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Urban Environment Management Program

Review of Selected
1980-1992 IDRC Project
Literature

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October 1993

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EXECUTIVE SUMMARY

INTRODUCTION

The purpose of this review of selected IDRC project literature is to present and comment the scientific contributions of the technical reports and related production of these projects in relation to the approach and objectives of the Urban Environment Management Program (URB), with a view to document achievements and further define the Program's research approach for the next three to five years.

The general approach and objectives of the URB Program¹ can be outlined as follows:

To promote participatory and scientifically rigorous research to determine the causes and responsibilities for people's vulnerability to severe urban environmental conditions, as well as the constraints and opportunities for people strategies of vulnerability reduction, in order to devise socially and economically attractive solutions for prevention and mitigation, which can be implemented by people's organizations alone or in collaboration with public and private sectors.

The project review focuses on the themes retained by the URB Program at the time the review was commissioned: Disaster Prevention and Mitigation, Waste Management, Water Management, and Urban Agriculture. A section is devoted to each theme below, and a final section comments on lessons learned and points to areas of particular concerns in term of future URB research.

While the review cannot be regarded as an exhaustive coverage of actual findings,²

¹ The synopsis document of the URB Program is titled "Urban Environment Management Program, ENR/IDRC" (formerly titled "Global Program Initiative on Urban Environmental Management: water, disasters, waste, urban agriculture." This document is referred to in the text as the 'URB document'.

² Due to resource limitation, not all contributions of past and present IDRC projects to the URB Program are captured in this review. Firstly, only a limited number of projects (30) have been initially retained for review. Their selection relied mainly on a reading of the summary of approximately 300 IDRC projects which have begun after 1980, identified through an extensive search on the IDRC database (IDRIS). The project selected were those whose abstracts corresponded more closely to the URB Program. Secondly, the social sciences background of the reviewer has led, perforce, to the temporary omission of several of the selected projects or sections thereof which pertain to physical sciences, a list of which can be found in the full report. Thirdly, in the course of the review, project reports or related production were found to be yet unavailable for some of the projects selected. These projects were therefore also omitted from this review. Finally, not all main findings in the documents analyzed are reported here, but only those that are more directly related to (although not necessarily in agreement with) the approach and objectives of the URB Program.

the sum of information it contains nevertheless is strongly indicative of the experience gained from IDRC projects over the last 12 years with regard to URB's concerns. It should therefore be accounted for when specifying the Program's strategy for future project development.

1. DISASTER PREVENTION AND MITIGATION

1.1. Causes of vulnerability.

The impact of disasters, in terms of losses and damages for a society, are the result of two broad categories of concomitant causes: (a) the natural, physical 'triggering' components of the disasters, such as cyclones, volcanic eruption, earthquakes, torrential rain, drought, etc., which in most cases are increasingly predictable though still largely unpreventable and uncontrollable; and (b) the human, primarily socioeconomic, or socio-cultural, or institutional activities or structures which increase people's vulnerability to the former (or fail to reduce it), which are perceived as being correctible in various degrees, such as poverty, settlement deficiencies and the lack of formal and informal organization for prevention and mitigation.

Notably, certain 'triggering' physical events of increasing recurrence and devastation, such as landslides, floods, land subsidence, observed mainly in urban areas and often believed to have 'natural' origins, are largely caused by human actions (e.g. deforestation, land over-exploitation, and ground water over-extraction, respectively).

People's poverty is most often seen as the primary cause of their vulnerability. The effects of poverty are well demonstrated in the documents: hazardous location and deficient housing, hesitation to evacuate in the face of disasters, inability to cope with the impacts and consequences of disasters due to poor health or lack of financial resources, etc.. At any rate, the relations between wider structural causes and vulnerability remain to be demonstrated, as suggested in the URB document (item 4a).

The State's share of responsibility for vulnerability is generally perceived to be substantial, mainly for its neglect of prevention and mitigation measures. Everywhere, resources are allocated almost exclusively to preparedness and relief activities, where nonetheless the results are generally disappointing. The main problems observed are: absence of prevention and mitigation policy; inefficient decision-making and institutions due to over-centralization, underfinancing, poor inter-institutional coordination, and corruption. Also, existing laws, regulations and norms are disconnected from social reality, which precludes their implementation.

Moreover, various weaknesses in educational curriculum and media systems result in

the lack or absence of popular preparation for prevention and mitigation. The inadequate preparation of the population can in part result also from individual perceptions and attitudes regarding risks of disasters, including fatalism and passivity, which can represent strong constraints to possible adjustment strategies.

1.2. Constraints and opportunities for people's adjustment strategies.³

The weakness or absence of State action may suggest the need for greater people or community empowerment, not only to pressure governments towards greater responsibility, but mainly for people and communities themselves to design and implement the preventive and mitigative measures required for their safety. This closely agrees with the URB Program's approach and objectives regarding environmental risk reduction (URB document items #8c, 9a, 9b). However, as with waste management, the findings point to serious obstacles standing in a way of such empowerment.

Poverty acts as a major constraint in two ways mainly:

- (a) Other basic necessities (employment, housing, food, etc.) are often given higher priority by the poor, absorbing their time and energy to the detriment of cooperative actions for disaster prevention and mitigation;
- (b) National poverty limits the resources available to governments for complementing people's prevention and mitigation strategies, a role which remains necessary according to the documents reviewed (see section 'Solutions' below). For some authors, however, the main problem is one of misplaced priorities in terms of budget allocation by governments.

Another potent obstacle mentioned is that people's or community organizations are often repressed under non-democratic regimes, or neglected due to prevailing government attitude towards illegal settlements and (their) associations.

Other constraints include: fatalist conceptions and attitudes on the part of the population with regard to physical risk; the poor's dependency towards governments; and the simultaneous exposure of people to several different kinds of risks and disasters, which represents a serious obstacle to strategies for prevention and mitigation.

³ The concept of *people's adjustment strategy* in the URB document refers essentially to plans designed and actions taken by local communities or individuals to deal with their vulnerability to disasters.

Few successful cases of civil or community organization for disaster management are reported, and these refer almost exclusively to emergency and relief actions. Success stories need to be explored for determining factors and potential for replication.

1.3. Solutions proposed for vulnerability reduction

As mentioned previously, the State is perceived as having a major, if not the main responsibility for reducing peoples' vulnerability, although the need for, as well as obstacles to cooperation between government and people (community) are recognized.

Fundamental changes are required within government organization as well as in the State-population relationship. Decentralization is strongly recommended in nearly every document. People's participation is necessary to allow local inputs in government strategies, which would lead to a better assessment of and response to popular needs by governments in terms of prevention and mitigation. Specific legislation and accompanying apparatus must be established to coordinate the actions of the various actors involved.

Perhaps the most urgent and important step proposed toward a solution in relation to the desired disaster prevention and mitigation efforts is to consider the 'need rationale' of both State and the poor. In a few words, neither governments nor the poor will act to solve a problem which they see as a lesser priority, unless these actions are conceived to bring tangible benefits for these parties in relation to more urgently felt needs, such as national savings for governments (via reduced reconstruction and social health costs), or employment creation for the poor. This proposition conforms to the URB document's emphasis on designing socially and economically attractive strategies as a prerequisite for people's participation in vulnerability reduction. (URB document items 7e and 10).

2. WASTE MANAGEMENT

2.1. Causes of waste problem

The problem of waste disposal in urban areas is seen as having various causes. At a more primary level of causality, rapid urbanization, itself due to deeper structural causes such as regional disparity, forced industrialization, or concentration of wealth and resources in capital cities, results in rapid increase in demand and poorly planned settlements which stresses capacity for service delivery.

Central and local governments financially strapped by a declining economy are understaffed and/or lack proper equipment. Cost recovery of municipal service delivery is affected by a narrow tax base, which is largely composed of the poor, who would rather

allocate their resources to necessities of life which they feel are more urgent.

Institutionally, public agencies responsible for waste management are seen as lacking in several respects. They are generally over-centralized, complex and bureaucratic, which does not allow the fluidity in information transmission or the flexibility in decision making required to assess and address local popular needs. Local governments are not given enough resources to operate autonomously and efficiently, thus remaining dependent on central government resources, and hence priorities. Corruption has been observed at the level of operations, where users must bribe the operators in order to receive the service, and where poorer neighborhoods are neglected while richer ones are favored.

2.2. Constraints and opportunities for people's (community's) adjustment strategies.

Faced with the failure or shortcoming of the public sector to provide adequate services for waste disposal, most documents point to the need for communities to participate more actively (in various ways and degrees) in the provision of this service. However, serious obstacles stand in the way of this process.

constraints:

Perhaps the most repeatedly reported constraint to people or community strategies for improved waste management is the weakness of community itself. The heterogeneity in the composition of local communities is often observed. Dwellers typically come from various cultural or socio-economic backgrounds, and the diversity of needs, priorities and expectations regarding basic services represents the main obstacles to local participatory strategies. Urban communities on the whole may be less homogeneous, cohesive and cooperative than rural ones. One important study stresses the need to properly define the community sector in urban Africa.

In many cases, although the poor may be aware and concerned about waste, they do not confer a high priority to this problem, while their time and resources are devoted to more urgently felt necessities of life. The URB Program's emphasis on promoting "waste management as a community-based resource-generating activity" seeks to respond to this rationale (URB document item 16.1).

opportunities:

While several problems are reported in relation to community cooperation, instances of successful community organization and self-help and promising behavioral/perceptual aspects are also noted. Strong community bonds in some of the poor neighborhoods studied allow mutual help for essential services. In one case, such cohesion is said to be based on

cultural and/or ethnic commitment; in another case, it arose out of an eviction threat; in another yet, such threat of eviction was one of the main contributing factors to community participation for improved waste management after environmental education had failed. The latter two cases lend support to the claim that the poor will cooperate among themselves only in activities which respond to their priority needs.

2.3. Solutions

Most recommendations seem purposefully ambitious or encompassing, thus reflecting perhaps the nature and dimension of the task ahead —one document states that poverty must be eliminated before the waste problem can be dealt with! It is generally agreed that because both the poor (communities) and the State lack the resources required to tackle the problem on their own, they must unite and combine their resources for the task. This requires a better knowledge of community's real needs by government agencies —but also an understanding of government needs by the needy— which are to be gained mainly by decentralization and free flow of communication between authorities and grassroots levels as well as promotion of community leadership. More research is needed to define the actual and potential terms of this relationship.

3. WATER MANAGEMENT

Overview of findings and comments

The projects reviewed have addressed the water theme as one among several other urban services, including waste management, and their principal conclusions and recommendations are general and apply to both water and waste management. Most of the causes of water problems and constraints and opportunities for people's adjustment strategies, in terms of structures, politics, institutions and behaviours, are similar to those observed in relation to waste management. The reader is thus invited to refer to the previous section for a summary. Other projects in the IDRC project database are dedicated to urban water supply and quality resorting to expertise mainly in hydrogeology, structural engineering and bio-chemistry. These projects also relate closely to the URB approach and concerns.

At any rate, urban water management appears in the literature reviewed as being less amenable than waste management to direct popular participation. Participation was observed in one case primarily as a means to pressure government for adequate water delivery, and recommended in another mainly in the form of people's cooperation for the implementation of government initiatives or strategies. Perhaps the larger capital investment and infrastructure (physical and institutional) normally required for urban water delivery could explain the relative absence of CBOs and NGOs active in this field.

4. URBAN AGRICULTURE

4.1. Major obstacles to expansion and improvement of food production in urban areas (cf. 17.1, in URB Program statement)

The major obstacles to the furtherance of urban agriculture are both technical and political: In Kenya, lack of inputs and capital, pests and animal diseases, droughts, flooding, theft, crop destruction by animals. In Kampala, firstly lack of capital, but also lack of access to land, crop theft, lack of security of tenure, tools and technical advices.

4.2. Food production-nutrition interface (cf. 17.2 a))

The produce of urban agriculture consists mainly of subsistence foods and is consumed for the most part by the producing households, which are found mainly among the low-income population; it plays an essential role in the survival strategy of the poor. The sale of surplus also contributes to household income. However, it is the poorer urban households which have the greatest difficulty in producing food for themselves, due to lack of access to urban land, especially in large cities.

4.3. Economic, legal and policy aspects (17.2 b))

Although by-laws prohibit urban agriculture (in most countries), in these case studies, it appears that they are not generally enforced. Harassment of urban farmers by authorities is not a major problem in the cases studied, although over a quarter of sample surveyed in Kampala said they had been harassed and efforts at constraining urban farming have increased in Kenya since 1984. Local authorities are on the whole more lenient or receptive to the practice than central authorities. What is needed is the active support of authorities. (see below)

4.4. Waste re-use and health risk (17.2 c)

Organic waste and wastewater are scarcely used. Waste reuse could improved farm productivity and at the same time contribute to urban sanitation by using as production input animal waste, which is vector for human diseases, as well as domestic and commercial refuse, whose disposal is increasingly problematic. Recycling of wastewater could also relief the burden on municipal water supply, as the vast majority of farmers who irrigate rely on treated piped water. The main obstacles to increased organic waste reuse is the cost of transport and a lack of knowledge about possible benefits. Government incentives for waste reuse should be provided, such as technical advice, or the allotment of space for livestock production in poor neighborhoods together with refuse collection points for animal feed.

4.5. Access to land, crop security and credit (17.2 d))

Very few urban farmers have security of tenure, especially among the poorer segments. Most use public land, especially in larger towns. Lack of access to land and of tenure security are viewed as major impediments to food production. Governments should make unused public land more accessible to farmers, preferably providing some form of tenure guarantee in addition.

Crop theft ranks high among the problems faced by farmers. There are very few formal organizations providing security, credit and other inputs. Although informal cooperation is widespread, especially in smaller towns, most farmers would join formal associations if they existed.

Few NGOs are active in the field of urban agriculture although there is much need for the creation of specialized organizations to provide a variety of services such as credit, technical advices, tools, etc..

4.6. Equity (17.2.e)

A majority of urban farmers are women, the proportion being higher in larger towns. This should be more carefully taken into account when designing farmers extension services.

OVERALL CONCLUSIONS AND COMMENTS

This section attempts to derive certain lessons for the URB Program's research agenda from the overall findings presented in this overview. It should be stressed that, given the limited coverage of the review, the wide heterogeneity of the projects from which the above findings have been extracted, and the fact that none of the projects reviewed have been explicitly developed on the basis of the URB Program's approach and objectives, the sum of these findings contains cannot be regarded as a sufficient measuring tool for the further definition of the URB Program agenda. Nor should the following comments be interpreted as a critique of any project in particular. These findings and comments should primarily indicate possible areas of concerns and opportunities for future research.

a) On research method.

Although the methodology used in the selected projects has not been thoroughly examined in the review, the following common observations are of particular relevance to the URB Program.

The beneficiaries's participation in research to determine the causes of their vulnerability, as well as the constraints and opportunities for solutions, is central to the URB Program. Particular attention therefore was given, in selecting projects for the review, to any such participatory indication to be found in the project's abstracts provided by the Centre's database (IDRIS). It can therefore be safely assumed that the projects selected are rather high on the participatory ladder among IDRC's projects.

In relation to the URB Program's standards, however, participation in research should be strengthened in future research. As a rule, in the projects selected, people's participation consists in responding to semi-structured or structured questionnaires for mapping demographic and socioeconomic indicators, usually accompanied by more in-depth studies of selected households with open interviews or direct observations. Few surveys attempt to discover the needs of beneficiaries, and only rarely are the respondents sufficiently or adequately (it seems) prompted to express their opinions on problems and solutions.

Participation is problematic even in the most participatory studies. Several authors advise that the answers collected, particularly on certain sensitive topics, should be taken with reserve. For instance, the interviewees tend to deny partaking in 'reprehensible' waste disposal behaviour, or understate their real income in order to lessen eventual financial contribution to service provision, or else under authoritarian regimes fail to express their discontentment regarding authorities for fear of reprisal. Also, cooperation in survey is often limited from and by respondents who are suspicious of the interviewers, whom they perceive, wrongly or rightly, as being associated with government authorities. Also, in one of the most participatory studies, the researchers believe that participation is more appropriate and efficient when limited to the survey of needs and in the implementation of solutions, while they perceive the latter to be technically complex and better left to experts. The latter observation may also explain why projects relating to urban water supply and quality, which generally involve a more substantial technological component, are less participatory than projects on the other themes reviewed.

In summary, causes, constraints and solutions in most projects reviewed are identified and analyzed by researchers with no or relatively low level of participation from intended beneficiaries. The extent to which this is due to limits inherent to the participation process or to other factors is unclear and should be a topic of concern, if not investigation, in view of future project development. A priori, insufficient input on the part of the intended beneficiaries in a project which purports to answer their perceived needs, will likely hamper their needed cooperation in the proposed actions. As the URB document states clearly: "Prescription will not be effective unless the research process involves actively those most affected by urban environmental problems (or their representatives), unless these can use the information to hold themselves and other sectors accountable for needed changes. (...) problems will not be solved without participation of the communities concerned in the

choice, implementation and management of solutions." (URB document items 9c and 13).

With regard to scientific rigour, the main and most common difficulty observed is that while conclusions and recommendations generally appear sound and pertinent, they are in many cases not sufficiently demonstrated or supported in the reports by data or analysis, which likely reduces their credibility, and hence their potential impact. In most cases, research does not exceed the exploratory phase, and conclusions are recommendations are in reality intended by their authors as hypothesis or statements regarding problems whose dimensions could not be rigorously analyzed within the time and resources limitation of normal (pre-restructuring) IDRC projects (see "Solutions" below). In some other cases, however, limited demonstration apparently results from poor or unused research capacity.

b) On the causes of vulnerability, and the constraints and opportunities for people's strategies.

The most common (human) causes of people's vulnerability observed across components are: economic crisis, national debt obligations, development models, urbanization, concentration of national resources and wealth, State or people's poverty, questionable political allocation of resources, centralized decision-making systems, bureaucratic confusion, delay or inaction, corruption, and inadequate financing of local governments. Regarding constraints to people's or community strategies -which could also be considered as causes of their vulnerability- we may add: the poor's more urgent priorities; fatalistic attitude; the heterogeneity of local 'communities' and the weakness of local communal bonds; the lack of resources for communal actions and the individual or community's dependency on government authorities; and the government neglect or repression of grassroots organizations.

With regard to opportunities, several cases of promising individual behavioral elements and strong community organization are reported. These however are not analyzed with respect to determining factors and potential for replication.

c) People-designed and implemented solutions.

While selected projects have stated (and some have demonstrated), an interest in people's participation as a requirement for solutions, such participation was extremely limited with regard to the designing of these solutions. This should not necessarily indicate, however, that solutions proposed are not *socially or economically attractive and rewarding* (URB document items 10 and 13d).

As the URB Program focuses attention on the prospects of community action to solve urgent urban problems, the nature and strength of community may represent fundamental

issues in its research agenda. In the literature reviewed, as elsewhere, the concept of community is usually not defined, but seemingly used evocatively to refer to a territorial cohesive aggregation of families and individuals (with boundaries or confines rarely made explicit) bound by common needs and sustained interrelations. The project literature also reveals, however, that the urban community is often marked by heterogeneity of constitutions, needs and interests, and beset by lack of cooperation, by tension and strife (including murder), although examples of cohesive communities are also reported. The existence, nature and potential of urban communities need to be identified, given the latter's importance as both a major client and beneficiary of URB Program's research projects.

d) Cooperation between government and population

Finally, one of the main conclusions reached in most documents reviewed is that, since both the poor and the State lack all of the resources they need to tackle existing basic problems on their own, they must combine their resources for the task. This calls for a greater and better cooperation between governments and (poor) people. The nature and degree of such cooperation vary widely across documents and components, although a common denominator seems to be decentralization, which in essence is greater people participation in local government to better express their needs and pressure the latter for answers, coupled with greater local government answering capacity through enhanced financial, institutional and political autonomy vis-a-vis central governments. The task is indeed demanding, considering the obstacles to effective people and government actions and cooperation mentioned in the literature reviewed. Moreover, seen primarily from a political science/political economy perspective, such proposed transformation in the relationship between State and (poorer) population portends far-reaching consequences for the society as a whole in developing countries, since the demand for compromise involved in the proposed cooperative structure is liable to extend rapidly, one presumes, beyond the needs for cleaner and safer urban environments and adequate water supply, to concern other (perhaps more) urgent and costly necessities of life, such as nutrition, housing, health, and employment. Thus, one may be entitled to seriously and realistically doubt that existing power holders would be inclined or willing to face the pressures and costs involved in such transformations. It remains unclear to what extent such recommendation has been based upon a careful consideration of the potential obstacles and constraints presented in this review. In any case, projects aiming at feasible and sustainable solutions should be attentive to all carefully.

At any rate, if, according to the information garnered in this review, the prospects for effective decentralization and government-people cooperation are not glistening, those for total people or community autonomy for solving urban problems is no more promising given existing socioeconomic and political structures. A feasible compromise between these two options may be considered.

INTRODUCTION

Aim of report

This review of selected IDRC projects presents and comments the scientific contributions of their technical reports and related production, with regard to the approach and objectives of the Urban Environment Management Program (URB) with a view to documents achievements and further define the URB's research agenda for the next three to five years.

The general approach and objectives of the URB Program can be summarized as follows:

To promote participatory and scientifically rigorous research to determine the causes and responsibilities for people's vulnerability to severe urban environmental conditions, as well as the constraints and opportunities for people strategies of vulnerability reduction, in order to devise socially and economically attractive solutions for prevention and mitigation, which can be implemented by people's organizations alone or in collaboration with public and private sectors.

Reach and limits of report

Due to resource limitation, not all contributions of past and present IDRC projects to the URB objectives are captured in this review.

Firstly, only a limited number of projects (30) have been initially retained for review. Their selection relied mainly on a reading of the IDRIS abstracts of approximately 300 projects identified through an extensive search on the database with the help of library personnel.¹ The project selected were those whose abstracts corresponded more closely to the URB Program. Programme Officers in Ottawa and the regional offices have contributed descriptors for the search and have helped finalize the list of projects by suggesting amendments.²

Secondly, the social sciences (mainly political science) background of the reviewer has led, perforce, to the temporary omission of several of the selected projects or sections thereof pertaining to various physical sciences. These projects and sections are listed in the pertinent components/chapters (mostly Water Management) and may be considered for further review.

¹ For the list of descriptors used, see appendix 16.

² I wish to thank all who have contributed in various ways to this review. These are, primarily, Luc Mougeot, for supervising the project and editing this report, and also Stephen Tyler, Aung Gyi, Jim Hea, David Brooks, Sylvain Dufour, Danilo Anton, Sylvio Gomez, Madeleine Audet, Pierre Dubé, Brent Herbert-Copley, Jean-Michel Labatut, Hartmut Krugmann, Luis Navarro, Akwasi Aidoo, Randy Spence, Carmen Boix, Ai-Ling Goh, Ola Smith. I hope this list includes everyone.

Thirdly, in the course of the review, project reports or related production were found to be yet unavailable for some of the projects selected. These projects were therefore also omitted from this review.³

Finally, not all main findings in the documents analyzed are reported here, but only those that are more directly related to (although not necessarily in agreement with) the approach and/or objectives of the Program.

While this cannot be viewed as an exhaustive coverage of actual findings, the sum of information it contains nevertheless is strongly indicative of the state of knowledge gained from IDRC projects over the last 12 years with regard to URB Program's concerns. It should therefore be accounted for when specifying the URB agenda for future project development.

The contributions are mostly conclusions and recommendations, but also hypotheses, statements and data, found in the documents. The former are generally supported, though not always, by data and demonstration, with quantity and quality varying widely both across and within documents.

Structure of report

The present and assess the scientific contributions of the projects reviewed has been a challenging task. On one hand, the large number of contributions renders their individual and separate evaluation problematic.⁴ On the other hand, project heterogeneity in perspectives, foci, objectives and methods makes any attempt at generalization difficult, if not hazardous. Therefore, in an effort to strike a compromise between these constraints and to also preserve the integrity of each contribution, the report has been structured as follows:

Contributions are first reported separately and as found in the documents, although they are regrouped under general themes to facilitate cross-referencing.⁵ One chapter is devoted to

³ Similarly, a few network projects have produced voluminous final reports, of which only the comparative or overview volumes have been reviewed. These are 88-0277 "National Disaster in High-Risk Zoning (Central America), and 80-0136 "Participatory Urban Services (Asia)".

⁴ This I thought would be almost impossible to expose in this report. The projects however are analyzed and assessed separately in more details in appendix.

⁵ Causes of vulnerability, as well as constraints and opportunities for people's strategies for instance are regrouped under 'Structural', 'Institutional/Political', 'Behavioral/Perceptual', 'Organizational/Technical', and others. The documents reviewed however are rarely structured according to these themes or categories. Also, the boundaries between categories seem unclear in some cases. For instance, is limited municipal

each of the 4 URB Program components, i.e. Disasters (1), Waste Management (2), Water Management (3), and Urban Agriculture (4). The first three chapters contain at least four sections. Section 1 presents the causes of the problem as perceived in the documents (URB Program document, item 13.a and b⁶). Section 2 reports the constraints and opportunities for people's strategies to reduce their vulnerability (#13.c). Section presents the solutions suggested (#13.d, 14, 15, 16 and 17). Section 4 presents an overview of the findings contained in the previous sections, and comments on their overall value with reference to the Program's approach and objectives.⁷ The chapter on Urban Agriculture is structured differently to better reflect the URB approach to this theme.

A final chapter draws overall comments on the main findings and their relevance to the URB Program, and comments on the research methodology used in the projects, underlining the level of participation involved, as well as the main obstacles and success encountered. Also, individual project reviews and assessment are found in appendix, which contains further information not included in the report for concision (strength of individual contributions, research method used and difficulties encountered, future research proposed, etc.)

This structure should provide the reader with a certain measure of evaluation of these contributions in three ways. First, the regrouping of all contributions under their respective sections and themes will better allow the reader to 'cross-examine' the contributions of each document. For instance (and particularly) the 'solutions' suggested in one document can be compared against the causes or constraints exposed by others in order to assess complementarity or contradiction.⁸ Secondly, this cross-examination is also possible for each

financial capacity for providing urban services primarily an institutional/political or a structural problem? In most cases however findings are more readily associated with one of the suggested themes.

⁶ Please note that #13.b in the URB Program document can be subsumed under #13.a for the report's concision.

⁷ The reader may feel that some contributions included in the "Causes" section should rather appear in the "Constraints" section, and vice versa. For example, poverty may induce the poor to settle in degraded or hazard-prone areas, and therefore be classified as a cause of their vulnerability; alternatively, the same poverty may be seen as a constraint to the poor's vulnerability reducing efforts and strategies by severely limiting the energy or savings which can be invested by the poor in upgrading schemes. Certain causes and constraints, therefore, will often appear in both sections.

⁸ The limits of such exercise are recognized; causes and constraints will often vary, sometimes widely, among case studies and could justify different recommendations. One should note nevertheless that the principal causes and constraints are largely similar across the documents reviewed.

project separately by referring to their individual review in the corresponding appendices.⁹ Thirdly, general and tentative evaluative comments are presented in the concluding chapter.

Reference system: In the first three sections of each of the first three chapters, the numbers in brackets, after each contribution, refer to the number ascribed to the project (listed at the beginning of each chapter) and the pages of the document where the item was found. For example: (11a:65) refers to the first document of the project #11 (88-0104), page 65.

Documents are listed in the reference section at the end of the report. In the "Overview of findings, and comments" section, the numbers in bracket refer to the contributions appearing in the first three sections.

⁹ Projects which are more directly relevant to the Program are reviewed at greater length. See for e.g. appendices 4 and 11.

CHAPTER 1

DISASTER PREVENTION AND MITIGATION.

PROJECTS REVIEWED:

1-Natural Hazards and Urban Services (Bolivia). #84-0010

General objective: To analyze the impact of floods and drought on the urban services and standards of living in three cities.

2-Hazard Assessment and Response: Volcanic Activity in Latin America. #86-0232

General objective: Investigate the complex range of factors that led to the disaster of El Ruiz in Columbia, and extract policy lessons for the mitigation of such disasters in the future in specific zones of volcanic activity in Columbia, Peru, Chile, Ecuador and Nicaragua.

3-National Disaster in High-Risk Zoning (Central America). #88-0277

General objective: Establish a classification of high-risk zones in the region, assess the mechanisms planned by the public authorities for disaster, estimate the potential impact of future disasters on the socioeconomical and organizational structure of the countries in questions and make recommendations to decision makers and the public. Studies mainly hurricanes, seisms, volcanic eruptions, drought and flooding.

NB: The selected projects on Disaster Prevention and Mitigation which relate to physical sciences and were therefore not included in this review, are listed at the end of this chapter.

FINDINGS

1. The understanding of natural disasters is relatively advanced from the perspective of natural sciences (geology, geophysics, geomorphology, climatology etc.), especially with regard to the larger, often more destructive cataclysms (seisms, hurricanes, volcanos, etc). Less is known of smaller, but increasingly recurrent and devastating disasters such as landslides, floods, and land subsidence, especially with respect to urban areas, where greatest damage is caused. More importantly, however, much less is known about the social or 'human' determinants of vulnerability to various disasters studied from a social science perspective. The selected projects have attempted to respond to this lack. Although the documents offer information on the physical aspects of the disasters studied, these are merely presented as part of the contextual background to the social science analysis, the latter being the focus of these studies. This background information will therefore be largely omitted in this report.

2. This review also includes findings and information on matters relating to preparedness, evacuation and relief, which may be seen as pertaining to mitigation strategies.

1. CAUSES OF VULNERABILITY

3. The documents reveal that while disasters vary in kind, the causes of their destructiveness as well as the constraints and opportunities for solutions, which can largely be found in the social (human) sphere, are in many instances similar. The findings presented in this chapter are therefore regrouped under themes and not under kinds of disaster.

structural

general

4. Although poorly researched by natural sciences, the rapid deforestation in Central America for cattle grazing and intensive agriculture seems to have caused increased flooding, land erosion, landslides and droughts. (3a:32)

5. Vulnerability in Central America is increased by the degradation of environment, in addition to the density of population in major urban areas which often settles in or near high-risk areas. (3a:49)

6. "(T)he rapid deforestation and subsequent urbanization of hill tops and slopes especially in Guatemala, El Salvador and Honduras, without regard to adequate drainage and channelling of pluvial runoff has led to an increase in flooding in popular working class 'barrios' with an increase in the numbers of landslides and avalanches." (3b:8)

7. In Bolivia, regional disparities and rapid concentration of resources and people in cities created a stress on urban service provision, and settlement by the poor in flood-prone urban areas. Also, floods are increasing in frequency and magnitude due to over-exploitation of resources in rural areas (deforestation for agriculture and cattle and increasing sedimentation of river beds) and, closer to cities, to the removal of rocks from river beds (for construction) and tree removal along rivers for new settlement. 'Therefore "the causes of these disasters have little to do with nature". (1:1.1-2.3)

8. Neo-liberal structural adjustment policies and national debt repayment, in addition to a series of armed conflicts throughout the regions in the 80s have severely weakened social policies with respect to health, housing, education etc. (3a:41)

9. "The economic crisis suffered in all the Central American countries during the last decade and its obvious impact on poverty levels, investment, and social policy expenditures, is of obvious importance in the context of vulnerability to disasters and the capacity to promote prevention and mitigation policies. (3b:12)

10. The highly inequitable internal distribution of national wealth. In Central America, in early 80s, 5% of population had 31.5% of the region's income, while 50% got only 13%. (3a:39)

11. A majority of the people in Central America are exposed to several physical risks at once, which has very important consequences in terms of the difficulty of prevention. (3a:35)

people's poverty

12. "Poverty is probably the single most important factor in characterizing the more vulnerable sectors of the population to disasters." (3b:15) 50% of pop in Central America are considered to be living in extreme poverty. (3a:41)

13. For lack of alternatives, the poor tend to settle (squatter) in degraded or hazard-prone areas, which increase their vulnerability to disasters. The exclusion of the poor from formal land markets in Central America results in land invasion of marginal, low-value land. (3b:8,17)

14. In Bolivia, floods affect mostly the urban poor, who often settle on flood-prone lands alongside urban rivers and creeks. (1)

15. The non, or highly limited access of the poor to formal financial loans for housing, results in the construction of vulnerable shelters. (3a:52) Houses, particularly in poor areas, are usually made of precarious building material, with little structural protection against flood, seisms, volcanic eruption and various storms. (1; 3b:17)

16. Droughts and floods not only affect the urban poor immediately through losses or and damages of property, but also by facilitating spread of diseases due to inadequate sanitary disposal, or by creating temporary or permanent loss of employment (due to disaster-induced disability, relocation, or reallocation of resources and energy for reconstruction), or the greater scarcity and costs of food following disasters, and the lack of access to public resources to cope with consequences (health care, credit, etc.). (1:12) The high population density and the lack of adequate sanitary services for the majority of the population in poorer neighbourhoods of Potosi (Bolivia) leads to spread of diseases, which was accelerated during drought. (1:III.3)

17. Generally, the poor resist or delay evacuation in the face of disasters, partly for fear of leaving behind their belongings. (3a:52) Many refuse or hesitate to evacuate in the face of, or even during floods (Bolivia), in the hope of protecting their possessions from the torrent and from thieves, which has resulted in higher morbidity and mortality for the lower than for

the higher income groups (1:12)

18. Due to the economic crisis, the population of Potosi (Bolivia) refused to pay higher water tariffs for the new waterworks which were needed to compensate for the drought, thus affecting the capability of government to provide this service. (1:IV.1)

19. Many of the families interviewed in a survey of risk areas in Costa Rica said that they were unable, for lack of resources, to engage in activities to reduce their vulnerability to disasters, such as upgrading their place of residence. (3a:52)

institutional/political

20. Countries in Central America have no global policy or strategy for prevention or mitigation of disasters. (3a:54) No government organization has an explicit and comprehensive mandate to coordinate efforts of various sectors for prevention and mitigation that are integrated in development plan at national and regional levels. (3a:57)

21. In Bolivia, the policies for prevention, in the social, technical, institutional, sanitary, educational and informational fields, were almost non existent, which has aggravated enormously the consequences of floods and drought (1:15-18)

22. While all Central American countries have legislations, norms and guidelines for prevention and mitigation, these do not guarantee their application or efficiency. Administrative structures generally are inadequate: duplication of functions; lack inter-institutional coordination; lack of financial and human resources ; corruption in private and public sectors; insufficient budget to undertake actions and for the maintenance of public works, etc. As a result, there is "an enormous gap exists between the normative content of the proposed measures and the capacity (or genuine willingness) for their implementation." (3a:55)

23. In Colombia, centralization, lack of definition of responsibilities and lack of financial resources were obstacles to confront the crisis caused by the volcanic eruption. Prior to the eruption of el Ruiz (Columbia), adequate scientific information existed to predict the event, but there were no explicit policies or specific institution dedicated to volcanology and the natural disasters which follow eruptions, of which the most destructive are the avalanches caused by the partial melting of ice and snow caps, and second the explosive eruptions of pyroclastic materials and ash falls. (2:257) The scientific and technical bodies with pertinent expertise were not able to formulate and execute initiatives and programs to deal with the crisis. (2:259)

24. In Peru, there is no continuous monitoring, nor any scientific institution specialized in monitoring, nor a policy supporting volcanology. Government Institutions responsible for emergencies have vague attributions, inadequate decision-making system, and insufficient resources. (2:266)
25. In the case of Beni (Bolivia), government intervention regarding floods have always been improvised and uncoordinated, scarce and poorly distributed. The established poor neighbourhoods are especially neglected, while all the aid is concentrated in rural communities or recent drought-stricken migrants seeking refuge in cities. There is no permanent institution to cope with such disaster. (1:28-9) Also, in the case of drought (Potosi), there was poor coordination between authorities, institutions and relief agencies, and delay due to heavy bureaucracy. (1:IV.2)
26. The frequent changes in the directorship, and the lack of training in volcanic aspects of the new managers could hamper emergency plans during crisis. (2:263-264)
27. In Central America, a large gap exists between legislations and measures on the one hand, and the social and political processes or reality on the other, which result in the former operating in a "social vacuum". (3a:55) For instance, poverty of people force them to occupy areas at risk, thus contravening zoning laws and norms. The State, often, even encourages such action by providing essential basic services to illegal settlers (electricity, water and sewerage infrastructure). People's vulnerability thus becomes "institutionalized". Existing norms for construction also are often defied by the poor because the latter lack of access to the formal credit, which would allow them to build safer habitations. (3a:55-56)
28. The excessively bureaucratic and centralized State (in Central America), isolates the decision makers from the diversity of realities found in the regions. (3a:43) Institutional centralisation (Bolivia) deprives decision makers at high levels of authority of the knowledge of needs and constraints at the base. (1:VI.b,c)
29. Local governments in Central America generally lack the financial resources and skills to assume their responsibility for various public services, including disaster prevention and mitigation efforts. (3a:53) Attempts at effective decentralization have failed throughout the region and local government power is constantly reduced. (3b:13)
30. The weakness of local governments and population alike is a very important obstacle to prevention and mitigation schemes in Central America. (3a:57)
31. Resources are concentrated for dealing with emergency and relief activities.(3a:15) In Central America, public institutions may act effectively during emergency periods, but not so

regarding prevention and mitigation. (3a:53)

32. "The problem of slack supervision of public works and the use of inadequate construction techniques can at many times be attributed to negligence or straight forward (sic) ignorance. However, there is also a clear economic problem related to national and local government finances, which constitutes a further aspect of global economic vulnerability and which directly affects distinct population groups at a local level" (3b:18)

33. Financial constraint is not the only problem, however. It is also one of priority setting. Sufficient budget is allocated to protect the investments of the better-off, as in Costa Rica, where the economic and political clout of different segments of the population is clearly a factor in budget allocation. (3b:19)

educational/informational

34. The population is generally not adequately informed and prepared by educational systems and media (formal and informal) with respect to prevention and mitigation. (2; 3a:53)

35. In Central America, the public institutions involved in the diffusion of information on impending risks usually have a vague and uncoordinated role. People have recourse instead to informal sources or medias, all of which lack specificity regarding risk areas and intensity, and therefore credibility. 3a:54.

36. The medias (national mainly) played a fundamental role of information to population and decision-makers during the eruption of El Ruiz (Columbia) with respect to evacuation, but failed to educate for prevention. This is partly due to: the absence of journalists specialized on the theme, which contributed to confusion and inadequate coverage of the crisis; the extremely poor communication between scientific authorities and the media, due to language problems and poor acquaintance; and the absence of a single scientific authority which could feed information to medias and population in general. (2:260)

37. The authors of the Bolivian report are convinced that the reason why 62% of the victims were not pre-warned about the downpour and subsequent rushing waters was the lack of community integration and participation in the Juntas Vecinales, which could serve as an informal means of transmitting information, which made people dependent almost exclusively on the radio for their information; many therefore were not listening at the time of the announcements. (1:3.3.1 and 3.5.2)

38. In Ecuador, 3 million habitants live in the Inter-Andino valley and on the flanks of the Andes, surrounded by at least 15 active volcanos. The National Direction of Civil Defense

(Dirección Nacional de Defensa Civil) began a program to sensitize the population regarding risks, although its reach is limited due to lack of economic resources. (2:263)

2. CONSTRAINTS AND OPPORTUNITIES FOR PEOPLE'S ADJUSTMENT STRATEGIES

A) CONSTRAINTS

39. NB: The reader should be reminded that some of the main causes of vulnerability presented above (section 1), such as poverty or institutional weaknesses, can also be seen as obstacles to solutions. Their mention in this section is therefore not redundant.

40. "In general, in Central America (our study reveals an) almost complete inexistence of permanent social organizations dedicated specifically or even tangentially to the reduction of physical risk or to the preparation for any future emergency situation. (...) The lack of social organization at a local level around such a pervasive problem as that of the physical vulnerability of the population can have no single explanation and any search for causality (must take) into account the diverse socio-economic and class structures, ethnic composition, ideological and cultural conformation, etc. of different communities." (3b:19-20)

41. The low levels of cohesion or organization found among the populations with regard to daily necessities is as much related to the context of economic vulnerability (poverty) in which they find themselves, as to personal attitudes and idiosyncrasies. (3a:52)

42. The lack of popular organization in relation to hazard, more specifically, also seems to reflect (from the authors' point of view) the lower priority assigned to these problems when compared to more permanent and daily needs, such as employment, income, basic services, etc. (3a:53)

43. Repressive regimes in Central America have been serious obstacles to popular or community organization in the region. Grassroots formation of any nature are soon or later labelled by authorities as "political" and eventually repressed. (3a:45)

44. "Even in the long established and stable liberal democracy in Costa Rica, the state has consistently managed to 'control' the levels of popular organization, by the stimulation of parallel government incentivated organizations (...)." (3b:13)

45. The community organizations in Santa Cruz (Bolivia) have not mobilized for prevention efforts and other community works. This is largely due to the weakness of such organization, itself a result of the lack of recognition --and hence support-- from urban authorities because

of the illegal nature of these settlements. This non-recognition to which the community organizations in marginal areas have been submitted repeatedly, has paralysed community initiatives. For this reason, and also because of social marginality, lack of opportunities and alternatives, social isolation, etc, there is total lack of faith and much passivity in community organizations on the part of the poor (exception of sports and religious organizations). The general rule is "cada vecino se ocupaba de lo suyo". (1:3.5.2)

46. While the non-governmental initiatives were very important (El Ruiz, Columbia), they lacked a solid analysis on which to base their diagnosis and adequate orientation. (2:260)

47. Fatalist conceptions and attitudes prevail among the poor regarding causes of disasters, although certain segments of the population demonstrate a certain degree of awareness and knowledge about the factors that contribute to disasters. The tendency, in any case, is to look towards national government for preventive and mitigative actions. Few of the poor see a real possibility of solution at the community or family level. (3a:53)

48. Since floods are recurrent in Beni (Bolivia), the poor perceive them as normal events in their lives.(1:30)

49. The local population in Arequipa (Peru) see the volcano not as a potential danger, but as a scenic element for which they feel pleasure and pride. (2:266)

B) OPPORTUNITIES

50. Associations (juntas vecinales) in Beni (Bolivia) demonstrated strong popular organization, with a capacity for self-organization and direction in relief and rehabilitation work. Eg. relocation to safer site through purchase and equitable distribution of land, and creation of rescue groups. The relocation has resulted in the creation of a new barrio (Villa Vecinal) which however has not yet received needed public services from government. (1:19) The first association was created following the 1956 flood. Now there exists a solid and disciplined federation regrouping 22 associations, which are active in health services, training, various domestic and urban services, and self-help in emergency situation. The federation claims to be the most knowledgeable and experienced institution regarding flood problems. It suggested several preventive measures to authorities. (p.29-32)

51. Despite the low community organization in Santa Cruz, increasing participation was observed among the poor after the flood, although the rate is still very low and participation of new members is of the passive type. The precarious economic situation of the population of lower income precludes it from assuming individual defensive efforts against disasters. Although the poor are slowly increasing their faith in neighbourhood organization on this

point, they place all their thrust in the public agency (SEARPI), which has for mandate the control of river water and in a general way the coordination and planning of social and economic development of the river basin for preservation and sanitation, because they believe it is the only institution capable of doing something to prevent new floods. (1:4.1) The population is willing to assist SEARPI with labour or money (1:4.2.1)

52. During the drought in Potosi (Bolivia), the civic committee of Potosi fulfilled significant organization and mobilization functions. (1:18)

53. In Chile, the high concentration of population and infrastructure in Santiago, and the proximity of the city to two major active and ice-capped volcanos constitutes a high-risk. The National System of Civil Protection is adequately organized, as demonstrated during an earthquake in 1985. This agency has developed and continuously implemented preventive and educative campaigns against disasters, at school, in communities and coordination programs for the national institutions which are integrated in the system. However, there is no official system for monitoring the active volcanos in the region. (2:261-262)

3. SOLUTIONS

54. "(In Central America) obviously, there exist no simple formula to promote the necessary changes. However, it is clear that the latter require fundamental changes in terms of the orientation and organization of government activities at regional and national levels; concerted efforts in terms of local popular participation and a strengthening of applied research activities both in basic sciences and, primarily, social sciences." (3a:60)

55. At the government level, important changes can only begin to occur (the authors believe) if disasters are considered as serious economic and political problems, and their prevention and mitigation perceived as bringing real benefits in relation to growth and development, and become an integral part of policy or planning for development. Governments need to accept the evidence that the existing social processes and their ecological impact increase people's vulnerability. (3a:60)

56. The territorial dispersion of risk areas in the region (Central America) call for decentralization with local participation, however difficult these goals can be (particularly the latter). As with the government level, preventive and mitigative activities cannot be introduced viably in local communities if they are isolated from the local socio-cultural and economic realities and treated as a separate problem or activity. These activities must be integrated into a wider local development strategy, which caters also to other necessities (priorities) of housing, employment, education, health and environmental management. (3a:61)

57. Institutionally, there is a need for specific legislation and apparatus for coordinating the various sectors involved. This responsibility could be given to the existing Emergency Committees in the countries, whose functions would be extended to include prevention and mitigation, by giving them ministerial power, adequate budget, and a highly decentralized structure of activities towards regional and local level. These Committees should also be advised by institutions of basic and applied research, which should be coordinated and integrated into permanent technical advisory committees. The Committees should provide reliable early warning systems adapted to specific areas and communities, which must be based on participation at these levels; promote changes in the education system curriculum for increasing knowledge on relation between human actions and environment; "promote a more balanced and integrated relation between basic and social research, so as to convert information or scientific knowledge into an socially accessible instrument of change"; provide a regional centre of social documentation for the isthmus; provide in each country systems of geographical information which record data continuously on events and impacts at the economic and social levels. (3a:62)

58. Solutions to disasters require the participation of population at the local level in low cost schemes. (3a:49) For example, the construction of inexpensive dykes could be adequate to protect certain communities subjected to recurrent flooding. (3b:18)

59. Priority of research and policy should be given to areas with higher frequency and intensity of disasters and higher population density. (3a:49)

60. The main conclusion of the Bolivian case study is the need for a better state-society relationship in dealing with disasters. The State should be responsible for the organization and coordination of efforts, while the population and their associations should be active mainly in terms of participation (i.e. implementation). The study revealed that the grass-roots organizations could not effectively fulfil (perhaps exception in the case of Beni) the functions of representation and aggregation of peoples' demands at times of emergency. (1:23)

Two reforms are needed.

a) Reform of the system of civil defence.

The latter regroups various government and civil mechanisms and structures into the National System of Civil Defence. This intended integration between State and Society has failed. Changes must be brought to institutional, territorial, and financial structures. At the institutional level, information flows from top to bottom with no retro-alimentation in terms of information, stimulus and demands. The regional and local levels of authority only have a role in operation, and no active and creative role in policy. Because decision-making is overly centralized, nation-wide standards and

policies are imposed on all regions which in many cases do not fit specific local reality and needs. Although the State must keep its leading role in supervision and direction, certain aspects could be decentralized to allow decision-making at local level. Decision-making structure could be made more flexible by allowing the lower (more local) levels of the institutional structure to modify when needed the directives emanating from the central organs. In this new structure, the institutional structure would be subordinated to the departments, provinces and townships (cantones). Financially, a transfer of resources should concomitantly be made from departments which do not suffer from natural disasters to those who do, through the creation of a Financial Emergency Fund. (1:24-30)

b) Creation of a sub-system of Civil Self-Defense.

The experience of civil associations in Beni could be replicated all over the country. An organization of progressive centralization should incorporate popular associations of barrios into federations of such associations, where needs and demands would be transmitted from local areas to a centralized decision-making organ. (1:30-33)

61. In the case of volcanos, generally, there is a need to: define clear and coherent public policies; establish efficient decision-making mechanisms, with definition of attributions and responsibility; decentralize levels of decision to deal with regional risks; promote the design and implementation of initiatives by non-governmental sectors; (for more dangerous volcanos) initiate or continue the detail study of high-risks volcanos; begin installing monitoring geophysical equipment; elaborate risk maps; develop regional capacity for scientific analysis, social diagnosis and mitigation through the mechanisms for civil defence; (for population in general) find the appropriate mechanisms to prepare the population to the possibility of natural disasters, and promote their organization to face them; (regarding medias) make the medias conscious of their role; provide them with necessary information in a comprehensible language and towards mitigation, with the cooperation of scientific community; (regarding latter) establish single entity for communication with State, medias and organized population; sensitize the scientific community to the professional and socio-cultural characteristics of their interlocutors. (2:267-269)

4. OVERVIEW OF FINDINGS, AND COMMENTS

The projects's contributions presented in the first three sections above are obviously many and diverse. The following section therefore summarizes and comments only the most common and principal findings with regard to the objectives of the Disaster component of the URB Program document (section #15), and to the general URB approach and objectives (see mainly sections #9-13). Also, additional information for each project can be found in the

corresponding appendix (strength of contributions, research method used, difficulties encountered, future research proposed, etc.)

4.1 Causes of vulnerability.

-The impact of disasters, in terms of losses and damages for a society, are the result of two broad categories of concomitant causes: (a) the natural, physical 'triggering' components of the disasters, such as cyclones, volcanic eruption, earthquakes, torrential rain, drought, etc., which in most cases are (still) largely unpreventable and uncontrollable; and (b) the human, primarily socioeconomic, or socio-cultural, or institutional activities or structures which increase people's vulnerability to the former (or fail to reduce it) and which are perceived as being correctible in various degrees, such as poverty, settlement deficiencies and the lack of formal and informal organisation for prevention and mitigation.

-Moreover, certain 'triggering' physical events of increasing recurrence and devastation, such as landslides, floods, land subsidence, which are mainly found in urban areas and are often believed to have 'natural' origins, are themselves largely caused by human actions (for e.g. deforestation, land over-exploitation, and groundwater over-extraction). (4-7)

-People's poverty is most often seen as the primary cause of their vulnerability. The effects of poverty are, on the whole, well demonstrated in the documents: hazardous location and deficient housing (14,15,18,19), hesitation to evacuate in the face of disasters (17), inability to cope with impact and consequences of disasters due to poor health or lack of financial resources, etc. (16). Perhaps due to various constraints placed on research projects, the underlying causes of poverty are only suggested, when at all mentioned (development models, debt payments, concentration of resources, etc. See 7-9). One may ask how meaningful, applicable and sustainable can any proposed solution to a problem be without the prior full consideration, understanding or even solution of its deeper causes. At any rate, the relations between wider structural causes and vulnerability remain to be demonstrated, as recommended in the Program document (section 4a).

-The State's share of responsibility for vulnerability is generally perceived to be substantial, mainly for its neglect regarding prevention and mitigation. Everywhere, resources are allocated almost exclusively to preparedness and relief activities. Even in these areas, however, the results are generally disappointing. The main problems observed are: the absence of prevention and mitigation policy (20,21,24); inefficient decision-making and institutions due to over-centralization (22,23,28,29), underfinancing (22,23,24,29,32); poor interinstitutional coordination (22,25,26); and corruption (22,23). Importantly, also, existing laws, regulations and norms are disconnected from social reality, which precludes their implementation. (27)

-Also, various weaknesses in educational curriculum and media systems result in the lack or absence of popular preparation for prevention and mitigation (somewhat better with respect to emergency situation, and only in certain cases. 34-38). The inadequate preparation of the population can also be partly due to personal perceptions and attitudes regarding risks of disasters, including fatalism (47), passivity (47), even adulation (49), which, as with the other causes, can also represent strong constraints to possible adjustment strategies.

4.2. Constraints and opportunities for people's adjustment strategies.¹⁰

-The weakness or absence of State action may suggest the need for greater people or community empowerment, not only to pressure governments towards greater responsibility, but mainly for people and communities themselves to design and implement the preventive and mitigative measures required for their safety (see primarily 88-0277, but also 84-0010). This closely agrees with the URB Program approach and objectives of the disaster component (Program document items #8c, 9a, 9b). However, the findings also point to solid obstacles standing in a way of such empowerment.

-Poverty acts as a constraint in two ways mainly:

(a) Other basic necessities (employment, housing, food, etc.) are often given higher priority by the poor, absorbing their time and energy to the detriment of cooperative actions for disaster prevention and mitigation; (42)

(b) National poverty limits the resources available to governments for complementing people's prevention and mitigation strategies, a role which remains necessary according to the documents reviewed (see section "Solutions" below). The main problem however could be one of misplaced priorities by government in terms of budget allocation. (33)

- People's or community organizations are often repressed under non-democratic regimes (43) or neglected due to prevailing government attitude towards illegal settlements and (their) associations. (45)

- Other reasons include: fatalist conceptions and attitudes on the part of the population with regard to physical risk (47-49); people's dependency towards governments (partly for material reasons); and the simultaneous exposure of people to several different kinds of risks

¹⁰ The concept of people's adjustment strategy in the Program document refers primarily and essentially to plans designed and actions taken by local communities or individuals to deal with their vulnerability to disasters (see section 10 in document).

and disasters, which represents a serious obstacle to strategies for prevention and mitigation. (11)

-Few successful cases of civil or community organization for disaster management are reported, and these refer almost exclusively to emergency and relief actions (50-52, with the exception perhaps of the Chilean community educational program for prevention, which is however initiated and coordinated by the Government.⁵³). At any rate, these success stories were not explored for determining factors or potential for replication.

4.3. Solutions proposed for vulnerability reduction

-As mentioned previously, the State is perceived as having a major, if not the main responsibility for reducing peoples' vulnerability, although the need for, as well as obstacles to cooperation between government and people (community) are recognized (particularly emphasized in 84-0010 and 88-0277).

-Fundamental changes are required within government organization as well as in the State-population relationship. Decentralization is strongly recommended in all cases. People's participation is necessary to allow local inputs in government strategies for a better assessment and response by the public sector to popular needs in terms of prevention and mitigation (58, 61). Specific legislation and accompanying apparatus must be established to coordinate the actions of the various actors involved. (57,58,61)

-Perhaps the most urgent and important step proposed toward a solution is the consideration of the "need rationality" of both State and the Poor in relation to the desired disaster prevention and mitigation efforts. In a few words, neither governments nor the poor will act to solve a problem which they see as a lesser priority, unless these actions are conceived to bring tangible benefits, often related to the more urgently felt needs (e.g. national savings for governments and employment creation for the poor) (55-56). The latter proposition lends strong support to the URB Program's emphasis on socially and economically attractive strategies as a prerequisite for their participation in vulnerability reduction. (URB document, items 7e and 10).

5. LIST OF PROJECTS RELATING TO PHYSICAL SCIENCES

88-1061 Seismic Micro-Zoning (China).

Objective: Develop a set of geo-technical guidelines for the siting of buildings and critical facilities in earthquake-prone areas for the construction authorities.

Only a very short progress report was produced so far, presenting activities undertaken.

89-0287 Low-Cost Housing (Typhoon-resistant) (Philippines). Objective: Carry out research activities for the construction of socially acceptable and affordable typhoon-resistant low-cost houses, built with locally available materials, and involving community participation. The project will also develop a self-sustaining financing scheme suitable for poor people to ease access to home ownership.

A short technical report is available. Reminders sent with no success, and recipient is apparently weak in research capacity, but strong in organizational ability for community participation (Aung Gyi).

89-1011 Cyclone Resistant Housing (Carib).

Objective: Carry out systematic laboratory and field studies with community participation to develop suitable design and construction methods for low-cost houses, which will be affordable to the poor and resistant to cyclones.

From the file, only information bulletins on research activities are available so far. The Jamaican team is recommended by Gyi for same reasons as 89-0287 (above).

Seismic Micro-Zoning (China), 88-1061

Cyclone Resistant Housing (Caribbean) 89-1011.

Low-Cost Housing (Philippines), 89-0287

CHAPTER 2
WASTE MANAGEMENT
(SOLID WASTE, WASTEWATER)

PROJECTS REVIEWED:

4. Participatory Urban Services (Asia) 80-0136

Objective: Describe the structural arrangements of the existing services, evaluate the effectiveness of various forms of self-help service delivery, including installation of sewerage lines, and recommend policies for city planners administering or contemplating such schemes.

5. Solid Wastes (Honduras) 80-0198

Objective: Develop a non-conventional system of waste collection with the participation of the community in marginal areas of Tegucigalpa, and integrate the system into the formal collection system of the Metropolitan District. To be achieved through a survey of attitudes and practices, the identification of methods to incorporate communities, including education, and an estimate of the potential financial or other contributions by the community to the system.

6. Urban Growth Management: 7 Cities (Africa) 84-1005

Objective: Strengthen and build upon selected urban research projects that have received support from IDRC and improve the dissemination of their research results.

7. Urban Sanitation Services (Tanzania) 82-0175

Objective: To improve management and delivery of sanitation services to the urban poor in Arusha. Evaluate present delivery of sanitation services; assess organizational and policy problems; and determine training requirement.

8. Urban Health Services (Khartoum) 84-0005

Objective: Analyze health services in Khartoum, including sewage and garbage disposal, to recommend improvement for the low-income groups.

9. Solid Waste Management (Peru) 85-0037

Objective: Devise and field-test a pilot system for the collection, disposal and recycling of solid wastes through an approach involving active community participation.

10. The Financial Management of Urban Services: Water and Sanitation (India) -Phase II- 86-0261

Objective: Study the financial and management structure of nine local governments and identify ways to improve the management of revenue that is available to authority, and identify ways to coordinate government, private-sector and community initiatives to minimize the government's cost of providing water and sanitation services.

11. Integral System for Recycling Organic Waste (Mexico) 88-0104

Objective: To identify the factors (mainly socio-economic and socio-political) which facilitate or impede the adoption, operation and maintenance of the a low cost and effective technology (SIRDO) for collecting and treating waste products. Also assess the technical (including health concerns) and economic performance of the SIRDO system and its related activities, and analyze the impact of the system on the socio-economic and political development of the community. A methodology will also be developed for the promotion, installation, operation and correct maintenance of SIRDO by and for different types of communities.

NB: A brief presentation of SIRDO technology is available in appendix #11. This project probably comes closest to the URB Program's approach and objectives. The SIRDO methodology combines solid organic and inorganic waste collection and recycling, with wastewater reuse for biofertilizer production, and micro-enterprise creation on the basis of the resources derived (both material and financial) from these processes, all with the participation and for the main benefit of poor communities. This project is reviewed at greater length in appendix 11.

12. Traitement des eaux domestiques usées (Dakar) 90-0153

Objective: Carry out a feasibility study of the potential for purification of domestic wastewaters of Dakar by a procedure which uses the purifying capability of certain aquatic plants; a sociological study assessing the perception of the population of wastewater purification and reuse; an ecological study of the palustrian flora of Senegal's marshland; a chemical analysis of wastewaters.

13. Alternatives for Solid Waste Management (Dominican Republic) 91-0245

Objective: To propose a comprehensive solution to solid waste management in Santo Domingo (capital city) with the participation of all related actors, through an assessment of quantity and quality waste, capacity of informal sector to become key actors in method, cost-benefit comparison of actual public system and would-be participatory solution, etc.

14. HS's review of water projects ('Chauvin's Report', 1991).

Review water related projects (including wastewater) of IDRC and propose orientation for future research.

NB: The projects or sections thereof looking at Waste Management from a physical sciences perspective are listed at the end of this chapter for potential review.

FINDINGS

1. CAUSES OF VULNERABILITY

structural

1. Rapid urbanization raises the demand for basic services (7:30), and hinders in many ways the provision of adequate services by city governments.(4:9)
2. Great concentration of people in the capital city of the Dominican Republic, due to concentration of resources and infrastructure in that city, stresses waste management capacity. (13:12)
3. "Migration to cities or urban centres is typical of nations in which economic differentials exist among regions (as in the Philippines)". (4:73)
4. In Korea, massive rural-urban migration, propelled by the industrialization movement forced by the Korean government since the 1960s has resulted in the creation of many squatter areas and a strain on basic urban services. (4:30-31)
5. The proliferation of open dumps in the streets of Santo Domingo is a major problem to the municipality for the large number of collectors it must employ to collect and transport this waste to the final disposal site. (13:51)
6. The density of slums incites inhabitants to throw their waste in backyards because of the impossibility of bringing it to places where it could be collected by municipal or potential community organizations. (13:51)
7. There is a general absence of planning in settlements, resulting in the lack of pathways or streets giving access to houses (7:30), or in the poor quality of streets. (11a:6)
8. "The spatial distribution of housing and roads in unplanned squatter settlements is perhaps the single most important factor which inhibits the effective and efficient provision of basic services." (14:7)

poverty

9. The declining economy means less foreign exchange and budget to meet rising demand for urban sanitation services in Tanzania.(7:26)
10. The reduction of budget allocated to waste management in Santo Domingo coincided with the beginning of structural adjustments. (13:67)
11. In Indian urban centres surveyed, the financial constraints of government, in conjunction

with the low chargeable rates for waste disposal service, result in obsolete equipment and under-staffing, and hence uncollected waste. Municipal income from waste disposal suffers from a narrow tax base and low recovery rate. (10:64-71)

12. A Lack of spare parts for imported equipment means frequent breakdowns, and thus an inefficient use of employee. (7:63)

political/institutional

13. There is a rural bias in terms of resource allocation in Tanzania which should be corrected. (7:19)

14. There is a lack of priority generally conferred to urban services in Sudan. (8:169)

15. The municipality of Santo Domingo does not have well defined routes for garbage collection. (13:44)

16. The municipal waste collection system functions very irregularly in the Mexican neighbourhoods studied. (11a:2)

17. 91% of surveyed respondents in a Peruvian community perceive the municipal government as irresponsible regarding waste management. (9:33)

18. In Khartoum, the urban administrative system is too complex, with too many bodies involved, which result in conflict or inaction. The local government has failed to clearly delineate responsibility and functions between itself and central government. Financial resources are inadequate, due to outdated and inadequate tax base, incompetence and corruption in collection, and no clear system to develop spending priorities and cost effectiveness. (8:166-167)

19. The critical lack of urban services in the Philippines points to the failure of the top-down delivery approach, where the government provides the services, the people pay for them and a group of managers and workers ensures that the services are provided regularly. (4:74) For bureaucracies, community residents are seen "as clients or beneficiaries, not as partners in service management". (4:115)

20. In Tanzania, local participation in the planning and the implementation of local development projects had to comply to guidelines centrally issued. The national planning system establishes national priorities which may not be the same as the desired local priority. Sanitation was given a low national priority and this was duplicated at the local level. (7:19)

21. The financial and material resources of the municipality are inadequate and the situation is unlikely to improve.(7:19) Urban councils lack independence (from regional governments) to set policy, acquire necessary resources and oversee implementation due to fiscal dependence on central government. (7:30)

22. In Arusha, corruption and bribery in the delivery of services is common practice. For example, waste collection is mainly done around modern establishments. (7:56)

23. Municipal revenue from garbage collection only represented about a quarter of what users had to pay effectively in the form of "tips" to collectors.

behavioral/perceptual

24. "The results of the five (Asian) studies emphasize that governments are not unaware of the need to improve urban service delivery programs. Nor are urban communities unaware of their needs. The problem is how to develop effective responses". (4:262)

25. Because of their rural background, slum dwellers in Arusha live with domesticated animals whose wastes are dumped in streams polluting drinking and washing water of habitants downstream. (7:30)

2. CONSTRAINTS AND OPPORTUNITIES FOR PEOPLE'S ADJUSTMENT STRATEGIES

A) CONSTRAINTS

weakness of community

26. "The organization of a community must be considered if a community is to play a more participatory role. (...) Definitely, a fragmented community will not be able to wield power or influence." (4:98)

27. Community dwellers in Tegucigalpa were preoccupied that dwellers from adjacent communities might free load on the services in whose provision the former were asked to cooperate, as was in fact the case. (5:17) Also, any project tends to be discontinued due to changing community associations's authorities. The new authorities usually forsake previous administration's agenda and bring their own new projects as a self-justification measure. Therefore, there is a need for an integration of the different community associations which would encourage some consistency in programs, as opposed to isolated projects. (5:18)

28. As squatter settlements spread over the city, town councils in Greater Khartoum often represent different residential class neighbourhoods. This heterogeneity of towns and city councils entails including communities with different needs, priorities and expectation with regard to social services. Conflicts of interests thus dominate council performance. (8:74-75)

29. "Most government programs (in Indonesia) are national programs aimed at both rural and urban communities. Often, they are first designed with the rural population in mind. Certainly, there is a difference in the two types of communities: rural folk are perhaps more homogeneous than their urban counterparts (in terms of income, education, origin, occupation, etc.) but there is also increasing socioeconomic stratification at both the urban and rural levels. (...) Government programs often tend to view a (community) as a socioeconomic or cultural entity, an approach that frequently discounts class differences in most urban (communities), resulting in different needs according to respective groups. These class differences may be one of the obstacles preventing participation (...)" (4:208)

30. There may be cooperation for basic services in rural areas (Tanzania), but not so in urban areas. (7:28-9)

31. Most people in city are recent migrants, each with his own cultural traits and background. (7:45)

32. (Arusha) During community self-help efforts sometimes violent clashed have been reported between those who wish to keep the neighbourhood clean and those who are indifferent. (7:53)

33. (Arusha) Numerous murders occurred in the "community" studied. (7:54)

34. (Arusha) In the community, those who participated more to disposal efforts tended to be demoralized by the negligence and lack of participation of some residents. (7:77)

35. Privatization of land within the barrios surveyed (Mexico) leads to protectionist attitudes by owners when their property is affected for collective benefits (e.g. wastewater pipes crossing their property). Some form of collective tenure is recommended to guarantee ecological health and the social function of property. (11a:11)

36. (Tanzania) Local community leaders should be the contact persons between community and municipal officials, because they know the area and the people well. One problem, however, is that these leaders are also local landlords, and any improvement in sanitary services could mean financial or social losses for them. (7:60, first draft)

37. The community sector is not yet properly defined, and the roles and types of community institutions in Africa are poorly documented and defined. (6b:29)

38. "African rural CBOs have their counterparts in urban areas though the phenomenon is not so extensive. Such organizations are also more recent and more in response to outside encouragement, either by government or NGOs" (6b:31)

39. One of the fundamental obstacles to community cooperation in the SIRDO technology, is the lack of democratic practice, not only in terms of relations between state and society, but also in the daily interactions among Mexicans. "Opportunism is clearly the marrow ("medula") of the political process in Mexico." Community leaders and important sectors of the community have used the SIRDO project as an ecological argument to oppose a government intention to dislodge the community for its contamination of the underground aquifer. Once the threat was removed, SIRDO was neglected. (11b:13)

institutional/political

40. (Asia) "On one hand, the state is anxious to reduce its costs by promoting self-help schemes, which often involve increased "advocacy" by community groups. On the other hand, governments are generally unwilling to allow this advocacy to reach to a point where it challenges their decision-making power. Thus, "participation" is often defined in government terms rather than community terms. The definition of participatory services, therefore, would differ from one country to another." (4:11)

41. In the Philippines, the study has shown that there is a match between the 'natural and informal' community leaders and the official leaders. I.e. governments tend to nominate natural and locally recognized leaders for the position of community captain ("barangay" officials).(4:93-95) But that the formal community leader is thus also a local politician has positive and negative implications. It may be in their interest to emphasize delivery of services that is timely for maximum election impact, but this may run counter to the sustainability of the services provided. (4:96)

42. Despite a municipal system which is decentralized and oriented to facilitate grass-roots involvement, "all the development legislations for the Khartoum urban administration system were politically motivated and primarily brought about to serve the interests of those in power". There is also a generally low level of implementation of council's decisions (8:67-70)

43. The municipal personnel affected to waste disposal in Santo Domingo refused the scientific advice of professionals who had been trained abroad, because they wish to defend

their "rights" acquired from an experience that is not compatible with modern management. (13:67)

44. The head of the municipal government had promised to support the installation of SIRDO by providing trucks and equipment. However, this was never complied with, in spite of him having received financial resources from the central government for that purpose. Moreover, the municipality continued competing with SIRDO collecting and recycling efforts by maintaining its own collection practices. (11b:10)

45. In the communities studied in Indonesia, most people do not seem to participate in government initiated activities, even in those aimed at improving their socioeconomic conditions. The reasons they offer is lack of interest or time. "The structural poverty that has entrapped the low-income groups creates difficulties for them in terms of becoming involved in any service activities that are designed for a wide range of income groups. (...) In delivering its programs, the government utilizes those who are better off and better educated to assist those who are poorer and less educated. In fact, the better-off groups have a different perception and outlook (...) in terms of defining the needs of the community. As a result, the poorer groups often do not enjoy the benefits of the programs. (...) The needs of different income groups are not taken into account. (...) It could be argued that it would be better to be more selective in distributing available services by first determining who needs what". (4:206)

46. "SIRDO technology has been perceived by large sectors of the government as a threat to their political interests, since it transfers to private initiative and/or civil society the management of domestic solid and liquid wastes. Not only it divests the Government of this function, but it affects the Government-mafia relation which control the mechanisms for collections of solid waste. However marginal this factor may seem (...) it proved to be one of the most important obstacles to the diffusion of SIRDO in Mexico." (11b:10)

47. Discontinuity in SIRDO is largely caused by changes of government. In the case of the State of Morelos, for example, the new governor will not support the work of his predecessor who had installed SIRDO projects in this region. (11b:11)

48. In the community of El Molino, Ixtapalapa, political party leaders have tried to take control of SIRDO and use it to obtain resources as well as professional and political prestige (11b:11)

49. In Africa generally, few support NGOs provide water, waste disposal and environmental conservation services. (6b:28-30)

behavioral/perceptual

50. "Historically, provision of services at the community level is generally assumed to have passed through a phase of (self-help at the local community level). (...) With increasing urbanization, economic growth and more and more people entering the wage labour force, however, the time that can be devoted to participatory services has decreased. Consequently, the state and the private sector at various levels (national, regional, city) have come to play an increasing role in service delivery." (4:11)

51. (Mexico) The poor "lack time" to sort waste, due to work, while attention and effort are given to other priorities. (11a:6)

52. The collection and disposal of waste is not viewed as essential by the poor (4; 10:80-81) "In the (Philippines) study, for example, people from the lowest income level (...) did not perceive garbage collection as being a problem. Outsiders looking at slum and squatter communities, on the other hand, would probably rate garbage collection as a major problem. Thus, communities have their own perceptions of problems and methods or prioritizing them. Efforts to develop a community will be forthcoming if they are seen as helping to solve the community's problems." (4:97-98)

53. "Moving to (squatter) areas (in Korea) is actually part of a family strategy to achieve higher socioeconomic status. The choice of low-quality housing indicates that a lower priority is given to housing than to education of children, better diet, better clothing, medical care, and other factors." (4:38)

54. The community was disillusioned by the corruption and inefficiency of the public collection system. Because the (SIRDO) researchers were advising the government, the former were associated with the latter in the eye of the people, which hindered the needed people's participation in the operation of SIRDO. (11a:12)

55. The population is not interested in participating in decision-making on matters which do not correspond to felt necessity related to economic activity.(11a:17) Environmental education by itself is not sufficient to make a majority of the population cooperate. Most People do not acquire new concepts rationally, but through senses, experiences. An economic project is needed as an incentive for people to sort out waste (which is required for the operation of the SIRDO technology), because it responds to real (felt) needs of the population, and therefore has possibility of consolidating. (11b:17-18) For example, the attempt to convince the habitants of one community to sort out their waste on the basis of ecological arguments gave poor or partial results; however, when the government recognition of this illegal settlement became conditional on cleaning the community in order

to protect the underground aquifer, SIRDO suddenly enjoyed the strong support and cooperation of the inhabitants. (11a:11)

56. SIRDO technology requires a constant daily discipline, to maintain a biological process (biofertilizer production) whose benefits for the users are in the medium to long term. "The urban community's expectations are always in the short term". (11b:12)

57. The idea of recycling domestic wastewaters in Dakar is more acceptable to the population than that of sewage water ("eaux vannes". (12:33)

technical

58. (Peru) Only 12.59% of collected wastes is composed of recyclable solid inorganic waste, due to the poor economic situation of the country. (9:56) The high percentage of organic waste (44.72%) reveals that almost all of the household income goes to food.(9:57) Nearly half of the solid wastes collected is non-recyclable, which shows the low level of recuperation that can be expected from waste.(9:75)

59. (Mexico) For inorganic solid waste: limited production of waste and lack of space to put different containers (11a:6)

60. (Dakar) Although wastewaters are extremely rich in organic and mineral matters, they are equally rich in (pathogens) and could represent a danger if used for agriculture. A majority of the population surveyed believe that vegetables irrigated by such water can cause sickness.(12:47)

B) OPPORTUNITIES

strength of community

61. In one Asian case study (Chulsae, in Korea), before the impressive improvements brought through self-help, residents would leave the settlement whenever possible. "Poverty was something shared by residents with varying backgrounds, coming from different places, instinctively distrustful of each other and , in many cases, hostile and uncooperative."(4:54-5) The first move to get residents organized came as reaction to government attempts in the early 60s at eliminating illegal squatters such as this one. This reaction was coordinated by a volunteer local indigenous leader and succeeded in cancelling the clearance order with the promise by the residents that they would make the necessary improvements to their habitat. House exteriors were then gradually renovated and sewage pipes installed under steep slope to prevent flood, without any government support. Latter residents successfully negotiated

with the authorities for title to the land and good quality houses were subsequently built. The whole process took 4 years, with material obtained on credit from the neighbourhood construction material store. Skill labourers were also employed on credit, while residents also contributed their labour. Following renovations, the value of land and housing soared. "The successful housing improvement project also triggered a self-sustaining mobilization of all potential resources needed to improve the lives of the residents in the Chulsea neighbourhood." (4:55-57)

62. In low-income urban communities in the Philippines, "the sense of community belonging is very strong (and) residents attach a high value to "living together", irrespective of the prevailing economic and social difficulties that characterize this togetherness." (4:92)

63. (Peru) The community is divided into Unidades Comunal de Vivienda, each being a grouping of 60 families which work together for housing and make a commitment to develop the barrio. (9:17)

64. (Khartoum) Self-help associations were developed in communities to provide essential services. Money is collected through voluntary donations, used in conjunction with community's own skills and labour. "(These) associations also act as political pressure groups to ensure that main services such as water and electricity are provided to the housing areas with the community arranging the internal distribution." (8:48-49) "(There is a) very strong culturally-based commitment amongst the Greater Khartoum urban communities to contribute financially to the provision of social and basic services and local development, (which) needs to be carefully revised and rationalized so as to be better utilized." (8:85) "Low class residential areas have the majority of self-generated and active institutions".(8:152) These are considered by respondents good substitutes for government institutions. (8:153) "(They) have also provided a feeling of belonging and attachment in some of the neighbourhoods, as indicated by 80% of all respondents of all residential areas. In many cases, the commitment to these institutions is an ethnic one. (These institutions) also bring the collective and group action characteristic of rural areas into the city." (8:154)

behavioral/perceptual

65. "Improvements in housing and community facilities are often times dramatic once residents are assured of legal ownership." (4:94)

66. Community effort and involvement in provision of basic services need the agreement of everyone concerned that the answer to providing basic services lies in joint solutions (government-community). (4:105)

67. (Arusha) People believe that locally made equipment can bring improvement in waste collection over the existing public equipment. "We do not see the modern equipment anyway..." (7:69)

68. (Tegucigalpa) The users are willing to pay for the services. (5)

69. (Lima) 61% of respondents believe the community dwellers are (should be) responsible for waste management. (9:35)

70. (Lima) People are preoccupied with waste mainly for health reasons (9:31)

71. (Dakar) The majority of population surveyed are aware of danger for health and the environment of wastewaters not being disposed of properly, although they fail to fully understand the extent of the danger. (12:32)

technical

72. In India's urban centres, in general, although 40% to 60% of solid waste is compostable, only 10% of waste collected is turned into compost. (10:70)

3. SOLUTIONS

cooperation between government and population

73. (Asia) "In the organization of participatory urban services, one of the critical questions to resolve is the best geographic and demographic unit for functional efficiency. Is there a threshold size at which urban services can be effectively organized by the people themselves?" (4:257) Some community units may be too small to provide basic services, while others may be too large to allow a sense of cohesiveness to be felt by residents. (4:258)

74. (Asia) "For government agencies, the issue of self-interest must also be considered. (...) Government agencies (...) must value input from the community if programs are to be evolved using this approach. (They) must be able to envisage a more efficient delivery of services using a participatory approach." (4:97-98)

75. (Asia) "National ministries that provide services on a sectoral basis should be guided in their planning by the needs of communities as articulated and prioritized by the local (leaders and local government)." (4:104) "Community meetings, with the help of outside facilitators, may be needed to enable communities to define their priorities and take stock of their

resources, opportunities and limitations." (4:105)

76. (Asia) "Different perceptions of the needs of an urban community by the residents as opposed to the delivery organizations bedevil many well-intentioned efforts and result in low rates of participation and success." (4:259) "Need articulation and the nature of activities to be pursued by community participation hinge on the availability of information being funnelled upward or downward. Ideally, information should flow freely among four different levels -individual, household, community, and state - so that the best strategies can be adopted to meet the socioeconomic needs of each urban community.(4:259) "In almost every study, the mismatch between residents' needs and actual programs was perceived. It was recommended that service delivery agencies should examine the hierarchy of needs (...)" (4:260)

77. (Asia) "Where relevant, government financial assistance should be accompanied by only broad guidelines so that the community can set its own priorities with respect to what services to provide." (4:261)

78. (Philippines) "Decentralization of service delivery (...) should be carried out in coordination with city offices. Indicators of success should be established to stress community participation and service coverage. Performance standards for personnel should also be revised to include incentives to work with the community. (...) What is needed is to reorient community leaders and bureaucrats toward joint participatory planning and action. (...) Joint orientation and training workshops should, therefore, be held periodically to develop skills, open lines of communication, and identify problems/opportunities . This is an area where academic or research institutions can play a major role." (4:116)

79. (Asia) "As participatory urban services are people-based, it is not uncommon that strong leadership (formal or informal) and successful delivery are positively related. " (4:258) "The studies were unanimous about the importance of leadership for effective participatory urban services.(4:260) "Leaders have to be identified, trained, nurtured. (...) Similarly, residents also need to be educated and trained as a majority of them are too poorly educated to comprehend the complexities of existing bureaucratic procedures." (4:261)

80. The problems with self-help activities in Arusha have been the lack of proper direction and encouragement. (7:)

81. (Tegucigalpa) It is very important to gain political interest and commitment in maintaining an efficient system, in order for the municipality to keep its side of the compromise, such as providing financial and institutional support for collecting wastes at communities' disposal sites. A sustained commitment on the part of municipality is a

prerequisite for community participation (5:Modulo, VOL II, annexe I, pp. 5-6.)

82. (Africa) "(P)roper balance between public and private sector initiatives, between local responsibility and central control, between international standards and indigenous requirements, and between the needs of the poor and the requirements of the community as a whole will all have to be worked out through struggles and bitter experience. Ultimately the solutions (...) must be formulated locally, by local people, on the basis of local experience and information. That these local problems are beginning to be taken seriously all over the continent is a hopeful sign. Their solutions will require both imagination and enormous dedication." (6b:66)

83. (Africa) "The question remains as to how urban institutions and CBOs can and do collaborate to improve urban management. The links between urban government and CBOs need to be articulated. In this respect, a thorough review is needed of the successes and failures in the region so far." (6b:32)

84. (Lima) It is difficult for the municipality to take charge of waste collection due to its limited resources. Therefore, the community must organize itself for the task. (9:31)

material incentive (employment, income)

85. (Indonesia) Activities should provide benefits to the residents, especially in terms of employment, for them to become more involved. Cooperatives could be formed for different activities. This would also provide their members with a sense of belonging. (4:209)

86. (Asia) "Participation in urban service delivery may offer the possibility of employment for residents of low-income communities. Even very small income subsidization by the government can create many income opportunities for low-income communities." (4:11)

87. (Tegucigalpa) Although slum dwellers see waste as a problem, they consider it less of a priority than other necessities, such as lack of drainage, land tenancy, fresh drinking water, electricity, roads, etc. Waste disposal is the least important in a scale of priorities. There is need for a global, integrated multi-sectorial and multi-institutional approach which would seek to supply all needed services at the same time, if the solid waste program is to work. (5:4,16) One of the most important conditions for integral development is the creation of employment for the poor. (5:MODULO, Annexe III)

88. (Tanzania) The community may have to be provided with incentives so as to participate effectively. (7)

educational/informational

89. (Asia) "The most practical recommendation is to expand resident's awareness of the need for and scope of participatory urban services and their essential roles in bringing these to fruition. If more people can be involved at all stages of service provision, including planning, implementation, and evaluation, it is more likely that the service will be provided". (...) This multiple-stage process will entail needs identification, consensus seeking, a free flow of information, community involvement, and monitoring and assessment of results. The Philippine model in this study appears to come closest to this ideal." (4:260)

90. (Tegucigalpa) Given disposal practices and the interest of the community in cleaning up, an education program is needed which would involve mass media diffusions before at the time of collection. (5:6)

91. (Arusha) More training is needed of supervisors and staff: urban sanitary standards, productivity assessment, equipment maintenance, etc. (7:73)

organizational/technical

92. (Asia) The interaction and interrelationships among urban services must be understood to prevent many inefficiencies. (4:13)

93. (Arusha) Given current shortages of resources, non-conventional methods of delivery should be sought which should not depend on imported inputs.(7:26)

94. (Arusha) When self-help activities are in progress, sanitation personnel should be present to give expert advice. (7)

95. (Tegucigalpa) Decentralization of equipment supply is needed. Equipment and materials ought to be stored in the vicinity. Smaller depot of equipment should be installed in the divisions or wards, which would make this equipment more accessible to community members. (i.e. decentralization of equipment supply) (5)

96. (Philippines) City dump trucks are inadequate, mainly due to poor access to houses (narrow and winding roads). "The community (...) can work with the city agency to determine the inputs, such as routing and collection schedules, and set up garbage collection points and procedures. The outputs would be a more environmentally safe community and possibly establishing a local enterprise to handle salvageable items from discarded materials" (4:106)

97. (Arusha) There is a need for a new appropriate technology, such as wooden wheel barrows to transport waste, to be constructed by local artisans with local material, and used by community members, thus creating jobs. (7:72) Similarly, pathways should be created, possibly with gravel or sand with stones, and maintained for carts and people to bring waste to collection areas. Some community members could be employed (not necessarily on permanent terms) or contracted out by the municipality. (7:79-84)

98. (Santo Domingo) The existence of sanitary landfills in the various sectors of the city help reduce transportation costs. (13:37)

99. (Arusha) Buried household waste turns into manure, but inhabitants do not attempt to make use of it, although this could result in increased yields in fruits and vegetables crops, providing employment and nutrition. (7:76)

100. (Santo Domingo) The slumps in urban areas have the capacity to store the solid waste for more than 20 years, and could therefore be used for the production of methanol for home energy or vehicle combustion. (13:37)

101. (India) Most practical attempts at composting have run into financial difficulties because of inappropriate technology. Further research needed to develop technologies for the production of low cost manure. (10:83)

4. OVERVIEW OF FINDINGS, AND COMMENTS

The projects's contributions presented in the first three sections above are obviously diverse. The following section therefore summarizes and comments only the most common and principal observations with regard to the objectives of the Waste Management component of the URB Program document (section #15), and to the general Program approach and objectives (see mainly sections #9-13). Comments on the research methods used by the projects reviewed are found at the end of this section. Also, additional information for each project can be found in the corresponding appendix.

4.1. Causes of waste problem

The problem of waste disposal in urban areas is seen as having various causes.

-At a more primary level of causality, perhaps, rapid urbanization, which is itself due to deeper structural causes such as regional disparity (3), forced industrialization (4), or concentration of wealth and resources in capital cities (2), results in rapid increase in demand and poorly planned settlements which stresses capacity for service delivery (1,2,5,6,7,8).

-Poverty is often perceived to be also at the root of the problem. Central and local governments financially strapped by a declining economy are understaffed and/or lack proper equipment (9,10,12). Cost recovery of municipal service delivery is affected by a narrow tax base (11), which is largely composed of the poor, who would rather allocate their resources to necessities of life which they feel are more urgent (51,52,53,55,87).

-Institutionally, public agencies responsible for waste management are seen as lacking in several respects (15,16,17). They are generally over-centralized, complex and bureaucratic, which does not allow the fluidity in information transmission or flexibility in decision making needed to assess and address local and popular needs (18,19,20). Local governments are not given enough resources to operate autonomously and efficiently, and are dependent on central government resources, and hence priorities (20,21). Also, corruption has been observed at the level of operations, where users must bribe the operators in order to receive the service (23), and where poorer neighbourhoods are neglected while richer ones are favoured (22).

4.2. Constraints and opportunities for people's (community's) adjustment strategies.

Faced with the failure or shortcoming of the public sector to provide adequate services for waste disposal, most documents point to the need for communities to participate more actively (in various ways and degrees) in the provision of this service. This also relates to the basic perspective of the URB Program. As with disaster prevention and mitigation, however, serious obstacles stand in the way of this process.

Constraints:

-Perhaps the most repeatedly reported constraint to people or community strategies for improved waste management is the weakness of community itself. The heterogeneity in the composition of local communities is often observed. Dwellers often come from various cultural or socio-economic backgrounds. Although this heterogeneity could perhaps suffice by itself to thwart people's inclination and ability for cooperation, the main obstacle to the latter is seen in the diversity of needs, priorities and expectations regarding basic services to be provided, which creates obstacles to local participatory strategies (29,28,26,31,34,45).

There is a difference between rural and urban communities in terms of cooperation (30) and organization (38). Violence has been observed during cooperation efforts within poor urban settlements (32). Community leaders may also be local landowners or politicians and have interests which may conflict with community improvement efforts (36,41). Urban communities on the whole seem less homogeneous, cohesive and cooperative than rural ones. Attention is finally called to the need of properly defining the community sector in urban Africa (37).

-Although poverty is a cause of the waste problem, it may also act as obstacle to its solution. In many cases, although the poor may be aware and concerned about waste, they do not confer a high priority to this problem, while their time and resources are devoted to more urgently felt necessities of life (51,52,53,55,87). The URB's emphasis on promoting "waste management as a community-based resource-generating activity" seeks to respond to this rationale. (URB document section 16.1)

Opportunities:

While several problems are reported in relation to community cooperation, instances of successful community organization and self-help and promising behavioral/perceptual aspects are also noted. (61-71) Strong community bonds in some of the poor neighbourhoods studied allow mutual help for essential services (62,63,64). In one case, such cohesion is said to be based on cultural and/or ethnic commitment (64); in another case, it arose out of an eviction threat (61); in another yet, such threat of eviction was one of the main contributing factors to community participation for improved waste management after environmental education had failed (55). The latter two cases lend support to the claim that the poor will cooperate among themselves only in activities which respond to their priority needs. (55,85, and URB Program document). However, the potential for replicating, as well as the possible social costs of, these 'success' stories could be further studied and appraised with reference to the Program aim of providing socially attractive solutions.

4.3. Solutions

-Most recommendations seem purposefully ambitious or encompassing, thus reflecting perhaps the nature and dimension of the task ahead. One document for instance states that poverty must be eliminated before the waste problem can be dealt with! (88). It is generally agreed that, because both the poor (communities) and the State lack the resources required to tackle the problem on their own, they must unite and combine their resources. This requires a better knowledge of community's real needs by government agencies -but also an understanding of government needs by the needy (74)- which are to be gained mainly by decentralization and free flow of communication between authorities and grassroots levels (75-78,89) and promotion of community leadership (79). More research is also needed to define the actual and potential terms of this relationship (82,83).

-Some points of particular interest to the Program:

- .Participation of the poor requires material incentives, mainly employment (85,87,88,96,97,99,100).
- .Need to understand the interrelationships between services (92).

- .Need to determine optimum size of community for efficiently in service provision (27,73).
- .Need for alternative delivery methods with low import content (93).
- .Location of landfills to reduce transportation costs (98).
- .Composting for fertilizer production (99, 101).
- .Integrated system for waste management (SIRDO).

5. PROJECTS AND SECTIONS RELATING TO PHYSICAL SCIENCES:

-84-0005 Urban Health Services (Karthoom). Final report. Section on sewage system: 99-104, 105-108.

-85-0203 Waste water reuse (Peru). Final report (Spanish). An evaluation of the sanitary and toxicological acceptability of waste waters (treated and untreated) for use in irrigation in Lima.

-88-0340 Community Water Treatment System (Columbia). Final report (Spanish). Various sections call for review by water treatment expert.

-88-0104 Integral System for Recycling Organic Waste (Mexico). Final report (Spanish). Contains two sections concerning the bio-chemical and agronomic aspects of the SIRDO technology. (1) "Lineas de Investigacion Intensiva de Produccion Agricola", pp. 1-36 (near the end of Vol I); and (2) "Optimizacion de Procesos: varios parametros fisicoquimicos, bacteriologicos y parasitologicos" at the very end of Vol I. Additional material may be forthcoming.

-90-0153 Urban Domestic Wasterwater Treatment (Dakar). Final report (French). Findings from engineering and biochemical studies of waste waters, and ecological study of the potential for the use of plants species in treatment process.

CHAPTER 3

WATER MANAGEMENT

PROJECTS REVIEWED:

4. Participatory Urban Services (Asia) 80-0136

Objective: Describe the structural arrangements of the existing services, evaluate the effectiveness of various forms of self-help service delivery, and recommend policies for city planners administering or contemplating such schemes.

6. Urban Growth Management: 7 Cities (Africa) 84-1005

Objective: Strengthen and build upon selected urban research projects that have received support from IDRC and improve the dissemination of their research results.

8. Urban Health Services (Khartoum) 84-0005

Objective: Analyze health services in Khartoum to recommend improvement for the low-income groups without recourse to large capital infrastructure.

10. The Financial Management of Urban Services: Water and Sanitation (India) -Phase II- 86-0261

Objective: Study the financial and management structure of nine local governments and identify ways to improve the management of revenue that is available to authority, and identify ways to coordinate government, private-sector and community initiatives to minimize the government's cost of providing water and sanitation services.

14. "Rapport Chauvin".

Objective: Review water related projects of IDRC and propose orientation for future research.

NB: Projects 4, 6, 8 and 10 have addressed the water theme as one among several other urban services, including waste management, and their principal conclusions and recommendations are general and refer to both water and waste management. Most of the findings presented below, therefore, have also been exposed in chapter 2.

Also, the above four projects use a social sciences perspective, although some of the reports contain sections relating to physical sciences. The projects identified in the IDRIS search which are dedicated to urban water supply and quality more specifically, on the other hand, pertain essentially or exclusively to physical sciences (mainly hydrogeology, structural engineering and bio-chemistry). A number of these projects relate more closely to the URB approach and concerns, and could possibly be reviewed by relevant experts. A list of these projects and sections is included at the end of this chapter.

1. CAUSES OF VULNERABILITY

structural

1. In Asia, rapid urbanization hinders in many ways the provision of adequate services by city governments. (4:9)
2. "Migration to cities or urban centres is typical of nations in which economic differentials exist among regions (as in the Philippines)". (4:73)
3. In Korea, massive rural-urban migration, propelled by the industrialization movement forced by the Korean government since the 1960s has resulted in the creation of many squatter areas and a strain on basic urban services. (4:30-31)

political/institutional

4. There is a lack of priority generally conferred to urban services in Sudan. (8:169)
5. In Khartoum, the urban administrative system is too complex, with too many bodies involved, which result in conflict or inaction. The local government has failed to clearly delineate responsibility and functions between itself and central government. Financial resources are inadequate, due to outdated and inadequate tax base, incompetence and corruption in collection, and no clear system to develop spending priorities and cost effectiveness. (8:166-167)
6. The critical lack of urban services in the Philippines points to the failure of the top-down delivery approach, where the government provides the services, the people pay for them and a group of managers and workers ensures that the services are provided regularly. (4:74) For bureaucracies, community residents are seen "as clients or beneficiaries, not as partners in service management". (4:115)

behavioral/perceptual

7. "The results of the five (Asian) studies emphasize that governments are not unaware of the need to improve urban service delivery programs. Nor are urban communities unaware of their needs. The problem is how to develop effective responses". (4:262)

2. CONSTRAINTS AND OPPORTUNITIES FOR PEOPLE'S ADJUSTMENT STRATEGIES

A) CONSTRAINTS

weakness of community

8. "The organization of a community must be considered if a community is to play a more participatory role. (...) Definitely, a fragmented community will not be able to wield power or influence." (4:98).

9. As squatter settlements spread over the city, town councils in Greater Khartoum often represent different residential class neighbourhoods. This heterogeneity of towns and city councils entails including communities with different needs, priorities and expectation with regard to social services. Conflicts of interests thus dominate council performance. (8:74-75)

10. "Most government programs (in Indonesia) are national programs aimed at both rural and urban communities. Often, they are first designed with the rural population in mind. Certainly, there is a difference in the two types of communities: rural folk are perhaps more homogeneous than their urban counterparts (in terms of income, education, origin, occupation, etc.) but there is also increasing socioeconomic stratification at both the urban and rural levels. (...) Government programs often tend to view a (community) as a socioeconomic or cultural entity, an approach that frequently discounts class differences in most urban (communities), resulting in different needs according to respective groups. These class differences may be one of the obstacles preventing participation (...)" (4:208).

11. The community sector is not yet properly defined, and the roles and types of community institutions in Africa are poorly documented and defined. (6b:29)

12. "African rural CBOs have their counterparts in urban areas though the phenomenon is not so extensive. Such organizations are also more recent and more in response to outside encouragement, either by government or NGOs" (6b:31).

institutional/political

13. "On one hand, the state is anxious to reduce its costs by promoting self-help schemes, which often involve increased "advocacy" by community groups. On the other hand, governments are generally unwilling to allow this advocacy to reach to a point where it challenges their decision-making power. Thus, "participation" is often defined in government terms rather than community terms. The definition of participatory services, therefore, would differ from one country to another." (4:11)

14. In the Philippines, the study has shown that there is a match between the 'natural and

informal' community leaders and the official leaders. I.e. governments tend to nominate natural and locally recognized leaders for the position of community captain ("barangay" officials) (4:93-95). But that the formal community leader is thus also a local politician has positive and negative implications. It may be in their interest to emphasize delivery of services that is timely for maximum election impact, but this may run counter to the sustainability of the services provided. (4:96).

15. Despite a municipal system which is decentralized and oriented to facilitate grass-roots involvement, "all the development legislations for the Khartoum urban administration system were politically motivated and primarily brought about to serve the interests of those in power". There is also a generally low level of implementation of council's decisions (8:67-70)

16. In the communities studied in Indonesia, most people do not seem to participate in government initiated activities, even in those aimed at improving their socioeconomic conditions. The reasons they offer is lack of interest or time. "The structural poverty that has entrapped the low-income groups creates difficulties for them in terms of becoming involved in any service activities that are designed for a wide range of income groups. (...) In delivering its programs, the government utilizes those who are better off and better educated to assist those who are poorer and less educated. In fact, the better-off groups have a different perception and outlook (...) in terms of defining the needs of the community. As a result, the poorer groups often do not enjoy the benefits of the programs. (...) The needs of different income groups are not taken into account. (...) It could be argued that it would be better to be more selective in distributing available services by first determining who needs what". (4:206)

17. (Africa) Urban services delivery suffer from unrealistic western standards, and poor management (too many central government controls, poor record of revenue collection, corruption, internal conflicts). (6:35)

18. (Africa) The provision of water and waste disposal are not a priority among NGOs. None of the NGOs provided infrastructural services (roads, energy). NGOs and voluntary organizations are not always structured to provide certain services that are spatially diffuse or require central planning. Furthermore, they are hampered in the provision of services by public regulatory policies, planning laws and regulations, building standards, rent controls and so on. The question to look at is what services could the informal sector be best suited to provide.(6:52).

19. In Africa generally, few support NGOs provide water, waste disposal and environmental conservation services (6b:28-30).

20. "The spatial distribution of housing and roads in unplanned squatter settlements is perhaps the single most important factor which inhibits the effective and efficient provision of basic services" (14:7)

structural

21. "Historically, provision of services at the community level is generally assumed to have passed through a phase of (self-help at the local community level). (...) With increasing urbanization, economic growth and more and more people entering the wage labour force, however, the time that can be devoted to participatory services has decreased. Consequently, the state and the private sector at various levels (national, regional, city) have come to play an increasing role in service delivery." (4:11).

B) OPPORTUNITIES

strength of community

22. In low-income urban communities in the Philippines, "the sense of community belonging is very strong (and) residents attach a high value to "living together", irrespective of the prevailing economic and social difficulties that characterize this togetherness." (4:92)

23. (Khartoum) Self-help associations were developed in communities to provide essential services. Money is collected through voluntary donations, used in conjunction with community's own skills and labour. "(These) associations also act as political pressure groups to ensure that main services such as water and electricity are provided to the housing areas with the community arranging the internal distribution." (8:48-49) "(There is a) very strong culturally-based commitment amongst the Greater Khartoum urban communities to contribute financially to the provision of social and basic services and local development, (which) needs to be carefully revised and rationalized so as to be better utilized." (8:85). "Low class residential areas have the majority of self-generated and active institutions".(8:152) These are considered by respondents good substitute for government institutions (8:153). "(They) have also provided a feeling of belonging and attachment in some of the neighbourhoods, as indicated by 80% of all respondents of all residential areas. In many cases, the commitment to these institutions is an ethnic one. (These institutions) also bring the collective and group action characteristic of rural areas into the city." (8:154)

behavioral/perceptual

24. "Improvements in housing and community facilities are often times dramatic once residents are assured of legal ownership." (4:94)

25. Community effort and involvement in provision of basic services need the agreement of everyone concerned that the answer to providing basic services lies in joint solutions (government-community). (4:105)

3. SOLUTIONS

cooperation between government and population

26. "For government agencies, the issue of self-interest must also be considered. (...) Government agencies (...) must value input from the community if programs are to be evolved using this approach. (They) must be able to envisage a more efficient delivery of services using a participatory approach." (4:97-98)

27. "National ministries that provide services on a sectoral basis should be guided in their planning by the needs of communities as articulated and prioritized by the local (leaders and local government)." (4:104) "Community meetings, with the help of outside facilitators, may be needed to enable communities to define their priorities and take stock of their resources, opportunities and limitations." (4:105)

28. (Philippines) "Inputs required from outside the community will include infrastructure and technology. In other words, government would have to supply the pipes and faucets. It would also have to supply the vertical management, e.g., for determining water rates and metering consumption. (...) The community, on the other hand, can participate in many ways. Residents can help in the construction of the system (and hence also learn new skills). They can help in deciding where communal facilities should be located and be responsible for the maintenance, repair, and for the collection of service fees. (...) The output expected using this participatory approach would benefit both government -improved service coverage, collection and maintenance, policing of illegal connections- an the community -through the skills learned, revenue collected for services, job creation, and better delivery of water service." (4:105-106)

29. (Indonesia) Activities should provide benefits to the residents, especially in terms of employment, for them to become more involved. Cooperatives could be formed for different activities. This would also provide their members with a sense of belonging. (4:209)

30. (Asia) "Participation in urban service delivery may offer the possibility of employment for residents of low-income communities. Even very small income subsidization by the government can create many income opportunities for low-income communities." (4:11).

31. (Philippines) Decentralization of service delivery (...) should be carried out in

coordination with city offices. Indicators of success should be established to stress community participation and service coverage. Performance standards for personnel should also be revised to include incentives to work with the community. (...) What is needed is to reorient community leaders and bureaucrats toward joint participatory planning and action. (...) Joint orientation and training workshops should, therefore, be held periodically to develop skills, open lines of communication, and identify problems/opportunities. This is an area where academic or research institutions can play a major role." (4:116)

32. "Different perceptions of the needs of an urban community by the residents as opposed to the delivery organizations bedevil many well-intentioned efforts and result in low rates of participation and success." (4:259) "Need articulation and the nature of activities to be pursued by community participation hinge on the availability of information being funnelled upward or downward. Ideally, information should flow freely among four different levels - individual, household, community, and state - so that the best strategies can be adopted to meet the socioeconomic needs of each urban community. (4:259). In almost every study, the mismatch between residents' needs and actual programs was perceived. It was recommended that service delivery agencies should examine the hierarchy of needs. (4:260) "Where relevant, government financial assistance should be accompanied by only broad guidelines so that the community can set its own priorities with respect to what services to provide." (4:261)

33. (Asia) "As participatory urban services are people-based, it is not uncommon that strong leadership (formal or informal) and successful delivery are positively related. " (4:258) "The studies were unanimous about the importance of leadership for effective participatory urban services. (4:260). "Leaders have to be identified, trained, nurtured. (...) Similarly, residents also need to be educated and trained as a majority of them are too poorly educated to comprehend the complexities of existing bureaucratic procedures." (4:261)

34. (Africa) "(P)roper balance between public and private sector initiatives, between local responsibility and central control, between international standards and indigenous requirements, and between the needs of the poor and the requirements of the community as a whole will all have to be worked out through struggles and bitter experience. Ultimately the solutions (...) must be formulated locally, by local people, on the basis of local experience and information. That these local problems are beginning to be taken seriously all over the continent is a hopeful sign. Their solutions will require both imagination and enormous dedication" (6b:66).

35. (Africa) "The question remains as to how urban institutions and CBOs can and do collaborate to improve urban management. The links between urban government and CBOs need to be articulated. In this respect, a thorough review is needed of the successes and

failures in the region so far." (6b:32)

educational/informational

36. (Asia) "The most practical recommendation is to expand resident's awareness of the need for and scope of participatory urban services and their essential roles in bringing these to fruition. If more people can be involved at all stages of service provision, including planning, implementation, and evaluation, it is more likely that the service will be provided". (...) This multiple-stage process will entail needs identification, consensus seeking, a free flow of information, community involvement, and monitoring and assessment of results. The Philippines model in this study appears to come closest to this ideal. " (4:260)

technical/operational

37. (Asia) The interaction and interrelationships among urban services must be understood to prevent many inefficiencies. (4:13)

38. Water, sewerage and the quality of housing are strongly interrelated and should perhaps be treated as a single sector (4:15)

39. "In the organization of participatory urban services, one of the critical questions to resolve is the best geographic and demographic unit for functional efficiency. Is there a threshold size at which urban services can be effectively organized by the people themselves?" (4:257) Some community units may be too small to provide basic services, while others may be too large to allow a sense of cohesiveness to be felt by residents. (4:258)

4. PARTIAL OVERVIEW OF FINDINGS, AND COMMENTS

The reader should note that most of the above mentioned causes of water problems and constraints and opportunities for people's adjustment strategies, in terms of structures, politics, institutions and behaviours, are similar to those observed in relation to waste management. The reader is thus invited to refer to sections 4.1 to 4.3 in chapter 2 for a summary.

Urban water management, however, appears in the literature reviewed as being less amenable to popular participation than waste management. Participation was observed in one case primarily as a means to pressure government for adequate water delivery (23), and recommended in another mainly in the form of people's cooperation for the implementation of government initiatives or strategies (28). Perhaps the larger capital investment and

infrastructure (physical and institutional) normally required for urban water delivery could explain the relative absence of CBOs and NGOs active in this field (18,19), as well as the use of a more technological and 'macro' approach in most research projects on water management.

5. LIST OF UNREVIEWED SELECTED PROJECTS PERTAINING TO PHYSICAL SCIENCES: HYDROGEOLOGY AND BIOCHEMISTRY (mainly)

- a) Groundwater Pollution (Tanzania), (HS-EES) 87-1039.
- b) Community Water Treatment Systems (Colombia), (HS) 88-0340
- c) Hydrogeology (Bamako/Mali), (CP-EES) 88-1017
- d) Latin American Urban Hydrogeology Network, (EES-FAID) 88-1029
- e) Groundwater Contamination (Sao Paulo, Brazil) Phase II, (EES) 88-1033
- f) Groundwater Management in Coastal Region (Indonesia) 91-1007

A section from project 8 (Urban Health Services, Khartoum, 84-0005) evaluates water supply's capacity and demand (8:91-98).

6. EES's REVIEW OF HYDROGEOLOGICAL PROJECTS ('Parson's Report'):

Evaluation of Urban Hydrogeology Projects: Argentina, Bolivia, Brazil, Mexico, Uruguay, Benin, Mali, Senegal, Thailand, Kohn Leonoff, Consulting Engineers (Myles Parson), 1990. The review covers projects c), d) and e) above. These, however, as most of the other hydrogeological projects reviewed by Parson, were relatively incipient at the time of his report, and the latter thus offers little specifics in terms of research findings. While that evaluation was not explicitly pursued in relation to the URB Program approach and objectives, some of its conclusions and recommendations could perhaps be pertinent to our concern. The report is available in the division.

7. HS's REVIEW OF WATER PROJECTS ('Chauvin's Report'):

IDRC Research on Water for Development Issues: a Future Research Agenda for the Health Sciences Division and IDRC, by Jacques Chauvin, February 1991.

The following conclusions and recommendations found in the report with respect to the Centre's research agenda on Water may be of particular interest to the Program. Note that this review was completed before the Centre's restructuring.

-The report recommends a Centre's corporate, more holistic, interdisciplinary, inter-divisional and cohesive approach to the discussion of issues as well as to the review,

identification and development of water-related research activities. Among the principal research issues: water resources management; planning and development of urban-based water services, with particular reference to peri-urban populations; community-based planning management and evaluation of water resources and supply systems; the socio-cultural dimension of human interaction with water; institutional capacity building; and human resources development.(iv-v,103-112)

-For the HSD, some among the main research issues should be: wastewater use for crop irrigation and the implications for human health; the examination of the cost-effectiveness of alternative institutional arrangements (community-based, government-centred) for the planning, implementation, monitoring and evaluation of water supply systems. (14:116) In collaboration with EES, continued support for investigations into actual and potential contamination of groundwater resources by human and domestic waste, and industrial and agricultural effluent. (14:119).

HSD should undertake a comprehensive review of research and development initiatives for the following topics:

- .PVC handpump technology
- .groundwater pollution from on-site sanitation facilities
- .rainwater catchment systems
- .wastewater treatment/resource recovery and reuse
- .health/environmental impact of improvements in water supply facilities
- .community-based strategies for the planning, implementation and management of water supply improvement activities. (14:vii)

The issues are many and cannot be all effectively addressed by the Division due to present limited resources. (14:92-93).

-The list of water-related projects found at the end of the Chauvin report contains certain projects which may be of particular interest for the URB Program. These are:

HSD:

- .Participatory Strategies in Water Supply (Costa Rica) 88-0243
- .Environmental Slum Improvement (Thailand) 86-0136 (first phase of Slum Improvement 88-0203?).

SSD:

- .Natural resource use and technology diffusion (mexico) 88-0067.
- .Urban services in Monteria (Colombia) 83-0028

EES:

.Water Resources Management Model Metro Manila (Philippines) 89-1029

CHAPTER 4

URBAN AGRICULTURE

PROJECTS REVIEWED

15. "Urban agriculture and fuel consumption in Kenya"(exact title and project number not available)

Objective: To investigate and document the extent of food and fuel production and subsistence consumption in urban Kenya. In so doing it is intended to identify the important policy issues related to urban food and fuel production and subsistence consumption in Kenya.

16. Urban Agriculture (Uganda) 88-0325

Objective: To learn how the activity of urban agriculture is organized. Determine who produces what, how much and why, with what levels of investment in land, labour, and capital. Examine ways in which urban agriculture could be made more productive.

NB: A project titled "Urban Agriculture (Tanzania)" (90-01230), attempts to explain the dynamics of urban agriculture in the Kinondoni District of Dar es Salaam. The final report is expected soon, and only a short progress report is available at this time, which bears almost exclusively on the research methodology used. See appendix 15.

The Kenyan project (#15) is a baseline study of the nature, extent and significance of food and fuel production, distribution and consumption in 6 representative urban centers in Kenya. The published final report is titled *Urban food production and the cooking fuel situation in urban Kenya. National Report; Results of a 1985 National Survey*. By D. Lee-Smith, et al., Mazingira Institute, 1987. The Ugandan project (#16) begins with a review of existing literature on urban agriculture in Africa, and proceeds with an in-depth case study of Kampala. The published final report is titled *Urban Agriculture in Africa: The Case of Kampala*. By D. Maxwell and S. Zziwa, Acts Press, Nairobi, 1992.

Both reports are extensive and very well structured and their conclusions and policy recommendations are well supported by data and analysis. A selection of the most pertinent findings and conclusions in relation to the URB Program's research initiative is offered below.

FINDINGS

1. URBAN AGRICULTURE (KENYA)

1. In Kenya, while only 29% of the urban population engage in food production, either within or outside their urban areas, about 63% of heads of urban households do so. (15:55)

2. Only 20% of urban dwellers in Kenya engage in livestock keeping, although half of the heads of urban households (49 percent) do so. There is a lower percentage of heads of urban

households who engage in livestock keeping than in crop production. (15:55-57)

3. In urban Kenya, 71% of households said that they have access to land which is suitable for food production. Only 31% said they have access to urban land, and 29% say they grow food on urban land. (15:84-86)

4. "59% of households with access to urban land were in the very low income category..." (15:86)

5. "While very low income households were as much or more represented among those with access either to rural or to urban land, they were less represented among those with access to both." (15:86)

6. The results strongly suggest that if "urban dwellers are given access to land where food can be grown they will grow food on the land." (15:88)

7. 62% of urban households without access to land said they wished they would have such access, while 30% said they would not. 62% of those who wish to have access to land said they want to be given free access to idle land, with 57% wishing the Central Government would take action in that respect, and 20% wanting the municipal government to do so. (15:88-91)

8. 49% of farming activities take place in backyards, 17% by the roadsides, 13% along rivers, and 21% in other places (e.g. open spaces in residential areas, open fields and forested land.). (15:91).

9. The average plot is 0.0484 hectare. (15:94)

10. Most urban farmers do not own the land they farm and "there are far fewer households from the very low income group who own their [plots] than there are in the population as a whole." (15:96)

11. Generally, in large towns, more urban farmers use public land and very few grow food on rented land. (15:96-98).

12. Most urban farmers grow maize (59%) or beans (41%). (15:102)

13. "Ninety-five percent of urban farmers consume the crops they produce, and only 23 percent sell any part of their produce." (15:102)

14. The urban farmer produces on average 155kg of food per season. Plots in Nairobi are about three times more productive than those in other towns. (15:105)
15. "In most cases, labour inputs are provided by unpaid household members, although heads of households themselves feature prominently in this." (15:116)
16. 56% of urban farmers are women (15:116). "It is only among the hired labour category where males exceeded females (82% against 18 percent)." (15:116)
17. 76% of farmers said they had no problem obtaining seeds. (15:120)
18. Nairobi had the highest volume and value of crop sold. (15:109)
19. Only 11% of urban farmers use fertilizer. In Nairobi, the percentage is 18%, the highest of all urban centres. 30% of farmers use farm yard manure. Of these farmers, 47% obtained the manure from their own animals. "Only one quarter of the farmers said they used compost and most of these (96 percent) obtained it from their own sources." (15:124-7)
20. "In general, urban farmers do not use commercial inputs such as fungicides [7% of farmers] and pesticides [10%] ... This may be because many [plots] are too small to justify the use of inputs. Indeed, most of those who said they use these inputs tended to have larger [plots] compared to those who do not." (15:132)
21. 61% of farmers do not practice crop rotation, 48% of which for ignoring its benefits. There is therefore a need for education. (15:136)
22. Only 3% of farmers had been harassed by authorities for growing crops. "Thus although municipal by-Laws in Kenya prohibit urban crop production, it seems that they are not enforced rigorously or effectively." (15:142)
23. About 44 percent of sample (455 farmers) said they would starve if prevented from growing crops in their urban plots. (15:145)
24. Half of urban farmers irrigate. Those who do not said it was due to lack of access to adequate water, or low proximity to source of water. 29% said it was because of adequate rainfall. (15:148)
25. 71% of those who irrigate obtained water from treated piped supply, even though municipal authorities discourage the practice. (15:148-152)

26. "[M]ost farmers have never studied agriculture ... and do not get advice on appropriate crop husbandry practices. This state of affairs must have unfavourable implications on the yields and the crop quality urban farmers can achieve." (15:154) 79% of farmers who do not received advice said they would like to do so. (15:157) Most urban farmers believe the Central Government should provide them with advice on husbandry practices. (15:157)
27. More than half the sample surveyed say they cooperate with neighbours (exchange of seeds, labour, sharing of tools, protection from thieves and animals, etc.. (15:160)
28. "Theft attributed to neighbours affects the highest proportion of farmers in Nairobi (18 percent)." (15:163)
29. Most farmers are not members of any farmers' association or group, although most say they would join if such organisation was formed. (15:163-6).
30. "22 percent of the 269 households that stoppxd farming did so because they were denied access by the owners..." (15:171).
31. Most farmers using public water supplies for irrigation said they would loose their crop if supply was cut. (15:174)
32. More than half of urban households who keep livestock in urban areas are in the very low income category (15:182). About 75% would like to keep livestock (most of them poultry, mainly, for requiring less space, although most want to keep more than one kind). (15:185-8). Most households keep animal for subsistence purposes (15:192). Livestock provides mainly eggs, milk and wool (15:199).
33. Of those who do not keep livestock, 48% said it was because of lack of land (57% in Nairobi) (15:185).
34. Most of the eggs and milk are sold to neighbours and friends. (15:199-200)
35. 98% of livestock keepers have never been harassed (15:222). Lack of veterinary services was mentioned as a major problem by 42% of households, theft by 19%, lack of capital by 7%. (15:226). About 87% have no member of their household trained in animal husbandry. (15:228)
36. "It is possible that ... as free fodder becomes scarce during the dry season [farmers] tend to switch to whatever else is available such as household or other wastes such as from hotels, or else simply feed their livestock less." (15:206). "The urban poor allow their livestock to

wander freely feeding on anything from garbage to farm wastes....Efforts by the authorities to keep the towns clean by clearing garbage and cutting grass and other vegetation can have an adverse impact on the income of the urban poor if it is done where they keep livestock since it means that they have to purchase fodder from their meagre incomes." (15:212)

37. Only 1% of the sample farmed fish. 40% of those who do not would do so if provided with water (15:215-6).

38. "[A] significant proportion of urban households display a lack of awareness on the legal position as far as livestock keeping is concerned." (15:238) Although by-Laws prohibit such practice, they have not generally been enforced. Only since 1984 efforts to restrain the practice have been made. (15:238)

Conclusions and recommendations:

39. While about half of urban dwellers in smaller towns grow at least some of their own food in urban areas, less do so in larger cities (20% in Nairobi). (15:275)

40. "[A] proportion of the very poor who are unable to feed themselves on their earnings are also not feeding themselves through urban farming, due to lack of access to urban land." (15:276)

41. Livestock keeping is less common among low-income group mainly because of lack of space. (15:276)

42. 69% of urban households had no access to urban land for growing crops. (15:278)

43. 95% of urban farmers produce for own consumption; only 23% sell products. (15:279)

44. "It is clearly apparent that crop farming is a normal activity for most urban Kenyans, but that the very low income groups have most trouble in doing it, as well as most need for it in terms of inadequate income and the health and even survival of their families." (15:280)

45. Low income groups live in high density and poorly serviced areas, which makes urban farming next to the house difficult. (15:280)

46. "Under-utilized urban land, road, rail and river reserves, (especially the last mentioned), provide ideal sites for short or medium term "allotment" of land to the urban poor, in the interests of increased amounts of urban food, for domestic subsistence use, larger amounts of cheaper food on the urban market, and increased income for urban poor households from the

sale of produce." (15:281)

47. "88% of all urban farmers mentioned more extension advice when asked to state what help they needed to improve their farming production." (15:282)

48. "Re-use of domestic waste water ... could significantly improve farm productivity if promoted by extension advice, without putting any undue stress on urban water supplies." (15:283).

49. "The urban poor could particularly benefit from extension advice on better crop practices and inputs which they can afford (manures, composts and mulches) and from which they could also make an income producing. In this respect, it would be useful if local authorities coordinated such advice, not only with the Ministry of Agriculture, but also combined extension advice with a land allotment program which included livestock production ... with supervision and assistance more easily provided to such designated areas in low income residential neighbourhoods. These urban livestock spaces could usefully be planned along with refuse disposal which is a resource the animals need ... [T]he practice of density being inversely proportional to income also needs to be reviewed, so that low and very low income households have the same opportunities as middle and high income earners to keep livestock." (15:283-5).

50. 20% of all animals died. Lack of veterinary services is the main problem. Such services should be provided by local authorities in collaboration with the Ministry of Livestock. (15:286-7)

51. "It is the largely low and very low income urban farmers using public land who have an interest in common which needs some protection and support from the public sector and a representational organization." (15:290)

52. "Informal cooperation was highest in the smaller towns, and lowest in Nairobi (15:291)

53. [C]ooperation in formal groups would be helpful to urban farmers in addressing most of their commonest problems, which were, in order of frequency, crop destruction by animals, crop theft, lack of inputs, and lack of finance." (15:292)

54. 56% of urban farmers are women, proportions being higher in larger towns. "Urban extension programs need to be specifically targeted to women farmers if they are to effectively reach the majority". (15:293)

55. With more accessible extension advices, increased productivity could be obtained, which

would create more availability and cheaper price of food in urban areas (the latter due to reduced transportation costs). This would also provide better income to poor farmers, if assisted in addition by marketing advice. (15:295)

56. "Productivity, nutrition and incomes could also be improved through longer term assistance on propagation and cultivation of indigenous vegetables..." (15:297)

2. URBAN AGRICULTURE (UGANDA)

Review of literature on urban agriculture in Africa

56. The limited literature available suggests that urban agriculture is common throughout Africa and amounts to an important component of household survival strategies for the urban poor, increasingly so in the last decades. It also represents the best hope for the unemployed in the near future. (16:2,11)

57. Cultivation and livestock keeping were banned throughout Africa from colonial days, and these by-laws remain until to day.(16:2)

58. There have been few efforts made by development agencies, either governmental or private, at understanding or assisting urban farmers and livestock keepers in Africa. (16:3)

59. "The biggest single reason for quitting agriculture had to do with eviction or otherwise losing land-use rights." (16:13)

60. "The main problems faced by urban farmers in Nairobi appeared to be technical, not political: erosion, drought, flooding and pest were among the top problems mentioned". (16:14)

Kampala case study:

61. In Kampala, "the food grown in the city (...) is processed and sold in kiosks, markets and small restaurants throughout the city", although most of the production is for household consumption. (16:14)

62. Over two thirds of randomly selected survey respondents were women.(16:20)

63. About half of the agricultural plots were within the compound or immediately adjacent to the household, while 24% were over a kilometre away. (16:24)

64. Plots varied between 2X3 metres to 10 hectares. (16:24)
65. The majority of enterprises (69%) are for subsistence. Another 23.3% produce primarily for household consumption, but sell also a significant amount to supplement cash income. (16:24)
66. "By far the most common enterprise was staple food crop production, while poultry keeping was the most common form of livestock production". (16:24)
67. Farmers rely on indigenous practice and resources available at low cost. "Little use is made of urban waste products, which abounds in the city, and the disposal of which constitutes an increasing problem." (16:26)
68. Less than 10% of farmers interviewed have firm security of tenure, and less than 3% for low-income households. Over 40% have no security at all, and can be considered squatters. (16:30)
69. 49% of respondents felt that they could acquire more land, the majority of them through purchasing. (16:30)
70. "The most significant step in the short-run (...) would be to make public (...) land available for agricultural production on some kind of terms which guarantee the producer security of tenure for some specified period of time, depending on what use was eventually planned for that land." Governments in East Africa should open land for urban farming by allowing "...use of land around public institutions, reclamation of unusable land, and (in the long-term) laying out some upgrading schemes so that some land for cultivation is included." (16:31)
71. Land reclamation by farmers is feasible and was observed, although major improvements would require firm tenure arrangements for the latter. (16:31)
72. There is a very close correlation between the type of crop and the security of land tenure. Crops requiring long term investment (e.g. banana) are rarely found in open (insecure) land areas, which are mainly used for annual crops. (16:32)
73. Labourers interviewed stated that casual work in agriculture is a last resource, noting that other informal labour is less arduous and pays more. (16:33)
74. One third of surveyed farmers reported hiring casual labour at one time or another during the year. However, agricultural labour is low paying and represents a last resource for

seekers of paid employment. (16:33)

75. 82% of producers purchased their inputs from private shops.(16:34)

76. While the vast majority of small farmers say that access to capital is their biggest problem, none of them borrowed money to operate their farms, although many households make use of informal credit. (16:35)

77. The most common reason for urban agriculture is the need to diversify and strengthen household income, and to create a buffer against high inflation, "to span this widening gap between real income and cost of living." (16:35)

78. Although respondents generally do not belong to formal organizations, informal cooperation is widespread for production, marketing and credit. In several instances observed, "small groups of producers, usually women, were cooperating together to share each other's labour at certain times of the year..." (16:37-38)

79. Urban agriculture in Kampala is clearly a significant socio-economic activity in terms of employment, income, food production, land use and capital investment. (...) At a local level, elected authorities (...) also demonstrate awareness of, and appreciation for, the significance of urban agricultural production. At higher levels, officials are not in agreement about the contribution of agriculture to the economy of the city." (16:40)

80. Based on the surveyed sample, an estimated 36% of households in Kampala engage in agriculture, with an average of between two or three persons per households. For these households, agriculture is the most significant form of employment, as nearly half have no other employment. (16:40-41)

81. The households surveyed produce on average 45% of their food needs (16:42), and it is estimated that at least 20% of the city food requirement is met by urban agriculture.(16:43)

82. A low estimate of city land used for farming is around 25%. (16:44)

83. Generally speaking, the authorities which are closer to the urban farmers recognize and/or support the practice (Local Resistance Councils), or overall show a "silent tolerance" (City Council), mainly for the perceived employment benefits. Higher authorities however hold it as contrary to existing legislation, and therefore illegal. 26.7% of respondents have been harassed by some authority in recent times, mainly within the low-income group. Main forms of harassment are eviction by land owner, or crop-slashing by City Council. (16:44-48)

84. "...the issue of whether or not urban cultivation and livestock keeping is desirable should be settled at the local level (Resistance Council ...) and violations be treated as legal cases, rather than being resolved by unilateral action. (16:48)

85. Harassment is not viewed as the major problem by urban farmers. The most important problems are lack of capital, lack of access to land, and theft of crops. "Lack of security of tenure (...) is a serious problem to nearly a third of all respondents in middle and low-income groups".(16:49-50)

86. What farmers think they need most are means to increase productivity: land, capital, inputs, tools and technical advice. (16:51) Capital is by far the most commonly mentioned problem. Experience from elsewhere indicates "...that the provision of credit to microproducers in the informal sector is more efficiently handled by specialized organizations, most often non-governmental organizations with a special interest in specific sub-sectors of the informal economy, than by formal, state-owned bank." Also, provision of tools and inputs and technical advice often comes with the provision of credit. NGOs could play a important complementary role in these areas.(16:52-3)

87. Most of the tools and inputs available through the Agricultural Office go to the more commercial producers, "simply because they are the ones who are informed about their availability." (16:52-53)

88. Urban waste products are very underutilized. 52% of respondents mentioned the high cost of transporting waste. 16% will not discuss the possibility of using waste, 8% had no ideas waste could be beneficial, while 6.7% mentioned concerns about health problems. (16:52-3)

Conclusions and recommendations

89. Urban agriculture represents a major survival and economic strategies for over one third of households in Kampala. (16:54)

90. It produces an estimated 20% of the city's food supply. (16:54)

91. "Few direct services exist to support agricultural production in the city." (16:54)

92. Land resource for agriculture is vulnerable due to fragility of tenure. (16:54)

93. "(Official) attitudes towards urban agriculture, and indeed towards the entirety of the informal economy have varied from benign neglect to outright repression". This attitude

however is not monolithic or unchanging. Also, while many officials point to the illegality of urban agriculture, also evoking health reasons, the real motive for their opposition might be simply a prejudice against the concept and practice largely based on aesthetic reasons. Public authorities should be convinced of the many benefits of urban agriculture, because "...while urban authorities have the power to ban agriculture within their areas of jurisdiction, they also have the power to legalize it." In Tanzania and Zambia for example "new policy guidelines have been initiated from the top political levels of government which treat urban agriculture as a productive resource to be exploited for national development, not an embarrassment to be suppressed." In Uganda, however, "so long as significant resources remain in the control of those higher authorities (specifically public land), change in attitude will have to trickle up to higher-level authorities than just local Resistance Councils for any major change to be effected. It is to these authorities that the macro-level concerns about employment and food security ought to be directed." (16:55-57)

94. Little recognition of urban agriculture comes from NGOs. These generally confine themselves to working in rural areas.(16:56-57)

95. With regard to productivity, specialized and flexible organizations should be set up to work with actual and potential small producers to provide credit, equipment and technical advice. Services must be geared more specifically to the needs of the latter, as opposed to those of commercial farmers, who already have much easier access to available services. For example, "if it can be agreed that the reason for making land available for productive purpose is to strengthen the productive capacity of low-income households, steps will have to be taken to ensure that such land is actually utilized by those it would be intended for." Or "putting the emphasis on technical advice and the provision of expensive chemical inputs would basically be in the interests of higher-income and more commercialized farmers. Putting more emphasis on the provision of tools, and the control of problems such as pests and theft, would be more in the interests of low-income producers." (16:56)

96. Urban agriculture could easily make a greater contribution to public health if certain incentives were offered to recycle urban wastes. "Livestock keeping in city (does) present a certain health problem, since human diseases can be spread by livestock wastes. However, this problem could be more readily solved through the immediate recycling of animal wastes back into agricultural production." (16:55)

97. "The possibility of urban waste recycling is probably one of the greatest potential of urban agriculture..." And given that waste disposal is currently one of the city's council main problems, city authority may be tempted to cooperate. (16:57)

98. "Over a third of the respondents (...) either didn't know that waste usage could be

beneficial to their production, or else flatly refused to consider the issue" (16:57)

99. "Over half recognized that there might be value in recycling waste, particularly organic waste, but didn't have the means of transporting waste, or thought the cost of transporting it outweighed any increase in productivity that might result." (16:57-58)

100. Domestic and animal wastes could be redirected towards compost heaps rather than towards City Council disposal containers. (16:58)

101. "Recycling has not been taken up by the existing agricultural extension service, though it easily could be". (16:58)

Further research

102. "...even if the legal issue was to suddenly disappear, there would still be unique constraints on urban agriculture, particularly with regard to competition for land resources with other urban demands for land." (16:58)

103. "The issues of legality, official attitudes, and access to land certainly deserve the greater short-term priority (before those of organizational and technical constraints)." (16:58-9)

3. OVERVIEW OF FINDINGS, AND COMMENTS

The projects's contributions presented above are many and diverse. The following section therefore summarizes and comments only the most common and principal findings with regard to the objectives of the Urban Agriculture component of the URB Program (see section #17 in URB Program statement), and to the general approach and objectives of the Program (see mainly sections #9-13).

3.1. Major obstacles to expansion and improvement of food production in urban areas (cf. 17.1, in URB Program statement)

The major obstacles to the furtherance of urban agriculture are both technical (as opposed to political): In Kenya, lack of inputs and capital, pests and animal diseases, droughts, flooding, theft, crop destruction by animals (35,53). In Kampala, firstly lack of capital, but also lack of access to land, crop theft, lack of security of tenure, tools and technical advices (85,86).

3.2. Food production-nutrition interface (cf. 17.2 a))

The produce of urban agriculture consists mainly of subsistence foods and is consumed for the most part by the producing households, which are found mainly among the low-income population; it plays an essential role in the survival strategy of the poor (12,13,23,32,43,44,65,66,81,89). The sale of surplus also contributes to household income (13,34,43,65). However, it is the poorer urban households which have the greatest difficulty in producing food for themselves, due to lack of access to urban land (40,41,42,44), especially in large cities (39).

3.3. Economic, legal and policy aspects (17.2 b))

Although by-laws prohibit urban agriculture (in most countries), in these case studies, it appears that they are not generally enforced. Harassment of urban farmers by authorities is not a major problem in the cases studied, (22,35,83) although over a quarter of sample surveyed in Kampala said they had been harassed (83) and efforts at constraining urban farming have increased in Kenya since 1984 (38). Local authorities are on the whole more lenient or receptive to the practice than central authorities. (79,93). What is needed is the active support of authorities. (see below)

3.4. Waste re-use and health risk (17.2 c)

Organic waste and wastewater are scarcely used (19,67). Waste reuse could improved farm productivity and at the same time contribute to urban sanitation by using as production input animal waste, which is vector for human diseases, as well as domestic and commercial refuse, whose disposal is increasingly problematic (67,96,97). Recycling of wastewater could also relief the burden on municipal water supply, as the vast majority of farmers who irrigate rely on treated piped water (25,48). The main obstacles to increased organic waste reuse is the cost of transport (88) and a lack of knowledge about possible benefits (98,99). Government incentives for waste reuse should be provided, such as technical advice, or the allotment of space for livestock production in poor neighborhoods together with refuse collection points for animal feed (49).

3.5. Access to land, crop security and credit (17.2 d))

Very few urban farmers have security of tenure, especially among the poorer segments (10,30,59,68,85,92,). Most use public land, especially in larger towns (11). Lack of access to land and of tenure security are viewed as major impediments to food production (6,7,33,85). Governments should make unused public land more accessible to farmers, preferably providing some form of tenure guarantee in addition (7,46,70,71).

Crop theft ranks high among the problems faced by farmers (35,53,85). There are very few formal organizations providing security, credit and other inputs. Although informal cooperation is widespread (27,29,76,78), especially in smaller towns (52), most farmers would join formal associations if they existed (29).

Few NGOs are active in the field of urban agriculture (58,94) although there is much need for the creation of specialized organizations to provide a variety of services such as credit, technical advices, tools, etc. (86,95).

3.6. Equity (17.2.e)

A majority of urban farmers are women (15,54,62), the proportion being higher in larger towns. This should be more carefully taken into account when designing farmers extension services (54).

OVERALL CONCLUSIONS AND COMMENTS

The main contributions from the selected projects have been succinctly summarized and commented in their respective component/chapter. The reader should refer to these sections for such overviews. The main purpose of this final chapter is to infer from the overall findings certain lessons with respect to the URB Program agenda.

It should be stressed however that, given the limited coverage of this review, and the fact that none of the projects reviewed have been explicitly developed on the basis of the Program's approach and objectives, the sum of the findings it contains cannot be regarded as a sufficient measuring tool for the further definition of the Program agenda. Nor should the following comments be interpreted as a critique of any project in particular.¹¹ These findings and comments should primarily indicate possible areas of concerns and opportunities for future research.

As presented in the introduction, the essence of the URB Program is as follows:

(a) To promote participatory and scientifically rigorous research to (b) determine the causes and responsibilities for people's vulnerability to severe urban environmental conditions, as well as the constraints and opportunities for people strategies of vulnerability reduction, in order to (c) devise socially and economically attractive solutions for prevention and mitigation, which can be implemented by people's organizations alone or in collaboration with public and private sectors.

a) On research method.

Although the methodology used in the selected projects has not been thoroughly examined in this review, the following common observations are of particular relevance to the Program. Additional information on individual project methodology can be found in appendix.

The beneficiaries's participation in research to determine the causes of their vulnerability, as well as the constraints and opportunities for solutions, is central to the Program. Particular attention therefore was given, in selecting projects for this review, to any such participatory indication to be found in the IDRIS synopses, and it can be safely assumed that the projects thus selected are rather high on the participatory latter.

Participation in research is nevertheless very limited in most projects selected, relatively to URB standard. As a rule, people's participation in projects selected consists in responding to semi-structured or structured questionnaires for mapping demographic and socioeconomic indicators, usually accompanied by more in-depth studies of selected households with open

¹¹ A better idea of the value of each project, mainly in terms of its contribution to the approach and objectives of the Program, can be gained from reading their individual review in appendix.

interviews and/or direct observations. Few surveys will attempt to discover the needs of beneficiaries, and only rarely are the respondents sufficiently or adequately (it seems) prompted to express their opinions on problems and solutions (see notably 88-0277 and 88-0104).

Participation is difficult even in the most participatory studies. Several authors advise that the answers collected, particularly on certain topics, should be taken with reserve. For instance, the interviewees tend to deny engaging in 'reprehensible' waste disposal behaviour, or understate their real income in order to lessen eventual financial contribution to service provision, or under authoritarian regimes fail to express their discontentment regarding authorities for fear of reprisal. Also, cooperation in survey is often limited by and from respondents who are suspicious of the interviewers, whom they perceive, wrongly or rightly, as being associated with government authorities. Also, in one of the most participatory studies (88-0104), the researchers believe that participation is more appropriate and efficient when limited to the survey of needs and in the implementation of solutions, while they perceive the latter to be technically complex and better left to experts. The latter observation may also explain why projects relating to urban water supply and quality, which generally involve a more substantial technological component, are less participatory than projects relating to the other components.

To sum up, causes, constraints and solutions are identified and analyzed by researchers with no or relatively low level of participation from intended beneficiaries. The extent to which this is due to limits inherent in the participation process (some of which presented above) or to other factors is unclear and should be a topic of concern, if not investigation, in view of future project development. A priori, insufficient input on the part of the intended beneficiaries in a project which purports to answer their perceived needs, will likely hamper their needed cooperation in the proposed actions. As the Program document states clearly: "Prescription will not be effective unless the research process involves actively those most affected by urban environmental problems (or their representatives), unless these can use the information to hold themselves and other sectors accountable for needed changes. (...) The above problems will not be solved without participation of the communities concerned in the choice, implementation and management of solutions. (Program document, sections 9c and 13) The term "representatives" is not clearly defined in the URB document. If this expression can be seen to include recipient researchers, or even local or national governments, then the beneficiaries's participation in the research process becomes optional.

With regard to scientific rigour, the main and most common problem observed is that while conclusions and recommendations generally appear sound and pertinent, they are in many cases not sufficiently demonstrated or supported in the reports by data and/or analysis, which may reduce their credibility, and hence probably their potential impact. In most cases,

research does not exceed the exploratory phase, and these conclusions are recommendations are intended as hypothesis or statements regarding problems whose dimensions could not be rigorously treated within the time and resources limitation of ordinary (traditional) IDRC projects (see "Solutions" below). In some other cases, however, the lack of demonstration is apparently due to poor or unused research capacity.

b) On the causes of vulnerability and constraints and opportunities for people's strategies.

The most common (human) causes of people's vulnerability observed across components are: economic crisis, national debt obligations, development models, urbanization, concentration of national resources and wealth, State or people's poverty, questionable political allocation of resources, centralized decision-making systems, bureaucratic confusion, delay or inaction, corruption, and inadequate financing of local governments. Regarding constraints to people's or community strategies, which could also be considered as causes of their vulnerability, we may add: the poor's more urgent priorities or fatalist's attitude; the heterogeneity of local "communities" and the weakness of local communal bonds; the lack of resources for communal actions and the individual or community's dependency on government authorities; and the government neglect or repression of grassroots organizations.

With regard to opportunities, several cases of promising individual behavioral elements and strong community organization are reported (see chapter 1, #50-53, chapter 2 #61-71). These however are not analyzed with respect to determining factors and potential for replication.

The above causes, constraints and opportunities are not, of course, mentioned or granted equal emphasis in all documents reviewed. Individual projects contribution are better appraised in the appendix. However, the relations among causes and constraints, as well as the hierarchy of causality are important aspects of a multidisciplinary research process for efficient and sustainable solutions. These aspects are further commented below.

c) People's designed and implemented solutions.

While selected projects have stated, and some have demonstrated, an interest in people's participation as a requirement for solutions, such participation was extremely limited with regard to the designing of solutions. This does not mean, however, that solutions proposed are not *socially or economically attractive and rewarding* (URB document items 10 and 13d).

As the URB Program focuses attention on the prospects of community action to solve urgent urban problems, the nature and strength of community may represent fundamental issues in its research agenda. In the literature reviewed, as elsewhere, the concept of community is

usually not defined, but seemingly used evocatively to refer to a territorial cohesive aggregation of families and individuals (with boundaries or confines rarely made explicit) bound by common needs and sustained interrelations. The project literature also reveals, however, that the urban community is often marked by heterogeneity of constitutions, needs and interests, and beset by lack of cooperation, by tension and strife (including murder), although examples of cohesive communities are also reported. The existence, nature and potential of urban communities need to be identified, given the latter's importance as both a major client and beneficiary of URB Program's research projects.

d) Cooperation between government and population

Finally, one of the main conclusions reached in most documents reviewed is that, since both the poor and the State lack all of the resources they need to tackle existing basic problems on their own, they must combine their resources for the task. This calls for a greater and better cooperation between governments and (poor) people. The nature and degree of such cooperation vary widely across documents and components, although a common denominator seems to be decentralization, which in essence is greater people participation in local government to better express their needs and pressure the latter for answers, coupled with greater local government answering capacity through enhanced financial, institutional and political autonomy vis-a-vis central governments. The task is indeed demanding, considering the obstacles to effective people and government actions and cooperation mentioned in the literature reviewed. Moreover, seen primarily from a political science/political economy perspective, such proposed transformation in the relationship between State and (poorer) population portends far-reaching consequences for the society as a whole in developing countries, since the demand for compromise involved in the proposed cooperative structure is liable to extend rapidly, one presumes, beyond the needs for cleaner and safer urban environments and adequate water supply, to concern other (perhaps more) urgent and costly necessities of life, such as nutrition, housing, health, and employment. Thus, one may be entitled to seriously and realistically doubt that existing power holders would be inclined or willing to face the pressures and costs involved in such transformations. It remains unclear to what extent such recommendation has been based upon a careful consideration of the potential obstacles and constraints presented in this review. In any case, projects aiming at feasible and sustainable solutions should be attentive to all carefully.

At any rate, if, according to the information garnered in this review, the prospects for effective decentralization and government-people cooperation are not glistening, those for total people or community autonomy for solving urban problems is no more promising given existing socioeconomic and political structures. A feasible compromise between these two options may be considered.

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APPENDIX 1

NATURAL HAZARDS AND URBAN SERVICES (BOLIVIA) (84-0010)

Document reviewed: "Sistema General de Prevencion de Desastres Naturales", La Paz (BOL): CINCO, Centro de Investigacion y Consultoria. 1986, 4 vol., var.page.

Project objective: To analyze the impact of floods and drought on the urban services and standards of living in three cities. Describe the causes and consequences of the vulnerability of these cities to natural disasters; analyze the deterioration in standards of living, especially among the low-income population; describe relief measures developed by governmental, international and popular organizations; describe the survival strategies of the population, especially the urban poor; and propose an emergency plan to be implemented when such disasters recur and long-term strategies to reduce vulnerability.

From Volume 1 (Overview of findings)

Causes of vulnerability

The causes of the vulnerability of the poor to disasters too floods are:

- Precarious building material and housing sites (in flood areas) due to poverty and lack of alternatives.
- Poorer people will often refuse to leave houses and building during or after flood in order to protect their belongings, not only from torrent but also from thieves. This has resulted in higher morbidity and mortality for the lower than for the higher income groups.
- Poorer groups are also disadvantaged in coping with consequences of floods (e.g. spread of diseases due to poor sanitary disposal, reconstruction) for lack of access to public resources (health care, credit, etc.). (12)
- The policies for prevention, in the social, technical, institutional, sanitary, educational and informational fields, were almost non existent, which has aggravated enormously the consequences of floods and drought.(15-18)

Constraints and opportunities for people's strategies

- Contrary to Santa Cruz (see vol.4, below), the neighbourhood associations (juntas vecinales) in Beni demonstrated strong popular organization, with a capacity for self-organization and direction in relief and rehabilitation work. E.g. relocation to safer site through purchase and

equitable distribution of land, and creation of rescue groups. The relocation has resulted in the creation of a new barrio called "Villa Vecinal" which however has not yet received needed public services from government. (19; see also Vol. 3, below)

-During drought in Potosi, the civic committee of Potosi fulfilled significant organization and mobilization functions in response to drought (18) (((Comment: It would have been interesting to find a more elaborate presentation and analysis of this in the report. The case study in Vol 2 only gives 4 short paragraphs to this, and the demonstration is not very clear.)))

Solutions.

-The principal need is for a better state-society relationship in dealing with disasters. Organization of measures should be the main responsibility of the State, because grass-roots organizations could not effectively fulfil (perhaps exception of the case of Beni) the functions of representation and aggregation of peoples demands, which is needed in times of emergency. (p.23) "El sitio natural de emplazamiento de la variable organization radica en el Estado y sus aparatos tecnicos y administrativos; por el contrario ... la variable participacion radica en la Sociedad y sus organismos asociativos". Both variables were deficient during disasters. This requires reforms in (1) the System of Civil Defense, and (2) the system of civil "self-defense". Explanations found pp.24-38.

From Volume 2 (Drought in Potosi)

Causes of vulnerability

-The high population density and the lack of adequate sanitary services for the majority of the population in poorer neighbourhoods of Potosi leads to spread of diseases, which was accelerated during drought. (Section III.3)

-Population refuse to pay higher water tariffs created by new waterworks for drought. This is a sign of the economic crisis of the country. The latter also affects the capability of government and administrations to provide these services.

-Absence of infrastructure in country to respond to such situation.

-Also, the bureaucratic red tape slows considerably solutions which are immediately required. Also lack of coordination between institutions, authorities, relief agencies. (see details in IV.2)

Constraints and opportunities for people's strategies.

-Population were mobilized under the leadership of the Juntas Vecinales only when it was sure to receive benefits (food, medicine), but only at the level of implementation, not planning, organization and decision-making of relief activities, levels at which bureaucratic centralization was present. This low level of popular participation resulted in weak expression and transmission of popular needs to higher levels of authority. (sections VI.b,c)

-The report argues that the progressive nature of droughts "favorecen pues acciones preventivas en la medida en que se advierte meses o años antes procesos y tendencias hacia probables desastres naturales". These facts have not been considered by authorities in this case, which led to improvised measures at the time of disaster. (Section IV.I)

((Comment: The description of living conditions in volume II is done for each of the 13 zones studied. It is very detailed and repetitive (25 pages) and its contribution to the report is dubious. It would have sufficed to present a global picture of all the zones (as done in section III.5))))

From Vol.3 **(Flood in Beni)**

Causes of vulnerability

-Drainage system is slow and inadequate, which compounds flood problems. (15)

-Government intervention regarding floods have always been improvised and uncoordinated, scarce and poorly distributed (the established poor neighbourhoods especially neglected, while all the aid is concentrated in rural communities or recent migrants to cities), and to this day no permanent institution to that effect exists. (28-9)

Constraints and opportunities for people's strategies

-Since floods are recurrent, the poor perceive them as normal events in their lives, and they face such problems with the same organization and the same consciousness than for other daily problems related to health, basic services, food etc.(30)

-The federation of Juntas Vecinales in Beni is a solid and disciplined grouping of 22 juntas. The first of which was created following the 1956 flood. These are now active in health services, training, various domestic and urban services, and self-help in emergency situation. The federation claims to be the most knowledgeable and experienced institution regarding flood problems. It suggested several preventive measures to authority (p.29-32) (((Comment: It would be interesting to know more about the conditions which gave rise and support to such strong organization.)))

From Vol.4

(Flood in Santa Cruz)

Causes of vulnerability

-The case background presents several causes of structural nature, relating to regional disparities and the rapid concentration of resources and people in cities. These created a stress on urban service provision, as well as the settling by the poor in flood-prone urban areas. Also, floods are increasing in frequency and gravity due to over-exploitation of resources in rural areas (deforestation for agriculture and cattle and increasing sedimentation of river beds) and, closer to cities, to the removal of rocks from river beds (for construction) and river edge tree removal for new settlement. Therefore "las causas de estos desastres naturales tienen muy poco de naturales". (Sections 1.1 to 2.3)

Constraints and opportunities for people's strategies

-The community organizations in Santa Cruz have not mobilized for prevention efforts and other community works, largely because such organization were not solid enough due to lack of recognition --and hence support from authorities-- itself due to illegal nature of the settlements. There is total lack of faith and much passivity in community organizations on the part of the poor (exception of sports and religious organizations). The general rule is "cada vecino se ocupaba de lo suyo". (Section 3.5.2; also p.18 of volume I)..

-Authors are convinced that the reason why 62% of the victims were not warned in time about the downpour and subsequent rushing waters was the lack of community integration and participation in Juntas Vecinales, which made people dependent almost exclusively on the radio for their information; many therefore were not listening at the time of announcement. (i.e. no neighbourhood informal transmission of news). (3.3.1, 3.5.2).

-The reasons for the apparent 'passivity' of the poor are the rejection, non recognition by government authorities to which the community organizations in marginal areas have been

submitted repeatedly and which paralysed community initiatives. (3.5.2) This passivity may also be due to social marginality, lack of opportunities and alternatives, social isolation etc.. (3.5.2) (((Comment: Interesting inference, but not sufficiently demonstrated)))

-In spite of the above, after the flood, an increase in participation in community organization among the poor was observed, although the rate is still very low (25%) and participation of new members is of the passive type, which is however superior to middle class participation, which fell. (4.1.)

-The precarious economic situation of the population of lower income precludes it from assuming individual defensive efforts regarding disasters. Although the poor are slowly increasing their faith in neighbourhoods organization, they place all their thrust in SEARPI (a public institution whose mandate is to control the river and in a general way to coordinate and plan the social and economic development of the river basin for preservation and sanitation), because they believe it is the only institution capable of doing something to prevent new floods. (4.1) The population is willing to assist SEARPI with labour or money. (4.2.1)

-The population en general have a poor opinion of the public assistance provided to victims. (4.2.2)

-For lack of means of transportation, poorer households were dependent on public assistance for evacuation, although only half benefited from this service.

-A good part of the reason why this flood attracted so much attention and assistance locally, nationally and internationally is that, this time, middle and higher class residents have been also directly affected (although less), and organized themselves to sensitize authorities. (2.4)

GENERAL COMMENTS ON REPORT

-Participation of beneficiaries in this project, although limited to interview, is rather full, considering its depth and the fact that the team aimed, at this stage, at assessing causes and socioeconomic consequences of disasters for the poor.

-The authors recognize and are concerned with the necessity, potential and limits of participation between marginal populations and the government in preventing and coping with disasters.

-The numerous recommendations found in pp. 24-38, in response to the last specific objective of the project, are almost entirely of a political and institutional nature. Although plausible (in my opinion), most seem overly ambitious or general, and nearly all of them have not been argued (in some cases, not even introduced) in the report. They appear therefore, on the whole, premature, unfounded, and therefore unconvincing. See for example p. 35 #3,10,12,14,18..

-Community participation in relation to disaster was somewhat more documented and analyzed in the case of Beni than in that of Potosi.

-The report is also rich on information concerning the various consequences of disasters on socio-economic well-being of the population (the poor, particularly). Such info was omitted from this review because deemed less directly relevant to GPI. (see mainly Vol.4, section 3.4.)

-Methodology is appropriate (socioeconomic surveys, interviews with victims and officials, analysis of secondary data from documents, newspaper, etc.)

From PCR: (1988)

Satisfactory.

Two seminars were held in to present results to public officials, and civic representatives. Another seminar is planed at national level with National Defense Committee.

There was an enormous turnover of staff during project, due the promotion of previous researchers to very high government ranks.

APPENDIX 2

HAZARD ASSESSMENT AND RESPONSE: VOLCANIC ACTIVITY IN LATIN AMERICA (86-0232)

Document reviewed: Riesgo Volcanico: Evaluacion y Mitigacion en America Latina; aspectos sociales, institucionales y cientificos. Lima: Centro Regional de Sismologia para America del Sur (CERESIS), 1989, 298 p.

Project objective: Investigate the complex range of factors that led to the disaster of El Ruiz in Columbia, and extract policy lessons for the mitigation of such disasters in the future in specific zones of volcanic activity in Columbia, Peru, Chile, Ecuador and Nicaragua.

Causes of vulnerability

-In Columbia, centralization, lack of definition of responsibilities and lack of financial resources were obstacles to confront the crisis caused by the volcanic eruption. Prior to the eruption of el Ruiz (Columbia), adequate scientific information existed to predict the event, but there were no explicit policies or specific institution dedicated to volcanology and the natural disasters which follow eruptions, of which the most destructive are the avalanches caused by the partial melting of ice and snow caps, and second the explosive eruptions of pyroclastic materials and ash falls (257). The scientific and technical bodies with pertinent expertise were not able to formulate and execute initiatives and programs to deal with the crisis. (259)

-In Peru, there is no continuous monitoring, nor any scientific institution specialized in monitoring, nor a policy supporting volcanology. Government Institutions responsible for emergencies have vague attributions, an adequate decision-making system, and insufficient resources. (266)

-The frequent changes in the directorship, and the lack of training in volcanic aspects of the new managers could hamper emergency plans during crisis. (263-264)

-The population is generally not adequately informed and prepared by educational and media systems (formal and informal) with respect to prevention and mitigation.

-The medias (national mainly) played a fundamental role of information to population and decision-makers during the eruption of El Ruiz (Columbia) with respect to evacuation, but failed to educate for prevention. This is partly due to: the absence of journalists specialized on the theme, which contributed to confusion and inadequate coverage of the crisis; the extremely poor communication between scientific authorities and the media, due to language problems and poor acquaintance; and the absence of a single scientific authority which could feed information to medias and population in general. (260)

-In Ecuador, 3 million habitants live in the Inter-Andean valley and on the flanks of the Andes, surrounded by at least 15 active volcanos. The National Direction of Civil Defense (Dirección Nacional de Defensa Civil) began a program to sensitize the population regarding risks, although its reach is limited due to lack of economic resources. (263)

Constraints and opportunities for people's strategies

-While the non-governmental initiatives were very important (El Ruiz, Columbia), they lacked a solid analysis on which to base their diagnosis and adequate orientation. (260)

-The local population in Arequipa (Peru) see the volcano not as a potential danger, but as a scenic element for which they feel pleasure and pride. (266)

-In Chile, the high concentration of population and infrastructure in Santiago, and the proximity of the city to two major active and ice-capped volcanos constitutes a high-risk. The National System of Civil Protection is adequately organized, as demonstrated during an earthquake in 1985. This agency has developed and continuously implemented preventive and educative campaigns against disasters, at school, in communities and coordination programs for the national institutions which are integrated in the system. However, there is no official system for monitoring the active volcanos in the region. (261-262)

Solutions

-In the case of volcanos, generally, there is a need to: define clear and coherent public policies; establish efficient decision-making mechanisms, with definition of attributions and responsibility; decentralize levels of decision to deal with regional risks; promote the design and implementation of initiatives by non-governmental sectors; (for more dangerous volcanos) initiate or continue the detail study of high-risks volcanos; begin installing monitoring geophysical equipment; elaborate risk maps; develop regional capacity for scientific analysis, social diagnosis and mitigation through the mechanisms for civil defence; (for population in general) find the appropriate mechanisms to prepare the population to the possibility of natural disasters, and promote their organization to face them; (regarding medias) make the medias conscious of their role; provide them with the necessary information for mitigation in a comprehensible language, with the cooperation of scientific community; (regarding latter) establish single entity for communication with State, medias and organized population; sensitize the scientific community to the professional and socio-cultural characteristics of their interlocutors. (267-269)

GENERAL COMMENTS ON REPORT

The principal case study in this project was Colombia where little information refers to urban setting. Only a general overview was offered for the other countries. Among the latter, the more pertinent case studies for our purpose would have been those having large urban centres at risk, such as Chile (Santiago), Ecuador (Quito), Peru (Arequipa) and Argentina (Mendoza). The document is limited to mapping the principal risk areas in the latter countries.

The project as a whole emphasizes preparedness through better research (geophysical) support and coordination, public sensitization and education mainly by the medias, and improved public sector coordination for emergency situations. Settlement planning, popular participation and organization, and other preventive measures are not addressed.

Method

The role of medias and government for preparedness and emergency however have been well analyzed. The findings are derived from semi-structured interviews with researchers, civil servants (actual and former), civic organizers, journalists and survivors, as well as a review of press releases prior to and during the events.

APPENDIX 3

NATURAL DISASTERS IN HIGH-RISK ZONES (Central America) (88-0277)

Documents reviewed:

- a) "Desastres Naturales y Zonas de Riesgo en Centroamerica: condiciones y opciones de prevencion y mitigacion en Centroamerica. (final regional report), Lavell, Allan T., San Jose: Confederacion Universitaria Centro Americana (CSUCA) and IDRC, 1992, var. pagination.
- b) "Prevention and mitigation of disasters in Central America: Social and Political Vulnerability to Disasters at the Local Level", (mimeo), Lavell, Allan T., paper presented at the Developing Areas Research Group, Institute of the British Geographic and the Royal Geographical Society on Disasters Vulnerability and Response, London, May 1991, 31 p. plus appendices.

Project objective: Establish a classification of high-risk zones in the region, assess the mechanisms planned by the public authorities for disaster, estimate the potential impact of future diasters on the socioeconomic and organizational structure of the countries in questions and make recommendations to decision-makers and public.

From the first document (a)

A. Sections I and II (Overview)

NB: The findings presented below, and found in the first two sections, are mainly derived from the Costa Rican case study, and reflect, according to the authors, the global context and general features of all countries.

-Resources are concentrated for dealing with emergency and relief activities, not for prevention and mitigation. (15)

-Although poorly researched by natural sciences, the rapid deforestation in Central America for cattle grazing and intensive agriculture seems to have caused increased flooding, land erosion, landslides and droughts. (32)

-A majority of the people in Central America are exposed to several physical risks at once, which has very important consequences in terms of the difficulty of prevention. (35)

-The internal distribution of national wealth is highly inequitable in the region. In the early 80s, 5% of population had 31.5% of the region's income, while 50% got only 13%. (39).

-50% of pop in Central America are considered to be living in extreme poverty. (41)

-Neoliberal structural adjustment policies and national debt repayment, in addition to a series of armed conflicts throughout the regions in the 80s have severely weakened social policies with respect to health, housing, education etc. (41)

-The excessively bureaucratic and centralized State isolates the decision makers from the diversity of realities found in the regions. (43)

-Vulnerability is increased by the degradation of environment, in addition to the density of population in major urban areas which often settles in or near high-risk areas. (49)

-The non, or highly limited access of the poor to formal financial loans for housing, results in the construction of vulnerable shelters. (52)

-Generally, the poor resist or delay evacuation in the face of disasters, partly for fear of leaving behind their meagre possessions. (52)

-Many of the families interviewed in a survey of risk areas in Costa Rica said that they were unable, for lack of resources, to engage in activities to reduce their vulnerability to disasters, such as upgrading their place of residence. (52)

-Local governments in Central America generally lack the financial resources and skills to assume their responsibility for various public services, including disaster prevention and mitigation efforts. (53)

-Public institutions may act effectively during emergency periods, but not so regarding prevention and mitigation. (53)

-The population is generally not adequately informed and prepared by educational and media systems (formal and informal) with respect to prevention and mitigation. (53)

-The public institutions involved in the diffusion of information on impending risks usually have a vague and uncoordinated role. People have recourse instead to informal sources or medias, all of which lack specificity regarding risk areas and intensity, and therefore credibility. (54)

-While all countries have legislations, norms and guidelines for prevention and mitigation, these do not guarantee their application or efficiency. Administrative structures generally are inadequate: duplication of functions; lack inter-institutional coordination; lack of financial and human resources ; corruption in private and public sectors; insufficient budget to undertake actions and for the maintenance of public works, etc. As a result, there is "an enormous gap exists between the normative content of the proposed measures and the capacity (or genuine willingness) for their implementation." (55)

-Countries in Central America have no global policy or strategy for prevention or mitigation of

disasters. (54) No government organization has an explicit and comprehensive mandate to coordinate efforts of various sectors for prevention and mitigation that are integrated in development plan at national and regional levels. (57)

-A large gap exists between legislations and measures on the one hand, and the social and political processes or reality on the other, which result in the former operating in a "social vacuum" (55). For instance, poverty of people force them to contravene zoning laws and norms. The State, often, even encourages such action by providing essential basic services to illegal settlers (electricity, water and sewerage infrastructure). People's vulnerability thus becomes "institutionalized". Existing norms for construction also are often defied by the poor because the latter lack of access to the formal credit, which would allow them to build safer habitations. (55-56).

Constraints and opportunities for people's adjustment strategies

-Repressive regimes in Central America have been serious obstacles to popular or community organization in the region. Grassroots formation of any nature are soon or later labelled by authorities as "political" and eventually repressed.(45)

-The low levels of cohesion or organization found among the populations with regard to daily necessities is as much related to the context of economic vulnerability (poverty) in which they find themselves, as to personal attitudes and idiosyncrasies. (52).

-The lack of popular organization in relation to hazard, more specifically, also seems to reflect (from the authors' point of view) the lower priority assigned to these problems when compared to more permanent and daily needs, such as employment, income, basic services, etc. (53)

-Fatalist conceptions and attitudes prevail among the poor regarding causes of disasters, although certain segments of the population demonstrate a certain degree of awareness and knowledge about the factors that contribute to disasters. The tendency, in any case, is to look towards national government for preventive and mitigative actions. Few of the poor see a real possibility of solution at the community or family level. (53)

-The weakness of local governments and population alike is a very important obstacle to prevention and mitigation schemes in Central America. (57)

Solutions

-Solutions to diasters require the participation of population at the local level in low cost schemes. (49)

-Priority of research and policy should be given to areas with higher frequency and intensity of disasters and higher population density. (49)

- "Obviously, there exist no simple formula to promote the necessary changes. However, it is clear that the latter require fundamental changes in terms of the orientation and organization of government activities at regional and national levels; concerted efforts in terms of local popular participation and a strengthening of applied research activities both in basic sciences and, primarily, social sciences." (60)

- At the government level, important changes can only begin to occur, the authors believe, if disasters are considered as serious economic and political problems, and their prevention and mitigation perceived as bringing real benefits in relation to growth and development, and become an integral part of policy or planning for development. Governments need to accept the evidence that the existing social processes and their ecological impact increase people's vulnerability. (60)

The territorial dispersion of risk areas in the region call for decentralization with local participation, however difficult these goals can be (particularly the latter). As with the government level, preventive and mitigative activities cannot be introduced viably in local communities if they are isolated from the local socio-cultural and economic realities and treated as a separate problem or activity. These activities must be integrated into a wider local development strategy, which caters also to other necessities (priorities) of housing, employment, education, health and environmental management. (61)

- Institutionally, there is a need for specific legislation and apparatus for coordinating the various sectors involved. This responsibility could be given to the existing Emergency Committees in the countries, whose functions would be extended to include prevention and mitigation, by giving them ministerial power, adequate budget, and a highly decentralized structure of activities towards regional and local level. These Committees should also be advised by institutions of basic and applied research, which should be coordinated and integrated into permanent technical advisory committees. The Committees should provide reliable early warning systems adapted to specific areas and communities, which must be based on participation at these levels; promote changes in the education system curriculum for increasing knowledge on relation between human actions and environment; "promote a more balanced and integrated relation between basic and social research, so as to convert information or scientific knowledge into an socially accessible instrument of change"; provide a regional centre of social documentation for the isthmus; provide in each country systems of geographical information which record data continuously on events and impacts at the economic and social levels. (62)

From the second document (b)

Causes of vulnerability

- "(T)he rapid deforestation and subsequent urbanization of hill tops and slopes especially in Guatemala, El Salvador and Honduras, without regard to adequate drainage and channelling of pluvial runoff has led to an increase in flooding in popular working class 'barrios' with an increase in the numbers of landslips and avalanches." (8)

- "The economic crisis suffered in all Central American countries during the last decade and its obvious impact on poverty levels, investment, and social policy expenditures, is of obvious importance in the context of vulnerability to disasters and the capacity to promote prevention and mitigation policies. (12)

- Attempts at effective decentralization have failed throughout the region and local government power is constantly reduced. (13)

- "Poverty is probably the single most important factor in characterizing the more vulnerable sectors of the population to disasters." (15)

- For lack of alternatives, the poor tend to settle (squatter) in degraded or hazard-prone areas, which increase their vulnerability to disasters. The exclusion of the poor from formal land markets in Central America results in land invasion of marginal, low-value land. (8,17)

- Houses, particularly in poor areas, are usually made of precarious building material, with little structural protection against flood, seisms, volcanic eruption (roof collapsing under weight of ashes) and various storms. (17)

- "The problem of slack supervision of public works and the use of inadequate construction techniques can at many times be attributed to negligence or straight forward (sic) ignorance. However, there is also a clear economic problem related to national and local government finances, which constitutes a further aspect of global economic vulnerability and which directly affects distinct population groups at a local level." (18)

- Financial constraint is not the only problem, however. It is also one of priority setting. Sufficient budget is allocated to protect the investments of the better-off, as in Costa Rica, where the economic and political clout of different segments of the population is clearly a factor in budget allocation. (19)

Constraints and opportunities for people's adjustment strategies

- "Even in the long established and stable liberal democracy in Costa Rica, the state has consistently managed to 'control' the levels of popular organization, by the stimulation of parallel government incentivated (sic) organizations (...)." (13)

- "In general, in Central America (our study reveals an) almost complete inexistence of permanent social organizations dedicated specifically or even tangentially to the reduction of physical risk or to the preparation for any future emergency situation. (...) The lack of social organization at a local level around such a pervasive problem as that of the physical vulnerability of the population can have no single explanation and any search for causality (must take) into account the diverse socio-economic and class structures, ethnic composition, ideological and cultural conformation, etc. of different communities." (19-20).

Solutions

-The construction of inexpensive dykes could be adequate to protect certain communities subjected to recurrent flooding. (18)

GENERAL COMMENTS ON REPORT

Method

-Popular participation was limited to questionnaires and interviews. This may be justified by the nature of this study, which aimed at identifying risk areas for future preventive and mitigative actions.

-The mapping of high-risk areas, only begun in this project (a:49), relied on two main surveys: (a) an historical reconstruction of disastrous events, mainly in the past 30 years, by type, identifying location, time, social and economic consequences, to determine regions of higher risk; (b) an assessment of the potential human vulnerability in the regions identified in (a), based on the analysis of existing socioeconomic and demographic structures in these regions.

The historical reconstruction was limited due to the incomplete territorial coverage by the medias, especially with regard to isolated or peripheral events. At any rate, the data put together by the project on each country represent, according to the authors, the most complete data base existing.

Regarding the impacts of disasters on society and the economy, a general lack of documentation evaluating or analyzing these impacts (except for some magnum events) made it impossible to calculate the accumulated socioeconomic costs of small and medium disasters. The authors recognize that such calculation remains to be done in order to support the cost-benefit argument in favour of prevention and mitigation. (a:47)

The appraisal of human vulnerability was pursued with various degrees of success across the countries, largely depending on the availability in each country of spatially and temporarily disaggregated qualitative and statistics information. (a:47-48).

Despite these limitations, the above surveys have allowed a mapping of zonal or regional risk and vulnerability which can be useful for strategic planning in prevention and mitigation.

-The questionnaires are well thought out and comprehensive.

-The authors of the Savadoran case study mention that a "very serious obstacle" to the study was the low rate of response from the population to certain aspects of the questionnaires, which the authors believe was a consequence of the "difficult conditions" in the country and the suspicion towards strangers (investigators). For instance, the vast majority of interviewees remained silent

when asked what actions they thought the government should take to reduce their vulnerability. The authors believe that this reaction is partly due to their fear of expressing ideas on government (but also lack of sufficient education to know what sorts of actions are required or feasible). (see document (a), pp.14-15 of the El Salvador case study)

-It may be desirable to review each country report in full (volumes not found at library), to see how well the main findings and conclusions presented in section III of document (a) are demonstrated in these individual reports.

Other

-The Honduran, Guatemalan and Salvadoran case studies address the symptoms of the problem of vulnerability: lack of education, low community organization, dependence on government, lack of government organization and responsibility, lack of technical knowledge, of means of communication, etc.. These symptoms are seemingly presented as the causes of vulnerability, while the underlying causes of poverty and inequitable distribution of resources and wealth are for all practical purpose overlooked. The recommendations, which aim at curing the symptoms, are very general and encompassing (and judging from the synthesis of findings presented in the main volume -document (a), section III- not adequately supported by demonstration, although this would have to be verified by reviewing the full individual country reports.).

-Despite having recognized the history of absence of preventive measures from the public sector in all countries, the project report as a whole recommends the seemingly impossible: a thorough remodelling of government institutions and operations towards decentralization, rationalization, efficiency, popular participation, prevention and mitigation. The Salvadoran team, for instance, recommends as a "short or medium term measure" the decentralization of State activities to secure a reversal of rural-urban migration, in addition to a country-wide low-cost earthquake-resistant housing program. (document (a), El Salvador study, p.20). The costs of this transformation, however, may appear to the State as well exceeding the claimed (not demonstrated) results and benefits of prevention and mitigation for the country as a whole, which could explain why such transformation at the State level was not pursued or effected in the past. While the authors recognize the need to convince the State that the benefits outweigh the costs in the longer term (growth, development) (a:47,60), the question remains as to whether most governments in poor and/or unstable countries are or could really be inclined to look beyond their short term interests while in power.

-A March 1991 conference was planned on the role of local governments and popular participation in prevention and mitigation. The results should be interesting.

-The Nicaraguan case study (floods) suggests solutions in terms of crop biotechnology and slope engineering, which may be reviewed by a specialist. (49-53)

All in all, this project is the most elaborate and directly relevant to the GPI among the three reviewed.

APPENDIX 4

PARTICIPATORY URBAN SERVICES (ASIA)

80-0136

Document reviewed: Community Participation in Delivering Urban Services in Asia, Y.M. Yeung and T.G. McGee (eds), IDRC, 1986, 279 pages. This publication is the summary of findings from this 5-country projects. Individual full country reports are available at the library.

Project objective: Describe the structural arrangements of the existing services, evaluate the effectiveness of various forms of self-help service delivery, such as in road and housing construction, installation of sewerage lines, and recommend policies for city planners administering or contemplating such schemes.

Introduction and conclusion chapters

(Yeung and McGee)

Causes of vulnerability

-Rapid urban growth has posed many problems in terms of the ability of city governments to deliver adequate services (p.9).

-The ineffectiveness of government provided services has prompted efforts at mobilizing people's resources.

-It is important in the analysis of urban services to understand the interaction and interrelationships among urban services because many efficiencies can be brought about. (13) According to one main theoretical perspective, Third World cities play a crucial role in the underdevelopment of the Third World, by being infrastructures that siphon off capital from the country to metropolitan centres of developed countries. Another main perspective is that global integration of Third World countries has created conditions for rapid independent capitalist development and has set in motion a process of industrialization that focuses on major urban centres. This debate indicates how developments in the international economic system have ramifications on the urban systems of T.W. countries, and suggests that such consequences should be taken into account in research proposals. (13-14)

-Water, sewerage and the quality of housing are strongly interrelated and should perhaps be treated as a single sector (p.15)

-Institutions found in developing countries have generally developed from administrative and social structures fashioned during the colonial period and they have found themselves unable to respond effectively to service demands stemming from the rising expectations of the

population since independence. In the absence of institutional reforms, alternative mechanisms for service delivery are urgently needed.

-At least one group of writers felt that the provision of basic needs within the cities (eg. shelter) by government encourages rapid rural-urban migration, which only exacerbates problems related to city growth (13). (((Comment: Can we hypothesize from the above that governments are not interested in really helping to make living conditions better in officially not recognized and poorer areas of the cities, and therefore are unlikely to invest needed resources, even with respect to participatory projects (i.e. technical advice, training of leaders, loans, etc.)?)))

-The study results lend support to the proposition that as the level of development increases, there is a greater government involvement in the provision of urban services with a corresponding decline in the scope of or need for self-help activities. (256)

Constraints and opportunities for people's strategies

-Historically, provision of services at the community level is generally assumed to have passed through a phase of self-help. With increasing urbanization, economic growth and more and more people entering the wage labour force, however, the time that can be devoted to participatory services has decreased. Consequently, the state and the private sector at various levels (national, regional, city) have come to play an increasing role in service delivery. (12).

-On the one hand, the state is anxious to reduce its costs by promoting self-help schemes, which often involve increased "advocacy" by community groups. On the other hand, governments are generally unwilling to allow this advocacy to reach to a point where it challenges their decision-making power. Thus "participation" is often defined in government terms rather than community terms. The definition of participatory services, therefore, would differ from one country to another. (11)

-The Indonesian study strongly suggests a more accurate needs assessment of the local population. The programs presently being implemented were initially developed for rural areas and are, therefore, insensitive to the heterogeneity of the urban population. (259)

-The results of the five studies emphasize that governments are not unaware of the need to improve urban service delivery programs. Nor are urban communities unaware of their needs. The problem is how to develop effective responses (262).

Solutions

-Participation in urban service delivery may offer the possibility of employment for residents of low-income communities. Even very small income subsidization by the government can create many income opportunities, for low-income communities. (11).

-The main idea about community participation, is that public transfers will be thus reduced to enable public capital to be utilized for other purposes in terms of "development options" (9-11). (((Comment: These "other purposes" should be identified. Is it mainly referring to luxurious infrastructure or consumption for the elite, or basic development infrastructures to benefit the whole of the population? Also, we may ask to what extent this "capital" has been acquired because of the poor (via the latter's lesser claim on, access to, or use of national resources, thus allowing greater concentration of wealth in, usually and mainly, the public sectors), and thus to what extent the poor should be entitled to receive free of charge government-provided services in return for this contribution?))).

-In the organization of participatory urban services, one of the critical questions to resolve is the best geographic unit for functional efficiency. Is there a threshold size at which urban services can be effectively organized by the people themselves? (257)

-As participatory urban services are people-based, it is not uncommon that strong leadership and successful delivery are positively related (258). The studies were unanimous about the importance of leadership for effectiveness in delivery. (260). Leaders have to be identified, trained, nurtured. Residents also need to be educated and trained as a majority of them are too poorly educated to comprehend the complexities of existing bureaucratic procedures. (261)

-Different perceptions of the needs of an urban community by the residents as opposed to the delivery organizations bedevil many well-intentioned efforts and result in low rates of participation and success. (259) In almost every study, the mismatch between residents' needs and actual programs was perceived. It was recommended that service delivery agencies should examine the hierarchy of needs. (260) Also, where relevant, government financial assistance should be accompanied by only broad guidelines so that the community can set its own priorities with respect to what services to provide. (261)

-Need articulation and the nature of activities to be pursued by community participation hinge on the availability of information being funnelled upward or downward. The more information that flows the four levels -individual, household, community, and state--the more likely urban service delivery will be effective. (259-260)

-The most practical recommendation is to expand resident's awareness of the need for and scope of participatory urban services and their essential roles in bringing these to fruition. Participation at all level, including planning, implementation and evaluation. This process will require need identification, consensus seeking, a free flow of information, community involvement, and monitoring and assessment of results. The Philippine's model in this study appears to come closest to this ideal (260).

Chapter on Korea

The Korean study concentrates on squatter areas lacking appropriate levels of public services. Specifically, the study attempts to 1) identify the type and extent of urban services furnished via self-help, 2) explore the process of self-help with emphasis on identifying needs, resident participation, and the role of community leadership 3) determine the type of government support required 4) evaluate contributory factors affecting self-help performances and 5) provide policy recommendations. (30)

Method included A) identification of urban poor and government policies for squatter areas, B) interviews with officials, leaders of local voluntary groups. and residents to examine nature of self-help programs, C) questionnaire to identify socioeconomic characteristics of residents, urban services they "felt" were deficient, and their attitudes toward local self-help operations. (30)

Causes of vulnerability

-Massive rural-urban migration, set in motion by the movement toward industrialization and forcefully pushed by the Korean government since the 1960s resulted in the strained on basic urban services and the creation of squatter areas. Government favoured urban infrastructural development as a prerequisite for industrial growth, as part of a strategy for the elimination of poverty through economic growth. Rural and squatters were neglected. (30-31)

NB: The income of residents tended to be underestimated by probably 10-20% in the interview since residents tend not to report the full amount of their income to elevate their eligibility for public welfare programs.(36)

Constraints and opportunities for people's adjustment strategies

-Moving to squatter areas is part of family strategy to achieve higher socioeconomic status. The choice of low-quality housing indicates that a lower priority is given to housing than to education of children, better diet, better clothing, medical care, and other factors.(38)

In one case study (Chulsae), before the impressive improvements brought through self-help, residents would leave the settlement whenever possible. Poverty was something shared by residents with varying backgrounds, coming from different places, instinctively distrustful of each other and , in many cases, hostile and uncooperative (54-5). The first move to get residents organized came as reaction to government attempts in the early 60s at eliminating illegal squatters such as this one. This reaction was coordinated by a volunteer local indigenous leader and succeeded in cancelling the clearance order with the promise by the residents that these would make necessary improvements on their living habitat that . House exteriors were then renovated gradually and sewage pipes installed under steep slope to prevent flood, without any government support. Latter residents successfully negotiated with

authorities for title to the land and good quality houses were subsequently built. The whole process took 4 years, with material obtained on credit from the neighbourhood construction material store. Skill labourers also employed on credit, while residents also contributed their labour. Following renovations, value of land and housing soared. The successful housing improvement project also triggered a self-sustaining mobilization of all potential resources needed to improve the lives of the residents in the neighbourhood (56-57). (((Comment: This is a very interesting success story. Note, among other aspects of the story, the non-participatory attitude of residents before improvement, and the need for an external threat (squatter clearance policy) to get people to cooperate. It may be argued that cooperation was achieved not for the improvement of living environments in itself, as much as for the need to remain in the squatter area, improvement being here only a means to the latter, at least initially.)))

(((Comment of Korean study: The Korean team appears to be realistic and motivated regarding self-help and grass-roots participation in urban services at all levels. They provide seemingly good insights into prospects and difficulties. Conclusions in many cases would need better demonstration. It would be useful to examine the full final report, but the latter is in Korean.

Chapter on the Philippines

This study aimed at 1) identifying and defining the nature, scope and magnitude of basic urban services available to the low-income areas and 2) describing the participatory management model and the support structure needed to implement the model. It involved A) an overview of the delivery of services, b) a description of the basic urban services in 7 low-income communities in three urban centres, c) a community leadership study aimed at determining who were the leaders (potential participants in the proposed participatory urban management system, and d) a study discussing the participatory model and the support system (i.e. the people needed to make the model operational). (75)

Causes of vulnerability

-Migration to cities is typical of nations in which economic differentials exist among regions, as in the Philippines. (73)

-The critical lack of urban services points to the failure of the top-down delivery approach, where the government provides the services, the people pay for them and a group of managers and workers ensures that the services are provided regularly (74). For bureaucracies, community residents are seen as clients or beneficiaries, not as partners in service management. For community residents, the pattern is one of dependency or on militancy to obtain services. (115)

Constraints and opportunities for people's adjustment strategies

-Improvements in housing and community facilities are often times dramatic one residents are assured of legal ownerships. (94)

-In low-income urban communities in the Philippines, the sense of community belonging is very strong and residents attach a high value to "living together", irrespective of the prevailing economic and social difficulties that characterize this togetherness. (92)

-The community leadership study has shown that there is a match between the 'natural and informal' community leaders and the 'official leaders'. I.e. governments tend to nominate natural and locally recognized leaders for the position of community captain ("barangay" officials) (93-95).

-But that the formal community leader is thus also a local politician has positive and negative implications. It may be in their interest to emphasize delivery of services that is timely for maximum election impact, but this may run counter to the sustainability of the services provided. Therefore, to lessen the political influence on urban service programs, education of community residents on the politics of urban service delivery, as well as on negotiation skills, should be carried out (96). (((Comment: What if local residents already know better than any external observers the pitfalls of their clientelist relationship with local politicians, and yet see no alternative strategies for the provision of services? Education on this topic would probably be useless in this case.)))

-Incentives for government and community to cooperate must exist if interaction and involvement are to be sustained. (97) For eg, in one study, people from the lowest income level did not perceive garbage collection as being a problem. Outsiders looking at slum and squatter communities, on the other hand, would probably rate garbage collection as a major problem. Thus, communities have their own perceptions of problems and methods of prioritizing them. Efforts to develop a community will be forthcoming if they are seen as helping to solve the community's problems (97-98). For government agencies, the issue of self-interest must also be considered. These agencies must be able to envisage a more efficient delivery of services using a participatory approach. For eg., the waterworks company should be able to achieve a higher collection rate or lower level of water loss as a result of illegal collections. (98)

-The organization of a community must be considered if a community is to play a more participatory role. A fragmented community will not be able to wield power or influence. (98). Community organization and leadership are prerequisites for participatory urban service delivery. (104)

-Community effort and involvement in provision of basic services need the agreement of everyone concerned that joint solutions (government-community) are the answer to providing adequate service. (105)

Solutions

-National ministries that provide services on a sectoral basis should be guided in their planning by the needs of communities as articulated and prioritized by the local leaders and local government. (104) Community meetings, with the help of outside facilitators, may be needed to enable communities to define their priorities and take stock of their resources, opportunities and limitations. (105) Decentralization of service delivery should be carried out in coordination with city offices. Indicators of success should be established to stress community participation and service coverage. Performance standards for personnel should also be revised to include incentives to work with the community. (116). What is needed is to reorient community leaders and bureaucrats toward joint participatory planning and action. Joint orientation and training workshops should therefore be held periodically to develop skills, open lines of communication, and identify problems/opportunities . This is an area where academic or research institutions can play a major role.

-As interesting as self-help community efforts have been, they have not been effective in providing basic urban services. They may be suitable for ensuring peace and safety, but providing potable water or electricity is too technically complex or expensive to be a self-contained effort. In the proposed participatory management, both the government and the community pool their resources and efforts to make the services possible (74). Community participation means readiness of both the government and the community to accept certain responsibilities and activities. It also means that the value of each group's contribution is seen, appreciated and used. (97)

-Communities have many needs and problems, but few options because of their limited access to funds. In many ways, their lack of resources and lack of skill to access the resources place them at a disadvantage (for self-help). Community resources have therefore to be complemented by external resources.

-A program that sincerely aims to involve the community, not merely for consultation but for active participation, must evolve strategies for doing this. (95)

WATER

Solutions

Specific objective 5b: develop sound management strategies: demand control, changes in consumption attitudes and behaviour, harvesting and treatment for selective reuse of wastes, incentives and institutional support.

-Inputs required from outside the community will include infrastructure and technology (pipes and faucets, vertical management for determining water rates and metering consumption.) The community can help in construction of the system and in deciding where communal

facilities should be located and be responsible for their maintenance, repair and for the collection of fees. (105) Structural as well as behavioural changes are within the bureaucracy are required. Structural change would ensure that resources will be available from the government for materials and supplies, and that a technician must be available to help supervise construction and provide information on maintenance. Behavioural change would mean that government officers or extension workers involved would participate in community decisions (113). This would benefit government (improved service coverage, collection and maintenance, policing of illegal connections) and the community (through the skill learned, revenue collected for services, job creation, and better delivery of water services (106) (((Comment: Uncertain whether these recommendations are based on elaborate study. May verify in full report))).

WASTE

Constraints and opportunities to people's adjustment strategies

- In one study, people from the lowest income level did not perceive garbage collection as being a problem.

Solutions

- City dump trucks are inadequate to meet the needs of community. Community can work with the city agency to determine the inputs, such as routing and collection schedules, and set up garbage collection points and procedures. More environmentally safe, the outputs would also possibly establish a local enterprise to handle salvageable items from discarded materials (106) (((Comment: As in the case of water, above, uncertain whether these recommendations are based on elaborate study. May verify in full report. Also, the problem of lack of community motivation for garbage disposal, above, is seemingly overlooked in this recommendation.))).

Overall comments on Filipino study:

- Needs and responsibilities are better documented in this case study. Perhaps we should examine the full final report.
- This appears to be perhaps the strongest study of this project.
- The model for participatory management (99-108) is quite interesting.

Chapter on Indonesia

The study looks at both the "top" from the point of view of the public planners, and the "bottom" form that of the studied community, in order to help policy-makers address the

following questions: 1. What type of participation can be expected in the different types of programs? 2. What type of participation can be expected given the characteristics of the communities and projects? The survey was in-depth, with many of the questions being structured but open-ended. The analysis was qualitative based on single tabulations and two variable cross tabulations. (191-192).

Causes of vulnerability

-The content of several government programs is not relevant to the needs of a large section of communities.(206)

Constraints and opportunities for people's adjustment strategies

-Most people in the community studied do not appear to be involved in the various government initiated activities.(206) Less than half participate actively designed to improve their social and economic conditions. When asked why, most people stated that they were not interested, unable to participate or that they did not have time to participate. The structural poverty that has entrapped the low-income groups creates difficulties for them in terms of becoming involved in any service activities that are designed for a wide range of income groups. In delivering its programs, the government utilizes those who are better off and better educated to assist those who are poorer and less educated. In fact, the better-off groups have a different perception and outlook in terms of defining the needs of the community. As a result, the poorer groups often do not enjoy the benefits of the programs. The needs of different income groups are not taken into account. It could be argued that it would be better to be more selective in distributing available services by first determining who needs what.

-The structure of local government is so bureaucratic that it is difficult for a person with little education to understand the necessary procedures for requesting services.(207) Staff are often not sufficiently trained or qualified and most of them are overburdened with administrative work. As a result, they often have no time to undertake real activities with the kampung residents.(208)

-Most programs have been designed with the rural population in mind. But rural folk are perhaps more homogeneous than urban folk in terms of income, education, origin, occupation, etc. Government programs often tend to view local community as socioeconomic or cultural entity, which frequently discounts class differences in most urban communities. Such differences may be one of the obstacles preventing participation of local population at all levels in government initiated participatory programs (208).

Solutions

-Government may have to recognize this heterogeneity and create priorities for delivering services, especially in a situation where funds are restricted. If activities were to provide benefits to the residents, especially in terms of employment, they would likely become more

involved. People could form cooperative to perform certain productive activities, as each member will experience a sense of belonging and a desire to develop the organ they have created. (209).

Overall comments on Indonesia study:

-Difficult to appraise the pertinence of this study for our GPI since it approaches the delivery of services generally, including secondary services such as social and cultural services with more basic ones such as water and sewage infrastructure. The study fails to clearly discriminate among these services in its analysis and conclusions. A look at the full final report may verify this. It appears as perhaps the weakest study of the book, although not in terms of our GPI concerns.

-The text is often redundant. May wish to see full report.

Chapter on Hong Kong

This is a study of the relationship between community official representatives and the government in a context where the needs expressed by the population are other than the basic necessities of water, sewage and waste disposal. Thus, less relevant to our study. Summary of findings 235-237.

Chapter on Malaysia

This case study addresses mainly the socio-cultural needs of young workers in export-zones in the country. No relation to GPI

GENERAL COMMENTS ON PROJECT AS A WHOLE

-This is certainly one of the most pertinent projects. Rich in information and findings (thus the length of this review).

-The Korean and Filipinos studies are especially interesting for the GPI.

From PCR (1989):

-average.

-Individual country case study report available at library. We may want to look at the Korean and Filipino reports more closely for our assessment of these potential partners.

-Four meetings of team representatives took place in relation to this project.

Dissemination: A seminar was held in Seoul, 5-6 March 1984, which was attended by team leaders and policy makers from each country. A policy seminar was also held in Penang July 26 1985. The trip report from F. Bélisle (May 29-June 28 1985) gives more information on dissemination.

-Impact: information regarding impact was lacking. But because the wide dissemination of results and the number of policy recommendations, the potential impact is considered important. See F.B.'s trip report for more info.

APPENDIX 5

SOLID WASTES (HONDURAS)

80-0198

Document reviewed: "Incorporacion de barrios marginados al sistema de recoleccion de desechos solidos", Activity reports (2 volumes), Concejo Metropolitano del Distrito Central, Departamento de Limpieza, Tegucigalpa, Honduras. 1983.

Project objective: Develop a non-conventional system of waste collection with the participation of the community in marginal areas of Tegucigalpa, and integrate the system into the formal collection system of the Metropolitan District. To be achieved through a survey of attitudes and practices, the identification of methods to incorporate communities, including education, and an estimate of the potential financial or other contribution by the community to the system.

Causes of vulnerability

-While 61 % of respondents say they burn or bury their domestic wastes, it was observed that at least 80% throw them on empty plots (5).

Constraints and opportunities for people's strategies

-Community dwellers were preoccupied that dwellers from adjacent communities might free load on the services in whose provision the former were asked to cooperate (as was in fact the case) p.17. "El concepto de las organizaciones comunales debe ser reorientado a la solucion de problemas especificos comunes, por tal motivo seran mas efectivos al integrar varias comunidades con caracteristicas de ubicacion afines..." p.18. (((Comment: Interesting, but not demonstrated in report))).

-Any project tends to be discontinued due to changing community associations's authorities, which tend to forsake previous administration's agenda and bringing their own new projects as a justification measure. (p.18). Therefore, there is a need for an integration of the different community associations which would encourage some consistency in programs, as opposed to isolated projects. (((Comment: Good, but not demonstrated))).

-"Habra que ser cuidadosos en la aplicacion de la tecnologia apropiada ... Los moradores ... se niegan a aceptar soluciones que los remontan a su origen tal es el caso de la alternativa de recoleccion con traccion animal ya que ellos vienen a la ciudad en busca de un cambio y no quieren seguir siendo campesinos." The dump truck therefore suits better the reality of the citizens and the operational patterns of municipalities in general (p.19).

-The users are willing to pay for the services.

-40% of domestic solid waste was organic.

Solutions

-Given disposal practices and the interest of the community in cleaning up, an education program is needed which would involve mass media diffusions before at the time of collection. (6) To aim at sustainable program, you must teach children the proper habit (p.9) (((Comment: The need for education programs seems to be a premature conclusion, as it is not demonstrated in the report. Not clear at all in the report whether the poor disposal practices are mainly the result of ignorance or lack of psycho-sociological pressures (which would partly remedied by educational campaigns) and not of other determinants, as seems to be recognized below))).

-Although slum dwellers see waste as a problem, they consider it at least of a priority than other necessities, such as lack of drainage, land tenancy, fresh drinking water, electricity, roads, etc. Waste disposal is the least important in a scale of priorities. There is need for a global, multi-sectorial and multi-institutional approach which would seek to supply all needed services at the same time. Need for integrated development: "La existencia de los servicios basicos de saneamiento, transporte, legalizacion de la tenencia de la tierra y la vivienda misma son requisitos vitales para conseguir actitudes positivas hacia el problema de los residuos solidos" (p.16). "Los pobladores ... tienen una escala de necesidades con un orden de prioridades para su atencion que abarca la tenencia y legalizacion de la tierra, construccion de vivienda, abastecimiento de agua, energia electrica, alcantarillado sanitario, acceso y vias de comunicacion, y desechos solidos." (Annexe III, p.4). An integrated development program is required if the solid waste program is to work (p.4). (((Comment: Interesting conclusion, although not demonstrated in report.)))

-It is very important to gain political interest and commitment in maintaining an efficient system, (p.20) in order for the public authority to keep its side of the compromise, such as financial support and institutional support for collecting refusals at communities' disposal sites. Such sustained provision is a prerequisite for community participation (see Modulo, VOL II, annexe I, pp. 5-6.)

-"Una de las condiciones mas importantes para el desarrollo integral de la comunidad es la creacion de empleos". Which indicates the possibility of hiring underemployed for the program. (MODULO, Annexe III)

-The project has resulted in the design of two pilot systems with the cooperation of community representatives and organizations, which the authors think can be replicated to all marginal areas, with the conditions that the general aspects presented in the recommendations be implemented. (21)

These systems are essentially the production with local material and skills of disposal bins to be placed in locations with easy access for dump-trucks and households, buttressed by educational programs to motivate households to bring their refuse to such locations, assisted

by the development of mid-range transportation, be it motorized or human-powered tricycles or horse-drawn carts. (For more details, see annexes 1 and 3, in Vol II)

GENERAL COMMENTS OF REPORT

-This research project corresponds in a large measure to the two general objectives of the GPI. Participation of beneficiaries was sought and gained not only for the survey phase, as in most other projects, but also in the design and/or selection of socially and economically desirable alternatives. Participation of public authorities was also pursued by researchers, who are themselves public servants. The project team seems highly motivated, knowledgeable and insightful about, and sensitive to beneficiaries's reality and needs, as well as endowed for their advisory and monitoring roles in relation to public programs.

Method

-There was some suspicion on the part of community members that the few households selected for the survey would be the only ones receiving the services, or else that the selection was biased. (p.6).

-Survey done by female social workers. One of the main reasons is that female interviewers would be more acceptable to households than males, since in most cases households respondents were women. (VOL II, annexe #3)

-There is reason to doubt the validity of the interviewees's responses to the questionnaire administered by social workers. Who would openly declare to public officials their unwillingness to cooperate in waste disposal programs? (see questionnaire pp. 6-7). An affirmative response from households would not guarantee their cooperation. On page 5, VOL II, the authors recognize the dubious nature of responses: less than 40% responded that they were throwing garbage on street while in fact 80% had been observed to do so.

-Recommendations appear in many cases premature in the absence of full demonstration and support within the reports.

-It would be interesting to find out whether the project had any follow-up. The library has no related publications.

-The recipient wanted to put up a network of collaboration on the issue, regrouping other developing countries in Latin America and linked to REPIDISCA.

-The project leader met with other researchers at a workshop in Chile designed to develop another IDRC funded project. (project number: ...)

-Reports lack in structure in the identification of appendices and general presentation.

-Details about the collection systems designed and proposed can be found in the appendices of the second volume.

Follow up:

The recipients envisaged the evaluation of the pilot projects.

APPENDIX 6

URBAN GROWTH MANAGEMENT: 7 CITIES (Africa) 84-1005

Document reviewed: African Cities in Crisis. Managing Rapid Urban Growth, Richard Stren and Rodney White (eds.) African Modernization and Development series, Westview Press, 1989. This publication reports the findings of 7 IDRC early 80's projects in urban growth management in African cities.

The book presents 50-page summaries of the 7 projects. As its title may suggest, emphasis is placed on the public managerial aspects of the problem: decentralization, fiscal empowerment of local governments, need for urban planning and for greater definition of jurisdiction and responsibility among levels of government, accountability and training, etc. Most of these projects recognize water supply and sanitation and waste disposal as priorities.

Stren's chapter of introduction "Administration of Urban Services" is recommended. Stren general perspective is: "proper balance between public and private sector initiatives, between local responsibility and central control, between international standards and indigenous requirements, and between the needs of the poor and the requirements of the community as a whole will all have to be worked out through struggles and bitter experience. Ultimately the solutions (...) must be formulated locally, by local people, on the basis of local experience and information. That these local problems are beginning to be taken seriously all over the continent is a hopeful sign. Their solutions will require both imagination and enormous dedication" (p.66).

This need for such balance, however, is not equally recognized by all authors in the book. Perhaps only half of the papers really show sensitivity to the questions of community empowerment and participation in solutions. The Khartoum case-study (chapter 9) is one of them, and has been selected as one of the 30 or so more relevant projects for our analysis (84-0005). Another interesting projects which may be worth analyzing in greater detail is that on Nigeria, with Onibokun (83-0183). The focus of his study was on water supply, electricity supply and waste management and how the state of one utility affects the efficiency of another. Onibokun may be a good prospect for the analysis of administrative, constitutional and fiscal problematic of management.

Chapter 8 reports the finding of the tanzanian team. Focus is on legal-administrative aspects of governments and decentralization. The recently begun 91-0251 is a continuation of this. It intends to explore the interface (present and potential) between the public and informal sectors in public services in Tanzania.

The following excerpt from one of the papers which compose the book could easily have been found in several others in the book: "The present deterioration of urban services is a complex financial, technical, and managerial issue. Improvement of the quality of urban

services to acceptable standards which meet the needs of rapidly growing urban population requires a heavy injection of foreign exchange, imported capital and machinery, competent and experience technicians and managers, and proper utilization of the scarce plant and machinery available" p.239.

The project results of 84-1005, overall, may be a useful complement to the analysis of needs and obstacles which concern us more fully.

An IDRC sponsored workshop (88-4249) took place as a follow-up of this project. Stren and Lee-Smith produced a paper (file) discussing four new orientations, one of which is "Community sector organizations". The paper is titled "New Perspectives in African Urban Management". Based on the findings of 84-1005, the authors suggest 4 priority themes for urban research in Africa and which (supposedly) inspired these new proposals. One of the themes is "Community sector organizations" (pp. 28-34). The following is summary of that section:

- Community sector organizations include local formal authorities, charitable organizations, ethnic associations, professional "support" NGOs, welfare societies, village committees, self-help groups, security committees, and so on. Poorly researched, and still poorly defined. Some support NGOs provide housing, while few provide recreation, water waste disposal and environmental conservation services. (28-29)
 - The community sector is not yet properly defined. However, we will consider that they include support NGOs and CBOs.
 - The roles and types of community sector institutions that exist in the African continent are as yet badly documented as well as ill-defined, and institutional linkages between state and community sectors are undeveloped, when compared to literature on local organizations and social movements in Latin American cities. (p.30)
 - African rural CBOs have their counterparts in the urban areas though the phenomenon is not so extensive. Such organizations are also more recent and more in response to outside encouragement, either by government or "NGOs. (p.31).
 - During the process of decolonization, urban institutions tended to remain, while new governments hoped to solve rural problems at least partly through a reliance on indigenous CBOs or various versions of self-help. Thus urban areas were not perceived as the proper province of CBOs.(p.32)
 - The question remains as to how urban institutions and CBOs can and do collaborate to improve urban management. The links between urban government and CBOs need to be articulated. In this respect, a thorough review is needed of the successes and failures in the region so far.(32).
 - Large numbers of CBOs exist without, or with very little, organized support, either from governments or support NGOs. (33)
-

Another paper presented at the seminar (88-4249) is a case study of Kenya, by Ndinda Bubba and Davindwer Lamba of the Masingira Institute. The following are the main pertinent points:

- Because the urban population is generally poor, they are unable to support urban services (p.34). Most urban services require huge capital outlays, and their access by the poor must be subsidized. But deteriorating financial situation of governments means crippling of services, while subsidies end up in the hands of middle income earners. The urban poor have therefore sought ways of providing their own services.
- Unrealistic western Standards (35). Poor management (too many central government controls, poor record of revenue collection, corruption, internal conflicts.
- Poor access to basic urban facilities affects women more than men. (36)
- In Kenya, CBOs are not usually registered (p.38). Support NGOs are mainly involved in education (61% of NGOs listed), welfare, health (clinics, hospitals, extension services) 38%, housing. (39-42)
- The provision of Water and waste disposal are not a priority among NGOs. None of the NGOs provided infrastructural services (roads, energy.)
- NGOs and voluntary organizations are not always structured to provide certain services that are spatially diffuse or require central planning. Furthermore, they are hampered in the provision of services by public regulatory policies, planning laws and regulations, building standards, rent controls and so on.
- Question to look at is what services could the informal sector be best suited to provide.(52).

APPENDIX 7

URBAN SANITATION SERVICES (TANZANIA) 82-0175

Document reviewed:

"Delivery of Sanitation Services in Arusha: An evaluation and policy options", by Dr. J.S. Minja, and Mr. A. K. Kiwango. Revised final report, 1986, 118 p. (ARCH 628.4 (678-21) M5)

Project objective: To improve management and delivery of sanitation services to the urban poor in Arusha. Evaluate present delivery of sanitation services; assess organizational and policy problems; and determine training requirement.

Causes of vulnerability

- Animal and domestic waste is dumped in streams, polluting the water used by people down streams.
- The resources (financial and material) of the municipality are inadequate and the situation is unlikely to improve.
- There is a rural bias in terms of resource allocation in Tanzania which should be corrected (19).
- Local participation in the planning and the implementation of local development projects had to comply to guidelines centrally issued. The national planning system establishes national priorities which may not be the same as the desired local priority. Sanitation was given a low national priority and this was duplicated at the local level. (19)
- Declining economy means less foreign exchange and budget to meet rising demand for urban sanitation services.(26)
- Urban councils lack independence (from regional governments) to set policy, acquire necessary resources and oversee implementation (30) Fiscal dependence on central government.
- Demand rising due to rapid urbanization.
- Lack of pathways and roads giving access to houses.
- Crowded sub-standard housing in slum areas.

-Absence of planning in settlements.

-Rural background of slum dwellers means living with domesticated animals, whose wastes are dumped in streams polluting washing and drinking water of habitants down the stream.

-Most dwellers are poor.

-Corruption and bribery in the delivery of services. Waste collection mainly done around modern establishments. (56)

-Lack of spare parts for imported equipment. Frequent breakdowns means inefficient use of employee. (63)

-The idea of considering any substitute equipment is not seriously considered by implementors. The recipients points of view are quite different from the implementors. They believe improvement could be made by favouring locally made equipments. "We do not see the modern equipment anyway..." (69)

-The basis for effective control of delivery by those who receive the services may not exist: the implementors are rarely seen and the urban poor feels that they have no power to influence how the services should be provided.(73-4) They feel apathy, not seeing how the increased efforts on the part of the implementors will have any impact on their living conditions. (75).

Constraints and opportunities for people's strategies

-Problems with self-help activities have been lack of proper direction and encouragement.

-In rural areas, it is said that there is cooperation for basic services, but not so in urban areas. (28-9).

-Most people in city are recent migrants, each with his own cultural traits and background. (45)

-During community self-help efforts sometimes violent clashes have been reported between those who want to keep their compound clean and those who care least. (53).

-Numerous murders in the "community" studied.(54)

-Participation is hindered due to negligence of some residents, lack of cleanliness consciousness, and sometimes for being at work (on Sunday). This tends to demoralize those who do participate greatly (77).

-Ten cell community leaders should be the contact persons between community and municipal officials, because they know the area and the people well. One problem, however, is that these cell leaders are also the local landlords, and any improvement in sanitary services could mean financial or social losses for them (see first draft, page 60.)

Solutions

-The community may have to be provided with incentives so as to participate effectively.

-More training is needed of supervisors and staff: (urban sanitary standards, productivity assessment, equipment maintenance, etc.) (73)

-Given current shortages of resources, non-conventional methods of delivery should be sought which should not depend on imported inputs.(26)

-Need for new appropriate technology: wooden wheel barrows to transport waste. To be constructed and used by community members. Use of local artisans and material to create jobs. Also the making and maintenance of pathways, possibly with gravel or sand with stones, for the carts and people to use to bring waste to collection areas, as such pathways are lacking. Community members could be employed (not necessarily on permanent terms) or contracted out by the municipality (see pp. 79-84).

-When self-help activities are in progress, sanitation personnel should be present to give expert advice.

-Equipment and materials ought to be stored in the vicinity. Smaller depot of equipment should be installed in the divisions or wards, which would make this equipment more accessible to community members. (i.e. decentralization of equipment supply)

-Buried household waste turn into manure, but inhabitants do not attempt to make use of it, although it could result in increased yields in fruits and vegetables, providing employment and nutrition. (76)

GENERAL COMMENTS ON REPORT

- Community participation in this project amounted to responding to questions from researchers in interviews pertaining to their status, quality of life and perceptions of needs in terms of public services. Even then, participation was difficult.
- The authors do not clearly indicate the hierarchy of causality, simply discussing various perceived causes separately.
- The final report shows sensitivity to the need of devising appropriate technology making use of local talents and material, and of encouraging collaboration between public sector (policies, regulations, administrative support) and the beneficiaries.
- Assessment of community participatory potential is not adequate, even though the report provides some insights.

Method

- Conclusions and recommendations appear generally sound and pertinent, but based in many instances on insufficient demonstration.
- Questionnaires seem well constructed and comprehensive.

Difficulties: "The researchers could not link the name of the respondent on the sampling frame and the person they were introduced to. The Ten Cell Leaders (i.e. the local community leader), who were our field research guides and who happen to be landlords attempted to show us wrong respondents. This was because they thought that the selected respondents being their clients and given the patronage relationship, were likely going to give the picture "in their own eyes", instead of giving it in the landlords's eyes." (14)

Also, the research coincided with the attempt by municipal council to list all its residents for Development Levy Tax purposes. Considerable time was spent to convince the respondents to respond to the interview situation because they thought that the researchers were associated with the Development Levy Tax Deal, and hence were suspicious. (15).

Further research:

Researchers proposed an in-depth pilot study which would evaluate effectiveness, taking into account recipients' views and culture, community participation and incentives to participate, individual initiatives, political and economic structures and resources available to the community for sanitation, and the general well being of the community. (88-89). We should perhaps find out whether it took place

Other

-Report not very well structured. Much redundance.

-Report is mainly descriptive, often with superfluous details. But this may be the necessary first phase to their proposed in-depth study.

From PCR (August 1986):

-The report was disseminated to various ministries, and the Municipal Director of Arusha was interested in designing a pilot project to test the recommendations. The researchers were also using the material in their courses at the Institute of Development Management, and were disseminating the results to senior government officials who regularly attend the Institute. An article was to be published in the Tanzanian Management Journal.

APPENDIX 8

URBAN HEALTH SERVICES (KHARTOUM) 84-0005

Document reviewed: "Management Problems of Greater Khartoum" M.O. El Sammani and al., IES, University of Khartoum., Feb 1986, 221 p. (final report)

Project objective: Analyze health services in Greater Khartoum in relation to its rapid growth with a view to recommending positive changes for the low-income groups. Describe and analyze problems of environmental sanitation affecting low-income groups; identify the problems of urban health service delivery; and examine the present administrative structure and make recommendations for its improvement.

Causes of vulnerability

-While the urban administration system is decentralized and oriented to facilitate grassroots involvement, its performance has not quite reflected the applicability of this philosophy.. All the development legislation of the Khartoum urban administration were politically motivated and aimed at serving the interest of those in power. There is also a generally low level of implementation of council's decisions. (67-70)

-The general problem with utility services is the lack of financial resources for infrastructure and equipment, running costs. Also suffers from poor management and training. But also reflects the lack of priority generally attached to the provision of urban utilities. (169)

-The deficiency of the administrative and financial system is the result of: 1) too many bodies are involved, particularly at lower level, making to whole system to complex and ends up in either conflict or inaction; 2) failure of local government system to define clearly the separate functions and responsibilities of central and local government; 3) inadequacy of financial provisions (tax base outdated and inadequate to meet current demands, incompetence and corruption in collection, no clear system to develop spending priorities and cost effectiveness) (166-167).

Constraints and opportunities to people's strategies

-Self-help associations were developed in communities to provide essential services. Money collected through voluntary donations, used in conjunction with community's own skills and labour. Also act as political pressure groups to ensure that main services such as water and electricity are provided to the housing areas with the community arranging the internal distribution. (49)

-Neighbourhood councils, which are at the base of the structural hierarchy of the urban administration system, depend on local communities self-help and self-reliance for their

revenue sources. They contribute substantially to health projects but also to financing water projects and local roads. There is a very strong culturally-based commitment amongst urban communities to contribute financially to social and basic services and local development, which needs to be carefully revised and rationalized so as to be better utilized. (85).

-Low class residential areas have the majority of self-generated and active institutions: cooperative societies and government initiated institutions taken by people as channels for self-help organization to satisfy basic needs (152) These institutions are considered by respondents good substitute for government institutions (153). These institutions have also provided a feeling of belonging and attachment in some of the neighbourhoods, as indicated by 80% of all respondents of all residential areas. In many cases, the commitment to these institutions is an ethnic one. These institutions also bring the collective and group action characteristic of rural areas into the city. (154) (((Comment: Looking at the questionnaire, it is unclear how these conclusions could have been derived from the info obtained.)))

-As squatter settlements spread over the city, town councils in Greater Khartoum often include different residential class neighbourhoods. This heterogeneity of towns and city councils entails including communities with different needs, priorities and expectation with regard to social services. Conflict of interests thus dominates council performance. (74-75)

-It is widely argued that there are too many neighbourhood councils to operate efficiently and to facilitate meaningful involvement of the grass-roots. However, there is a sense of competition amongst neighbourhoods councils in connection with self-help, tapping popular potential and fostering popular initiative for public action programmes (76)

Solutions

- Need for overall settlement strategy, aimed at encouraging regional investment and stabilizing population movements. At the Khartoum level, need to develop overall planning strategy, based upon an assessment of needs of people to ensure that social and cultural imperatives of population are respected (63).

-People generally aspire for better services, recognizing the community itself has a substantial responsibility to contribute towards improving the situation. (157)

-Need to consider a better utilization of community resources by coordinating community efforts with official plans and programs. (86)

WATER

-Water supply: capacity and demand (technical section, pp.91-98)

-Sewage system: (technical, pp. 99-104)

WASTE

Causes of vulnerability

-pp.105-108. (((Participation aspect absent. Seen as a financial problem, mainly)))

Solutions

-An overall refuse collection at disposal system needs to be designed for the conurbation. House to house system in higher income areas with obligatory charge reflecting true cost of service. In low income areas a more extensive network of collection points needs to be developed, with penalties for indiscriminate dumping.(178)

GENERAL COMMENTS ON REPORT

-Participation of beneficiaries was limited to responding to a survey for the mapping of needs only. Researchers show concern for socio-economic reality and socio-political issues and community participation in solutions.

-Gives high priority to sewage and waste disposal. Stresses privatization, cost recovery, and self-financing.

-Conclusions and recommendations often appear to have been reached too rapidly, without proper demonstration, and with little specificity. They are also more of the orthodox type (better financing, accountability, training, monitoring, cost recovery, privatization, etc.) Thus, the many comments on potential community organization appearing throughout the text are not carried through to any firm conclusion or recommendation. The reader has the impression that the research seeks to cover too much in the urban problematic, resulting in very general and usually ill-demonstrated conclusions and recommendations.

-The report raises important issues and offers several insights which should be explored more rigorously.

-The project leader, El Sammami, geographer, is an experienced consultant with several major IGOs.

Method. The method consisted in 1) assessing and documenting physical and demographic growth, 2) documenting growth of administration system, 3) evaluating effectiveness of administrative response.

-The sampling procedure for the surveys appear thorough and rigorous.

From PCR (1988)

-Average.

_Impact unknown

APPENDIX 9

SOLID WASTE MANAGEMENT (PERU) 85-0037

Documents reviewed:

1. "Informe Final, Proyecto Solid Waste Management 3-P-85-0037", Lima, Universidad Nacional Mayor de San Marcos, Facultad de Ingenieria Industrial. 1989. 77p. plus annexes.
2. Folleto de Capacitacion Para el Buen Manejo de Los Residuos Solidos Para el Pueblo de Huaycan. Date? no pag.(about 10)

Project objective: Devise and field-test a pilot system for the collection, disposal and recycling of solid wastes through an approach involving active community participation.

Causes of vulnerability

-It is difficult for the municipality to take charge of waste collection due to its limited resources. Therefore, the community must organize itself for the task.(31)

-91% of respondents to survey in the community perceive the municipal government (of Lima) as irresponsible regarding waste management (33). (((Comment: Note however that this community has no authority which represents the central government (of Lima), but is self-administered through an elected executive council which looks after all the needs of the community. See p.11-12))).

Constraints and opportunities for people's strategies

-61% of respondents believe the community dwellers are (should be) responsible for waste management. (35) (((note however that only 367 out of the universe of 2415 interviewees have responded to that question. (see question #32, p.8 of annexe No.7)

-The community is divided into Unidades Comunal de Vivienda, each being a grouping of 60 families which work together for housing and make a commitment to develop the barrio. (17). The majority of the population in Huaycan lived before in Asociacion or Cooperativa (28%), barrio popular (25%), and "urbanizacion popular" (23%). (29).

-People are preoccupied with waste mainly for health reasons. (31)

-Only 12.59% of collected wastes is composed of recyclable solid inorganic waste, due to the poor economic situation of the country. (56) The high percentage of organic waste (44.72%) reveals that almost all of the household income goes to food. (57). Nearly half of the solid wastes collected in non-recyclable, which shows the low level of recuperation that can be expected from waste.(75)

GENERAL COMMENTS ON REPORT

-Report is almost entirely concerned with technical aspects of operation. Weak in socioeconomic analysis and grassroots perspective, it seems. Participation is limited to responding to a rather rigid questionnaire. Slightly less participatory than 80-0198 (Honduras). Insist on working more with community representatives. Recipient seemingly strong on the engineering side, being led by, and essentially composed of engineers, in collaboration with CEPIS, itself an engineers' organization. They seem also to have a lot of information on alternative solid waste management in Latin America, although, I suppose, also from an engineering point of view.

-This survey is weak on recycling. Limited to recommending household sorting of waste. No information found in report on market potential or distribution of gains. What is mentioned is that a very small portion of waste is reusable, although organic waste reuse is apparently not considered.

-The support of various city public authorities was solicited. (14).

-Note that the team of "Waste Management (Honduras, 80-0198)" was governmental, and yet more grassroots and participatory in perspective than the non-governmental, university team in this project.

Method

-The report omits to specify what proportion of the sample surveyed have effectively responded to the various questions. The report speaks of a universe of 2415 people spread over 488 households. According to questions #2 to 8, in annexe No.7, for example, we may think that all or nearly all of the 2415 peoples responded to the questionnaire, while for most other questions the total number of respondents rarely slightly exceeds, and in most cases is exactly 488. This sheds some doubts on the rigour of the survey. The methodology is being rather vague on this aspect.

-Conclusions in many cases are not clearly supported by body of text. Eg: The report concludes that all of the residents of the barrio are preoccupied by waste management, (74, no.4), while only 40% of universe (about 1100 out of 2415) gave a reason to "why they were preoccupied by waste". Also, the questionnaire includes no question as to whether people are really preoccupied by waste, i.e. enough to consider it as a priority deserving of their time and efforts (see annexe No.7 questions #12 and 13).

Another example, conclusion 14.1.7 says that in general, the population knows the disadvantages of poor waste management and would be ready to collaborate with a new system of collection, through monthly payments. However, the number of respondents on these issues was very low (around 20%), and respondents were nearly equally distributed being contribution in kind (labour) and cash (see annexe No. 7, questions #33-24, where

results are also problematic). Conclusions No. #10-13 seem general and out of place, and were not discussed in report.

-The authors admit that the answers to some of the questions should be accepted with reserve. For eg, while nearly 100% of respondents say they sweep their house or street every day, subsequent visits (interviews) revealed that many had not been swept for days. (31. See other eg. p.37 "servicios"). The large majority of people do not like telling how much they earn, and therefore generally respond the "vital minimum wage".

Other

-Scattered in report are several free-floating general statements and recommendations which are not supported by references or prior demonstration. Eg: pp.42, 59, 74).

-My impression is that researchers saw waste disposal as a major problem and proceeded to '*clean this barrio*' essentially from an engineer's perspective, without sufficient concern for beneficiaries' reality, needs and limitations.

The 8-month extension to April 1991 includes a project evaluation. It would be worth to see if it took place, and to see if the collection system proposed by recipient worked.

APPENDIX 10

THE FINANCIAL MANAGEMENT OF URBAN SERVICES: WATER AND SANITATION (India) -Phase II- (86-0261)

Document reviewed: "Pricing of Urban Services, National Institute of Urban Affairs, Research Study Series, No.48, New Delhi, 1991, 95 pages. (Final report)

Project objective: This is a second phase of 82-0233 "Management of Urban Services", whose purpose was to identify the management inefficiencies in selected municipal bodies regarding water supply and waste disposal. 82-0233 revealed an absence of sensitivity on the part of the municipal bodies to properly market the services (see pp.6-7 of 86-0261 report). This second phase will examine the financial management structure of nine local governments, and identify ways to improve the management of revenue that is available to authorities. It will also identify ways to coordinate government, private-sector and community initiatives to minimize the government's costs of providing water and sanitation services.

Overall findings

Causes of vulnerability

- Services are underpriced, which is jeopardizing the financial viability of the municipal bodies. (V)
- Several municipal bodies suffer from financial inefficiencies and wastage, and do not use strategies to reduce costs or practice cost effectiveness. The expenditure level continues to escalate and widen the imbalance between expenditures and incomes. (2)

WATER

- The fact that 72% of the urban population has access to safe water does not necessarily mean that the quantum of water supplied is adequate or that water is equitably distributed among different income groups, or that it reaches out to poorer segments of the society. (13)

Causes of vulnerability

- Investment in water sector has not risen fast enough to meet the growing requirements or urbanization.(13-14)
- Water supply is one of those services which is extremely complex in nature, and whose availability, adequacy and costs are a function of a wide variety of factors. (14).

-The larger cities spend more, per capita, on water provision than smaller ones (28). Also, the earnings from water supply as a proportion of total earnings seem to be lower in larger towns as compared to the smaller ones. (47)

-Most local bodies in India find it exceedingly difficult to meet even the expenditure on operating and maintaining water supply system (37).

-Earnings from water supply are uniformly low in all municipal bodies. In Bhopal, this explained by the extremely low water tariff for non-domestic use (45, 52). Bhopal has the most unfavourable operating ratio (income/expenditure) 1:4.46 (55)

-The absence of uniformity in the tariff structures, variations in the efficiency or revenue collection machinery as also the different processes of production and distribution of water are stated to be the main factors for the unfavourable operating ratios. (55) (((Comment: Nothing is said on the ability to pay, as an important factor)))

-The introduction of metered connections may not always be feasible in the domestic section of small towns owing to small scale operations. (27)

-Costs are a function of a multiplicity of factors, which cannot be easily isolated and explained. (35-6)

-Income from unmetered connections are abysmally low. (57)

Solutions

-One important reason for the higher level of earnings in the Tamil Nadu towns is the efficient collection of water taxes and water charges. (45-46)

-The conversion of unmetered connection to metered connections will prop up municipal revenues considerably (57). Also, if water from standposts (mainly located in poorer areas) were charged at rates applicable to metered connections, the annual incomes would increase substantially, at least in several cities (59) (((Comment: The report does not however specify what segments of the population are currently served by unmetered connections, nor of their ability to pay higher rates than at present. These main conclusions-recommendations therefore appear speculative. We find on page 78 a semblance of explanation, but it is vaguely led, and seemingly confused.)))

-The prospect of effecting economies on the cost/expenditure side of the services do not appear promising. Many of the cost items are external and independent, and cannot be easily regulated. Therefore the approach to sustain provision lies essentially on the revenue side. (83)

-Charging for water is important because it prevents wastage (26)

WASTE

-The percentage share of expenditure on refuse collection varies from one-tenth to over one-third of the total municipal expenditure in towns studied.

Causes of vulnerability

-Obsolete equipment, inadequate use of infrastructure as well as under-staffing are among the main reasons for uncollected waste. These problems arise from financial constraints of municipal bodies, and the low chargeable rates for this service. (64) Expenditures vary from 10% to 30% of total municipal expenditures while income does not exceed 10% and averages 5%.

-Solid waste disposal is very labour intensive. The actual staff in most cities is lower than the norm.(65) Over 75% of total expenditure on solid waste disposal is on meeting the establishment costs.(67-8)

-Taxes for waste disposal suffer from a narrow base and low recovery rate. (71)

-The unit costs of water can be attributed to a number of factors, including the sources of water, the nature and extent of treatment, electricity rate (single most important item in several cases), the age of the distribution system and administrative practices and procedures (77).

Constraints and opportunities for people's adjustment strategies

-Most practical attempts at composting have run into financial difficulties because of inappropriate technology. Further research needed to develop technologies for the production of low cost manure. (83)

-The collection and disposal of waste is not viewed by households as "essential", with the result that it constitutes an insignificant part of the household expenditures. Unlike water supply, the poor spend little or nothing on waste disposal services, while the higher income group households spend more on these services. (80-81)

Solutions

-Those local bodies which do not levy taxes or charges for waste collection should do so in addition to making all out attempts to increase income from the sale of compost/manure (72). The modalities of such tax need considerable in-depth research particularly in terms of the affordability (((Comment: perhaps this only instance this concept is mentioned in the text))) and methods of charging. Privatization of collection charges is one possible solution. (82)

-The prospect of effecting economies on the cost/expenditure side of the services do not appear promising. Many of the cost items are external and independent, and cannot be easily regulated. Therefore the approach to sustain provision lies essentially on the revenue side. (83)

-More innovative methods of charging for this service must be found; charging all users and not only those subjected to property taxes is one of them (84).

-Taxes for waste collection is main source of income, but sale of compost plays a minor role (except in the case of Sehore, 80%, and Dhoraji, 40% of total income from waste collection. (70). However, 40-60% of solid waste is compostable, while only 10% of waste collected is turned into compost in India's urban centres in general.

GENERAL COMMENTS ON REPORT

-The project findings and recommendations reported in this review are those of the researchers, and not necessarily those of the potential beneficiaries, since their participation in this study is extremely limited.

-This study is essentially concerned with government-provided services, from a top-down perspective and without exploring grassroots actions and possibilities, which are seen in the GPI as necessary for equitable and effective service provision. The final comparative report of Phase I only briefly (three lines) mentions the need for community involvement in the water and waste management at the end of the report. The report also deplores the absence of "market" data such as type of consumers, their income status, and price and demand elasticities. This important aspect of the problematic could have been pursued in this second phase, but it was not. All of the above leads me to agree with one of the recent comment made by a PO (found in file) that the recipient is not really interested in participatory research at grass-roots level.

However, many of the findings can be useful.

-The main questions of this study was: What does it cost the municipal bodies to provide water supply and waste management, and to improve income of municipality from the supply of these services. The researchers seem to lean toward the economic argument that the efficacy and efficiency of a service impinge and is dependent upon the economic and financial viability of the agency which provides it and therefore, better recovery must be gained (pp.73,76).

The possibility of cross-subsidization is not explored. If the responsible "agency" in question were correctly identified to be the State as a whole, and not strictly the municipal department responsible for any specific service, the financial and resource allocation at the State level would also need to be considered. It would then, also, be possible to argue that the population has already contributed, directly or indirectly, considerably to the national public treasure, and therefore deserve "free" basic services in return.

From PCR

-mediocre.

-It is too early to determine the impact of the project. The results of phase one (82-0233) have been shared with city officials in each of the nine cities studied, and the comparative volumes have been widely disseminated.

Other

-Text of final report is often redundant.

APPENDIX 11
INTEGRAL SYSTEM FOR RECYCLING ORGANIC WASTE (MEXICO)
(88-0104)

Documents reviewed:

- GTA: "Reporte Final Programa de Investigacion IDRC/GTA/SIRDO", Mexico D.F., 1992 (2 vol, var.pag.)
- GTA: "Synthesis del Reporte Anual de Investigacion Realizada en 1990", 1991, var.pag.
- Andres Sanchez Bain: Trip Report (Consultancy 3-P-85-0037/4), 1990.

Project objective: To identify the factors (mainly socio-economic and socio-political) which facilitate and/or impede the adoption, operation and maintenance of the a low cost and effective technology (SIRDO) for collecting and treating waste products. Also assess the technical (including health concerns) and economic performance of the SIRDO system and its related activities, and analyze the impact of the system on the socio-economic and political development of the community. Develop a methodology for the promotion, installation, operation and correct maintenance of SIRDO by and for different types of communities.

WHAT IS SIRDO: Designed not only to manage waste, it creates jobs and revenues for the cooperative's members: Using waste waters and organic wastes (domestic, public and commercial) in the production of bio-fertilizers, which is largely sold to offset the capital and recurring operation costs of SIRDO, while the rest can be distributed to members for agricultural use. Effluent from the process can be used for irrigation. The collection and recycling of solid inorganic waste is a related activity, which processes collected plastic in a cooperative-owned micro-enterprise into pellets to be recycled in the production of various products, including plastic pipes needed for collecting waste waters in the community. SIRDO moreover acts as a catalyst for sustained community development.

From the "Synthesis del Reporte":

See the main conclusions on the fundamental obstacles, from a socio-political perspective, to functioning and diffusion of SIRDO, on pages 9-13 (copies attached). These conclusions are well supported by material presented in the two volumes of the final report.

Section titled
"Metodologia de Promocion Comunitaria Para
el Saneamiento Ambiental"

Constraints and opportunities for people's adjustment strategies

-Hay que cambiar el marco conceptual de referencia que define el problema, como por ej. dejar de pensar que tenemos que proveer de 250 lt/hab/dia de agua potable, y comenzar a diferenciar entre agua "potable" y agua reciclada par usos de riego y lavado (ej. patios). (2)

-La busqueda de nuevos criterios tarifarios basados en el subsidio (ya sea del Estado o de los ricos para dar a los pobres) o en busqueda de nuevos esquemas financieros solventados por creditos de la Banca Internacional para beneficio de los Tercermundistas, generalmente va acompanada de tecnologias convencionales que implican altos costos de inversion y conceptualizacions obseletas. Al interior de esta tendencia, la tecnologia es una constante neutral, y no una variable que demanda una revision conceptual.(3) (((Comment: This premise was not demonstrated in report)))

-See summary of systemized methodology for the promotion of SIRDO to the communities, pp. 4-8 (copies attached.)

-La transformacion de conciencia (hacia el medio ambiente) require un tiempo para ir adquiriendo vivencias que permiten a los usuarios (del SIRDO) internalizar nuevos conceptos ligados a nuevos habitos de limpieza. Tambien requiere articular un proyecto economico que incentive al usuario a la separacion de los desechos, porque responde a necesidades reales de la poblacion, y por tanto tiene posibilidades de consolidarse (17). El proceso de educacion ambiental, por si solo, puede lograr como maximo concientizar a un 30% de la poblacion, y se requiere planificar otros mecanismos para lograr la transformacion de conciencia en el 70% restante. La adquisicion de nuevos conceptos no se da racionalmente sino en forma sensorial, experiencial. La metodologia para la promocion de SIRDO pretende enfocar a ese porcentaje mayoritario. (17-18).

From "Reporte Final Programa de Investigacion IDRC/GTA/SIRDO" VOL I

Causes of vulnerability

-En la comunidades estudiadas, el sistema municipal de recoleccion de desechos solidos funciona con bastante irregularidad y deficiencia y generan descontento social y graves deterioros ecologicos, contaminando aire, suelo y mantos freaticos.(2)

Constraints and opportunities for people's adjustment strategies

-El hecho de que el SIRDO es una tecnologia basicamente urbana, la politica condiciona fuertemente la accion social. (20)

-Dado que la comunidad de Tres Marias se habia vuelto desillusionado por la corrupcion y la ineficiencia publica, y siendo GTA asesor del Gobierno, su identificaion con el gobierno, ante los ojos de la comunidad obstaculizaba la operatividad de SIRDO. (12)

-la poblacion no le interesa participar en decisiones sobre aspectos que no responden a sus necesidades sentidas, relacionadas con su actividad economica; ni siquiera tratandose de su salud, o del impacto positivo que podria tener en su actividad de servicios con atencion al turista, el saneamiento de su propio medio ambiente. (17)

-En la comunidad de Bosques, el enfoque ecologico orientado a lograr que los usuarios separen sus desechos, ha dado resultados pobres o parciales. Pero cuando la regularizacion y consolidacion del barrio se hicieron condicional, por parte de las autoridades, en el saneamiento ambiental del area para prevenir la contaminacion del manto freatico, SIRDO volvio a tener un significado politico y logro movilizar a la poblacion para la construccion de las redes colectoras (11)

-Otro ej. de como SIRDO fue utilizado por dirigentes politicos para sus propios intereses (26).

-Los parametros intrinsecos que afectan la operacion del sistema SIRDO, en el sub-programa desechos solidos inorganicos, son (en la comunidad de la delegacion de Tlalpan por ejemplo): la escasa produccion de desechos; el desagrado que le provoca a los propios usuarios el separar sus desechos; la "falta de tiempo" de los adultos porque trabajan; la falta de espacio par ubicar los diferentes depositos, el desconomiento de los efectos que causaria el tirar sus basuras en via publica. Los parametros extrinsecos son el servicio irregular de recoleccion que ofrece el municipio; el mal estado de las calles, la canalizacion de recursos y atencion hacia otras necesidades prioritarias. (6)

-La promocion del SIRDO (sub-programa desechos solidos inorganicos) cuando realizada por la propia comunidad resulto ser muy efectiva. (7).

-La privatizacion del suelos ha ocasionado una actitud proteccionista hacia sus bienes cuando estos resultan ser afectados en beneficio comunitario (ej. negarse al derecho de acceso de la red colectora de aguas negras atravesando sus terrenos). Por ese GTA proponia generar formas complementarias de tenencia, de caracter colectivo, para asegurar su funcion social, y consolidar su estructura ecologica-productiva. (11)

Job creation is not the most salient advantage of the system in itself. In the community of Tres Marias, for example, the full operation of 2 Sirdo units, with associated micro-entreprise for the recycling of plastic, is expected to create 8 permanent jobs. (see Synthesis del Reporte Final..., p. 16).

-El SIRDO trae una marcada disminucion en el No. de casos atendidos en enfermedades gastrointestinales. (21) En la comunidad de Tres Marias, desde 1990, el ahorro de costos de salud por el descenso de casos fue de 16.8 millones de pesos. (21)

GENERAL COMMENTS ON REPORT

People's participation is sought mainly in the survey of resources and for the implementation of SIRDO, and much less at the level of design, which is seen by the authors as a technically complex matter which is to be left preferably to GTA.

The project team is aware of the importance of the cooperation of municipality. However, recognizing the many pitfalls and weaknesses of public administration, they seek to increase the

level of independence and autonomy of community through SIRDO.

-This project's goal and approach coincide very closely with those of the GPI's Waste component.

-The team has succeeded in identifying the conditions which favour or create obstacles for the adoption and maintenance of SIRDO in the three pilot communities. The entire experience is rather well documented.

-Some of the researchers of GTA became part-owner, with communities's brigade members, of the micro-industry created by the project (SIRDOTEC) (17), which has a good potential for franchising, should SIRDO spread more widely. The researchers have made it clear that the technology of SIRDO should be considered as the property of GTA but that the operation and maintenance of the system belongs to the community.

-Page 8 of the conclusion section of the Social Area (Step 2) in the Sub-Program on Inorganics in Bosques de Pedregal, is missing.

-There are two sections of the reports which deal with the bio-chemical and agronomic potential aspects of SIRDO. These should perhaps be reviewed by appropriate scientists: (1) "Lineas de Investigacion Intensiva de Produccion Agricola", pp. 1-36 near the end of Vol I; and (2) "Optimizacion de Procesos" (various parametros fisicoquimicos, bacteriologicos y parasitologicos), at the very end of Vol I.

-Jenny Cervinkas's memo (August 1991) suggests that there is a need to move from the research phase to one of intervention and careful follow-up if this project is not to be 'wasted'. The consultant's trip report (September 90) showed concern about the progress of the project, the social and economic components having been scarcely pursued, but mentions that GTA had taken further steps to improve the social science component of its team.

Further research:

The researchers suggest that more follow-up of the pilot projects is required to ascertain the success of SIRDO in the longer term.

-I spoke with Arq. Mena (project leader) on December 7.

She says GTA produces a monthly pamphlet with up-dates on the pilot projects. She will send us this material, along with information regarding dissemination. She seems very enthusiastic. She would like to know if there are any Canadian organizations giving loans to community organizations to start/maintain micro-enterprises such as GTA's in this project (horticulture, plastic recycling, etc.). She already approached CIDA and the Canadian embassy in Mexico, who said that they did not know of any. Mrs. Mena thinks it is sad that funds are provided only for the research phase and not for such follow-up activities. I said I would ask Luc Mougeot for ideas and get back to her, also with ENR brochure. -----

APPENDIX 12

TRAITEMENT DES EAUX DOMESTIQUES USEES (Dakar) 90-0153

Document étudié: "Projet d'épuration des eaux usées domestiques dans la zone urbaine de Dakar. Première partie: Bilan et perspectives." (rapport technique intérimaire) Seydou Niang, Institut des Sciences de l'Environnement, Faculté des Sciences, U.C.A.D. Dakar., 1992, 70 pages, plus bibliographie et annexes.

Objectif du projet: La deuxième partie de ce projet aura pour but d'expérimenter une nouvelle technologie de traitement des eaux usées domestiques par Mosaïque hiérarchisé d'écosystèmes artificiels, dite "Technologie Radoux", suite à cette première partie qui visait à réaliser une caractérisation physique, chimique et biochimique de ces eaux à Dakar, une étude sociologique pour cerner la perception et le comportement des population-cibles envers les problèmes d'assainissement, et une étude écologique faisant l'inventaire des différentes plantes de marais autour de Dakar et de leur utilisations traditionnelles.

Les principales conclusions de l'étude sociologique sont annexées. Les résultats des études biochimiques et écologiques pourraient être analysés par des experts appropriés. L'accent est mis sur le développement du système de canalisation existant et sur son entretien. Il existe par ailleurs, selon les auteurs, des potentialités dans le pays en ce qui concerne l'utilisation de macrophytes. Aussi, les données sont anciennes et doivent être mises à jour, ce que compte entreprendre la seconde phase de cette étude pour la région du Cap-Vert.

Commentaires sur l'étude sociologique.

Les principales conclusions pertinentes à la IGP URB se résument comme suit: Bien que la population soit en général assez consciente de l'effet néfaste des eaux usées sur l'environnement et la santé, des efforts de conscientisation doivent être faits afin de préciser le niveau de danger et surtout les modes de transmissions des maladies. Seulement 34.8% de la population-cible acceptent le recyclage des eaux usées ménagères, et seulement 19.4% en ce qui concerne les eaux vannes. (78)

L'étude sociologique se limite à un simple (mais relativement élaboré) relevé des perceptions, attitudes et comportements des populations selon les catégories d'âge, de sexe, de profession, d'éducation, etc.. L'étude conclue que c'est le mode d'alimentation en eau qui joue le plus grand rôle dans le mode d'évacuation des eaux usées ménagères.

Aussi, les résultats de l'étude sociologique en ce qui touche aux relations maraîchage-eaux usées-maladies, ne sont pas rapportés dans la section conclusion ci-jointe. Le rapport révèle que, bien que les eaux sales soient extrêmement riches en matières organiques et minérales, elles le sont également en pathogènes (47). Utilisées pour l'agriculture, elles constituent un danger potentiel. 62.7% de la population-cible sont au courant de cette pratique et 81.3% d'entre eux croient que

les légumes arrosés par cette eau peuvent rendre malade.

L'aspect sociologique dans l'ensemble n'a été que superficiellement étudié. Les variables sont purement sociologiques, excluant les aspects socioéconomiques et sociopolitiques possibles, et sont étudiées séparément, les liens possibles entre variables n'ayant pas été abordés (ex. profession et éducation vont de pair, probablement, avec catégorie de quartier et, partant, avec le degré et la qualité de déservissement en services d'eau et d'égoûts.). Enfin, la méthodologie est vague au niveau de l'échantillonnage (voir p.22)

APPENDIX 13

ALTERNATIVES FOR SOLID WASTE MANAGEMENT (Dominican Republic) (91-0245)

Document reviewed: "Proyecto AGERES: Alternativas de gestion de los residuos solidos en la ciudad de Santo Domingo. D.N. Informe de Progreso No. 1" Santo Domingo: APROFED, July 1992, 82 pages plus appendices (first technical report).

Project objective: To propose a definite comprehensive solution to solid waste management in Santo Domingo with the participation of all related actors. This requires assessing (principally): quantity and quality of waste; capacity and methods for disposal; capacity and possibility of informal sector to become a key factor in solution; cost-benefit relationship of present public system and would-be participatory solution; economic and social consequences of increasing the participation of informal waste collectors; alternative propositions.

Causes of vulnerability

-The great concentration of people in the Capital stresses waste management capacity, and is due to concentration of resources and basic infrastructure in this city. (12)

-The municipality does not have well defined routes for garbage collection. (44)

-68% of waste management costs goes to the cleaning of streets and dumping activities in open dump areas, and only 25% correspond to purchase and maintenance of trucks. This is a complete distortion showing the absence of rational organization and talent. (49) (((Comment: not demonstrated in the report))). The ratio of people to garbage trucks in the last ten years has been on average 55,000, while the acceptable standard is between 10,000 and 12,000. (51).

-The proliferation of opened dumps in the streets represents a great problems to municipality for the large numbers of collectors it needs to employ in order to collect this garbage for its subsequent transport to final dump sites. (51)

-The density of the majority of slums encourages their inhabitants to dump their rubbish in ditches or in their backyards because of the impossibility of taking it to other places where it could be collected by municipality or other community organizations. (51) (((Comment: Interesting comment, although not demonstrated in report)))

-The dump sites occupy at least 500 informal collectors ('pepinadores'). Apart from this serious social problem, the presence of these sorters is an aspect which must be resolved in order to operate efficiently in future sanitary sites. (66)

-The personnel refused the scientific advice of professionals who had been trained abroad, because they wish to defend their "rights" acquired from a practice which is not compatible with modern management. (67)

-The reduction of budget allocated to waste management coincides with the start of structural adjustments and means a deterioration of waste management. (50)

Constraints and opportunities for people's adjustment strategies

-Municipal authorities have lost in 1966 their independence in determining the excise taxes for waste disposal with respect to the National Development Council (p.26).

(((Comment: The study proposes charge rates apparently on the basis of a municipal study done before 1987 (p.71). The authors also seem to overestimate the potential collection coverage, if we compare p.72 with p.65. The overall assessment of appropriate charge rates appears very superficial.)))

-Sanitary landfills in the various sectors of the city help reduce waste transport costs. (37)
(((Comment: Not demonstrated in report)))

-The slumps within the urban area have the capacity to store the solid waste for more than 20 years, and could therefore produce methanol for the production of energy, either electric or for vehicle combustion. (37)

GENERAL COMMENTS ON REPORT

-People participation is seemingly nil so far, either in research or action.

-This first progress report contains very little original findings and almost no analysis. Several interim conclusions remain unconvincing given their poor or insufficient demonstration.

-Judging from pp. 22-24, almost every possible solutions have already been studied and tried in the past but with no avail, due to persistent obstacles, principally of a political nature. The report does not elaborate sufficiently and clearly regarding these obstacles, neither does it clearly indicate the attempts which will be made to overcome those obstacles or how those actions are different from past attempts. The main aspects of the proposed solution, listed in section (G) of Part I (pp. 38-43), also seem premature in the absence of prior discussion and demonstration. For e.g. section 5.2. (p.41): Is there ability to pay on the part of inhabitants?; 5.3: Has this not been done before?; 5.8: Is this viable financially? Also, how will this proposed solution interact with the municipal decision to have one private firm collect all the waste, which is referred to on page 45?

-pp. 56-64 contains a bio-chemical analysis of waste to determine combustibility for energy potential, and concludes positively. May wish to have this reviewed by expert.

-The section on alternatives for final disposal addresses industrial toxic wastes (74-76) mentioning various existing engineering techniques available. No recommendation is made however as to any one in particular.

APPENDIX 14

RESEARCH ON WATER FOR DEVELOPMENT ISSUES: A FUTURE RESEARCH AGENDA FOR THE HEALTH SCIENCES DIVISION AND IDRC. ('Rapport Chauvin', February 1991)

Among the main conclusions and recommendations of report pertinent to GPI (see chapter 5):

There should be a Centre's corporate, more holistic, interdisciplinary, inter-divisional and cohesive approach to the discussion of issues and the review, identification and development of water-related research activities. Among the principal elements of such program: water resources management; planning and development of urban-based water services, with particular reference to peri-urban populations; community-based planning management and evaluation of water resources and supply systems; the socio-cultural dimension of human interaction with water; institutional capacity building; human resources development.(pp. iv-v, 103-112).

For the HSD, the main issues recommended for the research agenda are: Wastewater use for crop irrigation and the implications for human health; the examination of the cost-effectiveness of alternative institutional arrangements (community-based, government-centred) for the planning, implementation, monitoring and evaluation of water supply systems. (p.116) In collaboration with EES, continue to support investigations into actual and potential contamination of groundwater resources by human and domestic waste, and industrial and agricultural effluent. (119).

HSD should undertake a comprehensive review of research and development initiatives for the following topics:

- PVC handpump technology
- Groundwater pollution from on-site sanitation facilities
- rainwater catchment systems
- wastewater treatment/resource recovery and reuse
- health/environmental impact of improvements in water supply facilities
- community-based strategies for the planning, implementation and management of water supply improvement activities. (vii)

Among the main conclusions on and observations from SSD projects (p.67):

-The spatial distribution of housing and roads in unplanned squatter settlements is perhaps the single most important factor which inhibits the effective and efficient provision of basic urban services.

-Little attention has been paid to addressing other issues which affect the standard of living of peri-urban dwellers (eg.employment, land tenure, housing).

Among the main conclusions of HSD projects (pp. 82-83):

-on Hand Pump: There remains much to be learned about community-based management of water supply facilities and services.(many assumptions regarding expected roles and responsibilities.)

-Wastewater treatment/resource recovery and reuse (16 projects):

Much of the support has focused on studies of the technical performance of the various systems. In recent years, there have been several projects on the implications of wastewater reuse for agriculture (especially for market crops); the potential health hazards is not yet fully understood, and to date, no comprehensive review of the projects relating to this topic have been carried out. (90). "Well designed epidemiological studies to assess whether particular practices result in measurably greater incidence or prevalence of disease than occurs in the absence of the use of untreated wastewaters are required" (p.117)

-Apparently, there have been "noteworthy achievements" from investigations into, among others:

- .the issues to community-based management of water facilities and services (92);
- .the relationship between the siting of on-site sanitation facilities and groundwater contamination;
- .the environmental assessments of water resources, particularly river basins;
- .health implications of wastewater reuse for agriculture.

((Comment: the report offers little specifics on the findings from these and other projects referred to.)))

-There is a wide range of issues. The current resources available to the Division (personnel, funds) constrain the capacity of the Division to continue to entertain such a diverse range of research topics. (92-93).

Additional projects of possible interest, from list of water-related projects found at end of report:

HSD:

-Participatory Strategies in Water Supply (Costa Rica) 88-0243

-Environmental Slum Improvement (Thailand) 86-0136. May be first phase of Slum Improvement 88-0203. Check synopsis of latter for clues.

SSD:

-Natural resource use and technology diffusion (mexico) 88-0067.

-Urban services in Monteria (Colombia) 83-0028

EES:

-Water Resources Management Model Metro Manila (Philippines) 89-1029

((And perhaps, I would say, all the rest of the 20 or more projects listed in that section.)))

APPENDIX 15

URBAN AGRICULTURE IN TANZANIA 90-0123

Document reviewed: "Feeding the Urban Masses?: Towards an understanding of the dynamics of urban agriculture and landuse change in Dar-es-Salaam, Tanzania", Camillus J. Sawio, Progress report, June 1992, 71 pages.

Project objective: Explore, describe, and explain the dynamics of urban agriculture in Kinondoni District, Dar es Salaam, to help planners and decision-makers design supportive policies to ensure security of land, land tenure and access to other resources. Research is in progress. The data obtained from interview and surveys are being analyzed by researchers. This progress report is a detail presentation of the methodology, ending with preliminary remarks based on findings (the latter not exposed in the report). These two pages of remarks are annexed.

METHOD.

Main elements found on pages 26 (6.1), pp. 27-8 (6.1.2), p. 29 (III), and 31 (6.2.1)

-Difficulties experienced regarding interviews.

Some urban farmers, especially among the elite, were hesitant to respond to the questionnaires. One of the reasons was that some were not sure whether the information was going to be used to assess taxability of secondary sources of income. The National Urban Water Authority had just conducted a survey in the same areas in which these interviews were held. One of the goal of that survey was to track illegal pipe-water connections. Also, sometimes before, the minister in his budget speech had announced that efforts would be made to tax owners of informal enterprise, especially from middle and upper-classes, including urban farming. This explains the hesitations to respond to questionnaires. A 'snow-ball' strategy was then used, asking the person interviewed to introduce the interviewer to another urban farmer.

((Comment: I presume that the above would also represent an obstacle to the GPI participatory research approach in many countries, since the ideas of increasing local government revenues through taxation and of better monitoring water delivery and consumption appear to be gaining ground in LDCs generally.)))

GENERAL COMMENTS ON REPORT

-This report is essentially a very detailed and thorough presentation of method used and difficulties encountered. Instructive in this respect. Because survey results are not presented in this progress report, the "preliminary remarks", which take the appearance of conclusions

and recommendations, seem premature. Perhaps some of the results could have been presented in this progress report.

APPENDIX 16
DESCRIPTORS FOR IDRIS SEARCH

SEARCH #1

Group A:

waste management (or) waste disposal (or) waste recycling (or) water reuse (or) resources conservation (or) waste treatment (or) waste utilization (or) waste (or) solid wastes (or) industrial wastes (or) domestic wastes (or) waste waters (or) sanitary facilities (or) sanitary services (or) sanitation services (or) sanitation (or) drainage (or) fuel cycle (or) biodegradation (or) water management (or) water distribution (or) water storage (or) reservoir (or) water supply (or) water treatment (or) desalination (or) water utilization (or) water pollution (or) eutrophication (or) river pollution (or) water conservation (or) water consumption (or) water law (or) water quality (or) water requirements (or) water shortage (or) water resources (or) water balance (or) drinking water (or) freshwater (or) shared water resources (or) surface water (or) hydrology (or) hydrogeology (or) water balance (or) groundwater (or) well (s) (or) well drilling (or) pump (or) pumping stations (or) disasters (or) natural disasters (or) manmade disasters (or) devastation (or) disaster prevention (or) emergency relief (or) fire control (or) flood control (or) floods (or) damage (or) urban environment (or) environmental degradation (or) erosion control (or) hills (or) environmental effects (or) pollution control (or) storm (or) hurricane (or) volcanic eruption (or) tsunامي (or) tidal wave (or) earthquake (or) cyclone (or) industrial hazards (or) warning devices (or) renewable energy sources (or) biogas (or) agricultural wastes (or) animal wastes (or) biomass energy (or) methane (or) energy substitution

in combination with group B:

transport (or) freight (or) freight market (or) small enterprises (or) small-scale industry (or) medium enterprises (or) industrial enterprises (or) industrial cooperatives (or) enterprises (or) local industry (or) social participation (or) urban communities (or) informal sector (or) employment (or) cottage industry (or) handicrafts (or) appropriate technology (or) alternative technology (or) new technology (or) traditional technology (or) know-how (or) civil engineering (or) choice of technology (or) environmental engineering (or) environmental management (or) costs (or) risk (or) safety (or) decontamination (or) urban land (or) land management (or) land settlement (or) liability (or) civil liability (or) responsibility (or) government (etc.) (or) legislation (etc.) (or) regulations (etc.) (or) efficiency (etc.) (or) resource allocation (or) rationing (or) overexploitation (or) exploitability (or) resources recovery (or) resources depletion (or) resources management (or) resources evaluation (or) rationalization (or) 'supply and demand' (or) demand management (or) supply management (or) standards (or) quality standards (or) quality control (or) urban areas (or) towns (or) residential areas (or) slums (or) squatters (or) suburban areas (or) urban land (or) urban economy (or) urban planning (or) urban population (or) urbanism (or) human settlements (or) zoning (or) community development.

SEARCH #2

All of the descriptors in group (A) above, searched separately.

SEARCH #3

Group a: urban areas (or) towns (or) residential areas (or) slums (or) squatter areas (or) suburban areas (or) urban land (or) urban economy (or) urban communities (or) urban concentration (or) urban development (or) urban economy (or) urban planning (or) urban population (or) urbanism (or) human settlements (or) zoning

in combination with group b: agriculture (...including livestock, aquaculture, hydroponics, silviculture, sericulture, etc) (or) food security (or) food supply (or) perishable food (or) deforestation (or) reforestation.

SEARCH #4

LIST OF NON-DESCRIPTORS

Landslide
slope failure
hillside city (or settlement)
land subsidence
steep-gradient settlement
waste (or garbage or refuse) collection
organic wastes
disaster mitigation
