

COMMUNITY PARTICIPATION FOR WATER SUPPLY AND SANITARY
FACILITIES IN LOW-INCOME URBAN AREAS IN ASIA

A Discussion on the 'Hard' Reality of the 'Soft-Side'

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Preface



In the summer of 1989, I started a literature review and case analysis, concerning water supply and sanitary programmes in low-income urban areas in Asia. The International Reference Centre for Community Water Supply and Sanitation (IRC) in The Hague,

offered me the opportunity to do this research in a field of such importance, given the growing number of 'urban poor' and their deteriorating health status. Initially, it was planned that the specific objectives of my study would be:

- to develop an overview of the main constraints and priorities in providing water supply and sanitation to the urban poor;
- to identify innovative projects;
- to make a comparative analysis of selected cases (see appendix 4).

In the first phase of my research, I contacted several consultancy bureaux and other relevant institutions (see appendix 2) to obtain an overview of the material that was available. In general, there appeared to be little literature on this subject and the material I found was in the main technical in character, while I had the intention to focus on the socio-political and economic aspects of the projects at the community level. These aspects are as important, or even more important than the technical side of the programmes. But also the articles that did consider the socio-political and economic aspects of water- and sanitary projects of importance, were mostly written in a very 'instrumental' and far less analytical way. In other words, sociological problems were indicated, but not tried to analyse or explain, which - of course - should precede any effort to improve a given situation. An example may illustrate this problem. An article on the environmental conditions in the Bangkok slums, described the fact that most of the areas did not get the service of collecting the waste out of the residential area. "The reason is the truck cannot reach in the slum area. The other reason is

the slum dwellers refuse to pay. ... at a place where the truck can reach, the truck did not come" (Manoharn: 1983). Such a presentation of facts, raises more questions than it answers. Why did not the slum dwellers pay? Could not they afford the service? Why did the truck not come when it was technically possible? Were the officials ignorant of the problems of the urban poor? In another example, under the headline of 'Social Factors', I found the following 'significant' and only sentence: "There should be sufficient awareness at the user level of the benefits to be gained from the proper use and maintenance of the facilities" (Human Settlement Management Institute 1989: 11). Many more examples could be added, and they would make clear that the relevant literature on the subject of my research, appeared to be very limited. On the whole, I experienced a tendency in the involved articles, to stress the developments one wanted to happen, in stead of analysing the situations in practice. Trying to provide the urban poor with water- and sanitary facilities, is an effort that should be encouraged from as many sides as possible. But, I had the impression that there are many recommendations to improve the implementation of the programmes - like trying to allow the 'community' to 'participate' - without bringing up for discussion the socio-political climate in which these programmes are carried out. To contemplate 'the urban poor' as a target group, does not mean to ignore the differences in socio-political- and economic power within urban communities or between them. I know, of course, that it is unrealistic to expect a (inter)national policy that, in the prevalent socio-political and economic climate, puts the priorities of the urban poor first on her agenda. This, perhaps, is also the reason that while mentioning and shortly describing this climate, I sometimes got the reaction that I wrote down 'common knowledge', that did not add anything 'new'. This, however, is an argument that is not at all convincing for not writing it down. Of course, poverty and inequality are common knowledge, but I suspect other reasons to be more important for not analysing these subjects, although - unfortunately- I am not able to prove them. In the first place, there might be a group of people concerned with development problems, that considers the 'soft-side' as unimportant. These people might be technicians that see the solution of the water-

and sanitary problem in a pipe, a latrine and a tap, and all the rest as matters of minor importance or superstition. In the second place, there may be others that in their hearts know the importance of the 'sociological aspects' of development, but ignore them for reasons of policy and ease. In short, these people are the ones who avoid the reality of the so-called 'soft-sector'. This, however, is working against ones better judgement. A perspective from the 'bottom-up' -which community participation should bring about- demands a political position. Trying to help the urban poor, means to organize their strength. Community participation for water- and sanitary facilities, might make the involved people aware of the fact they 'fought' for the innovations. It might also make them fight against the reason why they did not have them before. In this way, community participation is not often regarded for it would mean a real threat to the established order. Far more often, community participation is regarded as a means to achieve 'cost-recovery' and 'cheap labour'.

In conclusion, it appeared to me that many of the mentioning of the socio-political aspects inherent to water- and sanitary programmes, is a kind of lip-service. Giving attention to 'women' or 'cultural aspects' is in fashion. The male, and technical- and commercial in orientation politicians or employees of, for instance, consultancy bureaux, flexible adjust to this fashion by appointing a sociologist or even a woman, but unfortunately forget to adapt their way of reporting their results. The merely restoring of facts without analysing them (on paper) was one of the main problems I encountered in writing this report. This is also the reason that I enlarged the number of project-descriptions with anthropological/sociological literature (see annotated bibliography) I consider of importance in the context of the subject of this report. Anthropological insights are important for at least three main reasons. In the first place, anthropologists have a holistic approach in their research. A certain phenomenon is studied in the realization that it always forms part of a wider context, and is only to be understood as a part of this context. This is a characteristic feature that distinguishes anthropology from all other social sciences (except perhaps history). Secondly,

(concept) differentiation is important within the anthropological studies. Anthropologists try to indicate diversity in concepts/categories that suggest uniformity. Planning for 'the urban poor' or 'women' as identifiable social categories will (should) provoke resistance, for these are categories that do not exist in reality. We have to consider the integration of the urban poor in their various environments - social-, political-, economic-, and cultural. In the third place, and related with the foregoing, feminist anthropology offered important insights by introducing the concept of gender-relations. Defined very limited, the concept of gender refers to the social filling in of biological differences between men and women. Women might share certain experiences and problems, but there are fundamental differences between them, resulting from differences in class, culture etc. In stead of taking 'women' as a target group for a certain development programme, it should be tried to find out what it is like to be a woman in a certain socio-cultural surroundings before starting any programme. It is wrong to assume there is an 'univocal women's perspective'. With the knowledge from my anthropological/non-western sociological studies, I hope to indicate the importance of the above mentioned insights for the water- and sanitary programmes in low-income urban areas in Asia.

Before specificating my research some more in the introduction, I like to thank Dr. Loes Schenk-Sandbergen from the Anthropological-Sociological Centre of the University of Amsterdam, who stimulated me not only by her comments on earlier versions of this report, but especially by the stories from her own experiences 'from the field'. Further, I am thankful to the IRC in general and Drs. Madeleen Wegelin-Schuringa and Ir. Teun Bastemeijer in particular, who gave me the opportunity to do this research. Ir. Jack Overkamp helped me in the first phase of my work by carrying a cardboard box through The Hague, from which several useful articles emerged.

Schoorl, 8 February 1990
Mirjam Letsch

Women on the banks of the Ganges may not be able to calculate an infant mortality rate, but they know all too well the helplessness and agony of holding a child as it dies of diarrhoea (Alan Durning).

Introduction

Our earth is more and more on her way to become an urban planet. Figures predict that in the year 2000 half of the world population will live in cities. From all the people living in the cities, over 450 million will be in struggle for survival in the low-income areas. The reality of this urban growth is hard to grasp, especially in providing the urban poor with basic services, including water- and sanitary facilities. These facilities intend to improve the quality of life in general but for many the shortage is so acute, it threatens survival chances.

The 'International Drinking Water Supply and Sanitation Decade (1981-1990)' is a program, started by the United Nations, to improve the lives of the people all over the world by providing water- and sanitary facilities. The resolution calls upon the world community to join in a unified effort to bring water and sanitation to everybody by the end of the 'Decade' in 1990. This ambitious goal has not been reached in 1990, but the 'Decade' has provided us with a lot of experience of which we can learn to improve our efforts in the years to come.



This report deals with the attempts that are made at improving the living conditions of the urban poor in Asia by introducing (improved) water- and sanitary facilities.

Slums are in general characterized by inadequate housing, deficient public facilities, and overcrowdedness. But to live in a slum involves much more. Insight in the socio-political and economic processes of the slums is essential for the success of projects in situations of urban poverty. Such insight would also make, that the writer of an article named Hatzenboer realizes that it is not the fact that 'the Indians won't unlearn to

relieve themselves in the streets' (1986: 31), but that a great part of the Indians just does not have another option than to do so. It is not very likely that the women in the Indian slums like to defecate after sunset on places that are also suited for rape and molestation (cf. Agarwal: 1985). In fact Chandigarh, the city that Hatzenboer describes, is a classical example of a city based on ultramodern planning, which totally forgot about the housing needs of construction workers and others in the unorganized sector (Singh and De Souza 1980: 11).

The situation of the poor, both in urban- and in rural areas, can be characterised by a high degree of dependency, insecurity, and also vulnerability. But, more than in the rural areas, housing is an enormous problem for the urban poor. Essential facilities for water and sanitation¹ are totally inadequate which creates a dangerous situation for health on places where so many people live side by side.

Almost all the documents studied in the context of this research, mention 'community participation' as the key factor accounting for the success of water supply and sanitary projects. The fact that the heterogeneity of the slum population, her weak economic position, and low social status have major impacts on community participation in these projects, receives less attention. In other words, I found a gap in the awareness of the crucial role of the sociological- and institutional aspects inherent to these projects. It is for this reason that I will focus on the socio-cultural-, the political-, and the economic aspects of water- and sanitary projects at the community level.

The urban poor are not an 'undifferentiated mass': in the slums of Bombay we can find as many economic activities in number as in the entire city of The Hague. But, in the slums of Bombay, where many people live at or below the poverty line, individual survival appears to be more important than organizing on the basis of common interests. In this situation of urban poverty, the poor will be more interested in an investment in patron-client relations, which, of course, has an important impact on

¹ In this report, I will use the concept of sanitation in the limited sense to describe only those practices that surround the disposal of body waste.

organizing the community for water- and sanitary projects. Working with the urban poor means an understanding of these aspects and to get insight in their social- and cultural setting to translate plans into action. Fortunately more and more planners and executors become aware of this importance. In the following, I will describe the ways and means with which development-workers try to reach the urban poor. Initially it was planned that I should give an insight in these factors by using case-studies. A case-study is useful because it offers an insight in the relation between social-, cultural-, political-, technical-, and economic variables. However, after studying a lot of documents, it appeared difficult to use these descriptions of the different projects as cases for a comparative analysis (as the IRC asked me to do), due to three reasons: In the first place, as already stated, there appeared to be little case material available describing the aspects chosen to be the subject of this paper. In the second place, the countries in Asia and the locations within one country, differ too much in socio-economic structure, physical environment, political- and cultural setting, to make a comparison very useful. The same can be said of the implementing organizations. I found differences in approach, structure, scope, as well as sponsoring. In the third place, the descriptions I studied are not really case-studies in the above defined sense. Most of them emphasize only a single aspect, for example the technical- or economic side of the projects, and discuss the other aspects only in a brief way or not at all. Nevertheless, I chose for a presentation of my findings that - it is true - simplifies the reality, but will hopefully prove useful in the preliminary stage of an investigation on water- and sanitary projects in low-income urban areas. I will illustrate these 'general findings' with examples 'out of the field' as I found them in the main in the literature and descriptions of the projects, and sometimes through discussions.

In the first chapter I will describe Asia's urbanization and the resulting low-income urban areas in a general way. The presented figures and descriptions of urban situations with regard to water and sanitation, will underline the importance of the subject of this report. The second chapter will pay some attention to the concept of community participation in a rather

theoretical manner. The socio-political and economic problems that go together with the reality of community participation in low-income communities, as well as the efforts to overcome them, will be the subject of the third chapter. In this chapter special attention will be given to the role of women in development programmes with regard to water and sanitation, being the ones most affected by the lack of these facilities and having the most to gain from organizing in order to struggle for an improvement of these facilities. In the fourth chapter, the role of caste and the position of sweepers and scavengers will get attention. I decided to reserve a separate chapter for this subject, in stead of placing it in the third chapter which also would have been possible, because sweepers and scavengers get too little attention in the involved literature and deserve special attention, as will become clear. In the final chapter, I will come to some conclusions which will hopefully contribute to the efforts undertaken to introduce water- and sanitary facilities in low-income urban areas. These efforts need out full attention and encouragements.

I. Asia's Urbanization

1.1 The facts

Urbanization, seen from a demographical approach, refers to a growth in the proportion of a country's population in urban centres of a particular size. During the period 1950-1980, Asia's urban population increased from 216.3 to 689.3 million, representing 15.7 and 27.4%, respectively, of the total population. It is anticipated that at this century's end, the corresponding figures will increase to 1.4 billion and 38.9%. Asia's urban population more than tripled in 30 years from 1950-1980, and will likely to double again the next 20 years (Yeung 1983: 11). Some figures for the different countries in Asia are given in the tables I and II.

1.2 Why do low-income urban areas increase?

The development of low-income urban areas, is the direct consequence of the fact that we are living in a world that is increasingly polarized. All over the world, we find the tendency that few people benefit from the commercial and technical progress, while many more -and a growing number- find themselves in a state of not to be tolerated poverty. This is true on an international scale, as well as within the different countries of the Third World (cf. Bissio: 1988).

Asia was traditionally a continent of smallholders in which landless peasants have always existed. But these peasants had a place in the rural economy that ensured them a living. Today, with the increasing commercial opportunities of expanding food markets and the opportunities for profit of new technologies, many peasants are being separated from their means of production -the land- and not only in terms of ownership (Worsley 1984: 172). Prosperous landlords enjoy the benefits of modern technology, like the so-called Green Revolution, and the concentration of these benefits in fewer hands is used to consolidate and accentuate their advantages by exploiting the poor mass.

The situation of the poor in Asia is deteriorating.

TABLE 1
Urban agglomerations expected to have populations of over five million in the year 2000

City (country)	Population (in millions)			City's population in 1980 as a percentage of:	
	1950	1980	2000	National population	Total urban pop.
EAST ASIA					
Guangzhou (China)	1.5	3.4	5.7	0.4	1.4
Lanzhou (China)	0.3	2.7	5.5	0.3	1.1
Beijing (China)	2.2	11.4	20.9	1.2	4.7
Shanghai (China)	5.8	14.3	23.7	1.5	5.9
Shenyang (China)	2.2	3.4	5.3	0.4	1.4
Taipei (Taiwan)	0.6	3.3	6.8	0.3	1.3
Tianjin (China)	2.4	5.1	8.1	0.5	2.1
Wuhan (China)	1.1	3.2	5.0	0.3	1.3
Osaka-Kobe (Japan)	3.8	9.5	10.9	8.2	10.4
Tokyo (Japan)	6.7	20.0	23.7	17.2	21.9
Hong Kong	1.7	4.4	5.9	91.0	100.0
Pusan (Korea)	1.0	3.1	5.4	8.2	14.9
Seoul (Korea)	1.1	8.4	13.7	22.1	40.6
SOUTH ASIA					
Dacca (Bangladesh)	0.3	3.0	10.5	3.4	30.0
Ahmedabad (India)	0.9	2.5	5.1	0.4	1.6
Bombay (India)	3.0	8.4	16.4	1.3	5.7
Calcutta (India)	4.6	8.8	16.4	1.3	5.7
Delhi (India)	1.4	5.4	11.5	0.8	3.5
Hyderabad (India)	1.2	2.5	5.2	0.4	1.6
Madras (India)	1.4	5.4	12.7	0.8	3.5
Jakarta (Indonesia)	1.7	7.2	15.7	4.7	23.3
Surabaya (Indonesia)	0.6	2.4	5.4	1.6	7.8
Karachi (Pakistan)	1.1	5.0	11.6	6.1	21.4
Lahore (Pakistan)	0.9	2.9	6.6	3.5	12.6
Manila (Philippines)	1.6	5.5	11.4	10.8	29.9
Bangkok (Thailand)	1.4	4.7	10.6	9.9	68.6
Danang (Vietnam)	-	1.8	6.6	3.4	14.8

Source: Donohue (1982)

TABLE 2
Percentage of squatters and slum dwellers in selected cities (by region in descending order)

Region and city	Year	City Population (in thousands)	Slum Dwellers Squatters (in 1000)	% of Slum Dwellers, to city population
SOUTH ASIA				
Calcutta	1971	8000	5328	67
Bombay	1971	6000	2475	41
Delhi	1970	3877	1400	36
Dhaka	1973	1700	300	35
Karachi	1971	3428	800	23
EAST ASIA				
Manila	1972	4400	1540	35
Pusan	1969	1675	524	31
Seoul	1969	4600	1320	29
Jakarta	1972	4576	1190	26
Bangkok	1970	3041	600	20
Hongkong	1969	3617	600	17

Source: Donohue (1982)

Absolute- as well as relative poverty ¹ are increasing, both in total number and in the proportion of the population affected. Two thirds of the absolute poor live in Asia (Harrison 1979: 406-408). In this situation of growing polarization, the poor seek strategies in order to survive, one of these being the rural to urban migration. Many of these migrants are forced to leave their home-villages and hope for a better standard of living in the city. The most important criterion for their settling is the closeness to their work. Very important in the context of this paper is the fact that Singh and De Souza found that the migrants include an increasing proportion of females, indicating that moving in family units is becoming more common than it was in the past. This means that development programmes for low-income urban areas should be family-oriented, especially taking into account the needs of women and children (1980: 51-52). The many people that enter the rapidly growing Asian cities, however, far exceeds the labour market capacity. Unlike the developed countries, the ever growing urban population in developing countries does not go hand in hand with industrialization. With employment opportunities expanding slowly and a rapid growing population, it is not difficult to forecast that the rift between the extremes - between the haves and the haves-not - is increasing with a growing inequality in income and opportunities between different social classes/castes involved in the urban economy (Bremner 1976: 1875-1906).

In the low-income areas themselves, the natural increase of the population causes an enormous pressure to the often scarcely sources. The desire of having more than two children, however, is not the cause but rather an answer on the overall poverty situation. Where the household is the most important unit of

¹ The concept of poverty is difficult to define. Often a distinction is made between absolute- and relative poverty. Absolute poverty is indicated as the level of income that 'imposes real suffering on people' (hunger, disease, bad housing and sanitation etc.). Relative poverty is indicated as the mental suffering that derives from inequality. Notions of an adequate standard of living are culture-specific norms, defined by people in specific societies according to their criteria (Harrison 1979: 405-408; Worsley 1984: 205-206).

production and consumption, and no forms of social- and economic security are provided, the having of children is of important economic value. In the Hindu- and Moslem cultures of South Asia, as well as in the Chinese cultures of Southeast Asia, especially sons are very much valued. Having at least one son appears to be a rational survival strategy. What should an aged couple do without any children or with only daughters that live with their husbands? A proverb out of India is illustrative for this problem: The name of a daughter indeed is a waste: you always lose her - she dies or she marries. Cousins and Goyder found that mothers were only prepared to undergo a tubectomy operation after they had completed reasonable large families. This observation was verified by other women, who said they would be willing to have an operation after they had delivered a third or a fourth child (1979: 71). Wiebe also mentions the 'optimal number' of children to be three or four (1975: 150). Mamdani states that the marginal employment available to the urban poor is skewed in favour of child labor: "The poor make demands on the 'conscience' of the local ruling class and their metropolitan tourist friends. The younger and more innocent-looking the caller, the better the chances of being rewarded" (Mamdani 1981: 48). What Mamdani indicates with this -a bit dubious formulated-sentence, is the important role children play in the unorganized urban economy. They often in fact support the adults.

In general it can be said that the children are viewed as an economic asset. There is a need to provide alternative forms of social and economic security in any integrated family planning programme. This is a matter of social justice as well as pragmatism (Singh and De Souza 1980: 69). This structural explanation for the desire of having many children is probably the most important, but not the only reason. In India, for example, we find an ideology that considers the giving birth to children as a religious and social obligation (dharma). In the slums of Hyderabad, progress in family planning had been slow because people felt this was against Islamic practices (Cousins and Goyder 1979: 38).

Both migration and the rapid natural growth of the (urban) population, reflect the general consequences of the penetration of the world economic system in which many people do not share in

the benefits. These people are forced into the low-income urban areas that will be the focus of this report.

1.3 The Result



The consequences of the above mentioned developments are numberless. It is estimated that a quarter to a third of the urban dwellers in developing countries does not have the disposal of basic facilities because the urban infrastructure is totally inadequate to provide enough save drinking water, fuel, shelter, etc. (Deelstra 1989: 48). The enormous pressure to the often scarcely sources together with the absolutely insufficient accompaniment of its use, are the cause of a sharp degradation of the social- and physical environment. The disposition and latitude of the urban developments in many parts of the Third World, constitutes a direct threat to the quality of living, working and dwelling in the city, as well as to the ecosystem around the city.

The consequences of these negative developments for the structural subordinated urban poor, most clearly find expression in the location and quality of their living environment. The lack of water- and sanitary facilities is one of the factors highly contributing to the deteriorating quality of the urban environment. The following examples may be illustative for this urban situation with regard to water supply and sanitation.

Calcutta

Improving the sewerage and drainage carries too far for the authorities. "The city already is stopped up and this means that we have to tear up the pavements for years", the municipality states. So it remains with tinkering and even this leads to chaotic situations. Nobody knows the way the pipes run beneath the streets. There are no accurate maps, and so far they do exist, they differ considerably from each other. When a part of the inhabitants of Calcutta is relieved, because the municipality workers pierced a stoppage in their sewerage, their neighbours, in all probability, will be without power (-if they have this anyway-). There are many leaks in the sewerage so on some places the sewage mixes with the drinking water. Besides, the water threatens the badly insulated electricity cables. Workers who descend into the catacombs of Calcutta are in a constant danger of life. The tangle of leaking pipes underground Calcutta, shapes an equally explosive surroundings as the crowd above ground.

(source: Janssen 1987: 95-97)

Singapore's Chinatown

For the most part, the toilet consisted of a small room (usually a cubicle) built in the corner of the same verandah that served as a kitchen. Thus the distance from the latrine bucket to the kitchen was in no case more than a few yards, and the hygienic effect of this proximity, particularly in view of the fact that the majority of the buckets (64 per cent) was emptied less frequently than once a day, can well be imagined. Moreover, it should not be overlooked that when the buckets were emptied, they had to be carried through the kitchen and the corridors, and down the stairs, and with full buckets inevitably some of the contents were spilled. This was a major source of complaint among the households interviewed; many of them alleged that the night-soil carriers deliberately spilled the soil over in those houses where their tip was not large enough.

(source: Housing Development Board, Singapore, in: Desai and Pillai (eds.) 1970: 139-140)

Bandar Lampung

Although Bandar Lampung has three densely populated commercial centres, only one of these, Tanjung Karang, enjoys a reticulated water supply, which provides water to 6006 household connections and approximately 72 public taps, serving in all less than 7% of the total population. During the rainy season when water is in abundance, at times even causing floods, well supplies, serving 80% of the population, are at their best and alternative sources of water are within easy access. There is spring water, river water for bathing and washing for those in close proximity to the Way Kuripan and its tributaries. People do not collect water in large quantities. They claim that the cost of tanks or other storage containers is prohibitive for them, adding too that rain water can only be used for bathing and washing.

Three weeks without rain, however, and the situation changes drastically. People in 67% of the 58 kampung claim that their wells dry up within two or three weeks; the level of pollution increases in rivers in proportion to the dropping water level; and rainwater supplies deplete rapidly. One has only to observe the Way Rilau Spring, in a dip at the side of a major road, at any time between 4.00 a.m. to 10.00 p.m.. There is a constant stream of water seekers. It is indisputable that the current water supply for the majority of the population of Bandar Lampung is far from equitable ideals portrayed in either the resolutions of the Decade or those of the Indonesian Government.

(source: Johnston 1986: 78-80)

Providing the urban poor with water- and sanitary facilities in situations as described in these examples, clearly requires the development of low-cost (material-, operation- as well as maintenance costs), appropriate technologies. Important as this is, the provision of improved technologies alone is not enough to

improve the health status of the people. An effective implementation of appropriate technologies requires a constant input of knowledge, resources, and time on the part of the community - especially her mothers. Community participation, indeed, has been identified as the key-factor in the success of water supply and sanitary programmes. Less, however, is written on the 'how' of community participation in urban situations of (extreme) poverty in which individual survival seems to be the most important. In these situations it is the poverty that prevents the urban poor from organizing, while at the same time, their not being organized can be regarded as one of the main factors causing their poverty. Obviously, a more horizontal organized community has much more bargaining power than a community that is merely organized in a vertical manner (see chapter 3). A successful community participation for water- and sanitary projects is not only a necessity in order to achieve the expected beneficial health improvements of the target population, but may also mark the starting point of a development in which the urban poor find ways to mobilize themselves to demand for more justice. In the countries of Asia, this is an enormous challenge because of the existing -and increasing- polarized class/caste structure.

Before turning more specifically to community participation in water- and sanitary projects in low-income urban areas in chapter 3, I will first give some attention to the concept itself in the next chapter.

II Community Participation for Water Supply and Sanitary Programmes in Theory



Community Participation is a concept that is mentioned in almost all the descriptions of efforts to improve or introduce water supply and sanitary facilities to the urban poor. I decided to reserve a chapter for this concept because, to quote De Kadt, "community participation has popularity without clarity and is subject to a growing faddishness and a lot of lip service" (in Midgley 1986: 35). In this chapter, therefore, I will indicate the way community participation is defined and mention the positive effects that are

expected to result from community participation in water- and sanitary projects. The chapter may be read as a theoretical foretaste on the more practical discussions that will follow.

2.1 Defining Community Participation

The United Nations, who started the 'Water and Sanitation Decade', consider community participation as the most important pillar on which the 'Decade' should be built and declared:

Maximum participation by those who will benefit from the new systems is central to the approach. Members of local communities are to be involved in all aspects of water/sanitation -from planning, construction and financing, to training, operation and maintenance (in Chauhan 1983: 9).

The IRC ¹ gives the following description of the concept:

Community participation (...) refers to organized involvement of a community in a development effort with all major population groups being represented, as opposed to a person-to-person relationship (1988: 1).

¹ International Reference Centre for Community Water Supply and Sanitation (IRC).

Clearly, descriptions as these are open to many kinds of interpretations. In none of the involved project descriptions, I found a real effort to conceptualize community participation. There was, however, attention paid to factors that might influence the degree of participation. Before describing these factors, it is important to consider the two concepts that make up this umbrella phrase in some more detail: community and participation.

2.2 Defining the community in low-income urban areas

Regarding 'community participation' as a necessity for water- and sanitary projects, means to bound the community. In Bourne (1984), an attempt is made at defining the community:

In relation to development programming, it is generally regarded as both a geographic entity (i.e. a group of people living near one and another and sharing a territory) and a social entity (a group of people who have economic and social interests in common) (224).

Such a description of the community makes me think of the nineteenth-century's sociologists, who used the concept of community -explicitely or implicitely- to sketch the opposition between pre-industrial and industrial, or rural and urban societies. Tonnies (1855-1936), for instance, used the concept of community (Gemeinschaft) in his distinction between Gemeinschaft and Gesellschaft to describe a certain kind of society, which was mainly rural and united through kinship and a feeling of 'togetherness'. The Gesellschaft, in contrast, was characterised by objectivity, slyness, and craftyness (Veen, van der 1986/87). However, not only Tonnies and his contemporaries used these typifications. In development projects, the community still bears a normative power; many projects try to foster a 'community feeling' in order to achieve certain goals. In Bourne (1984), it is described how the village is still regarded as a supposed unity in contrast to urban areas, where group identity would have been disappeared in an individual struggle for survival. None of these descriptions gives an insight in the actual situation. The image of a village as a homogeneous entity is out of date, and we

will see that cities are often built up of rather homogeneous neighbourhoods, characterised by a common caste-, ethnical-, religious-, or other background.

In conclusion, when we would take the physical neighbourhood as a community, we would easily forget the social reality of a highly heterogeneous society. On the other hand, by taking the more homogeneous urban neighbourhood, we certainly cannot conclude that these people will act 'as a collectivity' in all development programmes, as we will see in the next chapter. We should be very much aware of the community being in any case a 'political unity', in which we do not only find differences in power between families, ethnical-, religious-, etc. groups, but also within each of these groups, interests can be divergent in character. Besides a place to live, a community can be defined as a network of social relations between her members, as well as between the members and the social environment of the community. Perhaps we should follow Warren (in Wiebe 1975: 77) and consider the community as "...that combination of social units and systems which perform the major social functions having locality relevance". The latter involve production, distribution, consumption, socialization, social control, social participation, and mutual support.

2.3 Defining participation in development projects

The difficulty of defining community participation does not only concern the bounding of the community, but also the concept of participation. Nowhere, it is indicated at what point participation is distinguished from non-participation. In most of the cases, participation is defined in terms of a typology that contents an increasing degree of involvement in the development programme. In general, the most important criteria for community participation are the degree of involvement in:

- a. the planning of the project;
- b. the implementation of the project;
- c. the sharing of the benefits of the project;
- d. the evaluation of the project.

Again, these criteria are open to many kinds of interpretations. The concept of participation is little shaped and translating it into measurable empirical symptoms, therefore, is difficult.

White (1981), for example, defined participation of the community as an involvement of the local population in the decision-making concerning development projects or (my underlining) their implementation (1981: 3). In this definition, it is possible to speak of participation when the population is in fact only involved in the implementation of programmes, formulated by others. Later, however, White states that this is no real participation, but self-help. I do not agree with the word 'or' in the above mentioned definition, for I consider the involvement in the decision-making process essential in any community participation programme. Community participation should be a means by which the involved people may formulate their interests. This is a human right for we are talking about a basic need as water.

In the next paragraph, I will indicate the fact that the desirability of community participation is indeed often linked with the cost-effective and technical implementation of the water- and sanitary programmes, while I would like to suggest a more 'people oriented approach'.

2.4 Desirability of Community Participation

The main expected advantages of community participation in water supply and sanitary projects put forward by White (1981) and summarized by the IRC (1988: 3-9), are the following.

In the first place, involvement of the community as voluntary labour in construction can reduce the agency investments costs.

Secondly, with the capital saved through participation in construction and maintenance, more funds are available to serve those without improved water supply and sanitation. Thus more people can participate.

Adaption to local knowledge, needs and circumstances is the third expected advantage. Local men and women have a detailed knowledge of their physical and social environment and are able to indicate the needs and circumstances of different user categories.

In the fourth place, there is an increased chance of use and maintenance with full community participation.

Finally, community participation may act as a catalyst for

further development, in which local organizational, technical and managerial skills are strengthened in order to solve other problems and foster ongoing developments.

The first and the second point, indicate a reduction in costs, seen from the side of the implementing agency. What we see here - and what Chauhan et. al. (1983) state happens often - is a consideration of the costs of labour and material. What is left out is the coverage of the organizational and institutional costs, and the value of the time that agency and/or government personnel spend on developing a community project. Organizing and training volunteers (handpump-caretakers, health workers etc.) is expensive, even if they do not receive a payment. The interlinking of the social aspects with the technological innovations, is the most important reason for the desirability of community participation, and as such not recognized in the above mentioned points. Besides, Chauhan et. al. state, the most successful community participation projects have been well funded. In the case of the Baldia pit latrines in Pakistan, for instance, the UNICEF subsidy was more than 75% of the total cost of material and labour for each latrine (1983: 84). With regard to the financial aspect, it is striking that many descriptions use concepts like 'cost-effectiveness' or 'cost-benefit analysis', without analysing into detail whether or not the poor are able to contribute -in money or time. To my mind, the concept of 'willingness' in many articles should be replaced by 'ability' to pay or contribute, with a detailed analysis of the possible. Anil Agarwal (1981) gives some calculations for the 'Decade' and comes to the conclusion that with a political will, the (financial) resources are available. It is the general lack of this political will that is the greatest problem, and not the overall 'financial resources', the 'resource scarcity', the 'lack of appropriate technology', or other beautiful words that do duty as smoke-screen. Briscoe states rightly, that the problem of appropriate technology is a real one, and there is no doubt that, where political commitment exists, PHC ² programs will become more effective through the use of ORT, expanded immunization

² Primary Health Care

programs, improved low-cost sanitation technologies, and other technological improvements. This does not imply, however, that an enormous amount cannot be done with existing technologies (1986: 119). What has to be done then - and which is too little touched upon in the above mentioned points as well as in many of the involved articles - is to structure community participation in a way the interests of the involved people will be looked after, despite a lack of political enthusiasm characteristic of many Third World and developed countries. This is only possible by knowing the local setting, by developing an insight in the relations of the involved people. It is for this reason that I will focus on the social relations of the urban poor in the next chapter. It is important to consider the limitations of - and difficulties with the concept of community participation. "The idealism and rhetoric of the concept of authentic participation needs to be tempered with a realistic assessment of the possible" (Midgley 1986: 158). Recognition of these limitations, as described in the next chapter, is not meant to break down the positive aim of community participation. On the contrary, I feel that with community participation, a right emphasis has been laid on the development policy. By describing the constraints -as well as the efforts to overcome them- it is hoped to contribute to a development effort that seems the best alternative within the present socio-political context.

III Social relations in low-income urban areas

3.1 Introduction



The situation in which most of the urban poor live, makes that they are often looked at as 'marginals', living on a terrible location, as outcasts of the society in a social-, cultural-, political-, and economic sense. Their separate living environment, in this vision, makes the urban poor develop social patterns and values that differ in every respect from the hegemonic

culture. Oscar Lewis is the scholar best known for his analysis of this 'culture of poverty', and describes the preconditions to develop as follows:

The setting is a cash economy, with wage labour and production for profit and a persistently high rate of unemployment and underemployment, at low wages, for unskilled labour. The society (in which such a culture occurs) fails to provide social, political and economic organization, on either a voluntary basis or by government imposition, for the low-income population. There is a bilateral kinship centred on the nuclear progenitive family, as distinguished from the unilateral extended kinship system of lineage and clan. The dominant class asserts a set of values that prizes thrift and the accumulation of wealth and property, stresses the possibility of general mobility and explains low economic status as the result of individual personal inadequacy and inferiority (in Wiebe 1975: 9).

Many critics emerged on this 'culture of poverty', and in particular on the concept of 'culture'. In reality, the behaviour and attitudes of the poor are no emic cultural features, but reactions on situations imposed from 'the outside' (cf. Worsley 1984: 190-4). We cannot speak of common cultural features of the urban poor, but should in stead take into account the objective situation, stipulated by the political and economic reality. This is a reality in which the political powers do not have the will to attack the problems of the urban poor in a structural manner. This is also a reality in which the urban poor socially organize

their lives and relate themselves to their various environments in order to survive. The images of slums as highly disorganized agglomerations of anti-social elements, slowly are being replaced by an attention to the context and consequences of slum-living. In projects aiming to improve the living conditions of the urban poor, this insight is a necessity, for it has been proved that paternalistic approaches to slum improvement - where things are done 'to' rather than 'with' slum dwellers - appear to be excessively expensive (cf. Wiebe 1975: 7). The fact that community participation is regarded as the most important pillar on which the water- and sanitary projects should be built, indicates the importance of an understanding of the social processes within low-income urban areas. If the 'community' is not only presented with an already formulated project, but has the opportunity to 'participate' in allowing what they see as their priorities in improving their living conditions, an insight in their every-day experience is indispensable if we want to understand the ways in which these people are able to improve their living environment. The importance of a 'bottom-up-view' rather than a 'top-down' approach, is more and more being recognized.

3.2 The household in low-income urban areas

3.2.1 Traditional relations of the urban poor

The majority of the slum and pavement dwellers live in nuclear family units. The nuclear family is not, however, considered the ideal type of family structure. Most of the urban poor have a distinct preference for joint and extended family living.

If parents and children live together, with their wives, it is easier to run a business. It is then possible to work together and make more profit, and this adds up, bringing more prestige to the family (Wiebe 1975: 72)

There is nobody around in times of emergency when children go off and live by themselves. Suppose a person loses his job. Who will support him and his family if he cannot get another job (ibid.)?

The most important reasons for the decline of joint- and extended

family living are economic. Poor people cannot easily maintain large households (cf. Wiebe 1975; Hannerz 1980; Singh and De Souza 1980). Other reasons mentioned, are the lack of space in low-income areas, and the staying behind in the villages of in-laws (Singh in De Souza 1978: 71).

The decline of extended and joint families, as it takes place in many Asian cities, does not mean that traditional kinship linkages are not important any more in urban situations. In a critical review of research findings on family- and kinship systems, Sussman and Burchinal hold the position that the urban family can be regarded as a 'modified extended system'. This system consists of nuclear families that are bound together by affectional ties into a kinship network. Such a network, functions to provide mutual assistance including financial help, gifts and advice, provides mutual services, such as care of the old, children etc. (in Chandra 1977: 96/97). Raymond Firth summarizes this social change as follows:

What the development towards an industrial society probably does is to brake down the formal structure of kin groups, except perhaps that of the elementary family, which is most resistant. The lineage, the extended family, the large cooperative cognatic kin unit is likely not to survive as its members disperse into industrial employment and their traditional resources and authority structures lose meaning. But personal kin ties tend to be retained on a selective basis. Indeed they may even be strenthened if the physical isolation of the elementary family is promoted by industrial, urban conditions (in Wiebe 1975: 76).

The vast majority of the migrants have their kin living in the same neighbourhood or city, and this fact provides an important source of support to the migrants in, for example, the search for employment. This proces is, for instance, described by Bose (1968) in an interesting book on Calcutta. The migrants, that came to Calcutta from all over the country, constructed more or less separated residential concentrations, where one spoke ones own traditional language. Remarkable, in the view of the foregoing discussion on the differences between rural and urban societies, is Boses conclusion that the migrants were more and more partial to the special features of their traditional

culture, that gave them a distinctive identity. Bose found a tendency to split up in economic classes, but these could not be fully identified with parallel-classes across the 'language-boarder'. The question why this separation kept existing - even when the different groups lived near one and another for a long time - is an important one. It appeared that the many migrants that arrived in Calcutta daily, could not be absorbed in the urban economy. A migrant from Bihar, therefore, would seek the help from his relatives and friends in trying to find a job. With trade-unions and other professional organizations not or not enough developed, relatives form an important source in the introduction to urban living. In the urban context, we find aspects of the -according to some sociologists- 'rural culture'.

In urban planning we thus must be aware of the fact that the migrants often have strong traditional links with their regional-, ethnic-, linguistic-, caste- or religious background. If traditional links and habits play an important role in the present residential neighbourhood, this may have important implications for community participation in water- and sanitary projects. Some examples out of the literature indicate the importance of recognizing these facts.

Quetta

To be successful, a water supply and sanitary project should pay a lot of attention to sufficient information, making the people aware of:

- the existence of the programme;
- the benefits of having a hygienic latrine installed;
- the consequences of exposure to excreta in terms of illness;
- the responsible authority (WASA);
- and the sources for further information and submission of applications.

In Quetta, it was not experienced as difficult to arrive at the most appropriate method of presenting the message. The literacy rate is not very high, as shown by the results of the socio-economic survey. Therefore, it was decided to use an audio-visual method of presentation. However, a uniform message for Quetta was more difficult to formulate, because of the different customs and languages. Each of the ethnic groups has their own living habits and a message which may be self-explanatory to one group, may be confusing to another. The message has finally been captured in a series of illustrations which can be used for the posters, brochures, TV and cinema spots. The basic drawings were prepared in the project office and tested in the field to ensure that the message was understood. Further corrections and enhancements of illustrations were carried out by a local professional

advertising agency (source: project-description BKH: 1989).

Mirzapur

In Mirzapur, there are roughly two types of residential patterns. The poor strata of the Muslim community, the Scheduled Castes and some Scheduled Tribe households form clusters of homogeneous caste groups. In the middle- and higher caste/class core parts, there is a more heterogeneous residential pattern. These two types of residential patterns have consequences for community participation. In homogeneous areas, a group-wise approach can be followed in which community volunteers can play an important role, while in heterogeneous areas, a group-wise, and a door-to-door approach by a community volunteer will be more effective (L. Schenk-Sandbergen, personal communication, 1989).

Delhi

The scarcity of water and facilities in the basti for bathing also affected social relations. The Muslim women in Hassanpur sometimes constructed small walls behind their jhuggis in order to bathe in privacy, but officials tore them down as soon as they came to their notice. Their only alternative was to bathe within the jhuggi itself, creating damp and unhealthy conditions since most of their jhuggis had only mud floors. Women of other caste groups, however, were accustomed to bathing publicly (fully clothed, of course, discreetly changing into a fresh sari afterwards without exposing themselves). These different bathing customs ended up being a source of antagonism between Muslims and Berwas in Hassanpur since the Muslim men also bathed at the same handpump in the evenings when working Berwa women needed to use these facilities. The two groups were unable to reach a compromise over the use of the handpump since Muslims at any rate considered it inappropriate and immodest for women to bathe in the open. Eventually, the Berwa women resorted to carrying water from other more distant taps for their bathing and household needs (Singh in De Souza 1978: 67-68).

Besides these traditional links between- and habits of urban families, it is of importance to take into account the needs and priorities within nuclear families. These, as the next paragraph will show, may differ quite a lot.

3.2.2 Urban poverty and domestic responsibilities

The urban poor households have as a single unit the objective of ensuring their survival, and as such can be regarded as the basic unit of production, reproduction, consumption, and social, ceremonial and political interaction. Such a description of the urban household, however, is a rather formal one. The

coping responses to urban poverty of the individual members of the household need not at all be the same (cf. Breman 1976; Kalpagan 1985; White 1980). Especially differences between men and women are important in this context.

Studying the various documents concerning programmes to improve the lives of the urban poor - and more specifically in trying to provide them with water and sanitary facilities - I not often found a systematic distinction between the needs and priorities of women and men. When we are taking into account the fact, however, that women and men often have different roles in the society, they consequently have different needs. Within every family, there are numerous domestic chores and responsibilities which must be carried out on a regular basis, and in traditional societies these are usually carried out according to a fairly strict division of labour which is based on sex (Singh 1978: 72). This domestic division of labour refers to those tasks performed by men and women, that are an absolute necessity if the survival of the family is to be ensured, like cooking, taking care of the children and elderly, fetching water, cleaning etc. The allocation of these tasks between men and women, is notably unequal with women taking on the very much greater burden; or as a woman in the study of Karlekar states: "... a man's work is from sun to sun while women's work is never done" (1982: 103). Although the status of women varies not only from country to country depending on the cultural framework or the level of development, but also within one country due to religious-, socio-economic factors etc., the above mentioned division of domestic labour seems to be a rather universal fact.

In the context of water supply and sanitation it is almost always the task of women to draw and carry the water, to use the water for domestic as well as economic purposes, and to teach their children sanitary and hygienic practices. Due to these responsibilities, women are the ones most affected by the lack of water- and sanitary facilities. It is not unusual for women to wait for hours next to a public tap, hoping that it will keep functioning when they come in for their turn. In Phnom Penh (Kampuchea), for instance, Eva Mysliwiec found that it took about two hours to fetch the water at the public taps - each day (1986).

Given this fact of women in their gender ascribed roles as mothers and wives, having the responsibility for the survival of their children and husband, it would seem not more than logical to integrate women in programmes directly affecting their tasks and responsibilities. Any planned change in water availability or excreta disposal should be based on information about their present knowledge, attitudes, practices, perceptions and beliefs regarding water preferences, hygienic practices and defecation behavior (Elmendorf and Isely 1982: 3). Unfortunately this is not the case: the specialised knowledge of women is still too often neglected in development planning. Slowly, but far from enough, the importance of women in all stages of projects is being realized by the male dominated decision making powers at sometimes the national- and more often the local levels (see for example Heyzer: 1985). There is an impressive amount of field material showing the important role played by women in achieving project success through participation in local planning, design and management ¹ (IRC 1988: vii; Wijk-Sijbesma 1985). Women -and especially mothers- are the most important link between the improved water- and sanitary facilities and the health status of the family. This implies that the best investments with regard to the provision of water supply and sanitation, are those that meet the needs and priorities of women. Later, we will see that there are some important constraints in trying to put this theory into practice.

3.2.3 Women-headed households



Although the nuclear family may be the dominant type of family-structure, it is by no means the only possible one. Studies indicate that between the 20 and 35 percent of the working women among low-income urban groups are the sole providers for their families - either because they are alone (widowed, divorced, deserted, or single) or

¹ For the greatest part, however, this material refers to rural examples.

because their husbands or other male adults in the household are unemployed, ill, handicapped, or simply irresponsible with their income (Fawcett et. al. 1984: 101). Buvinic et. al. (1978) show that there are considerable variations in the relative number of women-headed households, but considered at a world-wide scale, it is an increasing rather than declining phenomenon, with which one has to reckon in planning for low-income urban households. They estimated the proportion of female-headed households to be 15 percent for Asia as a whole, and give examples for the different countries: 23 percent for Indonesia, 21 percent for Korea, and 17 percent for Thailand.

Single, divorced, recent migrant women seem much more likely than married women to enter the labor-force in urban areas. The former category probably includes large numbers of autonomous female migrants who migrated in order to find employment. These women are likely to be in greater need of employment than married women and therefore less particular about the number of hours they have to work, wages, and overall social status of work they take up (Fawcett et. al. 1984: 306). This brings me to the next paragraph in which I will focus on the employment opportunities in low-income urban areas.

3.3 The informal sector

Most of the urban poor, who did find some kind of employment, found this in the so-called informal sector ². The informal sector is usually considered as that part of the urban labour-force which falls outside the organized labour market and which includes an enormous complexity of activities, unorganized fragmented and divergent in character. It is formed by an extensive collection of small tradesmen, loose and unskilled workers and other categories with low and irregular incomes, inadequate education, a low degree of organization from which a lack of security and protection can be inferred (Bremner 1976).

² In this report, I will use both the concepts of 'informal' and 'unorganized' sector interchangeable. There are difficulties with the use of both of the concepts, but describing this would carry us too far from the subject of this paper. For an interesting discussion on the usefulness of the concept of the informal sector, see Bremner 1976.

The people that work in the informal sector are thus engaged in a wide variety of occupations, ranging from servants to chili powder sellers, from construction workers to sari block-printers.

One of the characteristics often attributed to the informal sector, is its ease of entry. However, in a situation in which the lack of regular paid work is predominant, we see that membership of a certain caste, region, ethnic group, or religious community is an important factor in the search of employment. Some economic functions are so much linked to particular groups, that penetration by outsiders is almost inconceivable without powerful middlemen, family- or other connections. This is what Breman (1976) calls the 'closed-shop' character of many activities in the informal sector.

If we consider the very low remuneration and the lack of permanence or job-security in the unorganized sector of the urban economy, we can understand the fact that as many members of the household as possible, have to join the work force in order to survive.

Clearly, the often assumed sexual division of labour in which the man as 'breadwinner' is involved in productive work that generates a cash-income, while the woman stays at home to be a housewife and 'homemaker' and solely takes the responsibility for the reproductive and domestic work involved in the organization of the household, does not restore the actual situation in low-income households. This assumption has been refuted by many -especially- feminist anthropologists and sociologists by describing the 'triple-role' of most women in low-income urban households in which cash-generating activities play a very important role in the survival strategies of the family (cf. Moser et.al.: 1988). This insight, however, has not yet penetrated enough into planning schemes.

In most of the low-income urban households the women do not only have reproductive tasks, that is to say work required to guarantee the maintenance and reproduction of the labour force, but also productive work generating a cash-income. In the urban context, this is often work in the informal sector enterprises located in the home or at neighbourhood level, and as such

invisible for many politicians and development planners. In a study of women in the bastis of Delhi, Andrea Menefee Singh found that the majority of the adult women were employed and earning a cash-income. Of the total basti population (including children), 40 percent of the females were employed compared to 48 percent of the males (Singh 1978: 75).

In her lively description of the life of a Jakarta street trader, Lea Jellinek outlines the productive work of a poor Indonesian woman.

Each morning at eight from Monday to Saturday Bud set off for market. She was the centre of the household, handled all the money, did all the buying of raw materials and selling of food. Like most Indonesians she shopped daily, for she lacked the money to buy for more than a day at a time and had neither the storage nor refrigeration required. She visited the same market stall every day yet had to haggle over the price of fruit, vegetables, live chickens and fish. Rice, krupuk, bean curd, sugar and coffee were sold at set prices, but even then Bud had to be on her guard for shoddy merchandise and shortweighings.

By 11 a.m. she would be on her way back, often using the same becak that had brought her to market and hired to help carry the bundles of bananas, vegetables, rice and chickens.

Cooking began when Bud returned with the food from the market. Ibu Bud helped with some of the peeling and preparation but soon retired for a midday siesta, leaving Nanti perspiring over steaming and sizzling pots in the stuffy, cramped kitchen. The odour of fried fish and stewed vegetables filled the little rooms and penetrated into neighbouring houses where it met opposition from boiling fat in other kitchens.

By five in the afternoon the food was ready. It was neatly packed into soucepans and bamboo baskets or wrapped in cloth and then carried over the bridge to Bud's mobile stall. Pak Santo was meant to push the stall into position. Indeed Bud paid him a salary to do this.

From five to ten in the evening she traded in the side street where she was less likely to encounter difficulties with the authorities. The trading usually continued until three or four in the morning, by which time most of the perishable food had been sold. Then the stall had to be cleaned and pushed home and all the valuable pots and pans, kerosine stoves, cigarettes and beer carried back across the rickety bridge into Bud's house. It would soon be dawn, and at eight Bambang her becak driver would call her to market for the start of another long day.

Ibu Bud's life is hard and her existence precarious, but she told me that for the first time in years she had a real prospect for improving her lot (free

reproduction from Jellinek: no date).

Shah and Smith, in their comparative study of five Asian countries (Indonesia, Malaysia, Korea, Thailand, and Pakistan) found differences in the patterns of labor-force participation of women. They mention a low participation of 4 percent in Pakistan to a high of 40 percent in Thailand. Data from other national surveys in Pakistan have shown that female participation is actually similar to the level of Indonesia and Korea: about 20 percent. We have to be aware of the fact that economic activities of women are seriously underreported in census data so in some countries measurement is difficult (in Fawcett et.al. 1984: 297-318).

In addition to these reproductive and productive tasks, particularly in urban areas, women are increasingly involved in managing work ⁴, undertaken not only in the household but also and more importantly at the community level. By managing work we usually mean those tasks which must be done if the household is to maintain itself, but do not relate so immediately to the physical needs of the members. Women play a more important role in, for example, the organization of expenditure, the arranging of credit, the social relations with kin and friends that must be kept going etc. Ursula Sharma remarks that we have to make a distinction between the 'work-dimension' of resource management and the 'decision-making dimension'. One might do the shopping from a list of requirements drawn up by somebody else and from a sum calculated and provided from that person (-the man-). In short, she who pays the bills does not necessarily decide what shall be brought. The poorer the household, the more often it is the housewife who decides how to spend the money. But this seems a dubious privilege when the choices open for her are strictly limited and the survival of other members of the household may depend on her capacity to economize and keep her eyes open for a bargain (Sharma 1986: 86-98). In general, however, it is the 'work-dimension' of the household management tasks that is done

⁴ see for a description of this managing work Ursula Sharma: 1986

by women.

With regard to the burdens of survival borne by different members of the families, it is clear that in all the families women share equally in the responsibility of earning a living and did claim for themselves a certain amount of spending power. But in two (-of the three-) families the ultimate responsibility for running the household, for every day getting at least a minimal amount of food for all, for entertaining friends and relatives, and for finding funds for emergencies and then for servicing that debt lies with the women. While the burdens of survival are enormous, those of the women are even greater (Kalpagan 1985: 7).

With the increasingly inadequate provision by the state of housing and basic services like water- and sanitary facilities, it are the women who not only suffer most, but are also increasingly forced to take their traditional responsibility for allocating limited basic resources to ensure the survival of their households. In combination with the overall poverty, the further deterioration of the urban environment may reach the end of the physical possibilities of women. The importance of their 'triple-role' (domestic responsibilities, earning an income, managing work) needs to be recognized much more in stead of portraying them as stay-at-homes, which is a privilege not everybody can afford. In the next paragraph, suggestions will be made to involve the working women in water- and sanitary programmes, despite their overloaded days.

3.3.1 Income generating activities



Many locally specific risks of transmission of water and sanitation related diseases, based on behaviour which continues after the introduction of improved facilities, make health

education support programmes necessary (Wijk-Sijbesma 1985: 3). Because of their traditional responsibilities with regard to water and sanitation, women appear to be the main target group for these programmes. However, for the poorest women, like those who are heads of the household, health education is not the first

priority in their lives. These women have to leave no stone unturned in order to survive. In the Kanpur-Mirzapur project (Haskoning: no date) this is recognized as an important constraint. To advise the poorest women to buy soap, is something that does not fit in their socio-economic situation. In this project, the interlinkage of income-generating activities for the poorest sections of the community is considered as a priority ⁵. In Phnom Penh (Kampuchea), the involved planners also stress the importance of income generating activities (Novib, project-description: no date) ⁶.

Christine van Wijk-Sijbesma, in her review of about 800 documents on the role of women in water- and sanitary projects, states that it is possible that the inclusion of economic components in health education programmes, is in the long term more cost-effective than more conventional health education for the total elimination of local risks of transmission of water and sanitation related diseases (1985: 7). Although I did not find any descriptions on the practice of interlinking urban water and sanitary projects with income generation for especially poor women - let alone the eventual positive results - I do consider it as an important (future) component and therefore I will make some short remarks on this topic. Earning an income, however, is not exclusively important in relation to an expected project success in the sense of cost-effectiveness; it is a human right in the first place.

As already stated, improved facilities are not expected to bring about an improved health status without a lot of attention paid to health-education. We saw in the foregoing pages that the work-force participation of low-income urban women is high. Advising these women to join a women's organization where, among other things, health education is given, is not likely to be very succesful; the lack of time resulting from their poverty-

⁵ I understood from Koos de Goede (symposium on 'poverty and environment' in Utrecht on the 11-th of November 1989), that the organization of income generating activities has been disconnected from the main project and will be continued by a NGO of which I do not have further details.

⁶ Income generation, in the involved article, is only mentioned, but not described.

situation being one of the most important constraints. What is important then, is -in the first place- to seek for solutions that make sure the health-information does reach the poor and full-time working women.

Kanpur/Mirzapur

In Kanpur/Mirzapur, the opportunities for poor women for collecting information are generally restricted to meetings at the water source, temple or market place. While working as, for instance, sweepers or scavengers, they do not have very much opportunity to communicate. However, these women go to bathing places at the Ghats of the river Ganges every morning, and to defecation places where they exchange news and talk with each other. This would be a wonderful place for dressing- and bathing rooms and ladies toilets. If there is an open space to sit, it will be an excellent place to communicate messages of the project to the women (Loes Schenk-Sandbergen, personal communication 1989).

Another important meeting-place for women in urban neighbourhoods, is the place of the public tap (Muller and Plantenga 1987: 19). While waiting on their turn to fetch water, these places form one of the rather limited possibilities to talk with other women and exchange news. Programmes could take up this point. Introducing more public water facilities, is economic in the sense that it reduces the time spent by women on fetching water. Time that could be invested in other pursuits women consider of importance. When, however, these new facilities are spread throughout the neighbourhood, an important social function of the water-place might disappear. An idea could be to group some taps at one place, so time would be saved without losing the social function of the tapping of water. The social function could even be extended by making this the place to exchange health-messages. Other facilities with an important social- and also sometimes religious function, are the public bathing houses and public laundries (cf. Etherton 1980).

In Muslim communities, the reaching of women will be more difficult.

Quetta

In the Pathan communities of Pashtoonabad and Baluch Colony, the purdah system is still very much in vogue and opportunities for

women to attend social gatherings and meetings outside the family structure are extremely limited. As a general rule, women aged between 10 and 45 do not leave the compound. In case of sickness a visit can be made to the doctor, but when a child is sick it is the father who will take him/her to the doctor. All other outside functions will be performed by the husband or the older women (BKH 1989: 19).

In these situations, the work of female volunteers/sociologists is of an enormous importance, in order to reach the women in their purdah areas.

In the second place, there are indications that the income of women is mainly spent on basic family needs (Singh in De Souza 1978: 94; Wijk-Sijbesma 1985: 3). According to Christine van Wijk-Sijbesma, these indications are not always supported by quantitative data (ibid.). What is supported by quantitative data, however, is the fact that the occupational structure offers far more limited opportunities to women than to men (see for example table 3). Women do not only have the low-status jobs, but in case they have the same job as the men, they are very often less paid.

In terms of income, women fared very poorly when compared to men. It was found that working women worked an average of forty hours per week compared to forty-eight hours per week for men, yet their average monthly income was only Rs 76 compared to Rs 192 for men. In other words they earned less than half as much per unit of time worked (Singh in De Souza 1978: 79).

If we combine this fact with the indication the income of women is often spent on the basic needs of the family, the importance of income-generating activities for women may become clear. In fact, we might even expect the general emancipation of women (legislation of a minimum wage, organization of working women's groups etc.) to be of greater importance to the overall health-status than starting a health campaign on its own. It would be an important improvement, if the time saved by women in, for example, fetching water due to improved facilities, could be used for the organization of activities for an (more secure) income for women. These activities will be among the most difficult things to organize, but they will not only have an impact on the

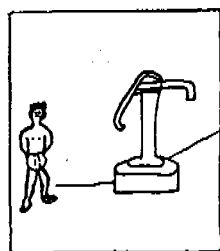
health status of urban poor families, but will also reduce the dependency relations with the economic and social superiors they maintain in order to survive. These relations will be the subject of the next paragraph.

TABLE 3: OCCUPATION ACCORDING TO SEX

Occupational category	Males		Females		Per cent female out of total workers
	Number	Per cent	Number	Per cent	
Domestic Unskilled	57	9.33	372	84.35	86.7
Semi-skilled	211	34.53	32	7.26	13.2
Skilled	160	26.19	10	2.27	5.9
Housh.ind.	80	13.09	2	0.45	2.4
Business	13	2.13	6	1.36	31.6
Tech./Manag.	62	10.15	11	2.49	15.1
Agricultural	16	2.62	2	0.45	11.1
Others	6	0.98	4	0.91	40.0
	6	0.98	2	0.45	25.0
Total	611	100.00	441	100.00	41.9

(Source: Singh in De Souza 1978: 76)

3.4 Dependency-relations as survival strategies



The political horizons of many of the urban poor are limited. Most of them are concerned so persistently with problems of food, shelter, clothing etc. that they have little direct interest in issues of state or national importance (cf. Wiebe 1975: 109). The urban poor know, however, that officials are in a position to find jobs, to provide water and other 'favours' in return for the support from the side of the urban poor. Many things are scarce in low-income areas, and the dwellers seek leaders who can provide them with necessities in order to survive. The so developed relations can be considered as patron-client relations. Silverman gives the following description of the phenomenon of patronage:

Patronage, as a cross-cultural pattern may be defined as an informal relationship between persons of unequal status and power, which imposes reciprocal obligations of a different kind on each of the parties. As a minimum, what is owed is protection and favour on the one side, and loyalty on the other. The relationship is on a personal, face-to-face basis, and is a continuing one (in Wolters 1983: 10).

Traditionally, this patron-client system bounded together a whole village by many rights and obligations between persons of different socio-economic status.

The urban context with a money-economy and other 'modern influences', changed the traditionally defined patron-client relations in an important way. This process is, for instance, described by Loes Schenk-Sandbergen (1988;1989) in a study on the survival strategies of domestic servants and their household members in Alleppey, in Kerala (South-India). In contrast with their husbands, who as coolies lost their traditional jobs as a result of the mechanization of their work, the modernizations like running water, washing machines etc. did hardly affect the access of the women to their traditional -caste-bound- occupations. This is because the Kudumbi domestic servants are so cheap that they, for as long this will last, sustain the rivalry of the modern facilities. The domestic servants stay in a matron-client relation with their Konkani mistresses, despite their humiliating tasks and bad pays. These servants are forced in this relation because of the unemployment of their husbands and the overall poverty. This matron-client relation, however, can hardly be considered as a form of social insurance against the uncertainties of life, as was the case in the traditional patron-client relations. According to Loes Schenk-Sandbergen, the relationship is more and more characterised by bare economic exploitation and this fact forecasts serious problems for the servants and their household members in the near future.

What we thus see is the fact that things as a surplus in labour, job-scarcity, increasing mobility, a more diversifying occupational structure etc. undermined many of the securities the traditional patron-client system offered (cf. Schenk-Sandbergen 1988; Wiebe 1975). Yet other elements of this dependency system are very obvious in the urban context. What this means in the context of, for instance, water supply, can be illustrated with

the following example out of Madras (India):

The problems of Chennanagar become even more clear with an analysis of the local supply of water. The Buckingham canal runs right by the slum and a few of the people have dug shallow wells for themselves. But for reasons already clear, the water from these sources is very impure. It can be used only for gardening, and even the livestock will not drink it. For drinking and bathing water and for water to be used in the washing of clothes, the people must rely on that supplied by the Corporation.

Because there are no taps in Chennanagar, some women walk to taps in neighbouring nagars and carry back their filled vessels on their heads and hips. Some of the adolescent boys make round trips to relatively less used public taps with as many as six brass water containers fastened to their bicycles. At least one vendor comes around with an ox-drawn cart carrying a tank of water for sale to those who want to pay the 10 p. he charges per bucket. To avoid the usual lines at the public taps, he fills his water tank during the night. Most of the people, however, get their water from the two local water tanks - each of which holds about 600 gallons and was initially installed at the expense of the Chennanagar people - daily filled by the Corporation.

Necessary as the introduction of a water supply was, it was not a simple response to the needs of the people. Rather, like the process involved in the settlement of the nagar, it ties in with political considerations. One tank was installed shortly after the nagar was settled, under the patronage of the D.M.K. leaders who encouraged the settlement. This tank is filled twice a day through the authority of the Corporation, its supply distributed under the supervision of the largest local political association.

The other tank was installed in 1969, in relation to the efforts of a dissident local group that gained the patronage of the Congress ward concillor. This association, like the larger one, has D.M.K. interests. But in the local context of scarcity, it turned for support to the area's Congress leadership and gained it. The local congress leaders received some bribe money and some local political support in the process. The new association gained its own supply of water, enabling it to meet more effectively the threat the larger association had made concerning the possibility that it would withdraw water drawing privileges from the dissidents. The tank of the dissidents is filled once a day (Wiebe 1975: 44-45).

In this environment, Wiebe (ibid.) states rightly, a 'politics of scarcity' is operative. In Surabaya (Indonesia), Johnston indicates a comparable development:

The situation may physically fulfil the requirements of a cheap subsidised supply close to the home, enabling a household to use large quantities of water. However, this supply may in fact be inaccessible to a poor family. For example, in Surabaya thousands of public taps have been installed, but syndicates have gained control of the taps and commercialised a public service. As a direct result water is expensive, and once again, a heavily rationed commodity for the poor (1986: 82).

Another example from Madras is described by De Wit (1985) in a case-study in which the different actors that are involved in a slum-improvement project, are analysed. De Wit indicates that the leaders are to some extent obliged to perform services for the slum dwellers so as to remain valuable patrons, but they also have their very personal interests that may not always coincide with those of the slum dwellers. With regard to facilities, the leaders were not always in a hurry to work for a quick provision of (all) facilities. In this way, the slum dwellers - who need them - were kept in a position of dependence, while the slum leaders make themselves indispensable and sustain their power (1985: 25).

The different actors and their relations in a slum-improvement project, are put in diagram in figure I. In this diagram, De Wit (1985: 53, and further) indicates some important points. In the first place, it illustrates the relative isolation of the masses of (Madras) slum dwellers. Apart from the leaders, who function as mediators, they hardly have any direct contact with other actor groups. One of the consequences is that information from the top will only reach the slum-leaders who not always inform the dwellers. Due to their position of dependence, the slum dwellers may be in a fierce competition to gain access to the communication channels, i.e. valuable contacts which amounts to entering patron-client relations in most cases. The result of a 'take what you can get' attitude may be faction struggles and personal feuds that divide the community into rivalling groups. It is clear from this diagram, that the slum upgrading machinery is hardly designed to incorporate the voices and needs of the masses of slum dwellers.

Community participation as a means by which the urban poor may formulate their own needs and priorities, seems to be restricted in many important ways. Their condition of overall poverty, the insecurity of employment opportunities, together with the loss of the more 'protective' relations the urban poor used to find in the villages they came from, makes that they are interested in vertical relationships that hamper the development of a distinctive class-consciousness in general and community participation for water- and sanitary projects in particular. Organizations on a more horizontal basis, therefore, are relatively less developed. In the literature, I nevertheless came across examples of voluntary organizations -women's organizations, for instance- that tried to overcome many problems the slum dwellers encounter. The following examples will be illustrative.

Madras

Credit was the focal point around which the Working Women's Forum (WWF) was founded, but the leaders of this organization recognized the wider political and social forces that limit women's economic opportunities. Therefore, the WWF outlined broad objectives as, for example, the creation of an association of women employed in the unorganized sector, the arranging of child-care-, health- and other facilities.

With the exception of Jaya Arunachalam, all the executive and administrative staff have been recruited from the Forum's membership, i.e. poor, often illiterate women from slum neighbourhoods. The establishment of women's loans groups -the priority most often mentioned by poor women was an income-united many poor women. As a group, these women lobbied officials on vital issues as latrines in slum areas (source: Chen 1983).

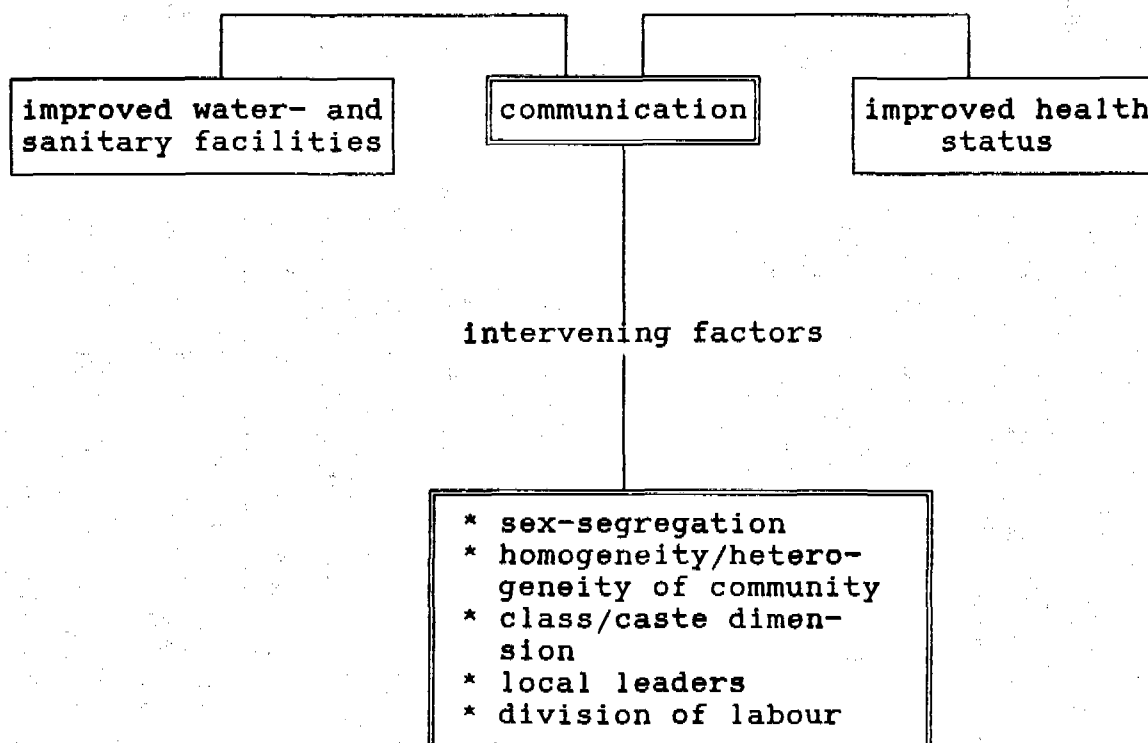
Visakhapatnam

In Visakhapatnam City (India), it was found that although slum leadership basically originates with caste background, it is extending its services to the whole slum. There is some evidence of this change from particularistic orientation to universal orientation arising from awareness of common needs and urge for overall development of the slum. It is interesting to find that in the least developed slums (Lakshinarayanapuram, Sivangar and Amarnagar) women leadership is prominent in contrast to other slums. The promoting of self-help activities are among the most

important tasks of these leaders ⁷ (source: Institute of Development and Planning Studies, no date).

In this chapter, it was described that the actual scope for community participation in low-income urban areas is limited. Since the effects of water- and sanitary improvements stand or fall with changes in hygienic behaviour on a large scale basis, communication ought to be a vital component of the programmes. Several socio-political and economic constraints were indicated that influence the communication channels. Figure 2 summarizes the factors described before.

FIGURE 2



What I hope has become clear from the foregoing, is the fact that it is not possible to plan for 'the urban poor', 'women', or

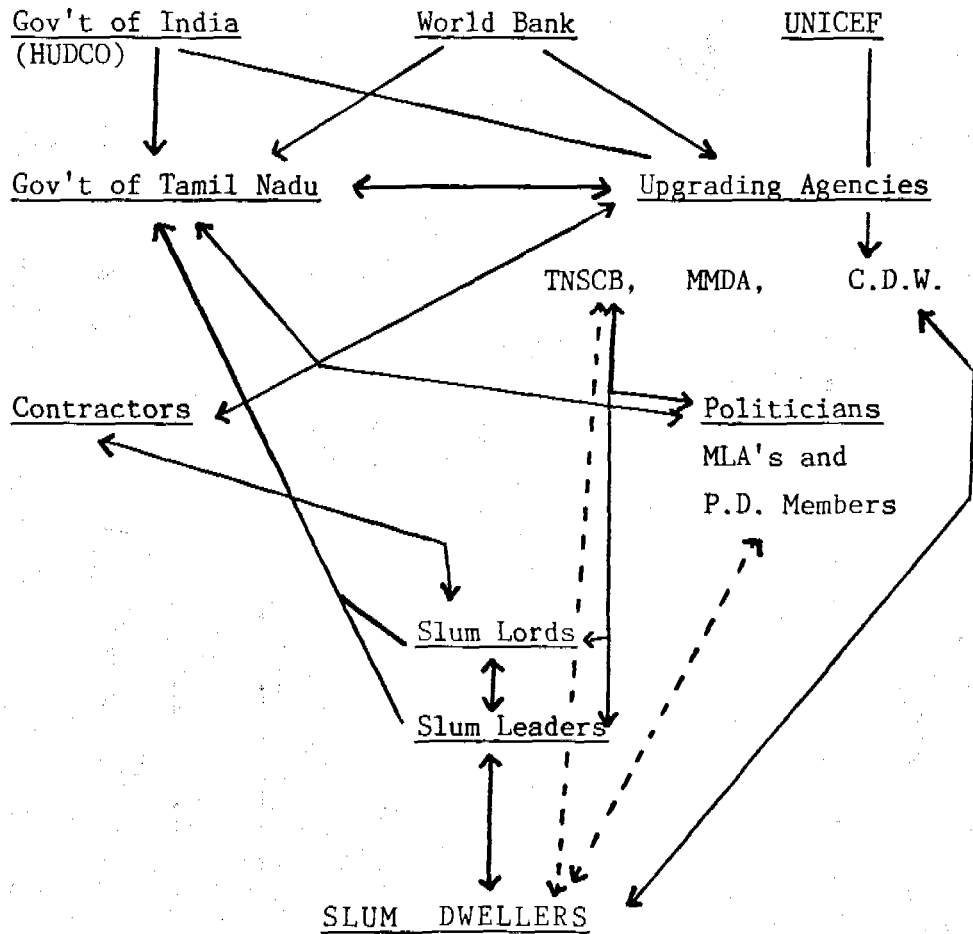
⁷ In this article, however, it is also recognized that the implementation of development programmes seems to have led to factions and groups with conflicting interests. This fact remains a problem.

'the community', for these are categories that do not exist. Within a certain project-area, a differentiation has to be made between men and women, women mutually, between leaders and non-leader etc., in order to make sure that -among other things- health information does not only reach a privileged group.

By stressing the important health impact, improved facilities may bring about, we must not overlook the possible negative socio-economic effect the introduction of these facilities could bring about for those who earn their living by the wastes of others: sweepers and scavengers. The next chapter considers this topic.

FIGURE 1

Communication between actors in slum upgrading (Madras)



- > = occasional contacts
- ====> = two-way communication
- > = one-way communication

(source: De Wit 1985: 53)

IV Modern sanitary facilities and notions of religious purity

4.1 Introduction



As already stated, improved sanitary conditions (together with water supply) - when used in a proper way - are expected to have a major impact on the overall health status of the people. This, in fact, is the reason the UN started their campaign for the 1980s. In many Asian cities, however, where the removal from nightsoil by emptying bucket latrines or very small

conservancy vaults, provides employment to a lot of sweepers and scavengers, the introduction of modern sanitary facilities has a social- and economic significance that reaches far beyond these - yet very important- medical facts. In India, as well as other Hindu communities, the position of those people who earn their living with the wastes of others, is a special one. To understand this position, it is important to consider the relation between the caste system with its deep rooted notions of purity and impurity, and the introduction of sanitary facilities. As such this relation will be the topic of this chapter. It will, however, be a description in a rather 'scouting' way because of the lack of descriptions that directly link the innovations with the involved sweepers and scavengers. I will start with some remarks on the nightsoil collectors in other Asian countries, that will indicate a difference in position compared to the Indian context. I will then give a bird's-eye view of some of the most important concepts out of the Hindu religion that are of importance in this context. It is impossible to work with sanitation in the Hindu context, without ever heard of, for example, the concept of karma. After sketching some of the implications of religious notions on purity and impurity for water- and sanitary projects, I will lay stress on the effects of modernizations in this field on the lives of sweepers and scavengers.

4.2 Nightsoil collecting in Asian cities

In Asian cities, the removing from nightsoil provides employment to many sweepers and scavengers. Their position, however, differs considerably from country to country. In Japan, Korea and Taiwan, for instance, where the houses are in general built of permanent materials, the emptying and transport of nightsoil is largely mechanized and provides enough material for the operation of large and efficient composting biogas plants (Conference Working Group in Pacey (ed.) 1978: 124). Reports from Taiwan and Korea suggested that there is no difficulty in recruiting night-soil collectors in these countries, because their wages are well above the minimum (Streefland in Pacey 1978: 134). In the China of after the Revolution of 1949, sanitary work is no longer considered as a job that has to be carried out by scavengers that lived in an enormous poverty apart from the rest of the society. Essential for the changes in the position of the scavengers after 1949, was the raising of their social status and the appreciation of their work (Schenk-Sandbergen 1975: 314). The people in China were stimulated to see sanitary conditions as a matter of the whole population, not of just the night-soil collectors. The result was an important socio-political and economic improvement of the life of the scavengers, when compared to the time before the Revolution. In Pakistan, Pieter Streefland (1975) carried out a study on a community of sweepers, cleaners and night-soil collectors in the Slaughterhouse area of Karachi. The Christian Punjabis, who do the sigmatizing work of sweeping, had a kind of monopoly position on their work that enabled them to earn incomes that are quite high compared to the income of others in the unskilled sector. However, the researcher predicts a deterioration concerning the future prospects of the sweepers in Pakistan, due to others taking over the sweeping jobs as a result of economic recession or as a result of a rationalization of the urban sewage system that makes many sweepers not needed any more. In India, there are certain castes that are engaged in the collection of human wastes. The Bhangis¹, as a sub-group of

¹ The term Bhangis co-ordinates all those castes that earn their living by cleaning and sweeping. In the rest of this report I will use this concept without further specification.

the untouchable caste, do not only earn their living by the most dirty, as well as impure work one can imagine, but socially-, politically-, as well as economic, they are also placed at the bottom of the social hierarchy. We will see that there are some remarkable differences in the literature, with regard to the effects of innovations in the field of sanitation on their lives. Before describing them, it may be important to gain some insight in the notions of purity and impurity, that influence the position of the Bhangis in an important way.

4.3 The religious integration of a secular employment-stratification

One of the most important presuppositions, that was attended by the development of Hinduism, was maya - often translated with 'the doctrine of the cosmic order' (cf. Basham 1954: 328). To understand the concept, one has to know that behind maya, we find an organic model of the cosmos which emphasizes rather surprising biological processes. To illustrate, I will cite a small part of the Rig Veda - a collection of the most sacred hymns - in which we see that the social stratification we find in India, was conceptualized in an image of the human body.

"When they divided the Man,
into how many parts did they divide him?
What was his mouth, what were his arms,
what were his thighs and his feet called?"

"The Brahman was his mouth,
of his arms was made the warrior,
his thighs became the vaisya,
of his feet the sudra was born."
(Basham 1954: 241)

Here, we find the fundamentals of the development of the Brahmanic theory of the society, this is varna - the social frame, wherein the endless fight has to be fought until the final redemption from the ongoing re-birthing is reached. The society is organized according to a hierarchy of functional specific elements - the four varnas - and these segments are, as the different parts of a human body, dependent on each other. The feet, although low in 'status' are not less important than the head or the arms.

But, the model goes beyond this rather simple analogy. Hindus believe that they are imprisoned in a web of decay, death and re-birth. This vicious circle would go on, unless one learned the secret of the transcendency of the human existence (maya). He who realizes that the inbeing of man, his soul (atman), is identical to the inbeing of the cosmos (brahman), will break his ties with the mortal existence and will land in a state of eternal salvation (moksha).

To fulfil the way to the final redemption, means - in social terms - to rise within the caste-system. Each varna, or social stratum, represents an extent of immersion in the mortal existence. Within each varna, an individual is a member of a hereditary determined jati, a certain professional category. Every jati is functional within the society, and this is why the moral code prescribes that, in order to reach moksha, one has to conform oneself to dharma - the behavioral rules for a certain jati. The carrying out of the acts (karma), prescribed by the dharma of the jati, means an assurance of being born again in a higher caste, and each higher caste is a little step further in the direction of moksha.

Besides this organic integration, we find the perception that organisms - alive as well as after death - produce a sequence of excrements and wastes. More than anything else, this perception appears to represent the degree of being connected with the 'mortal world'. The conclusion was being made that in the professional, as well as the religious domains, the degree of immersion in the mortal existence could be measured in terms of the degree to which the activities of a person contacted him or her with, for example, blood, excreta, death - in short, with impurity. A Brahman symbolizes the absolute purity, a Harijan the most impure individual.

This principle of ritual purity/impurity is easily worked out in a social hierarchy: the further removed from the impure, the higher the place occupied on the religious caste-ladder. A hierarchy, in this way, that is founded upon the contrast between purity and impurity. In the context of religious behaviour, this means that rituals have to be oriented in the direction of 'purifying activities'. In the context of employment, it means that the status of a profession - and thus the status of a person

- is determined on the basis of the more or less coming into contact with impure matters. The avoidance of impurity is managed in interactional terms. The contact between the different professional categories had to be structured in a way it would at the same time be an efficient economic exchange and a clear circumscription of social relations.

4.4 Ritual purity versus a physical cleanliness

Khare (1962) describes the way in which Hindus may come into an impure status as a result of natural events - like birth, death, menstruation - but also as a result of coming into touch with material objects (excrements) and 'impure people', the untouchables. In contrast with this ritual impurity, he places the physical being 'dirty': hands become dirty when preparing a meal and have to be cleaned afterwards. The activities with regard to ritual purity are related to address the human behaviour to a non-empirical referent - the well-being of the soul and religious devotion. This is not to say that these activities do not have any perceptible dimensions. The use of air, water and sun as 'purifying elements' and the avoidance of impure elements, are clear manifestations of this being troubled with religious purity.

Within the household, things may be dirty, but not impure - like flies in the drinking-water - but also dirty and impure at the same time. A latrine, for example, may be cleaned but will never be freed from her impure status. Other things may be clean and impure: clean water will be very impure for a Brahman when it is touched by a Harijan. With these notions of ritual purity and medical cleanliness in mind, it becomes clear that "a technician out of the West" may state that a certain practice makes the surrounding cleaner, while at the same time the people themselves may have totally different ideas about 'being clean'.

Wiebe (in De Souza 1978: 23) describes how the conditions of slum living make the concepts of pollution and ritual seperateness locally difficult to apply. Systems of transportation, recreation and housing make stereotypical responses in behaviour or attitude impossible. Yet, Wiebe states, it is nonsense to assume that the influences underlying such

patterns no longer have an effect. No person in the slum studied by the author, had any difficulty in giving his jati identifications and interests in the processes and implications of Sanskritisation remain meaningful ².

In the Bhaktapur project description (Nepal), it is also recognized that although the traditional caste-system has been abolished by modern legislation, it is still highly valid in everyday life and the fact that more than 80% of the members of the Nagar Panchayat in Bhaktapur belong to the traditional minority elite of the upper caste, shows that the traditional social structure survives to a large extent in the modern political set-up. During the execution of the project, for instance, the Brahman would not accept any food prepared by the Poda-caste (sweepers) (Bhaktapur project description, no date; 109).

In the following, I will try to outline the influence of modern sanitary facilities on the traditional -caste-bound- occupations of sweepers and scavengers.

4.5 Modern sanitary facilities and the traditional sweepers and scavengers



With the lowest position occupied in the untouchable caste, the Bhangis earn their daily living by streetsweeping and latrine cleaning. Many of the involved project-descriptions stress this traditional dehumanizing profession of carrying human excreta. The introduction of modern sanitary facilities, according to some of the authors (eg. Pathak 1982, 1983; Rao 1983), would mean a liberation of the Bhangis from the

² Sanskritisation is the process by which lower castes try to rise in the caste-system by adopting symbols, rituals and pretensions of the higher castes. They, in other words, try to rise in the same system that earlier was the cause of their inferior position. Another concept for the same process is 'Rajputization'. By Moslems it is called 'Islamization' or 'Ashrafization'.

shackles of this occupation. In Bihar, for instance, 862 scavengers were liberated from their miserable jobs and provided alternative jobs without any economic dislocation or interruption (Pathak 1982: viii). Unfortunately, I did not find any details on this process, neither in the involved project-description, nor in other articles. These details would be very interesting, for this success would at the same time mean an improvement in the overall health status as a result of more hygienic facilities, and alternative employment for those living on the bottom of the Indian society. However, after having read three studies that have the Bhangis as their main subject of research, I have my doubts about the project-descriptions that mention the liberation and emancipation of the Bhangis without any further details. These studies (Karlekar 1982; Schenk-Sandbergen 1975; Searle-Chatterjee 1981) indicate -with each of them a different emphasis- a deterioration of the position of the Bhangis after the introduction of modernizations in the field of sanitation, and as such in the field of their traditional occupations.

The research of Loes Schenk-Sandbergen (1975) in Bulsar, South-Gujarat, indicates a worsening of the situation of the streetsweepers and latrine scavengers as a result of -among other things- the 'sewer-revolution'. No alternative employment was created, and being religiously polluted, the Bhangis kept their 'outcast' status in a ritual- as well as social sense.

Malavika Karlekar (1982) and Mary Searle-Chatterjee (1981) state that the cleaning and sweeping will always be needed in India, because the very slow expansion of technological innovations in the field of sanitation, and the fact that there will always be people living on locations that are unsuited for the construction of sewerage. Because of the religious stigma attached to the occupations of sweeping and latrine cleaning, the Bhangis will keep their monopoly on 'dirty work'. This, however, is a rather macro-level prediction of the future of the Bhangis. On a more small-scale level, both the researchers describe a process in which modernization in the field of sanitation may lead to a 'upward' mobility of the men, but this fact is not true for women. The men may be provided with alternative employment, for example back-breaking work in an unhealthy factory, while the women have to stay in their traditional sweeping occupations in

order to make sure their households survive. What this means is that the social status of women is degrading in relation to their more mobile husbands. Together with their husbands, these women occupy the 'lowest' jobs, but social as well as professionally, their situation is often even worse.

The differences in the involved documentation, makes it evident that more research on this topic is needed. Any project in the field of sanitation in India should be aware of the role of caste-notions in order not to worsen the conditions of the 'bottom of the caste-system'. To my mind, the importance of the role of castes - with its deep-rooted notions of purity and pollution - is rather underestimated in the different programmes aiming to improve water- and sanitary conditions. A lot of attention should be paid to the awareness that a clean and hygienic environment is not the responsibility of a single caste-group, but something that concerns the whole community. In a society like India, this knowledge should be integrated in any health-education programme connected with water and sanitation.

Conclusion

For as long as we are living in a world that is increasingly polarized as a result of a world economic system with semi-feudal relations, in which many people do not share in the benefits of the new technical- and commercial opportunities, and few bother about it, there will be long queues of urban poor waiting for a basic necessity as water and, many children dying from diseases 'we' have almost forgotten.

Fortunately, a lot of work is going on to develop appropriate, affordable and maintainable levels of technology, to try to provide the urban poor with water- and sanitary facilities. To be successful, these technologies demand a lot of the target population in terms of community participation, which indeed has been identified as the key-factor contributing to the success of water- and sanitary projects. The expected advantages were listed in chapter II.

While studying the various documents, however, I often had the impression the word 'sanitation' became synonymous with technical findings, which neglects the whole set of socio-political and economic aspects that is of such importance with regard to community participation. With few exceptions, the studies that describe the results of the different projects, confirm the necessity for external assistance in the form of loans, grants, manpower training and technical assistance. There was, however, a tendency to isolate the 'water- and sanitary problem' from the socio-political context and overall poverty problems. Community participation as a means to reduce investment and maintenance costs, was stressed. But, community participation as a means by which the urban poor may formulate their own needs and priorities is restricted in many ways. These limitations were seldom recognized, let alone described or analysed. As indicated in the third chapter, the causes of the lack of water- and sanitary facilities, are very much related to the way certain classes and social groups exploit them. To understand the problem and to seek for solutions, therefore, means to consider the wider context. As is the case with innumerable areas of human endeavor, the technical aspects of the water- and sanitary

facilities, pale in comparison with the complexity and many-sidedness of the social and institutional aspects. "The sociologists, especially females, should extend their understanding and role into the technical area. In this way they would be able to speak with confidence about all aspects of the project" (BKH 1989: 46), is an advice that, to my mind, should emphatically be followed by the reverse. The technicians, especially the males, should extend their knowledge into the non-technical area. In this way, they would be convinced that there are no technical solutions to ill-health and agree with Anil Agarwal that "Health, or rather ill-health, is generated within a complex social ecology of poverty and only a total approach to development can help to solve the problem" (1980: 359).

Since the expected health improvement stands or falls with changes in hygienic behaviour on a large scale basis, there is a general consensus on the importance of health-education that must be interlinked with the implementation of water- and sanitary facilities. It is indicated that women, on the basis of their traditional roles as mothers and wives, and related knowledge in the field of water supply and sanitation, should play a leading part in these health education programmes. A serious problem - and as such often neglected - with this advice, is the fact that poor women have overloaded days in order to survive. Advising these women to join, for instance, a women's group where health education is given, means assuming women have the leisure time to do so. In the third chapter, some suggestions were given to reach the poorest and often full-time working women. More research in this field has to be done. Besides, I do not regard a successful participation of women in water- and sanitary projects important, exclusively in relation to an expected healthier life of these women and their household members, and to light their burden of domestic responsibilities. I do not think it is right to reduce the activities of women to the kind of 'practical utility' of the survival of the family. Ibu Bud, the Jakarta streettrader, shows us that the struggle for survival is not a static situation, but a process with hope and aspirations: "...for the first time in years she had a real prospect for improving her lot". Projects that try to combine the more practical gender-interests -like water and sanitary facilities- with, for instance, income

generating activities for women, form part of this steering for emancipation. One might wonder whether it is of any use to talk about gender interests on an absolute poverty-level. Especially within the lowest income groups, the equality between men and women is often the highest. At this level, it is the poverty that determines what shall be bought or done, and not the man. But, I hope I have made clear in the foregoing pages, that besides the same consequences of poverty, there are important differences between men and women, that force women to increase their traditional responsibility to ensure the survival of the household, and as such, the burdens of survival are much greater for them.

In the fourth chapter, I in a short way indicated the fact that there are some important differences between the project-descriptions and the anthropological-sociological studies, with regard to the role of sweepers and scavengers in the Hindu-society. Besides an health-impact, the introduction of modern sanitary facilities has important socio-economic implications in an environment where the notions of ritual purity and pollution are highly valid. More research is needed in order to analyse the effects of the introduction of modern sanitary facilities on the lives of those living at the 'bottom of the caste-system', and earning their living with the wastes of others.

There is an increasing tendency to approach the complex problems of the Third World in a more realistic way than the earlier top-down approach, which passed over the inventiveness and personal motivation of those most directly involved in development programmes. I think the fact that community participation is regarded as a necessity in order to achieve a certain project success, is directly related to this development. However, community participation is not a magic word. The urban poor are able to do many things for themselves; their settling and spirited defence of their dwelling place is evident for this fact. They take actions on many fronts and are able to respond to felt needs, like water- and sanitary facilities. On the other hand, the urban poor are very dependent on others. They not only react on felt needs, but also to perceived opportunities. In other words, the improvements in their lives, depend on their own

capacities to do things for themselves, but also -and more importantly- on the way their social environment will enable them to undertake actions. I think, stressing community participation too much in the sense of self-help, is irresponsible. Followed out too far, we would not be very much remoted from the 'culture-of-poverty-thinking' that, in a way, blamed the urban poor themselves for their miserable situation, and not the social system that surrounds them (cf. Wiebe 1975). Projects, that try to interlink the water- and sanitary 'installation' with more structural improvements, are far more difficult to organize, last but not least because of the probable resistance of the social context. Still, I think these efforts could mean a starting-point for a development that would reach even further than the so important water- and sanitary facilities for the urban poor.

Bibliography

- ABIODUM, Y. (et.al)
1987 'Rethinking the Third World City'.
Report from: Round-Table meeting in Stockholm,
Sweden, May 1985, Sweden: Swedish Government
Printing.
- ABRAHAM, A.
1985 'Housing for the Poor?'. In: Economic and
Political Weekly, no. 9, February.
- AGARWAL, A.
1980 'A Decade of Clean Water'. In: New Scientist,
vol.88, no.1226.
- AGARWAL, A.
1985 'Taboos make Hygiene difficult for Women'. In:
Gate, no. 4, p.29.
- AGARWAL, A. (ed.)
1981 Water, Sanitation, Health - for All?. Prospects
for the International Drinking Water Supply and
Sanitation Decade 1981-90. London: Earthscan.
- ASIAN DEVELOPMENT BANK
1986 Water Supply and Sanitation Sector Strategy
Review. (restricted)
- BAKHTEARI, Q.A.
1983 Social Engineering and Appropriate Technology: an
Experiment from Baldia Soakpit Pilot Project,
Karachi. Paper prepared at the International
Seminar on Human Waste Management for Low-Income
Settlements, Bangkok, Thailand. January 16-22.
- BAPAT, M.
1983 'Hutments and City Planning'. In: Economic and
Political Weekly, no. 12, March.
- BAPAT, M.
1985 'Depriving the Poor to provide for the Rich. A
Case of Slum Clearance through Private
Enterprise'. In: Economic and Political Weekly,
vol. xx, no. 41, October 12.
- BASHAM, A.L.
1954 The Wonder that was India. London: Sidgwick and
Jackson (third revised edition, 1988).
- BISSIO, R.R. (ed.)
1988 The Third World Guide 89/90. The World seen by the
Third World. Facts, Figures, Opinions. Argentina.
- BKH
1989 Quetta Sewerage and Sanitation Project.

- BOSE, N.K.
1968 Calcutta: 1964. A Social Survey. Bombay: Lalvani Publishing House.
- BOURNE, P.G. (ed.)
1984 Water and Sanitation. Economic and Sociological Perspectives. Orlando: Academic Press Inc.
- BREMAN, J.
1976 'A Dualistic Labour System? A Critique of the Informal Sector Concept'. In: Economic and Political Weekly, November and December (three parts), vol. xi, pp.1870-1876; 1905-1908; 1939-1044.
- BRISCOE, JOHN
1986 'Water Supply and Health in Developing Countries: Selected Primary Health Care Revisited'. In: Habitat, Health, and Development. A New Way of Looking at Cities in the Third World. Joseph S. Tulchin (ed.), Colorado: Lynne Rienner Publishers.
- BUVINIC, M.; N.H. YOUSEF with B. VON ELM
1978 Women Headed Households: The Ignored Factor in Development Planning. Report submitted to AID/WID Grant AID/ofr-G-1593, March.
- CAMPBELL, T.
1987 'Applying Lessons from Housing to meeting the Challenge of Water and Sanitation for the Urban Poor'. In: Journal of the American Planning Association, vol. 53, no. 2.
- CENTRE FOR SCIENCE AND ENVIRONMENT
1985 The State of India's Environment 1984-85. The Second Citizens Report. New Delhi.
- CHANDRA, P.
1964 'Communication of some New Ideas in a Madhya Pradesh village: A sociological Study Conducted in a Mixed Village'. In: Eastern Anthropologist, no. 17 (3), 183-214.
- CHANDRA, S.
1977 Social Participation in Urban Neighbourhoods. New Delhi: National Publishing House.
- CHATTERJEE, M.
1974 'Mobilisation of Urban Sweepers'. In: Economic and Political Weekly, November 30.
- CHAUHAN, S.K. (ed.)
1983 Who Puts the Water in the Tabs? Community Participation in Third World Drinking Water, Sanitation and Health. London: Earthscan.

- CHEEMA, G.S.
1986 Reaching the Urban Poor. Project Implementation in Developing Countries. London: Westview Press.
- CHEN, M.
1983 The Working Women's Forum. Organizing for Credit and Change. (Seeds 6) New York: Population Council.
- CHIPP, S.A. & J.J. GREEN (eds.)
1980 Asian Women in Transition. London: The Pennsylvania State University Press.
- CLINARD, M.B.
1966 Slums and Community Development. Experiments in Self-Help. New York: The Free Press.
- COHEN, M.A.
1983 'The Challenge of Replicability: Towards a new Paradigm for Urban Shelter in Developing Countries'. In: Regional Development Dialogue, IV/1.
- COUSINS, W.J. and C. GOYDER
1979 Changing Slum Communities. Urban Community Development in Hyderabad. Delhi: Manohar.
- DANKELMAN, J. & J. DAVIDSON
1988 Women and Environment in the Third World. Alliance for the Future. London: Earthscan Publications in association with IUCN.
- DARR, P., S.L. FELDMAN, CH. KAMEN
1976 The Demand for Urban Water. Leiden: Martinus Nijhof Social Sciences division.
- DASGUPTA, S.
1968 'Innovation and Innovators in Indian Villages'. In: Man in India, no. 43 (2).
- DAVIDSON, J.
1984 'Human Settlements and the World Conservation Strategy'. Paper, prepared for IUCN Commission on Environmental Planning.
- DEB, P.C., H. SINGH, L. SHARMA
1968 'Sources of Information used in the Adoption of Improved Practices'. In: Man in India, vol. 48, 2.
- DEELSTRA, T. (ed.)
1989 Milieuaspecten van verstedelijking in ontwikkelingslanden. (Environmental aspects of the urbanization in developing countries) Samengesteld in opdracht van IUCN Ledencontact, Amsterdam. Delft: The International Institute for the Urban Environment.

DESAI, A.R. and S.D. PILLAI (eds.)
1970 Slums and Urbanization. Bombay: Popular Prakashan.

DHV CONSULTANTS

n.d. Bandung Water Supply Phase II - Indonesia.
n.d. Support Study for Master Planning for Water Supply
Subsector Policy - Indonesia.
n.d. Water Treatment Plant at Temghar Bombay, India.
n.d. Water Supply and Sanitation Projects - Bangladesh.
n.d. Rajshahi Water Supply Project - Bangladesh.
n.d. Ibu Kota Kecamatan Water Supply Project -
Indonesia.

DONOHUE, J.J.
1982 'Some Facts and Figures on Urbanization in the
Developing World'. In: Assignment Children, vol
57/58, pp.21-41, UNICEF.

DOYAL, L.
1979 The Political Economy of Health. London: Pluto
Press.

DUBE, S.C.
1956 'Cultural Factors in Rural Community Development'.
in: Journal of Asian Studies, no. 16, 19-30.

DUMONT, L.
1967 Homo Hierarchicus. Essai sur le systeme des
castes. Paris: Gallimard. Bibliothèques des
sciences humaines.

DWYER, D.J.
1975 People and Housing in Third World Cities.
Prospectives on the problem of spontaneous
settlements. New York: Longman Group Limited.

EDINGTON, J.M. & M.A. EDINGTON
1977 Ecology and Environmental Planning. London:
Chapman and Hall.

ELMENDORF, M. & R.B. ISELY
1982 Water and Sanitation-Related Health Constraints on
Women's Contributions to the Economic Development
of Communities. WASH Technical Report, no. 17
(October).

ETHERTON, D.
1980 Water and Sanitation in Slums and Shanty Towns.
New York: UNICEF.

FAWCETT, J.T., KHOO SIEW-EAN, P.C. SMITH (eds.)
1984 Women in the Cities of Asia. Migration and Urban
Adaption. Colorado: Westview Press.

FINSTERBUSH, K. & W. WICKLIN
1989 'Beneficiary Participation in Development
Projects: Empirical Tests of Popular Theories'.
In: Economic Development and Cultural Change.

- FOUNTAIN, B. & H. SHIPMAN
1979 Guidelines for Development of Water/Sanitation Components of Urban Fringe and Rural Village Projects. Volume 1+2. A.I.D. Publication.
- FUREDY, C.
1984 'Socio-political Factors of the Recovery and Recycling of Urban Wastes in Asia'. In: Conservation and Recycling, vol. 7, no. 2-4, pp.167-173.
- FUREDY, C. & D. GOSH
1984 'Resource-Conserving Traditions and Waste-disposal: The Garbage Farms and Sewage-fed Fisheries of Calcutta'. In: Conservation and Recycling, vol. 7, no. 2-4, pp. 159-165. Great Britain: Pergamon Press.
- GALJART, B.F.
1986 Omville van de ontwikkelingsociologie. Muiderberg: Dick Coutinho.
- GANAPATHY, R.S.
1984 'Urban Agriculture, Urban Planning and the Ahmedabad Experience'. Paper. Ahmedabad (India): Indian Institute of Management.
- GUMPERZ, J.J.
1964 'Religion and Social Communication in Village North India'. In: Journal of Asian Studies, no.23, pp. 89-97.
- GUPTA, A.K. (ed.)
1986 Women and Society. The Development Perspective. New Delhi: Criterion Publications.
- HAMNETT, I.
1973 'The Role of the Sociologist in Local Planning'. In: Journal of Development Studies, vol. 9, July, no. 4.
- HANNERZ, U.
1980 Exploring the City. Inquiries Toward an Urban Anthropology. New York: Columbia University Press.
- HARRISON, P.
1979 Inside the Third World. Middlesex: Penquin.
- HARDOY, J.E. & D. SATTERTHWAIT
1984 'Third World Cities and the Environment of Poverty'. In: Geoforum, vol. 15, no. 3, pp. 307-333. Great Britain: Pergamon Press.
- HARPHAM, T.
1987 Review of the Global Situation in Respect to Health in Housing. Geneva: WHO.

- HARPHAM, T., T. LUSTY, P. VAUGHAN (eds.)
1988 In the Shadow of the City. Community Health and the Urban Poor. Oxford: Oxford University Press.
- HASKONING
n.d. Environmental and Sanitary Engineering Project, Kanpur-Mirzapur. Under Ganga Action Plan.
- HATENBOER, M.
1986 'Aantrekkingskracht bracht Chandigarh in isolement' ('Attraction brought Chandigarh in isolation'). In: Onze Wereld, no.4, April, pp. 30-31.
- HEYZER, NOELEEN (ed.)
1985 Missing Women. Development Planning in Asia and the Pacific. Kuala Lumpur: APDC.
- HOLLNSTEINER, MARY RACELIS
1979 'The Unwashed Urban Multitudes. Water Scarcity in Slums and Shanty-Towns'. In: Assignment Children, vol. 45/46, pp.79-92, UNICEF.
- HOLLNSTEINER, MARY RACELIS
1982 'Government Strategies for Urban Areas and Community Participation'. In: Assignment Children, vol. 57/58, pp. 43-64, UNICEF.
- HUMAN SETTLEMENT MANAGEMENT INSTITUTE
1989 Use and Maintenance of Sanitation of Sanitation Facilities in Low-Income Shelter Areas. Study of Malkapur Town, Maharashtra. New Delhi. March.
- HUMAN SETTLEMENT MANAGEMENT INSTITUTE
1989 Use and Maintenance of Low-Cost Sanitation Facilities. Study of Srinagar City, Kashmir. New Delhi. May.
- INSTITUTE OF DEVELOPMENT AND PLANNING STUDIES
n.d. Baseline Studies and Evaluation of Slum Improvement Project. Document 2. Profiles of Selected Slums in Visakhapatnam City - An Overview. Institute of Development and Planning Studies Muvvalavanipalem, Visakhapatnam.
- IRC
1979 Participation and Education in Community Water Supply and Sanitation Programmes. A Selected and Annotated Bibliography. Bulletin Series no. 13, July. Prepared by Christine van Wijk-Sijbesma.
- IRC
1979 Public Standpost Water Supplies. Technical Paper, no. 13. Den Haag.

- IRC
1987 Small Community Water Supplies. Technology of Small Water Supply Systems in Developing Countries. Technical Paper Series no. 18. Den Haag.
- IRC
1988 Community Participation and Women's Involvement in Water Supply and Sanitation Projects. Occasional Paper Series no. 12. Den Haag.
- IRC
1988 Community Self-Improvement in Water Supply and Sanitation. Training Series, no. 5. Den Haag.
- JANSSEN, R. (ed.)
1987 Onweerstaanbare Stad. Leven in Derde Wereldsteden. (Irresistible City. Living in Third World Cities). Den Haag: NOVIB.
- JELLINEK, LEA
n.d. The Life of a Jakarta Street Trader & The Life of a Jakarta Street Trader - Two Years Later. Monash University Centre of Southeast Asian Studies. Working Papers nrs. 9 and 13.
- JOHNSTON, M.
1986 'Clean Water at a Premium: the Case of Bandar Lampung'. In: Prisma, the Indonesian Indicator, no. 39, pp.76-84.
- JUMELET, H. (a.o.)
1986 Evaluatiemissie in het kader van het onderzoek naar de sanitaire voorzieningen in Phnom Penh, Kampuchea. Den Haag.
- JUMELET, H. (a.o.)
n.d. Sanitation Publique. Eindrapport ISP Phnom Penh + bijlagen. Delft: Technische Universiteit, Faculteit der Civiele Techniek.
- KALPAGAN, U.
1985 'Coping with Urban Poverty in India'. In: Bulletin of Concerned Asian Scholars, pp. 2-18.
- KARLEKAR, M.
1982 Poverty and Women's Work. A Study of Sweeper Women in Delhi. New Delhi:Vikas Publishing House.
- KHAN, AKHTER HAMEED
1983 Orangi Pilot Project Progress Reports. April 1980-June 1983.
- KHARE, R.S.
1962 'Ritual Purity and Pollution in Relation to Domestic Sanitation'. In: Eastern Anthropologist, no. 15, pp.125-149.

- KHARE, R.S.
1964 'A Study of Social Resistance to Sanitation Programmes in Rural India'. In: Eastern Anthropologist, no. 17 (2), pp. 86-94.
- KEESING, ROGER M.
1981 Cultural Anthropology: A Contemporary Perspective. New York: Holt, Rinehart & Winston.
- LANDELIJKE INDIA WERKGROEP
1982 Vrouwen in India. Hun Leven en Strijd (Women in India. Their Life and Struggle). Nijmegen-Utrecht: LIW.
- LANDELIJKE INDIA WERKGROEP
1987 India. Werken aan Wonen (India. Work on Living). De huisvestingsproblemen van 50 miljoen krottenwijkbewoners. Utrecht: LIW (juni).
- LEE, T.R.
1969 Residential Water Demand and Economic Development. Toronto: University of Toronto Press.
- LIETEN, G.K., O. NIEUWENHUYS, L. SCHENK-SANDBERGEN (eds.)
1989 Women, Migrants and Tribals. Survival Strategies in Asia. New Delhi: Manohar.
- LOHANI, B.N. & N.C. THANH
1980 'Problems and Practices of Solid Waste Management in Asia'. In: The Journal of Environmental Sciences, May/June.
- LOURDES, B. & G.SEN
1982 'Ongelijkheid op basis van klasse en sexe en de rol van vrouwen in economische ontwikkeling. Theoretische en praktische implicaties (Inequality on the basis of class and sex and the role of women in economic development. Theoretical and practical implications)'. In: Derde Wereld, oktober, no. 4.
- LURIE, CAROL (et.al.)
1989 Environmental Impact of Rapid Urbanization and Industrial Development: Water Resources in the Urban Context. WASH Task no. 019, Washington D.C.
- MAHAR, J.M. (ed.)
1972 The Untouchables in Contemporary India. Tucson (Arizona): The University of Arizona Press.
- MAMDANI, MAHMOOD
1981 'The Ideology of Population Control'. In: And the Poor get Children. Radical Perspectives on Population Dynamics. K.L. Michaelson (ed.) New York, pp.39-49.

- MANDELBAUM, D.G.
1986 'Sex Roles and Gender Relations in North India'.
in: Economic and Political Weekly, vol. XXI, no.
46, November 15.
- MANIATIS, K. (a.o.)
1987 'Solid Waste Management in Indonesia: Status and
Potential'. In: Resources and Conservation, 15, pp.
277-290. Amsterdam: Elsevier Science Publishers
B.V.
- MANOHARN, SUMET
1983 'Environmental Conditions in Bangkok Slums',
Paper, prepared for the International Seminar on
Human Waste Management for Low Income Settlements.
Bangkok, Thailand. January 16-22.
- Mc.GEE, T.G. & M. YEUNG (eds.)
1986 Community Participation in Delivering Urban
Services in Asia. Ottawa: IDRC.
- MIDGLEY, J. (ed.)
1986 Community Participation, Social Development and
the State. New York: Methuen.
- MINISTERIE VAN BUITENLANDSE ZAKEN
1089 Drinkwatervoorziening, Sanitaire Voorzieningen,
Drainage en Afvalverwijdering in
Ontwikkelingslanden. Sektornotitie. Februari.
- MINISTRY OF PUBLIC WORKS, INDONESIA
1983 'Improvements in Kampung Sanitation: The Bandung
Experience', Paper, prepared for the International
Seminar on Human Waste Management for Low Income
Settlements, Bangkok, Thailand. Januari 16-22.
- MOSER, O.N. & C. LEVY
1988 'A Theory and Methodology of Gender Planning:
Meeting Women's Practical and Strategic Needs'.
In: Reader, t.b.v. Ontwikkelingsproblematiek,
Macht, Technologie en Ontwikkeling. Amsterdam:
Vrije Universiteit.
- MULLER, M. & D. PLANTENGA
1987 De Volkswijk: Woning en Werkplaats.
Overlevingsstrategieën van Vrouwen in Derde
Wereldsteden. Amsterdam: Koninklijk Instituut voor
de Tropen.
- MULLER, M. & D. TOONEN
1989 Holland en Habitat. Een profiel van de Nederlandse
ervaring met habitat in de Derde Wereld. Leiden:
Faculteit der Sociale Wetenschappen.
Rijksuniversiteit Leiden. LIDESCO.

- MUMTAZ, K. & F. SHAHEED
1987 Women of Pakistan. Two Steps Forward, One Step Back? London: Zed Books.
- MYSLIWIEK, EVA
1986 Sanitation Survey Mission to Kampuchea. (June 13 to July, 1986).
- NARINE, D.
1986 'Urban Development, Housing and Community Involvement'. In: Community Participation, Social Development and the State. (Midgley, ed.) New York: Methuen.
- NATH, V.
1986 'Urbanization in India, Review and Prospects'. In: Economic and Political Weekly, vol. XXI, no. 8, February 22.
- NOVIB
n.d. Projektbescrijving. (Phnom Penh)
- PACEY, A. (ed.)
1978 Sanitation in Developing Countries. Great Britain: The Gresham Press.
- PANWALKAR, V.G. & PRATIMA PANWALKAR
1989 Slum Upgrading: A Policy Alternative to Management of Spontaneous Settlements (Bombay Experience). Bombay.
- PAPANEK, H.
1977 'Development Planning for Women'. In: Signs, vol. 3, no. 1, Autumn.
- PATHAK, B.
n.d. Paper prepared for the National Seminar on Conversion of Bucket Privies into Sanitary Water-seal Latrines.
- PATHAK, B.
1982 Sulabh Shauchalaya. A Study of Directed Change. Patna: Amola Press and Publications.
- PATHAK, B.
1983 'Role of Sulabh Shauchalaya in Human Waste Management - An Indian Experience'. Paper prepared at the International Seminar on Human Waste Management for Low-Income Settlements, Bangkok, Thailand, January 16-22.
- PATNAIK, N.
1961 'Digging Wells in Barpali, Orissa: An Experience in Rural Reconstruction'. In: Man in India, vol. 41, April-June, no. 2.

- PERLMAN, J.E.
1987 'Megacities and Innovative Technologies'. In: Cities, May. New York: Butterworth & Co.
- POERBO, H.
1986 'Management of the Urban Environment: a Challenge to seek a more Effective Approach'. In: Prisma, the Indonesian Indicator, March, no. 39, pp. 38-49.
- PRISCOLI, J.D.
1982 'Social Science Training for Engineers - Experiments from the U.S.A'. In: Water International, 7, pp. 72-77.
- RAO, G. SURYA
1983 'Voluntary Agencies and Beneficiary Interest in Human Waste Management'. Paper prepared at the International Seminar on Human Waste Management for Low-Income Settlements, Bangkok, Thailand, January 16-22.
- REW, A.
1977 Urban Water: Access, Delivery and Institutional Scarcity. (discussion paper) Brighton: Institute of Development Studies.
- REW, A.
1979 'Water Dependency and Urban Poverty". In: Assignment Children, vol.no. 45/46.
- SCHENK-SANDBERGEN, LOES
1975 Vuil Werk, Schone Toekomst? Het Leven van Straatvegers en Vuilruimers: een Onderzoek in Bulsar (India), Verkenningen in Peking, Shanghai, Tientsin en Tangshan (China), (Diss.) (Dirty Work, Bright Future? The Life of Street-sweepers and Scavengers). Amsterdam: Van Gennep.
- SCHENK-SANDBERGEN, LOES
1986 Rural Women and New Water and Fire Technology in Gujarat (India). Conditions for Success and Failure of Cooking Stove and Windmill Projects. Main Outcomes of an Investigation. Amsterdam: Universiteit van Amsterdam.
- SCHENK-SANDBERGEN, LOES
1988 Poverty and Survival. Kudumbi Female Domestic Servants and their Households in Alleppey (Kerala). New Delhi: Manohar publications.
- SCHENK-SANDBERGEN, LOES
1989 'Survival without Patrons and Matrons: Female Domestic Servants and Coolies in Kerala'. In: G.K. Lieten et. al., Women, Migrants and Tribals. Survival Strategies in Asia. New Delhi: Manohar.

- SCHILLER, E. & R. DROSTE
1982 Water Supply and Sanitation in Developing Countries. Michigan: Ann Arbor Science Publishers.
- SEARLE-CHATTERJEE, M.
1981 Reversible sex Roles. The Special Case of Benares Sweepers. Oxford: Pergamon Press.
- SETAMANIT, SURIN
1983 'Low-Cost Sanitation and Environmental Planning in the Metropolis: The Bangkok Experience', Paper, prepared for the International Seminar on Human Waste Management for Low Income Settlements, Bangkok, Thailand. January 16-22.
- SHARMA, U.
1986 Women's Work, Class, and the Urban Household. A Study of Shimla, North India. London and New York: Tavistock Publications.
- SIMPSON-HEBERT, M.
n.d. Methods for Gathering Socio-Cultural Data for Water Supply and Sanitation Projects. TAG Technical Note, no. 1.
- SINGH, ANDREA MENEFEE
1976 Neighbourhood and Social Networks in Urban India. New Delhi: Marwah.
- SINGH, ANDREA MENEFEE
1978 'Women and the Family: Coping with Poverty in the Bastis of Delhi'. In: Alfred De Souza (ed.) The Indian City. New Delhi: Manohar.
- SINGH, ANDREA MENEFEE
1980 'Income Generation and Community Development in Hyderabad'. In: Assignment Children, no. 49/50, UNICEF.
- SINGH, A.M. & A. DE SOUZA
1980 The Urban Poor. Slum and Pavement Dwellers in the Major Cities of India. New Delhi: Manohar.
- SINNATAMBY, G.S.
1986 'Solid Waste Management in a Large Squatter Settlement in Karachi'. Paper prepared by United Nations Centre for Human Settlements (habitat). Cairo: HABITAT.
- SINNATAMBY, G.S. & D. MARA
1986 'Shallow Systems offer Hope to Slums'. In: World Water, January, -February, pp. 39-41.
- SMITH, A.J.
1984 Women's Roles in Water Supply and Sanitation in Developing Countries: A Four-Part Bibliography by Author, Subject, Phase of Development, and Country. February.

- SPODEK, H.
1983 'Squatter Settlements in Urban India. Self-help and Government Policies'. In: Economic and Political Weekly, September, 8-10.
- STREEFLAND, P.H.
1975 Slaughterhouse. Een Samenleving van Christen Panjabi Sweepers in Karachi, Pakistan. (diss.) Publikatie nr. 21, Afdeling ZZOA, ASC. Amsterdam: Universiteit van Amsterdam.
- UNCHS (HABITAT)
1982 Survey of Slum and Squatter Settlements. Dublin: TYCOOLY International Publishing limited.
- UNCHS (HABITAT)
n.d. Physical Improvement of Slums and Squatter Settlements. Nairobi: UNCHS.
- UNICEF
1984 Urban Basic Services: Reaching Children and Women of the Urban Poor. UNICEF Occasional Paper Series no. 3. New York.
- URBAN EXAMPLES
1979 'Integrated Urban Development Project, Ahmedabad, India', in: Urban Examples, February.
- URBAN EXAMPLES
1979 'Income Generating Activities to Low-Income Families, Cebu City, The Philippines', in: Urban Examples, April.
- URBAN EXAMPLES
1984 'Community Development in Katchi Abadis/Slums of Lahore - Pakistan', in Urban Examples, March.
- URBAN EXAMPLES
1986 'Baldia Soakpit Pilot Project, Pakistan', in: Urban Examples, November.
- VEEN, K.W. VAN DER
n.d. 'Mensbeelden achter theorieen over ontwikkeling' (Human images behind theories of development). Syllabus, tweede semester 1986/87. Universiteit van Amsterdam.
- VIJAYANTHI, K.N.
1983 'Research Cum Action Project - Low Cost Technology for Human Waste Disposal', Paper, prepared for the International Seminar on Human Waste Management for Low Income Settlements, Bangkok, Thailand. January 16-22.

- WASH
1982 Water and Sanitation-Related Health Constraints on Women's Contributions to the Economic Development of Communities. WASH Technical Report, no. 17, October.
- WHITE, A.
1981 Community Participation in Water Supply and Sanitation. Concepts, Strategies and Methods. Den Haag: IRC.
- WHITE, B.
1980 'Rural Household Studies in Anthropological Perspective'. In: Rural Household Studies in Asia. Binswanger (ed.). Singapore: Singapore University Press.
- WHO
1972 Development of Environmental Health Criteria for Urban Planning. Geneva: WHO.
- WHO
1977 Community Water Supply and Excreta Disposal in South-East Asia. New Delhi: WHO.
- WHO
1985 Environmental Pollution Control in Relation to Development. Technical Report Series 718. Geneva: WHO.
- WHO
1987 Improving Environmental Health Conditions in Low-Income Settlements. A Community-Based Approach to Identifying Needs and Priorities. WHO Offset Publication no. 100. Geneva: WHO.
- WIEBE, P.D.
1975 Social Life In an Indian Slum. Delhi: Vikas Publishing House.
- WIEBE, P.D.
1978 'Interdependence not Duality: Slum Perspectives'. In: Alfred De Souza (ed.), The Indian City. New Delhi: Manohar.
- WIJK-SIJBESMA, C. VAN
1985 Participation of Women in Water Supply and Sanitation. Roles and Realities. Technical Paper Series 22. The Hague: IRC.
- WIJK-SIJBESMA, C. VAN
1988 What Price Water? User Participation in Paying for Community-Based Water Supply. Occasional Paper Series no. 10. Den Haag: IRC.

- WINDEN, J. VAN & M. VAN DEN VEERDONK
1986 Ganges, levenslijn van Noord-India (Ganga, Life-line of North-India). Utrecht: Geografisch Instituut van de Rijksuniversiteit Utrecht.
- WIT, J. DE
1985 'Slum Dwellers, Slum Leaders and the Government Apparatus. Relations between Actors in Slum Upgrading in Madras'. Urban Research Working Papers. Amsterdam: Vrije Universiteit.
- WOLTERS, W.
1983 Politics, Patronage and Class Conflict in Central Luzon. The Hague: Institute of Social Studies.
- WORSLEY, P.
1984 The Three Worlds. Culture and World Development. London: Weidenfeld and Nicolson.
- YACOOB, M.
1984 Women and Participation in Health Education for Water and Sanitation: An Operational Approach for Moslem Communities. Washington D.C.: Howard University.
- YEUNG, Y.M. (ed.)
1983 A Place to Live: More Effective Low-Cost Housing In Asia. Ottawa: IDRC.
- ZAJAC, V. (et.al.)
1984 Appropriate Technology for Water Supply and Sanitation. Urban Planning Manual Based on the Jakarta Case Study. Washington D.C.: World Bank Technical Paper no. 18.

SELECTED AND ANNOTATED
BIBLIOGRAPHY



Agarwal, Anil, 'Taboos make hygiene difficult for women', in: Gate, no. 4, p. 29, 1985.

In this article, Anil Agarwal states that male writers, reporters and analysts of human problems should be more aware of and sensitive to women's needs, with regard to water- and sanitary facilities. The sociological literature on sanitary behaviour that exists - which is amazingly little - shows that sanitation programmes were accepted more by women than by men because the greater need for privacy enforced upon them by society. One of the described social taboos that governs the behaviour of women is purdah, the seclusion of women, which makes them defecate on their rooftops or after sunset, while men ease themselves according 'to their natural requirements'.

Agarwal, Anil (ed.), Water, Sanitation, Health - for All?, Prospects for the International Drinking Water Supply and Sanitation Decade 1981-90, London: Earthscan, 1981.

In 1980 the United Nations launched its International Drinking Water Supply and Sanitation Decade to provide "Clean Water and Adequate Sanitation for All by 1990".

Three out of five people in the Third World (excluding China) had no access to safe drinking water, and three out of four had no sanitary facilities. Although these percentages are slowly falling, the total number of people without adequate water and sanitation increases every year.

This book examines the Decade's aims, describes the position globally and in Kenya, Colombia and India. Will the Decade bring significant improvements or merely raise unrealistic expectations?

Bapat, Meera, 'Hutments and city planning', in: Economic and Political Weekly, no. 12, (March), 1983.

It is often argued that proliferation of hutments and the deterioration of the living conditions of the poor in the cities is a consequence of rapid urban growth due to industrialisation and the paucity of public funds for urban development.

This paper disputes this view and argues that Urban problems are related to the failure, even the irrelevance, of the dominant ideology of urban planning and housing programmes and can neither be blamed on growth of large cities nor on rural influx. On the contrary, the inequitable distribution of even those resources as are available to the city authorities and wrong urban and housing planning are the root cause of the urban problem. The argument is elucidated with reference to the growth of hutment dwellings in Pune.

Bose, N.K., Calcutta: 1964. A Social Survey. Bombay: Lalvani Publishing House, 1968.

In 1962, the Anthropological Society of India planned a social survey of Calcutta. A team of research workers under the leadership of the author, was engaged in finding out how far the

process of urbanization had affected the different communities which make up the population of Calcutta. This book is the result of their endeavour.

The book deals largely with the socio-anthropological aspect of urbanization. Life in the city, demanding mutual participation in the civic, commercial and cultural aspects of community life, tends to erase the traditional and individualistic ties of the distinct groups that constitute it.

Calcutta, where such existence has been predominant for almost two centuries, seems to have proved an exception to the rule. Though some amalgamation has invariably taken place, communities still retain their intrinsic parochialism.

Buvinic, Mayra, Nadia H. Youssef with B. Von Elm, Women-Headed Households: the Ignored Factor in Development Planning. Report Submitted to AID\WID, March 1978.

In this paper, the authors lay stress on the fact that the women, who are the heads of the households in developing countries, are a very special group among the poor that needs the full attention of policy makers concerned with improving the quality of life of the poorest of the poor. More and more studies recognize the growing, though scattered, evidence of the increase of female-headed households, but its significance on 'policy-level' is often obscured. Women as heads of the household are placed in a situation in which they become economically responsible for themselves and their children. On the basis of census-data from 74 developing countries, the authors conclude that the percentage of women-headed households varies from a low ranking of 10 percent to 48 percent. But they also indicate that these are not very reliable data but have to be taken as suggestive of trends and patterns.

International data suggest a direct linkage between processes of modernization - particularly those stemming from economic development and its policies - and the rise of female-headed households. Explanatory factors should be sought in migration, mechanization of agriculture, urbanization, overpopulation, lower class marginality etc. Planners must recognize and be able to deal with this consequence of economic development and policies.

The man as the sole economic provider and household head and the non-Western family structure as welfare system that provides psychological, legal and economic protection towards all its male and female members are myths that neglect the changing economic conditions in developing countries.

Campell, T., 'Applying lessons from housing to meeting the challenge of water and sanitation for the urban poor', in: Journal of the American Planning Association, vol. 53, no. 2, 1987.

The pace of investments in water and sanitation lags far behind urban population growth in Latin America and the Caribbean. The health consequences of this shortfall amount to hundreds of thousands of deaths annually. This article suggests that a socio-technical strategy is required, based on the housing

experience of the past few decades, to reduce costs of producing sanitation and to minimize the risk of disease. The strategy involves fundamentally altered assumptions about state responsibility for water and sanitation. Concomitantly, beneficiaries must do more to build, operate, and maintain the water and wastewater systems.

Chandra, P., 'Communication of some new ideas in a Madhya Pradesh village: a sociological study conducted in a mixed village', in: Eastern Anthropologist, 17, 3, pp. 183-214, 1964.

In order to describe the extent to which selected innovations (education, scientific treatment of disease, smokeless stoves, filtered water etc.) were accepted and assimilated by the tribal Gonds and the non-tribal Hindus in a village in India, and the extent to which rural social structures, values and norms offered resistance, Chandra carried out a qualitative and a quantitative study. The author describes the way the new water supply systems pose problems with regard to the sharing of the costs, and intercaste rivalries. The acceptance of modern latrines was only ten percent; the higher caste-Hindus kept hiring sweepers and the untouchables could not afford the facilities. The Gonds were ignorant about the new facilities because they were not even approached by the authorities.

Chauhan, S.K. (ed.), Who Puts the Water in the Taps? Community Participation in Third World Drinking Water, Sanitation and Health. London: Earthscan, 1983.

This book challenges some favorite Third World myths. Is 'self-help' just development on the cheap? Does 'motivation' only mean urging people to accept what the government thinks is good for them? One common factor among the most successful water and sanitation schemes appears to be good administration, rather than tremendous enthusiasm alone. The motivators are usually not unpaid volunteers, but dedicated salaried professionals. The key official in a South Indian scheme, for example, is haunted by a childhood memory of church bells tolling all day long for people who had died of cholera.

Chipp, S.A and J.J. Green (eds.), Asian Women in Transition. London London: The Pennsylvania State University Press, 1980.

The changing roles and status of women in Asia are examined cross-culturally in this book, in an interdisciplinary perspective. Combining a geographical and a topical organisation, the volume gives a cross section of developments among Asian women: in aspirations, in economic and political involvement, and in family and community activity.

Based on field research, the contributions to this volume bring together the perspectives of political science, anthropology, sociology, and economics. The varied cultural and ideological contexts of Asian countries - including Islam, Buddhism, Hinduism, Catholic Christianity, and the thought of Mao

Tse-tung - are considered comparatively. Among the nations discussed are mainland China, Japan, the Philippines, Malaysia, Indonesia, India, Pakistan, and Bangladesh.

Clinard, M.B., Slums and Community Development: Experiments in Self-Help, New York/London: The Free Press/Collier-Mc.Millan, 1966.

In this book, the historical development of slums in several parts of the world is described, with special attention to the Indian slums. Clinard describes slum life as a subculture with its own norms and values which are, among other things, expressed in poor sanitation.

The Delhi Pilot Project (India) is analysed in an extensive way, with emphasis on leadership, power, and the self-help approach. Health and environmental sanitation had a high priority in this project and as such receives special attention in this study.

Cousins, William J. and Catherine Goyder, Changing Slum Communities, New Delhi; Manohar, 1979.

This book is an account of change and growth that resulted from a community development programme in the slums of Hyderabad, the fifth largest city in India.

First, it demonstrates that genuine people's involvement can be brought about, even in a government programme, if those involved as animators are committed to the people and can develop their capacity to organize themselves for social and cultural action.

Second, this study shows that self-help activities, when systematically linked with governmental, financial and voluntary institutions, can go beyond simple local projects to schemes of major economic significance.

Dankelman, I. and J. Davidson, Women and Environment in the Third World. Alliance for the Future. London: Earthscan Publications in association with IUCN, 1988.

Third World women play the major role in managing natural resources. They are the first and hardest hit by environmental mismanagement, yet they are neither consulted nor taken into account by development strategists.

This book contains well documented case studies and interviews with leading women conservationists from the Third World, and gives a clear account of women's problems in relation to land, water, forests, energy and human settlements. It also looks at the lack of response from international organizations and the ways in which women can organize to meet environmental, social and economic challenges.

Davidson, J., 'Human settlements and the world conservation strategy', Paper, prepared for IUCN Commission on Environmental Planning, 1984.

This paper looks at a number of community-based initiatives in urban resource-saving and environmental management at the local level, in the North and the South. The paper considers their successes and limitations, their importance in the context of national and local conservation strategies and it draws some conclusions about ways forward. A more resourceful approach to the management of human settlements requires a number of changes: new attitudes, a better partnership of action between the public, private and community sectors, the development of appropriate institutions and more demonstration and documentation of good practice. These are all areas in which cities traditionally have the advantage of innovative thinking.

Deb, P.C., Harbhajan Singh and M.L. Sharma, 'Sources of information used in the adoption of improved practices', in: Man in India, vol. 48, 2, pp. 167-173, 1968.

The study was conducted in a village in Rajpura Development Block (Punjab) to find out whether utilization of information sources in the adoption of improved agricultural practices was related to (1) types of source, (2) frequency of use, (3) stages of adoption, and (4) categories of adopters. It was found that the most frequently used sources of information were not the Extension Agency, but the informal sources like village leaders and friends and relatives of the farmers. The Village Level Worker was used as a source of information by some farmers belonging to innovator and early adopter category.

Douglas, Mary, Purity and Danger, London: Routledge & Kegan Paul, 1966.

This book is a 'classical' in the field of the cognitive anthropology: the anthropology from the coherence between the world-view of the people at one side and certain rituals and routine actions on the other hand. Mary Douglas describes symbols of purity and shows how these symbols are to be found in all cultures.

Doyal, Lesley, The political Economy of Health, London: Pluto Press, 1979.

'The Political Economy of Health' questions fundamentally the view that ill-health and disease are misfortunes that just happen to people, and which scientific medicine is dedicated to combatting. It shows, rather, that ill-health in both developed and underdeveloped countries is largely a product of the social and economic organization of society. The changing patterns of health and illness and the evolution of medical practice in both Britain and the Third World are explored.

Dube, S.C., 'Cultural factors in rural community development', in: Journal of Asian Studies, no. 16, pp. 19-30, 1956.

Dube describes the cultural difficulties that occurred when introducing innovations (new crop varieties, sanitation improvements, immunization, cooperative undertakings, education, etc.) in a Community Development Project concerning 153 villages in Uttar Pradesh, India. The upper castes did not want to cooperate with the lower castes, women were limited in their participation by their traditional roles tying them to their houses, and there were many religious beliefs affecting the hygienic component of the program. Dube analyses the way this complex socio-cultural structure poses difficulties in approaching the different social groups that make up the villages.

Elmendorf, M. and R.B. Isely, Water and Sanitation-Related Health Constraints on Women's Contributions to the Economic Development of Communities. WASH Technical Report, no. 17, 1982.

This paper briefly describes women's overall roles, their water supply and sanitation 'roles' and the interrelated health consequences of these roles. The authors conclude that water and sanitation must not be seen as a luxury but as a major precondition for economic development. Women, as participants in water and sanitation projects should not be limited in their active participation by their traditional roles. New programmes should not, by sex stereotyping, overlook women as the obvious candidates for training in the maintenance and operation of facilities.

Fawcett, James T., Siew-Ean Khoo and Peter C. Smith (eds.), Women in the Cities of Asia: Migration and Urban Adaption. Colorado: Westview Press, 1984.

Women in Asia are on the move. The migration of women from village to city has increased dramatically in the past decade, and many of these new migrants are young single women seeking jobs. In several Asian countries, women migrants now outnumber men by a substantial margin. Along with the physical movement from rural to urban areas come new roles for women, new problems associated with living in cities, and the prospect of radical changes in status - upward or downward.

This book is the first comprehensive examination of female migration and the situation of urban women in Asia. Drawing upon the studies and insights of sociologists, anthropologists, economists, geographers, and demographers, it documents the striking changes that are in progress and looks in depth at the causes and consequences of emerging patterns of female mobility. Particular attention is given to the ways in which public policies can be more responsive to the needs of women who are urban, poor, and burdened with special responsibilities as working mothers or heads of household.

The Asian situation is placed in perspective through comparative and theoretical contributions. In addition, the editors provide integrative themes in the introductory and concluding chapters. Changes in the development patterns of women are shown to be a major factor in economic development and social

change, providing new insights about the modernization process and suggesting that an understanding of female mobility is essential in any picture of Asian future.

Furedy, C. and D. Gosh, 'Resource-conserving traditions and waste-disposal: The garbage farms and sewage-fed fisheries of Calcutta', in: Conservation and Recycling, vol. 7, no. 2-4, pp. 157-165, Great Britain: Pergamon Press, 1984.

In spite of its many waste disposal problems Calcutta is foremost among South Asian cities in the productive use of wastes. Natural processes and informal practices on the metropolitan fringe contribute significantly to waste treatment and promote recycling. The disposal/recycling system that has developed over a century operates with a minimum of technology and engineering. The nineteenth century origins of the garbage farms and sewage-fed fisheries are sketched and the importance of the use of sewage and garbage in foodproduction is assessed. The effects of encroaching urbanisation on the wetlands are noted. This paper argues the need for research and discussion of development alternatives for Asian metropolitan fringe areas.

Gumperz, J.J., 'Religion and social communication in a village in North India', in: Journal of Asian Studies, no.23, pp. 89-97, 1964.

In this article, Gumperz analyses the social interaction and diffusion of innovations in Khalapur, India. He describes the caste and kinship restrictions that limit the social interaction and are the cause that the diffusion of innovations usually takes place within a network of small informal groups formed by a shared position in the social hierarchy. There appears, however, to be a way to overcome these limitations on the communication. The using of religious performances (like drama, lectures, sacred songs etc.) that were held on invitation of one family but were performed in public, were visited by members of all castes. If the message was to modern in performance and content, it provoked negative reactions, but Gumperz shows us the way traditional media can be used for the diffusion of 'modern' ideas.

Gupta, A.K. (ed.), Women and Society. The Development Perspective. New Delhi: Criterion Publications.

This volume identifies a number of major issues such as changing status of women in various fields, gender equality, political socialization, women and urban poverty and also concerning women's participation in the economic and social process in societies undergoing a rapid transformation. It discusses the current global debate on women's issues and also deals with the national perspective and change in perception about women's contribution to society, their needs and problems in the context of goals and priorities for social and national development.

Hamnett, Ian, 'The role of the sociologist in local planning', in: Journal of Development Studies, vol. 9, July, no. 4, 1973.

The role of the sociologist in development projects can be misunderstood by other members of an interdisciplinary team in ways that may have undesirable consequences for development research and can distort the resultant team recommendations. Technological professionals can define the sociologist's role in such a way that he\she is expected to produce answers to unreal and unanswerable questions and to refrain from attempting answers to important and answerable ones. These latter tend to be categorized as 'evaluative' or 'political' and excluded from the scope of the research project, with the result that major policy decisions are smuggled into the conclusions of the study in the guise of purely technical recommendations. The real goals of development can thus be largely ignored in the formulation of the report. Greater attention should be paid to the sociology and organization of development research itself if these dangers are to be avoided.

Hannerz, U., Exploring the City. Inquiries Toward an Urban Anthropology. New York: Columbia University Press, 1980.

Within a relatively short time, urban anthropology has emerged as one of the most vital fields of anthropology. During its formative period, however, it has lacked intellectual coherence. 'Exploring the City' is a bold first attempt to provide just such a coherent and unified theoretical understanding of urbanism. Drawing not only on anthropology but on the urban perspectives of other disciplines such as history, sociology, and geography, Ulf Hannerz brings intellectual unity to the history and development of urban anthropology.

Hardoy, J.E. and D. Satterthwaite, 'Third World cities and the environment of poverty', in: Geoforum, vol. 15, no. 3, pp. 307-333, Great Britain: Pergamon Press.

This paper examines environmental problems associated with Third World cities. It concentrates on environmental problems as they relate to health and living conditions, especially for the lower income groups. After an outline of urban growth trends, these problems are discussed on three geographic scales. At the regional level, the paper discusses how cities draw on a wider area for natural resources (and usually for labour) and have environmental impacts which stretch far beyond their boundaries, although the most pressing impact tend to be on their immediate hinterland. At the city-wide level there are problems of disposing of household, human and industrial wastes and of associated problems of air and water pollution. At the level of home or workplace there are problems of inadequate space and ventilation, inadequate infrastructure and basic services, and lack of provision for the safeguarding of human health. The final section discusses how governments might tackle the causes of these environmental problems on each of these scales.

Harpham, T., Review of the Global Situation in Respect to Health in Housing, Geneva: World Health Organization (WHO).

Attempts at improving health rarely focus upon housing. The main reason for this are the lack of understanding of the links between housing and health and the perception that housing interventions are too expensive. The paper argues that we have sufficient information on the links between housing and health and that poor housing is not given the attention it merits as a cause of ill-health. It is also argued that community level action can greatly improve housing conditions at relatively low cost.

As early as 1961 WHO considered the broad relationship between housing and health. Since then, considerable headway has been made in unraveling the complexities of the linkages between housing and health conditions. Although it is almost impossible to attribute a specific health condition to housing alone, we know there are associations between housing conditions and accidents, diarrhoeal, respiratory and infectious diseases.

There is now a renewed interest in housing and health due to urbanization and the rapid growth of slums, shantytowns and squatter settlements in developing countries. With estimates that almost half the people in developing countries will be living in urban areas by the year 2000 and that a large proportion of these will constitute the urban poor there is a need to focus upon housing and health. Approximately one quarter of the world's population do not have adequate shelter and live in extremely unsanitary and unhealthy conditions. 100 million people have no shelter whatsoever. Improved shelter is one way of improving the health of such people. Appropriate action can be taken at the household, community, city and national levels.

IRC, Public Standpost Water Supplies, Technical Paper Series, no. 13, The Hague: IRC, 1979.

An integrated approach is presented towards the planning implementation and management of public standpost water supplies, a level of service especially suited to rural and low income urban fringe areas, where investment funds are limited. System cost and financing possibilities are discussed, as well as social appropriateness and acceptance.

Organizational and managerial aspects of operation, maintenance, revenue collection together with the importance of community participation at every stage, are also taken into account. Finally technical design aspects are touched upon.

IRC, Small Community Water Supplies. Technology of Small Water Supply Systems in Developing Countries, Technical Paper Series no. 18, The Hague: IRC, 1987.

This handbook has been designed as a broad introduction into the technology of small water supply systems in developing countries. In particular it is directed to engineers and technical staff involved in water supply programmes and projects, and the consulting engineers assisting them.

IRC, Community Self-Improvement in Water Supply and Sanitation, Training Series, no. 5, The Hague, 1988.

This training and reference manual is designed to provide community development workers, community health workers and other extension workers with ideas and information to work with the community in order to implement self-help improvement in their environment. Meant to be used in in-country training and reference work it gives a number of basic, relatively simple solutions for identified problems and felt needs related to water supply and sanitation. Nearly 300 drawings illustrate several options on ten subject areas ranging from water quality to household hygiene improvements.

Harpham, Trudy, Tim Lusty and Patrick Vaughan (eds.), In the Shadow of the City: Community Health and the Urban Poor. Oxford; Oxford University Press, 1988.

It is now a widespread phenomenon that many more people in developing countries are moving from the countryside into the cities, where there are greater employment prospects, and often greater personal prestige. In most countries this migration imposes massive burdens on the infrastructure of cities that can ill afford to cope with existing populations. The result is often large areas of shanty and meagre shelter scattered throughout the cities, often right next to high-rise apartment and hotel blocks. The result of poor living conditions and overcrowding is poor health and other crises familiar to the urban environment. The problems are often quite different from those of famine, which receive much more interest and attention. This book discusses and addresses many of the issues, examines case studies, and suggests public health and other programmes that could be instituted by governments, non-governmental organizations, and international agencies.

Janssen, Roel (ed.), Onweerstaanbare Stad. Leven in Derde Wereldsteden (Irresistible City. Living in Third World Cities), the Hague: NOVIB, 1987.

The authors in this book, want - in contrast with what is usually be done - to lay stress on the positive developments in low-income urban areas. They show the creativity and inventiveness of the inhabitants of slums who fight for their existence, by describing their efforts in improving, for example, education, work, infrastructure etc.

Johnston, Mary, 'Clean water at a premium: the case of Bandar Lampung, in: Prisma, the Indonesian indicator, no. 39, pp. 76-84, 1986.

Bandar Lampung is a city with more than 500.000 inhabitants on Sumatra. During the dry season there is a great lack of water, with the result that many people try to fetch water at public taps (where they must pay) or buy it from water vendors. The

costs for water in the dry season can rise to 12 percent of the monthly income of the people. Given this fact Mary Johnston states that the planned enlargement of the piped water system to 75 percent of the population will not be reached before the year 2000. The author stresses three important fields where the same enlargement can be the cause of social problems:

- The PDAM, who is responsible for the project, is not in favour of increasing the number of public taps, and prefers the home-connections. In doing this, one runs the risk of creating a situation in which the poorest sections of the society will not profit by the new water supply system;
- The water-vendors need other jobs;
- Compensation is needed for those people living on locations chosen for the installation of the major pipelines.

Kalpagam, U., 'Coping with urban poverty in India', in: Bulletin of Concerned Asian Scholars, no. 17, pp. 2-18, 1985.

By describing the lives of three families in the slums of Madras, Kalpagam analyses the survival strategies of poor families. With regard to the burdens of survival borne by different members of the families, it is clear that in all the families women share equally in the responsibility of earning a living and did claim for themselves a certain amount of spending power. But in two of the families the ultimate responsibility for running the household, for every day getting at least a minimal amount of food for all, for entertaining friends and relatives, and for finding funds for emergencies and then for servicing that debt lies with the women. While the burdens of survival are enormous, those of the women are even greater.

Karlekar, M., poverty and Women's Work. A Study of Sweeper Women in Delhi. New Delhi: Vikas Publishing House, 1982.

'Poverty and Women's Work' is a study of 80 sweeper women of Delhi, based on participant observation, questionnaires and interviews, combining objectivity and empathy. Using macro-level baseline data as a framework, it views the impact of independence, rapid urbanization and a mixed economy on a specific category of poor urban people. It deals with women employed in a traditional occupation in a fast-changing environment, and the impact of these changes on their social system.

An important contribution of this study are the suggestions on possible schemes for improvement in the lives of these women, in terms of their perception of reality, rather than the anthropologist's perception of their needs. A rich source of data which will find its place among contemporary studies on women.

Khare, R.S., 'Ritual purity and pollution in relation to domestic sanitation', in: Eastern Anthropologist, no.15, pp.125-149, 1962.

Khare gives a description of the ritual purity and pollution in India and the modern/scientific concepts of hygiene and sanitation. The activities of ritual purity serve the upward

spiral of soul but also have clear physical dimensions that may overlap the medical/scientific ideas of physical cleanliness. Difficulties arise when the ritual purity notions negatively affect the physical cleanliness. Health education, Khare concludes, is very important in changing the 'negative habits' and respecting the beliefs that result in a healthy soul as well as body.

Khare, R.S., 'A study of social resistance to sanitation programmes in rural India', in: Eastern Anthropologist, no. 17 (2), pp. 86-94, 1964.

On the basis of nine sanitary measures taken by officials in Godalpur (India), Khare analyses the extent to which caste and religious attitudes influence the acceptance of these measures. After discussing the reaction of the villagers on each of the introduced items, Khare concludes that caste may play an active, marginal or passive role. When caste plays a passive role, other social forces - such as the gaining of political power - may pose serious constraints on the introduction of innovations.

Kulkarni, K.M., Urban Structure and Interaction. New Delhi: Concept Publishing Company, 1981.

The main aim of the present study is to analyse the urban structure, process, spatial mobility and linkage patterns of a medium sized city. The book attempt to synthesize the detailed descriptive account of the urban land-use functions and their dynamic features, general characteristics of economic flow patterns and movement patterns as a whole. Making a discreet use of quantitative methods, the study aims at an understanding of the urban landscape of Nasik city and its functioning in the city system of north-west Maharashtra. The city has also been compared with similar sized cities of India in terms of urban attributes.

Landelijke India Werkgroep (LIW), India. Werken aan Wonen (India. Work on Living), De huisvestingsproblemen van 50 miljoen krottenwijkbewoners. Utrecht: LIW, 1987.

When one asks poor people in India what they want most: a good house or work, they will choose the work. This book, for that reason, wants to go further than only describe the living conditions of the urban poor. Slums are symptoms of the overall poverty-problem and that is why the authors try to link the existence of slums with, for example, social relations, political power and employment.

Lee, Terence R., Residential Water Demand and Economic Development, University of Toronto Department of Geography Research Publication no.2, Toronto: University of Toronto Press, 1969.

This study is an attempt to measure and define the relationship between economic development and the provision of

need for public water supply systems through examination of domestic water consumption and patterns of use in 13 sites in Calcutta and New Delhi. Terence Lee compares households that have piped water connections with households using water from sources outside the house. Measurements are made of amounts used, the nature of the use, and judgements obtained from the users as to the quality of the water. The author concludes that the demand for domestic water supply is a function of accessibility to water, housing conditions, level of income, and water-using habits. Beyond a basic supply needed for health, he feels there is little evidence that increased supplies will lead to greater economic growth.

Lohani, B.N. and N.C. Thanh, 'Problems and practices of solid waste management in Asia', in: The journal of Environmental Sciences, May/June, 1980.

The solid waste management situation in Asia needs further improvement in quality, but faces many problems and the solutions to these problems are subject to a number of constraints. The nature of waste, climate, hygiene, living conditions, social, religious, economic and other factors in Asia are different from other countries and, therefore, specific solutions need to be developed. The authors believe that improvements in the present situation would be aided by an exchange of relevant methods and practices of effective solid waste management through many channels, including regional meetings and seminars.

Mandelbaum, D.G., 'Sex roles and gender relations in North India', in: Economic and Political Weekly, vol. XXI, no. 46, November 15, pp. 1999-2004, 1986.

The conduct of women is a particularly strong focus of social concern in those parts of India where women's seclusion is most stringently practised. Purda, which is observed over much of the northern part of the sub-continent, refers not only to specific traits of veiling and spatial separation, but, more widely, to the values about the proper behavior of women and to the restrictions on their respectful demeanour within the home.

While the standards for purda observance vary by regional, caste and religious groupings, certain features are common to all. The author sketches these shared fundamentals and notes one of the principal variations, that between the Muslim and Hindu versions of purda.

Maniatis, K. (a.o.), 'Solid waste management in Indonesia; status and potential', in: Resources and Conservation, no.15, pp. 277-290, Amsterdam: Elsevier Science Publishers B.V.

The increasing arising of municipal solid wastes constitutes a serious environmental problem for the developing countries. Urbanisation has magnified the need for adequate solid waste disposal. This article examines the present situation of waste management in Indonesia in general and Jakarta in particular. The available disposal methods are presented and analysed, with

possible options to improve the overall management of wastes are discussed on the basis of the available technologies. These are evaluated in terms of compatibility with the wastes produced in Indonesia.

Mc.Gee, T.G. and M. Yeung (eds.), Community Participation in delivering Urban Services in Asia. Ottawa: IDRC.

Since 1945, the pursuit of accelerated economic growth by the market economies of Asia has led to rapid economic growth, a pattern that seems likely to continue. This rapid urban growth has made it difficult for city governments to deliver adequate urban services, in terms of both physical services, such as providing water, garbage collection and disposal, fire protection, and human waste disposal, and social services, such as health care, child care, recreation, and education. The problem is particularly acute in low-income communities. Given that governments' efforts to meet the need for increased urban services have not been totally effective, many urban communities in Asia have experimented with self-help and participatory mechanisms designed to improve the quality of urban life. This volume presents the highlights of a five-country study, involving Hong-Kong, Indonesia, Korea, Malaysia, and the Philippines, that attempted to provide information on the development and operation of a range of basic urban services based on the principle of self-help.

Muller, M. and D. Plantenga (eds.), De Volkswijk: Woning en Werkplaats. Overlevingsstrategieën van Vrouwen in Derde Wereldsteden, Amsterdam: Koninklijk Instituut voor de Tropen, 1987.

This book focuses upon the women that live in low-income urban areas. Their roles as mothers, as breadwinners, in building and organizing their neighbourhood, are described in nine articles, covering women from all over the world.

Muller, M. and D. Toonen, Holland en Habitat. Een Profiel van de Nederlandse Ervaring met Habitat in de Derde Wereld, Leiden: Faculteit der Sociale Wetenschappen, LIDESCO, Rijksuniversiteit Leiden, 1989.

This study gives an overview of the Dutch experience in the field of 'Habitat and the Third World'. Habitat programmes and projects from NGO's, consulting engineers, universities and institutions for international education and some other relevant organizations are presented.

Mumtaz, K. and F. Shadeed, Women of Pakistan. Two Steps Forward, One Step Back? London: Zed Books, 1987.

'Women of Pakistan' is the first history of Pakistani women's struggles for their rights in the 20th century. From the Education Reform Movement around 1900 to the current campaigns

led by the Women's Action Forum, the authors make clear the diverse conditions affecting Pakistani women, and set their struggle in the context of the country's troubled politics and the specific role of Islam. They hope the story they tell and the questions they raise will provide a starting point for a much-needed discussion of feminism in Pakistan.

Nath, V., 'Urbanisation in India, review and prospects', in: Economic and Political Weekly, vol. XXI, no. 8, February 22, 1986.

This paper is divided into six parts. In part I, trends in the growth of the urban population during the 30-year period 1951-81 and the projections of the growth to the end of the century, contained in the World Development Report 1984, are reviewed. Part II discusses the strategies of dispersed industrial development and urbanisation which have formed the basis of the official policies since the early 1960s. Part III discusses the issues of resources of finance and management for urban administration and for undertaking the needed programme of expansion of housing and urban services. The reason for grossly inadequate resource-allocation during the last three decades and the prospect of more adequate resource inputs in future are discussed. Part IV and V are devoted to discussion of the problems of the maintenance of peace and security and of environmental pollution in the cities. The problems of the four giant cities - Bombay, Calcutta, Madras and Delhi - are discussed briefly in part VI against the background of projections of increase in their populations by two or three times during the 20-year period, 1980-2000, made by the authors of the World Development Report 1984. The question is raised whether it will be possible to cope with the pressures created by such rapid growth on urban systems which are already so greatly over-strained.

Pacey, A. (ed.), Sanitation in Developing Countries, Great Britain: The Gresham Press, 1978.

Produced with the sponsorship of Oxfam and the Ross Institute of Tropical Hygiene, this book is a selection of papers on solutions to Third World sanitation problems, presented at a 1977 conference held at Pembroke College, Oxford. As such, it is based on innovative experiences, largely but by no means entirely drawn from programmes in Asia, designed to provide effective waste disposal without recourse to inappropriate conventional sanitation technology.

There is coverage of the whole spectrum of technical factors involved, from an appreciation of sanitation's influence on health, through the choice of technology and discussion of socio-cultural aspects, to the treatment and reuse of human excreta. At each stage, it is clear that the conference participants were not content with refusing widely accepted views and policies, but were all armed with 'alternative' proposals that, in most cases, had proved feasible and effective not just from the health point of view, but also with regard to the optimal use of resources and socio-cultural considerations.

Rao, K. Ranga and M.S.A. Rao, Cities & Slums. A Study of Squatters' Settlement in the City of Vijayawada. New Delhi: Concept Publishing Company, 1984.

Although the slum has come to be regarded as a major problem of urbanization, there have been only a few full length studies of slums which give both insights into as well as a general picture of slum life. This book is an attempt to fill this gap. The authors define and identify different kinds of slum areas and analyse the factors in their emergence and growth in general. They then give a geographic description of a squatters' slum (Peta) in the city of Vijayawada (Andhra Pradesh) in terms of social composition, demographic features of the slum-dwellers, patterns and causes of rural-urban migration, occupational structure and mobility, work organization of occupational groups and the community life. They also show how the slum-dwellers form part of the economic, political and social organization of the city. In doing so, the authors attempt to bring out the inherent limitations of the conceptual frameworks of 'informal sector' and 'culture of poverty' in understanding the nature of the economic and social organization of slums. Based on a classwise examination of the programmes and politics of slum clearance, improvement and control, they advocate a combination of several measures in the urban ideology of town planning and municipal development in favour of the urban poor and the establishment of a Gandhian ashrama type of settlement that will eventually lead to improved environmental conditions and community life in slums.

Schenk-Sandbergen, Loes, Vuil Werk, Schone Toekomst? (Dirty Work, Bright Future?) Het leven van straatvegers en vuilruimers: een onderzoek in Bulsar (India), verkenningen in Peking, Shanghai, Tientsin en Tangshan (China), Amsterdam: Van Genneep, 1975.

In this study, Loes Schenk-Sandbergen focuses on the transformation of India from 'tradition' to 'modernity' and its effect on some of the most impoverished and low-status groups in society: the streetsweepers and latrine scavengers of Bulsar, a small town in South Gujarat, India. A comparison is made with findings out of China, based on short visits.

The introduction of modern facilities - 'the sewer revolution' - worsened the situation of the lowest strata because no alternative employment has been created for the former sweepers and cleaners. Nor are there signs of a struggle for 'betterment' from 'below'. The most important cause for this fact being the poverty itself, which does not allow people any time to spend on 'betterment' beyond bare survival. Voluntary organizations were not very successful either: they did not even attempt to better the lives of the poorest people.

In China, however, impressive improvements had been made by the sweepers and night soil collectors. A major difference between India and China, is the fact that India followed a course of modernization within the existing powerstructure, while in China, a violent revolution swept away the economic basis of the old order and effected a radical redistribution of wealth and power.

According to Loes Schenk, the comparison of India with China

leaves hope for a brighter future - if, of course, political changes take place so as to bring about a different strategy of modernization in India, one that mobilizes initiative from below rather than relying exclusively on guided development from above.

Schenk-Sandbergen, Loes, Poverty and Survival: Kudumbi Female Domestic Servants and their Households in Alleppey (Kerala), New Delhi: Manohar, 1988.

In this book, the survival strategies of domestic servants and their household members are described and analysed in the city of Alleppey, in Kerala (South-India). These domestic servants are members of the Kudumbi-caste coming from Goa, that set up in Alleppey during the XVII-th century, following their traditional masters, The Konkani's.

In contrast with their husbands, who as coolies lost their jobs as a result of the mechanization of their work, the modernizations like running water, washing-machines etc. did hardly affect the access of the women to their traditional occupations. This is because the Kudumbi domestic servants are so cheap that they -for as long as it will last- sustain the rivalry of the modern facilities.

An important question Loes Schenk-Sandbergen asks in her book, is why the domestic servants stay in a matron-client relation with the Konkani mistresses, despite their humiliating tasks and bad pays. She shows that the domestic servants do not have another option. The unemployment of their husbands and overall poverty, forces these women in a matron-client relation to survive at household as well as at caste-level. Loes Schenk describes how in times of shortage, matron-client relations will prove more economic rewarding than organizing with other poor people. It is poverty itself that hinders an organization on the basis of a common situation.

Searle-Chatterjee, Mary, Reversible Sex Roles. The Special Case of Benares Sweepers. oxford: Pergamon Press, 1981.

This book is a description of the life of a group of people at the bottom of the hierarchical pyramid - migrant Untouchable Sweepers in Benares, the holy city of India. It studies striking variations in the usual patterns of gender behaviour, focusing on the sexual division of labour both inside and outside of the home, as well as on the recreational and political activities. It examines family and kinship patterns and ideas of honour, purity and virtue in clear and simple language which does much to demolish some of the mystique of anthropology.

Setamanit, Surin, Low-cost Sanitation and Environmental Planning in the Metropolis: The Bangkok Experience (Paper), n.d.

Although there is no sewerage system to carry human waste and wastewater for treatment and disposal, the sanitation condition of the Bangkok Metropolitan Area is still liveable because of the general use of water seal pit latrines with cesspools or septic tanks or soil percolation. Problems arise

due to the low and the non-permeable properties of the Bangkok soils in most areas, especially in the rainy seasons. The situation is saved from disaster because of the intricated network of canals and the large Chao Phya River, and the natural phenomenon that is found to take place all over Bangkok. That is the emergence of stabilization and oxidation ponds wherever a piece of land is left vacant. Several master plans and reports concerning sewerage and drainage systems of Bangkok had been drawn up in the past, but were either abandoned or partially implemented. The problems encountered and alternative ways of handling them are discussed and explored in this paper.

Sharma, Ursula, Women's Work, Class, and the Urban Household. A Study of Shimla, North India, London and New York: Tavistock publications, 1986.

In this book, Ursula Sharma explores the nature of women's household work in a modern Indian city, and shows how it contributes to the maintenance, and sometimes mobility, of the household. She focuses her attention not so much on the more obvious tasks of housework, like cooking and cleaning, but more on other kinds of work involved in the servicing of the household: the organization of expenditure, the social relations that must be kept going, contact with relatives and friends etc. In this study, women play a more important role in this 'household service work' than men, in spite of the variations according to the class position of the household. At a more theoretical level, Ursula Sharma tries to define more precisely the interaction between gender and class.

Simpson-Hebert, M., Methods for Gathering Socio-Cultural Data for Water-Supply and Sanitation Projects, TAG Technical Note, no. 1, 1983.

This article is mainly intended to help engineers who need to obtain socio-cultural data in the course of planning and designing low-cost water supply and sanitation projects. It describes data requirements, key data-gathering techniques, and how these techniques can be modified to suit particular circumstances.

Singh, Andrea Menefee, Neighbourhood and Social Networks in Urban India, New Delhi: Marwah, 1976.

Andrea Menefee Singh focuses her attention on middle-class South Indian migrants living in Delhi. She describes the city of Delhi with its socio-economic characteristics and the historical reasons for the predominance of Brahmans in the population. The role and development of the South Indian services and institutions in Delhi are analysed in detail. Singh suggests that these services and institutions lend an air of permanence to the South Indian community and provide many of the cultural symbols utilized in maintaining regional identities. Karol Bagh, the South Indian neighbourhood is examined and the author describes the social networks among the South Indians here, their

extensions beyond the physical boundaries of the block, and the roles and activities upon which these networks are based. Also the individual's participation in voluntary associations and the functions of voluntary organizations for the individual are discussed. The last part describes in detail the voluntary associations which were active in Delhi during the research period.

Singh, Andrea Menefee and Alfred De Souza, The Urban Poor, Slum and Pavement Dwellers in the Major Cities of India, New Delhi: Manohar, 1980.

The problems of slum and pavement dwellers in the cities of India are fast assuming allarming proportions: slum and pavement dwellers constitute nearly a third of the population of the major cities, and a fast-growing proportion of the smaller towns and cities as well.

This study was designed to provide a broad overall view of the present situation of slum and pavement dwellers in Delhi, Calcutta, Bombay, and Madras. Based primarily on published and unpublished sources of data, it represents one of the first attempts to draw together and analyze the existing data on a macro-level; few studies in the past have been concerned with this problem in more than one city or region of India. The authors concentrate on the major trends and most serious problems in areas such as housing, health, nutrition, employment, and income.

The study also attempts "to bring into focus some of the basic information requirements for urban research, policy, and programmes so that the human needs of slum and pavement dwellers can be met more effectively".

This book gives an introduction to the critical problems of urban development by presenting an integrated data-based profile of the urban poor in the major cities of India, and as such is of important value.

De Souza, Alfred (ed.), The Indian City: Poverty, Ecology and Urban Development, New Delhi: Indian Social Institute, Manohar, 1978.

This book focuses on the social, economic, and cultural dimensions of urban poverty, slums and the informal sector. The various contributions to this book examine several interrelated themes - migration, nutrition and health, education and employment, housing, slum improvement and relocation - which taken together highlight the problems of urbanization in India.

In the first section, the themes of poverty and ecology are developed in the context of the informal urban sector, slums and squatter settlements. The second section is concerned with analytical case-studies in some of the major cities of India: Calcutta, Hyderabad, Ahmedabad, Ranchi and Delhi.

In the introduction, Alfred De Souza outlines the basic themes that underlie the challenge posed by urban poverty and that play an important role in the rest of the book. In the first place he recognizes the immense contribution of the informal sector to the urban economy. In the second place, he assumes that

the urban poor are a permanent, not a transitory, feature of the Indian city. Third, traditional urban planning needs to be re-examined in terms of its value system and the social, economic, and political structures which keep large numbers of men and women poor and powerless (xxx). A book highly recommendable to anyone interested in urban problems.

Spodek, H., 'Squatter settlements in urban India. Self-Help and government policies', in: Economic and Political Weekly, September 8-10, pp.1575-1586, 1983.

The colossal pressures on housing in the rapidly expanding cities prompt three questions: 1) How do slum dwellers and squatters assess their own condition? 2) What have been the policies, and the effects of the policies, of different governments for dealing with the situation? 3) What trends for the future are beginning to appear? This paper examines the situation with regard to housing for the poor, assesses the activities of both slum dwellers and government through a series of five case studies and comments, tentatively, on prospective policies and problems.

Streefland, P.H., Slaughterhouse. Een samenleving van Christen Punjabi Sweepers in Karachi, Pakistan (diss.), Publikatie nr. 21, Afdeling ZZO, ASC. Amsterdam: University of Amsterdam, 1975.

In this study, Pieter Streefland gives an extensive description of the Christian Punjabi Sweepers, an urban class occupying a subordinate position in Pakistan. He analyses how this class of sweepers came into being as a result of the Christianisation of the Chuhras (the untouchables) of the Punjab and as a result of the migration after 1947. These sweepers occupy a subordinate position in the Pakistani society because of their origin, and the sweeping work they do. Central themes in this study are the theoretical analysis of conflict phenomena in the community, the organisation of the community in which kinship and locality play an important role, sources of income and credit, and leadership.

The thesis concludes with a number of observations concerning the future prospects of the Christian Punjabi Sweepers. The prospects for improvements, at least for the time being, are not very promising. It is much more likely that their situation will deteriorate, whether because of moslems, confronted by economic recession, are themselves beginning to work as sweepers, or because of an increase in the number of potential sweepers as a result of continued immigration, or because of a decline in the amount of work available, following the introduction of mains sewage.

White, Alastair, Community Participation in Water and Sanitation: Concepts, Strategies and Methods, Technical Report No. 17, The Hague: International Reference Centre for Community Water Supply and Sanitation (IRC), 1981.

In this paper, Alastair White provides an overview of the

socio-cultural and political factors which influence community participation in water- and sanitation projects. He examines examples from mixed- as well as socialist economies and particular attention is paid to differences of interest within villages, in relation to water and sanitation facilities.

WHO, Community Water Supply and Excreta Disposal in South-East Asia, New Delhi: WHO Regional Publications, 1977.

This report looks at the progress made in terms of the targets set by the 25th World Health Assembly for the Second United Nations Development Decade, for both water supply and excreta disposal in rural and urban areas. As well as national reports, projections are made on the magnitude of the tasks to be carried through in order to achieve the goals set for the 70s. Statistical data by country are appended.

WHO, Improving Environmental Health Conditions in Low-Income Settlements. A Community-Based Approach to Identifying Needs And Priorities, WHO Offset Publication no. 100, Geneva, 1987.

This publication offers guidance to communities on how they can identify and gather information about environmental factors affecting health in the areas where they live. In this way they can diagnose their own environmental health problems and determine priorities for action.

Wit, Joop de, 'Slum dwellers, slum leaders and the government apparatus. Relations between actors in slum upgrading in Madras'. Urban Research Working Papers. Amsterdam: Vrije Universiteit.

Joop de Wit analyses the difficulties that are coupled with self-help programmes and communication with the community in a slum improvement project in Madras. He shows how the different actors - Government, World Bank, UNICEF, contractors, politicians, slum dwellers, slum leaders etc. - often have different, so not conflicting interests in the project.

Winden, J, van and M. van den Veerdonk, Ganges, Levenslijn van Noord-India (Ganges, Lifeline of North-India), Utrecht: Geografisch Instituut van de Rijksuniversiteit Utrecht, 1986.

The river Ganga, the leading thread running through the lives of many Indians, changed in a muddy stream as a result of pollution, the withdrawing from water and the choking up with sand. this little book gives an overview of these problems and describes the projects aiming to improve the situation. The role the Netherlands play in these projects receives special attention.

Worsley, Peter, The Three Worlds. Culture and World Development. London: Weidenfeld and Nicolson, 1984.

In 'The Three Worlds', Peter Worsley examines the constituents of development - cultural as well as political and economic - throughout the world from pre-history to the present.

The first part of the book examines existing theories of development. None is sacred: using empirical material drawn from the historical experience of advanced capitalist and socialist states, China and the distinct regions of the Third World, Worsley evaluates and synthesises the Marxist approach with that of social anthropologists. He identifies culture - in the sense of a shared set of values - as the key element missing in more traditional approaches to the sociology of development.

In the second half of the book Peter Worsley considers successive forms of rural organization, the rise of large scale 'agribusiness' in the capitalist world and collectivized agriculture in the communist countries. In a section entitled 'The Making of the Working Class' he contests the view that the Third World is overwhelmingly populated by peasants and develops a new definition of the urban poor. Worsley then examines the importance of the concepts of ethnicity and nationalism, showing how they relate to social class and to each other, and concludes by discussing the nature of the three worlds implied in the term 'Third World'. Different conceptions of the Third World have led, he argues, to very different political conclusions. As a synthetic and critical work, grounded in precise case studies, this book is unique.

Yacoob, M., Women and Participation in Health Education for Water and Sanitation: An Operational Approach for Moslem Communities, Washington D.C.: Howard University, 1984.

This paper argues that reaching Moslem Communities in general, and the women in these communities in particular, may require a unique approach that has never before been fully utilized. Behavior changes - which is the aim of health education to bring about - in this milieu must spring from a value system and behavioral ideals that are already in use by the target groups. Moreover, a blend of cultural insights and project experiences helps to show that religious principles, as expressed in the Koran, are the best means of effecting both behavioral change and longstanding development objectives. It is clear that there are ways to reach women in the most traditional of these communities, as well as to incorporate their needs into design of water and sanitation projects.

LETTERS

**Indo-Dutch Environmental and Sanitary
Engineering Project Kanpur-Mirzapur
under Ganga Action Plan**

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To

Ms. Mirjan Letsch
Meidoornplantsoen 93
1871 SL Schoorl,
The Netherlands

your reference

our reference

date

3463.23/613/1.69

23rd October 1989

Dear Ms. Letsch,

In visiting Unicef office, New Delhi, Urban Basic Services Programme, I was asked by Ms. Eliana Riggio to react on your letter as well in which you asked for documentation. She will do it separately.

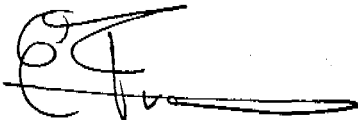
I am most willing to make my contribution but I saw that your study supervisor is Mrs. Schenk-Sandbergen. She has received all documentation about our project and did visit us regularly.

Since it concerns a literature study I am quite sure that she can help you as well with general literature references. Good entries are the publications of Prowess/UNDP and the IRC. If we can help you with any further specific information, please let us know.

Thanking you

Yours sincerely

Ed. Frank
Coordinator SEU





INTERNATIONAL DEVELOPMENT RESEARCH CENTRE

CENTRE DE RECHERCHES POUR LE DÉVELOPPEMENT INTERNATIONAL

31 July 1989

31 AUG 19 1989

Letsch

Mr. Mirjam Letsch
IRC - International Reference
Centre for Community Water
Supply and Sanitation
WHO Collaborating Centre
P.O. Box 93190
2509 AD The Hague
THE NETHERLANDS

Dear Mr. Letsch:

Your request for information on water and sanitation facilities in urban areas in Asia has been referred to me for reply. Your research topic is certainly very timely in light of the current discussions by the Collaborative Council of the External Support Agencies dealing with the "Water Decade and Beyond", IRC is a member of the Council and will be able to provide detailed information.

You are quite right in noting that programs for improved water supply and sanitation in urban and peri-urban areas have received insufficient attention by donor agencies. This includes IDRC. A few projects have been supported over the years, however. Two which come readily to mind are (a) The "Development of Appropriate and Economic Treatment System for Hospital Wastewater" (project no. 3-P-83-0031) which was undertaken by the Ministry of Public Health in Thailand; (b) "Aerated Facultative Pond Treatment System (project: BLISS Waste Treatment, 3-P-84-0245) undertaken by the Philippines' National Environmental Protection. There are likely a number of relevant sociological/anthropological studies which have been supported over the years by our Social Sciences Division. I am referring your letter to my colleague in our Singapore office, Mr. Lee Kam Wing, Health Sciences Division, IDRC, Tanglin P.O. 101, Singapore 9124 (telex: RS 21076).

.../2

Mr. Mirjam Letsch

- 2 -

31 July 1989

Another organization which I would recommend you contact in the Environmental Sanitation Information Centre at the Asian Institute of Technology (AIT), P.O. Box 2754, Bangkok, Thailand. Prof. Chongrak Polprasert at AIT has been involved with the development of viable water supply/sanitation systems for low income communities in Asia (telex: 84276 TH).

I wish you much success in your research project.

Yours sincerely,



Alex Redekopp, B.Eng.
Senior Program Officer
Health and the Environment
Health Sciences Division

AR/ms

c.c. ASRO - Lee Kam Wing



SIMAVI

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IRC
Postbus 93190
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15 AUG 89 10:30
Letch

uw ref.
onze ref.

Haarlem, 14 augustus 1989

Betr.: verzoek om informatie over water-en sanitaire voorzieningen
in stedelijke gebieden in Azië/ uw ref.: 44.050./ML/lw

Geachte mevrouw Letsch,

In gebieden als door u omschreven in bovengenoemde brief, heeft
SIMAVI op dit moment geen bemoeienissen met projecten op het
terrein van water-en sanitaire voorzieningen.

De steun van SIMAVI is incidenteel en aanvullend en is waarschijn-
lijk ook niet geschikt voor projecten, zoals door u aangegeven.

Hoewel vrij veel steun wordt gegeven aan activiteiten gericht op
verbetering van de drinkwaterpositie, wordt die hulp veelal gege-
ven aan ziekenhuizen e.d.

In India hebben de waterprojecten een iets meer structureel karak-
ter; hier gaat het echter om plattelandsprojecten.

Mocht u denken, dat wij u toch op een of andere wijze van dienst
kunnen zijn, dan bent u welkom.

Met vriendelijke groet en hoogachting,

S. Keuning
directeur



INTA international association for the development and management of existing and new towns
AIVN association internationale pour le développement et la gestion des villes anciennes et nouvelles

10 AUG 1989 14359
Letsch

Ms. M. Letsch
International Reference Centre
PO Box 93190
2509 AD The Hague

The Hague
10 August 1989
894/MS/kem

Dear Ms. Letsch,

Thank you for your letter dated 12 July. I am very sorry to inform you that INTA does not have any information which would be of assistance to you in your research into this subject. However I suggest you contact the International Institute for Water Supply and Wastewater (IIWSWD) at their office in Zoetermeer. Their address is given below.

I wish you every success in your endeavours.

International Institute for Water Supply
and Wastewater Disposal
Gooiland 11
2716 BP Zoetermeer

Yours sincerely

Michel Sudarskis
Secretary General

International Secretariat / Secrétariat Général
Nassau Dillenburgerstraat 44
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Category 2 status with the
Economic and Social Council
of the United Nations
and the Council of Europe

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et du Conseil de l'Europe



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Mw. M. Letsch
International Reference Centre for
Community Water Supply and Sanitation
Postbus 93190
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U 692/12-div./89

Den Haag, 4 augustus 1989

Geachte mevrouw Letsch,

Hierbij bevestig ik de ontvangst van uw brief van 18 juli j.l., ref. 44.050/ML/lw, waarin u voor uw studie om projektbeschrijvingen e.d. vraagt.

Aangezien het Vrouwenberaad Nederlandse Ontwikkelingsinstanties geen projectorganisatie is, is de literatuur die wij over projecten hebben beperkt. U bent echter van harte welkom om te komen kijken in onze bibliotheek.

Er is door het Vrouwenberaad wel een rapport uitgebracht, getiteld "Inventarisatie van onderzoek op het gebied van vrouwen en ontwikkeling", waarin te zien is wie op het gebied van water- en sanitaire voorzieningen onderzoek heeft gedaan. Dit rapport is voor zover ons bekend bij het IRC aanwezig.

Als dit niet het geval is, dan kunt u het rapport bij het Vrouwenberaad bestellen door Fl. 25,- over te maken op postgiro 3685353 te Leiden.

In de hoop u hiermee van dienst te zijn geweest,

met vriendelijke groeten,

Saskia Brusse, secretaresse
VROUWENBERAAD NEDERLANDSE ONTWIKKELINGSINSTANTIES



Ministerie van Volkshuisvesting,
Ruimtelijke Ordening en Milieubeheer

Directoraat-Generaal Milieubeheer
Postbus 450, 2260 MB Leidschendam
Telefoon (070) 20 93 67, telex 32362 VROM NL
Facsimile 31 70 27 98 68

DWB fax nr. 17 50 67

11.018 19 20364
Letsch

Directie: DWB
Hoofdafdeling: Drinkwater/11

IRC
t.a.v. Mirjam Letsch
Postbus 93190
2509 AD 's-GRAVENHAGE

Uw kenmerk	Uw brief van	Kenmerk	Datum
44.050/ML/1w Onderwerp	18 juli 1989	2679404	/ augustus 1989

Informatie over water- en sanitaire voorzieningen in stedelijke lage inkomensgebieden in Azië

In het kader van uw literatuurstudie naar water- en sanitaire voorzieningen in stedelijke lage inkomensgebieden in Azië zijn in bijlage I enkele aanvullende literatuurgegevens opgenomen.

Wellicht ten overvloede zend ik u toe de Beleidsnota "Water" van de Voorlichtingsdienst ontwikkelingssamenwerking van het Ministerie van Buitenlandse Zaken.

Ik wens u veel succes toe met uw literatuuronderzoek en het aansluitende veldwerk. Mocht u in een later stadium nog nadere informatie willen ontvangen, dan kunt u contact opnemen met de heer Balnikker van mijn afdeling.

Met vriendelijke groet,
het hoofd van de hoofdafdeling Drinkwater,

ir. G.W. Ardon

Bijlage I

- "Milieu-aspecten van verstedelijking in ontwikkelingslanden".
Een verkenning, samengesteld in opdracht van de Stichting I.U.C.N. Ledencontact Amsterdam
Uitgevoerd door: Tjeerd Deelstra, Jack Overkamp en Ton Koning van "The International Institute for the urban environment", Delft, juni 1989.
- "Participation and Education in community water supply and sanitation programmes: a literature review".
IRC-publicatie, 2e herziene druk, Den Haag, 1984
- "Seminar on appropriate technology for water supply sanitation in developing countries", Eskill Olsson, 1985
- "The Environment of simple water supplies; a selected and annotated bibliography in support of public standpost watersupplies, IRC, 1984
- "Management of water projects; decision-making and investment appraisal", O.E.C.D., 1985
- "Community water supply and sanitation. Options for self-improvement", IRC, 1988.



euroconsult 18 08 1989

Letsch

Euroconsult BV
Registered at Arnhem, no. 38921

Beaulieustraat 22
P.O. Box 441
6800 AK Arnhem, The Netherlands

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Telegrams euroconsult arnhem
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Telephone national (085) 57 71 11
Telephone international +31 85 57 71 11

Direct line (085) 57 7

IRC Water and Sanitation Centre
t.a.v. Mw M. Letsch
Postbus 93190
2509 AD DEN HAAG

Y/ref.: 44050/ML/lw

O/ref.: 139/1.71.001

Arnhem, 17 augustus 1989

Subject: Urban Water Supply and Sanitation in Asia

Geachte Mevrouw,

In uw brief van 12 juli 1989 vraagt u informatie over water- en sanitaire voorzieningen in stedelijke gebieden in Azië. Wij begrijpen dat u literatuurstudie en aansluitend veldwerk in India (en waarschijnlijk ook in Pakistan) doet, gericht op het identificeren van de voornaamste prioriteiten en belemmeringen bij de uitvoering van water- en sanitatie programma's.

Inderdaad is het zo dat Euroconsult als project consultant betrokken is bij de uitvoering van water- en sanitatie projecten in meerdere landen, terwijl nog een dubbel aantal van zulke projecten in het stadium van initiële planning en opdrachtverlening is. Waar mogelijk, worden low-cost technologies gebruikt en bevordering van de betrokkenheid van de bevolking (in het bijzonder de vrouwen) is een vast en geïntegreerd onderdeel van al deze projecten. Hetzelfde geldt voor gezondheidsvoorlichting en bevordering van de algemene hygiëne (zowel persoonlijk als in de leefomgeving).

Uw vraagstelling is ons niet geheel duidelijk in de zin van welke specifieke informatie voor uw studie het meest van nut zou zijn. Euroconsult heeft uiteraard nogal uitgebreide informatie-bestanden voor onze water- en sanitatie projecten.

Wellicht kunt u telefonisch uw studie-oriëntatie en informatiebehoefte nader verduidelijken en mogelijk kan raadpleging van geselecteerde projectdocumentatie helpen. Daarvoor zou wel een bezoek aan ons kantoor in Arnhem nodig zijn.

Met vriendelijke groet,
Euroconsult,

Ir E.H. Hofkes



DHVV

DHV Raadgevend Ingenieursbureau BV

10.10.89 11.30.8

Letsch

Postbus 85 - 3800 AB Amersfoort
Postadres voor:

Laan 1914 nr. 35, Amersfoort
Telefoon (033) 68 91 11
Telefax (033) 61 50 47
Teleex 79348 dhv
Telegramadres: dehave

IRC

T.a.v. Mej Mirjam Letsch
Postbus 93190
2509 AD 's-Gravenhage

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Overcingellaan 15
Telefoon (05920) 1 21 21

Postbus 246 - 7550 AE Hengelo(O)
Geerdinksweg 185
Telefoon (074) 42 36 24

Postbus 388 - 5700 AJ Helmond
Kasteel Traverse 90
Telefoon (04920) 3 23 45

Postbus 5136 - 6130 PC Sittard
Spechtstraat 1-3
Telefoon (04490) 2 18 55

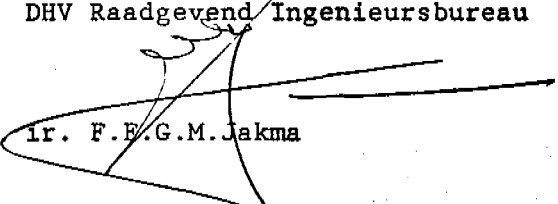
Amersfoort, 9 augustus 1989

Onze Ref : FJ/we-180
Uw Ref : 44.050/ML/lw
Dossier : 3.5400.21.002
Betreft : Verzoek om informatie

Geachte Mej Letsch,

Wij danken u voor uw brief van 12 juli waarin u verzoekt om informatie met betrekking tot water- en sanitaire voorzieningen in stedelijke gebieden in Azië. Wij verontschuldigen ons voor dit vertraagde antwoord. Bijgesloten treft u enig informatiemateriaal aan over DHV's activiteiten op water- en sanitatiegebied in Azië. Wij hopen dat dit materiaal kan bijdragen aan de studie die op dit moment uitvoert en beantwoorden graag eventuele verdere vragen van uw kant.

Hoogachtend
DHV Raadgevend Ingenieursbureau


Ir. F.E.G.M. Jakma

bijlagen: brochures en projectbeschrijvingen

Mirjam Letsch,
IRC,
Postbus 93190,
2509 AD DEN HAAG.

89 AUG 19 10337

Letsch

Den Haag, 8 augustus 1989

ref.: 545/60/IRC/180705
ond.: uw brief d.d. 12 juli 1989

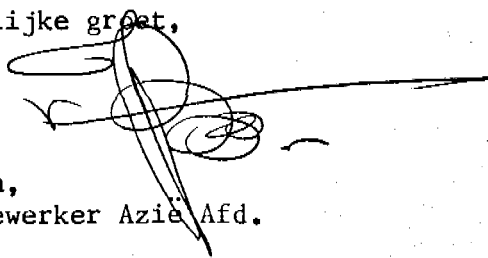
Geachte mevrouw Letsch,

Uw verzoek om projectbeschrijvingen en ander relevant materiaal welke U wilt gebruiken in het kader van Uw studie Culturele Antropologie, hebben wij ontvangen.

We zouden U graag van dienst zijn, ware het niet dat HIVOS erg weinig stedelijke projecten welke met water en sanitaire voorzieningen werken ondersteund. Ik heb er zo op het eerste gezicht geen kunnen vinden. We steunen wel een aantal plattelandsprojecten waarbij de watervoorziening een belangrijk onderdeel vormt.

Het staat U vrij om eens bij ons langs te komen om door onze documentatie te gaan. Mogelijk komt U iets tegen wat U interesseert. We hebben echter weinig tijd ter beschikking om samen met U of voor U dit materiaal te zoeken. Indien U langs wilt komen maakt U dan wel vooraf telefonisch een afspraak.

Met vriendelijke groet,



Jan Bruinsma,
project medewerker Azie Afd.



97 AUG 89 203.16

Letsch

IRC
t.a.v. mw. Mirjam Letsch
Postbus 93190
2509 AD DEN HAAG

IWACO B.V.
Postbus 183, 3000 AD Rotterdam
Schiekade 189, Rotterdam
Telefoon (010) 4.241.641
Telex 24069 NL
Telegramadres IWACO Rotterdam
Telefax (010) 4.330.977

Uw kenmerk

Bijlage(n)

Datum

02-08-1989

Ons kenmerk

BH/KdR-7.0143.0/89081640

Onderwerp

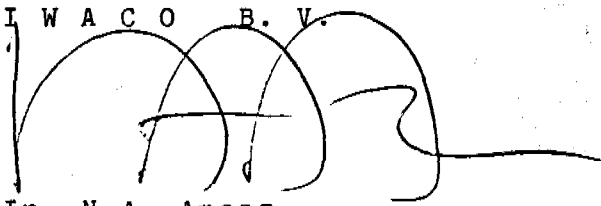
Geachte mevrouw Letsch,

Graag bevestig ik U de ontvangst van Uw brief no. 44.050/ML/Lw van 12 juli 1989. Het is ons tot nu toe niet gelukt u telefonisch te bereiken, vandaar dit briefje.

Het is ons wat moeilijk om u inzage te geven van de rapportage die ons bureau uitbrengt aan opdrachtgevers. Wij zijn echter gaarne bereid U te woord te staan om bij U levende vragen met U door te spreken. Indien U dat op prijs stelt, kunt U daartoe nader een afspraak maken met de heer J.B. Bolten van ons bureau, waar ik wel bij moet zeggen dat deze tot 17 augustus op vakantie is.

Hoogachtend,

I W A C O B. V.



Ir. N.A. Amesz
Algemeen Directeur



**WATER AND SANITATION
FOR HEALTH PROJECT**

Operated by CDM and Associates

Sponsored by the U.S. Agency
for International Development

WASH Operations Center
1611 N. Kent St., Room 1001
Arlington, Virginia 22209-2111 USA

Telephone (703) 243-8200
Telex No. WUI 64552
Cable Address: WASHAID
FAX No. (703) 525-9137

RE: Water and Sanitation Peri-Urban Information Network

Dear Colleague:

The Water and Sanitation for Health Project (WASH) is sponsored by the U.S. Agency for International Development. WASH provides short-term technical assistance services for water supply and sanitation projects. Enclosed is Progress Report No. 12 which provides a description of our activities and a bibliography of WASH Field and Technical Reports. Please let us know if we can provide you with copies of our reports. Reports are provided free of charge.

The WASH Information Center is establishing an information network on water and sanitation issues in peri-urban areas of developing countries. The United Nations estimates that from 1950 to the year 2000, the urban population in developing countries will increase from 300 million to almost 2 billion. According to projections, the urban population will continue to increase past the year 2000. In developing countries, it is estimated that, on average, 50% of urban populations live in peri-urban areas. Water supply is considered a top priority by peri-urban residents. Excreta disposal and refuse disposal are also major problems faced by peri-urban residents.

The WASH peri-urban network will collect and disseminate information on water and sanitation issues. Databases will be established on experts, training courses, publications, etc. Statistics and data will be collected and compiled on water and sanitation related health problems and on the health impacts of water and sanitation projects in peri-urban areas. Future activities of the network may include publication of a newsletter and organization of workshops or study tours.

Enclosed is a questionnaire to obtain information on your organization. Please fill in the questionnaire and return it to WASH if you would like to become a member of the network.

Sincerely,

Dan Campbell
Dan Campbell/Librarian



80-08-02 1616

1 August, 1989

04 AUG 89 10308
Letsch

Infrastructure Division
J-O Johansson/KP

Mrs Mirjam Letsch
IRC
P.O. Box 93190
2509 AD THE HAGUE
THE NETHERLANDS


1.304

Dear Mrs Letsch,

With reference to your letter dt 13/7/89 requesting for literature on urban sanitation, we regret to inform that SIDA has not yet embarked on any such project.

However, it is rather likely that in the future SIDA will be involved in such projects. Hence, after you have completed your project we would appreciate receiving a copy of your study report.

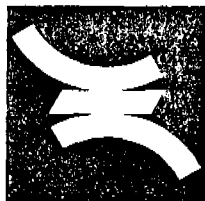
With kind regards



John-Olof Johansson
Head of section

570-008

SNV



organisatie voor
ontwikkelingssamenwerking
en bewustwording

Bezuidenhoutseweg 161
2594 AG Den Haag
Telefoon 070-814141
Telex 31326

03 AUG 19 10 29 5

Letsch

mevrouw M. Letsch
IRC
Postbus 93190
2509 AD DEN HAAG

3 augustus 1989
SNV/LZ
studiemateriaal

Dank voor uw brief van 18 juli, waarin u vraagt om projektbeschrijvingen op het gebied van watervoorziening in steden in Azië. Het spijt me dat ik u niet van dienst kan zijn: voor zover SNV zich in Azië bezig houdt met drinkwater en sanitatie (Noord-Jemen, Nepal en Bhutan), gaat het om rurale activiteiten.

Ik hoop dat u het elders beter treft en wens u succes in India en Pakistan.

Met vriendelijke groeten,

SNV/Azië/Latijns-Amerika,

Hans van der Veen

WASTE

consultants
ON
appropriate
technology

Stichting WASTE
Crabethstraat 38 F
2801 AN Gouda
The Netherlands
tel 01820-22625

03 AUG 89 20293

Letsch

fax 01820 - 11296

aan/to
IRC
Postbus 93190
2509 AD Den Haag

tav Mirjam Letsch

betreft/re

44.050/ML/lw

datum/date

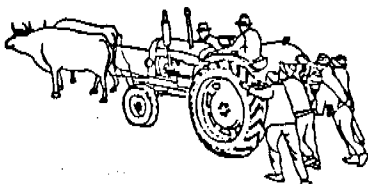
31 juli 1989

Beste Mirjam Letsch,

In je brief van 12 juli laat je ons weten voor je studie geïnteresseerd te zijn in projektbeschrijvingen van drinkwater en sanitatie programma's in stedelijke lage inkomens gebieden in Azie.

Voor de UNCHS schreven wij onlangs een trainingspakket over "water supply in low-income urban housing projects; the scope of community participation". Een daarop aansluitend trainingspakket zijn wij aan het afronden over "women's participation in water supply and sanitation projects". Deze trainingspakketten zijn nog niet gepubliceerd. Hoewel wij niet tot doel hadden een literatuuroverzicht te maken ben je voor de aanpak van je studie misschien wel geïnteresseerd in een gedachtenwisseling met de samenstellers.

Specifieke projekt ervaring op het gebied van low-cost sanitation in low-income urban area's hebben wij in Dar es Salaam, de hoofdstad van Tanzania, Oost Afrika. Het betreft een projekt waarin in de ongeplande wijken op wijkniveau het probleem van overvolle latrines wordt aangepakt. Latrines worden gelegegd met behulp van speciaal ontwikkelde hand-pompen die in Tanzania worden vervaardigd en onderhouden. De uitvoering van het "verbeterde" legen van de latrines is gebaseerd op het traditionele systeem van informele putlegers, betrokkenheid van wijkcomitees (in dit geval partij-cellen) onder coördinerende verantwoordelijkheid van de gemeentelijke dienst voor sanitatie. Voor de verwerking van de gelegegde putinhoud zijn er twee benaderingen: begraven op het erf (on-site disposal) en, in gebieden met hoge grondwaterstand, afvoer naar kollektiepunten (substations), waarvandaan de gemeente door middel van tankwagens zorgt voor verder transport naar de rioolzuiveringsvijvers.



Het betreffende projekt in Tanzania loopt nog en er is nog niet over gepubliceerd, we zijn de rapportage aan het schrijven over de pilot fase. Mocht je ondanks het feit dat het niet in Azie is gelegen er toch kennis van willen nemen ben je bij deze van harte uitgenodigd om een afspraak te maken. Er is foto- en videomateriaal en concept rapportages over o.a. sociaal onderzoek en evaluatie van de pilot fase.

Met vriendelijke groet,

WASTE CONSULTANTS

Jaap Rijsburger



PAN AMERICAN HEALTH ORGANIZATION
Pan American Sanitary Bureau, Regional Office of the
WORLD HEALTH ORGANIZATION

525 TWENTY-THIRD STREET, N.W., WASHINGTON, D.C. 20037, U.S.A.

CABLE ADDRESS: OFSANPAN

IN REPLY REFER TO: HPE/3/1

TELEPHONE 861-3200

August 2, 1989

Mr. Mirjam Letsch
International Reference Centre
for Community Water, Supply
and Sanitation
Prinses Margrietplantsoen 20,
The Hague,
The Netherlands

11. 20571
LETSCH

Dear Mr. Letsch: •

Thank you for your letter inquiring about information on water supply for urban marginal areas in Asia.

Unfortunately, the Pan American Health Organization works only with Latin American and Caribbean countries. Nevertheless, we are sending you the proceedings of a Regional Symposium on this subject which features some cases and other information.

I hope this information will be useful for you.

Sincerely yours,

Guillermo H. Dávila
Coordinator
Environmental Health Program

... Encl.

LIDESCO

Leiden University
Stationsplein 12
P.O. Box 9507
2300 RA Leiden
the Netherlands
Tel.: 071-273494
Telex: 39427

Mevrouw M. Letsch
IRC
P.O. Box 93190
2509 AD Den Haag

25 SEP 89 20081
Letsch

Nieuw adres per 1 juli 1989:

Wassenaarseweg 52
P.O. Box 9555
2300 RB Leiden

Tel.: 071-273494
Telex: 39427
Telefax: 071-273619

Leiden, 21 september 1989
13089/CB

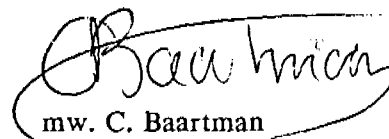
Geachte mevrouw Letsch,

In reactie op uw brief van 12 juli 1989, nr. 44.050/ML/lw betreffende uw verzoek om informatie over water- en sanitaire voorzieningen in stedelijke gebieden in Azië moet ik u helaas berichten dat LIDESCO niet aan uw verzoek kan voldoen.

Wij hebben echter enkele adressen voor u van personen die u wellicht kunnen helpen bij uw onderzoek. U kunt contact opnemen met WASTE Consultants, Crabethstraat 38F in Gouda; Arnold v.d. Klundert en Heleen Clarenbould zijn met het onderwerp 'water in steden' bezig voor UNCHS/Habitat in Nairobi. Ardi Braken, stageaire van de Katholieke Universiteit Nijmegen, bij IOV van DGIS doet onderzoek naar de institutionele context van drinkwaterprojecten.

Wij hopen u enigszins van dienst te zijn geweest en wensen u veel succes bij uw onderzoek.

Met vriendelijke groeten,


mw. C. Baartman
administratief coördinator
LIDESCO



27 SEP 89 20711
Letsch

P.O. BOX 151
3700 AD ZEIST,
THE NETHERLANDS

IRC
t.a.v. Mirjam Letsch
Postbus 93190
2509 AD DEN HAAG

Tel. (0)3404 - 248 44
Telex 47644 ICCO NL
Telegram Address Develop
Telefax (0)3404 - 256 14

Zeist, 25 september 1989
DZ/gd/89

Geachte mevrouw Letsch,

In verband met een twee-tal factoren, namelijk vakantie en ziekte, zijn wij pas nu in de gelegenheid uw brief van 12 juli j.l. te beantwoorden. Onze excuses hiervoor.

Helaas is het voor ons niet mogelijk om in te gaan op uw verzoek om een onderzoek te verrichten zoals voorgesteld in uw brief. Wij ontvangen regelmatig dergelijke verzoeken en wij moeten ons derhalve aan bepaalde limieten houden. Immers, voor een dergelijk onderzoek dient er toch een bepaalde begeleiding aanwezig te zijn waarvoor gezien de huidige omstandigheden - op dit moment geen ruimte is.

Wij hopen dat u begrip heeft voor ons standpunt in deze en wensen u succes toe bij uw verdere studie.

Met vriendelijke groet,

INTERKERKELIJKE COORDINATIE
COMMISSIE ONTWIKKELINGSPROJECTEN

Mevrouw H.A.J. Zeelenberg,
hoofd Bureau Personeelszaken

Interchurch co-ordination committee for development projects
Comité inter-églises de coordination de projets de développement
Comisión intereclesialística de coordinación para proyectos de desarrollo

Zusterplein 22a,
Zeist, The Netherlands

Interkerkelijke coördinatie commissie ontwikkelingsprojecten



CONSULTANCY GROUP FOR WATERSUPPLY, SANITATION, AGRICULTURE AND WATERMANAGEMENT

2 JUL 19 1989
Petzah

I.R.C.
T.a.v. Mirjam Letsch
Postbus 93190
2509 AD DEN HAAG

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bank: RABO Utrecht 39.43.32.113
giro: 53.28.345
Chamber of Commerce no. S 180620

Ref : A/331/SD
Betr: ref. 44050/ML/Lw

Utrecht, 28-8-1989

Beste Mirjam,

Bedankt voor je brief d.d. 18 juli j.l.
SAWA is wat stedelijke water- en sanitaire programma's betreft, m.n.
werkzaam geweest in Nicaragua en op de Kaap Verdiese Eilanden.
In Azië betreft en betrof ons werk resp. irrigatie en rurale
watervoorziening.
We kunnen je dus helaas niet van dienst zijn.
Veel succes met je onderzoek.

Met vriendelijke groeten,

i.a. *Paul*
Simon Dermijn/
SAZWA



ENVIRONMENTAL SANITATION INFORMATION CENTER

ASIAN INSTITUTE OF TECHNOLOGY, P.O. BOX 2754, BANGKOK 10501, THAILAND
Tel: 5290100-13, 5290091-3, Ext. 2870 • Cable: AIT BANGKOK • Telex: 84276 TH • Fax: (66-2)-529-0374

Ref. No. ENS89/200

September 13, 1989

Mr. Mirjam Letsch
International Reference Centre for
Community Water Supply and Sanitation (IRC)
P.O. Box 93190
2509 AD The Hague
The Netherlands

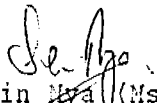
Dear Mr. Letsch,

Thank you for your letter of August 19, 1989 which was addressed to Dr. Chongrak Polprasert requesting material concerning water and sanitation in low-income urban areas.

As requested, we are sending to you a list of bibliography on the above subject. All the articles listed are available from us either in microfiche or in hard copy.

Please do not hesitate to contact us if you need further assistance from us.

Yours sincerely,


Sein Hpa (Ms.)
Senior Information Scientist

SM\ps

Encl.

SUBJECT: Water and sanitation in low-income urban areas

OUTPUT FROM A BATCH COMPUTER SEARCH

Retrieved from ENSI DATA BASE

Output processing date : Friday, 08 September 1989

Run for : Mr. Mirjam Letsch, IRC, The Netherlands.

Thank you for your interest in this service, which is a result of the concerted support of IBM/Far East and AIT's Regional Computer Center. Do not hesitate to contact the staff in charge of the concerned Data Base (Room 213, LRDC Office Wing, Ext. 2870) if you need more information. Any comment/suggestion is most welcome.

The structure of the data base is being extensively overhauled. For this reason, some inconsistencies may appear in the output.

ENVIRONMENTAL SANITATION INFORMATION CENTER
Asian Institute of Technology
P.O. Box 2754
Bangkok 10501, Thailand
Cable AIT BANGKOK - Telex 84276 TH

INTRODUCTION

Currently ENSIC covers these following types of wastes: sewage (including greywater and blackwater), human excreta, animal wastes, and household refuse. Besides, water supply is also covered. Special attention is paid to low-cost options.

The topics covered are indicated by the first two digits of the Accession Numbers as follows:

- | | |
|---|--|
| 10 - Deposition Devices | 4 - REUSE OPTIONS |
| 2 - ON-SITE COLLECTION AND DISPOSAL | 41 - Irrigation |
| 21 - Pit Latrines (including Bore-Hole Latrines) | 42 - Aquaculture |
| 22 - Composting Privies | 43 - Algae (including Sea Weeds) |
| 23 - Septic Tanks & Aqua-Privies (including Soil Absorption Systems, Sand Filters, Evapo-transpiration Beds, etc. treating septic tank effluents) | 44 - Fertilization |
| 24 - General | 45 - Biogas Production (including Landfill Gas) |
| 3 - COLLECTION AND OFF-SITE TREATMENT | 46 - Others (eg. Refeeding, Single Cell Protein) |
| 31 - Cartage | 5 - WASTE MANAGEMENT |
| 32 - Waterborne | 50 - Wastewater/Greywater |
| 33 - Ponds (including Oxidation Ditches and Aerated Lagoons) | 51 - Refuse Management |
| 34 - Composting (including Vermicomposting) | 52 - Agricultural Residue |
| 35 - Aquatic Plants (Macrophytes) | 53 - Agro-Industrial Wastes |
| 36 - General | 6 - WATER MANAGEMENT |
| | 60 - Water Conservation |
| | 61 - Water Supply |
| | 7 - GENERAL ASPECTS |
| | 71 - Technological Aspects |
| | 72 - Institutional Aspects |
| | 73 - Behavioral Aspects |
| | 74 - Health Aspects |

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Accession No: 610519 Availability: PS
State Water Agencies and the Crisis of Urban Water Supply in Nigeria.
Adeniji, K. (Nigerian Institute of Social and Economic Research (NISER),
Ibadan, Nigeria). Aqua. (5): 237-241 (1985). 10 references. 2 tables.
Language: En.
Problem / Urban / Water supply
Nigeria

Accession No: 33-001 Availability: 3301/IDRC
LOW COST WASTE TREATMENT SYSTEM FOR CANTONMENT AND TOWNSHIPS.
Alagarsamy, S.R.; Bhalerao, B.B. (Central Public Health Engineering Research
Institute, Nagpur, India). Proceedings Seminar on Distribution and
Maintenance of Electric Supply and Public Health Engineering Services in
Cantonments and Townships, India. : 129-135 (1973). 5 references. Language:
En.
Urban
India

Accession No: 240122 Availability: ENS
Waste Management in Urban Slums.
Amoning-Yankson, S.A. (Ministry of Local Government and Lands, Gaborone,
Ghana). Sanitation and Water for Development in Africa. Proceedings 9th WEDC
Conference, 12-15 April 1983, Harare, Zimbabwe. ISBN 0-906055-14-8.
Published/Distributed by Loughborough University of Technology, U.K. : 50-53
(1983). 1 figure. 1 table. Language: En.
Case study / Communal latrine / Cost / Evaluation / Flush toilet / Slum /
Urban
Ghana

Accession No: 240123 Availability: ENS
Urban Low Cost Sanitation: Self Help, Government Direct Labour or Contractor
Built?
Ashworth, J. de B. Sanitation and Water for Development in Africa.
Proceedings 9th WEDC Conference, 12-15 April 1983, Harare, Zimbabwe. ISBN 0-
906055-14-8. Published/Distributed by Loughborough University of Technology,
U.K. : 93-95 (1983). 1 table. Language: En.
Construction / Cost / Self-help / Urban / VIP latrine

Accession No: 240074 Availability: ENS
ALTERNATIVE WASTEWATER MANAGEMENT STRATEGIES FOR RURAL AND URBAN-FRINGE
COMMUNITIES.
Campbell, P.C. (Nova Scotia Department of Municipal Affairs, Halifax, Nova
Scotia, Canada). Proceedings CSCE Conference, 26-27 May, Fredericton, New
Brunswick, Canada. ISBN 0-919305-30-X. Published/Distributed by University
of New Brunswick, Canada. 1 : 365-385 (1981). 19 references. Language: En.
Absorption field / Administration / Case study / Community participation /
Institutional aspect / Sewerage
Canada

Accession No: 340089 Availability: PS
Source Separation of Garbage for Composting.
Chanyasak,V.; Kubota,H. (Tokyo Institute of Technology, Yokohama, Japan).
Biocycle. 24 (2): 56-58 (1983). 6 references. 2 figures. 2 tables. Language:
En.
Case study / Community participation / Compost use / Fertilization /
Fertilizer value / Field application / Public opinion / Refuse separation /
Urban
Japan

Accession No: 610343 Availability: PS
Water Supply Management in Hyderabad City.
Chettri,R.; Bowonder,B. Water Resour. Dev. 1 (4): 271-290 (1983). Numerous
references. 3 figures. 9 tables. Language: En.
Case study / Institutional aspect / Management / Policy / Pricing / Urban /
Water consumption
India

Accession No: 510080 Availability: TD790 C64
Environmental Management of Urban Solid Wastes in Developing Countries - A
Project Guide, Technical Paper No. 5.
Cointreau,S.J. ISBN 0-8213-0063-6. Published/Distributed by World Bank. :
xv+214 pp (1982). Numerous references. figures + tables. Language: En.
Appropriate technology / Case study / Community participation / Developing
countries / Implementation / International cooperation / Planning / Policy /
Problem / Refuse characterization / Refuse collection / Refuse management

Accession No: 32-021 Availability: 3221/IDRC
SIMPLIFIED TREATMENT FOR URBANIZED VILLAGE.
Contractor,J.C.; Agrawal,M.C. (S.V. Regional College of Engineering and
Technology, Surat, India). Proceedings Seminar on Sewage Treatment and
Disposal for Small Communities, 13-14 March, India. : 4 pp (1971). 6
references. Language: En.
Case study / Suburban
India

Accession No: 610235 Availability: ENS
Proposed Measures for Reducing Costs in Infrastructure and Urbanization
Projects for Low Income Housing in Honduras.
Cordon,R.O. WASH Field Report, No. 46. Published/Distributed by Water and
Sanitation for Health Project, U.S.A. : iii+71 pp (1982). 5 references.
figures + tables. Language: En.
Cost analysis / Cost saving / Housing / Low-income area / Planning /
Regulation / Sewerage / Standard / Urbanization
Honduras

Accession No: 610024
DUAL DISTRIBUTION SYSTEMS ANALYSIS.
Deb,A.K.; Evans,M.P. AWWA J. 72 (2): 103-108 (1980). 3 references.
Language: En.
Cost analysis / Cost estimation / Systems analysis / Urban / Water demand /
Water distribution
USA

Accession No: 31-007 Availability: 3107/IDRC
URBAN LATRINES (CONSERVANCY TYPE) AND PUBLIC URINALS.
Directorate General of Health Services, Ministry of Health, New Delhi,
India. : 16 pp (1965). Language: En.
Excreta collection / Urinal
India

Accession No: 21-004 Availability: 2104/IDRC
PROCEEDINGS OF THE SEMINAR ON SEWAGE DISPOSAL IN URBAN DEVELOPMENT (WITH
PARTICULAR REFERENCE TO LOW-COST HOUSING), Papua New Guinea.
Division of Building Research, Papua New Guinea. Published/Distributed by
Commonwealth Scientific and Industrial Research Organisation, Papua New
Guinea. : 76 pp (1971). Language: En.
Economics / Public acceptance / Sewage treatment
Papua New Guinea

Accession No: 32-023 Availability: 3223/IDRC
STUDY OF DOUBLE'S WASTEWATER DISPOSAL SYSTEM.
Elong, P.M. (University of Cameroon, Cameroon). Published/Distributed by
Secretariat des Missions d'Urbanisme et d'Habitat, France. (74): 62-67
(1973). Language: En.
Case study / Urban
Cameroon

Accession No: 210015 Availability: ENS
THE PIT LATRINES OF LANU.
England, R.; de Kruijff, G.J.; Soni, P. (University of Nairobi, Nairobi,
Kenya). Published/Distributed by University of Nairobi, Kenya. : vi+45 pp
(1980). 10 references. figures + tables. Language: En.
Diarrheal disease / Field application / Helminth / Operation / Urban
Kenya

Accession No: 610239 Availability: ENS
Water and Sanitation in Slums and Shanty Towns.
Etherton, D. Published/Distributed by United Nations Children's Funds. :
iii+98 pp (1980). 6 references. figures + tables. Language: En.
Biogas / Bucket latrine / Case study / Communal latrine / Composting latrine
/ Constraint / Cost / Drainage / Evaluation / Excreta disposal / Greywater
disposal / Limitation / Low-income area / Pit latrine / Pour-flush latrine /
Rainwater catchment / Septic tank / Springwater tapping / Stabilization pond
/ Suburban / Urbanization / Vault latrine / Water collection / Water storage
/ Water treatment

Accession No: 510128 Availability: PS
Socio-Political Aspects of the Recovery and Recycling of Urban Wastes in
Asia.
Furedy, C. (York University, Downsview, Ontario, Canada). Conserv. Recycl. 7
(2-4): 167-173 (1984). 22 references. Language: En.
Behavioral aspect / Health aspect / Resource recovery / Scavenging / Social
aspect
Asia / India / Philippines

Accession No: 230043 Availability: PS
SEPTIC SYSTEM PROBLEMS ON AN URBAN FRINGE.
Goehring, D.R.; Carr, F.R. (New Castle County Areawide Waste Treatment
Management Program, Newark, Delaware, U.S.A.). J. Water Resour. Plann.
Manage. Div.-Proc. ASCE. 106 (WR1): 89-102 (1980). Language: En.
Decision-making / Environmental impact / Failure / Groundwater contamination
/ Planning / Water table
USA

Accession No: 610350 Availability: TD927 W38
Urban Water Supply.
Griffiths, F.N.H.; Klein, R.L. (Howard Humphreys and Partners, Leatherhead,
U.K.). Water Supply and Sanitation in Developing Countries. ISBN 0-901427-
12-8. Published/Distributed by Institute of Water Engineers and Scientists,
U.K. : 163-202 (1983). 5 references. 18 figures. 3 tables. Language: En.
Appurtenance / Metering / Urban / Water distribution

Accession No: 240003 Availability: PS
APPRAISAL OF FOUR ALTERNATIVE EXCRETA REMOVAL SYSTEMS FOR URBAN AREAS IN
DEVELOPING COUNTRIES.
Hansen, J.A.; Therkelsen, H.H.; Buch-Hansen, P. (Technical University of
Denmark, Lyngby, Denmark). Prog. Water Technol. 11 (1/2): 235-249 (1978).
Language: En.
Alternatives / Appropriate technology / Bucket latrine / Cartage / Communal
latrine / Decision-making / Economic analysis / Economic feasibility /
Technical feasibility / Tropics

Accession No: 32-025 Availability: 3225/IDRC
ALTERNATIVE SANITARY WASTE REMOVAL SYSTEMS FOR LOW-INCOME URBAN AREAS IN
DEVELOPING COUNTRIES.
Hansen, J.A.; Therkelsen, H. (Technical University of Denmark, Lyngby,
Denmark). Published/Distributed by Polyteknisk Forlag Publishers, Denmark. :
143 pp (1977). Language: En.
Case study / Cost-benefit analysis / Economics

Accession No: 610488 Availability: TC401 I613 1982
Use of Selected Urban Runoff to Augment Water Supply Systems in Rapidly
Developing Cities: A Case Study on Design and Application.
Harley, B.M. (Camp Dresser and McKee Inc., Boston, Massachusetts, U.S.A.).
Proc. 1982 International Symposium on Urban Hydrology, Hydraulics and
Sediment Control, 27-29 July 1982, Lexington, Kentucky, U.S.A. ISBN 0-98779-
048-0. Published/Distributed by University of Kentucky, U.S.A. : 43-53
(1982). 7 figures. Language: En.
Developing countries / Distribution network / Modeling / Project / Runoff /
Urban

Accession No: 720074 Availability: PS
The Management and Implementation of Physical Infrastructures in Dar es Salaam City, Tanzania.
Hayuma, A.M. (Ardhi Institute, Dar es Salaam, Tanzania). J. Environ. Manage. 16 (4): 321-334 (1983). 10 references. 1 figure. 2 tables. Language: En.
Case study / Drainage / Implementation / Infrastructure / Management / Problem / Refuse management / Sewerage / Urban / Water supply
Tanzania

Accession No: 610328 Availability: PS
On-Site Water Contamination in an Urban Slum.
Hebert, J.R. (Harvard School of Public Health, Boston, Massachusetts, U.S.A.). Water Intl. 8 (3): 127-132 (1983). 12 references. 3 figures. 1 table. Language: En.
Drinking water quality / Fecal coliform / Groundwater contamination / Health hazard / Regression analysis / Urban
India

Accession No: 240004 Availability: PS
SANITATION AND DISEASE IN BANGLADESH URBAN SLUMS AND REFUGEE CAMPS.
Howard, J.; Lloyd, B. (Oxfam, Oxford, U.K.). Prog. Water Technol. 11 (1/2): 191-200 (1978). Language: En.
Alternatives / Communal latrine / Construction / Design / Diarrheal disease / Double-vault composting latrine / Health education / Human settlement / International cooperation / Maintenance / Pathogen / Slum / Urban / Water-borne disease
Bangladesh / India / Vietnam

Accession No: 34-001 Availability: 3401/IDRC
SANITARY EFFECTS OF URBAN GARBAGE AND NIGHT SOIL COMPOSTING IN CHINA.
Institute of Health, People's Republic of China. Chin. Med. J. 1 (6): 406-412 (1975). Language: En.
Field application / Urban
China, People's Republic

Accession No: 31-006 Availability: 3106/IDRC
APPRAISAL OF THE KABUL WATER SUPPLY AND SANITATION PROJECT AFGHANISTAN, Report No. 746-AF.
International Bank for Reconstruction and Development, Europe, Middle East and North Africa Regional Office, Washington, D.C., U.S.A.
Published/Distributed by World Bank. : 59 pp (1975). Language: En.
Case study / Evaluation / Excreta collection / Sewerage / Urban
Afghanistan

Accession No: 240006 Availability: PS
NEW PROSPECTS FOR URBAN EXCRETA DISPOSAL IN DEVELOPING COUNTRIES.
Kalbermatten, J.M. (World Bank, Washington, D.C., U.S.A.). Prog. Water Technol. 11 (1/2): 225-234 (1978). Language: En.
Alternatives / Appropriate technology / Cartage / Health aspect / Historical review / Pour-flush latrine / Research need / Sewerage

Accession No: 610355 Availability: PS
Bombay City and Its Water Management.
Khan,A.F. (Bombay Municipal Corporation of Greater, Bombay, India). Indian
East. Eng. 126 (2): 11-12 (1984). Language: En.
Case study / Financing / Problem / Public opinion / Urban / Water leakage

Accession No: 210009 Availability: TD153 S26
USE OF DRY PIT LATRINES IN RURAL AND URBAN ETHIOPIA.
Kinde,K. (Environmental Health Division, Addis Ababa, Ethiopia). SANITATION
IN DEVELOPING COUNTRIES - Proceedings of a Workshop on Training, 14-20
August, Lobatse, Botswana. ISBN 0-88936-293-9. Published/Distributed by
International Development Research Centre, Canada. : 9-12 (1980). Language:
En.
Country report / Problem
Ethiopia

Accession No: 32-027 Availability: 3227/IDRC
INTERNATIONAL URBANIZATION SURVEY - REMOVAL AND TREATMENT OF SOLID AND
LIQUID WASTES.
Koneigsberger,O.H. Published/Distributed by Ford Foundation, U.S.A. : 98-
142 (1972). 64 references. Language: En.
A general discussion of excreta disposal PROBLEMS in rapidly URBANizing
areas of DEVELOPING COUNTRIES is given.

Accession No: 41-037 Availability: 4137/IDRC
TREATMENT AND DISPOSAL OF WASTEWATERS OF SETTLEMENTS IN RURAL, AGRICULTURAL,
NON-URBAN AREAS.
Kutera,K. (Central Public Health Engineering Research Institute, Nagpur,
India). Proceedings 7th Conference on Water Pollution Research, 13
September, Paris, France. : 15 pp (1974). 16 references. Language: En.
This article describes a year-round system for spreading and (or) irrigation
of SEWAGE from small RURAL communities. It discusses ice formation, winter
irrigation, as well as types and kinds of soils.
Operation

Accession No: 610029 Availability: ENS
NEW CONCEPTS OF WATERSUPPLY DEVELOPMENT IN PROVINCIAL URBAN CENTERS OF
POPULATION IN DEVELOPING COUNTRIES.
Leano,C.C. (Local Water Utilities Administration, Philippines). Proceedings
2nd Regional Conference on Water Supply in Eastern Asia, 19-21 November,
Taipei. : 1-11 (1979). Language: En.
Behavioral aspect / Institutional aspect / Pricing / Socio-economic aspect
Philippines

Accession No: 32-028 Availability: 3228/IDRC
(EXPERIMENTS IN APPLYING TRADITIONAL URBAN SANITATION FORMULA TO TROPICAL AFRICA).

Lemoine,L.; Michel,C. (Comite Inter africain d'Etudes Hydrauliques, Upper Volta). Serie Hydrologie du Comite Inter africain d'Etudes Hydrauliques. : 83 pp (1972). 8 references. Language: Fr.

A study of adapting Western MATHEMATICAL MODELS for DESIGNING waterborne SEWERAGE systems to tropical African conditions is reported.

Tropics
Africa

Accession No: 320003 Availability: 972
EVALUATION OF SEWAGE COLLECTION & TREATMENT SYSTEMS FOR HOUSING AREAS IN TAIWAN-LINKOU PROJECT.

Liang,W.K. Published/Distributed by Asian Institute of Technology, Thailand. (1976). Language: En.

Country report / Performance evaluation / Urban
Taiwan

Accession No: 33-021 Availability: 3321/IDRC
PLANNING FOR WATER SUPPLY, LIQUID AND SOLID WASTES HANDLING IN ASIAN TOWNS.
Ling,H.C. AIT Master's Thesis, No. 592. Published/Distributed by Asian Institute of Technology, Thailand. : 208 pp (1972). 34 references. Language: En.

Planning / Rapid sand filtration / Slow sand filtration / Urban
Asia / Thailand

Accession No: 46-020 Availability: TD429 L5
Evaluation of Treatment for Urban Wastewater Reuse.
Linstedt,K.D.; Bennett,E.R. (University of Colorado, Boulder, Colorado, U.S.A.). Published/Distributed by U.S. Environmental Protection Agency. : x+139 pp (1973). 51 references. 73 figures. 8 tables. Language: En.
Activated sludge / Alum treatment / Chlorination / Flocculation / Multimedia filter / Nitrification / Nutrient removal / Pilot study / Turbidity
USA

Accession No: 510122 Availability: ENS
Urban Solid Wastes: Recovery and Recycling.
Lohani,B.N. (Asian Institute of Technology, Bangkok, Thailand). ENDA Third World Document, No. 19. Published/Distributed by Environment and Development in Third World, Senegal. : 44 pp (1982). 12 references. 4 figures. 7 tables. 4 annexes. Language: En.

Anaerobic digestion / Composting / Incineration / Pyrolysis / Resource recovery / Single cell protein / Socio-economic aspect

Accession No: 23-051 Availability: 2351/IDRC
CURRENT DESIGN CAPABILITIES IN APPROPRIATE SANITATION TECHNOLOGIES.
Mara,D. (University of Dundee, Dundee, Scotland). Proceedings Conference on Sanitation in Developing Countries Today, 5-9 July, Oxford. Published/Distributed by Oxfam, U.K. and London School of Hygiene and Tropical Medicine, U.K. : 3-10 (1977). 14 references. Language: En.
Developing countries / Tropics / Urban / VIP latrine

Accession No: 330112 Availability: PS
Brazilian Stabilisation-Pond Research Suggests Low-Cost Urban Applications.
Mara,D.; Pearson,H.; Silva,S.A. (University of Leeds, London, U.K.). World
Water. (July): 20,23,24 (1983). 1 figure. 4 tables. Language: En.
Algae / Bacteria removal / Multi-stage pond / Organics removal / Parasite
removal / Sewage treatment
Brazil

Accession No: 230139 Availability: PS
Low Cost Solutions Often Beat Sewers.
Moes,W.; Zwagge,R.R. World Water. 7 (9): 56-57 (1984). 1 figure. Language:
En.
Case study / Feasibility / Pour-flush latrine / Septic tank / Sewerage /
Suburban / Urban
Bangladesh

Accession No: 31-017 Availability: 3117/IDRC
SANITARY WASTE DISPOSAL IN LOW-INCOME COMMUNITIES IN JAKARTA. UNPUBLISHED
REPORT WORKSHOP II - PUBLIC POLICY PROGRAM.
Morrow,D. : 77 pp (1975). Language: En.
Aqua-privy / Case study / Economics / Urban
Indonesia

Accession No: 510109 Availability: ENS
Urban Solid Waste: Appropriate Technology.
Nath,K.J.; Chatterjee,P.K.; Dasgupta,S.K. (Calcutta, India). Sanitation and
Water for Development in Africa. Proceedings 9th WEDC Conference, 12-15
April 1983, Harare, Zimbabwe. ISBN 0-906055-14-8. Published/Distributed by
Loughborough University of Technology, U.K. : 31-34 (1983). 2 references. 2
tables. Language: En.
Country report / Pilot study / Refuse management
India

Accession No: 240043 Availability: TH6021 N54
APPROPRIATE SANITATION FOR URBAN AREAS.
Nielsen,J.H.; Clauson-Kaas,J. (Cowiconsult, Virum, Denmark).
Published/Distributed by Cowiconsult, Denmark. : 138 pp (1980). 10
references. Language: En.
Alternatives / Case study / Composting latrine / Cost analysis / Economic
feasibility / Pit latrine / Pour-flush latrine / Septic tank / Water supply
Ghana / Kenya / Tanzania / Zambia

Accession No: 22-019 Availability: 2219/IDRC
EXCRETA DISPOSAL WITHOUT WATER.
Nimpuno,K. (Chalmers Technical University, Gothenburg, Sweden). Appr.
Technol. 3 (4)(1977). Language: En.
Pathogen inactivation / Refuse / Rural / Urban

Accession No: 710023 Availability: ENS
Low Cost Infrastructure Planning Using Near Vertical Small Format Aerial Photographs.

Nimpuno, K.; Lohman, E.J.A. (Department of Urban Survey and Human Settlement Analysis, Enschede, Netherlands). Published/Distributed by International Institute for Aerial Survey and Earth Science, Netherlands. : 19 pp (1984). Numerous figures. 2 annexes. Language: En.
Airphoto interpretation / Excreta disposal / Methodology / Planning / Refuse disposal / Slum / Survey / Urban / Water supply
Tanzania

Accession No: 210037 Availability: TD774 P38

Sulabh Shauchalaya: A Study of Directed Change.
Pathak, B. (Sulabh Sauchalaya Sansathan, Patna, Bihar, India). Published/Distributed by Amola Press and Publication, India. : ix+151 pp (1982). Numerous references. Figures + tables. Language: En.
Pour-flush latrine / Socio-economic aspect / Survey / Upgrading / Urban / Vault latrine / Voluntary agency
India

Accession No: 72-001 Availability: AIT Thesis No. 625

LOW COST ENVIRONMENTAL SYSTEMS FOR SQUATTER SETTLEMENTS IN BANGKOK.
Philip, M. AIT Master's Thesis. Published/Distributed by Asian Institute of Technology, Thailand. : 111 pp (1974). Numerous references. Figures. Language: En.
Case study / Planning / Policy / Refuse disposal / Sewage treatment / Slum / Urban / Water supply
Thailand

Accession No: 610508 Availability: PS

Urban Water Supply Systems.
Rao, C.E.S. (The Hindustan Construction Co., Bombay, India). Aqua. (4): 194-198 (1985). 6 references. Language: En.
Computer application / Institutional aspect / Operation / Planning / Urban / Women's role
India

Accession No: 210023 Availability: ENS

Planning and Designing of Large Scale Pourflush Latrine Programme in Urban Areas.

Roy, A.K. (United Nations Development Programme, New Delhi, India). Proceedings Seminar on the Implementation of Low-Cost Sanitation Programmes in Tanzania, 29 March - 2 April, Tanzania. Published/Distributed by Ardhi Institute, Tanzania and Ministry of Lands, Housing and Urban, Tanzania. : iii+24 pp (1982). Language: En.
Communal latrine / Construction / Demonstration / Design / Institutional aspect / Pour-flush latrine / Project / Sociocultural aspect
India

Accession No: 610110 Availability: TD495 W3
OPERATION AND MAINTENANCE OF SEMI-URBAN WATER SUPPLY STATIONS IN KANO STATE.
Sabari, A.M. Proceedings 6th WEDC Conference, 24-28 March 1980, Zaria,
Nigeria, Edited by J. Pickford and S. Ball. ISBN 0-906055-11-3.
Published/Distributed by Loughborough University of Technology, U.K. : 127-
129 (1981). Language: En.
Case study / Groundwater exploitation / Suburban
Nigeria

Accession No: 36-026 Availability: 3626/IDRC
(LOW COST SYSTEMS FOR WASTE WATER TREATMENT).
Secretaria de Recursos Hidraulicos, Mexico. Published/Distributed by
Direccion General de Usos del Agua y Prevencion de la Contaminacion. :
xvi+187 pp (1974). Language: Sp.
Economics / Evaluation / Imhoff tank / Primary treatment / Secondary
treatment / Septic tank / Urban
Mexico

Accession No: 610337 Availability: PS
Urban Water Supply in Indonesia - Bridge the Manpower Gap.
Spencer, A.L. Water Resour. Dev. 1 (3): 221-230 (1983). 5 references. 2
figures. Language: En.
Case study / Manpower development / Project / Project / Urban
Indonesia

Accession No: 510105 Availability: PS
The Problems and Prospects of Refuse Disposal in Ibadan City, Nigeria.
Sridhar, M.K.C.; Ojediran, O. (University of Ibadan, Ibadan, Nigeria). J.
Environ. Health. 46 (1): 28-31 (1983). 3 references. 1 figure. 3 tables.
Language: En.
Case study / Health education / Problem / Refuse collection / Refuse
disposal / Survey / Urban
Nigeria

Accession No: 22-032 Availability: 2232/IDRC
EVALUATION OF WASTE DISPOSAL SYSTEMS FOR URBAN LOW INCOME COMMUNITIES IN
AFRICA.
Winblad, U. SPC Report, No. 3. Published/Distributed by Scan Plan
Coordinator, Denmark. : 34 pp (1972). 45 references. Language: En.
Africa

Accession No: 360493 Availability: ENS
Economic, Institutional and Technical Implications of Alternatives Urban
Sanitation and Recycling Options: A Case Study of Chonburi, Thailand.
Asian Institute of Technology, Bangkok, Thailand. Published/Distributed by
Asian Institute of Technology, Bangkok, Thailand. : xi+237 pp (1988).
Numerous refs. + figs. + tables. Language: En.
/ Construction cost / Design criteria / Fish culture / Sewerage / Wastewater
treatment
Evaluation / Ponds
Thailand

Accession No: 360399

Availability: PS

A technical and economic comparison of nightsoil and sewerage systems in urban areas.

Bradley, R.M.; Raucher, R.L. (Engineering Science, Inc., Pasadena, CA, U.S.A.). Water SA. 14 (1): 49-57 (1988). Numerous ref. 4 figs. 6 tables. Language: En.

Cost comparison / Economic analysis / Excreta collection / Excreta disposal / Excreta treatment / Health aspect / Sewerage / Waste characterization
Korea Republic

Accession No: 61-new

Community participation - water supply systems in Karnataka.

Chickannaiyappa, M.; Ramaswamy, M.V. Water and Sanitation in Asia and the Pacific. : 8.1-8.4

Institutional aspects / Community participation / Rural areas / Urban areas / Water supply
India

Accession No: 510164

The people who get in the way : changing values in urban waste management.

Furedy, C. (York University, North York, ONT, Canada, Division of Soil Science). Treatment, Disposal and Management of Human Wastes. Water Science and Technology. 18 (7/8): 121-128 Numerous refs.

Case study / Refuse management / Socio-cultural aspect / Waste reuse
India

Accession No: 610741

Availability: PS

Factors influencing per capita water consumption in urban areas of developing countries and their implications for management, with special reference to the Khartoum Metropolitan Area.

Khadam, M.A.A. (University of Khartoum, Khartoum, Sudan, Department of Civil Engineering). Water International. 13 (4): 226-229 (1988). 3 refs. 1 fig. 4 tables. Language: En.

Case studies / Developing countries / Urban areas / Water consumption / Water supply
Sudan

Accession No: 240159

Environmental sanitation in urban development projects.

Pickford, J. (Loughborough University of Technology, U.K., WEDC Group). Planning and Development in Developing Countries. : 93-105 18 refs. 6 figs.

Appropriate technology / Case studies / Communal latrine / Excreta disposal
Botswana / Pakistan / Tanzania



**WATER AND SANITATION
FOR HEALTH PROJECT**

Operated by CDM and Associates

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for International Development

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Letch

WASH Operations Center
1611 N. Kent St., Room 1001
Arlington, Virginia 22209-2111 USA

Telephone (703) 243-8200
Telex No. WUI 64552
Cable Address: WASHAID
FAX No. (703) 525-9137

Sept 5, 1989

Dear Mizam:

Enclosed in a questionnaire
WASH has recently mailed
out to about 200 organizations.
I will be glad to share
with you the responses
that we receive. Please
keep in touch about the
progress of the literature
review.

Sincerely,

Dan Campbell



1 AUG 1989 10 00 AM
Letch

AGENCY FOR INTERNATIONAL DEVELOPMENT
PPC/CDIE/DI
Research & Reference Services
Room 209 SA-18
Washington D.C. 20523

Center for Development Information and Evaluation

Research 703\875-4807 Reference 703\875-4818

4 August 1989

Mirjam Letsch
International Reference Centre for
Community Water Supply and Sanitation
P.O. Box 93190
2509 AD The Hague, The Netherlands

Dear Mr. Letsch,

Enclosed you will find a bibliography of A.I.D. documents on water sanitation in Asian cities. If you would like to order any of these documents, you can do so by contacting our Document and Information Handling Facility (DIHF); I have enclosed ordering information.

I have forwarded a copy of your letter to Dan Campbell, Librarian for A.I.D.'s Water Sanitation for Health Project (WASH). He will be able to provide you with more information on the subject.

I hope these materials will assist you in meeting your information needs.

Sincerely,

Mark R. Huet
Research Analyst

AGENCY FOR INTERNATIONAL DEVELOPMENT
BUREAU FOR PROGRAM AND POLICY COORDINATION
CENTER FOR DEVELOPMENT INFORMATION AND
EVALUATION/DEVELOPMENT INFORMATION DIVISION
ROOM 209, SA 18
WASHINGTON, DC 20523

TO ORDER DOCUMENT(S) CALL USER SERVICES (301) 951-7191

RPTGEN13 REPORT DOCLAS

SDG

TITLE: A.I.D. Documents on Water and Sanitation in Asian Cities

PREPARED BY: MARK R. HUET
PPC/CDIE/DI
ROOM 209 SA-18
WASHINGTON

DC 20523

PREPARED FOR: Mirjam Letsch

PN-AAH-962 Feasibility Study ISN=11737
 NEGOMBO METROPOLITAN AREA WATER SUPPLY, SEWAGE AND DRAINAGE
 SYSTEMS; PREFEASIBILITY STUDY
 Stanley Consultants, Inc., Muscatine, IA,
 1980, 31P., EN
 2781813
 AID/OTC-C-1628

Descriptors: /SRI LANKA/ /WATER SUPPLY/ /SEWAGE TREATMENT/
 /DRAINAGE/ /Feasibility studies/ /URBAN AREAS/ /Jordan/

PN-AAJ-351 Feasibility Study ISN=12107
 WATER SUPPLY, LIPA CITY WATER DISTRICT; FEASIBILITY STUDY,
 TECHNICAL REPORT; VOLUME I (TEXT)
 Camp Dresser and McKee, Inc., Arlington, VA,
 1976, 193P., EN
 SUMMARY REPORT: PN-AAJ-350; TECHNICAL FINAL REPORT, V.2:
 PN-AAJ-352
 DIC Call No: RP 628.1.C186b (AIDL),
 4920260
 AID-492-1281-T

Descriptors: /WATER SUPPLY/ /Feasibility studies/ /Water
 resources/ /Distribution/ /URBAN AREAS/ /Cities and towns/ /Civil
 engineering/ /Municipal level/ /WATER MANAGEMENT/ /PHILIPPINES/

PN-AAJ-352 Feasibility Study ISN=12108
 WATER SUPPLY, LIPA CITY WATER DISTRICT; FEASIBILITY STUDY,
 TECHNICAL FINAL REPORT; VOLUME II (APPENDICES)
 Camp Dresser and McKee, Inc., Arlington, VA,
 1976, 235P., EN
 SUMMARY REPORT: PN-AAJ-350; TECHNICAL FINAL REPORT, V.1:
 PN-AAJ-351
 DIC Call No: RP 628.1.C186b (AIDL),
 4920260
 AID-492-1281-T

Descriptors: /WATER SUPPLY/ /Feasibility studies/ /Water
 resources/ /Distribution/ /URBAN AREAS/ /Cities and towns/ /Civil
 engineering/ /Municipal level/ /WATER MANAGEMENT/ /PHILIPPINES/

PN-AAJ-353 Feasibility Study ISN=12109
 WATER SUPPLY, PROVINCIAL URBAN AREAS; FEASIBILITY STUDY,
 SUMMARY REPORT
 Camp Dresser and McKee, Inc., Arlington, VA,
 1976, 49P., EN
 DIC Call No: RP 628.1.C186c (AIDL),
 4920260

AID-492-1281-T

Descriptors: /WATER SUPPLY/ /Feasibility studies/ /Water
 resources/ /Distribution/ /URBAN AREAS/ /Cities and towns/ /Civil
 engineering/ /Municipal level/ /WATER MANAGEMENT/ /PHILIPPINES/

PN-AAJ-350 Feasibility Study ISN=12106
 WATER SUPPLY, LIPA CITY WATER DISTRICT; FEASIBILITY STUDY,
 SUMMARY FINAL REPORT
 Camp Dresser and McKee, Inc., Arlington, VA,
 Jul 1976, 37P., EN
 TECHNICAL FINAL REPORT, V.1: PN-AAJ-351; V.2: PN-AAJ-352
 DIC Call No: RP 628.1.C186a (AIDL),
 4920260
 AID-492-1281-T

Descriptors: /WATER SUPPLY/ /Feasibility studies/ /Water
 resources/ /Distribution/ /URBAN AREAS/ /Cities and towns/ /Civil
 engineering/ /Municipal level/ /WATER MANAGEMENT/ /PHILIPPINES/

PN-AAK-218 Feasibility Study ISN=12794
 WATER SUPPLY: MISAMIS OCCIDENTAL WATER DISTRICT; FEASIBILITY
 STUDY, SUMMARY FINAL REPORT
 Camp Dresser and McKee, Inc., Arlington, VA,
 1976, 45P., EN
 VOLUME I, TEXT: PN-AAK-216; VOLUME II, APPENDICES: PN-AAK-217
 4920264

Descriptors: /PHILIPPINES/ /WATER RESOURCES/ /WATER SUPPLY/
 /URBAN AREAS/ /Feasibility studies/ /Cost benefit analysis/
 /Water supply engineering/ /WATER MANAGEMENT/ /Public services/

PN-AAK-223 Feasibility Study ISN=12796
 WATER SUPPLY: URDANETA WATER DISTRICT; FINAL REPORT,
 FEASIBILITY STUDY; VOLUME I (TEXT)
 Camp Dresser and McKee, Inc., Arlington, VA,
 1977, 309P., EN
 4920282

Descriptors: /PHILIPPINES/ /WATER SUPPLY/ /WATER RESOURCES/
 /WATER MANAGEMENT/ /Feasibility studies/ /Development project
 planning/ /Water supply engineering/ /SANITATION/ /HYDROLOGY/
 /Public services/ /FINANCING/ /Water use/ /WATER QUALITY/
 /DEMAND/ /ECONOMIC ASPECTS/ /Cost benefit analysis/ /URBAN AREAS/

PN-AAK-224 Feasibility Study ISN=12797
 WATER SUPPLY: BANGUED WATER DISTRICT; FINAL REPORT, FEASIBILITY

STUDY; VOLUME I (TEXT)

Camp Dresser and McKee, Inc., Arlington, VA,
1977, 287P., EN
4920282

Descriptors: /PHILIPPINES/ /URBAN AREAS/ /WATER SUPPLY/ /WATER
RESOURCES/ /WATER MANAGEMENT/ /Development project planning/
/HYDROLOGY/ /SANITATION/ /Public services/ /Feasibility studies/
/WATER QUALITY/ /DEMAND/ /Water use/ /Cost benefit analysis/
/ECONOMIC ANALYSIS/ /FINANCING/ /Water supply engineering/

PN-AAK-225 Feasibility Study ISN=12798
WATER SUPPLY: CALAMBA WATER DISTRICT; FINAL REPORT, FEASIBILITY
STUDY; VOLUME I (TEXT)
Camp Dresser and McKee, Inc., Arlington, VA,
1977, 289P., EN
4920282

Descriptors: /PHILIPPINES/ /URBAN AREAS/ /WATER RESOURCES/
/WATER SUPPLY/ /WATER MANAGEMENT/ /Public services/ /SANITATION/
/Water supply engineering/ /ECONOMIC ASPECTS/ /WATER QUALITY/
/Water use/ /DEMAND/ /Cost benefit analysis/ /Feasibility
studies/ /FINANCING/

PN-AAK-228 Feasibility Study ISN=13297
WATER SUPPLY: GAPAN WATER DISTRICT; FINAL REPORT, FEASIBILITY
STUDY; VOLUME I (TEXT)
Camp Dresser and McKee, Inc., Arlington, VA,
1977, 302P., EN
4920282

Descriptors: /PHILIPPINES/ /URBAN AREAS/ /WATER SUPPLY/ /WATER
RESOURCES/ /Feasibility studies/ /Water supply engineering/
/WATER MANAGEMENT/ /DEMAND/ /Water use/ /WATER QUALITY/ /Cost
benefit analysis/ /ECONOMIC ASPECTS/ /FINANCING/

PN-AAK-229 Feasibility Study ISN=13298
WATER SUPPLY: SECOND TEN PROVINCIAL URBAN AREAS; FINAL REPORT,
FEASIBILITY STUDY; VOLUME II (APPENDICES)
Camp Dresser and McKee, Inc., Arlington, VA,
1977, 298P., EN
4920282

Descriptors: /PHILIPPINES/ /URBAN AREAS/ /Feasibility studies/
/WATER SUPPLY/ /Water supply engineering/ /Water use/ /DEMAND/
/WATER QUALITY/ /WATER MANAGEMENT/ /WELLS/ /Cost benefit
analysis/ /WATER RESOURCES/

PN-AAK-230 Feasibility Study ISN=13299
WATER SUPPLY: SILANG WATER DISTRICT; FINAL REPORT, FEASIBILITY
STUDY; VOLUME I (TEXT)
Camp Dresser and McKee, Inc., Arlington, VA,
1977, 184P., EN
VOLUME I-A, TEXT: PN-AAK-231
4920282

Descriptors: /PHILIPPINES/ /URBAN AREAS/ /Feasibility studies/
/WATER SUPPLY/ /WATER RESOURCES/ /WATER MANAGEMENT/ /Water use/
/WATER QUALITY/ /DEMAND/ /Water supply engineering/

PN-AAK-231 Feasibility Study ISN=13300
WATER SUPPLY: SILANG WATER DISTRICT; FINAL REPORT, FEASIBILITY
STUDY; VOLUME I-A (TEXT)
Camp Dresser and McKee, Inc., Arlington, VA,
1977, 183P., EN
VOLUME I, TEXT: PN-AAK-230
4920282

Descriptors: /PHILIPPINES/ /URBAN AREAS/ /WATER SUPPLY/ /WATER
RESOURCES/ /WATER MANAGEMENT/ /Feasibility studies/ /Water supply
engineering/ /ECONOMIC ASPECTS/ /Cost benefit analysis/
/FINANCING/

PN-AAK-238 Feasibility Study ISN=13302
WATER SUPPLY FEASIBILITY STUDY: SAN FERNANDO WATER DISTRICT;
VOL. I
Camp Dresser and McKee, Inc., Arlington, VA, (Sponsor)
Philippines. Local Water Utilities Administration. Dept. of
Engineering, Quezon City,
MAR 1978, (177P.), EN
V.I-A: PN-AAK-239
4920282

Descriptors: /PHILIPPINES/ /URBAN AREAS/ /Feasibility studies/
/WATER SUPPLY/ /WATER RESOURCES/ /HYDROLOGY/ /Water use/ /DEMAND/
/Water supply engineering/ /WATER QUALITY/ /Water supply
engineering/

PN-AAK-239 Feasibility Study ISN=13303
WATER SUPPLY FEASIBILITY STUDY: SAN FERNANDO WATER DISTRICT;
VOL. I-A
Camp Dresser and McKee, Inc., Arlington, VA,
1978, 191P., EN
V.1: PN-AAK-238
4920282

Descriptors: /PHILIPPINES/ /WATER SUPPLY/ /URBAN AREAS/
/Feasibility studies/ /WATER RESOURCES/ /HYDROLOGY/ /FINANCING/
/Cost benefit analysis/ /Water supply engineering/ /ECONOMIC
ASPECTS/ /WATER MANAGEMENT/

PN-AAP-378 Progress/Interim Report ISN=33615

Summary

Engineering - Science, Inc., Arcadia, CA,
U.S. Agency for International Development. Bureau for Private
and Development Cooperation, Washington, DC,
Planning and Development Collaborative International, Inc.,
Washington, DC,
Dacrea (P.T.)
U.S. Agency for International Development. Bureau for Asia.
Indonesia, Jakarta, (Sponsor)
Indonesia. Ministry of Public Works. Directorate General of
Housing, Building, Planning and Urban Development, ID
(Sponsor)

Oct 1980, ix, 64p. + annexes, En

In: Medan urban development, housing, water supply and
sanitation project

4970249

Descriptors: /Urban development/ /Housing/ /Sanitation/ /Water
supply/ /Indonesia/ - /Urban planning/ /Sewers/ /Drainage/ /Waste
disposal/ /Water supply engineering/ /Development strategies/

PN-AAV-503 AID Supported Study ISN=46242

Water supply and sanitation in the health sector in the Asia
region : information needs and program priorities

Briscoe, John

Camp Dresser and McKee, Inc., Arlington, VA,
U.S. Agency for International Development. Bureau for Asia and
Near East, Washington, DC, (Sponsor)

U.S. Agency for International Development. Bureau for Science
and Technology. Office of Health, Washington, DC, (Sponsor)

WASH technical report, no.36, Feb 1986, vi, 45p. : charts,
statistical tables, En

WASH activity no.141

NTIS: PB87-206850,

9365942

DPE-5942-C-00-4085-00

A conceptual framework for analyzing the structure and cost of
water supply and sanitation (WS/S) services in the Asian health
sector is presented herein. The framework identifies the
portions of the overall costs of serving either (1) nonhealth
needs that are recognized and properly supported by consumers or
(2) unrecognized and often external health needs that are
properly supported by public funds. Analysis is made of: the
costs and health impacts of different levels of service; cost

reduction and cost recovery mechanisms; consumers' willingness to
pay for services; the influence of setting (e.g., urban vs. rural
areas); and means of strengthening local WS/S institutions. The
paper assesses two main issues: (1) what are the information
needs of WS/S projects if rational policies are to be devised;
and (2) what are the conditions under which investment of health
sector resources in WS/S projects may be appropriate. Cost
considerations and WS/S health impacts are illustrated through 24
figures and tables; a 71-item bibliography (1959-85) is included.

Descriptors: /Water supply/ /Sanitation/ /Health delivery/
/Asia/ - /Cost studies/ /Cost recovery/ /Cost control/
/Institution building/ /Health aspects/ /Impact assessment/
/Development project planning/ /User fees/ /Subsidies/ /Resource
allocation/ /Urban areas/ /Rural areas/

PN-ABA-517 AID Supported Study ISN=57350

Possible innovations in the delivery of urban services in
metropolitan Bangalore, India

Hubler, George E.

Center for Privatization, Washington, DC,

U.S. Agency for International Development. Bureau for Private
Enterprise, Washington, DC, (Sponsor)

U.S. Agency for International Development. Bureau for Asia and
Near East, India, New Delhi, (Sponsor)

Center project / Center for Privatization, no.74, Jul 1988,
29p. + 4 appendices : statistical tables, En

9400008

DPE-0008-C-00-5058-00

Descriptors: /Community services//Urban areas//Public
administration//India/ - /Privatization techniques//Water
supply//Traffic control//Technology transfer//Land
management//Housing administration/

PN-AAP-379 Feasibility Study ISN=33616

Interim strategic plan and feasibility study

Engineering - Science, Inc., Arcadia, CA,

U.S. Agency for International Development. Bureau for Private
and Development Cooperation, Washington, DC,

Planning and Development Collaborative International, Inc.,
Washington, DC,

Dacrea (P.T.)

U.S. Agency for International Development. Bureau for Asia.
Indonesia, Jakarta, (Sponsor)

Indonesia. Ministry of Public Works. Directorate General of
Housing, Building, Planning and Urban Development, ID

Oct 1980, v.p., En

In: Medan urban development, housing, water supply and
sanitation project, v.2

Descriptors: /Urban development/ /Housing/ /Water supply/
/Indonesia/ - /Sanitation/ /Development strategies/ /Urban
planning/ /Wastewater/ /Drainage/ /Sanitation engineering/ /Low
cost housing/

PN-AAP-384 AID Supported Study ISN=33621

Master plan and first stage program for water supply
Engineering - Science, Inc., Arcadia, CA,
Sinotech Engineering Consultants, Inc.
Planning and Development Collaborative International, Inc.,
Washington, DC,
Dacrea (P.T.)
U.S. Agency for International Development. Bureau for Asia.
Indonesia, Jakarta, (Sponsor)
Indonesia. Ministry of Public Works. Directorate General of
Housing, Building, Planning and Urban Development, ID
(Sponsor)
Oct 1980, v.p., En
In: Medan urban development, housing, water supply and and
sanitation project : master plan and first stage program
for water supply and sanitation, v.5,pt.1(1)

Descriptors: /Urban development/ /Water supply/ /Indonesia/ -
/Water management/ /Water resources/ /Water treatment/ /Public
health care/ /Sanitation/ /Water/ /Distribution/

PN-AAP-385 AID Supported Study ISN=33622

Master plan and first stage program for water supply,
appendices A to H
Engineering - Science, Inc., Arcadia, CA,
Sinotech Engineering Consultants, Inc.
Planning and Development Collaborative International, Inc.,
Washington, DC,
Dacrea (P.T.)
U.S. Agency for International Development. Bureau for Asia.
Indonesia, Jakarta, (Sponsor)
Indonesia. Ministry of Public Works. Directorate General of
Housing, Building, Planning and Urban Development, ID
(Sponsor)
Oct 1980, v.p., En
In: Medan urban development, housing, water supply and
sanitation project : master plan and first stage program
for water supply and sanitation, v.5,pt.1(2)

Descriptors: /Development planning/ /Potable water/ /Urban
development/ /Water supply engineering/ /Water sanitation/
/Indonesia/ - /Urban planning/ /Hydrogeology/ /Demographic
analysis/ /Water resources/ /Wells/ /Environmental quality/

PN-AAU-829 AID Supported Study ISN=44688
Meeting housing needs in Sri Lanka : a strategy for the future
Planning and Development Collaborative International, Inc.,
Washington, DC,
U.S. Agency for International Development. Bureau for Private
Enterprise. Office of Housing, Washington, DC, (Sponsor)
Oct 1982, 26p. + 2 annexes : statistical tables, En

Descriptors: /Housing administration/ /Housing planning/ /Sri
Lanka/ - /Strategic planning/ /Population censuses/ /Housing
needs/ /Public sector/ /Private sector/ /Rural areas/ /Urban
areas/ /Water supply/ /Toilet facilities/ /Low cost housing/
/Forecasting (administration)

PN-AAZ-183 Environmental Assessment ISN=54335

Natural resources and environmental management in Indonesia :
an overview
Tarrant, James; Barbier, Ed; et al.
U.S. Agency for International Development. Bureau for Asia and
Near East. Indonesia, Jakarta,
Oct 1987, 2v. : charts, statistical tables, En
DIC Call No: 333.71509598.T192 (AIDL), NTIS: PB89-106348,

In Indonesia, the government's economic policies, the
objectives of private businesses, and the socioeconomic interests
of local communities coincide in viewing natural resources as
commodities for production and export to the detriment of the
natural resource base. This comprehensive overview of Indonesian
policies and their effects on long-term goals for natural
resource management focuses on: (1) the continuing deforestation
of tropical hardwoods at a rate of 0.6 to 1.0 million ha
annually; (2) the degradation of 36 of Indonesia's 125
watersheds; (3) the loss of biological diversity through
non-conservation of the habitat of rare and endangered species;
(4) the increasing reliance of agriculture on pesticides,
resulting in food contamination and extensive crop losses to
pesticide-resistant pests; (5) the decline of water quality and
supply due to upstream agricultural, industrial, and urban
management practices; and (6) the increase in liquid and solid
toxic wastes from industrial and processing activities. Many of
these problems result from highly centralized policy formulation
within the government and are compounded by inadequate research
and information and weak arrangements to foster local
participation in resource management. Although the government
and the donor community have made significant progress in
addressing these issues over the last decade, there is an urgent
need to develop resource inventories and methodologies and to
upgrade the policy formation process. Includes extensive
appendices. (Author abstract, modified)

Descriptors: /Environmental degradation/ /Indonesia/ /Natural
resource management/ /Policy making/ /Environmental planning/

THU, AUG 3, 1989

AID/CDIE/DIHF DEVELOPMENT INFORMATION SYSTEM

PAGE 5

/Deforestation/ /Water contamination/ /Environmental quality/
/Environmental policy/ /Community participation/ - /Pesticides/
/Water supply/ /Rural areas/ /Urban areas/ /Tropical rain
forests/ /Water quality/ /Soil erosion/ /Industrial wastes/
/Agricultural wastes/ /Pollution/ /Human encroachment/
/Institutional aspects/ /Private organizations/ /Biological
diversity/ /Watersheds/ /Private sector/ /Development programs/
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departments/

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Most available documents may be ordered from the Document and Information Handling Facility (DIHF) at the following address:

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Citations which list a "DIC Call Number" refer to documents which are catalogued and kept in the AID Library. These may be available to you through interlibrary loan from your local public or academic library.

INSTITUTIONS

AID

Agency for International Development Document & Information Handling Facility,
7222 47th Street, Suite 100,
Chevy Chase, Maryland 20815, U.S.A.

* received a bibliography

ADPAC

Asian and Pacific Development Administration Centre,
P.O. Box 2224,
Persiaran Duta,
Duala Lumpur,
Malaysia

* no reaction

BEAU

Bureau for Engineering, Architecture and Urbanism,
Peperstraat 110,
2801 RH Gouda

* no reaction

BKH

Consulting Engineers, Bongaerts, Kuyper and Huiswaard,
Smitswater 23,
(Postbus 93224),
2509 AE Den Haag

* Quetta material

CEBEMO

Katholieke Organisatie voor Medefinanciering van Ontwikkelingssamenwerking
Rijngeesterstraatweg 40,
(Postbus 77)
2340 AB Oegstgeest

* no reaction

CICAT

Centre for International Cooperation and Appropriate Technology,
Stevinweg 1, kamer 4.93,
(postbus 5048)
2600 GA Delft

* made use of library

DGIS

Ministerie van Buitenlandse Zaken,
Bezuidenhoutseweg 67,
(Postbus 20061),
2500 EB Den Haag

* Quetta material

DHV

Consulting Engineers,
Laan 1914, 35,
(Postbus 85),
3800 AB Amersfoort

* little information,

ESIC

Environmental Sanitation Information
Centre,
Asian Institute of Technology,
P.O. Box 2754,
Bangkok 10501, Thailand

* received
bibliography

EUROCONSULT

Beaulieustraat 22
6814 DV Arnhem

* may have ma-
terial: not
used (yet)

FAO

Food and Agriculture Organization,
Via delle Ferme di Caracalla,
001000 Rome, Italy

* no reaction

HASKONING

Berg en Dalseweg 61,
(Postbus 151),
6500 AD Nijmegen

* Kanpur-Mir-
zapur project

HIVOS

Stichting Humanistisch Instituut
Voor Ontwikkelingssamenwerking,
Raamweg 16,
2596 HC Den Haag

* no informa-
tion

ICCO

Interkerkelijke Coordinatie
Commissie Ontwikkelingsprojekten,
Postbus 151
3700 AD Zeist

* no informa-
tion

ICRW

International Centre for Research
on Women,
1010 16th street, N.W.
Washington, D.C. 200036

* no reaction

IDRC

International Development Research
Centre,
Box 8500
Ottawa K2G 3Mg
Canada

* no informa-
tion

IFHP

International Federation of
Housing and Planning
Wassenaarseweg 43,
2596 CG Den Haag

* no informa-
tion

IHE

International Institute for Hydraulic
and Environmental Engineering,
Oude Delft 95,
(Postbus 3015),
2601 DA Delft

* no reaction

IHS

Institute for Housing Studies
Weena 718
(Postbus 20718)
3001 JA Rotterdam

* made use of
of library, and
received docu-
ments

INTA

International Association for the
Development and Management of
Existing and New Towns,
Nassau Dillenburgstraat 44,
2596 AE Den Haag

* no informa-
tion

IIWSWD

International Institute for Water
Supply and Wastewater Disposal,
Gooiland 11,
2716 BP Zoetermeer

* no reaction

IWACO

Schiekade 189,
(Postbus 183),
3000 AD Rotterdam

* not allowed
to give me the
information,
see their
letter

KIT

Koninklijk Instituut voor de
Tropen,
Mauritskade 63,
1092 AD Amsterdam

* made use of
library

LIDESCO

Leiden Institute of Development
Studies and Consultancy Studies,
Faculteit der Sociale Wetenschappen,
Rijksuniversiteit Leiden,
Wassenaarseweg 52,
(P.O. Box 9555)
2300 RB Leiden

* no infor-
mation

LIW

Landelijke India Werkgroep,
Oude Gracht 36,
3511 AP Utrecht

* discussion,
and symposium

NOVIB

Nederlandse Organisatie voor
Internationale Ontwikkelings-
samenwerking,
Amaliastraat 7,
2514 JC Den Haag

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PAHO

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Organization,
525 23rd Street, N.W.
Washington, D.C. 20006

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PALM

Ondersteuning van Opbouwwerk
in Ontwikkelingslanden,
Postbus 423,
8300 AK Emmeloord

* no reaction

SAWA

Stichting Adviesbureau Werk-
groep Waterbeheer,
Schoolplein 7,
3581 PX Utrecht

* works in
Asia only in
rural areas

SIMAVI

Vereniging voor directe steun
aan medische projecten in ont-
wikkelingslanden,
Spruitenbosstraat 6,
2012 LK Haarlem

* no infor-
mation

SNV

Organisatie voor Ontwikkelings-
samenwerking en Bewustwording,
Bezuidenhoutseweg 161,
2594 AG Den Haag

* only rural
areas

UNDP

United Nations Development Program,
866 United Nations Plaza,
New York, New York 10017

* no reaction

UNICEF

South Central Asia Regional Office,
Unicef House,
17 Lodi Estate, New Delhi,
110003 India

* information
underway

UNICEF

Nederlands Committee for Unicef,
Postbus 85857,
2508 CN Den Haag

* no reaction

VENA

Onderzoek- en documentatiecentrum
Vrouwen en Autonomie,
Rijksuniversiteit Leiden,
Stationsplein 10
2312 AK Leiden

* made use of
library

VROM

Ministerie van Volkshuisvesting,
Ruimtelijke Ordening en Milieuhygiene,
Directoraat-Generaal van de Volks-
huisvesting,
Boerhavelaan 5,
2713 HA Zoetermeer

* some litera-
ture suggest-
ions + policy-
nota on water

VROUWENBERAAD

Vrouwenberaad Nederlandse Ontwikkelings-
organisaties,
Bezuidenhoutseweg 161
(Postbus 11640)
2502 AP Den Haag

* no infor-
mation

WASH

Water and Sanitation for Health Project,
1611 N. Kent Street, Room 1002,
Arlington, Virginia 22209

* little
informationpp.

WASTE

Consultants on Appropriate Technology,
Crabethstraat 38 F,
2801 AN Gouda

* works in
Tanzania

WHO

World Health Organization,
Avenue Appia,
1211 Geneva 27, Switzerland

* no reaction

WORLDBANK

1818 H. Street, N.W.
Washington, D.C. 20433

* no reaction

TERMS OF REFERENCE

TB/10 January 1989

TURBAN- Typology of low-cost Urban Water Supply and Sanitation Applications

Project number: 91.520

LITERATURE REVIEW AND CASE ANALYSIS CONCERNING WATER SUPPLY AND SANITATION PROGRAMMES IN LOW INCOME URBAN AREAS IN ASIA
(Master's thesis, one or two students, 3 to 5 months)

Scope

Low-income areas in urban centres and medium sized towns in developing countries are often not adequately served by the existing water supply and sanitation systems. Generally, among the constraints met in efforts to serve low income communities are often cited the illegal status of settlements, rapid population growth , insufficiency of existing water supplies and sanitation systems, lack of solvability of the population, poor lay-out and high housing density , unsuitable location of the areas concerned (for instance on steep slopes, or in flood plains).

Nevertheless, an increasing number of low-income urban settlements has succeeded in installing and running improved water supply and sanitation services either by their own efforts or through cooperation with local authorities, water agencies and externally supported programmes.

Literature review and case analysis will aim to identify how these low income communities have succeeded in developing viable water supply and sanitation services despite the prevailing constraints.

The study will contribute to guidelines for the planning and appraisal for urban water supply and sanitation projects including a typology/overview of suitable approaches and solutions for low income areas in developing countries.

It is hoped that through the study one or more innovative projects or programmes will be identified for more detailed case analysis and field studies.

Objective

The aim of this study assignment for students is to contribute to an international effort to increase the effectiveness of urban water supply and sanitation projects by learning from successful experiences with innovative interdisciplinary approaches and appropriate technologies.

Specific focus is on low cost technical solutions, cost recovery and on the role of the users or communities in managing, operating and maintaining the facilities. The role of women as an important target group will receive special attention.

Specific objectives of this study assignment are:

- To develop an overview of the main constraints and priorities in providing water supply and sanitation facilities in low income urban areas in Asian countries.
- To identify innovative projects
- To make a comparative analysis of selected cases

Direct results to be achieved

The assignment should result in:

- Study report summarizing the findings (30-50 pages) in English
- Systematic list of information sources, documents, references, and projects.

Summary of main activities

Under guidance of senior IRC staff (One sociologist, one engineer/planner) the following activities are expected to be carried out.

- Preliminary literature survey
- Preparation of a checklist for case analysis
- Identification of information sources in the Netherlands
- Visits to relevant institutions (public and private) to discuss relevant experiences on the basis of the above checklist.
- Collecting and compiling documentation from identified projects and earlier studies
- Reviewing earlier studies concerning water supply and sanitation for low income urban areas.
- Identifying main constraints and solutions for cases in Asia
- Preparing study report

IRC inputs

IRC will offer office accommodation for the duration of the study assignment, and provide professional guidance. The students will have full access to IRC's documentation holdings and be free to use its computerized library system. For reporting personal IBM compatible computers are available (text processing normally on word perfect).

Travel costs and expenses will be covered by IRC after prior consultation.