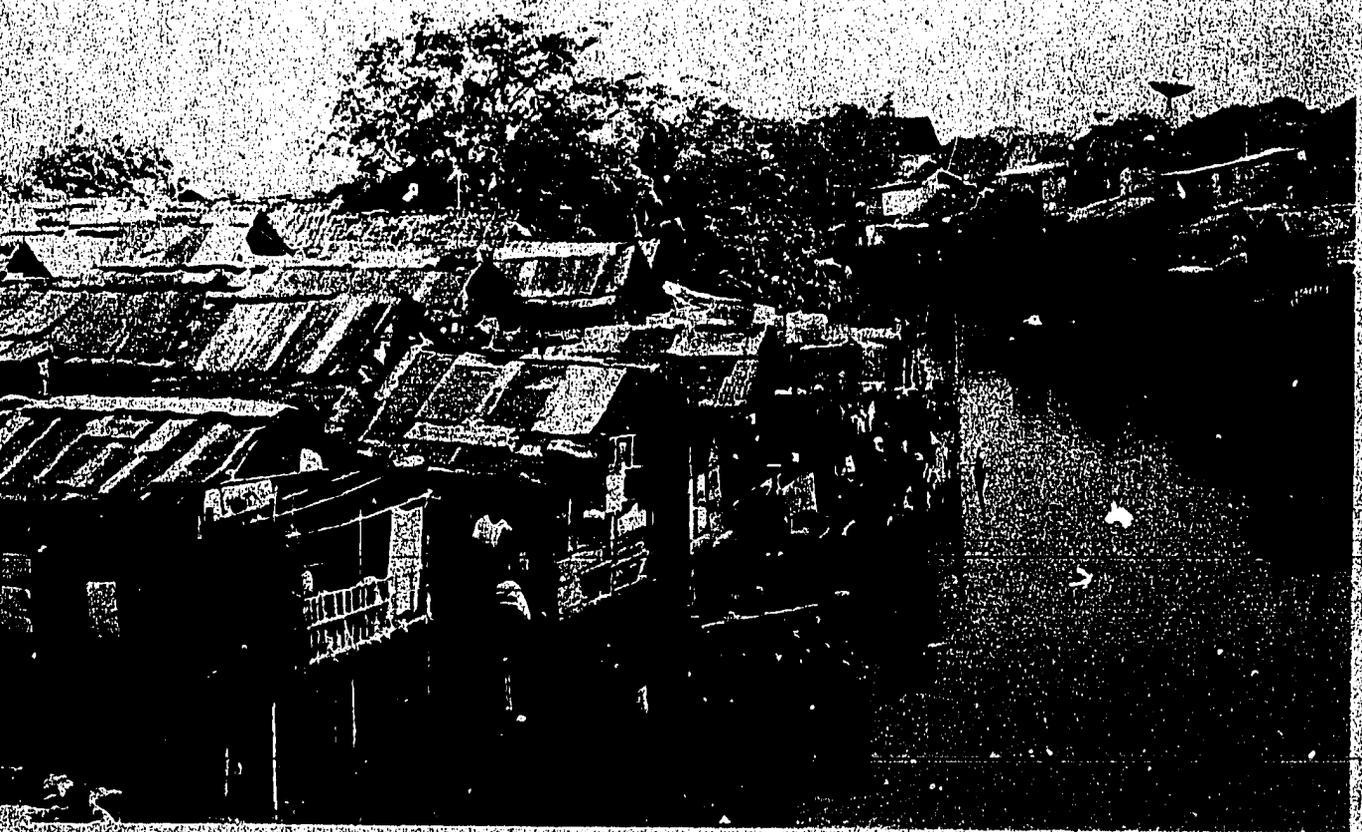


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URBAN ABSTRACTS

REGIONAL HOUSING AND URBAN DEVELOPMENT OFFICE
RHUDO/JAKARTA



U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
AUGUST, 1994

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Cover Photograph: Informal settlement along the Ciliwung River, near the Jatinegara market, in East Jakarta.

URBANIZATION AND THE ENVIRONMENT IN EAST ASIA - RHUDO'S RESPONSE

Urbanization throughout RHUDO/Jakarta's East Asia region is dramatically changing the overall context of the region's cities. Indonesia's urban population is one of the most rapidly growing in Asia. Urban population growth rates have eclipsed 5% during this decade and, at this pace, the urban population will increase to over 90 million by the year 2000, approximately 45% of the country's total population. In the Philippines, the urban population is now 48.6% of the total and, more significantly, urban households outside of the Manila metropolitan area increased by an astounding 90.7% between 1980 and 1990. Urban areas grew at a rate 15 times faster than rural areas. Based on this growth, the urban Filipinos will number 36 million by the year 2000, well over 50 percent of the population.

The impact of this massive growth can be seen most immediately as one views the environmental conditions of cities. Only 44 percent of the urban population in Indonesia has access to piped water and the overall levels of groundwater are sinking fast-largely because of heavy extraction from industry and urban expansion. Sewer systems reach less than 5 percent of the urban population and 80 percent of infant deaths are still caused by water-related diseases. In the Philippines, raw and untreated hazardous, toxic and human waste are routinely discharged into drains and waterways to the extent that all of Manila's rivers are now considered biologically dead. Over 3 million people are now estimated to live in environmentally substandard slums and squatter settlements, overburdening Manila's already inadequate infrastructure.

RHUDO/Jakarta's programs have focussed on these serious urban environmental programs in Indonesia and the Philippines over the last seven years through a series of interventions - \$295 million in Housing Guaranty loans for environmental infrastructure; \$40 million in USAID-financed grants for technical assistance and training; and a compendium of studies and reports which have analyzed these critical urban issues and have detailed specific policy interventions and a strategic framework for changing the status quo.

In the individual abstracts which follow, we confront the problems associated with urbanization which include, not only the urban environment, but the issues associated with poverty alleviation, housing finance and the need for quality urban management training throughout the region's cities. In addition, while we are certainly cognizant of the negative consequences of urbanization, more importantly these abstracts present our view that

cities are also cradles of opportunities. Urban growth should be seen as an opportunity that positively impacts national economic development and we hope that these abstracts add to the body of literature which deepens this perspective within the minds of the policy-makers, urban planners, government counterparts and development professionals throughout Asia.

William M. Frej, Director
Regional Housing and Urban Development Office for
Indonesia and the Philippines
The United States Agency for International Development
August, 1994



RHUDO/JAKARTA URBAN ABSTRACTS



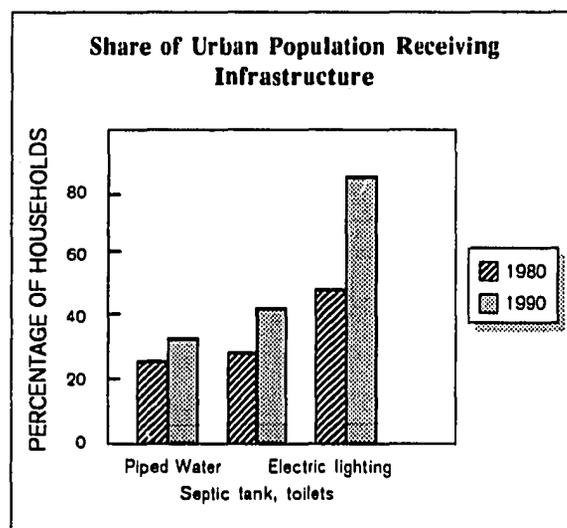
Regional Housing and Urban Development Office (RHUDO)/Jakarta

Poverty Alleviation and Urban Infrastructure Investment

Infrastructure services have strong links to development, as inputs to firms and consumption goods for households; shortages produce bottlenecks that constrain economic expansion. Infrastructure is a necessary but not sufficient condition for lifting households out of poverty, by enabling firms that provide income generating opportunities to expand and operate efficiently. Urban environmental infrastructure, particularly water, wastewater and solid waste management services, influence living standards directly by contributing to better health and nutrition, and indirectly by limiting environmental degradation associated with the contamination of surface and groundwater resources from the discharge of untreated household wastes.

A study completed by G. Thomas Kingsley of the Urban Institute in August 1993 examined Indonesia's urban infrastructure investments in water, sanitation and shelter, and assessed the impact of these expenditures on the lives of lower income urban residents. The assessment documented the remarkable progress made by the Government of Indonesia in reducing the percentage of the

population living below the poverty line. Economic and health related indicators have all shown substantial progress, partially resulting from investments in urban infrastructure. The analysis concluded with recommendations for the government of Indonesia to enhance the effectiveness of infrastructure investments in benefiting the urban poor.



Between 1980 and 1990, the share of the urban population receiving infrastructure services rose in all categories. For example, the percentage of the urban population served by piped water supply rose from 26

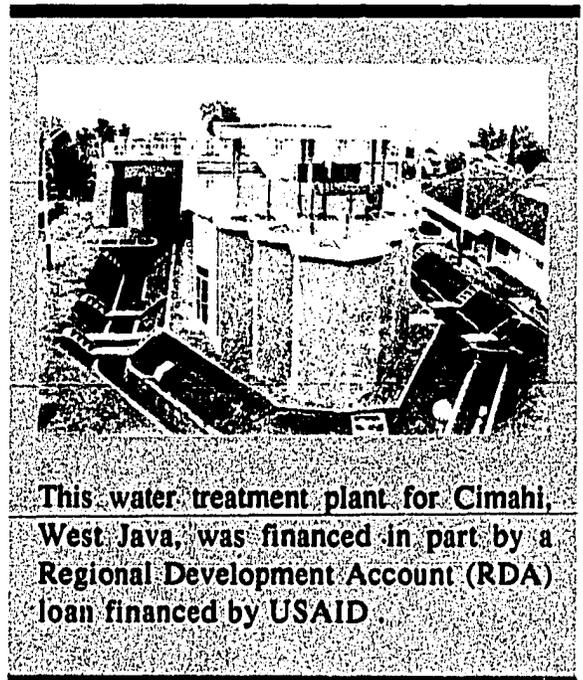
percent to 33 percent and households with basic sanitation, such as toilets with septic tanks, rose from 29 percent to 44 percent. Most significantly, urban households served by electric lighting rose from 49 percent to 85 percent. These substantial increases are particularly impressive considering that Indonesian's urban population mushroomed over the decade from 32.8 million to 55.4 million persons.

The government's policy reform agenda has also dramatically improved the living condition of the urban poor. For example, the Kampung Improvement Program, or KIP, has been the centerpiece of the Government's urban poverty alleviation program. KIP ameliorates living conditions of the poor by making minimal investments in infrastructure, such as footpaths and public toilets. Investments in drainage have a particularly high impact in low income areas since the poor are often concentrated in flood prone areas. Considerable evidence also suggests that large portions of the investments in urban infrastructure, such as water supply, sanitation, and access roads, have directly benefited low income families.

Basic low-cost urban infrastructure programs are among the most cost-effective public sector contributions to the urban development process. Cost-benefit analyses demonstrate that benefits of minimal infrastructure investments generally far exceed those of investments in public housing or subsidized government job generation initiatives. Low-cost urban infrastructure programs improve the conditions needed to generate private jobs which benefit the poor as well as reduce health hazards and improve overall living conditions.

Despite these very impressive results,

Dr. Kingsley's report does point out that overall investments for urban infrastructure have not kept pace with Indonesia's rapid urban population growth rates. Real expenditure per capita has declined and procedural and institutional bottlenecks appear to be constricting the ability to generate the additional revenue for infrastructure investments needed to further significantly enhance poverty alleviation. Since 1988, sector investment has increased at an annual compound rate of about 4.5 percent, which is well below the inflation rate. As a result, real per capita investment in infrastructure in Indonesia has fallen significantly.



This water treatment plant for Cimahi, West Java, was financed in part by a Regional Development Account (RDA) loan financed by USAID.

The IUIDP Program

Through the mid-1980s, virtually all urban infrastructure in Indonesia was planned by central government agencies in Jakarta, primarily the Ministry of Public Works, and implemented by their field offices in the provinces. The programs of one central office, such as water supply, were seldom coordinated with those of another, such as drainage, and local officials had little opportunity to influence them.

As cities and towns began to grow more rapidly, officials began to recognize that this approach could not be sustained logistically, let alone respond sensitively to the varying needs of different urban areas. Many central offices came to believe that the only satisfactory long term solution would be for local governments to assume full responsibility for providing their own urban services. However, it was also clear that few local governments had the capacity to assume this role effectively.

The Integrated Urban Infrastructure Development Program (IUIDP) was developed in response to this dilemma. IUIDP is a phased approach to decentralization in which the central government supports local capacity building at the same time it works with existing local staff in planning and implementing investment programs.

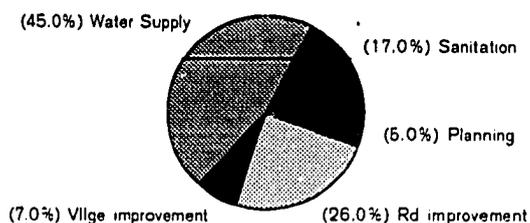
To date, IUIDP has been limited to functions that traditionally had been the responsibility of the Ministry of Public Works including projects

supporting the development of water supply, sanitation, drainage, kampung improvement programs and urban roads.

Partly because the initial targets were so ambitious, there have been problems in IUIDP implementation. Particularly in the early years, consultants often dominated local development planning (PJM) preparation without involving local governments. Many local governments have yet to internalize the process or develop the capacity to operate it effectively. It is also clear that the initial guidelines were too cumbersome and did not permit enough flexibility to adapt to varying local needs and priorities.

Through an GOI interministerial team, with support from the Municipal Finance Project, the PJM process is currently being simplified, streamlined, and developed almost exclusively by local officials in two pilot cities. This process is being documented and will serve as a model for nationwide replication during the next five year development plan.

Indonesian Government's Basic
Urban Infrastructure Program;
1986/87 through 1991/2



Infrastructure Investments and National Standards

While investments in urban infrastructure are an essential aspect of poverty alleviation efforts, adoption of nationwide standards is inappropriate and may have an adverse, longer term effect. For example, although infrastructure investment should stress the provision of low-cost water and sanitation, a rigid national standard which requires that all cities spend a certain proportion of total investments on these types of services might not be necessary. A national standard would fail to recognize that other important ways to alleviate poverty are to expand high productivity job opportunities and to improve infrastructure services for businesses. Services for businesses should not be subsidized, but programs which expand services for businesses which are willing to pay for them should not be constrained. It is only the subsidy portion of the budget that should be tightly targeted to the poor.

A national standard usually fails to recognize that national regulations almost always distort investment. Investments that benefit the poor differ among cities and among various locations within the city. This understanding was the basis for Indonesia's decentralization of investment decision-making in the mid-1980's through the Integrated Infrastructure Development Program (IUIDP). Poverty alleviation programs are not likely to meet the true needs of the poor unless they are designed by locally-accountable officials and are based on serious analysis of local conditions.

Uniform national standards for infrastructure development inevitably result in too much investment in some places and too little in

others. Several site-specific characteristics of a given urban area warrant consideration. For example, each location has specific needs. In some locations, the poor desperately need their water distribution network extended. In other locations, the network exists, but the quantity or quality of water being supplied is inadequate. In yet other areas, drainage is urgently needed to prevent frequent flooding.

The targeting of infrastructure investments is made more difficult by some unique settlement patterns within Indonesia's cities. Unlike many other developing countries, the poor within Indonesia's cities are scattered throughout the cities borders. Some of the poor live in relative spatial isolation from higher income groups, but most live in mixed-income neighborhoods.

Recommendations for Enhancing the Impact of Infrastructure Investment on Urban Poverty Alleviation

Indonesia's basic urban infrastructure program was substantially expanded during the 1980s and was responsible for marked improvements in living and working conditions in the key urban centers of all provinces. Despite major progress achieved by the government in expanding its infrastructure investment program and improving living conditions for lower-income families, there are indications that the program needs to do much more in this regard. Three recommendations proposed by the USAID-funded analysis for further enhancing the program's contribution to poverty alleviation were as follows :

1. *Require analysis of household survey data (on demand and perceived infrastructure need), explicit planning for*

poverty alleviation and participation of the poor, in the preparation of local medium-term investment programs (PJMs).

It is expected that local officials will be more sensitive than central officials in designing infrastructure programs that address the particular needs and opportunities of their own communities. Nonetheless, their effectiveness in this regard will depend heavily on how well they are informed about how the local population actually sees the need for various types of infrastructure improvements and about their ability and willingness to pay for them. The first waves of PJM preparation were not based on actual household surveys along these lines, but it is heartening to find that some such surveys have been conducted recently and that IUIDP will now require them as a base for all future PJM planning (a standard questionnaire and handbook for these has been prepared).

To meet the new priority for urban poverty alleviation, however, three things should be required in addition. First, ways should be found to expand the direct participation of community leaders and other representatives of the poor in PJM planning (this has occurred in some parts of the program but should be required more extensively). Second, it should be required that all future PJMs present an explicit analysis of survey data on demand and perceived needs and refer to it as a basis for strategy formulation. Third, each PJM document should be required to contain a separate section explicitly identifying how the program will address the particular needs of the poor (this has not been required in the past). This should include a table showing explicitly how the subsidy component of each subsector expenditure target will be

allocated by income group.

2. Eliminate the constraints that are holding back the growth of the overall program.

After much expansion in the 1980s, real per capita investment in the program has declined over the past few years. Procedural bottlenecks are a partial cause in the short term, but more important long-term constraints are the lack of institutional capacity at the local level (in part to be addressed by increasing private participation in urban service provision) and, particularly, the lack of adequate resource mobilization for infrastructure. The latter implies the need for stronger actions in support of several objectives in the GOI's Policy Action Plan for the program. These include giving more latitude to local governments in revenue generation and spending decisions, raising property tax yields, substantially increasing cost recovery for infrastructure services (particularly from businesses and higher-income groups), and fully establishing a self-sustaining market-oriented credit system for infrastructure finance. These steps, to regain the momentum of the overall program, will probably do more for poverty alleviation than any action simply to shift more of the program's current internal resources toward the poor (although the latter is also likely to be warranted in many urban areas).

3. Address the need for new land development on the urban fringe.

Review of past PJMs indicates an almost universal emphasis on making up for infrastructure deficits in already built-up areas. Yet one of the most serious problems in urban Indonesia at present is that an

insufficient amount of new land is being opened up at the urban fringe to accommodate new population growth. When the quantity of land is tightly constrained, marked inflation in land prices is inevitable. High land and development costs make it harder to establish new businesses and expand existing ones, and the effect on housing affordability is disastrous. These outcomes harm the poor much more than any other group. Accordingly, the GOI should work with localities in PJM planning and give priority to defining new "area development" mechanisms for urban fringe expansion in a manner that will provide new land for economic activity (thus job creation), as well as residences, and accommodate the poor equitably. This should be one of the key themes of urban poverty alleviation.



Housing Guaranty Programs and Poverty Alleviation

Under the Housing Guaranty (HG) Program, the Government of Indonesia makes rupiah expenditures on shelter-related infrastructure benefiting below-median income urban households in amounts equivalent to the loan guarantees, usually authorized by USAID in annual tranches of US \$20-25 million.

HG loans require that the local currency equivalent of all loan funds disbursed be spent on improvements suitable for households whose incomes are below the national urban median. The Indonesian government and USAID have determined the percentage of the total expenditures under each eligible program activity that could be attributed to below-median income households, as follows:

- 100% for the Kampung Improvement Program (KIP)
- 50% for water supply
- 50% for projects funded through the Regional Development Account
- 40% for sanitation and drainage improvements
- 30% for solid waste management and road improvements
- 10% for costs of related planning and studies.

Before each annual allotment or "tranche" of loan funds are disbursed, the Indonesian government prepares a nationwide Housing Guaranty Program Investment Plan showing planned expenditures for each type of activity, and after the performance period, it submits a report on actual outlays in each category. Total expenditures multiplied by the accepted percentages yield the amounts that are credited against the HG tranche.



RHUDO/JAKARTA URBAN ABSTRACTS



Regional Housing and Urban Development Office (RHUDO)/Jakarta

Analysis of Options for Delivery of Training in Urban Finance and Management

Introduction

For Indonesia's economic growth to continue, the development of basic infrastructure must accelerate, as well as mobilization of additional resources to finance it. Urban population growth in Indonesia is presently estimated to be 5.4% per year. This means that the current urban population of 55 million is anticipated to grow by some 3 million persons per year, adding enough urban residents each month to create a new city with a population of 240,000.

The Government of Indonesia's (GOI) investment program for urban infrastructure has a target of over \$500 million per year, triple the level just seven years ago, and is rapidly increasing. Included in this number are eleven major Urban Development Projects and Integrated Urban Infrastructure Development Programs (IUIDP) supported with foreign loans scheduled to be completed during the next five years. The total investment of these eleven projects is approximately \$1.7 billion (see Box).

USAID/Indonesia has been working with the Government of Indonesia since 1988 to improve mobilization and management of local government financial resources. Between 1988 and 1992, the USAID urban sector program addressed issues of fiscal decentralization through three components:

Urban Policy Action Plan: Under a \$120 million Housing Guaranty (HG) Loan program, the GOI established a broad plan for decentralization of infrastructure finance. Disbursement of the loans, made by U.S. investment banks, was subject to the Government's progress in achieving certain policy targets.

Local Currency Investment Program: Under the HG program, the GOI also made rupiah expenditures on infrastructure for low income households in amounts equivalent to the loan guarantees, authorized in annual tranches of \$25 million.

Technical Assistance and Training: Under a

\$5 million 4-year grant, the Municipal Finance Project (MFP) funded a long-term advisory team which assisted the GOI implement the Urban Policy Action Plan.

In addition to the services of four full-time technical advisors to central government, the Municipal Finance Project provided funding for a variety of training activities, ranging from support for individual participation in U.S. training courses to sponsorship of in-country seminars. The original MFP had very limited training resources, certainly too limited to support direct training to local governments. In 1992 an evaluation was conducted for the MFP. This evaluation was designed to provide the basis for modifications and extension of the existing program under a proposed amendment. The evaluation team recommended that the Municipal Finance Project give priority to (1) increasing local tax authority, (2) preparing an action plan for building the Regional Development Account (a special account in Bank Indonesia for funding loans to local authorities) into a market-based credit system, (3) establishing an indigenous system for building local capacity in urban management, and (4) inclusion of policy agenda items which address urban environmental degradation.

Following-up on the evaluation recommendation for the Municipal Finance Project to emphasize building local capacity in urban management, USAID/Indonesia commissioned a study by a U.S. consulting firm, Planning and Development Collaborative International Inc. (PADCO), to propose alternative strategies for supporting the delivery of training in urban finance and management. The study, by Robert van der Hoff, entitled "Analysis of Options for Delivery of Training in Urban Finance and Management in Indonesia", presented options to USAID on how systems for delivering training to local governments could be best developed.

SELECTED URBAN PROJECTS IN INDONESIA (1992)

- The \$-125 million Housing Guaranty Loan Program, its companion \$5 million grant-funded Municipal Finance Project (MFP) and the (then) proposed \$10 million amendment to the Municipal Finance Project funded by USAID.
- The \$15 million Private Participation in Urban Services (PURSE) Project funded by USAID.
- The various World Bank and Asian Development Bank (ADB) Urban Development Projects, such as the Medan Urban Development Project (MUDP), Bandung Urban Development Project (BUDP), and the Secondary Cities Urban Development Project (SCUDP).
- The IUIDP Training Extension Projects under the IBRD's Urban Sector Loan One (USL-1) (Regional Packages & Metropolitan and Large Cities).
- The various Integrated Urban Infrastructure Development Programs (IUIDP) funded through bilateral donors, such as the Swiss Development Cooperation (SDC), the Australian International Development Assistance Bureau (AIDAB), the Canadian International Development Assistance (CIDA).
- The IUIDP Implementation Support Project (IISP) funded jointly by the UNDP, IBRD and the Government of the Netherlands (GON).
- The local Government Training Project (LGT II) for regional planning, funded by USAID.
- The (regional) Urban Management Program (UMP) funded by UNDP, UNCHS (Habitat) and the World Bank.

Summary Review of Existing Urban Management Training

The PADCO "Analysis of Options" paper began its analysis by citing a number of deficiencies in the existing system for the delivery of training and technical assistance in urban management to local government officials:

- No part of the existing system is truly providing training for urban management. Training is for the most part sector- or project-oriented;
- The supply of managers, staff and technical specialists available is insufficient to meet even the existing need for skilled professionals in the levels of Government responsible for urban management—in particular, the Regency (analogous to county governments in the United States) and Municipal level of local government;
- Large amounts of technical assistance are being delivered within individual projects, but this is for the most part not systematically linked to training, and generally is not institutionalized. This assistance is typically designed to transmit specific skills or tools (e.g., how to operate the tax records system) rather than to build broader urban management skills and the knowledge of when and how to use those tools;
- There is no adequate supply of training materials available to any level of government, and there is no plan or mechanism for producing the necessary materials; and,

- The volume of training provided at the local government level is totally inadequate.

With an understanding of these deficiencies, several proposals have emerged or are being implemented for improvement of the quality and quantity of training for urban management. Among others, the National Development Planning Board (BAPPENAS) has proposed that training in urban planning and management be strengthened and made more appropriate to contemporary needs, through a re-examination of the curricula and role of regional universities in training in this area.

Other proposals include those made by a joint working group of the MFP and IUIDP Implementation Support Project advisors and their counterparts. This group has made a proposal for the development of an "Urban Management Training Program." The program is intended to provide a rapid expansion in the number of local government managers trained in new "strategic management" courses (finance, infrastructure programming, service delivery management, spatial planning, and overall urban management).

Description of the Target Groups

The main target groups of GOI-sponsored urban development-related training were described in the PADCO "Analysis of Options" paper as mid-career professional staff of central, provincial and local agencies directly involved in the planning, programming, implementation, operation and maintenance of urban infrastructure and services. IUIDP training between 1987 and 1992 was estimated to reach about 20% of

- c) Emphasis of Training of Trainers, coupled with development of curricula in the early stages of the proposed program, before focusing on large-scale delivery system-building activities.

Among the basic assumptions of the PADCO analysis were that: (a) no new institutions need to be created; (b) universities have an essential role in delivering urban management training; and (c) the Ministry of Home Affairs is a key actor in training delivery because of its direct access to local government staff and training budgets.

Immediate and Longer Term Options for Urban Management Training

The target beneficiaries for the urban management training will be the 'senior urban management team' within local government, which includes all the heads and sub-heads of local agencies which play a role in urban management. Although this is considered the primary target group, training courses should, as much as possible: (a) be opened to participants from the informal as well as the formal private sector; and (b) make more use of private practitioners as resource persons. As a general principle, training activities should address functional "teams" of participants from inside and outside government, as their collaboration is essential in the planning, implementation and management of urban infrastructure and services.

Those who cannot benefit from direct training must be reached by information and communication programs. University students are not as yet a direct target group

at this stage, except for the one or two universities which already have established Urban Management Programs.

Immediate Options

- Develop an inter-ministerial committee, possibly the IUIDP Management Group (IMG) in collaboration with the National Agency for State Administration (LAN), to discuss and agree upon the general training strategy in the field of urban management.
- Establish a framework for donor support, where by donors can "buy into" selected components of the course development system.
- Strengthen urban management knowledge and skills by developing a number of urban management-related training courses to the stage where they are ready for general use (consolidated), including supplies of training materials readily available for distribution.
- Build training delivery capacity in universities by : (a) assisting selected public and private universities in urban management training curriculum development; and (b) assisting the same universities in establishing networks of foreign universities through linkage programs.
- Build training delivery capacity in the Agency for Personnel Training and Education (Badan Diklat) of the Ministry of Home Affairs and selected Provincial Training Centers

(Diklat Propinsi) to the stage when qualified trainers are available and courses have become part of the regular training program provided by these training centers.

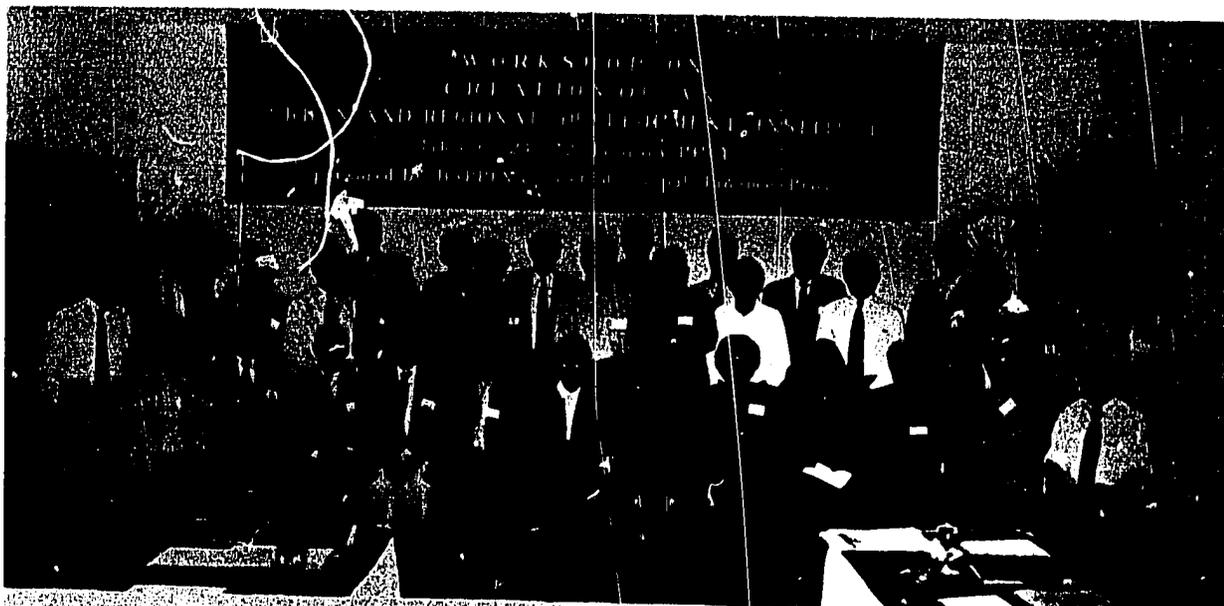
- Promote the creation of a 'development forum' and 'center of excellence' in urban and regional development by assisting GOI and the private sector in assessing the feasibility of an independent Urban and Regional Development Institute (URDI).

Longer Term Options

- Develop Urban Management Training Programs for selected universities in collaboration with foreign university counterparts, taking into account regional diversification and the desirability of program specialization.
- Assist government universities in developing a network to include private universities and planning practitioners, whose task would be to monitor quality and consistency of urban management programs.
- Further develop the regional government delivery system by providing management support to additional Diklat Propinsi in urbanized areas.
- Consolidate the training program by establishing regular, institutionalized mechanisms for domestic funding of: (a) training of trainers; (b) continued R&D for training courses; and (c) regular delivery in the two

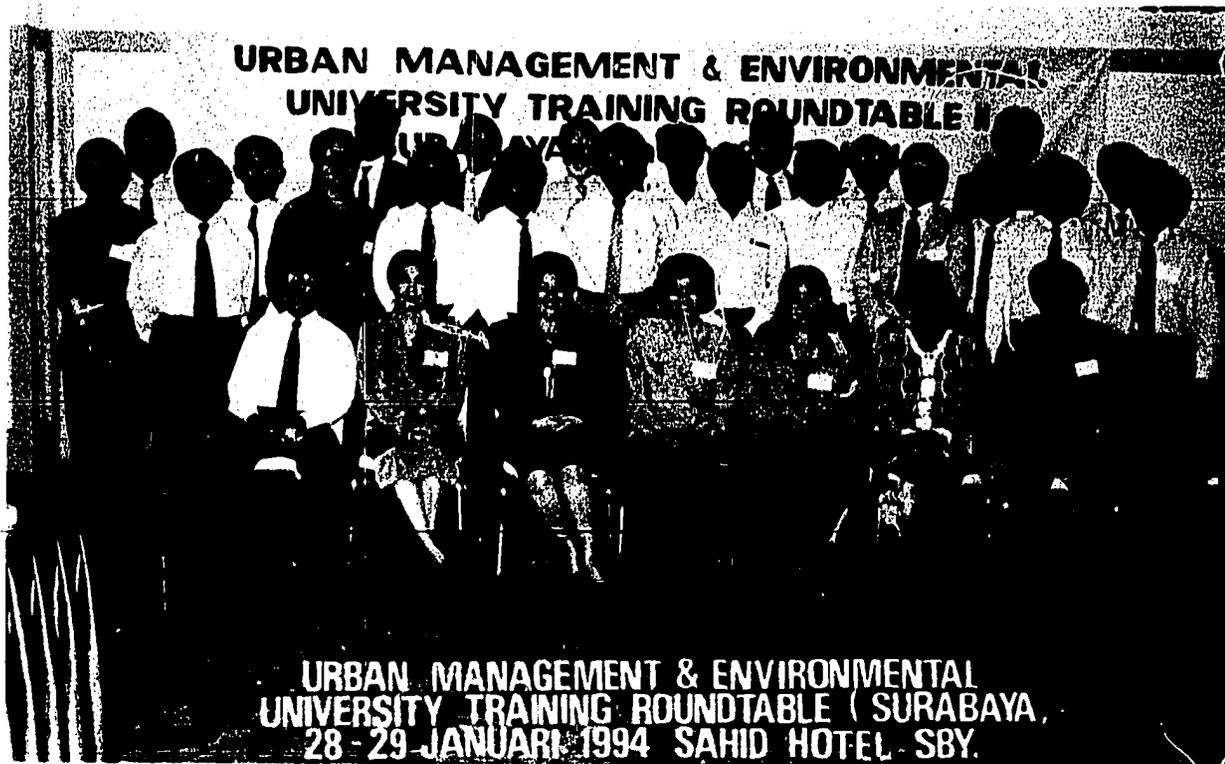
parallel systems.

- Over the long term, establish an independent, public-private institution for Urban and Regional Planning (URDI). While the URDI would become financially self-sufficient in the long term, its initial establishment and ongoing development will require considerable external resources.



**Workshop On - Creation Of An
Urban and Regional Development Institute
Hotel Atlet Century Park Jakarta Tgl. 21 - 22 January 1994**

USAID/Indonesia has supported the Government of Indonesia's efforts to establish an Urban and Regional Development Institute (URDI) and efforts by Indonesia's universities to improve curricula for urban management and environmental planning.



**URBAN MANAGEMENT & ENVIRONMENTAL
UNIVERSITY TRAINING ROUNDTABLE (SURABAYA,
28 - 29 JANUARI 1994 SAHID HOTEL SBY.**



RHUDO/JAKARTA URBAN ABSTRACTS



Regional Housing and Urban Development Office (RHUDO)/Jakarta

Housing Finance in Indonesia : Is A Secondary Mortgage Market Needed?

A Feasibility Study

Indonesia is home to over 180 million people. As the population grows, so do their housing needs. A primary mortgage market is developing only slowly to meet the demand for housing loans.

A recent report assessed the feasibility of creating a secondary mortgage market in Indonesia in order to support more rapid growth of housing finance. (A secondary mortgage market involves the sale of mortgages by primary lenders - such as commercial banks - in order to generate additional funds that they may then lend for housing.)

The report begins with a review of the approaches used to finance owner-occupied housing, and a definition of the concept of a secondary market. A secondary market is seen as a solution to the problem of insufficient lending by primary market institutions. The appropriate organization of the secondary market depends on the specific reasons why primary market lenders

are not providing sufficient funds to meet demand.

Secondary mortgage markets exist in a variety of forms in different countries. The study briefly reviews the experience with such markets and identifies the requirements for their successful operation. The feasibility of a secondary mortgage market in Indonesia is evaluated through a review of the primary market conditions. The major conclusion is that a secondary mortgage facility could significantly improve the allocation of credit by reducing the liquidity risk for primary market lenders and increasing the flow of funds from long term sources of capital such as pension funds.

The report, *Indonesian Secondary Mortgage Market Study*, was written by Dr. Michael J. Lea of Cardiff Consulting Services for the Urban Institute, Washington, DC. It was prepared under contract with USAID, for the Ministry of Finance, Government of Indonesia.

What is a Secondary Mortgage Market?

In many countries, wholesale institutions exist to facilitate the flow of funds to the primary mortgage market (such as commercial banks, savings and loan associations, and mortgage banks). These wholesale institutions, often referred to as secondary mortgage facilities, are typically government-supported. They issue general obligation bonds in the capital markets and use the proceeds to refinance the portfolios of primary market lenders.

In the U.S., the Federal Home Loan Banks have been making collateralized loans to mortgage lenders since the 1930s. In Asia, the National Bank of India and the National Home Mortgage Finance Corporation of the Philippines were created for this purpose. *Cagamas* in Malaysia purchases mortgage loans from primary market lenders.

A secondary mortgage market (SMM) involves the sale of mortgage loans or mortgage-backed securities (MBS) backed by specific pools of mortgages. As such, it involves the transfer of the risks and ownership of mortgage loans to a third party. The loans may be sold to specialized institutions which raise funds through issuance of securities backed (or collateralized) by the loans. The majority of residential mortgage loans in the U.S. are funded through the SMM.

The Rationale for Secondary Markets

Why Primary Lenders Do Not Lend Enough

The need for secondary markets arises when retail lenders are not providing sufficient funds for owner-occupied housing. Alternatively, retail lenders may not find mortgages attractive investments because of credit risk or funding risk. A third factor may be availability of capital. If a lender is capital constrained, it cannot expand its balance sheet significantly without being able to shell loans it originates.

A fourth factor influencing mortgage investment activities is the presence of a state subsidized competitor. If institutions in the primary market have preferential access to low cost (government subsidized) sources of funds, they can crowd out private lenders from the market by offering lower rates and/or better terms. Borrowers will often queue to receive below market rate loans, depriving private lenders offering market rate products of a profitable customer base.

Solutions to the Lack of Lending

The proper solution to the lack of mortgage lending depends on the primary market problems. If default risk occurs because systems of property ownership are underdeveloped or the foreclosure process is inefficient, then government provision of mortgage insurance may stimulate more lending. If the costs of underwriting loans or achieving broad geographical diversification appear to be a major problem, then a private mortgage insurance solution may be the optimum solution.

A secondary mortgage facility (SMF) is appropriate if primary market lenders have poor access to the broader capital

markets or if there are concerns about their ability to manage interest rate or liquidity risk. A SMF may be able to issue longer maturity bonds compared to individual institutions and, if well-capitalized or government - supported, a higher credit rating and lower cost funding relative to private issuers can be achieved.

SMM have been created when off-balance sheet financing is desired. Transfer of ownership allows lenders with relatively little capital to participate in the mortgage market.

The problem of competition with a subsidized direct lending competitor cannot be solved by introducing a secondary market. Lending activities of these competitors must be targeted to those in greatest need.

Benefits of Secondary Markets

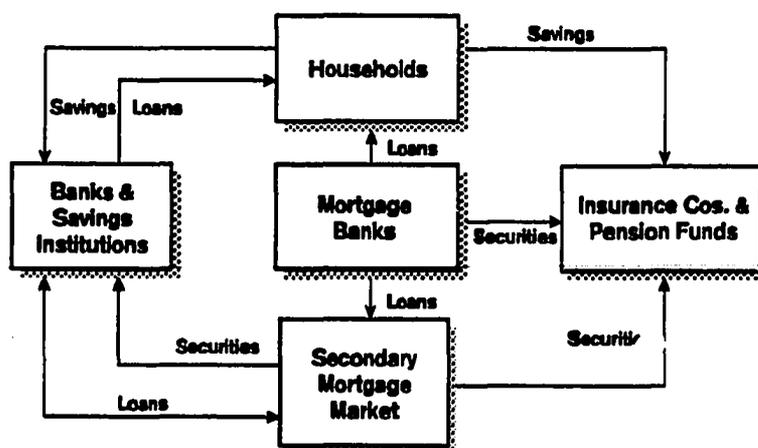
A secondary market can benefit the housing finance system as well as the entire economy. The primary benefit is an increase in the availability of funds for housing.

A SMM can also lower the cost of mortgage credit by more efficiently allocating risk. This can occur by matching long term mortgages with long term sources of funds, nationwide diversification, and expanding funding opportunities for primary lenders.

A SMF can reduce the transaction costs of mortgage lending and investment through the standardization of mortgage loan documentation, underwriting and servicing and the creation of standardizing securities. By offering longer maturity mortgages as well as alternative mortgage instruments, a secondary market can also improve the affordability of housing finance.

An active secondary market enhances the marketability of securities by reducing the investment risk and mortgage rates. Improved marketability will lower the relative costs of mortgage securities as well as spur the development of the overall bond market.

Housing Finance with Secondary Mortgage Market



Principles of SMM Operations

The Primary Mortgage Market

Mortgages must be attractive to investors: interest rates must be determined by the market and provide investors with a positive, risk-adjusted rate of return. The mortgage market must be able to produce a sufficient volume of loans to justify development of the SMM. In order to reduce the costs of evaluating mortgage loans, and of issuing and administering Mortgage-Backed Securities, mortgage characteristics should be standardized.

An underwriting process needs to be established in order to ensure that borrowers have the ability and willingness to repay the debt and that the property provides sufficient security for the mortgage. Efficient collection of mortgage payments, and the remittance of these payments to the investor are critical.

The Legal and Regulatory Framework

The regulatory environment must be supportive of a secondary mortgage market. Capital requirements must reflect the relative risks. Proper accounting standards should exist to provide institutions, investors and regulators with accurate and consistently defined information.

Investors are primarily concerned with enforceable security interest, that is the enforceability of their claim on the collateral in the event of default, with clear land title, the ability to establish priority of liens on the collateral, and the ability to enforce foreclosure and repossession. Where appropriate, security interests must be transferable.

The Role of Government Institutions

Government support of a secondary mortgage market may be necessary to achieve investor acceptance and increased access to funds.

Secondary mortgage markets are not appropriate for subsidizing mortgage credit. Their primary mission is to mobilize private capital, broaden financial markets and improve risk allocation.

The Feasibility of a Secondary Mortgage Market in Indonesia

Primary Market Conditions

The volume of mortgage lending through formal sector institutions in Indonesia is relatively low, particularly in relation to housing needs. There are several factors responsible for this situation. First, real interest rates have been very high in recent years, reducing affordability and depressing demand. Second, the majority of lending has been through special facilities, isolated from the broader financial markets: both Bank Tabungan Negara (BTN) and Bank Papan have had access to low cost government credit. The relatively large volume of subsidized loans made by these two institutions has discouraged mortgage lending by other banks. Most private bank lending has been at the high end of the market.

Private banks have also shied away from a significant volume of mortgage lending due to perceived **credit risk** - costs and uncertainties associated with the foreclosure and possession process. However, several private banks have developed ways to manage this risk, including obtaining guarantees from developers, setting up direct deposit and payroll deduction plans with employers and aggressively using the court system. Furthermore, there is a belief that house price inflation offsets much of the high cost of foreclosure and provides an incentive for borrowers to sell their houses instead of risking loss through foreclosure.

A second significant source of risk is **liquidity risk**, arising from the nature of mortgage assets and bank deposits. Mortgage loans typically have maturities of

15 to 20 years. Because they amortize and are subject to repayment, their average lives are typically 5 to 7 years. In Indonesia, the vast majority of commercial bank liabilities are deposits with term of 2 years or less; most private bank mortgages are therefore short-to-medium term loans. Even so, many banks are reluctant to allocate more than 5 to 10 percent of their portfolios to mortgages.

Interest rate risk is a third potential concern to lenders. There is a demand for fixed rate mortgages by a segment of their customer base. However, the banks have no corresponding liabilities or experience in pricing such instruments.

Mortgage Funding

There is a notable lack of investment in mortgages by long term investors (pensions and insurance funds). The only vehicles for such investments have been the bond issues of BTN and Bank Papan, which represent a small fraction of total bond issuance and pension fund assets. A large portion of state pension fund assets are invested in government short term paper (BI certificates) and time deposits. There is, therefore, a large reservoir of long term funds that could be used to fund housing.

Private banks do not consider issuing bonds to finance their mortgage portfolios to be an attractive business pursuit. Bond issuance is very expensive and there are institutional constraints. Due to uncertainty over credit quality, potential investors for private bank bonds often require a substantial credit risk premium.

Legal and Regulatory Constraints

In addition to the difficulties in foreclosing on delinquent loans, several legal and regulatory constraints inhibit mortgage

lending and investment: bond market requirements, ownership transfer issues, and system rigidities. The sale of mortgages requires borrower consent which is time consuming and costly. A lengthy process inhibits collateralized borrowing or sale of mortgage loans with the lender retaining the servicing.

Market Needs

One of the major roles for government is to identify and prioritize the principal problems affecting provision of credit for important social and investment needs for adopt appropriate policies to solve those problems.

High interest rates for housing are a major problem, as they reduce the affordability of low and moderate income households. A secondary market can modestly *lower* mortgage rates relative to other market interest rates, but it cannot *solve* this problem. Targeted subsidy programs - through BTN, for example - and the introduction of alternative mortgage instruments are better solutions to affordability problems of the low and moderate income groups. However, a secondary mortgage market can lead to the use of longer term mortgages which, in turn, improve affordability.

Credit risk is another significant issue. The ultimate solution is to improve land titling and court systems. Government insurance of mortgages could reduce or eliminate credit risk, although this could expose the government to significant liabilities if it is not properly priced and underwritten. An opportunity may exist for a private insurer to profitably price and manage this risk.

A third market need is greater access to long

term sources of funds. There are substantial sources of long term funds that could be invested in mortgages if proper investment vehicles are made available. Developing long term funding options can also alleviate liquidity and interest rate concern. A Secondary Mortgage Facility may be the most appropriate way to improve access to long term sources of funds for mortgage lending. Private banks could obtain long term advances from a **Secondary Mortgage Facility** funded by general obligation bond issuance. The bonds would be purchased by pension plans, insurance companies, and other banks.

This alternative of a Secondary Mortgage Facility is relatively simple to implement. If the collateralized lender can get prompt access to the borrower's payments in the event of loan default, the risk of such lending should be modest. If the Facility has some form of government involvement, it will have a ready demand for its bonds among long term investors.

If mortgage lenders are unable or unwilling to significantly expand their mortgage investments, a mechanism for sale of the loans needs to be developed. One alternative could be for a Secondary Mortgage Facility to purchase loans which are funded by its bond issues. However, the legal issues involved in selling mortgages and managing servicing risk suggest that it would take an extended period of time to develop such a system.

A true secondary mortgage market model would be expensive and time consuming to form. Systems for tracking and transferring cash and information would have to be developed. Mortgage design and underwriting would have to be standardized

to permit the issue of mortgage-backed securities. It would be necessary to resolve legal obstacles to ownership transfer and to determine how to enhance credit.

The Secondary Mortgage Market in the U.S.

The secondary mortgage market mobilizes a majority of funds for owner-occupied housing in the U.S. Its roots go back to the 1930s, when the Federal Housing Administration (FHA) was created to insure mortgages, increasing investor confidence in mortgage assets, and fostering the adoption of the long term, self-amortizing mortgage instrument. In order to promote the adoption of this instrument and increase liquidity in the mortgage market, Fannie Mae was created to provide a secondary market for originators of FHA mortgages. Until the 1980s, Fannie Mae functioned as a portfolio investor in mortgages, funding its purchases with general obligation debt. Both Fannie Mae and the Federal Home Loan Banks (which make collateralized loans to primary market lenders) enjoy relatively low funding rates. Although they are not government agencies, they benefit from a line of credit with the U.S. Treasury, various security law advantages and a widespread perception that the government would come to their rescue in times of trouble.

Changes in the '60s and '70s

This system worked well until the 1960s when the combination of inflation, volatile interest rates and deposit interest rate ceilings led to shortages in the availability of mortgage credit. Thus, Ginnie Mae was created in 1968 and Freddie Mac in 1970 to develop secondary mortgage markets. Ginnie Mae is a government agency, and its securities are issued with a payment guarantee backed by full faith and credit of the U.S. Freddie Mac is a government sponsored enterprise with a similar structure to Fannie Mae, as a shareholder-owned corporation.

Coming of Age

The SMM came of age in the 1980s when thrift institutions were given tax incentives to sell their loans in the secondary market (in effect, to swap them for securities which they sold or used as collateral for borrowing). The increased liquidity and flexibility of MBS brought pension plans, insurance companies and foreign investors into the mortgage market. By the end of the 1980s, a majority of new single-family mortgage originators were being sold directly into the SMM.

The development of the SMM has not been without controversy. However, the U.S. appears to have weathered all of these problems, and homebuyers continue to benefit from ample availability and a relatively low cost of mortgage credit.

Issues with Developing a Secondary Market in Indonesia

As the banking system becomes stronger and the capital markets develop, a greater volume of housing finance is likely to be forthcoming from the private sector. However, at the present time funding risk appears to be a significant impediment to expansion. Thus, maintaining the status quo is not an attractive option for the housing finance system in Indonesia. The creation of a government supported institution - a Secondary Mortgage Facility (an SMF) - to refinance bank-originated mortgages funded through the issuance of bonds would have several beneficial effects. First, it would provide a **source of long-term financing for private banks**, removing a major obstacle for mortgage investment. Second, it would facilitate **investment in mortgages by pension funds and insurance companies**, potentially improving their investment performance and increasing the supply of funds available for housing. Third, it would help **stimulate development of a bond market** in Indonesia which would benefit private companies and government enterprises in their efforts to raise capital.

Ideally the SMF would be capitalized primarily from private sources to promote efficiency and prudent risk management. However, to facilitate pension plan and insurance company investment, the SMF should have some government connection.

Initially, it would be simpler to make loans to banks collateralized by their mortgage portfolios, rather than to develop the systems necessary for sale and transfer of individual loans.

Creation of an SMF can be viewed as the

first step towards development of a true Secondary Mortgage Market in Indonesia. Many issues concerning loan standardization, information processing and servicing will have to be addressed if individual banks decide to sell loans or mortgage-backed securities directly into capital markets. In this regard, an SMF can provide a valuable demonstration effect for the rest of the banking system and capital market. As market participants gain experience in originating, servicing and managing mortgage investments, new forms of funding tailored to the needs of lenders are likely to emerge.

Secondary Mortgage Markets in Other Countries

The United Kingdom

The UK's Secondary Mortgage Market developed without any government involvement. In the mid-1980s, centralized mortgage lenders entered the market in response to wide spreads between mortgage rates and money market rates. These institutions lend through a network of brokers and insurance agents and fund themselves entirely through wholesale sales, primarily mortgage-backed securities. They were initially able to build a market share as high as 15 percent. Later, however, their share fell to less than 5 percent of the market, reflecting the aggressive pricing of building societies.

Europe

Unlike the US and UK, mortgage-backed security markets have not developed in Europe. The primary reasons for the slow pace of securitization has been the lack of capital pressure of lenders, low rates on mortgages, high costs of developing securitization programs and legal and regulatory uncertainty. Wholesale funding of mortgages is, however, well established in Europe. Private and state-owned mortgage banks issue bonds which are primarily bought by insurance companies and pension funds.

the only other country with a well developed Secondary Mortgage Market. A little over 80 percent of the mortgage and real estate loans over US\$1 billion had been originated by 1991. They have been funded by mortgage-backed securities, specifically the low-risk, long-guaranteed by state housing authorities.

Malaysia created a secondary market institution originally to purchase loans from primary mortgage lenders. Bank and Finance Company own 80 percent of the fund, the Central Bank of Malaysia has a 20 percent ownership interest which gives the company securities the perception of government backing. Both market rate and government-subsidized loans are purchased with the intent of reselling them to the lender after a period of 3-7 years. Mortgage acquisitions are financed with the proceeds of general obligation bond issues. The government has created incentives for holding these securities through tax preferences and other means.

In India, the National Housing Bank is a wholesale institution that provides liquidity through refinancing primary market loans. Most of its funds come from government-directed sources or through bond issues carrying special tax advantages. In general, the Bank's access to new funds lags its commitments and has had only limited success in tapping into the broader financial markets.



Occupant-built low-income settlements, known as "kampung" in Indonesia, are gradually being replaced by formal market housing. (Jakarta kampungs shown above. Bogor formal market housing shown below.)





RHUDO/JAKARTA URBAN ABSTRACTS



Regional Housing and Urban Development Office (RHUDO)/Jakarta

Manado Urban Environmental Risk Assessment

Objectives and Scope

The impact of 'rural' pressures on natural resources in developing countries has been well documented, but relatively little is understood about the impact of urban and industrial development on natural resources. This lack of information is particularly significant for Manado, the capital city of North Sulawesi. This rapidly growing city of 300,000 residents is surrounded by beautiful beaches, rich marine resources and fertile mountains. In particular, the Bunaken-Manado Tua National Park, a spectacular group of coral reefs of significant ecological and tourist interest, is located near the city. The timing of the study is also critical because Manado is expected to experience a major tourist boom in the next few years as international flights are opened up to Japan, Australia and the Philippines.

While Manado is relatively clean by Indonesian standards, the urban environmental infrastructure is not currently equipped to handle the projected developmental growth. Phuket island in Thailand, for example, experienced a 400% increase in tourist visits during the 1980s when international tourism was actively promoted. The corresponding urban development had

major negative impacts on the environment that has questioned the sustainability of its tourism-based economic development. Therefore, there is a need to determine the most appropriate policies and infrastructure investments in Manado to support sustainable economic growth for the region.

An assessment of urban environmental risks in Manado, North Sulawesi was funded by the USAID/Indonesia Office of Agro-Enterprise and Environment (AEE) and the USAID/Washington Office of Environment and Urban Programs, managed by RHUDO/Indonesia, and conducted in August 1992 by a five-person consultant team fielded by the Waste and Sanitation for Health (WASH) project. The study had two objectives:

- a. To identify, assess, and prioritize the major anticipated environmental impacts of estimated growth in urban population, tourism, and industry on the coastal and urban natural resource base in the Manado/Minahasa area.
- b. To recommend ways to minimize the most serious potential environmental problems, including appropriate

investments in infrastructure, financial measures to recover infrastructure costs, and policy improvements.

The study assessed the potential environmental impacts of growth in urban population, tourism, and industry with respect to four distinct resources: the urban environment of Manado; the coastal land and waters of the Manado/Minahasa study area; Bunaken Marine National Park; and the Tondano River watershed.

Background

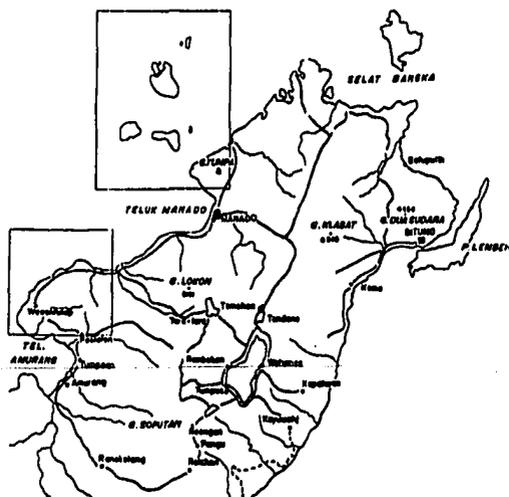
Manado is a medium-sized coastal city in the northeast part of North Sulawesi, Indonesia. It is surrounded by Minahasa, a largely rural and agricultural regency. The largest sectors of Manado's economy are commerce, banking, and services, based in large part on the agricultural economy of Minahasa, plus government and university employment. Manado and Minahasa benefit from a wealth of natural resources, including a long coastline that supports fringing reefs, mangroves and fisheries; Tondano Lake and the Tondano River watershed; and Bunaken Marine National Park, consisting of

five islands and associated coral reefs, plus mangrove areas along the mainland coast.

The Manado/Minahasa area has been designated in national and provincial planning documents as a priority area for tourism development. The area already supports domestic tourism centered on inland resources and foreign tourism based primarily on recreation (diving, snorkeling) in Bunaken Marine National Park. Developers have ambitious plans for tourist resorts in the area that will offer golf and beach vacations to foreign tourists. One resort has opened its first four-star hotel and another has begun construction.

Potential Impacts of Growth on The Urban Environment

Population growth will cause the most important impacts on the urban environment of Manado over the next ten years. Substantial investments in urban infrastructure will be required to keep pace with population growth and to maintain the existing level of environmental quality in the city. The Indonesian government's Integrated Urban Infrastructure Development Program (UIDP) has prepared plans for investments in water supply, sanitation, and solid waste management in Manado. These plans assume a rate of population growth lower than that actually experienced in Manado over the last ten years. Investments will need to be accelerated over and above expenditure rates in current plans to achieve UIDP coverage targets over the next ten years.



Map showing the two areas of Bunaken Marine National Park (boxed areas).

Water Supply

The local water utility presently satisfies

44% of the residential demand for water through its piped water system in urban Manado, including 6% of the population that is served by communal standpipes. The utility loses approximately 42% of its total production to leaks and unaccounted-for water. Residents satisfy most of their additional demand with water from vendors and shallow wells. Transmission of pathogens appears to be controlled by disinfection of the piped water supply and the common practice of boiling water used for drinking and cooking. Reported cases of diarrhea have increased over the last several years, however, and the nature and extent of contamination in the shallow aquifer is unknown at this time. This report recommends that a careful study be conducted of existing and potential groundwater contamination and of residents' practices in the use of groundwater.

The IUIDP plan includes investments to reduce losses in the reticulation system, rehabilitate existing facilities, and develop new groundwater sources. Repairing leaks and reducing losses should be given highest priority because these measures improve the safety of the water supply and satisfy more of the demand for water without developing new sources or facilities. Improving the quality and reliability of the water supply will also increase its value to consumers. Although groundwater resources appear adequate to support increased usage, a systematic study of groundwater resources and flow patterns should be prepared before new wells are developed.

Urban Wastewater

Two-thirds of the residents of Manado have access to adequate sanitation facilities,

including cistern-flush or pour-flush toilets that drain to septic tanks and soak-away pits. Design standards for septic tanks appear appropriate; systems for inspection and maintenance, however, are inadequate, particularly for septage pumping and disposal. Although elevations vary, the water table is relatively shallow in many places in this coastal city. Reliance on on-site systems in densely populated areas has probably resulted in some degree of contamination of shallow groundwater degradation. No data are available, however, with which to determine how well the existing sanitation system is functioning, the age-distribution of septic tanks, what portion of the current stock may be close to general failure, and to what extent system failures are contributing and may contribute in the future to the contamination of shallow aquifers and surface water, including the Tondano River and Manado Bay. The increase in cholera in the Manado area underscores the importance of improving sanitation facilities.

The IUIDP plan for Manado anticipates continued reliance on on-site systems, expanding capacity for septage pumping and treatment, and constructing communal sanitation facilities for low-income groups. The plan includes funds for studying the feasibility of small bore sewers and off-site treatment lagoons for densely populated areas. This report recommends that such studies examine the potential for using a variety of non-traditional sanitation technologies that may be appropriate to conditions in Manado and can be built over time with relatively modest incremental investments. To optimize future investments in sanitation, this report also recommends that systematic data be developed concerning ground and surface water quality, geohydrology, the assimilative capacity

of surface waters and Manado Bay, current health indicators, and the willingness and ability of residents to pay for sanitation improvements.

Solid Waste

The municipal solid waste service operates 15 trucks and a landfill, handling approximately 50% of the volume of solid waste generated in Manado each day. Service is reliable throughout the city, providing daily pick-up at most households and neighborhood collection sites. Most of the remaining waste is handled at individual homes by daily burning and burial. There is a modest amount of informal recycling of valuable materials, including aluminium, glass, and cardboard. The landfill is an open dump operation involving extensive burning, without daily covering of waste deposit cells. The landfill is not equipped for leachate collection or treatment.

The IUIDP plan for Manado anticipates increasing the city's fleet of collection trucks and developing a new landfill. As for other parts of the IUIDP program, investment will need to be accelerated to keep up with population growth and achieve target service levels. This report recommends that the new landfill either include provision for leachate collection and treatment or that it be sited to avoid potential impacts of leachate on ground and surface water quality.

Potential Impacts on Coastal and Marine Resources

Coastal and marine resources include coral reefs, mangrove stands, sea grass beds, and fisheries in Bunaken Marine National Park, Manado Bay, and along the northern coastline of North Sulawesi between Cape

Araken and Likupang. The most important impact on these resources is overfishing by artisanal and small-scale commercial fishermen. Overfishing, however, is not attributable primarily to growth in the urban population or tourism and, thus, is not addressed in detail in this study. The most important impact related to urban growth and tourism is the destruction of coastal habitats by coastal construction practices including land clearing, diking, dredging, and filling, and the clearing of mangroves and sea grass in recreational areas. Although impacts of coastal construction are limited at this time, they could become severe as the number of tourist facilities increases and in-fill development occurs along coastal roads. Development of the Molas Peninsula presents the additional potential for degrading the visual amenity values of the marine park if the design and height of tourist facilities and other buildings does not fit in with the natural forest cover now on the hillsides of the peninsula facing the park. Other potential impacts include oxygen depletion, toxic chemical contamination, and solid waste pollution in coastal waters.

Standards for controlling coastal construction practices should be strengthened and enforced. These rules should severely restrict land clearing, diking, dredging, filling, cutting mangroves or clearing sea grass beds, and any other practices that create direct physical alterations and damage to coastal habitats. Development on the Molas Peninsula should either be prohibited or designed to blend with its natural surroundings. Potential contamination of marine fauna with toxic chemicals can be largely eliminated by continuing the current

prohibition on gold mining in the area and requiring tourist resorts to limit their use of pesticides on golf courses now being planned. A careful study of the assimilative capacity of Manado Bay and near-coastal waters for oxygen-demanding pollutants should be conducted to determine whether anticipated growth in urban waste discharges by tourist facilities are likely to have substantial adverse effects on coastal habitats and fisheries.

Potential Impacts on the Tondano Watershed

The most significant impacts on the condition of the Tondano River above Manado are excessive erosion from hillside cultivation, solid and human waste discharges from settlements, and hydropower plants. The most important, by far, is soil erosion and the resultant sedimentation; this problem, however, is not related to urban growth in Manado and is not addressed in this study. Demand for power is directly related to urban growth in Manado and other cities in the region, notably the industrial zone at Bitung. The principal effects of hydropower development are habitat destruction and displacement of riparian communities, both of which can be minimized by decisions made in siting and designing hydropower projects. Dams also reduce the flow rate and volume of rivers, reducing their capacity to assimilate wastes discharged by riparian settlements, industries, and non-point discharges from agriculture. Water quality concerns should be integrated into plans for developing hydropower resources on the Tondano River to ensure that infrastructure improvements, regulatory measures, and changes in agricultural

practices throughout the watershed are coordinated and sure sufficient to protect the long-term health of the river.

Summary of Recommendations

Table 2 presents a summary of the environmental problems facing the Manado areas. This study recommends that USAID, BAPPENAS, Manado, and Minahasa place a high priority on taking the following action:

- Accelerate current plans for investment in water supply, wastewater management, and solid waste management to keep pace with higher-than-predicted rates of increase in the urban population. This study endorses current plans to repair leaks and control water losses in the piped water system to expand coverage of on-site sanitation facilities, and to study the need for and feasibility of off-site systems for treating human wastes. The study of potential off-site systems should be expanded to include a broader range of technology options.
- Conduct a comprehensive study of the efficacy of existing sanitation systems, the content of existing discharges, current water quality conditions in groundwater, surface streams and the Manado Bay, the hydrology of surface aquifers underlying Manado, usage patterns for water from shallow wells and its role in increasing rates of diarrhea, the assimilative capacity of area waters for additional waste inputs, and the willingness of Manado residents to pay for improved water and sanitation services. This information is needed to optimize the design of future

infrastructure investments in Manado.

- Improve the management of human wastes by providing technical assistance to homeowners for the design and maintenance of septic tanks and by implementing requirements for inspection and maintenance of septic tanks.
- Develop and enforce standards for coastal construction to restrict activities that cause direct destruction of coastal habitat.
- Prohibit development on the Molas Peninsula or establish design standards to ensure that any facilities constructed thereon blend with the surrounding environment and do not degrade the visual amenity value of Bunaken Marine National Park.
- Continue prohibitions on gold mining in the Tupaan District and require tourist resort to limit their usage and discharges of pesticides, to avoid contamination of marine fauna with toxic chemicals.

PRIORITY AND COST SUMMARY OF PROBLEMS AFFECTING THE URBAN ENVIRONMENT AND COASTAL RESOURCES OF MANADO

	High Priority	Low Priority
High Cost	<ul style="list-style-type: none"> • Contamination of piped drinking water from leaks in distribution lines • Contamination of shallow aquifer due to inadequate sanitation in densely populated areas 	<ul style="list-style-type: none"> • Potential oxygen depletion of Tondano River and Manado Bay from high BOD wastewater loadings and leachate from solid waste landfill • Potential depletion of deep aquifers from groundwater extraction by Manado and tourist resort
Low Cost	<ul style="list-style-type: none"> • Physical damage to coastal habitats from resort construction, cutting mangroves and clearing sea grass beds • High BOD wastewater loading to coastal waters from tourist facilities • Potential mercury contamination from gold mining near Arakan Peninsula • Contamination of coastal waters with solid waste from tourist resorts • Pesticide runoff from tourist resort golf courses 	<ul style="list-style-type: none"> • Potential damage to marine habitats from offshore oil spills



RHUDO/JAKARTA URBAN ABSTRACTS



Regional Housing and Urban Development Office (RHUDO)/Jakarta

Urban Environmental Quality Management

U E Q M

Environmental degradation is becoming Indonesia's most serious urban problem. Its burden falls most heavily on the poor.

In Indonesia today, there seems to be widespread awareness that urban environmental degradation is already severe. At the same time, Indonesia is ahead of many other countries in attempting to address its environmental problems. Major studies have been conducted, and strategies formulated, in such areas as industrial pollution and forest management. In 1986, the GOI established a process requiring the preparation of environmental impact assessments of government and major private sector projects (AMDAL). Nevertheless, these steps alone are not likely to be forceful enough to address environmental degradation in Indonesia's rapidly growing cities. A recent report for USAID recommends development of a capacity to address *urban environmental quality management (UEQM)* nationwide.

The most basic understanding behind an urban development strategy is that local leaders have stronger knowledge and incentives to guide urban development effectively

than central officials. It is also self-evident that the solution to most urban environmental problems will depend on improved infrastructure and services, or programs closely linked to them; i.e., it is impossible to imagine effective UEQM that does not entail enhanced water supply, waste disposal and treatment, and guidance of land development (which is primarily influenced by the placement of major roads and water supply mains). A decentralized urban development program is not only the best, but probably the only effective, vehicle for addressing urban environmental degradation.

The report, *Urban Environmental Quality Management and Integrated Investment Programming*, was written by G. Thomas Kingsley and Bruce Ferguson of the Urban Institute, Washington, DC. It was prepared under contract for USAID.

Elements of a Local UEQM Strategy

What should be the components of an effective local UEQM strategy? It is impossible to answer that question definitively since the priorities of individual local governments can legitimately differ. Some themes, however, are likely to be applicable in most cities. International literature suggests that

approaches can be grouped into six basic substantive elements that together comprise most of what UEQM needs to accomplish: (1) water supply; (2) household wastes; (3) industrial wastes; (4) transportation; (5) urban land development and use; and (6) programs providing economic incentives, effective regulation, and stimulating environmental awareness.

- *Water Supply.* There are three key principles for water supply. The **first** is to provide a mix of services that match customers' willingness and ability to pay - and then to insist on recovering full costs. Doing so will not only meet financial needs but also provide strong incentives for conservation. The **second** principle is to recognize that the most cost-effective way to provide water for new populations today is to cut down on waste in current water usage (rather than to draw totally new supplies). This can be accomplished through better maintenance and repair programs to reduce leakage; sensible recycling; and demand management techniques (including financial incentives like requiring firms to pay fees to dispose of industrial wastewater). The **third** principle is to adjust the current institutional framework for water supply, including giving encouragement to NGOs and community groups to take on more responsibility for water distribution in specific communities.

- *Household Wastes.* Themes for improvement here parallel those for water supply: recovering a large part of the costs from users (although it is recognized that given the externalities implied, some subsidization is warranted); recycling (there are many opportunities for recycling solid wastes, some of which are already being exploited by informal enterprises that could be moved up to become stable and efficient

businesses); and institutional change (again, involving community groups in responsibilities for intra-community collection systems is promising). There is also a need to expand the range of technical options being applied.

- *Industrial Wastes.* Reducing through recycling and process modification is often much less costly than treating industrial waste, and offers a better alternative for solving the waste problems of many existing industries. Indirect instruments such as taxation of inputs and deposit-refund schemes can induce small industries, in particular, to comply while demonstration projects can show them the feasibility of cleaner alternatives. The location of industry also matters: some locational steering to avert serious environmental threats should be possible.

- *Intracity Transportation.* Ultimately, slowing vehicular pollution requires control of the growth in total vehicle miles travelled through land-use planning, public transport, and other means.

- *Urban Land Development and Use.* It is now generally recognized that public sector dominated urban land development is prone to failure and a more promising approach for local governments is to facilitate a market oriented development process. It is important that efforts be made to assure that sufficient land will be developed to keep up with burgeoning urban population growth and that it will be developed at appropriate densities and in an appropriate spatial pattern so as to promote resource conservation and avoid the degradation of environmentally sensitive areas. The key to solutions here probably rests with the local capital budgeting process since the placement of major roads and water mains are the primary determinants of where land will be opened up for development.

Environmental Conditions in Indonesia's Cities

- The overall level of groundwater - which supplies the drinking water to 44 percent of the urban population - is sinking across Indonesia, largely because of heavy extraction from industry and urban expansion. The lack of waste water treatment in urban areas and salt-water intrusion appear to be rapidly decreasing groundwater quality, although no regular measurement program monitors it. Salt water infiltration is occurring in Medan, Cilegon, Jakarta, Semarang, Denpasar, and the northern coast of West and East Java. The most critical problem is in Jakarta.
- 80 percent of infant deaths are still caused by water-related disease in Indonesia.
- Sewer systems reach less than 5 percent of the urban population, and only a fraction of this sewage gets treatment. The great bulk of the urban population - 68 percent in Jakarta - use septic tanks. However, less than 10 percent of the sludge from these septic tanks gets treatment. In sum, most human waste gets dumped untreated.
- Only 60 to 80 percent of Jakarta's garbage gets collected and transported out of the city. The share is substantially lower for many smaller cities. The uncollected garbage gets dumped into waterways, causes water pollution and drains to block.
- A recent study (1988) gave Jakarta the worst ranking in air quality - along with seven other cities - of the world's 100 largest cities based on either suspended particulate matter or sulfur dioxide concentrations for these cities. The rapid growth of motorized vehicles in Indonesia - projected at over 10 percent per year and, thus, more than doubling by 2000 - bodes ill for future air quality. Inefficient land use plays a key role in increasing vehicular emissions.
- In 1988-89, 61 percent of industries in West Java failed to meet waste quality standards. A similar study of 100 industries in the Citarum, Cisadane, Ciliung, and Cileungsi river basins found that 70 to 80 percent fell short of these standards.

Giving Primacy to Local Leadership in UEQM

The consultants say that there are two fundamental lessons that are the keys to a more forceful approach to urban environmental quality management. The first is based on international experience: *UEQM objectives must be built into initial urban development planning processes (after-the-fact assessments are necessary, but alone insufficient to have a major effect on environmental trends)*. The second is perhaps the most basic lesson with respect to urban development: *local leadership is likely to be much more effective than central government in directing the urban development process, including UEQM, in individual cities*.

What are the major instruments available to government to influence environmental outcomes in cities? The most important are the programming of urban infrastructure and services. While related programs are needed as well, it is impossible to imagine effective UEQM that does not entail enhanced water supply, waste disposal and treatment, proper drainage, and the guidance of land development (which is primarily influenced by the placement of major roads and water supply mains). Indonesia has already decided on the most effective institutional means for planning and implementing urban infrastructure: to place primary reliance on local government.

With the many failures of public sector attempts to deliver goods and services, there has been a natural tendency of late to shift functions to the private sector where possible. But it is clear that UEQM as a whole is not something that simply can be left to the workings of the private market to resolve. Because it guides and coordinates the

activities of both public and private institutions, and because there are many externalities to be dealt with, UEQM must begin with what is inherently a public sector decision making process. Furthermore, basic standard setting, monitoring, enforcement, and record certification activities are activities that must always remain government controlled (if not always government performed).

This being said, however, there are strong reasons to involve the private sector in UEQM and to do so much more actively and positively than has generally been the case in the past. Private sector leaders can participate in the process of planning and standard setting by making recommendations, and they can play an active role as partners in educating the public about a new strategy. Private institutions (firms, NGOs, community groups, households) also can take on a much larger share of the work in implementation. But it must be emphasized that leaders likely to be most effective in these areas (public and private) are local leaders; i.e., those most directly affected by future change in their own communities.

It should be emphasized, probably more than anything else, that operationalizing UEQM means building it into the regular decision making processes of those who plan and implement infrastructure and other elements of urban physical development. Unless this is done, simply establishing a new environmental office in city hall will be a purely symbolic act (possibly a counter-productive one, if it done in a way that perpetuates the "separateness" of environmental issues).



UEQM Strategy Formulation

The process of strategy formulation might work as follows:

1. A central technical assistance/training team would work with local government staff in preparing analyses of the development and environmental challenges faced by a city (and the relationship of the city's current PJM - the medium-term investment plan - to those challenges). These would include analyses of trends and strategic options related to land development patterns and economic development as well as environmental conditions. Results of surveys of consumer demand would also be incorporated.
2. The Walikota would then call in his top management staff along with a few key private and community leaders for a series of meetings (or retreats).
3. At these meetings, local technical staff (with assistance from the central team) would present their ideas coming out of their analyses, i.e., outlining alternative strategies for development open to the city and presenting rough estimates of the impacts of each (e.g., infrastructure and land development requirements, costs and potential financing, environmental impacts, impacts on job creation and economic indicators). The estimates would be presented only to stimulate the joint thinking of the local leadership team, not in the manner of hard forecasts.
4. The leadership group would review, discuss, and debate the results of the analysis. The circumstance would force them to consider basic strategic options and tradeoffs between conflicting objectives in a realistic manner.
5. They would then make basic policy and program decisions that would set definite guidelines not only for PJM revisions, but also for revising and adding other programs as needed to achieve environmental and physical and economic development objectives.

After-the-Fact Environmental Assessments

There is no doubt that use of Environmental Impact Assessments, such as Indonesia's AMDAL process, is a basically sound approach to environmental management, and that a high priority should be given to strengthening it. However, AMDAL alone is neither the sole, nor even the most important, component of an effective UEQM process. The logic for this view starts with evidence on the failures of earlier "after the fact" environmental impact assessments in many other countries (e.g., the United States) where they have been applied diligently.

In the traditional project planning and design process, developers and their design teams (public and private) make decisions through a complex series of tradeoff analyses (some are explicit and quantified, most normally are not). A particular site plan or route design is put forward and then evaluated, balancing the quality of the physical product (in relation to specific project objectives) against its cost. This may occur solely within the mind of the principal designer, or as a part of joint decision making by a team, or most often, as a mix of both. In all cases, many adjustments are made as the work proceeds. The process takes time and resources and the participants build strong allegiance to what they have created along the way. When a group of "outsiders" then assesses the design from an environmental point of view and recommends changes, the development team and its sponsors are naturally likely to resist. And evidence from around world indicates they can be very powerful in doing so.

Take the example of the architect designing a tourist resort. If the architect places high value on environmental impacts, as well as costs and other design requirements, while

design alternatives are first being conceptualized, it is much more likely that maximum creativity will be applied in finding solutions that will achieve a reasonable balance between all relevant objectives. Clearly, there are situations in which value tradeoffs cannot be avoided; e.g., where protecting the environment will cost more. But this is not the typical case. Many times, creativity at the outset has led to solutions that avoided environmental problems and achieved substantial cost savings. Yet such solutions are not likely to be searched for if value is not placed on environmental objectives in the design process itself.

The point is that *environmental considerations need to be there at the very moment that other types of tradeoffs are being assessed*; every trial design needs to be considered from the point of view of product quality (in relation to project objectives), cost, and *environmental impact* at the same time. This does not mean that there will be no continuing need for outside pressures. Regulations, taxation, fees and other techniques will always be important to create strong incentives for design teams to give enough weight to environmental impacts (the longer term objectives of sustainable development) rather than short run outcomes alone. Nonetheless, it is clear that UEQM goals will not be achieved by such pressures alone. Environmental considerations must be brought inside initial planning processes.

Land Development and the Urban Environment

The impact of land use cuts across water, sanitation, and solid waste management. Development over aquifers and water recharge areas pollutes urban water supplies. Tight land markets caused by regulation and oligopolies raise land prices and force low-income people, in particular, onto the most environmentally precarious sites, such as lowlands subject to floods. Alternatively, high densities in inner-city kampungs rise and contribute to contamination of shallow wells by many septic tanks. Concentration of offices and business in one city center helps cause long commutes, air pollution from auto use, and high densities.

The absence of means for coordinating agreement on basic land-use matters is an important obstacle to improving the urban environment. Even if environmental impact assessments are conducted they can seldom reverse bad locational decisions. Key performance issues in this area are:

- *Inappropriate development regulations.*
- *Oligopolistic land markets.*
- *Lack of roads.* Because of transportation bottlenecks, access is the key to land value in much of urban Indonesia. The lack of adequate road access greatly limits the amount of land suitable for development in Indonesia's large cities.

Joined with potential conflicts between different public agencies on basic land-use issues, these factors have contributed to raising the price of urban land and constraining the supply of urban land avail-

able for development. These problems hit low-income households hardest, forcing them to live in increasingly crowded conditions often on environmentally sensitive lands and almost always without the benefit of basic public services.



Local Participation in Environmental Decision-Making

Ultimately, the potential for greater decentralization, cost recovery, and, thus, the ability to supply adequate environmental infrastructure lies in responding to local demand. Below median-income people represent a particular challenge. In many developing countries, local government officials do not understand poor neighborhoods, have little access to them, and have great difficulty delivering services to them effectively. Sometimes, the infrastructure that gets built is the wrong type, in the wrong location, local people feel no ownership of it, and do not maintain it. NGOs and, in some regions, organizations with religious affiliation sometimes do a better job.

A key test of responsiveness is the extent to which local people can influence the municipal budget process. The RW and RT, who are elected directly, act as the advocates for their area with higher levels of government. A good RT will forward a stream of requests based on his neighborhood's need upwards. These requests usually deal with small matters at the community level, such as the need for a new public water pipe, complaints about no garbage pick-up, the location of a public toilet. A portion of these requests get responses. One RT interviewed by the consultants had made 32 such requests in the past six months and had 12 granted.

Typically, the Lurah - the lowest official level of government - holds an annual meeting of its council (Lembaga Ketahanan Masyarakat Desa) to discuss the budget. Council members are nominated by the RW and the RTs, but appointed by the Lurah. The infrastructure preferences decided by the kelurahan are considered in a subsequent

annual meeting on the yearly budget at the kotamadya level. The Walikota and his staff develop the budget and take it to the city council. Typically, the council discusses packages that contain many individual projects. At many levels of government, the details of these infrastructure packages are not divulged. Hence, they remain the decision of the executive - at the kotamadya level, the walikota. Individual local people rarely go to meetings of the council at the kelurahan and kotamadya levels and never to the yearly budget meeting. Occasionally, groups of people present their requests.

This evidence suggests that local people do have some influence on small, community level infrastructure. However, they appear to have virtually no formal influence on broader decisions about water, sanitation, and road systems and the formal budget process. Informal channels present greater opportunity. Typically, many groups exist in kampungs - youth, women's, ethnic (based on area of origin), religious, and political groups form and engage in activities. These groups seem to exercise greater informal influence on the kelurahan and kotamadya than do people through the formal budget channels. PKK - a women's group - seems to have particular influence in many areas.

The environmental movement occasionally offers a means for local people to have an impact beyond the community level, usually in the form of stopping a polluting industry that threatens their livelihood. Currently, local people seldom have the opportunity to participate in AMDAL. However, AMDAL regulations and structure do contain provisions for public participation in environmental assessment. As the AMDAL process evolves, it may offer a means for local influence on urban environmental infrastructure.

Cross-Cutting Themes in UEQM

- Economic Incentives
- Effective Regulation
- Environmental Awareness

UEQM managers should always be on the look-out for workable economic incentives to enhance environmental quality; e.g., pricing strategies, user charges, and other techniques that "make the polluter pay." Clearly, these economic techniques will not eliminate the need for regulations, but they should take some of the pressure off regulatory approaches. The keys to effective regulation seem to be (1) keep the rules simple and realistic; and (2) do not bother to put a regulation on the books without a "credible threat of enforcement."

Another activity to be stressed is using a range of techniques to stimulate awareness of the importance of environmental issues and educate all segments of society about their potential role in support of UEQM. The techniques range from mass-media campaigns to building environmental themes into work with community groups and other NGOs related to other programs. There is much evidence that these approaches do change attitudes and, thus, they can make all of the other programmatic approaches discussed here work more easily.

Programmatic themes of UEQM include the following:

- *Responding effectively to service demands that can be met by local governments, and helping to structure a tariff policy that recovers costs from beneficiaries to the extent feasible but recognizes income and demand limitations.* Households now pay for safe water, access to communal toilets, and garbage collection, and are willing to pay more for some types of environmental infrastructure. But it is the essence of markets that households not be forced to pay for services they don't want to buy. The decision as to which local environmental services should be delivered through markets, subject to consumer choice, and which should be delivered collectively through the public sector, and how these latter should be paid for, will be critical to establishing a self-sustaining system of environmental management. Greater exploration of demand, the cost of different options for environmental infrastructure, and the external (community-wide) benefits associated with each is needed before pricing decisions can be made.
- *Appropriate technologies.* Water-borne sewage systems and piped water to individual households are clearly beyond the financial reach of many households. However, alternative technologies of the sort supported by KIP offer lower costs and promise much greater coverage. Further exploration of these options must play an important role in any strategy to improve the urban environment.
- *Building popular support for and awareness of the benefits of environmental quality.* More than most countries, Indonesia has a rich network of local organizations and heritage of community self-help, even in urban areas. This organizational network provides a foundation that can be built on for environmental infrastructure that reaches low-income people. It also provides the framework for collective choice at the community level in prioritizing environmental projects.
- *Private sector participation.* Where markets are judged to be the appropriate institutional vehicle for delivering services, priority should be given to private providers. Already, private sector providers are

active in such key areas as septic tank cleaning and sludge removal and solid waste collection.

- *Measurement and monitoring.* Better data collection and better analysis of the impact of environmental conditions on hu-

man health and economic growth are necessary conditions for better-informed environmental choices. Involvement of the kampungs in environmental quality monitoring is one way to give them a greater sense of control over environmental conditions and investment choices.





RHUDO/JAKARTA URBAN ABSTRACTS



Regional Housing and Urban Development Office (RHUDO)/Jakarta

The Intersection of Poverty and the Urban Environment

During the past year, the Mega-Cities Environment/Poverty Innovation Project has conducted case studies of innovative solutions to problems of poverty and the environment in twelve cities, nine in the third-world and three in the first-world. This working paper, by Janice Perlman and others, was designed to facilitate discussion among project participants at an international meeting held in Jakarta in August, 1993. The paper is divided into three sections. First, current thinking about the poverty-environment intersection is summarized. Second, the specific rationale and structure of the research program of the Mega-Cities Project is reviewed. In the final section, preliminary findings from case studies are presented.

Urban Poverty and The Urban Environment: Consensus and Dissent

The urban poor have lived in the most polluted parts of cities since urbanization began, and so, in one sense, the intersection between poverty and environment is not news. However, we are now facing a qualitatively different dimension in the combined reality of poverty and environmental degradation which is increasingly evident in mega-cities. The poor suffer disproportionately from such negative environmental conditions as the siting of toxic

and highly polluting industries in or near their communities. This is compounded by the absence of viable water and sewerage systems in the squatter settlements and their location on environmentally vulnerable lands, whether on floodplains, marshes, or steep hillsides.

The prevailing wisdom among policy-makers in urban planning and management, environmental protection and international development has finally achieved a consensus that ever worsening urban environmental problems cannot be solved without addressing the underlying problem of urban poverty. Policy-makers remain deeply divided, however, about whether or not poverty can be addressed solely through the stimulation of economic growth and income-generation, or whether we must have a strategy to redistribute income and wealth. This section reviews the emergence of the environmental consensus within international bodies and relates divisions in the thinking about poverty to that consensus.

The Emergence of a Consensus

In the twenty years that elapsed from the Stockholm meetings in 1972 that resulted in the creation of the UNEP (the United Nations) to the Rio meeting, environmental consciousness and action increased. But in the same period poverty around the world increased tremendously

and was accompanied by a magnified polarization between rich and poor, both within and among nations. Our progress in dealing with the relationship between poverty and the environment falls short of what we need in order to create a model of sustainability for the 21st century. There has been a strong tendency to keep on "blaming the victim" -- whether the victim is urban settlements themselves (which are blamed for polluting and degrading the environment) or the people in those settlements, especially the poor. The struggle for survival in squatter areas without access to water, sewers, garbage collection or clean fuel sets up those most at risk for blame in a situation whose genesis and perpetuation lies outside their control.

The socio-economic system that got us into the crisis of environmental decline and poverty holds little promise for getting us out of it. Neither the Brundtland Report, *Our Common Future* nor the UNCED proceedings fully grappled with this contradiction. Neither the capitalist model of development nor the socialist model of development has dealt adequately with how to create sustainable cities of development for the future of our children and grand-children. We need to define a new system or a new social contract between actors and new sets of incentives and rules of the game that to govern a sustainable mode of development. We will not have environmental sustainability without cities; how can we create cities that are socially just as well as ecologically sustainable? This is one of our unsolved challenges.

Neither data nor technology alone will illuminate the path to sustainability. The most difficult task remains finding a way to overcome the status quo which entrenches the way things are so as to protect personal interests and allow special benefits to be gleaned by powerful people. Those exclu-

ded from these protected privileges must be engaged in order to create a new vision and invent a new mode of values and operations. Shaking up the status quo will take a tremendous amount of courage and will.

The earth is to be seen neither as an eco-system to be preserved unchanged nor as a quarry to be exploited for selfish and short-range economic gain. But as a garden to be cultivated for the development of its own potentialities through the human adventure. The goal is not the maintenance of the status quo but the emerge of new phenomena and new values.

Renee du Bois.

When representatives from the world's cities met in a series of forums (including the World Forum in Curitiba and the Mayors' Summit in Rio) in preparation for the U.N. Conference on Environment and Development (UNCED) they emphasized the role of cities, especially large cities, in generating both negative and positive impact on the environment. They also began to evolve a set of recommendations addressing the environmental problems of cities, particularly the rapidly growing cities of the developing world. They saw a close relationship among greater participation and democracy, environmental sustainability and the alleviation of poverty. In short, urban experts realize that the poor are only too well aware of the environmental burdens they endure, and given the right to control their destinies, will work to clean up their physical environment.

At these meetings, while each speaker emphasized a particular aspect of the problem, a clear picture of steps to be taken began to emerge, shaping the Local Agenda. As mayors called for additional funding, the UNDP's representative acknowledged that his organization must address the needs of urban populations more than it has done in the past. Several people drew attention to the crying needs of children in these cities, for whom the hazards of polluted air, unsafe waters, raw sewage, and toxic wastes are critical health problems. Transfers of technology and information among cities of both the South and North were cited as one means for overcoming daunting environment problems within serious budgetary constraints.

Dissenting Views: the Argument for Considering Poverty and Environmental Issues Separately

Arguments that environment and poverty should be treated separately arise from larger debates about development. One theme in these debates is a suspicion that nothing with the stamp of "development" will ever enrich the poor. A second theme represents a moral argument that the poor have been least responsible for the creation of environmental problems and cannot justly be asked to solve them.

Poverty and environmental degradation as we find them in mega-cities can both be seen as by-products of the development strategies of the last four decades. Investment in western-style industries brought millions of people to cities, but was not accompanied by investment in the social infrastructure needed to support that many people. Both poverty and the breakdown of sanitation, water supply and transportation systems inevitably resulted. The failure of social investment was not caused by the lack

of productivity in these new urban industries, but rather by the appropriation of industry's profits by private parties, both domestically and in rich countries. In light of this failure to invest in the social and physical infrastructure to preserve and to improve the urban environment, it may be that major environmental problems can only be addressed through top-down public sector investment in transportation, sewage treatment, etc. Addressing major poverty problems, on the other hand, involves job-creation, credit, and a change in the development model. Placed in historical context, a joint strategy of poverty eradication and environmental protection which approaches both problems through the daily lives of the urban poor, amounts to the same old strategy of "development":



Finally, environmentalism was regarded as inimical to the alleviation of poverty throughout the 1970s. The claim to be able to abolish poverty, however, has been -- and still is -- the single most important pretension of the development ideology. But with spreading deforestation and desertification all over the world, the poor were quickly identified as agents of destruction and became the targets of campaigns to promote environmental consciousness. Once blaming the victim had entered the professional consensus, the old recipe could also be offered for meeting the new disaster: since growth was supposed to remove poverty, the environment could only be protected through a new era of growth. The way was thus cleared for the marriage between environment and development. Certainly the new era requires development experts to widen their attention span and to monitor water and soils, air and energy utilization. But development remains what it always comes down to, an array of interventions for boosting the GNP. (Wolfgang Sachs)

The Challenge

Rapid environmental degradation is overtaking the lumbering pace of policy-making to address poverty. The poor in the world's largest cities are not waiting for an international consensus about how to eradicate their poverty. Urgency demands immediate and creative policy responses to this life-threatening situation for the poor. Addressing

environmental problems cannot be done at further cost to those who are already pollution's most immediate victims. The needs of both people and environment must be addressed simultaneously. If solutions are to be sustainable they must address these problems at their point of intersection in poor communities. For example, if ways can be found to restore the ecological balance while at the same time generating income for the poor or improving the conditions in which they live, a "win-win" situation is created.

The policies and programs of the past three decades have been misguided, ineffective and sometimes even counter-productive. The need for creative new approaches is urgent. While "experts" are debating, community-based organizations and local governments are proving that alternative approaches at the neighborhood level can simultaneously begin to regenerate the environment and alleviate the impact on the urban poor. There is a great deal to be learned from systematic exploration of these initiatives. It is time cities were able to learn from each other so they can share successful approaches and avoid repeating each other mistakes.

Urban Environment/Poverty Innovations In Mega-Cities

The Mega-Cities Project received UNDP funding for a set of analytical and evaluative case studies to document innovative solutions to the problems of poverty and the environment in nine of the largest cities in the developing countries. These cases will later be compared to a parallel set of case studies underway in New York City, Los Angeles and Tokyo, which have been funded by the Kellogg Foundation and the Japan Center for Global Partnership. Our case study method is designed to uncover not only the technologies and practices being

used, but also the social context in which they are embedded. Aggregate data do not help us to learn from our success, while well-documented, analytic case studies can. They help us to illuminate the process and the practice which makes an innovation work, to grasp the social and political dynamics behind it, and to learn the conditions needed to up-scale it into public policy, and then to attempt replication and transfer.

The innovations we have studied range in scope from the neighborhood to the metropolitan area, and they can be initiated by the public, private or grassroots sectors. All meet our basic criteria of being socially just, ecologically sustainable, politically participatory and economically viable. The nine case studies agreed upon are summarized below and the six for which we have draft reports are analyzed in the table that follows.

Innovation Summaries

LATIN AMERICA

1. Rio de Janeiro: Reforestation of Favelas

Description: Since 1980, the favela Residents' Association and the Municipal Social Source Secretariat have been developing a multi-pronged project of drainage, sewage, reforestation and environmental education. The planting of fruit trees and vegetables on the hill-sides has served to prevent erosion, prevent further precarious settlement, provide jobs, and enrich the diet of some communities. It has also reduced the public expenditure for costly civil engineering works which have often been called for to reinforce these hillsides against erosion. The separation of sewerage and drainage systems and the preservation of water sour-



ces, springs, and fountains, have produced profound health benefits within the community. And, the accompanying environmental education program in local schools is raising the awareness of the next generation of urban citizens.

2. Sao Paulo: "Alert II" Air Pollution Awareness Event

Description: Alert II is an extensive public education campaign, designed to raise awareness about air pollution, and to encourage people not to drive on days when air pollution levels are dangerously high. Sao Paulo is in a low basin and therefore prone to severe thermal inversion and high levels of carbon monoxide, ozone, and particle matter. As in most mega-cities, the population most affected by this hazard are those in low-income settlements. High densities and inadequate shelter expose these residents to the worst effects of environmental degradation. Alert II publicizes the simulation of an air-pollution emergency, locating air monitors and pollution educators along the major travel corridors leading to the central city, and promoting public transportation from the periphery of the city. During the 1988 event, 90% of Sao Paulo's driving public left their cars at home. Alert II is the first step in getting the necessary public support for traffic measures that would have to be enforced in Sao Paulo in order to improve air quality.

3. Mexico City: El Molino Integrated Community Development

Description: The squatters of El Molino, calling themselves the United People (Pueblo Unido) have incorporated several types of innovations into their community. Their houses display different styles of self-help

construction using prefabricated modules made on site with local materials. They are each built on a concrete slab which enable them to "float" through earthquakes, like rafts on water. Household waste water, garbage and sewage are conducted by above-ground rubber tubing into a "SIRDO" which dries and filters it to create clean enough water for aquaculture and community gardens, as well as fertilizer which is sold for a profit.

4. Buenos Aires: The PAIS Plan

Description: In December, 1989, the Ministry of Social Action of the Buenos Aires Province initiated the PAIS (Programa Alimentario Integral y Solidario, or Integrated Joint Nutrition Plan), gathering the efforts of the regional government, local NGOs and the inhabitants themselves to help the city's low income population. It is designed to improve the access to food, to begin and support Multifamily Kitchens, to improve the urban environment by using vacant plots to create vegetable gardens, and to encourage low-income groups to organize themselves for self-production projects and productive micro-enterprises. Beginning with the development of community kitchens, comprised of 3 to 20 families which purchase food in common and cook together, the PAIS Plan is organized into three states: the formation of the Community Kitchens, each of which has a formal borrowing relationship with a private bank; the encouragement of self-production by providing inputs of flour, seeds, and home machinery; and, the organization of productive micro-enterprises through subsidies to cooperative organizations developed out of the Community Kitchens. This self-production simultaneously addresses poverty and environmental issues by involving low-income settlements in urban gardening for consumption and micro-enterprise.

ASIA

5. Bombay: CORO Pay Toilet Project

Description: Bombay's Community of Resource Organization (CORO) is working to provide sustainable, community run sanitary facilities in the city's low-income settlements. In the congested slum areas, stationary toilets have proven difficult to build and nearly impossible to maintain, but in July, 1992, CORO took over the management of government constructed toilet facilities in several locations throughout the city. Local groups manage the toilets on a cooperative basis, sometimes finding sponsors for the poorest areas where the toilets cannot pay for their own upkeep. The maintenance activity is providing monthly pay for 500 workers, while community members who are happy with clean facilities and adequate water are willing to pay.

6. Delhi: Action for Securing Health for All (ASHA)

Description: One out of every six persons in Delhi lives in a slum. Diseases of poverty -- air and water-borne illnesses, skin infections, malnutrition -- are rampant. ASHA (literally meaning "hope") is a voluntary organization which has initiated a service delivery project to improve health conditions of the people in Delhi's slums. The program has several intervention points: low cost clinics within slums, training local women as Community Health Workers, and formation of women's groups which organize income-generating programs, sanitation, and awareness of health-related issues. Since its inception ASHA has increased its coverage from one slum of 4,000 people to 15 slums with over 100,000 residents.

7. Jakarta: Greening Program at Bidara Cina

Description: The Greening program is aimed at upgrading the quality of urban environment while, at the same time, allowing the people to raise their income through planting vegetables and other economically valuable plants, proves the feasibility of applying a new approach to alleviating poverty and environmental problems in slum areas. The program has two unique characteristics which distinguish it from other programs: (a) it is a community-government partnership, through the mediation of an independent quasi-public agency; and (b) the interests of the people, specifically for ways to raise their incomes, is central to the program. Currently, the program covers an area of about 126 hectares with the population of around 44 thousand people. Some parts of the area have a density of more than 600 persons per hectare.

MIDDLE EAST and AFRICA

8. Cairo: Zabbaleen Environment and Development Program

Description: In Cairo the Zabbaleen have traditionally been the garbage collectors, sorting and recycling. In 1980, when the enormous growth of the city had far outstripped their capacity, a creative partnership was formed between their community organization, their trade association, a technical assistance group, and the local government, to legitimate the Zabbaleen system and upgrade the community and its capacity. The program creates thousands of jobs through several income-generating components, enabling the community to increase the value added of its activities. For example, several micro-enterprises were developed with small machines that could convert sorted and cleaned raw materials into simply

manufactured products such as rubber shoe soles, plastic dolls, and metal dishes, which could be sold for considerably more. The program also included a composting plant, a neighborhood clean-up project, and a mechanization project.

9. Accra, Ghana: Recycling Waste for Market-Gardening

Description: Low income wage earners in Accra's substandard neighborhoods have developed a waste recycling management system for market-gardening that supplies the city with 90 percent of its vegetables. The process involves four components: 1) domestic wastewater purification for watering vegetables through the damming of storm and wastewater channels, the erection of a filtration gate and the collection of water for hand-bucket irrigation; 2) rehabilitation of eroded valleys and storm-water channels in substandard neighborhoods and along street-ways through terracing, soil reconstruction, vegetable garden-bed construction, and the stabilization of eroding slopes; 3) the use of discarded industrial matter for fencing market gardens; and 4) composting domestic solid matter for soil enrichment.

Preliminary Findings and Conclusion

The case studies provide several insights into how poverty and the environment might both be addressed by a single innovation. Innovations reduced poverty by providing opportunities for income generation through jobs, organizing of collectives and commercial enterprises, and developing skills. In all cases, innovations improved community and city environments by increasing community environmental knowledge. Each innovation also aimed to physically improve one or more aspects of the local environment. The following points highlight some of the

factors underlying successful innovations, as well as some of the specific issues that emerged in these cases.

- Commitment by parties both inside and outside the community was critical to success in all cases. It is not surprising that community participation is an essential ingredient for success, but outside support and involvement was also critical in these cases. Critical outside intervention is not limited to financial backing for start-up investments in toilets, seedlings or garbage trucks. Technical expertise, political leadership and managerial experience were also critical contributions from outside collaborators. In the case of the El Molino sewer technology, the ineptitude of outside parties was a major factor in the project's failure.
- Leadership and imagination are needed to prevail over most "hindrances". Participation can be disastrously impeded by obstacles such as resistance to paying for service, or "turf" battles with parties who fear that the innovation will encroach on their interests, such as the "Wahis" in Cairo. The solutions to these problems are rarely technical, but rather require flexibility, the ability to negotiate, and imagination.
- The introduction of fees for services may be much more complex than it seems. In both projects in India, communities initially resisted paying for services when they were provided by through the aegis of government. Both studies documented that resistance, diminished when communities

were satisfied with the service. But questions remain in the CORO pay toilet case because men outnumber women by 50 percent, and children rarely use the toilets.

- Job creation alone may not address poverty. In both the reforestation of the favelas and the CORO toilet scheme, the collectivization of participants was also important. Collectivization was implemented to remedy flaws in the initial management structure at the toilets. CORO improved the operation of the toilet scheme by decentralizing management and giving local collectives responsibility for maintenance and a direct share of the income.
- Resources are scarce in poor communities. Conflicts resulted whenever project designs in poor communities relied on unremunerated contributions of labor or space or cash.
- Innovations can be diffused within a city through networks of activists and voluntary organizations. With the exception of the El Molino case, all the other cases were implemented using existing social networks that extended beyond the community boundaries. The diffusion of the innovation from its original site to other sites occurred through networks of resident associations, activists, health workers and other groups. "Community participation" was directly identified as the key factor in all the successful innovations. As the studies revealed, participation was most often a function of the project's effectiveness in addressing poverty. The ca-

ses also show two sides to the poverty dimension of an innovation. On one side, the innovation's approach to alleviating poverty had to be bonafide; that is the jobs must be real and pay at least market wages, and opportunities for entrepreneurship must be accompanied by support for enterprise development and access to credit. On the other side, technologies introduced must be sensitive to the resource constraints of poor communities; i.e., they must be inexpensive and simple to maintain.

"Environmental education" was cited in all cases as one of the community goals achieved by the innovation. In many of the cases "education" was defined broadly and included an aspect of an enhanced sense of community control over local environmental quality. These benefits are the most difficult to measure, but may be the most fundamental to furthering the innovation process.

These case studies point to the complexity of innovation in the poverty/environment intersection. Introducing social and technological change in a setting with little margin for experimentation increases greatly the risk of failure. Flexibility and adaptation cannot be simply a matter of absorbing costs and "writing off" losses. Rather, the innovation process must create its flexibility out of the political capital and intelligence of the innovating leaders and communities. The process of urban innovation is thus not exactly equivalent to innovations in other settings. The case studies have only begun to answer our original questions about the innovation life cycle, and have stimulated many more for future urban research.

TABLE 1. MEGA-CITIES URBAN ENVIRONMENT/POVERTY INNOVATIONS

	LATIN AMERICA			ASIA		MIDDLE EAST AND AFRICA
<i>Site</i>	Rio de Janeiro	Sao Paulo	Mexico City	Bombay	Delhi	Cairo
<i>Innovation</i>	Reforestation of Favelas	Alert II Air Pollution Awareness Event	SIRDO Sewage and Waste Disposal Technology	CORO Pay Toilets	Action for Securing Health for all (ASHA)	Zabbaleen Environment and Development
<i>Issue Addressed</i>	Soil Erosion	Air Pollution	Sanitation	Sanitation	Basic Health	Solid Waste Management
<i>Who Initiated?</i>	Public Sector response to Resident Association request.	Federal and State Government in collaboration with private sector, especially auto industry.	Promotion by inventor who has patented technology and distributes it exclusively through a for-profit firm.	National Department of Science and Technology, in partnership with CORO, a local NGO/Activist group first organized to do literacy work in slums.	Local organization headed by an innovation "champion."	The National Government
<i>Collaboration/ Implementation</i>	Municipal Secretarial of Social Development, Resident Associations directly employed community members.	Federal and State government, auto industry, high school students, media	Product champion's firm, communities.	Paid community literacy activist and, at each site, 10-15 volunteer youth and women.	Public Sector, PVO, community-based women's organization.	The directly interested ethnic communities, the national government with EQI and the community, the World Bank, the Ford Foundation, and other NGO's.
<i>Sustainability: Costs and Benefits</i>	"Low-cost": one yr. implementation + three yrs. maintenance = \$US 6919/hectare.	Very costly, but with large benefit; both would be difficult to quantify.	Benefits in reduced waste and in profits from micro-enterprise may be high, but sunk costs and operating costs are also high. Risk is a factor, as this technology either works or is a disaster.	Four small sites are self-sustaining. Largest site, having two-thirds of the toilets, does not break even.	Unclear ... expenses = 2,944,520 Rs in 1992; revenue = 120,000 Rs in 1991.	Many components are now commercially viable. Project design for all components includes cost recovery.

TABLE 1. MEGA-CITIES URBAN ENVIRONMENT/POVERTY INNOVATIONS (continued)

<i>Site</i>	Rio de Janeiro	Sao Paulo	Mexico City	Bombay	Delhi	Cairo
<i>Innovation</i>	Reforestation of Favelas	Alert II Air Pollution Awareness Event	SIRDO Sewage and Waste Disposal Technology	CORO Pay Toilets	Action for Securing Health for all (ASHA)	Zabbaleen Environment and Development
<i>Issue Addressed</i>	Soil Erosion	Air Pollution	Sanitation	Sanitation	Basic Health	Solid Waste Management
<i>Hindering Factors</i>	Hostile Drug Lords blocked access to reforestation sites, traditional hot-air balloons caused fires, livestock keepers were hostile, lack of political will for projects in low-income areas.	Technicians resisted disseminating technical information, law enforcement officers were reluctant to engage the public, and the large banks participated only after an alternative banking site was established.	Conflicts about the operation of the technology and about the space it required strained relations between communities and the firm controlling the technology. In one community this resulted in a law suit.	Resistance to paying for toilets, especially when free toilets were demolished in the course of constructing pay toilets. Also, some politicians jumped off the band-wagon, after initially promoting the project. Technical problems related to water supply and drainage forced curtailed service.	Conflicts between the project and the communities about the provision of clinic space. Resistance by communities to paying the government for service.	Initial hindrance from the legacy of conflict between the Zabbaleen and the Wahi—the garbage “middlemen.”
<i>Nature of Community Participation</i>	Participation was key, but depended absolutely on being able to pay wages to workers from the community.	Broad public participation defined the event, which they call a success. 90% of drivers complied by not driving. 94% of the people surveyed by Gallup supported the initiative.	Community participation was essential to successful implementation, but structural dis-incentives to participate were difficult to overcome.	In general, participation was high, except among children. Also, a significant male bias suggests that structural obstacles inhibit women from participating.		Community participation by all communities, but especially the Zabbaleen, was the most important factor in success.
<i>Other Helping Factors</i>	Leisure uses of the forest increased community interest.	Pre-existing public concern about pollution, and other environmental issues. Some “reluctant” collaborators participated because they feared being flagged as anti-environmental.	Moderate or higher income communities.	The reorganization of the management structure from a centralized city-wide organization to locally controlled collectives improved both financial accountability and the quality of maintenance.	The role of women enhance the project’s success, as they proved to be the best health communicators.	Simple, labor-intensive technologies. The linkage of environmental improvement to enterprise promotion.

TABLE 1. MEGA-CITIES URBAN ENVIRONMENT/POVERTY INNOVATIONS (continued)

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<i>Innovation</i>	Reforestation of Favelas	Alert II Air Pollution Awareness Event	SIRDO Sewage and Waste Disposal Technology	CORO Pay Toilets	Action for Securing Health for all (ASHA)	Zabbaleen Environment and Development
<i>Issue Addressed</i>	Soil Erosion	Air Pollution	Sanitation	Sanitation	Basic Health	Solid Waste Management
<i>Quantifiable Results</i>	144 men and women are employed. 40,000 people benefited directly from the reforestation of their communities.	On the day of Alert II, a 90% participation among 300,000 drivers. 50% reduction in carbon dioxide levels.		600 toilets in six slums, serving 28,440 users.	In each slum, five to 17 people are employed. They serve a total of 100,000 residents.	50 solid-waste handling communities now exist and have generated thousands of durable jobs.
<i>Impact on Poverty</i>	Job creation, collectivization of streetdwellers and beggars, strengthening of Resident Associations, community control of fruit harvest from trees.		Theoretically, jobs in micro-enterprises would be created, but the systems were not appropriate for low-income communities.	Job creation, collectivized community labor. Also, because the organization's main activity has been in literacy, the toilet scheme enhances their literacy effort.	Job creation; improved health; elevated resistance of women to oppression.	The Zabbaleen economy has been completely restructured. In addition to the waste enterprises, the project includes a credit scheme for women-headed households, upgraded housing and upgraded infra-structure.
<i>Environmental Impact</i>	Public environmental education, reforestation, soil stability; water quality and improvements in the climate [!]	Public environment education about automobile exhaust as the primary source of air pollution. Increase in political will to correct causes.	Environmental education. Sanitation was improved in one community where the technology was successfully implemented.	Better Sanitation.	Water and Sanitation services are improved (no elaboration on this point).	Improved sanitation, community health education and environmental awareness.
<i>Potential for Replication and Transfer</i>	Replication occurs through Resident Association "network".	Innovation was transferred to NYC. Sao Paulo would prefer <u>not</u> to repeat.	Restricted by patent. The technology has been heavily promoted through various media.	Replication in Bombay through the network of CORO activists. The innovation has diffused to other Indian cities.	The innovation has been replicated in 15 Delhi slums.	Individual components are replicated all over Cairo in the form of solid-waste handling companies.