

URBAN EXAMPLES

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IMPROVING ENVIRONMENT for CHILD HEALTH DEVELOPMENT

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Table of Contents

| | |
|--|-----------|
| PREFACE | 2 |
| INTRODUCTION - IMPROVING ENVIRONMENT FOR CHILD HEALTH AND DEVELOPMENT | 3 |
| PRODIBA - INTEGRATED BASIC SERVICE PROVISION FOR LOW INCOME GROUPS IN BUENOS AIRES, ARGENTINA | 11 |
| THE URBAN COMMUNITY DEVELOPMENT PROGRAMME IN THE 'FAVELAS' OF RIO DE JANEIRO, BRAZIL | 16 |
| INSTITUTIONALIZING AN URBAN BASIC SERVICES PROGRAMME IN COLOMBO, SRI LANKA | 20 |
| HEALTH SURVEYS AS INPUT INTO AND EVALUATOR OF UPGRADING PROGRAMMES IN AMMAN, JORDAN | 25 |
| IMPROVING WATER SUPPLIES IN OUTLYING LOW INCOME NEIGHBOURHOODS IN TEGUCIGALPA, HONDURAS | 30 |

This issue of Urban Examples was compiled and prefaced by Ephim Shluger, UNICEF New York. Information for each of the above case studies was supplied by the UNICEF Officers: Ernesto Lopes Montana (Buenos Aires); Cesare Laroca (Brasilia); Franco Squera (Colombo); Leila Bisharat (Amman) and Bernt Aasen (Tegucigalpa). These were edited by David Satterthwaite from the Human Settlements Programme of the International Institute for Environment and Development (IIED) who also added the Introduction and brief background information about each of the cities where the case studies are located. The sources of such background information are given at the end of each case study. Thanks are also extended to Migdalia Fuentes for her administrative assistance.

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PREFACE

UNICEF's promotion of basic services projects in poor urban communities is aimed at children's and women's health and well-being which, in turn, leads to enhanced development and a more productive adult life. This issue covers UNICEF supported basic service projects implemented through participatory strategies with the communities concerned. These actions in the living and working environment of the poor are part and parcel of UNICEF's broader range of policy objectives sought through the Child Survival and Development Revolution (CSDR) and are also complementary to the Urban Primary Health Care (PHC) initiatives.

The five case studies, herein presented, deal with the unique circumstances of the urban poor population living in squatter areas and practical ways of addressing the needs for improved access to drinking water, safe excreta disposal and drainage systems and health services. The unsafe and unhealthy physical environment commonly found in squatter settlements and the array of natural and man-made disasters, including deforestation, floods, soil erosion and ensuing landslides take a high toll on the poor's health and life expectancy of the poor.

Provision of basic services and improvements in environmental conditions have been directly correlated to good health. Recent studies conducted in Brazil and Egypt reveal that the provision of drinking water and basic sanitation in urban poor areas brings about a remarkable health improvement in general and particularly, the reduction of infant morbidity and mortality rates. A study on the impact of piped water on public health in Brazil (Merrick, 1985), attempted to quantify the relative importance of drinking water and sanitation in the decline of infectious diseases and infant mortality rates. This study indicates that improved access to water, combined with parents' education and good personal hygiene practices, had significantly changed the infant mortality rates of that country from 1970 to 1976. Similarly, in the study of selected squatter areas in Cairo, (Tekce, Oldham,

et. al 1987), evidence is drawn that among children born into households where parents are not educated and hygiene is poor, 213 per 1,000 die before the age of three, while with only limited parent education but some piped water and sanitation facilities available, the death rate is 71 per 1,000.

Most interventions in the living environments of the poor, however, still face great difficulties, stemming either from institutional weaknesses, severe lack of funds, restrictive legislation and/or ambiguities found in policies for upgrading or reconstructing settlements. The Introductory Chapter of this publication contains a concise overview of the current issues related to urban development policies and their past evolution and trends towards the poorer urban population's health and living conditions and the role played by the development aid programmes.

The case studies are preceded by a brief description of the particular social and economic contexts in which projects have been developed and incorporate a critical analysis of the outcome of each project and the potential for project coverage expansion or replication is also addressed through an assessment of the opportunities and constraints experienced in each of the five projects featured.

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INTRODUCTION

IMPROVING URBAN ENVIRONMENTS FOR CHILD HEALTH AND DEVELOPMENT

This introduction to the case studies looks first at the kind of environment in which hundreds of millions of poor urban adults and their children live and the health problems that they face. (1) It then reviews the lessons from 'success story projects' and how these might be applied in larger, more effective and more cost effective strategies to improve urban environments for child health and development. This section draws heavily, both on the UNICEF case studies and on some recent reports which are listed at the end of the Introduction.

The scale of ill-health: Few governments or international agencies acknowledge the scale of ill-health, disablement and premature deaths among low-income groups in urban centres of the Third World. In many squatter settlements where there is no public provision for water, sanitation, household waste collection or primary health care, a child born today is 40-50 times more likely to die before the age of five than a child born in a prosperous Western family. Infectious and gastrointestinal diseases which have essentially disappeared in richer nations, remains the major source of child morbidity and mortality in the Third World. Respiratory infections and nutritional deficiencies also associated with poverty, overcrowding and poor environmental conditions are the other two major causes of morbidity and mortality in young children.

A growing number of case studies on health problems among the urban poor, show levels of infant and child mortality, disablement and ill-health that compare with those afflicting the poorest rural groups. Large cities may succeed in attracting most public expenditure in water supply, sewers and hospitals but few of the poorer groups living in such cities receive any benefit from these. Those living in smaller urban centres often have as few publicly funded services and facilities as those living in rural areas.

The environment of poverty: Those sectors of the population most vulnerable to diseases because of inadequate incomes, are the ones who live in the most unsafe and over-crowded environments and have the worst provision for basic services (including health care) and the least coverage from immunization, first aid and emergency life saving services.

More specific generalizations about low-income groups' housing problems are difficult to make since there are major differences between cities in the ways that lower income groups find shelter. In any city, the options open to the poor depend on many factors including the availability of land for housing and the pattern of land ownership, government attitudes to low-income groups' housing needs and, of course, the scale and growth rate of the city and the distribution of income among its citizens.

However, most poor urban citizens find accommodation in one of two ways - the first is through single rooms rented by households (or several single persons) in tenements or cheap rooming houses with one toilet, bathroom, and kitchen shared amongst dozens of people. The second is through building, renting or purchasing a rudimentary house or shack on a land site where there is little or no provision of infrastructure and services. The settlements formed by these houses and shacks are often called 'squatter settlements' but the term is misleading since the residents are often not illegal squatters. Many such settlements are legal developments that still lack infrastructure and services; others are illegal sub-divisions but where the residents purchased the land sites from their legal owners and their illegality is only in the eyes of the government which did not sanction the sub-division. There are also many formerly illegal developments where legal tenure has been granted and legal temporary settlements where residents have permission to settle and build houses but no long-term tenure has been given. Such distinctions are important, not least because they affect the willingness and capacity of 'community organizations' to tackle health and

(1) The views expressed in the introduction are those of David Satterthwaite and derive from his work with Dr. Jorge E. Hardoy and other colleagues in IIED, Latin America. They do not necessarily express the views of UNICEF.

environmental problems.

All these different forms of accommodations provide unhealthy and dangerous living environments and contribute much to ill health, disablement and premature death. A high proportion lack safe water supplies within easy reach and those that do, typically have one tap to share amongst dozens of people. Virtually all are overcrowded - often five or more persons to each room. For most of their inhabitants, tenure is insecure, either because they rent the room and their income is uncertain or because the land site on which the shelter is built on is illegally occupied or sub-divided. In most, provision for the disposal of fecal matter is inadequate. If poorer groups have access to a water sealed latrine, it is probably shared by dozens of people. However, most have to make do with pit latrines or buckets. The majority of ban centres in the Third World have no sewer system at all and for those that do, the system usually serves only a small proportion of the total population. Garbage disposal services, often adequate for middle and upper income areas, reach relatively few low-income households.

The Illegal City: Over the last thirty to forty years, it is the rudimentary houses and shacks which most outside observers label 'shanty towns' which account for most new housing units built in Third World cities. In these, most of the construction was undertaken or organized by their inhabitants. In most cities, 30-50 percent of the population live in such settlements; in some the figure goes as high as 60 or 70 percent.

Here, the only way that low-income households can obtain a house of their own is to buy or rent one of these rudimentary houses (if purchased, usually with a view to improving and extending it over time) or to find a land site and organize their house construction. The only areas in or close to the city which are within their price range rarely include piped water and virtually none have sewers. Few have paved roads and pathways and storm and surface water drains. Most available sites are either on illegally occupied or illegally sub-divided land; legal house sites are too expensive. In addition, many such houses are built on inadequate land sites - steep hillsides

subject to landslides, low-lying land subject to regular flooding, sites contaminated by industries' pollution. Such sites are chosen for good reasons. These are often the only cheap sites relatively close to where their residents work, or they are the only sites where the threat of eviction is lessened by the terrain being too dangerous to have much commercial value as building sites. A combination of low-income, the threat of eviction and no services or support from urban governments discourages residents from making any improvements. As will later be discussed in more detail, much of the adult population have little 'free time' to work on the houses, because of long working hours, six or seven days a week. In addition, there are the tenants or renters who have little motivation to improve the structure since their landlord will be the main beneficiary of any improvement they make. In many cities, the peripheral 'shanty towns' have more cheap rental accommodation and indeed even larger degree of absentee 'landlordism' than the older more central districts which traditionally have been the location for cheap rental accommodation.

Most houses remain small and many have one room. Given the over-crowding and widespread use of open fires or solid fuel/kerosene stoves (often the only affordable means for cooking/heating) and the over-crowding, it is impossible to protect either children or adults from accidental burns and scalds. Open fires or inefficient stoves mean smoke-filled rooms which with high densities and poor ventilation contribute to the high incidence of respiratory infections. Low-lying house sites, lack of drainage and poor quality buildings often mean damp house interiors which also contribute to respiratory infections. Inflammable building materials like wood, cardboard, plastic sheets and tar paper are widely used since they are cheap or scavenged from waste dumps. Not surprisingly, large scale fires affecting whole neighbourhoods are common. Rarely is there public provision for even a basic level of emergency life-saving services. Yet public provision just for the knowledge and equipment on site to allow rapid treatment of burns, the referral of seriously injured people to hospitals and support for fire-fighting units within the area is not a major cost.

Children's special vulnerability: The fact that this environment of poverty impacts most on infants and children is well known, for they spend most of their time in or around the house and are most vulnerable to health hazards there. In addition to the multitude of health hazards already noted within the home are those in the surrounding area - sites contaminated with household garbage (including broken glass and empty tins with sharp edges) and fecal matter. This has obvious impacts on children since such sites are the only open spaces where they can play. Their problems are further magnified by the fact that few health services exist in such settlements, hence, cuts, sprains, bites and other accidental injuries are not immediately attended. In the many settlements built on steep slopes or land subject to flooding, or next to canals or major roads, the additional dangers for children are obvious.

The limitations of city and local government: Urban governments are confronted by a scale in their citizens' needs for basic infrastructure and services which far outweigh their capacities and resources. Existing levels of coverage for infrastructure and services are often deteriorating with no new investments to expand capacity. It is not uncommon for much of a city government's resources to be devoted to maintaining infrastructure and services in the residential areas of the affluent minority.

Many urban governments are unwilling to act. They do not want to make basic investments in illegal settlements because they feel that this would help legitimise their residents' right to live there. Ironically, these same people, ignored by their governments, are the main source of cheap labour on which the city's economy depends. Where urban authorities raise funds for major new projects - usually in capital cities - their relevance to the needs and priorities of the low-income majority are often limited. Elevated multi-lane highways or metro systems can monopolize new investments for years while more than half the city's population lack safe water, sanitation and health care. The recent return to more representative city governments in several nations have seen the election of governments with clear social concerns. However their ability to act is limited since higher levels of government are unwilling to allow them the power and

resources to do so. Upgrading programmes may run into complications because a high proportion of the inhabitants rent rooms and simply improving infrastructure and services may benefit landlords more than tenants. This can be overcome but few governments are prepared to seek ways of transferring ownership from landlords to long-term renters.

Even if the authorities do decide to act, the fact that so many informal settlements have developed, dotted around the urban periphery on dangerous and relatively inaccessible sites greatly increases the cost of providing basic infrastructure and services. City governments today have to pay the extra costs arising from the failing of their predecessors to guide the city's physical growth in ways which cheapen the provision of infrastructure and services and ensure low-income groups live in areas within easy reach of work.

The need for continuous, multi-sectoral action: Some national or urban governments have made serious political commitments to tackling these problems. Virtually all lack the resources to provide infrastructure and services to the standards set by the world's richer nations, i.e., government agencies providing piped water, sewers, electricity and regular garbage disposal to each house with all residential areas having paved roads, sidewalks, drainage, health care, health prevention and a comprehensive range of emergency life saving services. However, dozens of innovative projects have demonstrated how to improve the housing and living environments of poorer groups at relatively low cost. Most involved co-ordinated actions by government agencies or ministries from different sectors to improve services, to reduce health hazards in the home and its surroundings to improve the resistance of the inhabitants to health hazards and to improve the quality of treatment for those who became ill. For instance, the benefits that families receive from Oral Rehydration Therapy for the treatment of child diarrhoea may be enormous in the short-term but in the longer-term will be limited if no accompanying action reduces the risk of re-infection (for instance through increasing water supplies, improving water quality and improved provision for the safe disposal of fecal matter). Even taking action on all these

fronts will only have a limited impact if most children remain seriously under-nourished. Thus, it is to these 'success stories' (i.e., cases) that one turns for guidance on how to determine what actions are needed and how to implement and co-ordinate them.

Beyond the 'success story' project:

Urban governments could achieve far more with existing budgets and staff if scarce resources were used in different ways. Innovative projects have demonstrated that lower income groups can be reached with improved housing, living conditions and health at relatively low per capita outlays. Some water projects have even reached low-income families with safer, cheaper supplies with the beneficiaries paying enough to provide the implementing agency with full cost recovery. However, if the number of people reached by these 'success stories' are added together, they still make very little impact in terms of total need, and many of the features which allowed for their success are unique to each case.

However, each of the five case studies in this issue of Urban Examples have valuable lessons on how to scale up the impact and effectiveness of government action at a relatively low cost. The cases described in Rio de Janeiro, Buenos Aires and Colombo are especially important because they have gone beyond the stage of a 'pilot' or 'demonstration' projects to the point where the number of beneficiaries totals more than 100,000 inhabitants with multi-sectoral actions being undertaken in many different low-income settlements. In Rio de Janeiro, efforts have also been made to influence the institutional structure to allow continuous programmes rather than the 'project by project' approach. In the case study from Amman, there is the example of an important innovation built into implementation. Four features are worth highlighting: first the detailed physical, health and socio-economic surveys in settlements to be upgraded to show what problems the upgrading had to address; secondly, the fact that the surveys were quick and undertaken by the staff of the agency implementing the upgrading; thirdly, the health survey designed in such a way as to open a dialogue with the inhabitants about their needs and priorities; and fourthly, follow-up surveys after upgrading which allow evaluations on health impact. The case in

Tegucigalpa shows how out-lying settlements can be reached with improved water at a cost much lower than that needed to connect them to the main city supply. Each case contains important lessons.

Some governments and international agencies do understand that urban authorities need to improve the capacity to implement continuous programmes of multi-sectoral action to reach low-income groups, especially infants and children, with sustained improvements in their health. Principles on how to design and implement them are emerging from experiences over the last ten to fifteen years. Seven tentative principles are outlined below. The first three are about understanding the local context, especially the needs and priorities of low-income citizens and the constraints on their contributions to 'community action'. The second three are about government orientation and organization. The final one is about aid agencies' own limitations.

1. A real and detailed understanding of the needs and priorities of 'low-income groups'. A more specific understanding of the major health problems and their causes allows more effective choices in interventions to improve housing, infrastructure or services and health. Professionals from whatever discipline who work closely with low-income groups, often find that their preconceived ideas about the scale and nature of the health problems and their causes were at best simplistic and at worst inaccurate. Yet very few of the many recent upgrading projects included any attempt on the part of project personnel, either to discuss health problems with residents or to investigate health problems there and consider appropriate interventions as part of the upgrading. The Amman case study shows the surprising range of benefits which came from the health survey prior to the upgrading programme.

One of the most common mistakes is to assume that that 'low-income groups' have the same housing needs. A young single person has very different housing needs and priorities from a young family. People with stable, secure jobs have different housing needs from those who have to remain mobile, searching for casual work. Within the low-income population in any city, there are enormous ranges of different needs for

accommodation in terms of size, location, cost and permanence.

Another common mistake revealed by project evaluations is project personnel's failure to appreciate the often conflicting priorities within households. Women usually suffer more than men from inadequate services and facilities since it is seen as their role to organize water collection, manage the household budget, look after infants and children and care for sick or injured household members; in many instances these come on top of income earning activities. Yet numerous 'community development projects' have failed to understand women's priorities and ways to meet them.

2. From short term intervention for 'target groups' to long-term collaboration with the residents and their neighbourhood associations. The idea of a 'target group' implies some outside agency identifying a 'target' and concerted action on that target over a short project period. By implication, the 'target' has no role in design and implementation. Some aspect of the 'target groups' problems can be resolved by one sectoral action. For certain problems and for short-term emergencies, such an approach can be justified. Projects will not improve the urban environment for child (and adult) health cannot achieve much with such an approach because their poverty and ill health are the result of so many factors. Projects to improve the urban environment will continue to be insignificant in relation to need unless they can help set in motion a continuous process. This process involves the residents, the organizations they form and the local government within whose jurisdiction they fall having the resources and knowledge to collaborate in tackling problems, improving conditions and mobilizing resources. Poorly housed inhabitants do not want 'one off projects' or campaigns so much as a continued process through which services are improved and infrastructure installed and maintained with citizens having the right to a voice in determining what is done and how scarce resources are used. Of course, this presents problems for government and aid agencies set up to do 'projects'; this will be discussed under 5 and 7.

3. An appreciation of the constraints faced by low-income residents and 'community organizations' in contributing time and energy to community-based

projects. Assumptions made by governments and aid agencies on the free time that low-income groups can contribute to a community project or construction on their own house often prove false. One illustration is the fact that governments and agencies still talk of 'unemployment' or 'under-employment' as a major problem for low-income groups when the problem for many is 'over-employment' but 'under-payment'. Many of the so called 'unemployed' or 'under-employed' are working long hours, six or seven days a week. They are classified as 'unemployed' because their work is not official or registered. It is often assumed that 'women' have more free time but a high proportion may be working full time (especially where they are de facto heads of household) and even if not working full time, they are expected to undertake virtually all domestic and child-rearing responsibilities. These take up all available time, especially as those living in peripheral illegal settlements have to spend so much time collecting water and travelling to and from jobs, market place, health centres and virtually all other services and facilities.

There is also the issue of what purpose 'community participation' is meant to serve. Many projects have failed or had only limited success because outside agencies regarded 'community participation' as simply the means of reducing the cost to themselves of a project - i.e., saving labour costs through demanding that the residents contribute their time free, saving maintenance costs since these become a community responsibility, saving professionals' time through demanding that resident organizations design new internal road networks and move the houses which stand in the way of these new roads. It is ironic that the poor with the least incomes and often the least 'free time' are asked to help install and maintain infrastructure and services while richer households with access to better infrastructure are spared from this kind of "participation" to appropriate them.

A recent paper on 'community participation' in aid agency projects points out how 'the intense individualism generated by the survival strategies of low-income populations' can prevent or inhibit 'the collective solidarity necessary as the basis for community level organization' (see Notes for the Source). It also describes how many projects are designed with a poor

understanding of some of the contradictions at the level of the household and the community. Some have already been mentioned such as the different needs and priorities of men and women from the same household. Another is the assumption that all residents in a settlement chosen for upgrading have similar priorities. It is often found that in settlements, there are too diverse a population to be regarded as a 'community'. However, many parts of the project rely on 'community organization' for their implementation. Existing community organizations may represent the needs of only some of the inhabitants. Such organizations formed by residents of illegal settlements lobbying for legalization are hardly likely to include tenants' interests. This should not discourage either governments or aid agencies from closer engagement with low-income groups and community organizations. Most of the 'success stories' involved such a close engagement, but project officers understood the potentials and the limits on 'community participation'.

To turn to principles to guide government action, there are important but perhaps little studied institutional implications to implementing participatory, long-term programmes aimed to improve urban environments for child health and development.

4. Sustained political support to move from 'success story' projects to large scale, continuous programmes. The active involvement of low-income residents and their community organizations in such official programmes implies an increased role for them in decision making and an increased share in public resources at their disposal. Although many governments are not prepared to consider such an approach, others have effectively embraced such "partnership".

5. Changes in the ways that the different government agencies work and co-ordinate such work with each other and with the low-income residents. Most 'success stories' were small projects where different government agencies and different levels of government collaborated on an 'ad hoc' basis. For small, discrete projects, this is relatively easy given agreement amongst different government levels and sectoral agencies as to the worth of the project. The various legal and institutional impediments to a project's success - for instance the contravention of sub-division and building norms and standards for infrastructure provision - can be waived for that project. In-

novative projects often demand a high input of staff time but again, if the project is relatively small and only for a short time, this presents no major problem.

All these ways to overcome impediments to innovative projects cannot be repeated for large scale, city-wide and continuous programmes. Scaling up public actions to the point where they are commensurate with need will require changes in the way that agencies are structured and operate. It will require:

(a) A revision of norms and codes for building, planning, infrastructure and services to allow the widespread application of new approaches. The guiding principle for new standards must be the promotion of rapid but affordable improvements in health and safety. For building and planning standards in many illegal or informal settlements, mandatory building standards usually promote the impossible and unaffordable. Greater strides in improving conditions may come from replacing mandatory standards with publicly funded neighbourhood centres providing the residents with technical advice on how health and safety can be improved at minimum cost and how to get credit to allow this to be achieved; certain Third World NGOs have already tried such an approach and governments might well support NGOs in doing such work. If such an approach is followed, of course, measures must be taken to protect tenants.

(b) Far more professional staff whose job is to talk to, work with and help mobilize low-income groups. Here too, local NGOs can often make major contributions; many have long experience working with low-income groups and many of the 'success stories' owe more to such NGOs than they do to any outside agency.

(c) More power and influence to the staff who form the intermediaries between low-income groups and public interventions in project design and implementation than is currently customary.

6. A large increase in the capacity of city/municipal governments. To guide urban expansion, to ensure sufficient supplies of cheap, serviced land sites for new housing, to rehabilitate and maintain existing infrastructure and services and to vastly expand the proportion of people reached with infrastructure and services. This in

turn demands a far greater decentralization of resources and powers to raise taxes to local governments than national governments have proved willing to allow. It also demands more representative local governments since poorer citizens are hardly likely to receive more unless their interests are effectively represented in government.

7. A higher proportion of aid allocated to improving poor urban residents' health and environmental problems. International aid agencies could do much to support these new approaches. At present, very few give them a high priority. UNICEF has been outstanding among official multi-lateral and bilateral agencies in the priority that it has placed to projects concerned with reaching low-income groups (and within these groups women and children) with improved health, basic services, housing and living conditions. Many of its projects are also unusual in their explicit or implicit recognition of the many different factors which underpin poverty and ill health. This becomes evident from the multi-sectoral action that the projects include - in health prevention, in health treatment, in equipping low-income groups with the knowledge and equipment they need to help improve their and their children's health, in providing basic services, in installing basic infrastructure and so on. UNICEF projects also show more willingness to try out new approaches and work with local NGOs. As the case studies which follow this introduction illustrate, their experiences - both successes and difficulties - could do much to guide both governments and other aid agencies intent on giving the needs of low-income urban groups (especially the much neglected needs of children and women) a higher priority. It could also restrain a shift towards the single sector 'target group' project which hard pressed aid agency administrators value for its speed and ease of implementation. It would be wasteful indeed if many years of experience with large, multi-sectoral programmes which sought a better understanding of low-income groups' needs and sought new ways of working with these people and with local governments were not carefully evaluated and their lessons propagated.

At present, virtually all the bilateral aid programmes of the world's richer nations attribute low priority to reaching poorer groups with direct improvements in health and living environment. Typically, the cluster of project-

types which bring the poor most immediate benefits - water, sanitation, primary health care, health prevention and improved housing environments (including upgrading projects and site and service schemes) - receive less than 25 percent of funds. This is less than 25 percent for all low-income people - not just those who live in urban areas. In many bilateral programmes and in most multi-lateral agency programmes, these subjects receive less than 20 or even less than 15 percent of funds.

In addition, the issue of 'urban bias' needs to be reconsidered. In many Third World nations, the urban poor outnumber the rural poor. In virtually all nations, substantial proportions of the poor are in urban areas and their needs are given little or no attention; 'urban biases' (or perhaps more accurately 'large city biases') may be evident from analyses of the concentration of new investments and facilities but in very few nations does this 'bias' benefit 'the urban poor'. Even such explicit urban anti-poverty programmes as ration cards to allow urban residents cheap food purchase may not reach the poor; implementing agencies often demand 'an address' before providing these cards and illegal settlements are not accepted as addresses. This does not mean a plea for resources currently devoted to improving health services or water supplies in rural areas to be reallocated to urban areas but for more resources to alleviating poverty and ill health in both.

Evidence is also growing on the scale and nature of the health problems suffered by poorer groups in urban areas. Removing the fundamental underpinning to most urban peoples' poverty - inadequate incomes - is beyond the scope of aid agencies. Income generating projects can be valuable parts of multi-sectoral programmes like the case studies of Colombo and Buenos Aires in this issue. However, 'success stories' of urban projects which reach large numbers of low-income people with higher incomes at relatively low costs are much rarer than those which cheaply and effectively improved poorer groups' health and living environments. Factors constraining aid agencies' ability to ensure significant income rises for most poor citizens are too great. The removal of many of poverty's most debilitating effects in terms of ill health, disablement and premature death is not. There are hundreds of millions of urban poor in the Third World whose ill health,

disablement and premature death deserves considerably more attention by development aid agencies.

NOTES AND SOURCES

Most of the ideas in this introduction were drawn from two sources. The first was the material provided by UNICEF staff to allow the writing or editing of the case studies that follow; their names and addresses are given after each of the case studies. The second was the author's work with IIED's Human Settlements Programme, especially with Dr. Jorge E. Hardoy (Director of this Programme and of IIED's Latin American Office in Buenos Aires), with its collaborating research teams at the Universities of Lagos, Khartoum and Allahabad and at the Centre for Urban and Regional Research in Buenos Aires on the health problems faced by low-income urban dwellers and through work with the WHO/UNEP Programme on Environmental Health in Rural and Urban Development and Housing.

The text also drew heavily on a report by Dr. Caroline O.N. Moser, *Approaches to Community Participation in Urban Development Programmes in Third World Cities*, L.S.E.'s Department of Social Science and Administration, London, December 1986.

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- 1) **NAME OF PROJECT:** allow scarce public resources to be used for the benefit of far more people than in conventional public works programmes.
- PRODIBA INTEGRATED BASIC SERVICE PROVISION FOR LOW INCOME GROUPS, BUENOS AIRES, ARGENTINA**
- 2) **LOCATION:** Selected municipalities within Greater Buenos Aires, Argentina but outside the central city (the Federal District)
- 3) **TARGET POPULATION:** 110,000 people living in poor quality, in formal settlements
- 4) **TIME FRAME:** March 1985-March 1990
- 5) **IMPLEMENTING AND CO-OPERATING AGENCIES:** Government of the Province of Buenos Aires, selected municipal governments within Greater Buenos Aires and UNICEF
- 6) **SOURCES OF FUNDS:** Government of the Province of Buenos Aires and supported by funds from the Italian Government and UNICEF
- 7) **OBJECTIVES:**
- (i) To provide or improve basic services in 20 informal settlements through low cost solutions with a special emphasis on improving health for mothers and children;
- (ii) Through working with and strengthening community organizations and local government agencies, to set up the framework to allow improvements to sustain and continue after the project completion;
- (iii) To demonstrate to the national (Federal) and other provincial governments new ways of working with low-income groups to improve health and housing conditions at per capita costs which
- 8) **DESCRIPTION:**
- Background**
- While Argentina has long been one of the richer Third World nations - in terms of per capita GNP - the last two decades have seen a great weakening in its productive capacity, a fall for most people in real incomes and a rapid increase in the number of people living in extreme poverty. In effect, large proportions of the population are now facing problems and health risks which to a considerable extent had seemed to be overcome in previous decades. With a huge external debt and a stagnant economy, government ministries and agencies at all levels face severe constraints on all social expenditures.
- Buenos Aires, one of Latin America's largest urban agglomerations had 10 million inhabitants in the 1980 census, 2.9 million in the central city (called the Federal District) and just over 7 million in municipalities surround the Federal District. In recent decades, there has been a rapid growth in the number of people living in inadequate, over-crowded housing of one kind or another - over-crowded tenements or other forms of rented rooms, accommodation in cheap boarding or rooming houses, 'villas miserias' (the Argentinian term for squatter settlements which means literally 'misery villages') or workers' barrios. In virtually all 'villas miserias' and workers' barrios, there is inadequate or no public provision of basic infrastructure (for instance all weather roads, site drainage, piped water and sewers) and services (for instance health care, schools, kindergartens, household waste collection). In tenements and cheap rooming houses, toilets, washing and cooking facilities are usually shared between many families and both these and the buildings themselves are poorly maintained.
- Estimates suggest that between 30 and 40 percent of the population live in sub-standard housing and most of this housing is in the municipalities outside the Federal District. These include the people living in 'villas miserias', where the inhabitants illegally occupied land and

developed their own houses. More people live in what might be termed low-income or workers' 'barrios' (neighbourhoods) where the occupation of the land is not illegal. These grew in number as municipal governments exercised little control over private developers' sub-division of large vacant lots and most of the settlements which developed on these sub-divisions lack basic infrastructure and services. Many were built on land subject to floods. Thus, most residents have purchased the site from the owner and many such sub-standard sub-divisions were given municipal approval so there are illegal occupations (the 'villas miserias'), illegal sub-divisions and legal sub-divisions, all with a serious lack of basic infrastructure and services. Even among the 'villas miserias', the illegality of the land occupation is often not so clear cut; some have developed on municipally owned land with the permission of the local government but without legal tenure being provided to the inhabitants, while others have had tenure granted to their inhabitants or are in the process of negotiating such tenure.

The central city (the Federal District) has come to house a decreasing proportion of the low-income population. For much of the Twentieth century, the central city tenements (the conventillos) were the most important source of cheap accommodation but in recent decades, they did not expand in number and many have been replaced or redeveloped. There was also a rapid decline in the number of squatter settlements in the Federal District between 1976 and 1983 as the Military Government carried out a large scale forced eviction programme. Since the return to democratic rule, new informal settlements have again developed in the Federal District, some on exactly the same site from which squatters were previously evicted.

The Project

Twenty informal settlements (most of them 'villas miserias') in eight different municipalities were selected for the implementation of PRODIBA; the criteria for such selection included high scores in indicators of unfulfilled basic needs, strategic location (in terms of demonstrating new approaches to other nearby informal settlements) and local (municipal) governments able and willing to take part. All but one are to

the south of central Buenos Aires and they range in size from 'Villa Tranquila' and 'Barrio Guernica' each with around 15,000 inhabitants to "El Churrasco" with 2,900 and 'Villa Argentina' with an estimated 1,200 people.

The project brought together many different kinds of actions:

- Improvements to water supply, sanitation and storm/surface water drainage; also improvements to internal roads and access paths and household waste disposal.

- Primary Health Care services with an emphasis on teaching and encouraging inhabitants to help improve their own health and that of their infants and children. During the three-year project, five health care centres were built and equipped and parents (especially mothers) and children are reached through 32 community health workers; a further 36 community health workers have also been trained.

- A vaccination promotion programme which increased the proportion of immunized people; 80 percent of the total population covered by the project were reached.

- Annual campaigns to combat diarrhoea (especially during the summer when the incidence of diarrhoea infections usually rise) and to promote its rapid treatment with Oral Rehydration Salts. During 1986, the incidence of diarrhoea had fallen by 50 percent.

- Dental health care was initiated in 1987 through a comprehensive fluoridization programme.

- Special Child Development actions included the training of 59 community educators; 22 of these are working with 1,100 children aged between 45 days and 6 years selected on the basis of risk-criterion in Integrated Assistance Centres. Community educators and health workers also helped organize and run training workshops and other events for parents on nutrition, health and child development. New children's playgrounds were produced after upgrading unused sites previously subject to flooding. Parents' workshops also allowed residents to meet regularly to discuss

how best to help and stimulate children.

- Income generation actions included the setting up of seven enterprises currently operating on an experimental basis (sewing, community markets, toy manufacture and well drilling) and 127 family gardens with associated nutritional and technical training.

- Special programmes designed for women included education programmes in reproductive health and family relationships, alcoholism and drug prevention, literacy and domestic science.

- Social communication - a work-group was trained in designing and projecting messages. Audio-visual materials were produced with the help of the communities and used in training workshops, discussions and work with the children.

All these components were implemented in two settlements (with a total of 16,500 inhabitants) with the rest receiving those components which were found to be of priority in terms of needs. Some 75,000 people benefitted from the investments in improving water supply, sanitation, drainage, roads and pathways.

Results and Constraints

The results are discussed below under three headings: first in terms of immediate achievements within the project area; secondly, in terms of longer term impacts within the project area; and thirdly, the project's demonstration value in advocating to the Federal Government and to other provincial and local governments the type of strategies developed.

1. Some of the immediate results have been noted above - for instance the five health centres and training of community health workers, the work on child development and the special programmes for women. Over 40,000 square metres of land was recovered from wastelands or formerly flooded land for the development of community facilities. In addition, 7,000 metres of piping for drinking water has been laid, allowing home connections or better public sources for around 10,000 families. Just over 15,000 metres of drains for rain and sewage waters were built or improved with just under 15,000 metres of foot-

paths and internal roads also improved. All these bring important, immediate benefits. An evaluation undertaken in one settlement three months after launching an initiative to promote children's immunization against the most common vaccine-preventable diseases (measles, diphtheria, whooping cough, polio, tetanus and TB), found considerably higher coverage, especially for diphtheria and whooping cough and for polio where coverage had been very low prior to the initiative. An evaluation in two settlements on the effectiveness of an anti-diarrhoea campaign, five weeks after the campaign was initiated, found greatly increased use of Oral Rehydration Therapy. In addition, during those five weeks, there was a major drop in the number of cases of diarrhoea and in the repetition of diarrhoea. Comparing 1985 and 1986, there was a fall in the proportion of children aged 0 to 2 years taken into hospitals with dehydration from 1 percent to 0.3 percent.

2. The longer term benefits for the inhabitants of the 20 settlements included in the programme, can only be guessed but chief among them, would be steady improvements in inhabitants' health status - most especially among infants and children; as noted above, initial evaluations in one or two settlements show improved coverage in child immunization, in the use of Oral Rehydration Therapy and in the incidence and repetition of diarrhoea. Surveys will be needed in the future to test whether early progress has been maintained and the extent to which projects such as these can set up the services and institutions to allow steady improvements after project completion.

Certainly, the project, from its inception, sought to work with the inhabitants of the 20 settlements to ensure continued impacts after the end of the project. The project fostered the development of community organizations who were seen as an essential part, both of the project but as importantly as institutions which would help ensure continuity in services and upgrading after the completion of the assistance programme. Many community groups were formed, with women taking the major role - for instance health, sanitation and pre-school education committees and mothers' committees for kindergarten and pre-school groups.

3. An evaluation of the project's 'demon-

stration effect' will also have to wait, although the project has already generated interest in other quarters. After seeing the collaborative programme between UNICEF and the Government of the Province of Buenos Aires, other provincial governments have requested UNICEF support and the National Ministry of Health and Public Welfare has proposed to the central government that similar strategies be implemented elsewhere. In December 1986, workshops were held to inform other provincial governments about PRODIBA and various publications have helped publicize the project and its achievements. Innovative projects like PRODIBA are much needed in Argentina where despite innovative projects and thinking within government circles since 1983, many decision makers still remain committed to large scale public housing programmes, as well as construction of hospital complexes. In the past, these have proved very costly in terms of the number of people reached and most often they are not built in inappropriate and distant location.

Another of the project's attainments in terms of demonstration effect is its scale and the fact that it had to develop methodologies and training schemes to allow its implementation in 20 different settlements. There are many innovative projects which like PRODIBA combined many different elements in a truly multi-sectoral intervention which can point to success within one project site reaching a few thousand people. There are far fewer projects with both the scale and the multi-sectoral nature of PRODIBA. Both its successes and its shortfalls provide the basis for immediately designing and implementing comparable projects both in 'villas miserias' and low-income barrios in other parts of Buenos Aires and in the many other Argentinian urban centres. Meanwhile, continuing support for community initiatives in the settlements already reached would allow not only continued progress in improving health and well being but also continuous feedback from the experiences there to help refine similar actions being planned elsewhere.

There were some shortfalls in project achievements in certain areas. One is in the generation of income; while there were achievements - the seven micro-enterprises and the 127 family gardens. These cannot have a major impact among 110,000 inhabitants - although as discussed both in the Introduction to this issue of Urban

Examples and later in the Conclusions section of this example, job generation remains one of the most elusive components to achieve in public interventions within low-income settlements.

Other quantitative achievements, while substantial and of great benefit, still fell below the initial goals. For instance, the proportion of children immunized against the common vaccine-preventable diseases still needs to grow. In four of the 20 settlements, the project activated Government procedures for land appropriation with a view to providing the inhabitants with secure tenure; this is a substantial achievement in that this brings security of tenure for those who have built their own shelter there and is frequently fundamental to their motivation to improve their houses. Furthermore, the fact that they become legal owners of the site often provides them for the first time with the possibility of obtaining credit from an official agency to allow them to improve or extend their house. Comparable processes of legalization should also be sought in other settlements.

Three identified factors helped limit project implementation. The first is the long-standing suspicion on the part of the inhabitants as to the value of 'another project'; this derives from years or even decades of experience with broken or only partially fulfilled promises. The second is connected to this - the political process linked to two election campaigns (1985 and 1987) where as in most elections, much is promised but voters are never sure whether the promises will be fulfilled. The third factor which helped limit achievements was the institutional rigidity and frequent rotation of key officials in the government team.

Conclusions

In Argentina, the legacy of previous political regimes and its institutional framework seriously hinders the best of intentions in the resolution of housing and health problems. This legacy includes an enormous increase in the late 1970's in the proportion of people inadequately housed; falling incomes and the removal of rent control during the 1970's forced many people out of reasonable quality rental accommodation to compete with poorer groups for limited supplies of cheap housing while squatter evictions helped decrease the housing options open to poorer groups. The legacy includes serious deterioration in urban infrastructure and services and the need to rebuild the institutions of democratic government which allow effective social programmes. It also includes the vast foreign debt for which the previous government was largely responsible. It is clear that an integrated approach like that of PRODIBA can help resolve many of the most pressing health problems confronting the inhabitants of informal settlements.

A concentration on child health, welfare and early development can also better equip children for school. Such integrated projects not only help tackle the more serious health problems confronting low-income groups but can also bring important and much appreciated benefits in making the lives of the inhabitants less uncomfortable. Improved access to piped water not only brings important health benefits as the chances of infection from waterborne diseases decrease and water consumption for washing, laundry and personal hygiene rises, it also frees people (usually women and children) from the time and energy consuming task of collecting water. Similarly, the benefits from improved roads and footpaths and site drainage are often not fully appreciated by government or aid agencies. The fact that so many low-income settlements have developed on low-lying, poorly drained sites means that for much of the year, the sites are muddy and the houses damp. Not least among the benefits for residents is the fact that they do not have to walk, often knee deep in mud, to get to and from their homes after heavy rainfall. Road and footpath surfacing allied to improved drainage both for households' waste water and for surface water bring not only major benefits in health and hygiene but also in sheer convenience.

The project also highlights one factor critical to the success of virtually all large scale, cost-effective projects of this kind - the need from the outset to design, implement and evaluate the project with the inhabitants and their community or neighbourhood based organizations. In this regard, a comprehensive monitoring and evaluation method has been developed at the project's outset to measure results and guide actions during the implementation.

Finally, the project illustrates a difficulty shared with so many other similar projects on the aspect of income/job generation. The need to significantly increase the income of poorer households is always one of the most important aspects of any strategy to reduce poverty. Nevertheless, it remains one of the most difficult to implement at any significant scale.

NOTES

This text is based on documentation provided by Ernesto Lopez Montana from the PRODIBA project. For more details, the reader should contact

Mr. Lopes-Montana at the following address: UNICEF, c/o Santiago Office, Isidora Goyenechea 3322, Comuna de las Condes, Santiago, Chile.

It also drew on the following sources for some of the Background Information:

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- 1) **NAME OF PROJECT:**
URBAN COMMUNITY DEVELOPMENT PROGRAMME IN THE FAVELAS
- 2) **LOCATION:**
RIO DE JANEIRO, BRAZIL
- 3) **TARGET POPULATION:**
Initially, the inhabitants of the 'favela' (squatter settlement) Rocinha; later extended to the inhabitants of other favelas
- 4) **TIME FRAME:**
Initially 1979-84; then extended to programme still being implemented
- 5) **IMPLEMENTING AND CO-OPERATING AGENCIES:**
Rio de Janeiro's Municipal Secretariat for Social Development and UNICEF, Municipal Sanitation Company (COMLURB) and State Water and Sanitation Company (CEDAE)
- 6) **SOURCES OF FUNDS:**
Municipal Secretariat for Social Development and UNICEF
- 7) **OBJECTIVES:**
 - (i) To develop Action Plans for improving basic services and implement them in squatter settlements.
 - (ii) To work with the residents and their own organizations in planning and implementing these improvements.
 - (iii) To develop out of a project a city programme and the institutions that such a programme needs.
- 8) **DESCRIPTION:**

Background

Rio de Janeiro has long been one of Latin

America's largest cities; in 1980 it had 9.1 million inhabitants in its metropolitan area covering 7,708 square kilometres with around 5 million of these in the central municipality of Rio de Janeiro which covers 1,171 square kilometres. Within the municipality alone, an official figure for 1983 stated that about one million people lived in 377 different 'favelas' (squatter settlements). Hundreds of thousands of low-income inhabitants also live in very poor quality and over-crowded accommodation in different kinds of tenements and cheap boarding and rooming houses. Both within and outside the municipal boundaries, there are also many houses or shacks built on legal and illegal sub-divisions which remain poorly provided with basic infrastructure and services.

The inhabitants of the favelas receive a share of the public resources devoted to infrastructure and service provision far below proportion to their share in Rio's population and contribution to Rio's economy. For instance, data from the municipal sanitation company (COMLURB) 1983 suggests that only 3 percent of the city's household garbage comes from the 'favelas' although they represent almost 20 percent of its population.

Rocinha is one of Rio's largest and oldest 'favela' with at least 80,000 inhabitants. It is perched on steep slopes above prosperous residential and commercial areas which surround it. The environmental conditions had long been very poor; raw sewage and garbage accumulating in the settlement. The open areas where children played were usually contaminated both with garbage and with fecal matter. During the rainy season, these have been periodically washed down along with domestic waste water, in open drains. These drains often flooded the lowest lying areas - which were also the poorest areas. Prior to the project, the garbage disposal service was simply 15 large containers in which households could place their garbage, emptied three times a week; given the distance of most houses from these containers, the level of service provision was quite inadequate. Most inhabitants in Rocinha had inadequate or no publicly provided infrastructure and services, and lived in precarious dwellings. Some parts of the settlement - usually the older parts did have better quality housing and paved streets, a water supply and electricity.

The study which formed part of a research/action project on women's health between 1983 and 1985 (see Urban Examples No 13 for a description of this) revealed some interesting characteristics about the inhabitants of Rocinha. Out of 125 cases of women between 17 and 50 years of age, 72 percent of those who worked outside the home worked as maids. On the issue of child health, 30 percent had had a child who had died (77 percent of them during the first year of life), 27 percent had experienced miscarriages and 85 percent had suffered some health problems during pregnancy. More than half had received no anti-tetanus vaccine during any of their pregnancies and 63 percent had had no orientation on childbirth during the pre-natal period. The research also revealed the lack of information available to women about contraception.

Rocinha has a long history of community activity. For instance, a 'mutirão' (mutual aid group) was set up by residents in mid 1970 to work on Sundays and holidays to clean the public areas and clear ditches; the municipal government supplied the basic tools for these tasks. Since then, services have gradually improved; Rocinha has three day-care services, three health posts and two community schools run and supported by residents.

Residents also formed a health group and a sanitation group and liaised with municipal authorities in a scheme to improve the main sewage/drainage ditch. In 1979, they initiated a project to construct a new sewage/drainage ditch but this was never completed due to technical shortcomings and material insufficiency.

The Project

In 1980, Rio de Janeiro's Municipal Secretariat of Social Development and UNICEF began an Urban Community Development Programme. This aimed to develop Action Plans for 'favelas' with the organizations formed by their residents as part of the policies established within the new municipal agency. Together, they would tackle the most serious problems there and identify how best to do so, combining residents' own efforts with municipal inputs. This recognized that there were already existing resident initiatives within many favelas (often helped by NGOs) to provide some health care, improve sanitation or

water supply or set up a community school. In many instances, these could be made more effective or given more continuity with appropriate support from municipal agencies. Project staff also recognized that many favelas were so densely populated, especially in inner city areas, that they needed to be incorporated into existing city networks (for instance) water supply, sanitation/drainage and garbage disposal.

Rocinha was chosen as the site for a demonstration project because its inhabitants had already demonstrated their capacity to organize and work together. Rocinha residents' health and sanitation groups prepared an upgrading plan with UNICEF and staff from the newly formed Municipal Secretariat for Social Development. A survey was initiated to provide the information base for the plan which was to include improvements to water supply, sanitation, informal education and health services.

The decision was made to concentrate on completing the sewer/drain in 'Rua 3' (street 3) which had been begun but not completed, three years previously. A group of residents including members of the Sanitation Group were paid to work part time to liaise between residents of the sector and the engineers and to work with project staff in mobilizing residents to help in the construction work.

To prepare for construction, a seminar was organized on basic sanitation, attended by representatives of government agencies (including those responsible for water, sewerage and garbage) and Rocinha residents. Work began in late 1981 in 'Rua 3' on:

- Completing the sewerage trunks system and five manholes;
- Laying household connections to the trunk which prepared Rua 3 houses for connection in the future to the city's main water supply;
- Draining and paving the area around the water tap;

- Constructing a new collection post for garbage cans which would be regularly collected by the municipal sanitation company; and
- The conversion of land sites for merly used as garbage dumps and sites adjacent to the sewerage mains to land suitable for recreation.

By early 1982, the sewerage trunk system had been completed, despite the steep slope and difficult terrain. Residents contributed to the work by providing labour, equipment and materials and the organization of such work.

Results and Constraints: The Project becomes a Programme

In 1982, the municipal authorities announced their plans to support similar schemes in other favelas; a total of 60 other favelas requested such schemes. However, with technical and financial constraints, just 9 favelas were selected for this phase of 'Projecto Mutirao'. The eligibility of favelas was based on three criteria:

- (i) those that have demonstrated capacity of carrying out mutual aid works through community organizations;
- (ii) resident's associations prepared to bear the responsibility of organizing and carrying out project assignments; and
- (iii) a favela where the issue of land ownership was not in court litigation.

In September 1982, a week long course on 'The Management of Basic Sanitation Projects for Favelas' was organized by the Municipality for those involved in the work. Then the action plans and their implementation in each favela were based on the experience in Rocinha with residents' associations mobilizing local labour to build sewerage/drainage systems, stairways and water distribution systems with the Municipal Secretariat for Social Development providing technical advice and delivering construction materials.

The work undertaken reached 18,300 beneficiaries and total costs were less than half that of the same work if it had been undertaken by conventional procedures (i.e., hiring a contractor). Residents contributed labour, organization, administration, some basic equipment, construction materials and maintenance. Estimates suggest that the residents absorbed around 25 percent of the costs which includes purchasing materials, sharing of tools and providing labour. It is also interesting to note that salaries and administrative costs represented half of total costs; this implies that projects such as these, while making a major saving in capital costs, still demand a high level of involvement by local government and utility agency staff.

Early in 1986, with a newly elected Municipal government, plans were announced to extend the project to 96 favelas to reach 100,000 beneficiaries. At this stage, UNICEF was no longer involved and the programme had become an important part of the Municipal Authorities' own agenda of work. By the end of 1986, some 20,000 metres of sewage/drainage pipes had been laid along with other improvements such as paved streets and footpaths, improved distribution for potable water and improved garbage collection services. The project staff had grown to 76 technicians and assistants and the programme was receiving the support of other government agencies such as Public Works, the State of Rio de Janeiro's Water and Sanitation Agency (CEDAE) and the Municipal Sanitation Company (COMLURB). At this phase, the programme has introduced payed labour, recruited from each favela where projects were scheduled, thus improving earning opportunities for local construction workers. In addition, this has resulted in increasing the speed in construction works undertaken.

Two important constraints inhibited the institutionalization of this type of programme. The first was the structure of local government. With National (Federal), State and Municipal agencies involved and within the municipality, the involvement of different sectoral agencies, there were major problems of co-ordination. Each municipal agency's mandate is rigidly defined. As in many, if not most Third World nations, local authorities of cities or districts within cities, lack the resources and technical personnel to allow

them to effectively meet citizens' needs for water, sanitation, garbage removal, drainage and health care. In addition, there are often political complexities - governments who neglect such responsibilities or instances where different levels of government are controlled by different political parties each with a distinct agenda of priorities. Many of these problems were overcome in Rio de Janeiro, first through ad hoc arrangements and later with some formal co-ordination efforts.

A second constraint arose from the innovative and generally successful principle of using local labour - for instance the part-time paid staff drawn from the residents in each favela to liaise between local residents and government agencies and the voluntary labour used in construction. There were shortcomings in the use of local labour for construction works, especially when semi-skilled or skilled work was needed. However, when paid labour was introduced as an alternative, the labour and legal regulations for hiring and paying community workers proved inappropriate and time consuming. When the law was lenient, it generally excluded community workers from social security and other important employment-related benefits. If a successful project is to be scaled up to a major, continuous programme, it will need the simplification of bureaucratic procedures to allow the use of paid community labour and the introduction of ways to secure such people employment-related benefits. It will also need schemes to train favela residents, including training for the semi-skilled and skilled work required by the upgrading programme and measures to ensure the use of their skills beyond the upgrading works of their own favela.

Conclusions

Perhaps the most interesting aspect of this experience is its development from one small project within one favela to a second stage reaching nine favelas to its third stage where it moved well beyond a series of projects which different municipal agencies could organize on an ad hoc basis. The project which became a programme can be justified simply on the results it produced in the favelas where it was implemented. However, the importance and relevance of this case will be much enhanced if its focus

widens and it becomes institutionalized and city-wide, yet still retains the active support of favela resident organizations.

In terms of a broader focus, the need is to follow up city-wide programmes to improve water supply, sanitation, drainage and garbage disposal with complementary programmes for health prevention and health care, for clarification of the legal status of favela dwellers' house site occupancy with the concentration on legalizing existing dwellers' occupancy and for upgrading the quality of the houses. In time too, further improvements in water and sanitation may be needed. The research/action project on women's health in Rocinha (described in Urban Examples 13) revealed the scale and complex nature of women's health problems and the degree to which existing services and facilities were still not meeting them adequately.

In terms of 'institutionalization', the key is the ability of the different municipal and state sectoral agencies whose responsibilities cover such aspects as water supply, sanitation, drainage, health care and garbage disposal to co-ordinate their efforts and do so within each favela, guided and co-ordinated by local residents' associations. For a single or for several projects, this is relatively easy, given agreement on the worth of the work to be undertaken. For city-wide and continuous programmes, fundamental changes are needed in the way agencies operate. As the example given above in the difficulties in paying community workers illustrates, changes are needed in the administrative procedures, the norms, codes and regulations which presently guide their actions.

To achieve city-wide and continuous programmes will almost certainly demand continuous support for Rio de Janeiro's municipal government from State level and Federal level agencies. While such an approach certainly saves on scarce capital investment and ensures public programmes are more effective at addressing the most pressing needs of low-income groups, it needs a scale and a kind of skill among technical and professional staff which most city/municipal governments are still lacking. The revision of norms and codes for building, planning, infrastructure, services and labour to allow the widespread application of such a new approach is also

likely to need the agreement and active support of higher levels of government. 1)

NOTES

Information for this case was drawn mainly from Ephim Shluger 'Expanding Project Coverage - Review of Urban Basic Services Projects of Rio de Janeiro and Buenos Aires', Paper produced for the UNICEF Inter-Regional Urban Meeting in Madras, India, March 1987. For further information on this case study, the reader should contact Cesare Laroqa, UNICEF, Caixa Postal 040-084, 70072 Brasilia, DF, Brazil.

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NAME OF PROJECT:

INSTITUTIONALISING AN URBAN BASIC SERVICES PROGRAMME

- 2) **LOCATION:**
Predominantly low-income, poor quality housing areas in COLOMBO, SRI LANKA
- 3) **TARGET POPULATION:** 200,000
- 4) **TIME FRAME:**
Two phases: 1979-83 and 1984-88
- 5) **IMPLEMENTING AND CO-OPERATING AGENCIES**
Ministry of Local Government, Housing and Construction (and within this the National Housing Development Authority) and Colombo Municipal Council with support from UNICEF, other national ministries and agencies and NGOs
- 6) **SOURCES OF FUNDS:**
Government of Sri Lanka (with aid from the Netherlands bilateral programme in phase 1 and the Canadian International Development Agency in phase 2) and UNICEF
- 7) **OBJECTIVES:**
General objective:
To improve health and environmental conditions for 35,000 households living in 650 different settlements
Specific objectives:
(i) To improve the nutritional status of children, young girls and mothers, especially within low-income households.
(ii) To demonstrate that above objectives could be achieved at relatively low cost with the full involvement of low-income groups and thus encourage the widespread use of similar approaches elsewhere.

8) DESCRIPTION:

Background

Colombo is much the largest city in Sri Lanka and is the core of an urban agglomeration which encompasses over half the nation's urban population. In the last census (1981), Colombo City contained 585,800 inhabitants within an area of 14 square miles (c. 36 square kilometres), while the much larger urban complex of which this forms the core, contained 1.83 million inhabitants. Estimates suggest that between 50 and 60 percent of the population of the City and the areas immediately surrounding it, dwell in slums or shanty towns. Most of the slums are centrally located while most shanty towns are on the fringes of Colombo. Most slums and shanty towns have very high densities of occupation; in the absence of sewers and drains (or other means to hygienically remove human wastes and storm/rain-water) and regular solid waste collection, this greatly increases environmental and health hazards.

Centrally located slums can be divided into two categories. The first are called 'slum houses' and were once good quality middle or upper income housing. But as their occupants moved out to better quality housing in the suburbs, these houses were sub-divided into small single rooms and rented to lower income groups. Despite the very large increase in the density of occupation as many families occupied the space originally designed for one, there was little or no expansion in the provision of toilets, bathrooms or cooking facilities. The second category of slum are termed 'tenement gardens'. These were built by private investors during colonial rule to rent to low-income labourers. They are long, single storey barrack-like buildings with single rooms built back to back, each room being rented to a household. The rooms open onto a common passageway. Each water tap and latrine are shared by several households. Conditions have deteriorated in both kinds of slum dwelling as the number of occupants have risen and little or no maintenance has been carried out by the owners.

Such slum houses and tenement gardens were the main source of housing for low income groups until the 1950s when more shanty towns began to grow rapidly around Colombo's built up area. Many developed on sites ill-suited to perma-

nent housing such as marshy areas or on the banks of canals or beside busy roads. For many of these settlements, the water from canals was their main water source, despite it being highly contaminated.

In Colombo alone, a large number of children die or become disabled daily as a result of contracting a water related disease (for instance diarrhoea) or malnutrition. Often, these two factors work together with malnutrition reducing the body's defences against infection and diarrhoea (in the absence of proper treatment) exacerbating malnutrition. Thousands of children under five years of age die every year as a result of diarrhoeal dehydration. Maternal malnutrition and anaemia during pregnancy contribute much to low birth weights which in turn cause or contribute to numerous infant deaths. A survey of 341 households in 1979 in Kirillapone, a shanty town on the periphery of the city, gives some indication of the scale and nature of ill health in such settlements. This study found a third of those surveyed were chronically sick of whom 31 percent were children and 21 percent mothers. The most common forms of chronic sickness among children were respiratory diseases, infected wounds and contagious diseases. Estimates suggest that a third of the pre-school children had chronic protein-energy malnutrition.

In recent years, many low-income families have also suffered as a result of a stagnant or deteriorating economy. This has further diminished the possibility of earning an adequate, stable income. Thus, any programme to improve health and environmental conditions for low-income groups had to recognize first the extreme poverty of the target group and secondly the sheer scale and complexity of health problems and their causes. In addition, funding was scarce and there was an evident deterioration in the capacity of the Municipality of Colombo to deliver services.

The Project

The UNICEF assisted project on Environmental Health and Community Development was launched in Colombo in 1979 and has gradually developed into a broader and more ambitious

Urban Basic Services Programme. The programme includes:

- Community based Primary Health Care
- Child Survival and Development strategy with Universal Child Immunization as the initial stage of a broader programme including child growth monitoring, Oral Rehydration Therapy and a more vigorous nutrition programme.
- Water and sanitation improvement, including improvements to drains and garbage disposal

From the outset, community participation was central to the planning and implementation of all interventions; indeed, the success of any intervention depended on help and support from community leaders and organizations. Within settlements, the many different facets of the project were co-ordinated by local community development councils while the co-ordination between work on the ground and the implementing agencies was handled by six district level Housing and Community Development Councils (Colombo municipality is divided into six districts) and above this a city-wide Housing and Community Development Council.

Over 600 local Community Development Councils have been established with their members elected by local residents. These are advised and supported by trained Community Development Officers (today more than 160 are at work) and by Community Health Volunteers (currently more than 1,000 are at work). In addition, 40 Child Survival and Development personnel work from health clinics to support and reinforce the work of the volunteers. All the Community Health Volunteers and 80 percent of the Community Development Officers are women.

At the district level, District Housing and Community Development Councils help the local Community Development Councils to clear away bottlenecks in the housing programme and basic service delivery. Chaired by District Medical Officers, these include public health person-

nel, the district municipal engineer, elected representatives of the local Community Development Councils and staff from the National Housing and Development Authority.

At the city level, a Housing and Community Development Council directs and co-ordinates project activities. It includes the Mayor of Colombo, the Municipal Commissioner, the Chief Medical Officer, the National Co-ordinator of the National Housing and Development authority and representatives from other ministries or agencies involved in the project.

The Urban Basic Services Programme is integrated into the Sri Lankan Government's ambitious Million Houses Programme. Since it is based in Colombo, it comes within the Urban Housing sub-programme (a substantial part of the Million Houses Programme supports housing improvements in rural settlements). This integration within the national government's sub-programme allows the integration of social and planning and services for children with physical and spatial aspects of urban development. Both the Urban Basic Services Programme and the Million Houses Programme are based on the principal of support for individuals and community organizations to improve their housing and living conditions and community involvement in determining and running basic service provision.

Beginning in 1985, a new method of "Community Action Planning" has been developed through workshops at local level in which frontline workers who deal with different aspects of the programme meet with community representatives, representatives from implementing agencies and specialists from various relevant areas. These workshops develop the local Plan of Action.

By its nature, the project has an important training component both for professionals and para-professionals and for volunteers from among the inhabitants of the settlements themselves. For instance, during 1985-87, there were intensive training programmes for public health nurses, public health midwives and community development officers on Oral Rehydration Salts and Therapy, Child Growth Monitoring and Nutrition. More than 1,000 community health volunteers also took part in training and refresher courses.

Results and Constraints

Two major impacts from the Programme have been the elimination of unsanitary bucket latrines and increased immunization coverage.

On the sanitation side, over 10,000 bucket latrines have been converted into water sealed toilets while a further 2,615 latrines have been built. In addition, 962 bathrooms, 1,261 stand-pipes and 9,628 water pipeline connections have been made in 600 settlements.

On immunization, 90 percent coverage has been achieved for children in the age group of 3 to 36 months while measles vaccination has achieved 67 percent coverage, despite being introduced as recently as 1985.

The establishment of community development councils has led to the setting up of 112 community pre-schools.

One important aspect of the programme is its scale. By 1988, it will have expanded to cover about 40 percent of the under-served tenements, squatter settlements and other kinds of inadequate housing. In addition, similar programmes are being implemented in five other urban areas in Sri Lanka, including the three largest after Colombo (Dehiwela-Mt. Lavinia, Moratuwa and Jaffna).

Another important aspect of the programme has been to demonstrate the capacity of poorer groups to organize and take part in actions directed at improving conditions in their own neighbourhoods. The Million Houses Programme has also shown evidence of this and between 1985 and 1987, the urban housing component of this programme reached more than 60,000 households.

The development of a health services delivery system between 1984 and 1987 has helped increase immunization coverage. Although creating and maintaining the 'demand' for immunization depended largely on mobilizing the community health volunteers and the community development officers, support from NGOs was essential and scheduling the services in a way that it becomes more convenient for local inhabitants to use them have strongly contributed to the good

results. Mobile teams and carefully designed communication strategies were also utilized to this end.

However, diarrhoea remains the leading cause of morbidity and mortality among infants and pre-school children. Awareness and practice of Oral Rehydration Therapy has grown but not to universal knowledge and practice. More needs to be done on teaching how to prevent, control and manage diarrhoea. With the intensive attention given to Universal Child Immunization, too little attention was given to Oral Rehydration and Child Growth Monitoring. This is now being addressed through a greater emphasis on training programmes for volunteers, nurses, midwives and community development officers. This will include standardizing the approach for Child Survival and Development interventions and forming a group of core "trainers" to organize regular training programmes and refresher course for Community Development Officers and community level health volunteers.

Conclusions

The Programme has had a positive impact on the health and well-being of children and women within the project areas, especially in the areas of water, sanitation, immunization and neighbourhood improvement - notably surface drains, footpaths, bathrooms or bathing wells and house upgrading.

It has also stimulated and supported local level citizen organizations (the Community Development Councils) to actively co-operate with governments and NGOs to address their own health and environmental problems. Local resources which so often remain untapped by public programmes have been mobilized. Complementary projects have been stimulated; for instance the Women's Bureau is working with the Municipal Government and Non-government women's organizations in running training programmes in income earning activities for women. In addition, a growing number of women have gained access to community leadership positions which were previously reserved for men; the fact that all health volunteers and most community development officers are women was noted earlier.

As with other programmes of this kind, it is too soon to assess its long-term impact. However, it has certainly been on a scale far beyond the usual 'project' in terms of the number of people reached. It has also sought to do more than the conventional project in two ways: first to set in motion a process within each settlement which will allow continuing progress towards improved health and environment; and secondly, to demonstrate to the government the effectiveness and cost-effectiveness of the multi-sectoral interventions it included. One test of this programme will be the extent to which progress in improving health, housing and the wider environment can be sustained after the programme assistance has ended. The Government hopes that this can be achieved and plans are now underway to attribute more responsibility for decision making and implementation to local community development councils. The urban housing sub-Programme of the Million Houses Programme also involves considerable devolution of tasks and resources to community and local levels. There is also a pilot programme of Urban Thrift and Credit Co-operation to provide credit at local level.

A second test of the programme's success will be the extent to which it helps develop an approach which can be applied elsewhere in Sri Lanka. UNICEF plans to cooperate with the Sri Lankan government to expand the programme; the purpose of UNICEF's continued support is essentially to help develop the urban basic services programmes to the point where there is a national consensus on the need to adopt such a programme to cover all areas. UNICEF also plans to help strengthen the government's capacity to expand basic services to all low-income urban areas. If this programme proves its effectiveness, not just as a one-shot intervention within the settlements where it was implemented, but also as an initiator of continued and successful efforts within these settlements to improve health and environment, it will have achieved far more than most projects. Its importance will be further magnified if it helps convince the national government to implement similar multi-sectoral programmes in other low-income settlements.

NOTES

The text is based on information supplied by Franco Sguera from UNICEF's Colombo office. For further information on this case study,

the reader should inquire with UNICEF, No. 5. Queens Avenue, Colombo 3, Sri Lanka.

Information in the background section was also drawn from:

UNCHS (Habitat), Shelter for Low Income Communities: Sri Lanka Demonstration Project Cast Study Part 1, Nairobi, Kenya, 1985.

World Health Organization, A Case Study in Housing: The Kirillapone Housing and Community Development Programme, Colombo, Sri Lanka, the RUD programme, PEP/RUD/87.8, Geneva, 1987.

- 1) **NAME OF PROJECT:**
**HEALTH ASSESSMENT AND
 OUTREACH PROGRAMME IN
 SQUATTER COMMUNITIES**
- 2) **LOCATION:**
 AMMAN, JORDAN
- 3) **TARGET POPULATION:**
 10,000 inhabitants of 4 low-income communities; special focus on 1,000 infants and children under three and their mothers
- 4) **TIME FRAME:**
 1980-1986
- 5) **IMPLEMENTING AND
 CO-OPERATING AGENCIES**
 Urban Development Department,
 Municipality of Amman
- 6) **SOURCES OF FUNDS:**
 US\$ 133,000 over the six-year period from the Urban Development Department, the International Development Research Centre of Canada (IDRC), UNICEF, the World Bank and the Population Council
- 7) **OBJECTIVES:**
 General - to upgrade squatter communities by providing legal tenure and basic services that are affordable by these low-income households.
- Specific:**
- (i) to improve water supply, sanitation and access to social services.
- (ii) in terms of health, to use infant and child health as the project indicator of community welfare; measure infant and child mortality and their health status before and after upgrading to understand major problems, design interventions, monitor changes and assess the impact of upgrading on health.

8) **DESCRIPTION:****Introduction**

'Urban Examples 13' included a short description of this project and summarized the substantial health improvements in the upgraded squatter communities revealed by comparing findings from the baseline survey before upgrading with a follow-up survey. The case study here concentrates on a different aspect critical to the subject of "Improving Environment for Child Health and Survival" - the relevance of a baseline survey with a substantial health component as an integral part of project formulation. This is not only for the information provided but also for the links it establishes with the residents in the areas to be upgraded. As the text will describe, this survey also brought other, unexpected benefits. For readers interested in more details of this work, the Notes at the end list the publications available. For those interested in implementing baseline surveys, one of the reports entitled 'Health and Population in Squatter Areas of Amman: a Reassessment after Four Years of Upgrading' includes details of the theoretical framework employed in the survey, the methodology used and the findings.

Background

Amman, Jordan's capital, has been one of the world's fastest growing cities in recent decades. A relatively small city in 1948, with some 60,000 inhabitants, it served as the governmental seat of the Kingdom of Jordan and as a trading centre for farmlands nearby. By the 1979 census, the population of Amman conurbation had grown to more than 1 million inhabitants with the population in the larger metropolitan region (which includes some nearby urban centres) totalling 1.29 million. Estimates for 1984 suggest a population of 1.67 million for the metropolitan region.

Influxes of refugees and high levels of natural increase have accounted for much of Amman's rapid population growth, along with some internal migration from rural areas in the East Bank. Since Independence in 1946, there has been rapid economic change and rapid urbanization. The high concentration of new investments

in and around Amman has helped underpin the migration flows there. Jordan is now predominantly an urban society; 70 percent of the population live in urban centres with 5,000 or more inhabitants and three quarters of this urban population live within the region of the capital city.

Despite rapid population growth and severe housing shortages, especially for the periods after each wave of refugees, health indicators such as infant mortality rates and education indicators such as literacy levels and proportion of children in school show major improvements. So too does the proportion of urban households supplied with piped water which rose from 49 to 87 percent of households between 1961 and 1979. Most other indicators in regard to housing quality have not shown comparable improvements. In 1979, few urban households were connected to sewerage systems and over-crowding in terms of persons per room was very high; some 41 percent of the urban population was housed at four persons or more per room. During the 1970's, new initiatives were launched to increase the supply of housing for low and middle income groups but their scale was too small to make much of an impact on large and rapidly growing needs.

The Project - A New Initiative on Upgrading

In 1980, the Municipal government of Amman set up the Urban Development Department as an ad hoc agency to upgrade squatter areas; it was also to develop site and service projects for low-income Jordanians. In upgrading, the aim was to extend improvements to all squatter households residents within chosen sites and to provide them with legal tenure. The interventions planned can be divided into three categories:

1. Registration of all squatter households as potential project beneficiaries with a detailed socio-economic survey of all households and a detailed physical survey of all sites, plots and dwellings plus a health survey covering some 33 percent of households.
2. Acquisition of the land site for the area to be upgraded by the Urban Development Department

and transfer of legal tenure to squatter households. Sites were expropriated with their original legal owners (who were not residents on the site) with compensation paid at the land's market value.

3. Construction or improvement of perimeter walls, communal foot paths, sewers and storm drains and water mains. Sanitary cores were constructed for each household and connected to water mains and sewers. Electricity connections were made for households lacking such connections and community and vocation centres were constructed. Occupants were also registered to allow them to apply for loans.

Most of the Department's funds were for physical improvements and for legalizing tenure but its mandate included complementary programmes such as health education, literacy, vocational training and small business development. The Department's Director felt that the greatest benefits the upgrading could bring to the residents would be improvements in health and that as an integral part of the project, the possibility of developing a mechanism to measure health conditions and their determinants should be investigated.

Five project sites were chosen and households there registered with the surveys undertaken in late 1980 or early 1981. The site acquisition and upgrading interventions began in three of these sites during 1981 and 1982 and were implemented between 1982 and 1984. In 1985, a follow-up survey was done in each of these settlements.

In the other two sites, such actions were delayed because of a dispute over a new highway being planned near or through them. In late 1984, the largest of the two was again chosen for priority upgrading, although a large swathe of buildings along its perimeter were marked for demolition to provide space for the highway. A second survey was undertaken, since results from the previous one were now four years old. In the fifth settlement where no upgrading was planned,

research on child-care behaviour and community organization was done with similar research done in one of the upgraded settlements.

Thus, in assessing the impact of upgrading on health, there were three upgraded settlements with socio-economic, physical and health surveys before and after upgrading; a settlement which had not been upgraded with similar surveys undertaken at the same time as the two in the upgraded settlements and a settlement where no upgrading had taken place but where child care behaviour and community organization could be compared to one of the upgraded settlements.

The Project's Baseline Survey

Squatter households live in fear of eviction and the demolition of their dwellings. Any outsider is perceived as a threat. Yet basic information about squatter households, their shelters and the site is needed to design the most appropriate interventions and allow the transfer of tenure to the occupants. Furthermore, the information gathering and processing has to be done quickly for two reasons. The first is to avoid a new wave of squatters rapidly moving into the site to take advantage of the upgrading, after the survey but before the upgrading can be implemented. The second is because in general, implementing agencies are unlikely to accept the principal of detailed socio-economic, health and physical surveys as basic input into designing interventions unless this is done rapidly. Too long a 'research' phase will be seen only to inhibit their operation.

The health study proved to be the means by which project staff could gain the confidence of the inhabitants. As interviewers went from house to house with their scales to weigh children and their kits to collect stool samples, neighbours gathered. The fact that children's health is perceived by the squatters as an issue of great importance and the weighing was an instant contribution, not a promise of some future action, helped quell their suspicions. A nurse who led the team carried a first aid kit and gave assistance where needed; burns from the kerosene stoves used in these crowded living quarters (4.5 persons per room) were a major complaint during the winter months. Survey personnel also gave advice on how to seek medical assistance.

The health survey was carried out in conjunction with the registration of beneficiaries and the physical survey. The registration and the physical survey also included information needed for the health assessment. For instance, questions on children ever born and children surviving were made part of the registration process to allow the calculation of infant and child mortality indices. The physical survey included questions and observations on such subjects as food storage and toilet practices, water sources, storage and consumption. The health survey made the other surveys more acceptable; surveyors with their measuring tapes were so suspect to the community that the women in the health team gradually took over many of the physical survey tasks as well.

This survey, before the implementation of upgrading interventions had two basic objectives:

1. to provide a baseline assessment of current health conditions; and
2. to define as far as possible how existing living conditions operate as determinants of infant and child mortality.

It also sought to provide the details needed about the population and its growth in the areas to be upgraded. Not one of the squatter areas had been enumerated before and there were no reference points for project staff beyond arbitrarily drawn boundaries to identify each dwelling.

In focusing on the health of children under 3 years of age, it focused on the group most vulnerable to the effects of exposure factors such as poor environment and poor diet. The health of this youngest age group is also a good indication of the whole community's health status. The survey also sought information on the characteristics and behaviour of mothers, including life time fertility and mortality experiences of married women.

This attention to health proved particularly important in integrating health actions with the more conventional upgrading works which concentrate on physical aspects. When stool samples taken from children under age 3 were analyzed, they revealed a high incidence of

serious intestinal parasite infections. Interviewers also found that all infants and children had diapers or were swaddled at night with the youngest during the day as well. Defecation by toddlers in common courtyard areas was rare. Most environmental contamination came from sources that the residents could not control such as sewage flushed down from the 'legal' housing areas up the slopes from the settlement. Immediate action was obviously needed in terms of treating the children and instructing the mothers on diagnosis, treatment and prevention. This also led to the recognition that help was needed from the Ministry of Health to provide services in squatter areas. In addition, action was needed to stop the flow of sewage down the hill. The findings from the analyses of young children's stool samples prompted both immediate sewer construction and the first community health sessions held by a doctor assigned from the Ministry of Health.

Conclusions

1. **The Integration of Research and Action within Implementing Agencies:** The design and implementation of surveys such as those undertaken in the squatter areas of Amman can and should be viewed as 'research' in terms of the specialized knowledge and rigour that should be used. In order to become an effective part of the operation of an implementing agency, they cannot be regarded as separate from implementation. In the surveys in squatter areas in Amman, the interviewers were not specialist researchers or child health specialists but regular members of the project staff designated to work with the five communities following upgrading. Interview schedules were filled according to rules set by the research teams but in undertaking the interviews, the interviewers came to learn more about the squatters and their needs than simply noting answers to pre-set questions. They also provided the squatter households with information about the upgrading and could counsel women. Drawing on the experience in Amman, a second, more streamline survey was recently completed in another UNICEF urban project in Syria; fieldwork and reporting took only two months.

2. **Building Project Staff Understanding of the Needs of the Target Groups:** From the outset, the health assessment allowed a special

relationship to develop between squatter households, the interviewers and ultimately the project managers. Indeed, the interviewers became strong advocates on behalf of the squatter households and sought to change what they found to be inappropriate eligibility criteria - for instance widening the access to credit. They also pressed for more attention to community and health facilities. Over time, they helped in the formation of community associations formed by local residents and these now operate neighbourhood community centres built as part of the upgrading project. These have become centres for primary health care, mothers' education in nutrition, child care, health outreach (including immunization and growth monitoring), literacy classes, coaching for school exams, sports and legal advice.

3. **Health Surveys as Learning Processes for Professionals:** Although an increasing number of governments and international agencies support upgrading programmes, very few examine the health problems of the people living in the areas to be upgraded; even fewer have used health surveys as a tool not only to learn of the project beneficiaries' health problems but also to use this knowledge as a major input into project design and implementation. Yet the health survey in Amman gave many examples of findings which were unexpected but of considerable relevance to the choice of needed interventions and the forms such interventions should take. Upgrading programmes which include multi-sectoral inputs to deal with the many different factors which cause or contribute to ill health have been shown to significantly improve health. It is difficult to see how best use can be made of limited resources in such programmes without a detailed knowledge on the part of the implementing agencies both of the health priorities of the people in the area to be upgraded and of health problems and their causes. One reason that health has been neglected is because project managers are trained in public works and most operate under implementation deadlines with little or no incentive to address health issues. A second reason is the mistaken belief that surveys take too long and cost too much.

4. **A higher priority to addressing low-income group's housing and health problems.** In most Third World nations, housing agencies or

ministries receive a low priority in the allocation of resources among the many ministries and agencies. Their justification for a higher proportion of government funds was certainly not advanced by the many costly and ineffective public housing programmes so many have tried to implement in recent decades. However, if housing agencies can present hard evidence, first on the magnitude of the health problems confronting low-income groups and secondly evidence of how to reach such low-income groups cheaply and effectively with real improvements, their case for a larger share of resources will be strengthened. Furthermore, if they succeed in convincing other Ministries of the relevance of such work to their own activities, they further increase their influence on public resource allocations. In this case a new, ad hoc organization, the Urban Development Department with 'paper' links to different ministries and the Municipal Government had relatively little power. With hard evidence of health conditions, especially evidence of intestinal parasites among young children, the Department had powerful evidence of the need for immediate action. Shortly after the initial survey results were obtained, Crown Prince Hassan, Jordan's ombudsman for planning, convened a surprise meeting of all government ministers, marched them through the open sewers of the squatter areas, took them into households and then called a meeting with project staff. He acknowledged the fact that the project team were evidently well known in the squatter areas and told the ministers that he thought some people were putting their money in the wrong place.

NOTES

This summary is based on a paper by Ms. Leila Bisharat from the UNICEF Regional Office in Amman and also draws from information provided in reports and papers staff from UNICEF and Amman Municipality's Urban Development Department. The summary has not done justice to the survey's methodology, findings and exploration of the Mosley/Chen framework - among other aspects. For more details, the reader should contact Ms. Bisharat at the UNICEF office in Amman, Comprehensive Commercial Centre, Marble Tower Building, behind Intercontinental Hotel, Jabla Amman, 3rd Circle, Prince Mohammad Street, Amman, Jordan to obtain:

Bisharat, Leila and Hisham Zagher, *Health and Population in Squatter Areas of Amman: a Reassessment After Four Years of Upgrading*, Urban Development Department, the Hashemite Kingdom of Jordan, June 1986.

Other papers with information of relevance include:

Bisharat, Leila and Magdy Tewfik, 'Housing the Urban Poor in Amman: Can Upgrading Improve Health?'. *Third World Planning Review* Vol 7, No 1., February 1985.

Shami, Seteney and Lucine Taminian, 'Reproductive Behaviour and Child Care in a Squatter Area of Amman', *The Population Council Regional Papers, Egypt, December 1986*.

Urban Development Department, *A Baseline Health and Population Assessment for the Upgrading Areas of Amman, a report to the Urban Development Department by the Population Council, Municipality of Amman, 1982*.

For a detailed presentation of the field instruments, coding and data entry system used in the baseline survey, see:

Urban Development Department, *User's Manual for the Registration and Health Surveys, Municipality of Amman, 1981*.

1) **NAME OF PROJECT:**
**IMPROVING URBAN WATER
 SUPPLY AND SANITATION IN OUT
 LYING NEIGHBORHOODS**

in precarious housing units where whole families live in one or two rooms and basic infrastructure and services is either non-existent or very inadequate.

2) **LOCATION:**
 TEGUCIGALPA, HONDURAS

3) **TARGET POPULATION:** 8,540

4) **TIME FRAME:**
 June-December, 1987

5) **IMPLEMENTING AND
 CO-OPERATING AGENCIES**
 The National Water and Sanitation Agency, the Metropolitan Health Region of the Ministry of Health, UNICEF and the Organization of Housewives (Club de Amas de Casa) in each community

6) **SOURCES OF FUNDS:**
 CUC/Canadian International Development Agency through UNICEF with local agencies

- 7) **OBJECTIVES:**
- (i) To reduce the incidence of water and fecal borne diseases in low-income neighbourhoods (barrios marginales) and thus bring substantial improvements to the health of mothers and children currently lacking a safe water supply and sanitation facilities.
 - (ii) To ensure safe water supplies are within easy reach of homes and thus reduce the time, energy and cost of obtaining water.

Most low-income individuals or households live in very over-crowded rental accommodation or in shacks they built themselves in 'barrios marginales (literally 'marginal neighbourhoods'). One of the most common kinds of rental housing is the 'cuarteria', a long, barrack-like single storey building divided into between 8 and 10 one rooms. Households rent one room, despite the fact that they usually have 6 or more members. Latrines and facilities for cooking and washing are shared by all households. Another kind of rental housing is found in relatively good quality houses which have been sub-divided into small rooms, each rented out to a household. As in the 'cuarterias', many households share one latrine (or WC) and washing facility. Both kinds of rental housing are found in some central neighbourhoods and densities are often as high as 600-900 persons per hectare, despite the fact that most buildings are only one or two storeys high. In 1974, over two fifths of the entire housing stock of the city's central district was one or two room units and most were rented. In this same year, three quarters of all one room units were rental units.

The other major source of accommodation for low-income groups are houses or shacks built by the low-income groups themselves. Although often described as 'squatter settlements', they include settlements where the house-builders purchased the land from the legal owners but where the poor quality of the housing and the land site and the lack of basic infrastructure and services ensure that health and environmental problems are comparable to squatter settlements. To further complicate an understanding of low-income groups' housing problems, some 'cuarterias' and other forms of rental housing have been built in peripheral 'barrios marginales'.

8) **DESCRIPTION:**

Background

Tegucigalpa, the capital and largest city in Honduras, has grown rapidly in the last two decades; its population is currently estimated to be 850,000. Around two thirds of the population live

Most of the 'barrios marginales' are located on the city's outer periphery, either on the steep hillsides which surround the city or along river embankments and highways. Tegucigalpa originally developed on the site hemmed in by hills and mountains, because of the silver and gold mines that were exploited there. Of the 167 officially registered 'barrios marginales', close to

70 have developed on sites ill-suited to permanent settlement. As might be expected, these areas are very inadequately served with water supplies and sanitation facilities.

While the 'barrios marginales' now contain most of Tegucigalpa's population, one estimate suggested that they consume just 6 percent of the municipality's water supply. Most residents are dependent on water vendors who sell water by 55 gallon drums or 6 litre tins. Despite being of poor quality and usually not safe for drinking, the water is still highly priced; the cost of purchasing water from such vendors makes up a substantial part of most household's total expenditures. In addition, high priced water limits its use for washing, laundry and personal hygiene - which are of major importance to good health.

TABLE 1: PRIORITY HEALTH PROBLEMS FOR THE RESIDENTS OF THE BARRIOS MARGINALES

1. Diarrhoeal diseases
2. Obstetrical diseases (i.e. those associated with childbirth and the period immediately preceding and following it)
3. Tuberculosis
4. Vaccine preventable diseases
5. Acute respiratory infections
6. Skin infections
7. Malnutrition

Source: Regional Health Authorities, Tegucigalpa

Both the 12 health centres which provide services to the barrio population and the residents themselves recognize that the inadequate, unsafe and highly priced supplies of water are the greatest threat to the health of the barrios' population. As Table 1 shows, the Regional Health Authorities in Tegucigalpa have ranked diarrhoeal diseases as the most serious health problem in the barrios. Research undertaken by the national government in 1975 showed that between one quarter and one third of all infant and child deaths in Tegucigalpa were caused by dysenteries or diarrhoea related diseases. Indeed, a high proportion of all the ill health or premature deaths associated with each of the seven priority health problems noted in Table 1 are likely to be the result of poverty, inadequate health care

(especially on the prevention side) and poor living environments.

However, there are problems in linking many of the peripheral low-income settlements to the main water supply. The water supply and sewerage system lacks the capacity to supply services to all 'barrios marginales' and many are so distant and high above existing pipelines that the costs would be very high; the barrios located above 1,150 metres have not been included in the Master Plan. Yet much of the future growth in Tegucigalpa's low-income settlements is likely to take place in barrios above this height.

The Project

The project arose in response to this need, and a UNICEF study for the National Water and Sanitation Agency recommended the use of non-conventional water supply systems and the setting up of a new section within the Agency to implement them. The study received the approval of the Agency and the local authorities and led to the establishment of a community liaison section called UEBM ('Unidad Ejecutora de Barrios Marginales' - which literally translated means the Executive Unit of Marginal Neighbourhoods; the term 'Executive Unit' being used in the sense of the implementing unit).

In co-operation with UEBM, UNICEF suggested three kinds of non conventional water supply system - self contained systems; wholesale vending; and rain-water collectors. The self contained systems had the lowest operating costs and are the preferred solution whenever suitable groundwater sources are available. The project was to be implemented in four different settlements: Colonia Brasilia, Colonia Buenas Nuevas, Colonia Villanueva; and Colonia Altos San Francisco.

- Self Contained Systems - the example of Colonia Buenos Nuevas and Colonia Brasilia. These two settlements, the first with 290 inhabitants, the second with 500, are in an area with good ground water. Down the hill from the barrios, two community wells have supplied the residents with around 60 percent of their water with the rest purchased from water vendors. UEBM improved the wells, and electric pumps are to be installed to pump the water to two storage tanks above the

barrios. This will allow water distribution by gravity through a community pipeline. Because the barrio's population are able to make considerable monetary and labour contributions to the project, the residents will receive water piped to their homes and will pay the official tariff for their water supplies. Such household connections will free people (especially women) from the time consuming and arduous task of collecting water from the wells and will allow more time to be spent on income earning activities.

- Wholesale vending - the example of Colonia Villanueva. Major problems in water supply were found in this settlement served by water vendors since a 55 gallon drum cost the equivalent of US\$1.75. Given the low-incomes of families there, on average, a family of seven members could only afford one 55 gallon drum every two weeks. This implies a daily per capita water use of little more than half a gallon (2.2 litres) when the minimum supply needed for good health is of the order of 50 litres - and preferably up to 100 litres per capita to ensure adequate supplies for washing, cooking, bathing and laundry. Average daily consumption for Western nations usually exceeds 220 litres. The project being implemented to serve certain sectors of this settlement and reaching 4,000 inhabitants, involves the construction of community cisterns which will distribute water to public stand-pipes. The cisterns will be filled regularly by water-trucks and the new system will bring down the price of a 55 gallon drum to the equivalent of US\$0.75, less than half the cost from private water-vendors.

- Extension of the Municipal Water Pipeline System - the example of Colonia Altos San Francisco. Some 3,750 residents of this settlement also had to rely on water vendors. UEBM installed a community storage tank, up the slope from the settlement which was connected to the municipal water system. As in Colonia Villanueva's new system, a network of gravity fed public stand-pipes distribute the water.

Each project was designed and implemented with community organizations. In each neighbourhood, autonomous women's organizations 'El Club de Amas de Casa' (the club of the housewives) were in charge of organizing the

construction work to be undertaken by residents, under the supervision of UEBM engineers. Social workers from the Metropolitan Health Region (Ministry of Health) helped the women's organizations mobilize residents and helped promote the idea of residents taking responsibility for the construction and maintenance of the new water system. Each household and 'patronato' (the organization formed by low-income households in a barrio to - among other things - lobby for improved services) had to raise a certain amount of money. In Colonia Brasilia where residents are relatively well off, each household contributed the equivalent of some \$50. By contrast, in Altos San Francisco, where incomes are lower, families were responsible for buying materials for the wooden shelters built to protect the public stand-pipes. The project also included a component on hygiene education and in each neighbourhood, social workers support the 'Club de Amas de Casa' in making a Plan of Action for hygiene education and for developing education materials.

Results and Constraints

The most immediate result is simply safer, cheaper, more plentiful water made available to some 8,500 people at a much lower per capita cost than through conventional means.

The impact on health, most especially on what was identified as the largest health problem in the low-income barrios (diarrhoeal diseases) is likely to be considerable, especially when allied to improved environmental sanitation and improved health and hygiene practices among the inhabitants. In addition, the lessening of the burden on women's time and energy in collecting water will have important impacts on health and well-being and in many instances can free up time for additional income earning activities. Again, the quantification of such benefits on health would be difficult to ascertain accurately, especially in the absence of a detailed knowledge of health problems in the barrios prior to the project. However, interviews with residents a year or so after the project has been completed could give a good idea of the benefits that the projects had brought. Interviews with women would usually prove most valuable since it is usually women who nurse family members who fall sick and who take responsibility for collecting water and managing household budgets.

One obvious constraint - and one so often forgotten by outside agencies - is the time that low-income residents can devote to projects such as these. Most of the men and many of the women leave their barrios on week-days to work. This meant the need for most construction work to be carried out at week-ends. From the point of view of professionals working on the project, this made the process both slow and inconvenient. It is worth noting that the UEBM engineers lacked experience in working on projects of this kind and did not spend enough time explaining the overall plan and the construction procedures to the residents. There were also problems in the utilization of local materials both in terms of quality and in terms of delays in their delivery. Agencies involved in such projects (including UNICEF) must pay more attention to training and orientation for engineers who work in projects such as these.

Conclusions

The project provides another demonstration of how better use can be made of limited public funds to make significant improvements in basic service provision for low income groups. More specifically, it shows how water supply improvements can be made in neighbourhoods to which the supply of piped water from central city supplies is too expensive. It also demonstrates the need for government agencies to learn new ways of working with the residents of 'barrios marginales' and their organizations to achieve such cost-savings.

Within Honduras, perhaps the most important potential benefit of the project is the possibility of national and local government agencies extending similar projects to other neighbourhoods inadequately served with water. Although 8,500 beneficiaries reached in a relatively short period may appear large, in Tegucigalpa it represents less than the increase in its population in one year. As the earlier introductory section noted, dozens or even hundreds of innovative projects can be described drawing from dozens of Third World nations which cheapened the cost of basic infrastructure or services or showed innovative ways through which governments can work with neighbourhood organiza-

tions in low income settlements. But added together, they still make very little impact on the scale of the problem.

The project also has a relevance beyond Honduras. For it demonstrates ways of improving water supplies in terms of cost and convenience for settlements to which the extension of central city mains supplies are too costly. Most third world cities have a haphazard, unplanned patch work of developments on their peripheries. High density low income neighbourhoods develop on land sites at considerable distances from existing water pipelines or on hillsides or mountain slopes far above pipelines. The logic which ensures their development on such sites is the logic of un planned, uncontrolled urban expansion where poorer households can only find sites for their houses in distant or unsuitable land developments. In Latin America, La Paz, Quito and Rio de Janeiro are among the many cities where low income settlements have developed perched on steep hillsides above the city. While the cheapest and most effective way of providing cheap, safe and sufficient water to residents of such low income settlements can but depend on a good knowledge of local circumstances, this project in Tegucigalpa shows how governments can turn to cheaper solutions than extending water mains.

NOTES

The text is based on information supplied by Bernt Aasen from UNICEF's office in Honduras. Some of the background information was also drawn from:

Elmendorf, Lindsay, Final Report: Tegucigalpa, Honduras, Foundation for Cooperative Housing, Washington DC, May 1980.

Data from the 1974 Censo de Poblacion y Vivienda (Census of Housing and Population) and other official Honduran Government documents quoted in US AID (see below)

US AID, Shelter for the Urban Poor, Project Paper on Honduras, project no 522-HG-005, 1978.

INDEX OF PAST ISSUES

| | | |
|----------------|--|----------------------|
| <i>UREX 1</i> | <i>Shelter</i> | <i>February 1979</i> |
| <i>UREX 2</i> | <i>Participation - A link Between Low-Income Communities and Outside Institutions</i> | <i>April 1979</i> |
| <i>UREX 3</i> | <i>The Infant and the Young Child - A Focus for Assistance and a Stimulus for Family Improvement</i> | <i>May 1979</i> |
| <i>UREX 4</i> | <i>Urban Primary Health Care - Health Services for the Urban Poor, A Process and a Product</i> | <i>March 1983</i> |
| <i>UREX 5</i> | <i>Management of Urban Basic Services - The Realities of Co-ordination (I)</i> | <i>June 1983</i> |
| <i>UREX 6</i> | <i>Water from Windmills and Other Examples Direct from the Field</i> | <i>March 1984</i> |
| <i>UREX 7</i> | <i>Abandoned Children - What Can be done?</i> | <i>April 1984</i> |
| <i>UREX 8</i> | <i>Management of Urban Basic Services - The Realities of Co-ordination (II)</i> | <i>October 1984</i> |
| <i>UREX 9</i> | <i>Urban Agriculture? Meeting Basic Food needs for the Urban poor</i> | <i>June 1984</i> |
| <i>UREX 10</i> | <i>Income-Generating Activities</i> | <i>June 1984</i> |
| <i>UREX 11</i> | <i>Programmes for Our Disabled Children</i> | <i>December 1985</i> |
| <i>UREX 12</i> | <i>Child Survival and Development and Urban Basic Services</i> | <i>June 1986</i> |
| <i>UREX 13</i> | <i>Starting up with Basic Services</i> | <i>November 1986</i> |
| <i>UREX 14</i> | <i>Street Food Trade</i> | <i>August 1987</i> |

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