assistance has been under the responsibility of the water supply, urban development, and housing divisions of the ADB's agriculture and social sector departments and their predecessors. Other divisions contributing to urban sector development have included the transport and communications, financial sector, and industry and energy divisions of the infrastructure, energy and financial sector departments.

The ADB has also sponsored a series of seminars that has contributed to the development of support to the urban sector in the Asia Pacific region. The publications based on several of these seminars formed the Bank's substantive contribution to Habitat II in 1996.

Manuals have been prepared for the economic evaluation of urban development and water supply projects. The Strategy and Policy Office has carried out research on governance and municipal service delivery. One general constraint has been a lack of comprehensive information on which to base the urban activities. However, the water supply sector has led the way in filling this gap by publishing the water utilities data books.

The ADB is an active member of the Cities Alliance.

Source: Urban Sector Strategy, ADB 1999, www.adb.org/Documents/Policies/Urban_Sector

UN Habitat

The UN-Habitat mission is to promote socially and environmentally sustainable human settlements development and the achievement of adequate shelter for all. UN-Habitat runs a number of global programmes that involve countries from all over the world. The programmes involve a wide range of partners ranging from central government, local government to civil society

and beneficiary communities. They are:

The Best Practices and Local Leadership Programme (BLP), which is a global network of government agencies, local authorities and their associations, professional and academic institutions and grassroots organisations dedicated to the identification and exchange of successful solutions for sustainable development.

The United Nations Housing Rights Programme (UNHRP) was launched in April 2002, as a joint initiative by UN-Habitat and the Office of the United Nations High Commissioner for Human Rights (OHCHR). The substantive focus of the programme is grounded in the Habitat Agenda, which states: "Within the overall context of an enabling approach, governments should take appropriate action in order to promote, protect and ensure the full and progressive realization of the right to adequate housing" (paragraph 61).

Strengthening Training Institutions to improve the living environment for all on a sustainable basis, by promoting resource development and institutional capacity building for the management of human settlements and ensure the implementation of the Millennium target on improving the lives of slum dwellers.

The Urban Management Programme (UMP), established in 1986, represents a major effort by UN-Habitat and UNDP, together with external support agencies, to strengthen the contribution that cities and towns in developing countries make towards economic growth, social development and the alleviation of poverty.

The Localizing Agenda 21 Programme (LA21) aims to help local authorities in secondary towns to achieve more sustainable development by implementing an environmental planning and management process to identify and address priority issues.

The Safer Cities Programme has as its main objectives to: (i) build capacities at city level to adequately address urban insecurity; and thereby (ii) contribute to the establishment of a culture of prevention.

UN-Habitat's Water and Sanitation Programme is a trust fund with the main focus on improving delivery of water and sanitation in Africa and Asia through its regional programmes, Water for African Cities and Water for Asian Cities, and promoting policy dialogue, information exchange, water education and awareness raising. It also monitors progress towards achieving the Millennium Development Goal targets.

The Global Urban Observatory (GUO) addresses the urgent need to improve the worldwide base of urban knowledge by helping governments, local authorities and organizations of the civil society develop and apply policy-oriented urban indicators, statistics and other urban information. The GUO was established by UN-Habitat in response to a decision of the United Nations Commission on Human Settlements, which called for a mechanism to monitor global progress in implementing the Habitat Agenda and to monitor and evaluate global urban conditions and trends.

Rapid Urban Sector Profiling for Sustainability (RUSPS) strengthens local, central and regional institutional and key stakeholders' capacities in settlement and slum improvement, utilising good governance and management approaches through pilot projects and contributing to the development of policy, institutional, legislative, financial, normative and implementation frameworks as a strategic contribution to poverty alleviation and to the implementation of the Millennium Development Goals.

The Sustainable Cities Programme (SCP) is a joint UN-Habitat/UNEP facility established in the early 1990s to build capacities in urban environmental planning and management.

The Slum Upgrading Facility (SUF) of UN-Habitat aims to address issues related to housing finance. It is focused on Millennium Development Goal 7 Target 11: "To make a significant improvement in the lives of 100 million slum dwellers by the year 2020". Domestic capital is seen as the key to the sustainable development of slum upgrading. The SUF operates in conjunction with Cities Alliance.

The Cities Alliance Consultative Group is co-chaired by the Executive Director, UN-Habitat and by the World Bank's Vice President for Private Sector Development and Infrastructure. They are responsible for developing the Cities Alliance's long-term strategy and approving its annual work programme.

Slum Dwellers International

Slum Dwellers International (SDI) is a loose network of people's organisations from an increasing number of countries in the South. The network is made up of federations of community organisations and other grassroots initiatives that are in the process of developing federations. All federations in the SDI network are collectives of slum-dweller women whose central activity is the operation of savings and credit schemes. Linked to this network is a group of professionals who are committed to supporting federations of the urban poor.

The network offers a growing set of living examples, in different cities and in different parts of the world, where communities have negotiated successfully for secure land and then proceeded with development at scale. Over the years SDI affiliates have developed, refined, adapted and transferred a set of tools that are used to pre-empt evictions and move cities from demolition to development.

Federations linked to the SDI can be found in Cambodia, East Timor, Indonesia, India, Nepal, the Philippines and Sri Lanka. SDI has been accepted as a full member of the Cities Alliance.

Source: www.sdinet.org

Asian Coalition for Housing Rights

In June 1988, a group of professionals and social activists involved with urban poor development activities in various Asian countries established the Asian Coalition for Housing Rights (ACHR). The first activity the group implemented was a regional campaign against evictions in Korea. This led to a number of new regional activities with a larger number and broader range of contact groups.

Since its inception, the ACHR secretariat has been located in Bangkok. ACHR has the strength of being an effective regional network to promote necessary changes for people. In the past several years, ACHR regional activities have grown considerably. This is mainly due to the implementation of the Training and Advisory Program (TAP), which in its first 3 years organised more than fifty regional activities of various kinds. In parallel with the growth of TAP, was the emergence of some common key issues and themes affecting most countries in the region. Regional Functional Units were set up to provide a clearer scope and focus for regional sharing of common issues and joint working on the main themes. As of April 1998, the following have become ACHR's active Regional Functional Units:

- Regional Eviction Watch Program
- Asian Women and Shelter Network (AWAS)
- Young Professionals Program (YPP)
- Savings-and-Credit Activities
- Community Organising and Strengthening

Source: www.achr.net/about_achr.htm

Annex 1.2

The International Labour Organisation

The ILO and the Urban Setting

The primary goal of the ILO is to promote opportunities for women and men to obtain decent and productive work in conditions of freedom, equity, security and human dignity – in other words – opportunities for Decent Work. Decent work is the converging focus of the four strategic objectives of the ILO, namely: employment, social dialogue, social protection and rights at work. Decent work is an organising concept for the ILO in order to provide an overall framework for action in economic and social development.[1]

The ILO has recognised that the unprecedented urbanization rates in most developing countries are changing the face of poverty: increasingly, poverty is manifesting itself in cities. Millions of jobseekers, men and women, are resorting to the urban informal economy, where they earn just enough to survive, without any form of social security for either themselves or their families. Most cities are having difficulties in trying to cope with this rising poverty.

Yet, cities are also places of opportunity. Improvements in infrastructure, including shelter, and services can directly and indirectly improve the lives of large numbers of people. But such improvements can hardly be sustainable if not supported by the simultaneous promotion of decent employment opportunities.[2]

ILO wants to contribute to a reduction in urban poverty not only through the improvement of the urban living and working environment but also by creating employment during the implementation and maintenance of the infrastructure.

What Can the ILO Contribute in Partnership with Others?

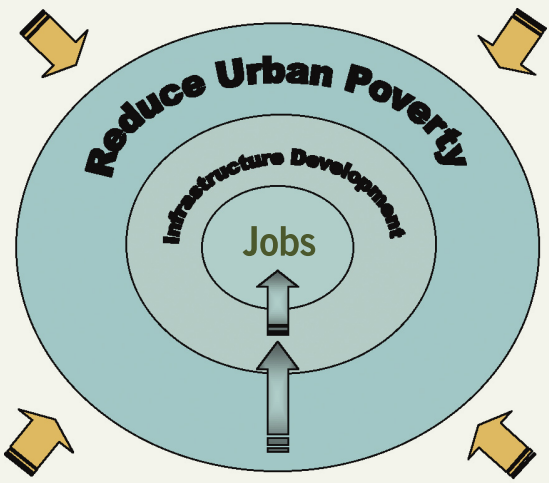
Perhaps what sets the ILO approach apart from other development agency approaches is the emphasis on employment and decent work in all aspects of its engagement. The ILO has developed tools and gained experience in several aspects of improving the lives of the urban poor:

- Planning with communities
- Planning for Local Economic Development (LED)

1: Source: Adapted from a Strategy for Urban Employment and Decent Work, ILO 2006
2: Source: Adapted from the foreword to Cities at Work - Employment Promotion to Fight Urban Poverty, ILO 2004

- Creating employment through the use of local resources and employment friendly techniques in urban infrastructure upgrading
- Support to communities in organisation, and in negotiation with development partners and local authorities
- Creating employment through support to new businesses and improvement of existing businesses
- Creating employment through support to cooperatives
- Improving access to savings and credit
- Improved social protection
- Improved workers rights
- Improving the opportunities for youth and their access to employment

The promotion of employment creation and the improvement of the living and working environment, in partnership with urban poor communities, are at the core of the ILO's work.



The Employment Intensive Investment Programme

The Employment Intensive Investment Programme (EIIP) of the ILO has developed a strategy and a set of tools and procedures to increase the impact of investments in infrastructure on local development, poverty reduction and employment creation. EIIP works with governments, the private sector and community associations in orienting infrastructure investments towards the creation of more productive employment and towards the improvement of access to basic goods and services for the poor. A combined use of local participation in planning with the utilization of locally available skills, technology, materials and appropriate work methods has proven to be an effective and economically viable approach to infrastructure improvement and maintenance works in developing and transitional countries.

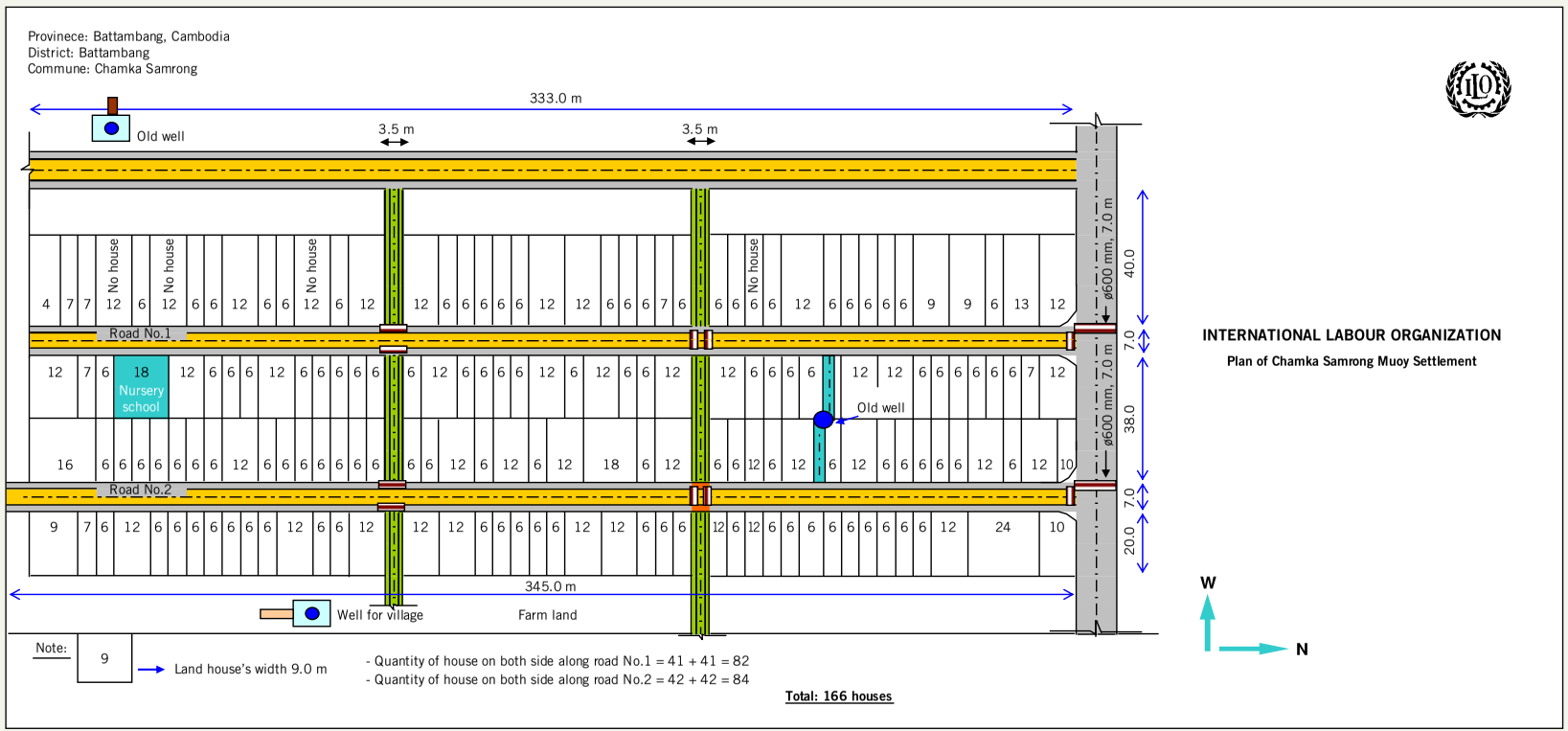
Annex 2.1-1

ILO Urban Poverty Infrastructure Pilot Project - Battambang Terms of Reference for the Community Task Force

The Community Task Force comprising of four elected members from the community shall be responsible for the following:

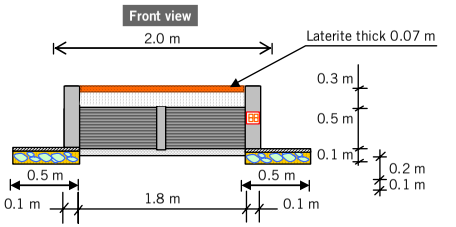
1. Liase with the community in smooth implementation of the agreed infrastructure works;
2. Collaborate with the project in the identification of contractors for civil works;
3. Collaborate with the project in arranging skilled and unskilled labour for the project implementation;
4. Assist the project management and the contractor in the removal of any encroachments by individual community households which interfere with the infrastructure works;
5. Shall assist the contractors in all logistics and other arrangements for safe keeping of their tools and equipment with the communities for project implementation;
6. Shall assist the project in identification of poorest households for the implementation of sanitation and water harvesting works;
7. Shall assist in reaching an agreement with the communities for future maintenance of the infrastructure, street lighting and solid waste disposal;
8. Shall assist the project in organizing any training or consultation with the community;
9. Shall assist in monitoring of works carried out by the contractors and provide feedback to the community and the project management in case of any problems.

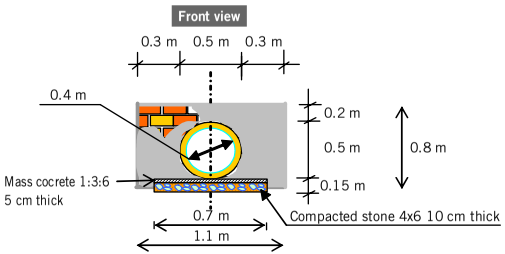
Annex 2.1-2 Technical Designs

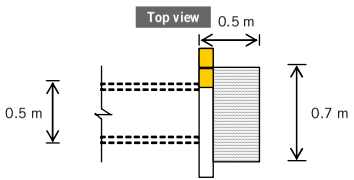


Technical Designs

Pipe Culvert installation for every house entrance (ø 400 mm)

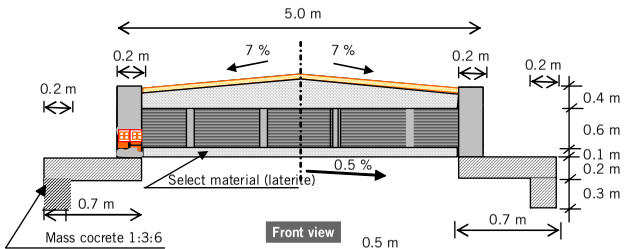


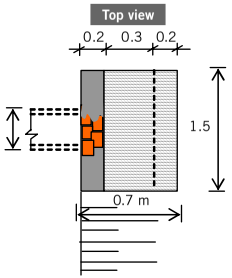


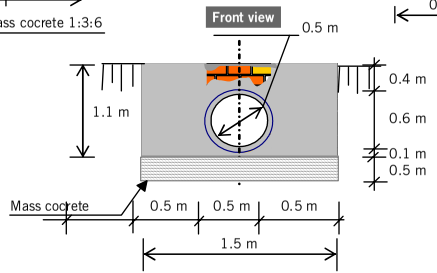


Note: -All dimension in metre

Pipe Culvert installation for road crossing (ø 500 mm) Longtitudinal Section







INTERNATIONAL LABOUR ORGANIZATION

Date: 18 July 2007

Prepared by: _____

Ms. Ham Syna

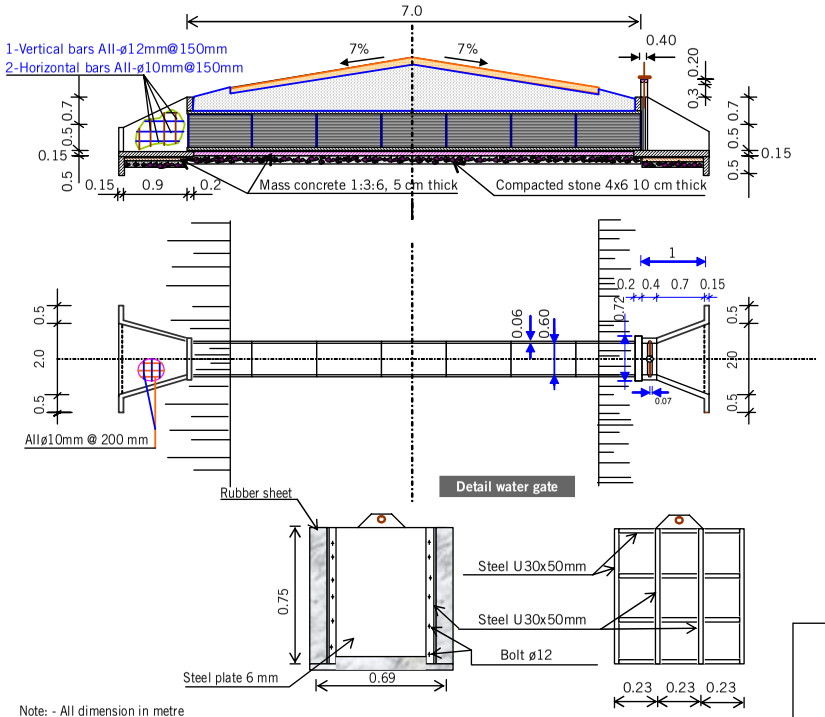
Date: _ _ _ _ _ / July 2007

Approved by: _____

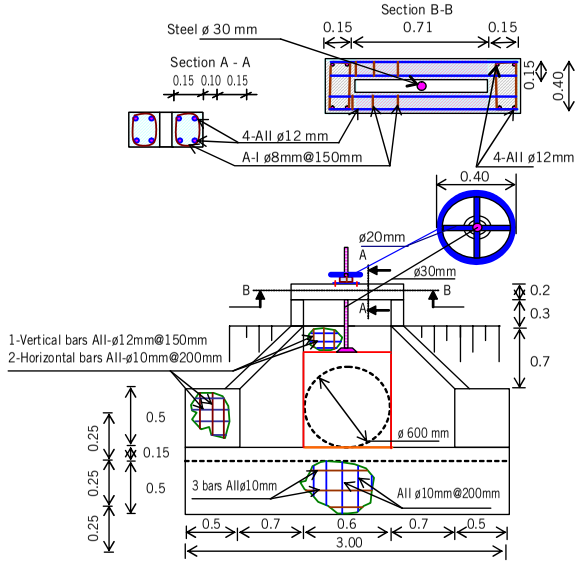
Mr. Mukesh C. Gupta

Reinforcement Concrete Pipe Culvert with water gate Construction

INTERNATIONAL LABOUR ORGANIZATION



Note: - All dimension in metre



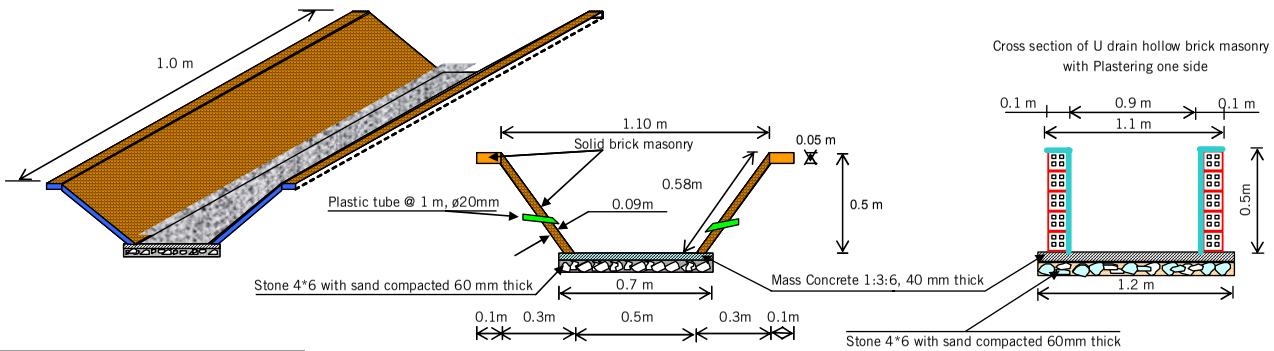
Date: 18 July 2007
Prepared by: _____
Ms. Ham Syna
Consultant

Date: _ _ _ _ _ / July 2007
Approved by: _____
Mr. Mukesh C. Gupta
CTA

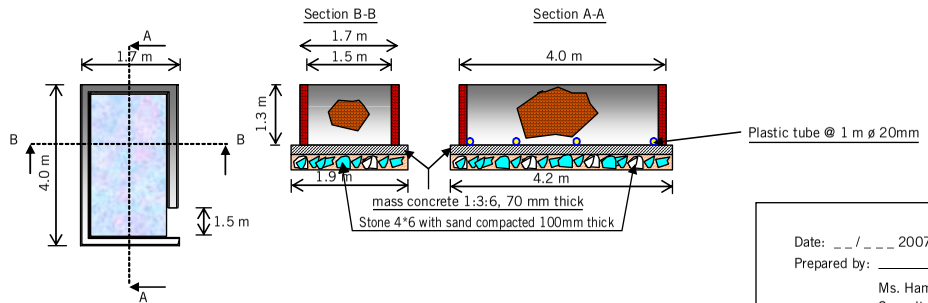
Pilot-Project -Rehabilitation of Urban Infrastructure

INTERNATIONAL LABOUR ORGANIZATION

Drawing of Side drain solid brick masonry



Top view of Brick masonry Solid waste disposal

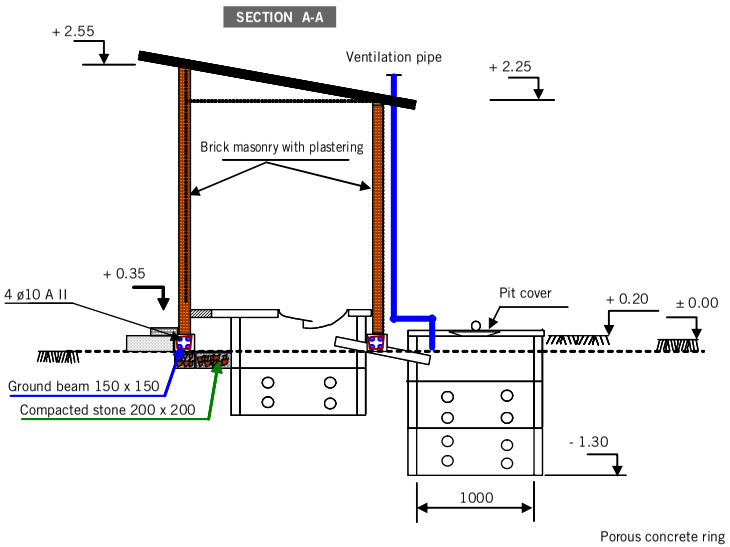


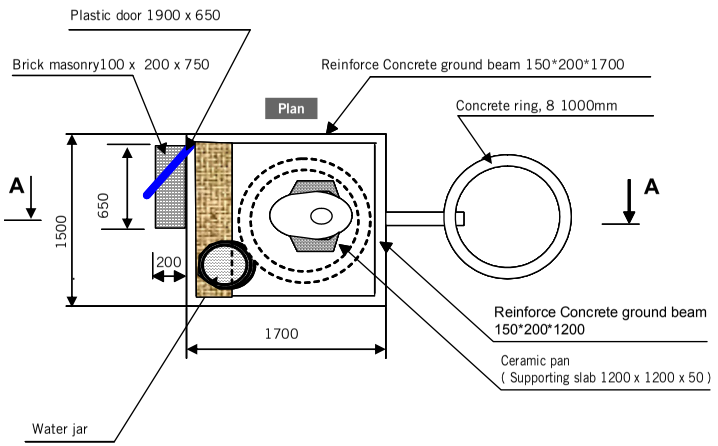
Date: _ _ / _ _ _ 2007
Prepared by: _____
Ms. Ham Syna
Consultant

Date: _ _ / _ _ _ 2007
Approved by: _____
Mr. Mukesh C. Gupta
CTA

Typical Road Cross Section Bamboo Concrete to Water Well in Chamka Samrong Muoy Village
INTERNATIONAL LABOUR ORGANIZATION
Road to old water well A
Road No.2
Box culvert
Road No.1
Old well A
Old well C
Road to old water well C
Cross Section A-A
Cross Section B-B
Cross Section C-C
U drain hollow brick masonry (length 1.2 m, width 0.2 m & 0.5m depth)
R.C Pipe ø250 mm
Tile floor (0.25 m x 0.25 m x 0.042 m)
Motar 1:4, 0.07 m thick
Compacted stone 4*6 with sand 70 mm thick
Raising the level of existing road 200 mm thick
Tile floor (0.25m x 0.25m x 0.042m)
Moter 1:4, 70 mm thick
Compacted stone 4*6 with sand 70 mm thick
Raising the level of exixting road 200 mm thick
Hollow brick masonry 300 mm height
Moter 1:4, 70 mm thick
Tile floor (250mm x 250 mm x 50 mm)
Compacted stone 4*6 with sand 100 mm thick
Raising the level of exixting road 150 mm thick
U drain wall hollow brick masonry with plastering one side, 500 mm height
Section B1-B1
Motar 1:4
Tile floor for walk way (250mmx250mm x 42mm)
Hollow brick masonry
Tile floor (0.25 m x 0.25 m x 0.042 m)
Motar 1:4, 70m m thick
Compacted stone 4*6 with sand 70 mm thick
Raising the level of exixting road 350-500 mm thick
Top view of box culvert brick masonry wall & R.concrete top slab
All ø10@100 mm
Section B2-B2
Reinforced concrete top slab 0.07m thick
Double hollow brick masonry with plastering 1 side, 0.2 m thick & 0.8 height
Compacted stone 4*6 with sand 100 mm thick
Mass concrete 1:3:6
Side view
R.C.top slab 0.07 m
Note: For Box Culvert to road no pipe culvert

Family Latrine in Rural and Urban area





Works Budget - Battambang

Item/description	Amount US$
Roads and drainage works	10,228.00
Construction of culverts	12,979.00
Water well trial boring	200.00
Construction of 15 latrines	4,305.00
Additional road works, lining of drains, access to water wells and water harvesting	13,555.10
Slides, swings and street lighting	1,884.00
Miscellaneous expenses	2,000.00
Local consultant and supervisory inputs	3,000.00
Total	**$ 52,475.10**

Annex 2.1-3

SERVICE CONTRACT

between

THE INTERNATIONAL LABOUR ORGANIZATION
represented by the International Labour Office

and

M/S Lork Suo Construction, Ota Kom 3 Village, Battambang

The International Labour Office (herinafter referred to as "the ILO") intends that certain work and/or services in connection with the Construction of assorted civil works in the Chamcar Samrong Settlement Area in Battambang to be contracted out and M/S Lork Suo Construction, Ota Kom 3 Village, Battambang (also referred to as "the Contractor") has agreed to carry out such work and/or services on the terms set out below.

Therefore the ILO and the Contractor hereby agree as follows:

1. WORK TO BE PERFORMED

1.1 The Contractor will perform the work and/or services as described in the Bills of Quantities (BOQs) attached as Annex.

1.2 The Contractor shall exercise all reasonable skill, care and diligence in the performance of the work and/or services as above described and herein after called the "Work".

2. DETAILS OF WORK IMPLEMENTATION

2.1 The Contractor shall commence work upon the signature of the Contract and shall endeavor to complete all work by 07 December 2007. Should the Contractor experience unforeseen difficulties which delay completion of work, the Contractor shall inform the ILO immediately with a view to identifying a mutually acceptable solution.

3. OUTPUTS

3.1 The works shall comprise of the following:

Construction of drainage, water harvesting, culvert and road works as per the details in the attached drawings in Chamcar Samrong Settlement Area in Battambang.

4. PAYMENT AND PAYMENT CONDITIONS

4.1 Upon satisfactory completion of the Work, the ILO, in accordance with the provisions below, shall pay the Contractor the amount of US$ 13,555.10 representing the total Contract Price and ILO's maximum financial liability under this Contract.

4.2 An advance of US$ 2000 will be paid to the contractor immediately upon signing of this Contract Agreement. Subsequently, Monthly Interim Payment Certificates will be prepared based on the actual quantities of work done by the contractor to the satisfaction of the ILO CTA.

4.3 The ILO reserves the right not to make payments if the ILO finds the Work's progress unsatisfactory.

4.4 Any reimbursement due to the ILO by the Contractor shall be made in the currency of original payment within a period of 30 (thirty) days from the date of receipt of a written notice by the ILO.

4.5 Irrespective of their nature, all claims of the contracting parties, other than warranty claims, arising from or in any way connected with this Contract, shall be asserted within 6 (six) months after its termination.

4.6 ILO reserves the right to suspend a payment due to the Contractor if the Contractor is in breach of a material term of this contract and the ILO has notified the Contractor in writing giving details of the breach and action required to remedy it. On remedy of such material breach by the Contractor, the ILO shall promptly pay the Contractor any payment suspended under this clause. For the avoidance of doubt all timescales specified by the Contractor are estimated timescales only. The Contractor shall use all reasonable endeavours to comply with estimated timescales but the Contractor shall not be considered to be in breach of any term of this contract solely because it has been unable to meet any date within the estimated timetable. On its part, the ILO shall ensure that the Project

provides all feedback, changes and approval for the completion of the work in a timely matter.

5. COMUNICATION

5.1 On all matters arising from this Contract, the Contractor shall deal with

Chief Technical Advisor, ILO
Department of Public Works and Transport
Battambang
Cambodia

5.2 Written communication on issues connected with the provisions of the present contract, its interpretation or an legal aspects related to it, shall be sent to the address given in the ILO Conditions for Service Contracts set out in Annex.

6. FORMATION OF CONTRACT

6.1 Terms of business or conditions of contract or general reservations published or issued by the Contractor or written in any correspondence or documents emanation from the Contractor shall not apply to this Contract unless such terms, conditions or general reservations are specifically accepted by the ILO in writing.

6.2 This Contract becomes effective upon its signature by both parties. It shall expire upon fulfilment by the parties of their respective obligations or otherwise in accordance with the provisions herein.

7. ANNEXES

The following documents form an integral part of the present Contract:

- Approved Bills of Quantities (BOQ) with Unit Prices submitted by the Contractor
- Specifications and Drawings for the Works
- ILO General Condition of Contract for Services.

8. PREVAILING PROVISIONS

8. The provisions of this Contract and its Annex shall prevail in case of any conflict with other annex(es).

For the International Labour Organization **For the Contractor**

_____ _____

Director
ILO Sub-regional Office

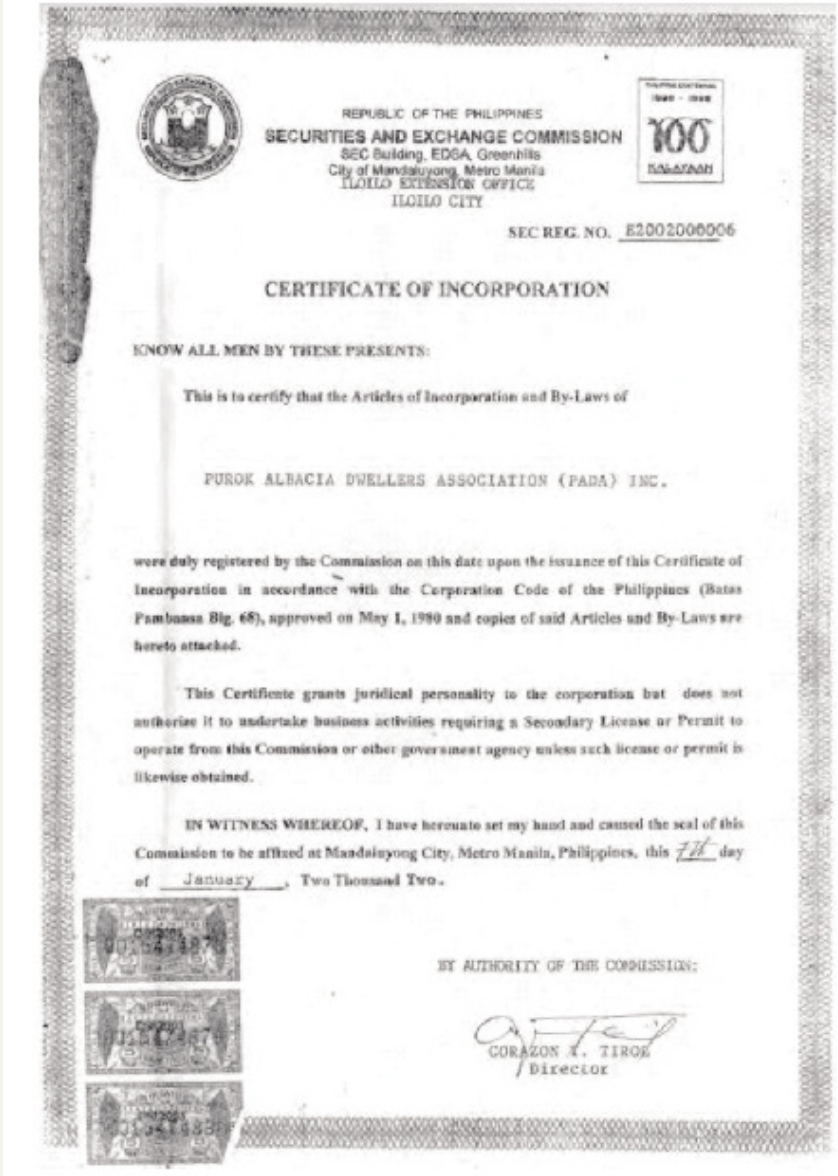
Bangkok Battambang, Cambodia

_____ _____

(date) (date)

Annex 2.2-1

Purok Albacia Dwellers Association Registration Certificate



REPUBLIC OF THE PHILIPPINES
SECURITIES AND EXCHANGE COMMISSION
SEC Building, EDSA, Greenhills
City of Mandaluyong, Metro Manila
ILOILO EXTENSION OFFICE
ILOILO CITY

SEC REG. NO. E2002006006

CERTIFICATE OF INCORPORATION

KNOW ALL MEN BY THESE PRESENTS:

This is to certify that the Articles of Incorporation and By-Laws of

PUROK ALBACIA DWELLERS ASSOCIATION (PADA) INC.

were duly registered by the Commission on this date upon the issuance of this Certificate of Incorporation in accordance with the Corporation Code of the Philippines (Batas Pambansa Blg. 68), approved on May 1, 1980 and copies of said Articles and By-Laws are hereto attached.

This Certificate grants juridical personality to the corporation but does not authorize it to undertake business activities requiring a Secondary License or Permit to operate from this Commission or other government agency unless such license or permit is likewise obtained.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of this Commission to be affixed at Mandaluyong City, Metro Manila, Philippines, this 7th day of January, Two Thousand Two.

BY AUTHORITY OF THE COMMISSION:

CORAZON T. TIROL
Director

Annex 2.2-2

TERMS OF REFERENCE FOR CONSTRUCTION COMMITTEE - ALBACIA

1 ILO EIIP AND COMMUNITY CONTRACTING

Investments in infrastructure can create jobs, reduce poverty and boost local economic development. The ILO ASIST-AP Programme has developed a set of tools to increase the investment impact on job creation, focussing on four areas: participatory planning, local resource-based technologies, small-scale contracting and operation and maintenance. These tools are now being adapted for the use in an urban context. Two countries have been selected for the first case studies, including the Philippines. A pilot activity is to test out some of the approaches including community involvement and Iloilo has been selected. ASIST-AP is providing technical assistance and with the help of the Iloilo City Urban Poor Network, using selection criteria in consultation with the ILO, two communities and projects have been identified.

The two communities selected in Iloilo will enter into contracts with the ILO for the implementation of the infrastructure. Both communities have participated in the project identification, design development and cost estimation. A local engineer will prepare detailed technical designs and will supervise the construction work.

2 THE PUROK ALBACIA DWELLERS ASSOCIATION PROJECT

This community located in Zone 4, Barangay San Isidrio, La Paz District, is affiliated with ICUPFI and comprises 60 households on-site and 110 off-site (not yet occupying their lots). The project comprises the following (technical details are shown in the contract drawings):

- A new temporary entrance roadway, with transverse culverts,
- The repair and widening of an existing foot-walk.

3 ACTIVITIES

The project will be managed using a standard ILO service contract with the HOA Construction Committee (CC) acting as the contractor. The ILO will provide technical assistance during construction works in the form of an Engineer and an Urban Consultant who will inspect and supervise works at regular intervals. The CC will be responsible for the following:

- Purchase and safely store materials according to specifications in the contract,
- Organise and pay labour (from the community), to complete the work on schedule,
- Keep records of material purchase, labour payments and other expenditure,
- Through a technically competent foreman, supervise and manage construction works,
- Ensure that the project is built according to the technical designs and on time,
- Abide by the conditions of the Contract.

4 FEES AND CONTRACT DURATION

The construction works programme and payment will be in accordance with the Service Contract.

Annex 2.2-3

Letter of Support from the Barangay Captain:

Barangay Captain Wilfredo Jurilla
Barangay San Isidro, La Paz District
Iloilo City

Friday 7th September 2007

TEMPORARY ENTRANCE ROADWAY PUROK ALBACIA DWELLER'S ASSOCIATION

Project Description: an 80 metre long temporary entrance roadway, will be built with three rows of 60x60cm reinforced concrete slabs cast in-situ on a sand and gravel bedding. The road is to be temporary, as the slabs can be taken up and moved to a new location. The work also includes the repair and widening of a 68m long existing concrete foot-walk.

This is to certify that in regard to the above project, and according to the knowledge of Barangay San Isidrio, the Purok Albacia Dweller;s Association has the capacity to enter into a small construction contract with the International Labour Organisation (ILO).

The Purok Albacia HOA members are recognised by the Barangay and are trusted to implement the works in accordance with the terms of the contract.

The Barangay fully supports the infrastructure improvement works in this urban poor community.

Endorsed by:

Signature: _____

Name: WILFREDO JURILLA Position: BRGY. CAPTAIN

Date: SEPTEMBER 7, 2007 Place: PUROK ALBACIA

Annex 2.1-4

ILO EIIP ASIST-AP Employment Creation in Urban Areas
PUROK ALBACIA DWELLERS ASSOCIATION-BILL OF QUANTITIES

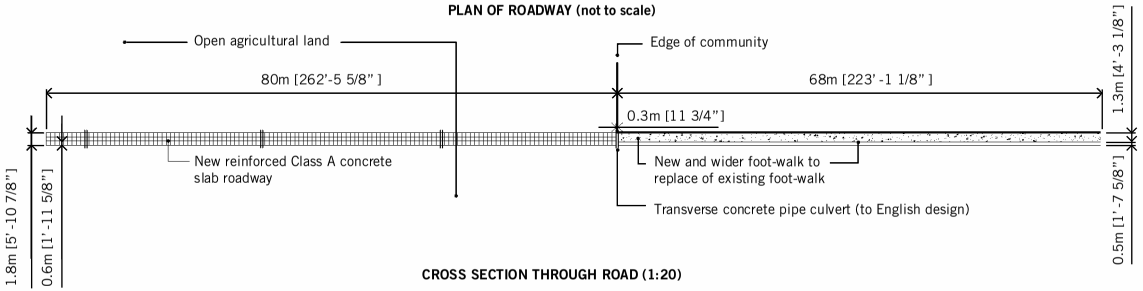
No	ITEM	BASIS OF MEASUREMENT		TYPE OF LABOUR / MATERIAL PARTICULARS	UNIT	CALCULATION OF QUANTITY		QTY	UNIT COST (Php)	AMOUNT (Php)	SUB-TOTAL	TOTAL (LABOUR + MATERIALS)
		QTY	UNIT			Persons /day	No. of days					
1	Breaking-up of existing roadway (part only) including excavation on and backfilling											
				LABOUR COST								
		148.4	m	Skilled	Man-days	1.00	5.00	5.00	250.00	1,250.00		
				Unskilled	Man-days	4.00	6.00	20.00	200.00	4,00.00	5,250.00	5,250.00
2	Levelling and clearing of existing roadway											
				LABOUR COST								
		148.4	m	Skilled	Man-days	1.00	6.00	6.00	250.00	1,500.00		
				Unskilled	Man-days	4.00	6.00	24.00	200.00	4,800.00	6,300.00	6,300.00
3	Spreading and compaction of fill											
				LABOUR COST								
		148.4	m	Skilled	Man-days	1.00	6.00	6.00	250.00	1,500.00		
				Unskilled	Man-days	4.00	6.00	24.00	200.00	4,800.00	6,300.00	
				MATERIAL COST								
				Fill materials	m^3			61.775	240.00	14,826.00	14,826.00	21,126.00
4	Spreading and compaction of base course											
				LABOUR COST								
		148.4	m	Skilled	Man-days	1.00	3.00	3.00	250.00	750.00		
				Unskilled	Man-days	4.00	3.00	12.00	200.00	2,400.00	3,150.00	
				MATERIAL COST								
				Gravel	m^3			19.00	450.00	8,550.00	8,550.00	11,700.00
5	Concreting (including installation of rebars and formworks)											
				LABOUR COST								
	5.1 0.6m > 0.6m slab	80.4	m	Skilled	Man-days	2.00	8.00	16.00	250.00	4,000.00		
				Unskilled	Man-days	6.00	8.00	48.00	200.00	9,600.00		
	5.2 continuous slab	68	m	Skilled	Man-days	2.00	7.00	14.00	250.00	3,500.00		
				Unskilled	Man-days	6.00	7.00	42.00	200.00	8,400.00	25,500.00	
				MATERIAL COST								
	5.1 0.6m > 0.6m slab			Reinforced concrete/form work	m^3			14.47	4,171.46	60,361.00		
	5.2 continuous slab			Reinforced concrete/form work	m^3			12.24	3,898.37	47,716.00	108,077.00	133,577.00

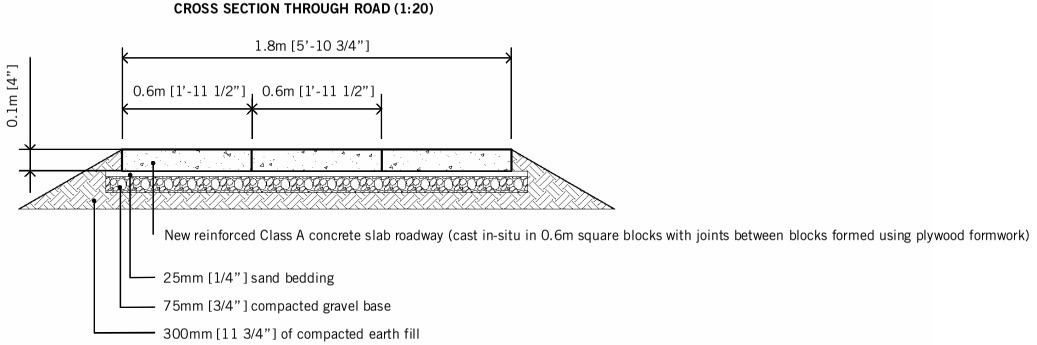
No	ITEM	BASIS OF MEASUREMENT		TYPE OF LABOUR / MATERIAL PARTICULARS	UNIT	CALCULATION OF QUANTITY		QTY	UNIT COST (Php)	AMOUNT (Php)	SUB-TOTAL	TOTAL (LABOUR + MATERIALS)
		QTY	UNIT			Persons /day	No. of days					
6	Installation of RCP Culvert											
				LABOUR COST								
		8	pcs	Skilled	Man-days	1.00	3.00	3.00	250.00	750.00		
				Unskilled	Man-days	2.00	3.00	6.00	200.00	1,200.00	1,950.00	
				MATERIAL COST								
				30cm x 1.00m RCP	psc			8.00	380.00	3,040.00		
				Portland Cernent	bags			6.00	184.00	1,104.00		
				Washed Sand	cu m			1.00	350.00	350.00		
				Screened Gravel	cu m			1.00	450.00	450.00	4,944.00	6,894.00
	Total materials cost										136,397.00	
	Total labour cost										48,450.00	
	TOTAL DIRECT COSTS											184,847.00
9	Additional costs											
	9.1 5% contingency (of direct costa)									9,243.00		
	9.2 Temporery facilities				Lump sum					1,500.00		
	9.3 Administration cost				Weeks			5	1000	5,000.00		
	9.4 Foreman				Man-days			30	300	9,000.00	24,743.00	
10	Tools											
				Shovel	pcs			2	480	960.00		
				Spade	pcs			2	480	960.00		
				Plastic Pails	pcs			4	60.00	240.00	2,160.00	
	TOTAL PROJECT COST											**211,750.00**

Prepared by:

Engr: Reynald M. Asuncion  Date: 1 October 2007

PLAN OF ROADWAY (not to scale)



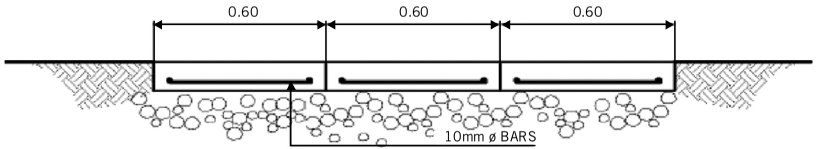


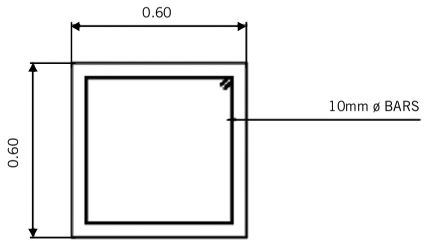
Revision No.	Date	Contents	Project	ALBACIA ROADWAY		
A	07.09.07	Road width increased to 1.8 with 3 slabs	Drawing title	PLAN & ROADWAY CROSS SECTION		
B	01.10.07	Culverts shown. Footwalk shown as new not repair	Scale	Not to scale & 1 : 20	Drawn by	Jonathan Price
			Drawing No.	ILO/ALB/01 B	Date	31 Aug 2007

PLAN OF CONTINUOUS SLAB

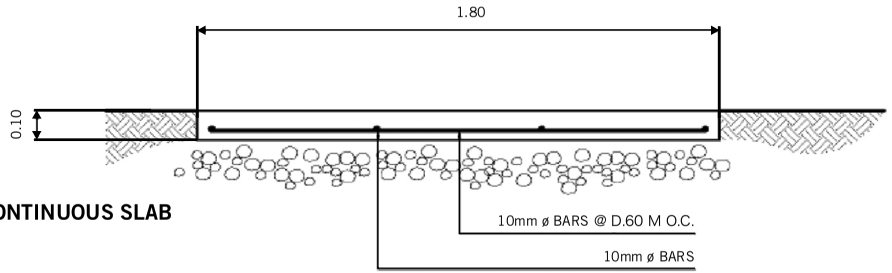
Revision No.	Date	Contents	Project	ALBACIA ROADWAY		
			Drawing title	STRUCTURAL DETAILS 1		
			Scale	Not to scale	Drawn by	Engr. Reynaldo Asuncion
			Drawing No.	ILO/ALB/02	Date	1 October 2007

SECTION OF FOOT SLAB





PLAN OF FOOT SLAB



SECTION OF CONTINUOUS SLAB

Revision No.	Date	Contents	Project	ALBACIA ROADWAY		
			Drawing title	STRUCTURAL DETAILS 2		
			Scale	Not to scale	Drawn by	Engr. Reynaldo Asuncion
			Drawing No.	ILO/ALB/03	Date	1 October 2007

Annex 2.2-5

Construction Committee - Albacia

Name of CC menber	Role in HO A/CC	Experience
PUROK ALBACIA DWELLER'S ASSOCIATION		
i) Mr Joel S Pailanga	HOA Present	● 1990-1997: Messenger, BPI, Iznart St.. IC. ● 1997-2001: Motorized Messenger, BPI, Iznart St.. IC. ● 2001-present: Messenger, BPI Security Branch
ii) Mr Reynaldo J Sotela	Foreman	● 1991-2000: Driver, RTWPB-VI/DOLE. ● 186-1990: Driver Rodrigo, Pontesk, M. H. Del Pilar, Jaro, IC ● 2005-present: Member, CFC (Couples for Christ). ● 2007: Fpreman for UPDF/ACHR funded street lighting project.
iii) Miss Candelaria A Francisco	Treasure	● 1993-1994: Secretary, Sarabia Manor Building. ● 1995-1990: Secretary, Auras Pension House, J. Plaurel St., Quezon, Palawan ● 2005: Secretary, KN Credit Services Inc., 2nd Floor, Amigo Building, IC
iv) Mrs Nolina M Sotela	Bookkeeper	● 2005-present: Fashion Pro 1, NATASHA, Solis St., IC. ● 1997-present: IGS, Fuller Life Direct Selling, Iznart St., IC. ● 1992-2002: Auditor, PADA Inc., San Isidro, La Paz, IC. ● 2005-present: Member of CFC/Handmaids of the Lord (NGO)
v) Mrs Julie N de la Peña	Time Keeper	● 1975-1982: Casher, Refreshment & Salon, La Paz IC. ● 2001-2003: Former Treasure PADA Association, San Isidro, La Paz
vi) Mrs Eden A Francisco	Checker/Canvassing	● 1981-1954: Sales Girl, Sunshine Grocery. ● 1991-1997: Barangay Treasure, Tabuc-suba, La Paz, Iloilo City.

Annex 2.2-6

Terms of Reference for the Engineering Consultant

1. BACKGROUND

1.1 ILO EIIP

Investments in infrastructure have the potential to create jobs, reduce poverty and boost local economic development. The Employment Intensive Investment Programme (EIIP) of the ILO has developed a number of procedures to increase the impact of investments in infrastructure on employment creation and poverty reduction. The tools focus on four areas: participatory planning of investments, using local resource-based technologies, small-scale and community contracting and operation and maintenance. EIIP are adapting these tools for use in the urban context. Two countries have been selected for case studies, including the Philippines. An urban consultant has been employed to assist in the development of technical tools, and to identify a quick pilot project in Iloilo, which will test out some of the approaches. With the support of the Iloilo City Urban Poor Network (ICUPN) a short list of possible projects was prepared. Then using selection criteria in consultation with ILO, two projects were chosen. A budget of US$10,000 has been set aside for implementing the two projects.

1.2 PUROK ALBACIA DWELLER'S ASSOCIATION

This community located in Zone 4, Barangay San Isidro, La Paz District, and affiliated with ICUPFI, comprises 60 households on site and 110 off site (not yet occupying their lots). The community originally relocated from Tabucsuba to this privately owned lot. NHA is in the process of purchasing the land from a private landowner. When the process is finalised, the residents will buy the land from NHA using the CMP process, over a period of 25 years. The project comprises the following:

- An 80 metre long temporary entrance roadway which will be built with two rows of 60x60cm reinforced concrete slabs cast in-situ on a sand and gravel bedding. The landowner has stipulated that the road should be temporary, so the HOA intends that the slabs could at some future date be taken up and moved to a new location. The road should be designed to take the load of a tricycle or Sikad (Pedicab).
- The repair and widening of a 68m long an existing concrete foot-walk.

- A transverse pipe culvert between the existing foot-walk and the new roadway.

1.3 URBAN FAMILY HOMEOWNERS ASSOCIATION

This community located in Barangay M. B. Hechanova, Jaro District, is affiliated with IFCA and comprises 21 households. The community is following a CMP process to purchase the land from a local bank. Adjacent to the HOA is another community of about 20 families who are in the process of trying to purchase the land they are occupying, who will also benefit from the improvements. The Barangay have recently assisted in constructing a concrete foot-walk in one part the community. The project comprises the following:

- A 78m long channel type storm-water and grey-water drain (hollow concrete block walls and reinforced concrete cover) to run adjacent to the existing foot-walk. The cover of the drain should be designed to take the load of a Sikad (Pedicab).
- Continuation of existing 26" wide concrete Barangay-constructed foot-walk for 36 metres to reach the main roadway accessing the community. The extended footpath should be designed to take the load of a Sikad (Pedicab).
- Connection to outfall with a pipe culvert 5.5m long and an extension of the Barangay channel drain 4m long.

    - It is assumed that a level survey will not be required as the site slopes well, towards the outfall. However, the condition of the outfall will have to be checked and the Barangay drain will have to be cleaned as part of the construction work.
    - Individual household connections to the channel drain will be made (according to the recommendations of the engineer) in concurrence with the main contract, but will be the responsibility of each family.

1.4 ORGANIZATION

Both projects will be managed using a standard ILO works contract with the HOA acting as the contractor. Each HOA will organise a Construction Committee (CC), which will be responsible for buying materials, organising and paying labour, supervising the construction works and keeping records of attendance etc. The CC will comprise the HOA President, an experienced foreman and the HOA treasurer or bookkeeper and other members proposed by the HOA. The Urban Consultant will also provide technical assistance. Unskilled labour will be organised by the CC and will come from the community. Skilled labour will preferably come from within the community unless they are not available.

Prior to finalising the design, estimating the costs and preparing the bill of quantities, the HOAs will provide canvassed costs of the materials required for the construction, estimated amounts of labour, time requirements for each element of the work and proposed labour rates.

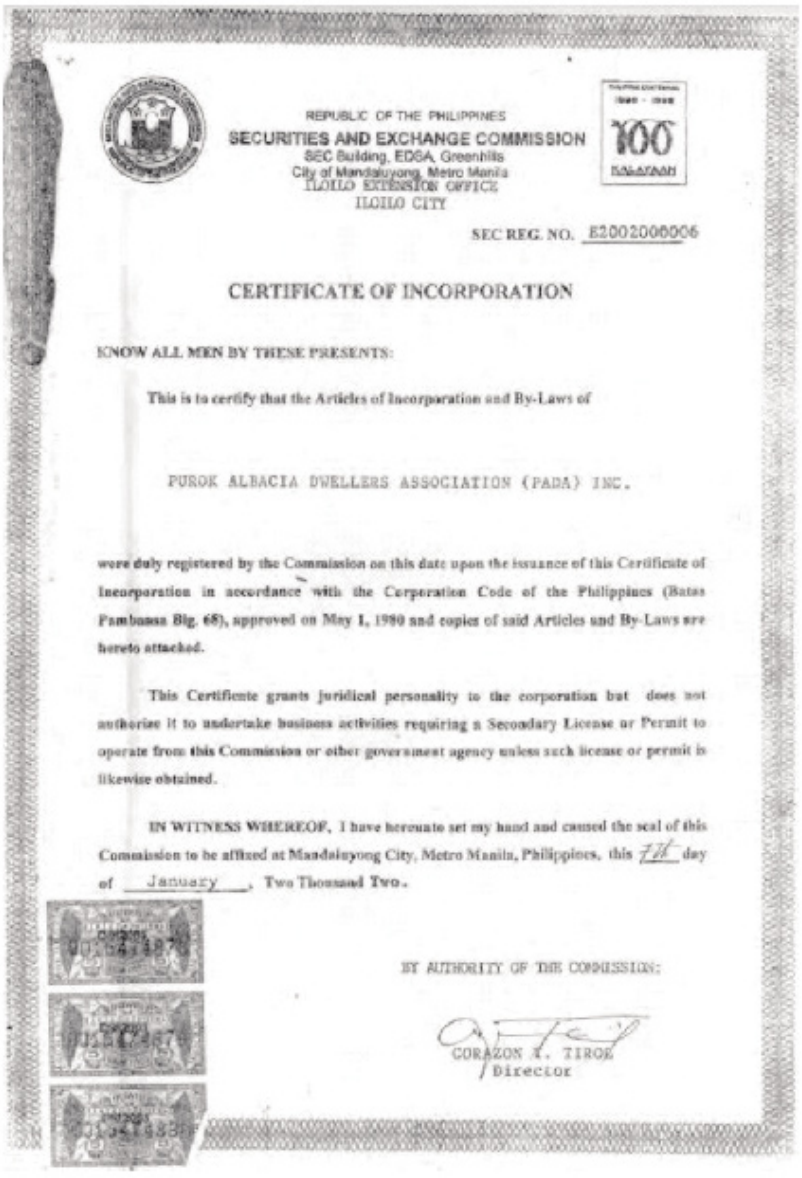
2. ACTIVITIES AND OUTPUT

The local engineer will work under the guidance of the Urban Consultant on the following activities, for each project, with outputs identified for each. All outputs should be provided in both hard copy and electronic format:

Activity	Output
i) Engineering design based on Urban Consultants schematics	Engineering details and construction drawings, reinforcement details and material and workmanship specifications (to be shown on drawings)
ii) Preparation of bill of quantities	Bill of quantities breaking the construction work down into elements easily understood by CC
iii) Using the information provided by HOA, preparation of estimates and materials and labour calculations.	Estimated costs against BOQ items and tables showing cost calculations (breaking costs into material and labour required for each element of work in BOQ). Estimated contract duration
iv) Attendance at meetings with the CC to discuss, explain and agree/negotiate the quantities and costs of work.	Final bill of quantities with costs negotiated and agreed with CC
v) Inspections on site during construction (at least two visits per week).	Site visit reports detailing any problems, instructions to contractor etc.
vi) Assistance during measurements of work for interim payments – with community foreman and Urban Consultant.	Measurement report on contractors completed work in relation to bill of quantities – and calculation of due payment

Annex 2.3-1

Urban Family Homeowner Association Incorporated – Registration Certificates



REPUBLIC OF THE PHILIPPINES
SECURITIES AND EXCHANGE COMMISSION
SEC Building, EDSA, Greenhills
City of Mandaluyong, Metro Manila
ILOILO EXTENSION OFFICE
ILOILO CITY

SEC REG. NO. E2002006006

CERTIFICATE OF INCORPORATION

KNOW ALL MEN BY THESE PRESENTS:

This is to certify that the Articles of Incorporation and By-Laws of

PUROK ALBACIA DWELLERS ASSOCIATION (PADA) INC.

were duly registered by the Commission on this date upon the issuance of this Certificate of Incorporation in accordance with the Corporation Code of the Philippines (Batas Pambansa Blg. 68), approved on May 1, 1980 and copies of said Articles and By-Laws are hereto attached.

This Certificate grants juridical personality to the corporation but does not authorize it to undertake business activities requiring a Secondary License or Permit to operate from this Commission or other government agency unless such license or permit is likewise obtained.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of this Commission to be affixed at Mandaluyong City, Metro Manila, Philippines, this 7th day of January, Two Thousand Two.

BY AUTHORITY OF THE COMMISSION:

CORAZON T. TIROL
Director

Republic of the Philippines

Securities and Exchange Commission

EDSA, Greenhills, Mandaluyong
Metro Manila
ILOILO EXTENSION OFFICE
ILOILO CITY

S.E.C. Reg. No. 1000832

TO ALL TO WHOM THESE PRESENTS MAY COME, GREETINGS:

WHEREAS, Articles of Incorporation and By-Laws duly signed and acknowledged for the organization of the

ILOILO PEOPLE'S HABITAT FOUNDATION, INC.

nder and in accordance with the provisions of the Corporation Code of the Philippines, atas Pambansa Blg. 68, approved on May 1, 1980, were presented for filing in this ommission on November 13, 1989, and a copy of said Articles and -Laws are hereto attached;

NOW, THEREFORE, by virtue of the powers and duties vested in me by law, I hereby certify that the said Articles of Incorporation and By-Laws were, after due mination to determine whether they are in accordance with law, duly registered in this mission on the 21st day of November, Anno Domini, een Hundred and eighty-nine

SING ... ATORY BOARD

IN TESTIMONY WHEREOF, I have hereunto set REGISTERED and and caused the seal of this Commission to be affixed at Iloilo City, Philippines, this 21st day of November, in the year of our Lord nineteen hundred and eighty-nine

BY AUTHORITY OF THE COMMISSION:

CORAZON ... TIROL
Officer-in-Charge

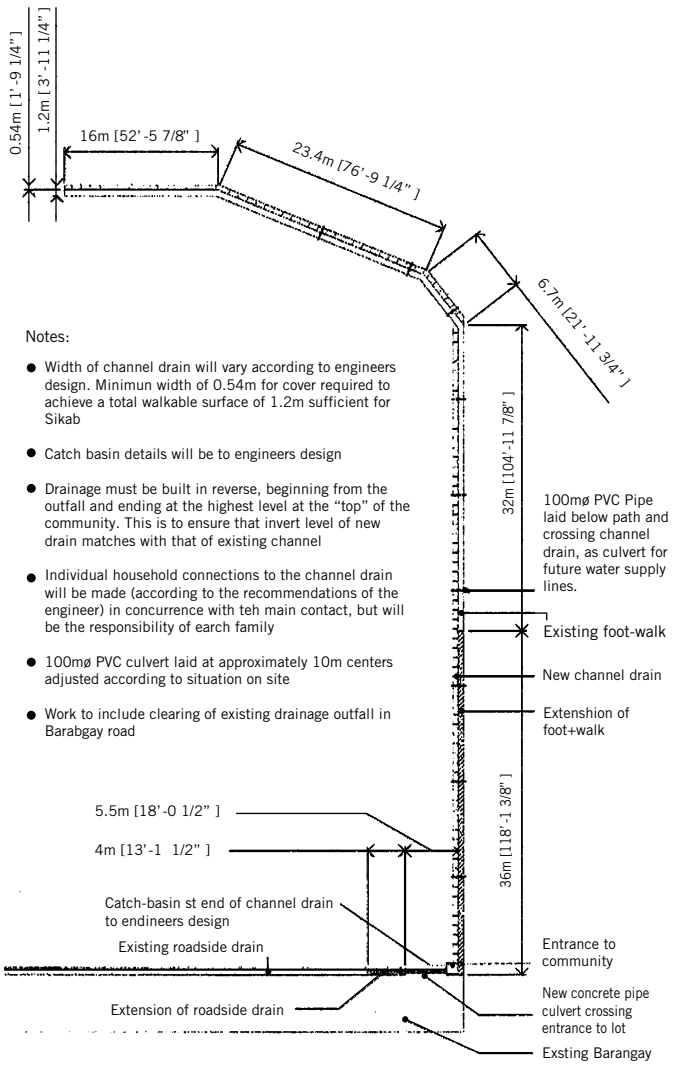
Per SEC Special Order No. 217 Series of 1987
and SEC Office Order No. 9 Series of 1993

Annex 2.3-2 ILO EIIP ASIST-AP Employment Creation in Urban Areas
URBAN FAMILY HOMEOWNERS ASSOCIATION-BILL OF QUANTITIES

No	ITEM	BASIS OF MEASUREMENT		TYPE OF LABOUR / MATERIAL PARTICULARS	UNIT	CALCULATION OF QUANTITY		QTY	UNIT COST	AMOUNT	SUB-TOTAL	TOTAL (LABOUR + MATERIALS)
		QTY	UNIT			Persons /day	No. of days		(Php)			
1	Excavation, Backfilling, Breaking-up of existing slab											
				LABOUR COST								
		118.10	m	Skilled	Man-days	1.00	12.00	12.00	250.00	3,00.00		
				Unskilled	Man-days	3.00	12.00	36.00	200.00	7,200.00	10,200.00	10,200.00
2	Laying and compaction of base course											
				LABOUR COST								
	2.1 Extension to roadside	4.00	m	Skilled	Man-days	1.00	0.08	0.08	250.00	20.00		
				Unskilled	Man-days	2.00	0.08	0.16	200.00	32.00		
	2.2 Concrete Drain/catch basin	114.10	m	Skilled	Man-days	1.00	2.22	2.22	250.00	555.00		
				Unskilled	Man-days	2.00	2.22	4.44	200.00	888.00		
	2.3 Foot-walk	36.00	m	Skilled	Man-days	1.00	0.70	0.70	250.00	175.00		
		154.10		Unskilled	Man-days	2.00	0.70	1.40	200.00	280.00	1,950.00	
				MATERIAL COST								
	2.1 Extension to roadside			Gravel	m^3			0.32	450.00	144.00		
	2.2 Concrete Drain/catch basin			Gravel	m^3			8.44	450.00	3,796.00		
	2.3 Foot-walk			Gravel	m^3			2.74	450.00	1,233.00	5,175.00	7,125.00
3	Concreting including fabrication and installation of rebars and drain cover											
				LABOUR COST								
	3.1 Extension to roadside drain	0.56	m^3	Skilled	Man-days	4.00	0.62	2.47	250.00	617.87		
				Unskilled	Man-days	4.00	0.62	2.47	200.00	494.30		
	3.2 RCP Culvert	0.28	m^3	Skilled	Man-days	4.00	0.31	1.24	250.00	311.14		
				Unskilled	Man-days	4.00	0.31	1.24	200.00	248.91		
	3.3 Catch Basin	0.30	m^3	Skilled	Man-days	4.00	0.34	1.34	250.00	335.41		
				Unskilled	Man-days	4.00	0.34	1.34	200.00	268.33		
	3.4 Concrete Drain	8.44	m^3	Skilled	Man-days	4.00	9.32	37.26	250.00	9,315.93		
				Unskilled	Man-days	4.00	9.32	37.26	200.00	7,452.74		
	3.5 Drain Cover	6.16	m^3	Skilled	Man-days	4.00	6.80	27.19	250.00	6,798.11		
				Unskilled	Man-days	4.00	6.80	27.19	200.00	5,438.49		
	3.6 Foot-walk	2.38	m^3	Skilled	Man-days	4.00	2.62	10.49	250.00	2,621.53		
		18.13		Unskilled	Man-days	4.00	2.62	10.49	200.00	2,097.23	36,000.00	
				MATERIAL COST								
	3.1 Extension to roadside drain			RC	m^3			0.56	4,713.90	2,639.79		
	3.2 RCP Culvert			RC	m^3			0.28	4,713.90	1,329.32		
	3.3 Catch Basin			RC	m^3			0.30	4,713.90	1,433.03		
	3.4 Concrete Drain			RC	m^3			8.44	4,713.90	39,801.38		
	3.5 Drain Cover			RC	m^3			6.16	4,713.90	29,044.25		
	3.6 Foot-walk			RC	m^3			2.36	4,713.90	11,200.24	85,448.00	121,448.00
								18.13				
4	Laying of CHB including rebars plastering and topping to level											
				LABOUR COST								
		114.10	m	Skilled	Man-days	2.00	8.00	16.00	250.00	4,000.00		
				Unskilled	Man-days	2.00	8.00	16.00	200.00	3,200.00	7,200.00	
				MATERIAL COST								
				CHB	pcs			1,414.00	8.00	11,312.00		
				Filter	m^3			2.96	2,040.00	6,041.00		
				Moter	m^3			0.57	3,535.00	2,015.00		
				Plaster	m^3			3.28	1,869.70	1,889.70	25,570.00	32,770.00

No	ITEM	BASIS OF MEASUREMENT		TYPE OF LABOUR / MATERIAL PARTICULARS	UNIT	CALCULATION OF QUANTITY		QTY	UNIT COST	AMOUNT	SUB-TOTAL	TOTAL (LABOUR + MATERIALS)
		QTY	UNIT			Persons /day	No. of days		(Php)			
5	Formworks (fabricate, install, remove)											
				LABOUR COST								
		1	Lumpsun	Skilled	Man-days	2.0	4.0	8.0	250.00	2,000.00	2,000.00	
				MATERIAL COST								
	5.1 Extension to roadside drain			1/4" x 4' x 8' Oedinary Plywood	shts			2.00	243.00	486.00		
				Coco Lumber	bdft			95.00	14.00	1,330.00		
				1" Common Wire Nails	kgs			0.25	39.00	10.00		
				4" Common Wire Nails	kgs			3.00	37.00	111.00		
	5.2 Drain Cover			Coco Lumber	bdft			160.00	14.00	2,240.00		
				4" Common Wire Nails	kgs			1.00	37.00	37.00		
	5.3 Foot-walk			Coco Lumber	bdft			160.00	14.00	2,240.00		
				4" Common Wire Nails	kgs			1.00	37.00	37.00		
	5.4 Catch Basin			Coco Lumber	bdft			58.00	14.00	812.00		
				4" Common Wire Nails	kgs			1.00	37.00	37.00		
				1" Common Wire Nails	kgs			0.25	39.00	10.00	7,350.00	9,350.00
6	Installation of RCP Culvert											
				LABOUR COST								
		5	pcs	Skilled	Man-days	1.00	1.00	1.00	250.00	250.00		
				Unskilled	Man-days	2.00	1.00	2.00	200.00	400.00	650.00	
				MATERIAL COST								
				RCP Culvert 300mm x 1.00m	pcs			5.00	380.00	1,900.00	1,900.00	2,550.00
7	Installation of PVC PipeSleeves											
				LABOUR COST								
		5	pcs	Skilled	Man-days	1.00	1.00	1.00	250.00	250.00	250.00	
				MATERIAL COST								
				100mm x 3.00m UPVC Pipe Sch40	pcs			5.00	201.00	1,005.00	1,005.00	1,255.00
8	Clearimh and Dredging of existing canal to main drain (100m long)											
				LABOUR COST								
		15	m^3	Unskilled	Man-days	2.00	5.00	10.00	200.00	2,000.00	2,000.00	2,000.00
	Total materials cost										126,448.00	
	Total labour cost										60,250.00	
	TOTAL DIRECT COST											186,698.00
9	Additional cost											
	9.1 5% contingency (of direct costs)									9,3350.00		
	9.3 Temporary facilities				Lump sum					1,500.00		
	9.3 Administration cost				weeks			5	1000	5,000.00		
	9.4 Foreman				Man-days			30	300	9,000.00	24,835.00	
10	Tools											
				Shovel	pcs			2	480	960.00		
				Spade	pcs			2	480	960.00		
				Plastic Pails	pcs			4	60.00	240.00	2,160.00	
	TOTAL PROJECT COST										**213,693.00**	

PLAN OF FOOT-WALK & DRAIN (not to scale)



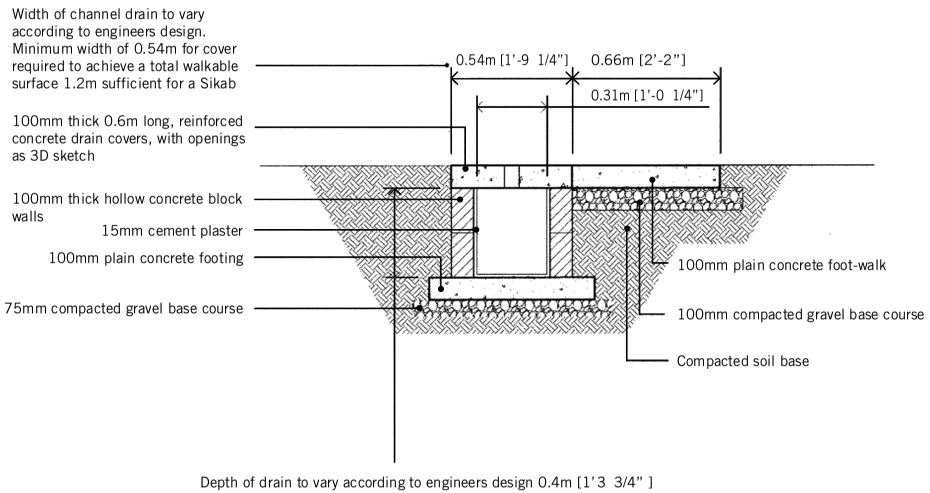
Notes:

- Width of channel drain will vary according to engineers design. Minimun width of 0.54m for cover required to achieve a total walkable surface of 1.2m sufficient for Sikab
- Catch basin details will be to engineers design
- Drainage must be built in reverse, beginning from the outfall and ending at the highest level at the "top" of the community. This is to ensure that invert level of new drain matches with that of existing channel
- Individual household connections to the channel drain will be made (according to the recommendations of the engineer) in concurrence with teh main contact, but will be the responsibility of earch family
- 100mø PVC culvert laid at approximately 10m centers adjusted according to situation on site
- Work to include clearing of existing drainage outfall in Barabgay road

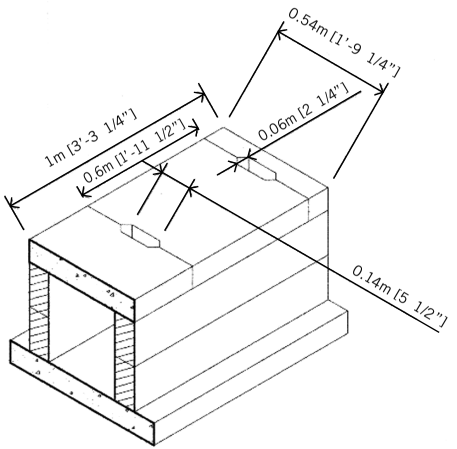
Revision No.	Date	Contents	Project	URBAN FAMILY FOOT-WALK & DRAIN
A	30.09.07	Top section of drain moved to other side of foot-walk	Drawing title	PLAN
			Scale	Not to scale
			Drawing No.	ILO/URB/01 A

Drawn by	Jonathan Price
Date	5 Sept 2007

CROSS SECTION THROUGH CHANNEL DRAIN (1:20)



3D VIEW (1:20)



Revision No.	Date	Contents	Project	URBAN FAMILY FOOT-WALK & DRAIN		
A	30.09.07	Drain cover revised as engineers recommendation	Drawing title	CONSTRUCTION DETAILS		
			Scale	1 : 20	Drawn by	Jonathan Price
			Drawing No.	ILO/URB/02 A	Date	6 Sept 2007

SECTION OF DRAIN

SECTION OF FOOTWOLK

SECTION OF DRAIN COVER

NOTES:

1. All steel reinforced bars shall be grade 33 (yield strength = 33000 psi / 227.6 mpa)
2. All cocrete mixture shall be 1:2:4 to achieve a minimum compressive strength of 17.24 mpa (2500 psi)
3. Wooden form-work shall be plumbed, aligned with concrete, at all times

Revision No.	Date	Contents	Project	URBAN FAMILY FOOT-WALK & DRAIN		
			Drawing title	STRUCTURAL DETAILS 1		
			Scale	Not to scale	Drawn by	Engr. Reynaldo Asuncion
			Drawing No.	ILO/URB/03	Date	30 September 2007

Annex 2.3-3

Example of a Price Quote for Materials from a Local Supplier

URBAN FAMILY HOME OWNERS, ASSOCIATION, INC.
Brgy. MV Hechanova, Jaro, Iloilo City
Tel. No. 508-0622 / 4660

Estimated
Cost of Materials Drainage System
not including the Cement.

Stand: -50 cubic mtrs. @ 350.00 /cubic mtr.	Amout php	17,500.00
Gravel: -75 cubic mtrs. @ 450.00 /cubic mtr.	. .	33,750.00
Hallow Blocks: -1,900 pcs. @ 8.00 each	. .	15,200.00
Total	Php	66,450.00

Quoted By:
ESTELA TALAMERA
TALAMERA CONCRETTE PRODUCTS

Canvass by:

NELMA GARFERIO
Ass, n Secretary

REYNALDO PUMAREN
Ass, Asst. Treasurer

Assisted by:

REMEGIO V. DE ASIS, SR.
Ass, n President

Note: Three prices for each item of material and hand tools were canvassed for.

Annex 2.4-1

Project 5 Homeowner Association Registration Certificate

Republic of the Philippines
Office of the President
Malacañang, Manila

PRESIDENTIAL COMMISSION FOR THE URBAN POOR

Certificate of Accreditation

Accreditation No. 2006 - 1327
(per PCUP Resolution No. 004-2001)

By virtue of Executive Order 82 creating the Presidential Commission for the Urban Poor to accredit legitimate urban poor organizations, this certificate is hereby granted to

PROJECT 5 HOMEOWNERS ASSOCIATION

Sooc Relocation Site, Arevalo, Iloilo City

This certificate shall take effect within two (2) years from date of issuance.

Issued this 25th *day of* September 2006

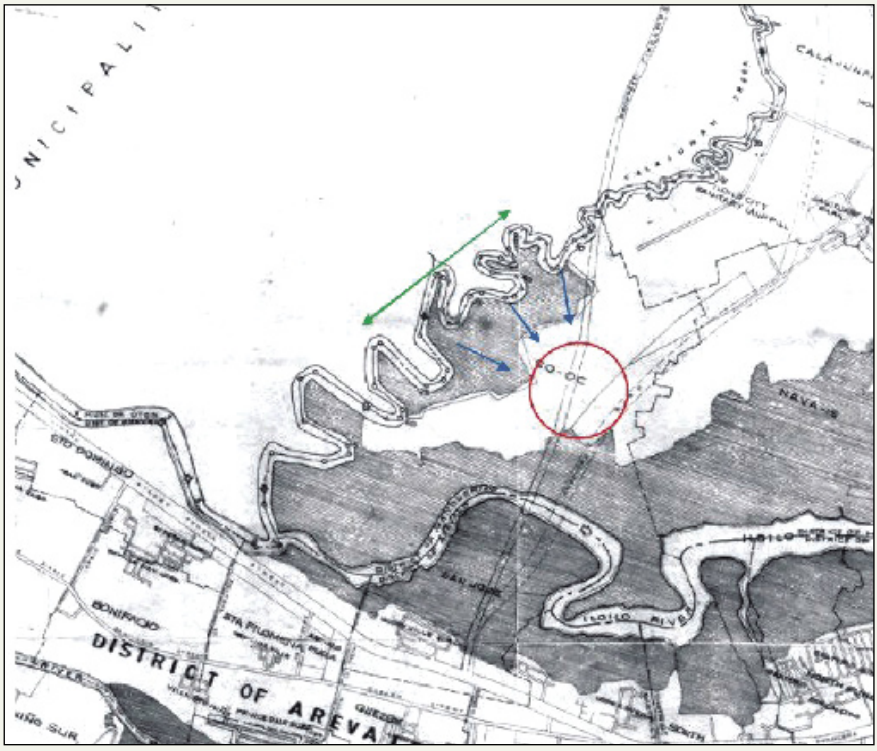
In the City of Manila.

CHLOE MANLOSA-OSANO
Director-FODV

PERCIVAL U. CHAVEZ
Chairman/Chief Executive Officer

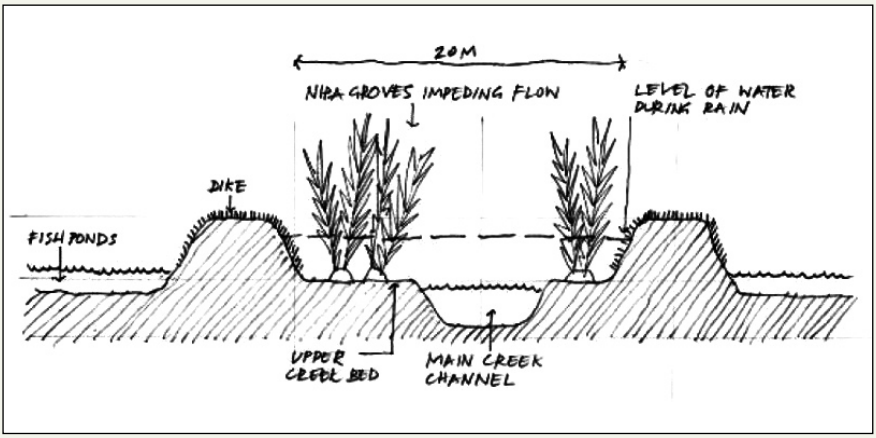
Annex 2.4-2

Creek Plan



Key:
The green line represents the area to be cleared – where the worst blockages occur
The red circle is the position of the Sooc 5 community, and
The blue arrows show the direction of the floodwaters

Diagram of Creek Cross-section



Budget

- A length of approximately 600m out of 1-2 km of creek is expected to be cleared
- The effective width of the creek should be widened to about 20m
- One team of 20 persons (including one chainsaw operator) will be able to clear about 267m² of creek area each day.
- Three teams will be required to complete the works
- Over 15 days, 3 teams could clear 12,000 m² (15 x 3 x 267 or 20 x 600) of creek area.

Activity	Unit Cost	Quantity	No. persons	Total Cost (Php)
Cost of one team to clear 267m² of creek				
Unskilled labour	200	1 day	18	3,600
Skilled labour (supervisor and chainsaw operator)	250	1 day	2	500
Daily rate for team to clear 267m²				4,100
Cost of three teams	4,100	15 days	3 teams	184,500
Tools and Equipment required per team				
Gloves	200	10 pairs	-	2,000
Tall rubber boots/waders	500	10 pairs	-	5,000
Tagad	800	5	-	4,000
Bolo	800	3	-	2,400
15" chainsaw	8,000	1	-	8,000
Cost of equipment and tools per team				21,400
Cost of equipment and tools for 3 teams				64,200
Total Cost of labour and equipment/tools				248,700
Overall foreman	300	15 days	1	4,500
Admin Costs	1,000	3 weeks	-	3,000
Contingencies (5% of labour and equipment costs)				12,435
TOTAL PROJECT COST				268,635
	Exchange rate: 1 US$ = Php 44.4			6,050 US$

Annex 3.1

Example of a Cost and Employment Calculation Sheet

Labour-based technology / employment creation	
Employment required 1 Unskilled (No and describe):	Supervisory arrangemants:
2 Skilled (No and describe):	
3 Lomg term (Training, ..)	
Tools and enquipment required:	Construction material required:

Direct costs	Calculation	Cost
Labour (incl. site supervision)		
Mterial		
Tools/Equipment		
Transport		
Sub-total		
Maintenance fund: 10%		
Total direct costs		

Contribution of partners

Source:Sustainable community-managed and labour-based upgrading of urban low-income settlements, Goldie Scot, Fransen, van Esch, ILO, 2002

Annex 3.2

Estimate of Unskilled Workdays

Covering parts of the road and drainage works in Chamka Samrong Muoy Settlement in Battambang

Road to water well A & C
in Chamka Samrong Muoy Village
Road Length: 62.5 m

Province:
Battambang
Date:_____2007

Item	Description	Unit	Qty	Work-Days Planned	
				Qty/wd	Total
1	Setting Out (two times)	m	62.50	20.00	6
2	Clearing debris and other obstacle	m^2	76.00	20.00	4
3	Water well repair (Old water well A)	LS	1.00	0.25	4
4	Supply an inorganic soil and including well compacting	m^3	40.00	0.80	50
5	Laterite with 13cm thickness after compaction including well compaction.	m^3	2.92	1.00	3
6	Compacted stone with sand	m^3	4.66	0.50	9
7	Mortar 1:4	m^3	6.06	0.20	30
8	Tile	pieces	1.172	80.00	15
9	Hollow brick masonry with plastering 5cm on top both sides as the drawing	m^2	4.26	2.00	2
10	Hollow brick masonry with plastering 1 side	m^2	1.20	1.00	1
11	Turfing	m^2	37.80	10.00	4
12	Structure - New 2 Box Culvert Construction and Drainage Pipe Culvert Installation				29
	TOTAL				158

Annex 3.4

Sample Paved Road Cross-sections for Urban Settlements

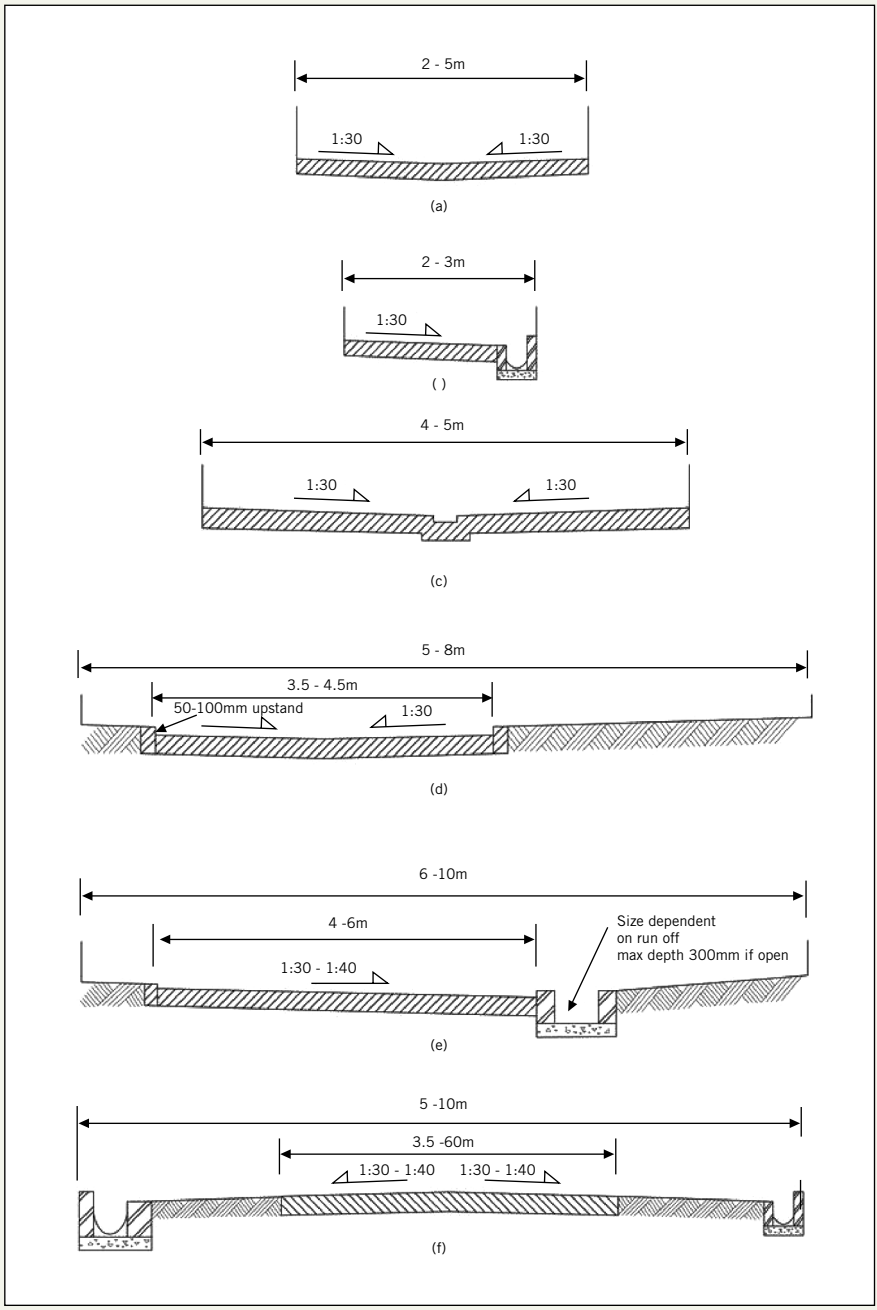


Image courtesy of WEDC. © Ken Chatterton

Annex 5.1

Memorandum of Understanding

between

The Community (full title and contact details)
and
The International Labour Organisation [ILO] (full title and contact details)
and
The Municipal Authority (full name and address of specific office i.e. UPAO)

Context

Investments in infrastructure have the potential to create jobs, reduce poverty and boost local economic development.

The proportion of poor people in Asia has fallen in recent decades but the region still accounts for two-thirds of the world's poor, of whom 250 million are in urban areas. Recent economic growth has largely by-passed the urban poor as the benefits of growth do not always trickle down very quickly. Special policies and programmes are needed to tackle urban unemployment and poverty.

The Employment Intensive Investment Programme (EIIP) of the ILO has developed a strategy and a number of procedures and tools to increase the impact of investments in infrastructure on employment creation, poverty reduction and local development. EIIP works with governments, employers' and workers' organizations, the private sector and community associations in orienting infrastructure investments towards the creation of higher levels of productive employment and towards the improvement of access to basic goods and services for the poor. This combined use of local participation in planning with the utilization of locally available skills, technology, materials, and appropriate work methods has proven to be an effective and economically viable approach to infrastructure works in developing countries.

As a demonstration of the ILO/ Employment Intensive Investment Programme approach, it has been agreed to carry out quick entry pilot projects. This MOU covers one such pilot project.

1. Background
(Description of the community – population, geographical location and needs)

2. Goal of the Cooperation
The goal of this cooperation between ILO, (community name) and (office name) is to assist the (name of community) in improving their living and working environment through the (description of the project). The (name of community) and their representatives will be directly involved in all aspects of the project. Through the use of local resources and labour-based methods of working, temporary employment will be created for the workers engaged in the project.

3. Institutional Arrangements
This memorandum of understanding is designed to clarify the roles of the partners undertaking improvement works in (name of the area/ community).

For the purposes of this agreement, the partners are as follows:

1	Funders	ILO
2	Contracting Authority	ILO
3	Contractor	Community committee, petty contractors from within the community, locally based contractors from outside the community (depends on works and available skills)
4	Beneficiaries	(name and numbers)
5	Technical Service providers	ILO, City Council, Private Sector Consultant

1. As funders, ILO will undertake to provide funds for the agreed community works and pay in accordance with the payment schedule, under the individual service contracts.
2. As the contracting authority, the ILO will undertake to prepare tender documents, accept bids and issue contracts and approve works for payment, in consultation with the community representatives.
3. As the contractor, the community are responsible for ensuring that the works are carried out in a timely manner to the satisfaction of the technical service providers and the ILO. The community is also expected to work together with individual petty contractors or contractors from outside the immediate neighbourhood (if required).
4. As beneficiaries, the community and their representatives are responsible for identifying their needs and to assist the ILO and municipal authorities in agreeing the location and design of the infrastructure improvement to be undertaken, within the allocated budget.
5. The technical service providers (ILO and / or Municipal council

engineers/ Federation/ NGO/private sector consultant) are responsible for designing the scheme together with the community, preparing the plans, preparing the contract documents, setting out the works and site supervision. The Municipal Authority will approve the plans, or at least register no objections to the plans, prior to the start of work. The Municipal Authority will be included in the final inspection of the works.

This Memorandum of Understanding acts as an umbrella for the individual service contracts, although it is not legally binding the following recommendations are included:

1. All unskilled labour will be recruited from the community in which the project is located.
2. Wherever possible skilled labour and petty contractors should be located from within the community. Where this is not possible or practical, contractors from outside the area can be sought.
3. The community and their representatives may opt to act as the contractor with the agreement of the ILO.
4. All work will be paid and the wage rate agreed prior to the start of the works and in advance of the bidding process
5. The ILO will supply a basic first aid kit to be kept on site and managed by the community leadership
6. Labour will be recruited in accordance with the clauses in the service contract.

An operation and maintenance plan must be developed and those responsible accept their role and responsibilities for the operation and maintenance, prior completion of the construction works (community, municipal authority or other).

(Insert a description of the works and tentative budget)

(This memorandum of Understanding (MOU) will be signed by a representative of the ILO, representatives of the community, and a representative of the local municipal authority)

List of signatories (names, titles and organisations)

Date of signing

Note: Separate agreements will be signed with technical service providers.

Annex 5.2-1

Example of a Community Contract

In the example provided, elected members of the community together with the city council are the clients and a construction team from within the community are the contractors.

Parties to the Contract:

1. **Client:** The clients are the Community Development Association (CDA) and the City Council. The funds for the improvement works have been deposited in a dedicated Community Bank Account, which requires the joint signatures of the Community Development Association (CDA) office bearers and the City Council district representative. Therefore the community together with the City Council are the joint clients.
2. **Contractor:** The contractor is the Community Construction Committee (CC)
3. **Technical Adviser:** The TA is provided by a local institute of learning, which appoints a site engineer to supervise the works.

The works are divided into smaller components, each covered by a contract. It is practical to make one advance payment covering the initial works (not including the profit).

The contract below is based on a trust relationship among the contract partners and is especially designed for the engagement of communities for carrying out the works. The contract document itself has not been tested in a court of law and should therefore be used with caution. It is not suitable as a contract with a regular commercial enterprise.

Community Development Association

Agreement form for Contract Works

Original for the Community Development Association (CDA, Client)

One Copy each for the Community Construction Committee (CC, Contractor), City Council (Client), and the Technical Assistance project Manager (TA)
Contract number: _____ Contract Date: _____
Name / no of infrastructure (road, drain, water pipe, culvert, etc.): _____
_____

Location (km stand or coordinates or description): _____
_____
Starting date: _____ Finishing
date: _____
Contract sum_____ (currency) Amount in words _____
The contract sum includes the cost estimate provided in Annex 1 plus 10% overhead/ profit.

The _____ Community Construction Committee has entered into a contract with the client _____ Community Development Association and the _____ City Council to undertake the above mentioned activities under the supervision of a Site Engineer appointed by the Project Manager.

The conditions of the contract are as follows:

General:
The contractor shall execute, complete and maintain the works in accordance with the contract to the satisfaction of the site engineer. The contractor shall comply with and adhere strictly to the instructions of the site engineer on any matter.

The contractor fully accepts to implement the works in accordance to the requirements mentioned in the contract.
In case of failure by the contractor to fulfil the contract agreement, the _____ CDA will have the right to terminate the contract after a written warning. In the case of misconduct, the contract can be terminated by the CDA immediately. In the case of conflict between the clients and the contractor, the technical adviser will arbitrate.

Payments:
The contractor will receive an advanced payment from the clients equal to

the full cost-estimate of the contract (see Annex 1) – If the contractor requires more funds to execute the contract, due to unexpected circumstances, a written request should be made to the clients.

The contractor will administer the advance payment. The clients and the technical adviser are free to audit the administration upon request.

At the end of the contract, the contractor will provide a report on the contract, according to the format given in Annex 2. The technical advisers will assist the CC in writing the report.

The project manager will check and verify and prepare a certificate covering the completed works evaluated on the basis of the agreed contract rates. The CDA, on behalf of the clients should agree to the certificate.

The contractor will receive a final payment of 10 percent of the contract sum, within 14 days after the certificate date. Differences between the advanced payment and the actual costs will be balanced in the final payment.

Uncompleted works will be evaluated on the basis of the contract rates and deducted from the contract sum.

Obligations of the Contractor:

- Hand tools and/or equipment are included in the contract sum and are the responsibility of the contractor.
- The contractor is responsible for the selection, appointment and management of workers as directed by the site engineer. The contractor will advertise the applications within the community, and select community residents as workers, through a ballot system. The ballot system will allow for representation of men and women. Salary levels and task rates will be set by the CDA in consultation with the City Council, the contractor, and the technical adviser.
- The contractor will provide a medical kit at the work site, and ensure safe working conditions. The contractor is responsible for compensation for work accidents in cooperation with the CDA.
- The contractor is responsible for the purchase and for the safe-keeping of construction materials, as directed by the site engineer.
- All legal and financial regulations and obligations pertaining to this contract and any labour laws of _____ (name of country) regarding labourers working along roads and streets are valid. Special reference is made to labour standards dealing with minimum age, non-

discrimination, prohibition of forced labour and occupational health and safety regulations.

Obligations of the Clients:

- The CDA should ensure that the contractor is paid in a timely manner, and that the work is correctly checked and verified by the site engineer, as written in the certificate.

Obligations of the technical adviser:

- In consultation with the CDA and the contractor, the project manager will appoint a site engineer. The site engineer will provide day-to-day supervision of the construction and will report to the CDA and the contractor.
- The project manager will check and verify and prepare a certificate covering the completed works evaluated on the basis of the agreed contract rates, and inform the clients likewise.
- The project manager will appoint an animation team to assist the CDA to keep the community residents informed of the construction and to assist in any conflict resolution.

Attachments:

1. Cost estimate and Bill of Quantities
2. Detailed Designs
3. Work plan / timetable
4. Format for a report on the community contract.

	Chairperson CDA	City Council	Contractor	Technical Adviser
Name	.....	.....	.....	.....
Signature	.....	.....	.....	.....
Date	.....	.....	.....	.....