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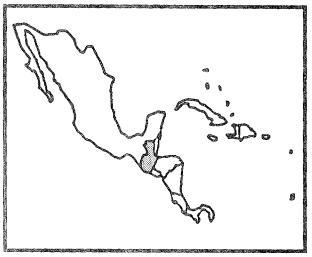

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SUMMARY: *This paper describes the Urban Basic Services Programme that UNICEF's Guatemala Office developed in Guatemala City between 1984 and 1993. Working initially with other NGOs and subsequently with government agencies, the programme developed a variety of community based, community directed initiatives for water, sanitation and drainage, housing improvement, health promotion, health care and child development in the illegal or informal settlements in which close to half of Guatemala City's population live. The programme included an innovative network of health promoters elected from their own community and new models of community based day care.*

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I. CONTEXT

IN THE EARLY 1990s, Guatemala City had a population of more than 2 million of which over 700,000 lived in 231 precarious settlements that lacked basic infrastructure and services. Most residents cannot obtain credit to invest in improving housing standards and infrastructure. In most cases there is also little incentive to obtain credit as 70 per cent of the residents lack title to their land. According to the Ministry of Planning, more than three-quarters of the city's population live on incomes that are below the poverty line, that is earning less than US$100 a month. In many of the precarious settlements, infant mortality rates exceed 64 per 1000 live births and can reach as high as 130 - and infant mortality rates are reported to have increased by 10 per cent between 1979 and 1984. A study in 1990 found that the prevalence of acute diarrhoeal diseases and acute respiratory infections in precarious settlements was more than twice as high as in the rest of the city.[1] These two categories of disease, together with intestinal parasites, malnutrition and perinatal infections are the main causes of child mortality in Guatemala.

Health budgets in Guatemala remain centred on curative rather than preventive services. Guatemala City's health budget

1. UNICEF (1990), *1990 Mid-Term Urban Basic Services' Evaluation*, Guatemala City.

assigns more than 80 per cent of its resources to hospitals providing emergency and specialized services - but estimates suggest that 80 per cent of health needs in this and other cities could be met more effectively and more cheaply by creating a community health care system.

The city's population has grown very rapidly; the city only had 284,000 inhabitants in 1950 while current estimates by the Municipality of Guatemala suggest close to 3 million. The annual average population growth rate is 5 per cent a year compared to a national average of 2.9 per cent. Three factors help explain this rapid growth: the high concentration of agricultural land ownership that brings with it a lack of opportunity for most of the rural population; the physical security problems created by the armed conflict and the damage wreaked by the 1976 earthquake; and a higher than average rate of natural increase within the city.[2]

2. National Institute of Statistics (1987), *National Socio-demographic Survey, 1986-87*, Vol.3, Guatemala; UNICEF (1991), *Health Survey in the Urban Marginal Settlements of the City of Guatemala*, Methodolical Monitoring and Evaluation of Sentinal Sites, Guatemala; UNICEF (1992), *Monitoring and Evaluation of the Urban Services Programme*, Guatemala City.

II. THE BEGINNING OF THE PROGRAMME

ONE OF THE first actions that UNICEF supported was an emergency water supply system in El Mezquital. This was a squatter settlement formed by 9,400 families who, driven by rising rents and housing shortages, invaded an empty lot on the outskirts of Guatemala City in 1984. The settlers managed to build temporary housing and successfully protected their new settlement from demolition by the city authorities. The invaded area had no urban services, including no water supply. The settlers received no help from either national or local government agencies; a law prohibits funding for land sites that have been invaded. The settlers approached UNICEF for help in improving water supplies, after an outbreak of typhoid fever. Initial surveys and meetings with residents found that the vast majority lived in extreme poverty. A lack of potable water and waterborne diseases were identified as the most serious problems. In 1985 alone, 150 children under the age of five died from preventable diseases.

Working with the French NGO, *Médecins Sans Frontières*, a basic services project was developed. With cooperation from the community association that had developed in El Mesquital during the invasion, student nurses undertook a door-to-door health survey and dispensed anti-parasitic medicines to children. UNICEF also purchased the materials for 13 community water taps that were installed by local volunteers.

III. DEVELOPING COLLABORATION WITH THE GOVERNMENT

IN 1986, AS these initial steps were being undertaken, a change in government provided the opportunity for a more broad-based approach. The newly elected government created a new commission to address the problems faced by the residents of squatter or precarious settlements. In February 1987, the Commit-

tee for Attention to the Population of Precarious Areas in Guatemala City (COINAP) was formally established and became UNICEF's government counterpart. COINAP had considerable inter-governmental representation with representatives from more than 20 public and private institutions including several ministries, the municipalities of Guatemala and nearby Chinautla, local universities, NGOs and aid agencies, and representatives from community organizations where projects were underway.

This committee began its work under the aegis of Guatemala's national planning ministry. Its aim was to coordinate assistance from public and private sources for the city's precarious settlements, to promote development and strengthen community organizations. It had a key role in linking agencies that had resources with local communities. During the first five years, it had a critical role in the implementation of Urban Basic Services Programme - providing technical and/or financial support from within its member group and promoting alternative methodologies and techniques. Technical teams created among COINAP members worked closely with communities implementing different types of projects. COINAP members met quarterly to monitor and evaluate activities. The results of these evaluations were disseminated among member agencies - and this helped the Ministry of Health identify new, practical models for the application of primary health care strategies.

After five years, during which the Urban Basic Service Programme had expanded rapidly, an evaluation was carried out and resulted in some reorganization. The basic goal remained the same but the growing number of precarious settlements was rapidly outstripping the institution's ability to respond. COINAP's role changed from a project-executing agency to one that sought to enable or support other organizations to implement basic service projects. It was reorganized into two large groups. The first concentrated on mobilization within low-income communities, working directly with communities seeking assistance or undertaking projects. The second concentrated on mobilizing institutional resources from government and other agencies represented on the committee. A new research department was also created whose main task was to document the methodology and experience to date and to document and evaluate the results of COINAP's different activities.

IV. THE HEALTH PROGRAMME AND THE *REPROINSAS* (COMMUNITY HEALTH PROMOTERS)

PERHAPS THE SINGLE most important intervention has been the work with community volunteers to develop a health care and monitoring programme within the precarious settlements. Initially, this involved student nurses undertaking door-to-door health surveys and administering anti-parasitic medicines to local children. The political change in 1986 made it possible for UNICEF to have a government counterpart, and a system of

community volunteers was developed. During discussions with the inhabitants of El Mezquital, it was discovered that the communities there had informally divided themselves into small areas or micro-zones made up of about 50 families. Initial meetings were held with each of these groups and residents were asked to elect one resident from each micro-zone to take part in the project.

Those elected, all women, decided to call themselves *reproinsas* or representatives of the integrated health projects. Their first task was to carry out a detailed physical survey of the settlement. Each *reproinsa* drew a diagram or map of her own micro-zone, noting down all relevant social and geographic information. This provided project organizers with a precise idea of the resources available in a given area - for instance a health clinic, church, public water tap or shop - as well as existing health hazards such as garbage dumps or streams of polluted water.

Once the maps were complete, the COINAP technical team met with the *reproinsas* to discuss the problems they had identified. These discussions centred on identifying the causes of the problems and discussing possible solutions. *Reproinsas* were encouraged to choose which problems they could realistically address, drawing mainly on local resources. They were also discouraged from thinking that help from outside agencies would be available or would provide answers or change local conditions. At the same time, it was stressed that the activities of the *reproinsas* could only have an immediate impact on the effects - for instance, they could help reduce the extent of diarrhoeal diseases but could not eradicate the sources of such diseases.

These discussions suggested that each *reproinsa* needed more information so house-to-house surveys were initiated to discover any specific health or social problems in each home within their micro-zone. Medical information was collected on family members - for instance details of those who suffered from chronic diseases, and what the most common illnesses were. *Reproinsas* also collected other relevant information regarding family life - for instance, whether particular family members were addicted to alcohol or drugs, or whether the children were being abused.

Another meeting was organized between *reproinsas* and the technical teams to analyze and discuss the results, identify the main problems and turn the problem analysis into a work plan. The first step was to prepare the *reproinsas* to undertake the activities identified as vital to community health. Each *reproinsa* received training over a period of a year, that was provided by the COINAP local technical team which included nurses and doctors from the Ministry of Health clinic, psychologists and social workers. The education and training were geared largely towards prevention and detection. With regard to diarrhoea, for instance, the training focused on how and why diarrhoea occurs and what steps must be taken to prevent children becoming infected. The *reproinsas* were also taught to recognize symptoms and to encourage mothers to increase the intake of liquids to prevent dehydration. As a last step, training was provided in oral rehydration therapy.

Reproinsas then began work in their micro-zones. Much of this work was awareness-raising and education - making home visits to discuss health problems with neighbours, diagnosing illnesses and suggesting solutions. They might visit a pregnant woman to discuss the importance of breast-feeding. Once they had learnt how to administer vaccines, they would visit the households in their zone to discuss why children needed a complete course of vaccinations to protect them against the many vaccine preventable diseases that are often major causes of death among non-vaccinated children (for instance measles). After training sessions on how to eliminate intestinal parasites, *reproinsas* encouraged mothers to use anti-parasitic medicines. Gradually, the inhabitants came to have confidence in the commitment and capacity of the *reproinsa* within their micro-zone.

Reproinsas also maintained health records for all the families in their micro-zone. This allowed them to check up on children's vaccination records and to know when babies were due. *Reproinsas* also encouraged their neighbours to use the health care system. This unique monitoring system allowed detailed and accurate records of the impact of project activities to be maintained within the entire settlement. The community information system that this produced became very valuable in evaluating and monitoring the success of health related activities. Senior government planners have recently studied this information system as a methodology for monitoring a wide range of development projects.

As well as making home visits and maintaining family health records, *reproinsas* designed materials for use in health education. They designed a flow chart demonstrating how acute respiratory infections are spread, using pictures and diagrams, as well as a booklet demonstrating the various stages of pregnancy and the nutritional and other needs of the developing foetus. In 1990, the *reproinsas* of El Mezquital held a community health fair, during which the positive results of looking after one's own and one's family's health were presented through song, popular theatre, and information booths. Simply designed leaflets on the importance of breast-feeding, child development, rehydration therapy, family spacing, and the prevention of common diseases were distributed at the booths, and condoms were distributed.

During the first four years work in El Mezquital, tremendous improvements in health took place. Between 1987 and 1990, the percentage of children under one who were vaccinated against immuno-preventable diseases rose from 16 per cent to 59 per cent. Similarly, among children between the ages of one and four, the proportion vaccinated rose from 51 to 85 per cent. Comparable improvements were achieved in Chinautla, a settlement on the edge of Guatemala City with a population of over 52,000, where the Urban Basic Services Programme is active.

The reductions in infant mortality rates in these settlements was much more rapid than for those in Guatemala City Metropolitan Area. Whereas in the city as a whole infant mortality fell by 3 per cent annually, the rate of infant mortality in project areas dropped by 9 per cent each year. If all the project areas are taken together, the rate of morbidity from diarrhoeal diseases dropped by 11 per cent per year, while the rate for acute

respiratory infections fell by 9 per cent annually. Child mortality rates as a whole fell from 77 to 49 per 1,000 live births.

A survey in El Mezquital in 1990 revealed that 90 per cent of those questioned knew their local *reproinsa* and had benefited from her presence. In a settlement of 30,000-35,000 persons, the traditional method of assigning a limited number of "health promoters" to the area would never have been so effective. Such promoters are neither locally based nor democratically elected. Each promoter is usually assigned a very large number of people; the end result is that they are incapable of meeting the needs of the community. This new approach of relying on local people who are known to, and elected by, their neighbours has proved much more effective.

This experience with *reproinsas* also demonstrated to institutional health care providers that this kind of model and methodology are not only viable but also more successful than traditional models. The coordinator of the health care component in Chinautla is also the director of the Chinautla Ministry of Health clinic. In a letter sent to fellow health care professionals, outlining the achievements of the project, this medical doctor called for a fundamental re-evaluation of traditional methodologies.

> "To achieve what we have achieved, we had to change our attitudes....We are motivated to press onward because we believe we have found a way to stop being one more inactive and lethargic service agency. Instead, we have become an entity with real projection into the community, assisting residents to become self-sufficient in resolving not only health problems, but also socio-economic problems. We are teaching people to fish, so that they may feed themselves all their lives."[3]

3. Dr. Julio A. Figueroa Urrea.

By 1993, some 600 *reproinsas* had received an average 18 months of training, at a cost of about US$100 each. They were active in eight geographic areas, with 60 settlements and serving over 150,000 inhabitants. Each *reproinsa* gives eight hours a week of voluntary service to the community. Since families living in the settlements where they are active spend on average about US$10 a month on medicine, with a total population served of over 150,000, there are obviously tremendous savings. Not only do *reproinsas* save families money through providing education and preventive care but their actions also reduce pressures and costs within the hospital system as the place of last resort for health problems. Either the illness or injury that would have led to a hospital visit is avoided or it is treated within the community. The person requiring hosptial treatment gets there more rapidly, when treatment is more effective and generally less costly.

V. STIMULATING SUSTAINABILITY AND SELF-SUFFICIENCY

SOME *REPROINSAS* FOUND it difficult to combine their work

as community volunteers and meet their own income needs. Project organizers noted that some of the *reproinsas* were being forced to drop out of the programme to devote their time to family survival. Some were discouraged by their husbands from working as *reproinsas* on the grounds that voluntary activities were not increasing family income. Through the same process of discussion and reflection that has characterized the project overall, it was agreed that efforts should be made to provide *reproinsas* with some economic assistance, both immediately and in the long run, and to do so in ways that would also bring benefits to the community as a whole.

From this came the first community pharmacy, opened in El Mezquital in 1989. Working through COINAP, with its connections to various government agencies, the *reproinsas* succeeded in creating a foundation, called FUNDAESPRO (Fundacion de Esfuerzo y Prosperidad - the Foundation of Effort and Prosperity). Under this legal aegis, a pharmacy staffed by *reproinsas* trained by the Ministry of Health began dispensing basic medicines at low cost in one area in El Mezquital. As well as providing a small income to *reproinsas* and affordable medicine to residents, the pharmacy also served as a base from which to educate community members on health care. For example, a survey of women in Guatemala's low-income urban settlements revealed that nearly two-thirds regularly practiced self-medication - either to save on the cost of visiting a doctor or because they didn't understand how to use the prescribed medicine. Community members know the *reproinsas* and trust them to help choose the proper medication and use it correctly.

In 1990, the new foundation FUNDAESPRO opened another pharmacy, this time in Chinautla, and also a small grocery store selling basic foodstuffs at low cost. The community stores helped to bring down prices in competing establishments (where costs are often two to three times higher than in other parts of the city) and also helped sustain the *reproinsas*. By 1992, between 1,500 and 2,000 customers a month were using the pharmacy in El Mezquital. The small profit margin allows FUNDAESPRO to pay several *reproinsas* in the form of basic foodstuffs valued at about US$12 per month. Until community enterprises can support the entire *reproinsa* staff, an equivalent level of support is being provided to other *reproinsas* through international aid agencies.

This decision to develop income-generating enterprises serving the urban settlements began a new dynamic within the programme. Between mid-1989 and the end of 1991, 17 income-generating projects had been launched in seven different communities where the programme is active. By 1993, there were eight community pharmacies in operation. Community based laboratories have also opened, and personnel from the Ministry of Health have trained *reproinsas* to carry out simple tests on blood, urine, and faeces. A more ambitious step is planned for 1994 when the programme takes over responsibility for 15 small "dispensaries" owned by the municipal government and located in low-income urban areas. These outlets will be transformed into family health centres, dispensing medicine and offering basic

laboratory testing and other medical assistance to residents of urban settlements all over Guatemala City. In addition, there are plans to develop a central warehouse for drugs and medicine. Bulk supplies will be purchased from a non-profit organization in Europe. FUNDAESPRO will operate the warehouse and supply existing and new pharmacies run by the foundation but, in addition, will sell medicines at a low profit margin to NGOs, churches, and other non-profit groups to create some income for FUNDAESPRO and ensure the sustainability of the overall enterprise.

The community grocery stores and mini-markets have proved more difficult to manage. From the first store in Chinautla, the programme had grown to include four stores and 15 mini-markets by 1993. Although profit margins are extremely low, the markets still serve a purpose in the community by offering low-cost, nutritious foods and providing information on nutrition to consumers. Consideration is being given on how to make them more financially viable, perhaps through a central warehouse similar to the one planned for supplying the pharmacies.

Another type of income-generating activity that has been promoted is the raising of pigs and chickens. Some of the livestock is consumed locally, increasing protein intake among the urban poor. Meanwhile, income from pigs and chickens sold outside the community goes to support *reproinsas* and to help cover costs. Like the grocery stores, this type of activity, while not overly profitable, is viewed by the coordinators of the programme as a means of improving nutrition and providing increased food security to residents of squatter settlements.

The basic methodology used in this *reproinsas* programme is likely to work well in other areas - although obviously adapted and modified to match local conditions and context. The key is that local residents must be viewed as the key actors, the subject of their own problems and not as objects for whom outside institutions must plan and do things. It is only when people become conscious of their problems that they can begin to effect positive changes in the conditions that surround them. Technical staff need to support the community groups but as facilitators. This is where the lines become difficult to draw. The support should not be total, to the point where the community is not really required to participate.

Over the course of the work with the *reproinsas*, through a process of discussion and reflection, the women with whom we have been working have defined four basic elements, without which a project cannot be successful:

* organization on the part of the community;
* widespread community participation in the initiative ;
* a project able to sustain itself, especially finding ways to cover its costs; and
* there must be inter-institutional coordination, i.e. a working relationship with outside institutions capable of providing initial technical and financial support.

The lack of any one of these elements can easily lead to failure.

The integrated nature of these initiatives is also important. As the *reproinsas* learnt during their training, health problems do not exist in isolation. They are intimately linked to the sanitary conditions prevailing in any area. The improvements in water and sanitation achieved by the technical team played a major role in the fall in infant mortality rates. Prevention and education can only go so far if the underlying structures affecting health conditions - in this instance water supply and sanitation - are not changed.

VI. WATER AND SANITATION

a. The Deficiencies

UNPLANNED URBAN SETTLEMENTS obviously lack the infrastructure necessary for a healthy environment. As in many countries in the South, Guatemala's urban growth has far outstripped the capacity of national and municipal authorities to provide piped water supplies, drains and sewers, and a regular service to collect garbage. Nationwide, the situation is serious; in the precarious settlements in and around Guatemala City, it is critical - see Box 1.

Box 1: The Lack of Infrastructure in Guatemala City's Precarious Settlements

A 1989 study of the infrastructure needs in Guatemala's precarious settlements revealed that:

* **Only 4.5 per cent of the homes in all of the city's low-income settlements had home water connections. Most of the population obtain water either from a few public taps or purchase it from privately owned trucks. Water purchased from private trucks is often contaminated and is over 25 times more costly per litre than water supplied through the municipal supply network.**

* **Human wastes are usually disposed of in communal or family latrines but as many as 15 per cent of the population have no access to toilet facilities and use the open air.**

* **Garbage is usually thrown onto the hillside or into the alleyways of the neighbourhood. No public garbage collection is available in most of the precarious settlements.**

* **There are virtually no pipes installed for drains and the collection of sewage. During the rainy season, excreta and solid waste literally float along public pathways.**

* **Approximately half of the homes in the areas studied had electric lighting, but most energy needs, principally fuel for cooking, are met through firewood. Guatemala's supply of firewood is dwindling rapidly and prices have risen sharply. It is not unusual for families to spend as much as one-third of their income on the purchase of firewood.**

There are obvious links between these deficiencies in infrastructure and services and the poor health conditions in the urban settlements. A lack of water and the consumption of contaminated water both create well-known health risks, the latter being the prime cause of the high incidence of often fatal diarrhoeal diseases. The presence of human and solid wastes in public places is another major cause or contributor to disease, especially in crowded settlements. The high cost of firewood for low-income households leaves fewer resources available to purchase food and thus can increase the incidence of malnutrition among children and increase the proportion of low birthweight newborn infants.

The real challenge facing the technical committees formed at the beginning of the Urban Basic Services Programme to address issues of water and environmental sanitation was to approach the problems in a non-traditional manner because of the shortage of water and of funding. Guatemala City suffers from a water deficit of 146,000 cubic metres a day.[4] Developing water supply networks in poor urban settlements was not a priority for the municipal water enterprise. Improved water supply had to be low-cost. Community participation was necessary, both to prioritize the problems and to ensure the maintenance of any new water system, i.e. the long-term sustainability.[5] As the health component progressed with its strong emphasis on education, community members became more conscious of the negative impact of their environment on their lives. Some infrastructure problems - especially water supply - were seen by community members as even more critical than the lack of health care. A strong motivation encouraging community participation in water and sanitation projects emerged, in some cases from an awareness of problems, in others from a growing understanding of the inextricable relationships between health and sanitation issues.

Working through COINAP, a consultant was hired to coordinate this component. He worked with existing community organizations to develop micro-zone committees to approach water and sanitation issues, using the same operational strategy as in health care. A wide variety of problems have been addressed, first in El Mezquital and later in other settlements incorporated into the programme. As the coordinator of the water and sanitation component commented:

> "We do not measure our success in terms of the number of drainpipes laid or public taps installed. Instead, we see our achievement as lying in the fact that groups in the community are now able to address the problems confronting them."[6]

b. Water Supply

Two different models for improved water supply developed: the single source tank and the well. Both combined the active involvement of a community group, reliance on technical assistance, and institutional cooperation from COINAP members.

4. Since there are 1,000 litres in a cubic metre, this is equivalent to an adequate (100 litre a day) supply for 1.46 million households.

5. The term "sustainability" tends to be used within international agencies to refer to the extent to which a new project or activity will continue after the "project" is completed and the involvement of the international agency ends. This is in contrast to its use among environmentalists which is generally with reference to ecological sustainability.

6. Marco Augusto Recinos, Coordinator, Water and Sanitation Component.

The single source tank: In Chinautla, residents devised an original method of obtaining piped water that had important implications for residents in other precarious areas. After studying the conditions in their community with technical assistance from COINAP, residents requested that Empagua, Guatemala's municipal water enterprise, install a "corporate" or single source water tank in the neighbourhood. Such units are usually installed only on a temporary basis on construction sites or for large enterprises consuming high quantities of water. From this single source, the community created a supply network to reach individual residences with UNICEF providing the funds for the pipes and other materials. Each family carried out the work necessary for their own home connection. The local community association receives one large bill from the water company and then collects fees from residents according to usage measured by individual meters. A resident chosen by the community was trained to manage billing and the collection of fees. Most of the fees are to cover actual costs but a portion is set aside for maintenance and the surplus will go towards other local infrastructure needs such as drains and sewers.

Although the cost of the water is more than that paid by households who are connected to the city's water supply network, it is still far less than the exorbitant rates that had previously been charged by private water supply firms. The fact that the supply is piped into each home also saves time for the household member who previously had to wait in line at public taps, and eliminates the physical effort of carrying the water back to the house. Other communities involved in the Urban Basic Services Programme have begun to make similar arrangements. The community associations responsible for overseeing water distribution often collect a small surcharge to cover the cost of other projects. One plans to invest the funds in low-cost latrines; another will create a community bank to help families with emergencies.

The role of COINAP in these activities is not simply to supply technical expertise and negotiate with related institutions. The different settlements involved in the programme are also represented on COINAP. Their representatives become directly involved in working with new communities that approach the programme for assistance. They attend meetings of the community associations to learn about what problems are being faced in each particular settlement and then work with the community to develop solutions. This achieves what might be termed a "horizontal" dissemination of the experience and expertise gained through the efforts of their own communities, i.e. from one settlement to another.

The community managed well in El Mesquital: In El Mesquital, as a rule, 40 families share each public tap, and residents have long identified water supply as a major problem. The community association requested funding from UNICEF to dig a well in the area but could find no space within the settlement to do so. After an 18-month search, the association convinced a local church to allow some of its land to be used as a site for the well.

When construction is complete, the 305 metre (1,000 feet) well should provide 80 litres of water per person per day for each of the 2,000 families residing in El Mezquital, at a price that is between 25 and 60 per cent less than that they currently pay for water from other sources. Project technicians estimate that within the next 20 years, another 1,200 families will move to El Mezquital and the water network should be capable of meeting this future demand as well. The community has formed a small, private enterprise managed by local residents to operate the new water project. UNICEF funded the initial 900 home connections and the purchase of a computer for billing and other administrative tasks. The community association charges on a sliding scale according to usage, with a much higher fee for those who use more than their allotted share. Payments by families connected to the new water supply system will go into a revolving fund enabling other homes to be connected until the service is finally extended to the entire settlement.

The cost of the project, including initial surveys and research, digging the well, installing the home connections, training the community managers, and purchasing the meters and the computer was estimated at US$200,000, or US$100 per family served. Moreover, once all the home connections are completed, the enterprise is expected to have a regular monthly surplus that will be invested in other community projects such as improved drainage systems capable of handling the increased volume of water.

c. Other Environmental Initiatives

In the five communities that form El Mezquital, 48 volunteers received training in basic environmental sanitation between 1987 and 1990. Trainers had to be brought in from the outside; technical advisors brought in by member agencies of COINAP were often unwilling or unable to adjust to the Urban Basic Service Programme's participatory methodology. After the initial training, 14 public taps and 500 dry latrines were installed, 3,000 existing latrines improved, and sewage drains and cobblestone sidewalks built in 24 of the alleyways. As the programme expanded into other settlements, more volunteers were trained, resulting in a considerable expansion in provision for sanitation and public taps.

Reforestation projects were initiated in El Mezquital, Chinautla and Plaza de Toros with volunteer labour from the community, support from the government's forestry division and seedlings donated by the National Committee for the Environment (CONAMA). Some 20,000 rapid growth trees have been planted with the aim of establishing a sustainable fuelwood supply. The trees also help stop soil erosion on the hillsides where many of the precarious settlements are located. Some are fruit and avocado trees that will provide produce for the community and also improve the whole neighbourhood environment. In two communities, residents working with the COINAP technical team produced a simple, low-cost composting unit, fed by household wastes.

New woodburning stoves developed through the efforts of the Mennonite Church (which is involved in COINAP) have also been introduced. These can mean significant falls in household expenditures as they cut by half the amount of wood required for cooking. The stoves cost the equivalent of about US$30 and, if used properly, their cost can be fully recovered in six to seven months through less expenditure on firewood. They also reduce the demand for wood and cut down indoor air pollution. Smoke inhalation from fire stoves not only exposes occupants to carcinogens but is also considered partially responsible for the high incidence of low birthweight infants among poorer households in Guatemala. By 1993, 350 of these stoves were in use and the COINAP technical team provides training in their use for those who purchase them.

There have been some problems with these stoves. Many families continue to use more wood than is needed to fuel the stoves. Others will not accept them because they have seen the electric or gas stoves widely used by middle and upper-income groups and cannot see why they should buy a new model of wood stove. Similarly, many low-income households are reluctant to invest in dry latrines when they know of the flush toilets used by middle and upper-income groups - even if each uses more water in a flush than their entire daily water consumption. When installing drainage pipes, there was a resistance to using the cheaper small-bore pipes because these differed from those used in wealthier areas and there was a concern that they would not work. "Alternative" technologies are often viewed by low-income groups as "second-class" and it has proved a challenge to the technical teams to overcome such attitudes. However, as other infrastructure improvements are made and education in sanitary conditions is provided, available low-cost solutions for sanitation are likely to be more widely accepted.

VII. EDUCATION AND SOCIAL MOBILIZATION

a. Introduction

SINCE THE URBAN Basic Services Programme was working in a precarious settlement where the population had had little schooling, and because of its firm commitment to a participatory methodology, special attention was given to community education and mobilization. The ideas and technologies being introduced were new and different. To succeed, they had to be understood and accepted by the community. If they were to endure, community members had to learn to implement and manage them.

The effort to develop a common language and approach began with the training of local health promoters, the *reproinsas.* Later, education and social mobilization programmes included such diverse activities as day care, literacy programmes, community theatre, sewing, art, and carpentry workshops.

The various activities that fall under the heading of social mobilization have evolved over time - some as a function of health

and water supply/sanitation activities, others as new initiatives with their own dynamic. The earliest work in this area was undertaken by the technical team working with the *reproinsas* to develop appropriate materials for educating community members on specific health issues, such as the stages of pregnancy, how diseases spread, and the progression of diarrhoea. This led to the formation of an Inter-Community Educational Materials Committee that included community and COINAP representatives. Once created, these materials become a resource that can be used in any of Guatemala's low-income areas.

The committee soon began to produce comparable materials to complement the work of the water and sanitation technical teams. These teams found that the technical terms required to explain, for example, how to install a drain or build a dry latrine were often confusing to community volunteers. The teams turned to the education and social mobilization committee, which developed simple diagrams to explain the various processes. The committee also worked closely with the technical team on the introduction of fuel-efficient stoves. UNICEF purchased the initial 100 stoves, with the understanding that as the new owners gradually paid for their stoves, the payments would be placed in a revolving fund to help other families to purchase stoves. The education and social mobilization group advised the community association on how to manage the revolving fund and create controls to ensure that the fund would work in the long run.

b. Literacy Activities

At the initiative of one of the *reproinsas*, the education and social mobilization team helped FUNDAESPRO to become involved in a literacy programme for the mothers of high-risk infants. By chance, one of the *reproinsas* was involved in a literacy effort promoted by CONALFA, the Guatemalan government literacy agency and a member of COINAP. She pointed out to other *reproinsas* that their health care efforts would be much helped if the young women with whom they worked could read and write. The programme was taken on by FUNDAESPRO as a major component of its work. Coordinating with the government literacy agency, nine *reproinsas* underwent literacy training in 1991; by 1993, some 450 settlement dwellers were being taught by *reproinsas* in 23 different communities.

The *reproinsas* teach five hours per week and receive the same small monthly wage as all CONALFA's literacy workers (about US$45). The *reproinsas* bring to this work a personal knowledge of the community including its special needs and its forms of communication. At the same time, the literacy work binds the *reproinsas* more closely to the women with whom they are working to improve health conditions. This integration of health and education activities is typical of the integrated nature of the Urban Basic Services Programme and reflects the goal of promoting self-sufficiency within Guatemala's urban settlements. At the same time, through COINAP, this component is receiving the institutional support (training and salaries via the govern-

ment literacy agency, CONALFA) that *reproinsas* need to meet their own household expenses.

c. New Models for Community Based Day Care

Another activity being undertaken with the support of the education and social mobilization teams is the creation of two new models for child care. The models emerged from the necessities and realities of the precarious settlements where there are a large number of female headed households in which the mother has to leave her children at home in order to work. One model is that of pre-school centres serving between 25 and 50 children. The other, undertaken where physical space does not allow for a large centre, is known as a "home day care network".

As with the literacy work, the original initiative came from a resident of one of the settlements where the programme was active - Plaza de Toros. She was a young woman named Letty who was training to be a teacher and who began by inviting children between the ages of four and six into her home during the afternoon, at a time when these children would normally be playing or wandering around the settlement. With no pre-school support, when they entered school at the age of seven, they were ill-prepared and often had to repeat grades. Many were on the way to becoming street children. Parents, discouraged by their lack of progress at school, allowed them to drop out and put them to work - but again in work for which the youngsters were usually ill-prepared.

At her own initiative, Letty provided the young children with some instruction and materials and a structured environment. When the children entered school the following year, the results were so impressive that both parents and educators became interested in the idea of a pre-school centre. In April 1991, a children's community centre serving 36 children between the ages of two and six was inaugurated in Plaza de Toros. It is situated in the neighbourhood community centre which was completed in 1989 with COINAP support and community labour. It has three separate classrooms and a small park, the latter built with the assistance of the municipal government. Two *reproinsas* have received training to staff the centre along with Letty, who is now a qualified teacher. A fourth staff member will prepare food and oversee the sanitary conditions of the new Centre. All aspects of the day care are agreed during meetings with the mothers, including the content of the daily programme, hours of service, and the type of food to be served. The local technical team helped design and build furniture for the Centre. The *reproinsas* apply standardized growth and developmental monitoring techniques to track the children's progress. Within a year of the Centre's opening, more than three-quarters of the children met or surpassed standards in all areas.

Fees are charged on a sliding scale, according to family income. In this, as in other community based initiatives, it proved possible to develop mutually beneficial links. The education and social mobilization team helped to establish a carpentry

shop and a bakery as income-generating projects to help cover remaining costs. The day care centre operates in the same neighbourhood where the water and sanitation team helped to plant orange and avocado trees. Part of the income generated from the sale of these products also goes to help cover the expenses of the children's community centre. UNICEF provided financial support (for food, salaries, and educational materials) during the first two years, after which the centre should be relatively self-supporting.

One of the underlying goals of UNICEF's Urban Basic Service Programme is advocacy, to demonstrate to government authorities alternative ways of providing basic urban services that are cheaper and more effective than conventional methods. It was hoped that the success of the day care effort would convince local authorities to provide some of the resources required to maintain the programme in Plaza de Toros and to encourage similar day care efforts. By 1993, this child care centre model was in use in other communities, and the Guatemala City municipal food and nutrition agency was supplying some of the food needs at the centres. As the coordinator of the education and social mobilization team commented:

> "It is very difficult to convince government authorities with just ideas. But if you come with an accomplished fact, and you can say, gentlemen, come and see what we have done and how we have done it, they are more likely to change their mind and to become more open to new approaches."(7)

7. Betty de Leon, Coordinator, Education/Social Mobilization.

The children in the day care programme wear smocks produced by a community sewing workshop located in La Verbena, a settlement with some 25,000 people. The sewing cooperative, also established by the education and social mobilization team, includes some 70 women who have received beginner, intermediate, and advanced training in sewing through the Ministry of Labour, one of the members of COINAP. The group produces inexpensive school uniforms and other items of clothing, and offers alteration and repair services. With this and other income-generating activities, community leaders in La Verbena organized a small child care centre similar to the one in Plaza de Toros, with assistance from Letty, the young educator who pioneered the original centre.

A different kind of day care model was developed for the densely populated community of Tecun Uman in the settlement at Chinautla. The neighbourhood lacks space for the construction of a centre, but *reproinsas* discovered a strong need and desire for child care on the part of working mothers. Thus a "home day care network" was initiated, again with UNICEF support and a two-year commitment to technical and financial assistance via COINAP institutions.

With the help of a local *reproinsa*, five community women received one month's training in early childhood development from social workers, psychologists, and nutritionists linked to COINAP institutions. Each home day care mother receives a small salary and the added benefit of a remodelling of their home to pro-

vide water and toilets as well as appropriate outdoor space for ten children. The education and social mobilization team developed a weekly curriculum model to help the day care mothers in the educational aspect of their work. It also compiled a list of children's songs and games as well as pamphlets on nutrition and early childhood development. As the project expands, these materials help to spread information to other neighbourhoods; home day care mothers from one community can help train others using printed materials and their own experience. The same model soon began operating in other crowded settlements, so that by 1993 about 250 children were receiving care in 25 homes that are part of the "network".

Various other employment and income-generating projects were initiated, including a carpentry workshop. In this, some 30-40 youths were trained over a three-year period in coordination with INTECAP, Guatemala's technical training agency, to produce useful household items such as tables and chairs for sale at reasonable cost within the community. Initially, INTECAP insisted on eligibility criteria that the education and social mobilization team deemed unrealistic, such as a minimum age of 17. Project staff pointed out that young people from these communities are often married and with a child by the time they are 16 or 17 and need to learn a skill before they reach that stage. They succeeded in changing this and other INTECAP criteria that would have hindered participation by low-income youth. These changes have contributed both toward the success of the effort and toward demonstrating the potential of alternative approaches to INTECAP personnel.

In the community of Tecun Uman, at Chinautla, a programme was introduced to help empower women. Women have had a critical role in the whole Urban Basic Services Programme but their accomplishments and growing ability to organize and achieve results often go unrecognized. A small space was donated by the municipality to serve as a womens' centre, and COINAP institutions provided a mill for grinding maize. The women involved in the project grind maize for others in the community for a small fee, thus saving their neighbours the time involved in grinding maize each day for *tortillas*, a staple in the Guatemalan diet. The funds are used to pay one woman to operate the mill and to cover other costs; any surplus is used for project related activities.

The education and social mobilization team have also become active in community theatre, involving large numbers of young people. The plays, which focus on issues of importance to local residents, are developed with the participants. The dialogue and action evolve spontaneously, reflecting the experiences of the dwellers. The plays do not merely describe problems; they seek to unearth the root of the problems and to present alternative solutions. Plays have focused on such matters as children's rights, environment, health care, and the importance of community organization. Although the groups have performed in universities and other outside forums, most productions are held in communities involved in the programme, to promote dialogue and "horizontal" education among and between Guate-

mala City's urban settlements.

Young people whose involvement in the programme had been through drama, job or skill training, or some other facet of the programme decided in 1993 to develop their own leadership training organization and to create income-generating activities to support it. Several hundred youths from three different settlements worked together and with the education and social mobilization team to define the goals of their cooperative, develop bye-laws, and plan how to sustain their organization. This decision by the youth to form their own organization is a positive step towards community control and implementation of local activities, which is the ultimate objective of all the programme's components. Moreover, the process of creating and developing an organization is, in itself, a vital learning process for the young people. It is one that will help them in their future efforts to obtain services for their communities as they rapidly progress from youth to adulthood.

VIII. HOUSING AND URBAN IMPROVEMENT

A NEW PROGRAMME has recently been initiated in El Mezquital to improve housing conditions and water supply and provide paved roads and a park. But this is to be funded through loans provided to the residents at a monthly cost that the relatively low-income households can afford. Entitled PROUME (Programme for the Urbanization of El Mezquital) and with a total budget of US$6.6 million, $4.5 million comes from a World Bank loan with the government of Guatemala contributing $1.5 million, the community $188,000 and UNICEF's Urban Basic Services Programme $117,000. The plan has three components: housing; urbanization and neighbourhood improvement; and water supply.

In regard to housing, 1,000 new homes will be built and 500 improved. Each family can choose one of five designs for its home, depending on its needs and the size of the lot. The designs allow for the construction of a second storey in later years. Families constructing a new unit can receive loans of up to Q10,000 (quetzals) to purchase construction materials and labour; this represents just over twice the average annual family income of Q6,000. Families wishing to improve their existing homes can receive around Q2,000. (In late August 1994, there were Q5.8 to one US dollar)

In regard to urbanization and neighbourhood improvement, the plan includes street paving, the installation of drains and sewers and the construction of a park and community centre. Each household will have to contribute labour towards these improvements and help to pay for materials.

In regard to water supply, each house will receive its own water connection and a water meter. After negotiations with the water agency (Empagua), the families need only pay for the cost of installation and not for the more expensive water rights. Water rates have been adjusted so families pay the cheapest rate for the first 100 cubic metres used each month with unit costs ris-

ing after this to encourage water conservation.

The monthly cost per household is estimated at Q183 for the entire package: Q135 for the housing, Q40 for the urbanization and neighbourhood improvement, and Q8 for the water. As noted above, average household incomes are Q6000 a year or Q500 a month.

Negotiating agreement among the many institutions involved in such a programme takes considerable time. The negotiations involved the World Bank, UNICEF, the government's National Reconstruction Committee and the two groups representing residents of El Mezquital: the Committee of Directive Boards; and the Integral Cooperative of Housing, Effort and Hope (COIVIES). Each institution had to make some allowance or adjustment to their rules or statutes to permit them to work together.[8] The residents, through COIVIES and their own Boards are in charge of administering and executing the programme. COIVIES is managing the water, environmental sanitation, infrastructure and housing components and will oversee the actual construction and distribution of credit to each household while the Committee of Directive Boards will ensure that each household contributes its share of labour. UNICEF will provide technical assistance to the Cooperative (ranging from social organization to civil works) and will manage the World Bank loan.

8. Marcos Agusto Recinos, an engineer contracted by UNICEF to oversee the technical aspects of the Programme.

IX. SOME CONCLUSIONS

REFLECTION AND ACTION are the keys to the implementation of an Urban Basic Services Programme. The provision of education and technical training in health and sanitation has provoked critical thinking among community members, and provided them with the necessary tools to confront their own difficult daily reality. The programme has been implemented in a horizontal, rather than in the traditional vertical, or top down, fashion that has meant linking different initiatives within and between settlements.

Why is community participation viewed as so vital to the success of this programme? One reason is that governments in Third World countries rarely have the resources or the political will to address the problems of the poor. Funding for projects in urban settlements is particularly problematic, as many governments believe such funding will encourage further rural-urban migration. International agencies come and go; some are more capable, some less so, in providing the necessary assistance. But they lack an on-going presence, so the projects they undertake often fail after the initial project period as they cannot be sustained.

Even large-scale, well-funded projects face problems in urban settlements. The installation of alternative, small diameter drainage pipes in a large urban settlement can be successfully completed. However, if community members do not change their lifestyles - which typically involves throwing all manner of objects into drains - the pipes will clog and the millions invested

will go to waste. As low-income human settlements multiply throughout the Third World, there are fewer and fewer millions to be invested in any given community.

This is the unavoidable fact that underlies the need for new, participatory approaches. Community members must come to appreciate, through an educational process, the viability of low-cost solutions and they must be involved in implementing them. Active community participation in developing and implementing solutions can lead to a sense of ownership by the community that greatly increases the sustainability of a given activity or enterprise.

The success of the approach taken by the Urban Basic Services Programme in Guatemala lies not only in its participatory methodology, but also in its integrated nature. It began with two basic assumptions: that no single institution has the resources - human or financial - to make significant inroads into the problem of servicing human settlements, and that a single-issue approach is inadequate to addressing the complex reality faced by those living in low-income settlements. The creation of COINAP, the inter-agency committee that also had representatives from community organizations and brought together public and private, national and international institutions, has brought the resources of the wider society to bear on the problems of the urban poor, while not overtaxing any one institution. At the same time, the programme's components are complementary and integrated in such a way as to allow a broad attack on some of the most serious problems facing low-income urban communities: little or no health care, insufficient, expensive and often contaminated water, inadequate or no provision of sanitation and child care, very poor housing conditions and, often, illiteracy.

The model developed in Guatemala can be reproduced in other, comparable situations. Its implementation requires a commitment to the methodology of community participation, coordination among a variety of governmental and non-governmental institutions with experience in the relevant technologies or skills, and the presence of community organizations willing to collaborate in improving their own local conditions.

Initiatives on economic development have been carried out from the top down for so many years with little or no input or involvement from the "beneficiaries", that it is difficult for development professionals to accept community members as full partners in project activities. Similarly, government agencies are not accustomed to working with the poor in a horizontal manner. Nor are they used to working together. Just as ingrained habits are difficult to change in low-income communities, so trained professionals are often reluctant to adapt to new styles of work.

Moreover, the creation of a new agency such as COINAP is liable to create political and bureaucratic power struggles that can undermine its effectiveness. Some members of an institution such as COINAP will inevitably be more involved in the work than others. Each will view priorities somewhat differently. Those in government who oppose aid to the illegal and informal

urban settlements may attempt to block the institution's initiatives and/or reduce its financial resources. Those in power are often reluctant to share scarce resources, such as funding for piped water, with the poor.

The Urban Basic Services Programme in Guatemala City has faced, and continues to face, many of these problems. But it has been able to make progress, working around these realities and constraints when necessary. This is largely because of the commitment of so many of those active in the programme, particularly at the community level, to solve the life-threatening problems that plague Guatemala's urban poor. Their persistence has been rewarded over the course of seven years by a growing appreciation of the programme's philosophy and methodology among government agencies and political leaders. This has led to a greater level of government support and moves toward their incorporation into government sponsored projects and programmes. By empowering local communities through the provision of education, technical expertise and skills, the programme has improved their bargaining position vis-a-vis government and other institutions.

The programme has also overseen not only positive changes in quantifiable health and sanitation data but also in attitudes. One of its most important successes has been the growing awareness within agencies such as the Ministry of Health, Empagua (the water agency) and INTECAP that alternative solutions are feasible and can produce results. At a more personal level, a technical consultant commented on what he had learned through his work with the programme: "Learning how to prioritize through hearing peoples' concerns is more realistic than having inflexible ideas about what people ought to have. Now I realize that letting people decide what they want to work on makes sense, because it assures their willingness to participate."

The Urban Basic Services Programme described here is in a constant process of change. It continues to centre around health care but new and creative offshoots of this central theme abound: from day care centres where children will be cared for, fed and taught, to grocery stores and pharmacies that serve the community and generate income for the community health promoters, the *reproinsas*. The dynamic is under way, fuelled by the creative energy of the communities and the technical and financial resources of COINAP. We believe that it offers an excellent model for urban service delivery in the 1990s.