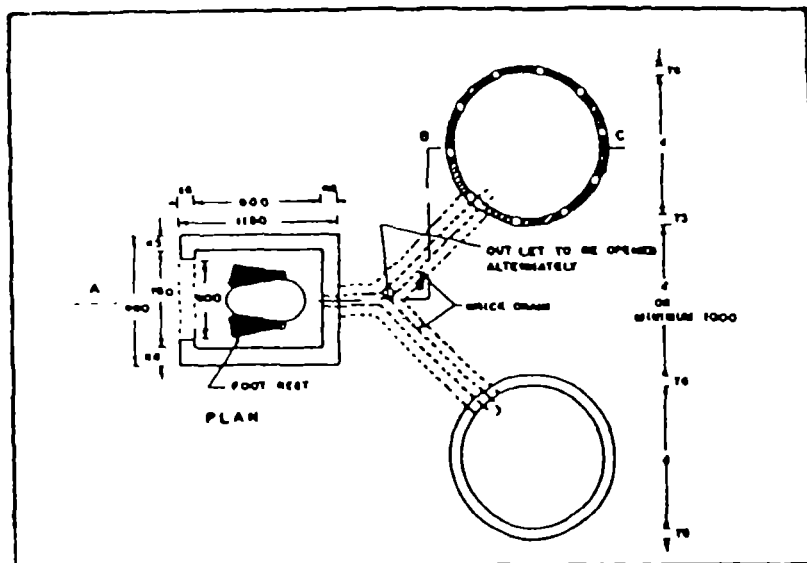


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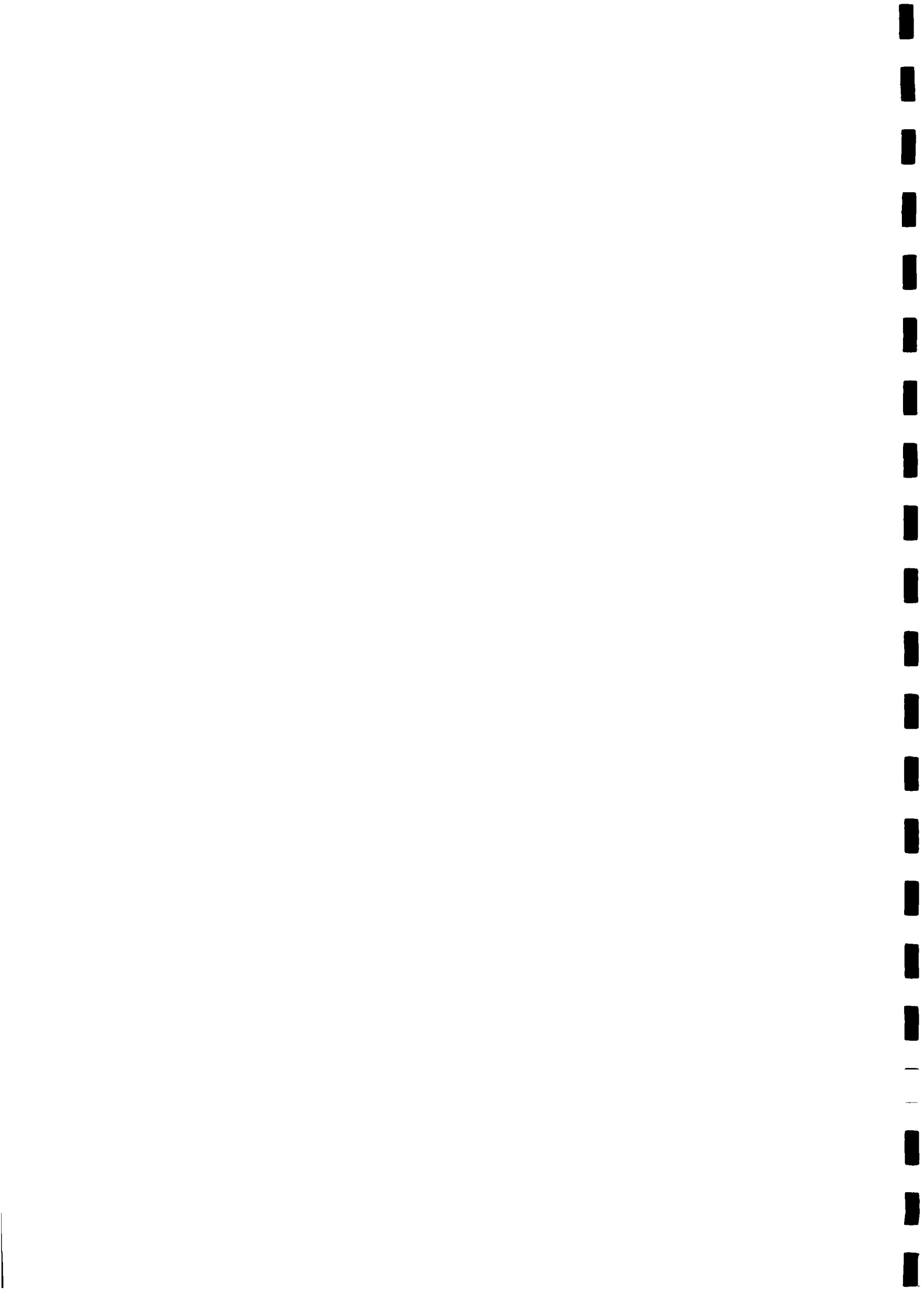
COMMENTS ON THE POLICY FOLLOWED IN THE LOW-COST
 SANITATION COMPONENT OF THE QUETTA
 SEWERAGE AND SANITATION PROJECT

A report based on findings in the Quetta Sewerage and Sanitation
 pilot project and the BUSTI project in Baldia (Karachi)



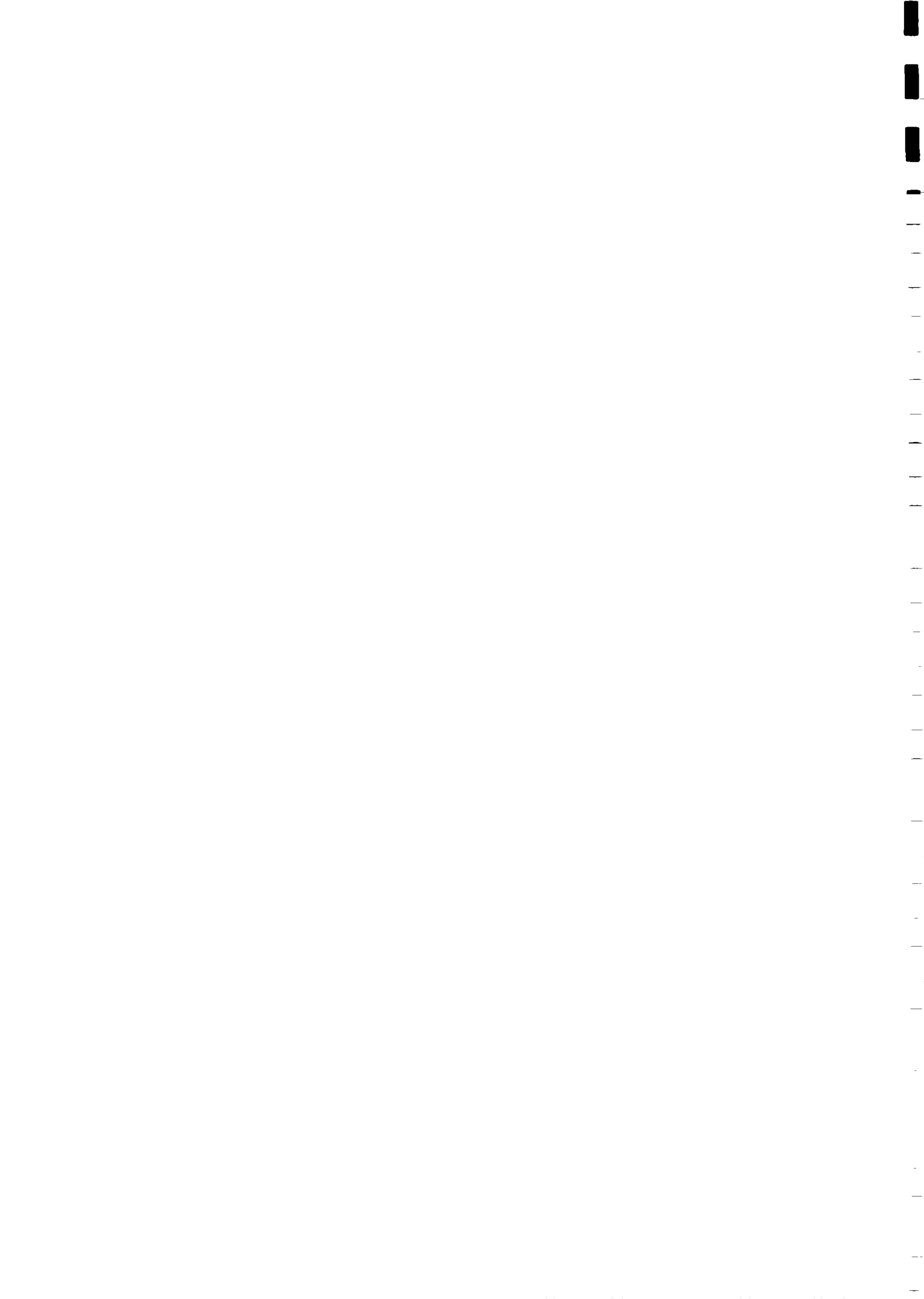
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1. INTRODUCTION

As a contribution to the global effort to achieve the goals of the International Decade of Water Supply and Sanitation (IDWSS), the Dutch engineering consultancy firm BKH is implementing a sewerage and sanitation project in Quetta, Pakistan since 1987.

In Pakistan, like in so many other third world countries, the infant mortality rate and the number of water-borne diseases among adults is very high. Providing the inhabitants of Quetta with safe water supply and sanitation facilities is an important component in the overall strategy for the improvement of health.

To absorb learnings from the past in the planning for the future, results of the Low-Cost Sanitation (LCS) pilot project in Quetta and the BUSTI project in Baldia have been examined here.

The objective of this study is to consider if lessons which are learnt in the past are picked up in the reformulation of the Quetta Low-Cost Sanitation Programme. If not so, suggestions are made on how these lessons could be taken up more elaborately in the policies actually followed in the Quetta project.

1.1 Contents of the report

In Chapter 2 and 3, the projects in Baldia and Quetta respectively will be described. For a full understanding of the policies which are followed in both projects, it is necessary to have a basic knowledge of the areas in which they are implemented.

Therefore, some background information, such as information on the water supply and sanitation - conditions in the project areas, and socio-economic characteristics of the target groups is delivered in the appendix 1 and 2.

Furthermore, the processes both projects have passed through are described. Attention is drawn to the origin of the projects, the planning, implementation, evaluation and re-formulation of the policies.

In Chapter 4, the findings of both projects concerning items which are accepted to be crucial to the success of sanitation projects are considered (Bukman, 1988). These items are:

- Participation of the target group
- Improvement of local organizational capacity
- Technical items
- Cost recovery

Concerning each item, comments on the policies followed in the Quetta project are given. Sometimes these comments are supplemented with relevant information about the project implementation. This information was acquired during a visit in Quetta in January 1990. Out of the comments, policy recommendations on the LCS programme are drawn.



2. THE BUSTI PROJECT IN BALDIA

2.1 Objective

The overall objectives of the programme in Baldia are firstly to reduce water-related infant and child mortality and morbidity and secondly to stimulate wide-scale community construction of soakpits and initiate other social improvements for children.

2.2 Origin of the programme

In 1978, the Government of Pakistan adopted the "Improvement Policy for substandard urban areas". Related to this, the Dutch Advisory Commission (DAM) was constituted after a request by the government of Pakistan and the World Bank in 1975.

The Karachi Municipality Council (KMC) selected Baldia Township as the first katchi abadi to be upgraded.

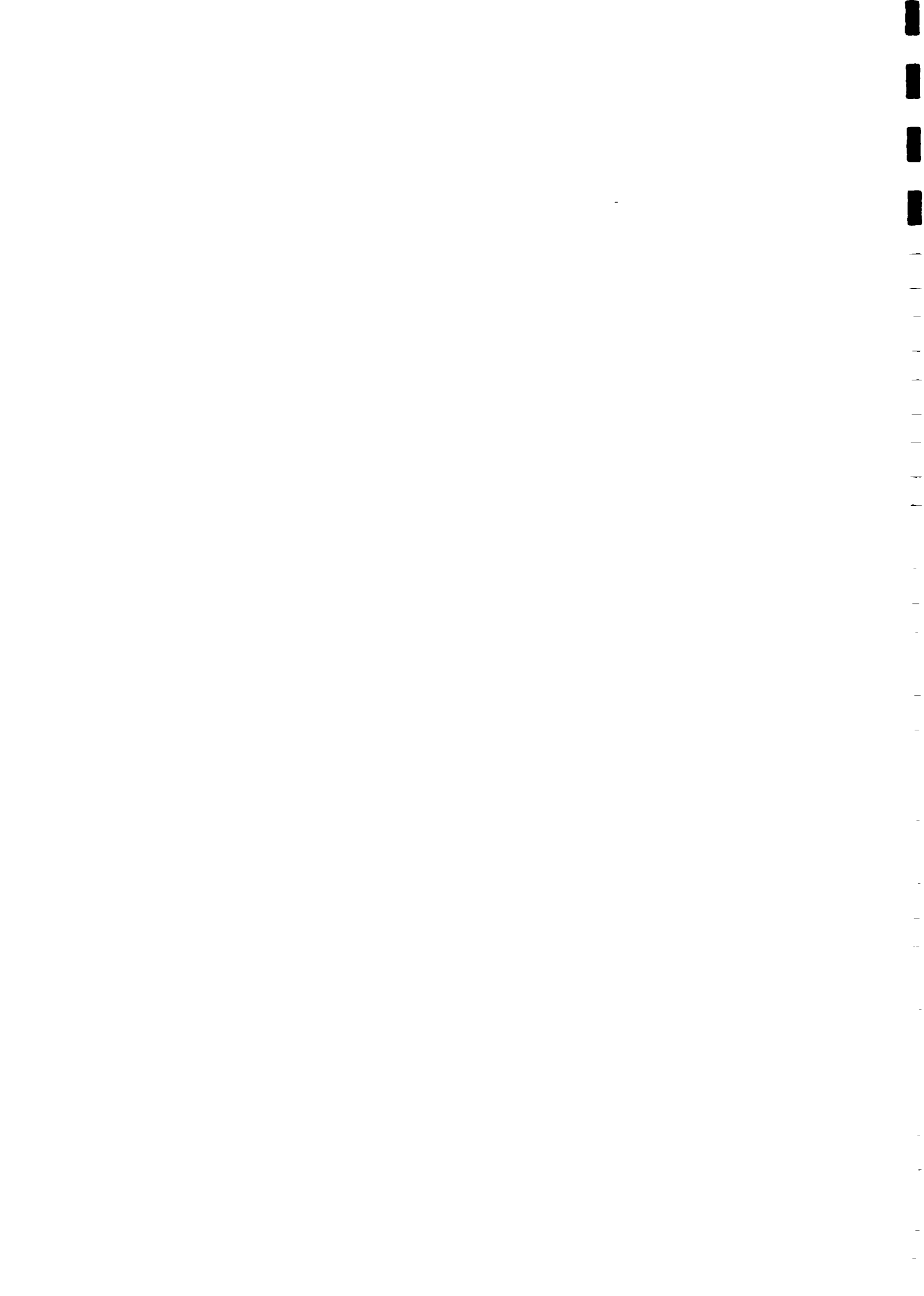
To tackle the high rate of child sickness and mortality, DAM envisaged the household installation of improved latrines on a mass scale. The idea was not received very enthusiastically by the community, nor by KMC (IBRD et al., 1988).

Due to the problems and inconvenience faced with sanitation, people were eager for improvement of the sanitation system. However, the kind of improvement the people generally had in mind was the construction of an underground sewerage system by the government. Soakpit technology was not welcome. The lack of preference for soakpits was reinforced by the negative demonstration effect of existing soakpits in the area, which were technically substandard, expensive and prone to maintenance problems (UNICEF, 1984).

KMC refused to cooperate. They mentioned that they were concerned with public water supply and sewerage utilities only whereas soakpit-latrines are household installations. The neglect of KMC probably also had some other reasons.

Government bodies in Karachi which own vast areas of land with high development potential commonly fear that an improvement of katchi abadis will merely encourage further squatting on still vacant land. By not encouraging improvements, KMC did not have to fear reactions of groups opposing improvements (Yap, 1982).

Since the scheme intended to reduce child sickness, UNICEF became interested in the programme and decided to undertake it. And so the Baldia Soakpit Pilot Project (BSPP) was launched in 1979. UNICEF decided to initiate the project as a joint project between UNICEF, the Pakistani Yawcees (the Junior Chamber of Commerce) and the Social Welfare Department of Karachi.



2.3 Macro-organisation

UNICEF is the major planning, organising and financing agency for the BSPP. It was assisted by DAM during the initial project planning stage, while the overall administrative umbrella was provided by the KMC. Pakistan Yajcees (the Junior Chamber of Commerce) and the Social Work Department, University of Karachi, were the other two major institutions involved in the project. They not only provided technical and social motivational support but were also involved in the overall management of the project.

In 1983, Pakistan Yajcees and the Social Work Department were formally brought together and a project team was constituted, which was responsible for project management and implementation and also provided the needed technical and social inputs. This project team worked in close association with the various community-based organisations which helped in the implementation of the programme.

With the completion of the experimental stage, in 1986, the BSPP has now been institutionalised to form a non-governmental organisation (NGO) called Basic Urban Services for Katchi Abadis (BUSTI). BUSTI's role is to act as an implementation and management agency for the provision of basic urban services to the katchi abadis.

2.4 Implementing agency

The responsibility for overall implementation of the programme rested with the project team which initially consisted of one community organiser and one engineer and was later strengthened to include two additional social organisers. The inputs of social/community organisers were provided by the social work department while the engineer was recruited through the Yajcees.

The structure of the project team was formally not hierarchical, but strong leadership was provided by Quaratul Ain Baktheari.

The implementing agencies at the community level were the community based organisations. These included the mosque committees, the sports clubs and the soakpit committees. These community based organisations had a development orientation, were receptive and technically inclined. As a result, they not only helped the social organisers in community motivation and sensitisation but also assisted the engineer in actual installation.

For example, the soakpit committees gathered the community residents, identified interested households, bought the materials needed and also helped in the actual installation of the soakpit.

The member of these community-based organisations consisted of the community's nominees. In the case of soakpit committees, three or four members were nominated by the community. The committee's leader was usually an active member of the community.

2.5 Planning

Quaratul Ain Bakhteari was among the first group of social graduates to visit Baldia in connection with the soakpit programme. The programme started in Muslim Mujahid Colony. Here, soakpits were provided free of charge to some families for demonstration purposes.

The people were not very interested in the programme which can be explained by the fact that the "real home" of the inhabitants of the colony is still the country side. Each year they return to their place of origin to plant and harvest. They are not very interested in an improvement of their "town houses".

One of the masons who installed the latrines in the Mujahid Colony proposed the social graduates to implement the programme in his own settlement, in Turk Colony. Inhabitants of Turk Colony do not have another house to live in than in the Colony itself.

The social graduates group decided on a different approach in the new colony. Those who wanted latrines must first dig their soak pits. These soak pits would offer an impetus for community organization which could eventually lead to the introduction by the community itself of further improvements.

2.6 Implementation

By making door-to-door visits and organize meetings in which the advantages of adopting soakpit-technology were stressed, attention of the community was drawn to the programmes.

A mason and his ten friends in the cricket team agreed to lead the way in the digging of soakpits. They dug their own soakpits together. This encouraged others to do the same. The cricket team did not stop work. For example, they went on to get a new road and a new water pipe line laid. The team expanded to "Turk Welfare Society", with 111 members and 33 active workers.

This new organization that has come into being, is much more progressive and socially concerned than the traditional "Jamat", which is the traditional council in Turk Colony. All disagreements within the community are settled by the Jamat. The Jamat can be seen as an organization which is essentially resistant to innovation and defensive of the status quo.

An expert of the Civil Engineering Department of Loughborough University, Mr. John Pickford worked closely with members of the Welfare Society to improve the design of the soakpits and to cheapen it.

There was no formal training component in the programme initially, but in 1988 some 60 masons and 100 families in Baldia were provided training for the construction, utilisation and maintenance of soakpits through practical demonstration and discussions. Pits were also opened in front of the communities and the working of the soakpit was monitored. These practices proved to be of significant educative value.



Women's involvement in the organisation has been minimal. Two educated young women from the community were trained to give primary and hygiene education in their home for children of the neighbourhood. A separate women's organisation has emerged out of this. The organisation, the "Home School Teachers Welfare Organisation", is actively involved in an educational programme for the communities.

In these schools, lessons are given to women and children. Sewing lessons are often given to the women. So, they learn a skill that increases the family income and does not meet with objectives of the husbands. Ten minutes of the lesson, however, are spent on teaching, reading and writing. Usually, they are first taught to write their father's and husband's names. Furthermore, they are taught some math so they can help with accounts and children's lessons.

The home school teachers have also been subsequently trained as public health care (PHC) workers. Initially, a group of 13 home school teachers underwent a one-month training course on growth monitoring and diet advice, breast feeding, ORS therapy and immunisation. Another six-week training programme was held for some 50 girls, in collaboration with the Civil Hospital. The PHC workers are working under the supervision of a qualified lady doctor (UNICEF, 1984).

Cost recovery

In the demonstration phase of the program, which lasted until 1986, soakpits were provided free to the people. In the second phase, with the creation of BUSTI, the concept of a revolving credit scheme for beneficiaries has been introduced.

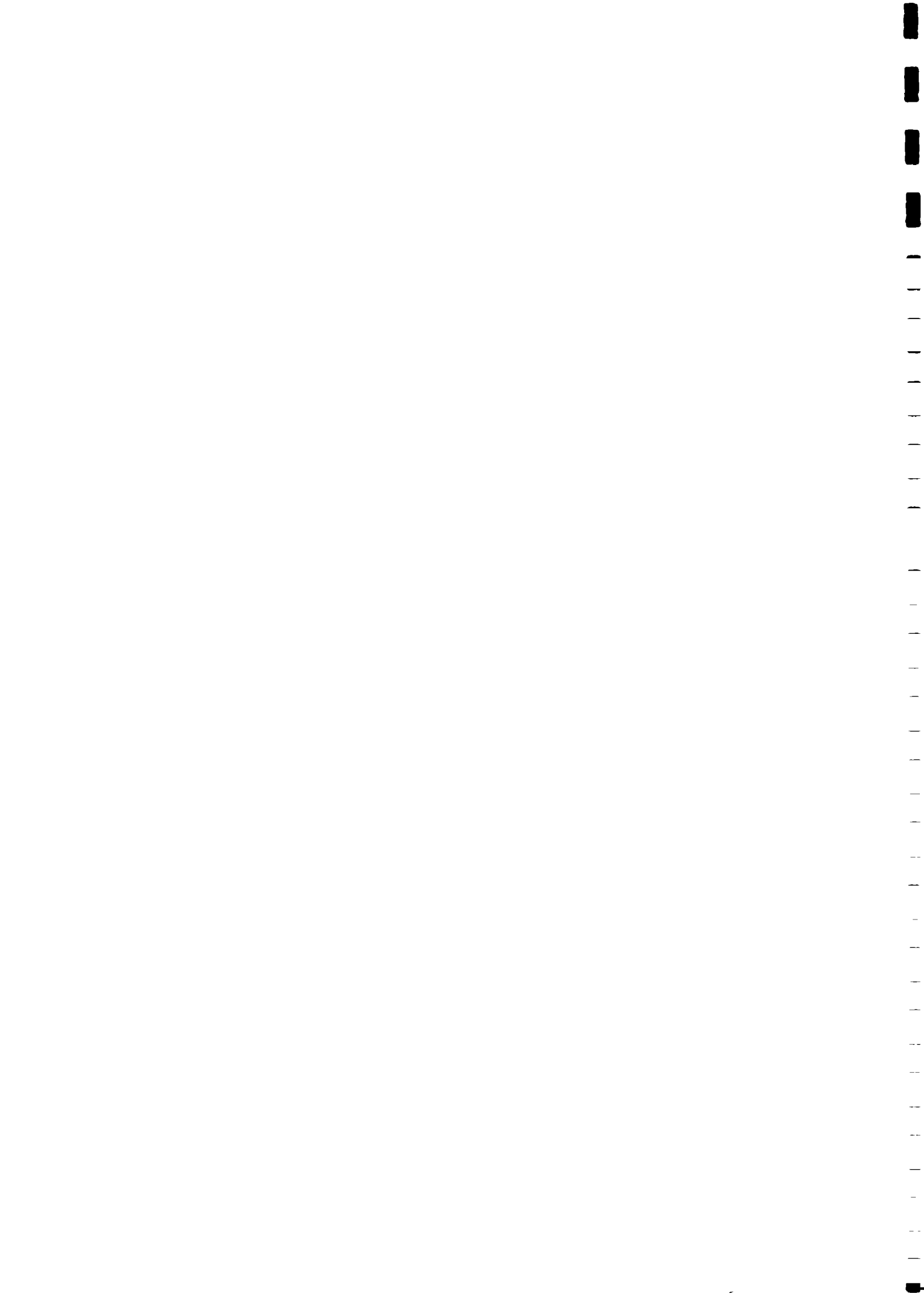
Repayment of loans is made in instalments amounting to Rs 100 per month. This amount, however, is observed to be flexible. Responsibility for collection rests with the soakpit committee which maintains detailed records of the instalments received, and passes on a copy to the BUSTI office. The beneficiary also keeps a record of the instalments paid, attested to by a member of the soakpit committee.

The overall loan recovery rate has not been high. The amount of loans recovered by December 1987 is reported to be Rs 12,500, giving a recovery rate of about 30 percent (IBRD et al., 1988).

2.7 **Evaluation**

The project in Turk Colony has had a positive effect on other colonies in Baldia, where the soakpit programme has been introduced on a later stage. It has encouraged communities in Baldia, to improve their living conditions by themselves. Furthermore, the infant morbidity rate has decreased considerably over the past 10 years (Kool et al., 1989: 137). Keys to success of the project have been (IBRD et al., 1988):

- The municipal government did not obstruct the NGO effort, but instead provided an umbrella and facilitated implementation.
- Women's involvement was substantial both within the project team and in the beneficiary community. The latter increased rapidly overtime.
- Substantial external agency support, both financial and technical, was available without strong controls on implementation.

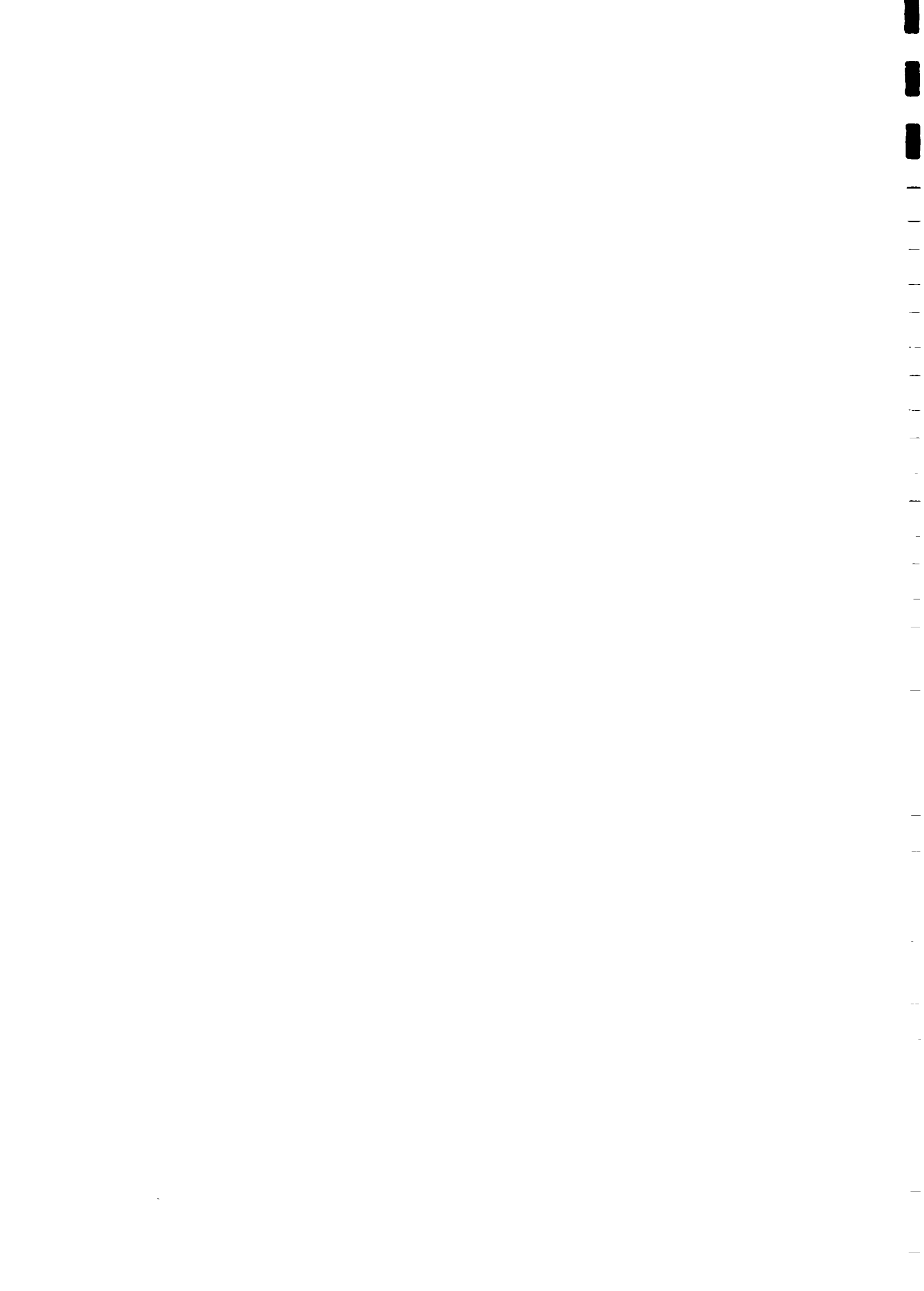


- Flexibility was allowed to the project team in evolving the working methodology of the programmes. The high quality of leadership and the nature of interaction within the project team provided the ability to build on successes and learn from failure.
- The demonstration ratio was fairly high at one for every 25 households in colonies where soakpit committees were established. This high ratio is due to relatively liberal access to project funds from UNICEF.
- The evaluation of the project whereby sectoral linkages (home schools, primary health care, income generating activities etc.) have been reinforced has contributed to raising the overall level of awareness and the process of community organisation.

The most important constraints which have arisen in the project concern the technical design of the soakpits and the cost recovery aspect of the programme.

There has been a lack of flexibility in the design. In different areas in Baldia the soakpits do not function because the water table has risen since the installation of the systems. Furthermore, the desludging of the pits is not done properly. Although KMC should officially desludge pits free of costs, people have to make arrangements themselves because of the poor service. This has created an incentive for connecting latrines to open drains.

The low rate of cost recovery is probably due to the fact that soakpits were provided free to the people until 1986. After that period it was difficult for the people to understand why they "suddenly had to pay".



3. THE QUETTA ON-SITE SANITATION PROGRAMME

3.1 Objective

The main aim of the on-site sanitation component of the project in Quetta is to change the unhygienic sanitation habits of the people and to promote latrine use and personal hygiene especially among children, in the peri-urban areas in the city (for a map of the project areas, refer Appendix 3)

3.2 Origin of the programme

In 1984, the Netherlands Ministry of Foreign Affairs, Development Cooperation, West Asia Department commissioned BKH Consulting Engineers, The Hague to carry out a Reformulation Mission for the Quetta sewerage project, Pakistan.

Early July 1984, studies were carried out by a multidisciplinary expatriate team in cooperation with local consultants. In December 1984, the report was finished. In the study, it was concluded that the installation of low-cost on-site latrine facilities is an effective and feasible intermediate solution for improvement of the poor sanitary conditions in the residential peri-urban areas of Quetta. A five-year sanitation programme was formulated to provide about 14,000 pour-flush double-pit latrines. The latrines can be upgraded to flush latrines in a later stage, when water-borne sewerage becomes affordable in these areas.

Furthermore, a water-borne sewerage system will be installed in the city-centre, complete with transport main and wastewater treatment plant. The effluent discharged from the treatment plant will be reused in the irrigation scheme that will be provided as part of the project (BKH, 1988: 1-1). In a later stage of the project, it was decided that the building of a pipe factory would also be included.

3.3 Macro-organization

The overall administrative umbrella of the QSSP programme is provided by the Baluchistan Water and Sanitation Authority (BWASA). BWASA is assisted in its tasks by BKH. These Dutch consultants work together with Pakistani, BWASA paid engineers and sociologists. BKH is in charge of the Quetta Low Cost Sanitation and Sewerage Programme, which includes the installation of 14,000 pour-flush latrines, a sewerage underground system, a pipe factory, water supply systems and a wastewater treatment plant.

Financing of the QSSP project is being undertaken with a grant fund from the Netherlands and a loan fund from the Government of Pakistan.

3.4 Implementing agency

The way in which the programme has been organised varied with the different stages of the project, which will therefore shortly be identified here.



In 1984, a feasibility study was implemented by BKH. From early 1987 until 1988 a pilot project was formulated and implemented (first project phase). This project was implemented to identify the opportunities and constraints in delivering and constructing about 14,000 pour-flush latrines in the low-income areas of Quetta. Between October and November 1988 a full evaluation of the pilot project took place. Alternative strategies were identified and a revised delivery method was formulated. Since 1989, the new approach is applied in the project (second phase).

The responsibility for the programme rests with the project team. During the first phase of the programme, a project manager coordinated and supervised the activities of two sociologists (male and female) and a deputy project manager. The male sociologist was responsible for the "public relations" aspect of the programme, whereas the female sociologist took care of the hygiene education. Thereby, she was assisted by two (WASA-paid) female social workers. The deputy manager finally looked after the engineering operations and was assisted by three (WASA-paid) engineers.

During the initial stage of the pilot phase there was close cooperation between the project team and councillors and chairmen of Zakat-committees. Those people introduced and promoted the programme in their areas.

At a later stage, local community organisations became more involved in the programme. Their involvement resulted in a large number of applications for PF latrines (more than 1,000).

To install the latrines, local contractors were recruited who were responsible for the supply of all bricks, cement and mortar and carried out construction work.

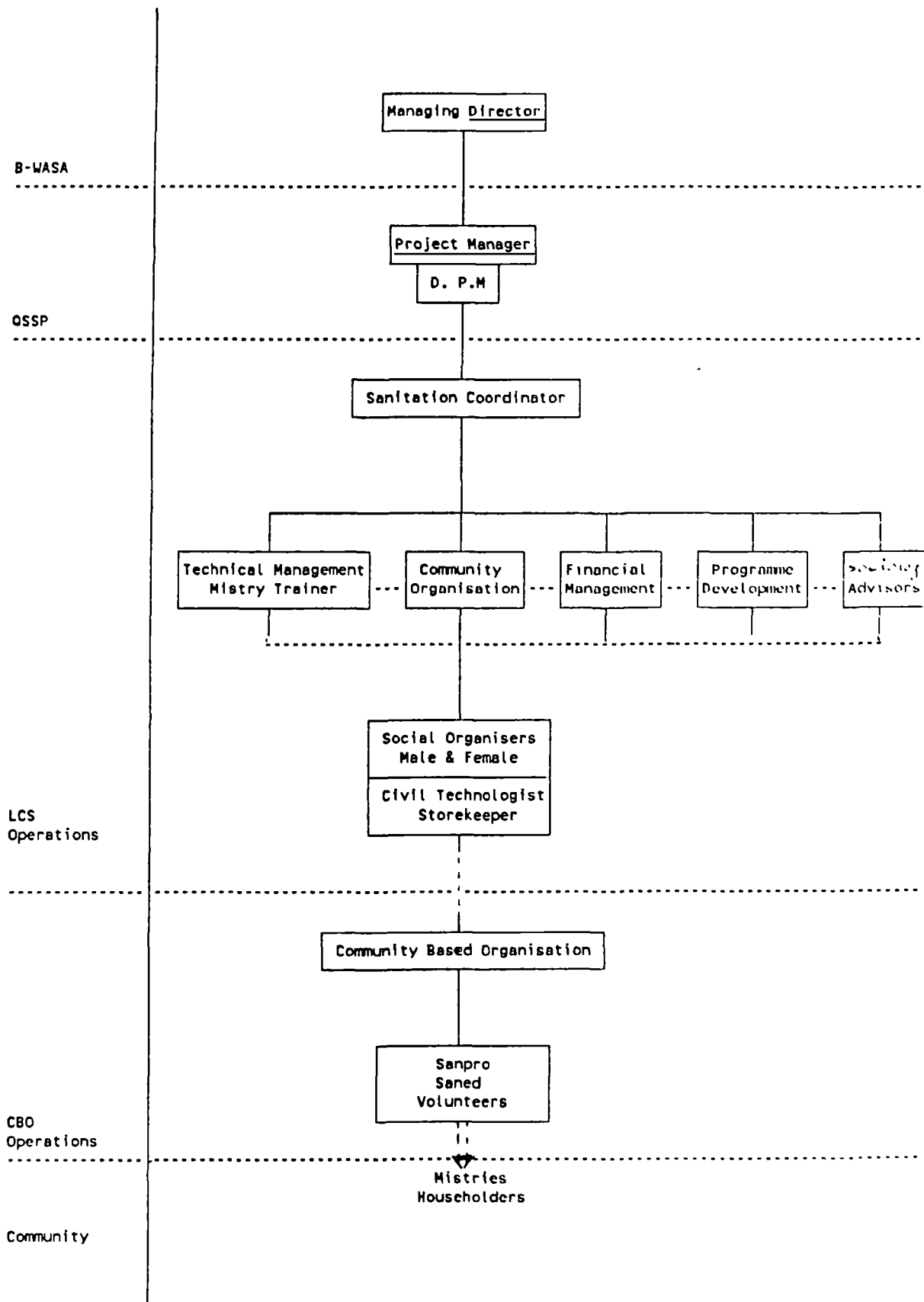
The recommendations of the evaluation mission resulted in a WASA/CBO combined approach, in which local reference centres (LRCs) are set up in each community. The LRC's are the focus points for the CBO's and communities working in the area. The extent of CBO input is not yet determined exactly, and depends on the commitment and manpower available with NGO's. If the approach proves to be successful more responsibility will be given to CBO's.

To provide hygiene education, CBO's directly employ (WASA paid) male sanitation promoters (sanpros) and female sanitation educators (saneds). All direct community activities are carried out by the CBO's. Furthermore, the work of the mystery teams will be supervised by the sanpros.

3.5 Planning

The pilot project aimed to install 100 low-cost latrines in the different ethnic communities distributed over the various project areas. The preparatory activities consisted of informing local authorities and community/religious leaders about the project, finalizing the designs and negotiating with contractors. In consultation with the ZAKAT communities in each community, a number of families were selected for inclusion in the pilot project. Subsequently these families were surveyed to determine the social background, family composition, economic situation and to identify a suitable site for the household latrine.

Figure 3.1 Organization chart





Two types of latrines were to be constructed: the pour-flush latrine (10 and 15 user capacity) and for areas in which water supply was extremely scarce, the ventilated improved pit latrines. Mostly construction of a superstructure was also included. Information which was collected in a feasibility study in 1984 was relied on to plan the project.

3.6 **Implementation**

To obtain people's interest in the sanitation programme, a promotional campaign was held. Through the mass media, it was emphasized that cleanliness is a very important aspect of the Quaran's teaching and that people have a moral duty in this respect. People were also informed about the organization responsible for implementation, and who can supply all relevant information. To involve women, house-to-house visits were made by the female social workers. On a later stage, CBO's were more involved in promoting the programme in their areas, which resulted in an application of 1000 households for latrines.

When people showed interest to the programme, there were a number of avenues available to obtain the required information and to lodge applications. People could go to their councillors, social welfare organizations and ZAKAT communities. The compounds of the applicants were inspected first. Relevant data on specific technological and social aspects were gathered. Contract documents were prepared, tenders called, evaluated, negotiated and contracts let.

The contractor worked with one team of labourers to excavate a number of sites at one location. During the period the assistant engineer made daily visits to the site to ensure that the standard quality of work was maintained. The project-manager and deputy project-manager made additional site visits during the progress of the work, giving particular attention to the construction of junction boxes and placement of pipes.

3.7 **Evaluation and re-formulation of the policy**

From the pilot project, and especially from the 1,000 applications that were made in the final phase, it revealed that the inhabitants of Quetta were eager to obtain on-site sanitation systems. Discussing sanitation habits was no longer a taboo in the project areas.

After an evaluation mission was carried out in October 1988, it was decided that the project approach should be changed considerably. Two main changes in the strategy were recommended. First of all, it was stated that the various CBO's were much better suited for approaching and convincing the local communities than WASA, which suffered from an inexperience with socially oriented activities and the absence of suitable personnel. Therefore, CBO members should be trained by the project team to promote latrines, implement hygiene education and monitor latrine use.

Secondly it revealed that communications between contractors and households were not always smooth. The families did not appreciate outside contractors in their family areas (purdah) and felt that excessive profits were being made by the contractors. Furthermore, involvement of the contractors was not successful in terms of



implementation speed and costs of construction. Construction work of local masons (masons), who are allowed to enter the family area of the people would be a solution to this problem. The masons should be trained in latrine construction, work organisation and management by the project team.

Some other things which revealed, were that latrines were hardly used because they were constructed in the guest areas and that costs of the latrines were too high if superstructures were included.

The evaluation mission thus recommended to exclude superstructures in the standard designs and to make sure that latrines would only be constructed in the family (purdah) areas.



4. EVALUATION AND COMMENTS

It has been learnt from the past that critical items in the success of sanitation projects concern community participation, local organisation capacity, technical items and cost recovery.

Findings concerning these items from the Quetta LCS programme and the BUSTI project in Baldia are evaluated here. On the basis of this evaluation, comments on the policies actually followed in the LCS programme are given.

4.1 Participation of the community

4.1.1 Willingness to participate

The willingness of people to change their sanitation habits and thus make proper use of the new latrines depends on the reason they have for applying for involvement (1). Their willingness to subscribe to the programme is for a large extent determined by their housing situation (2).

(1) Motivation

- (A) In Baldia as well as in Quetta, people were eager to have the sanitation conditions in their areas to be improved. The idea of improvement by a large scale installation of on-site sanitation systems however, was not welcome to them. This is not surprising, in light of the bad experiences people had with existing on-site systems in their areas. These systems were generally technically substandard and hardly maintained. The project team took great pains to convince people of the possibility to install on-site systems of good quality, and finally succeeded quite well in this.

Comment

A malfunctioning of the on-site sanitation systems which are built under the Quetta project can easily frustrate the motivation of people to adopt on-site sanitation technology. Therefore, it is of utmost importance that considerable attention is drawn to a good design and that good arrangements are made for the maintenance of the systems. This item will be discussed more detailed in Section 4.1.3 "Technical Items".

- (B) Clear information about reasons for beneficiaries of the BUSTI project to adopt on-site sanitation systems is not available. From the evaluation of the project in Quetta however, it turned out that status was the main reason for people to adopt a pour-flush latrine. As a result of this many latrines were constructed in guest areas.

Comment

It is of great importance, that the use of latrines as a motivation to increase adoption of hygienic behaviour is supplemented with practical health knowledge for all users. If status is the only reason for people to



participate in the programme, this will lead to an improper use of the new facilities.

(2) Housing situation

- (A) The project in Baldia has shown, that the appearance of cycle migration can have an important impact on the enthusiasm of people to improve sanitation-conditions in their mohallas. The Baldia project has been much more successful in Turk colony than in Mujahid colony, as the inhabitants from Turk Colony stayed in the area permanently.

Comment

More information about the level of cycle-migration in different project areas in Quetta may be required, as this importantly influences people's eagerness to improve their housing conditions in the city.

- (B) From studies in Karachi, it revealed that the security of tenure people have has a very great impact on their willingness to invest in an improvement of their housing conditions. People in Baldia did not have to fear eviction, as KMC itself appointed Baldia as the first katchi abadis to be upgraded. The security of tenure of the people in Baldia for a large extend explains their enthusiasm for the BUSTI project.

Comment

More information about the security of tenure house-owners and renters in Quetta may be required, as this is of great influence of people's eagerness to improve their housing situation. Especially if new project areas are to be selected, it will be important that this aspect is considered. It is worth considering, if the LCS programme can be integrated in existing katchi abadi upgrading programmes of the Quetta Municipal Corporation.

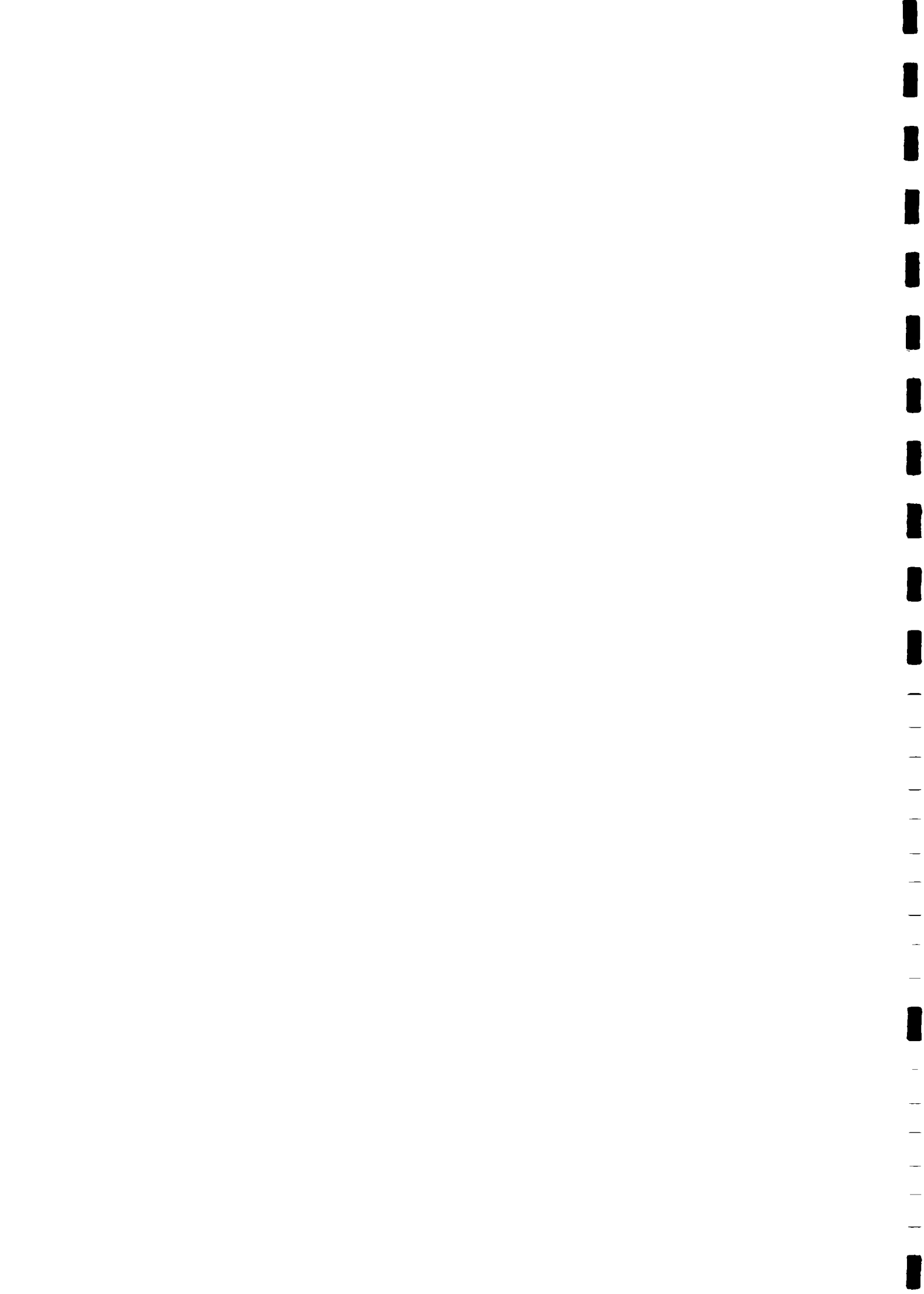
4.1.2 Ability to participate

To give people the ability to participate, the project must work through leaders who represent the wishes of the whole community (1) and everyone must have access to information (2).

(1) Good leaders

From research that has been carried out in katchi abadis in Karachi and Hyderabad, it has revealed that people are generally not able to participate in government programs because information from and access to public agencies is monopolized by middlemen. These middlemen rather represent their own interests than those of the community (refer Appendix 1, 1.6). The BUSTI project, however, succeeded well in involving the people in the programme.

Key to success in Turk colony has probably been that UNICEF involved organisations and people in the programme who were not involved in the complex hierarchical political and traditional social networks.



The cricket team turned out to be an important counterpart of the project in Turk Colony.

In the Quetta pilot project, the involvement of contractors met great distrust of the people. To regain the trust of the people, a CBO/WASA driven approach on community level has been chosen for in the reformulation of the policy to be followed.

Comment

The CBO/WASA approach that is chosen for in the Quetta project seems an important step forward to achieve the effort of involving people in the programme. The danger of involving CBOs in the programme which do not represent the interests of the whole community, however should not be underestimated.

During a visit in Quetta in January 1990, a few experiences indicate that it is almost impossible to find a "neutral" CBO:

- In Kili Shaikhan, CBOs were contacted and informed on the sanitation project. One councillor, at the same time chairman of one of the CBOs, was unwilling to cooperate with the programme. A few weeks later, it turned out that he had received a fund for the supply of infrastructural facilities in the area. It is clear here, that this councillor felt threatened in his middlemen-position by the LCS programme.
- During a conversation the Pakistani social organizer mentioned that CBOs are always involved in politics
- In South Pashtunabad, one of the CBOs involved in the programme became a member of a political party.

To avoid association of the programme with any political, traditional or other social group in the community, executive power should remain with BWASA. The BWASA paid staff members of the LRCs have the advantage of, while being familiar with the people's language and traditions, being "neutral outsiders". They should work through and with CBOs, but it should be clear to the people that the overall responsibility of the programme remains with BWASA.

(2) Access to information

If people want to be involved in the planning, construction and evaluation of the programme, they should have access to all kinds of information. Illiteracy of people and the seclusion of women in Pakistani society are important constraints to an equal involvement of the people in the programme. Therefore, training is an important aspect of the programme. This will be discussed in the following section, 'Improvement of local organization capacity'.



4.2 Improvement of local organization capacity

Ideally, a project should only work as a catalyst to further improvement of the living conditions of people. After the retirement of foreign consultants, people should be able to bring about further improvements by themselves.

In the BUSTI project, the achievements regarding this aspect seem quite successful. In 1986, the Social Welfare Department of Karachi University and the Yaycees took over full responsibility of the project. On community level, people were trained in construction and maintenance by members of the 'Turk Welfare Society' who in their turn were educated by an English engineer. To educate women and children, home school were established.

The education aspect of the Quetta project is considered as a very important item, which is a very positive aspect of the programme. People from community organisation are trained on how to promote latrines in their areas and how to explain people about the advantages of the systems.

Comments

The education aspect of the Quetta project is drawn elaborate attention to. Emphasis however, is laid on explaining the community how to use the latrines. Insufficient attention is drawn to hygiene education. Furthermore, training courses for the project staff could be provided, so that the organisational skills of the employees will be improved and a follow-up of the programme is ensured.

4.3 Technical items

In literature on sanitation, it is generally mentioned that elaborate attention to social aspects of sanitation programmes are the key to their success. The importance of a well functioning of the systems which are installed under projects, however, should not be underestimated. To convince people of the necessity to adopt on-site sanitation technology they have to see the advantages of this. Systems which are installed under a programme and do not function well can easily lead to a failure of such programmes. Elaborate attention has to be drawn to the design (1) the maintenance (2) and the integration of sanitation with water supply and drainage (3).

(1) Design

In the programme of Baldia, it turned out that not all systems functioned well in the long term. When making the design, the fact that the water table would rise in some areas was overlooked. Unfortunately, the consequences of all this for the programme in Baldia are not mentioned in literature.

In the case of Quetta, there are no experiences concerning this items as the first systems were established just three years ago.



Comments

In the design of systems in the different area in Quetta, it should well be considered if factors which determine the design, like the water supply and the number of users will change in future. In the design changes in water supply, water table, and the number of users must be taken into account. The decision of installation pour-flush latrines in all project areas should be flexible. Since a water shortage is expected in Quetta, the possibility of installing "dry" VIP latrines instead of pour-flush latrines should be re-examined thoroughly.

(2) Maintenance

In the Baldia project, people had to take care of proper desludgement of the pits because of poor service from KMC. This did not work out well and the incentive to connect pits with open drains arose. In the Quetta project, the responsibility for the maintenance of the systems is with the users.

Comments

In many areas in the world, and in Baldia also, it has appeared that users fail in maintaining their latrines properly. Therefore, it should be considered if it is possible to find another solution for the maintenance problem. It could be tried, to employ people (for example the sweepers who do not have to empty buckets any more) and make them especially responsible for the desludgement of the pits and other maintenance activities.

Desludgement could be done by hand or a machine which desludges the pits automatically, and which frequently visits the areas could be bought.

(3) Linking water supply, sanitation and drainage

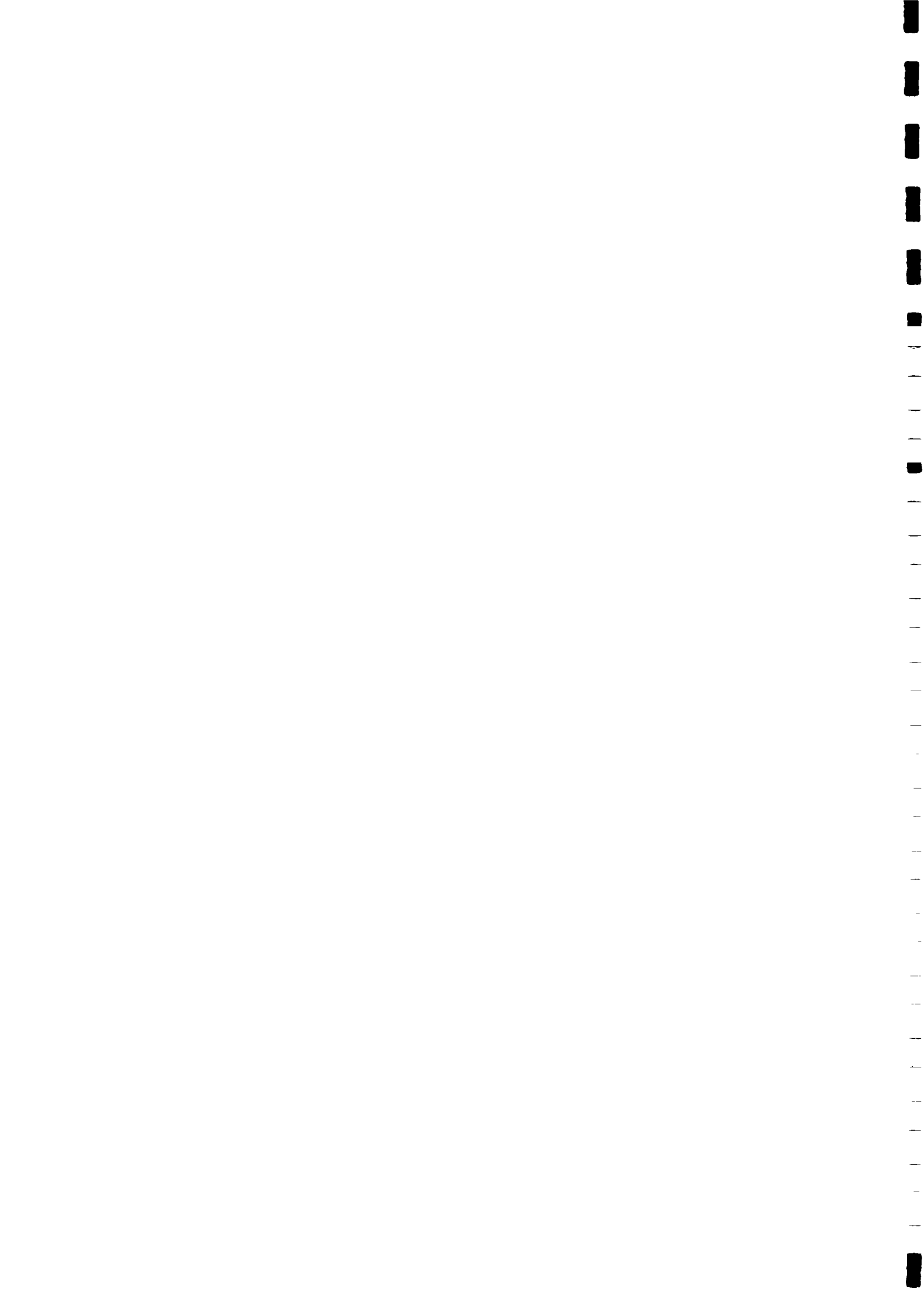
Combined water supply and sanitation improvements have more impact on health than either improved water supply or sanitation alone. In the Baldia project little attention seems to have been drawn to water supply and drainage. Although water supply falls under the QSSP project, plans to integrate the water supply component with the LCS programme are not made.

Comments

Possibilities to integrate water supply and sanitation in one programme should be considered. Advantages of integrating both programmes are that the effort of improving health conditions will probably be more successful and that promotion and cost recovery aspects of both programmes can be organized more efficiently.

4.4 **Cost recovery**

In Baldia, the recovery of costs meets serious problems. An important reason for this probably is that adoption of soakpits in the areas was subsidized until 1986. People probably did not understand will why they had to pay fully for the systems with the establishment of BUSTI. Concerning the project in Quetta, the recovery rate up until



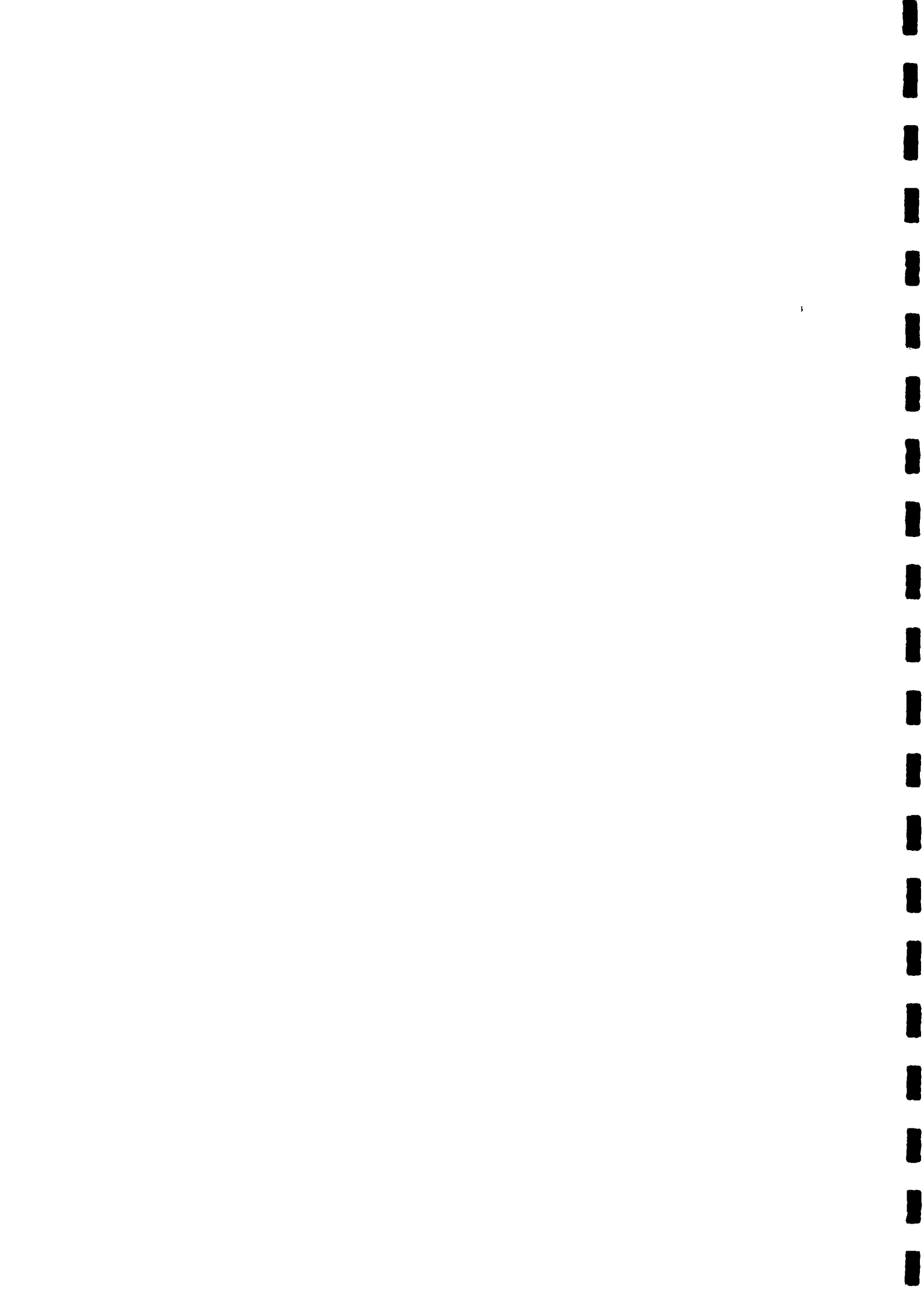
now is amazingly high (about seventy percent).

Comments

The recovery rate is very high, which tells strongly in the favour of the involvement of CBO's. Out of the comments made in this chapter, the following recommendations are drawn:

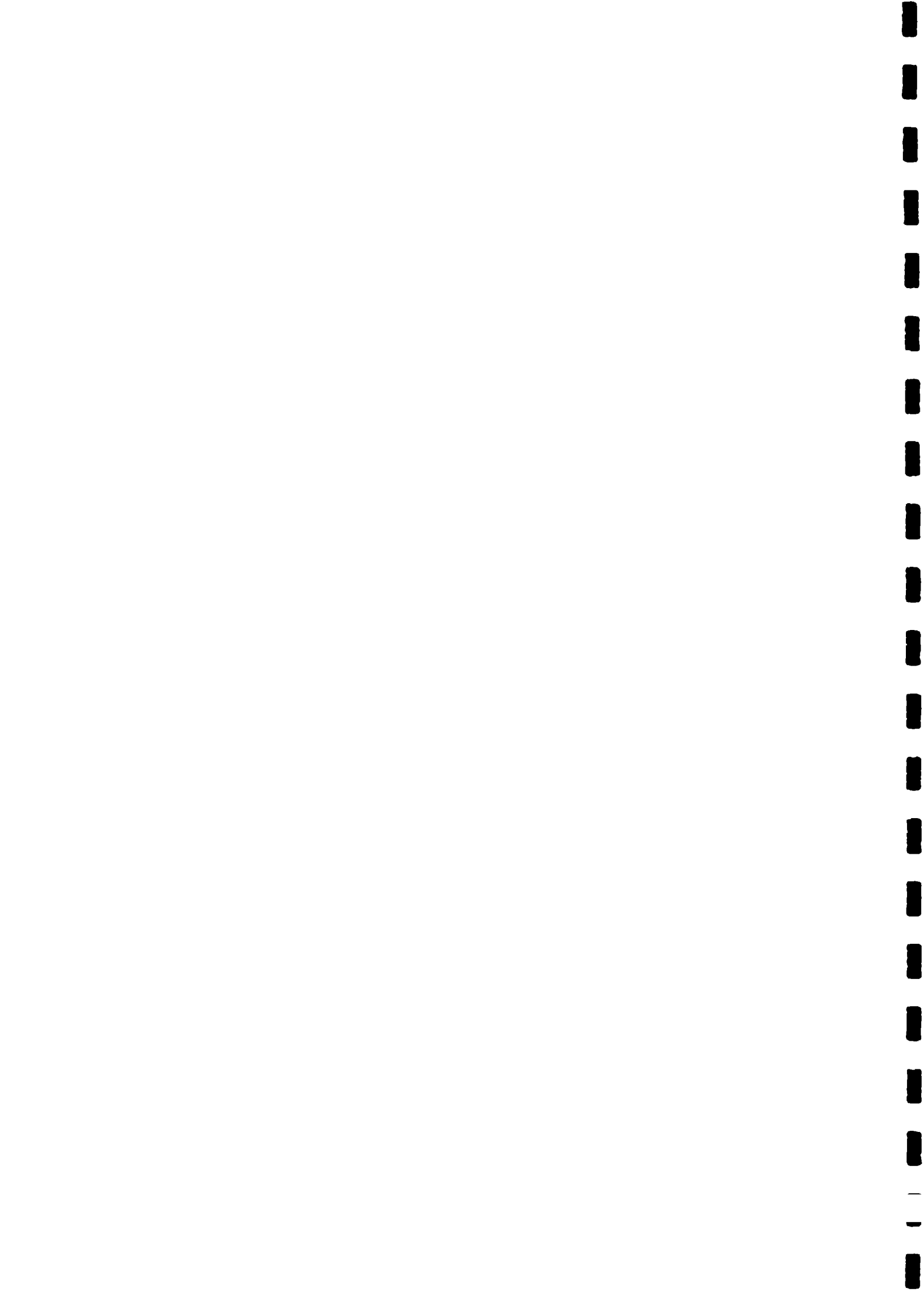
4.5 Recommendations

- Hygiene education must become a central part of the programme. Paying no attention to this aspect will lead to an improper use of the latrines, bad maintenance and no improvement of the health conditions in the areas on the long term.
- Training courses for the project staff should be provided to ensure an increase of future organization capacity.
- The extent of CBO input in the programme must thoroughly be considered. Although the CBOs should be consulted and should have a large impact on the programme, association of the programme with their political or traditional status has to be avoided. Therefore, operational executive power and overall responsibility has to remain with BWASA.
- It could be considered to put large boards in project areas on which the procedure of the programme is described. This will ensure an equal access to information for the whole community.
- The decision to install pour-flush latrines in all project areas should remain flexible. The possibility of installing "dry" VIP latrines should be reconsidered as a water shortage in Quetta is expected.
- Improving sanitation conditions in project areas should be seen as an improvement in people's housing conditions. Therefore, the agency in Quetta which is in charge of katchi abadis improvement should be contacted. Furthermore, housing conditions of people should be taken into account in the planning of the programme.
- It has to be monitored if latrines are desludged and maintained properly. If not so, people (unemployed sweepers) could be employed to visit the project areas frequently for desludging and repairing the systems.
- If a special "maintenance team" is employed by BWASA, it could be considered if the costs for this team should be included in the costs which are recovered from the users.
- Possibilities to integrate the sanitation and water supply programme should be examined.



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APPENDIX 1



Appendix 1

1. Background information of Baldia

1.1 Water supply

In 1979, Baldia faced an acute shortage of water with a few wells and handpumps supplying most of the area. In the west and south-west of Baldia there were some KMC standposts providing less than five gallons per capita per day.

The situation has improved gradually since then. From 1984 onwards, the Karachi Water and Sewerage Board (KWSB) has been providing community standposts in each street with one standpost, on average, serving twenty households. The residents appear to be satisfied with the present level of water supply.

1.2 Sanitation

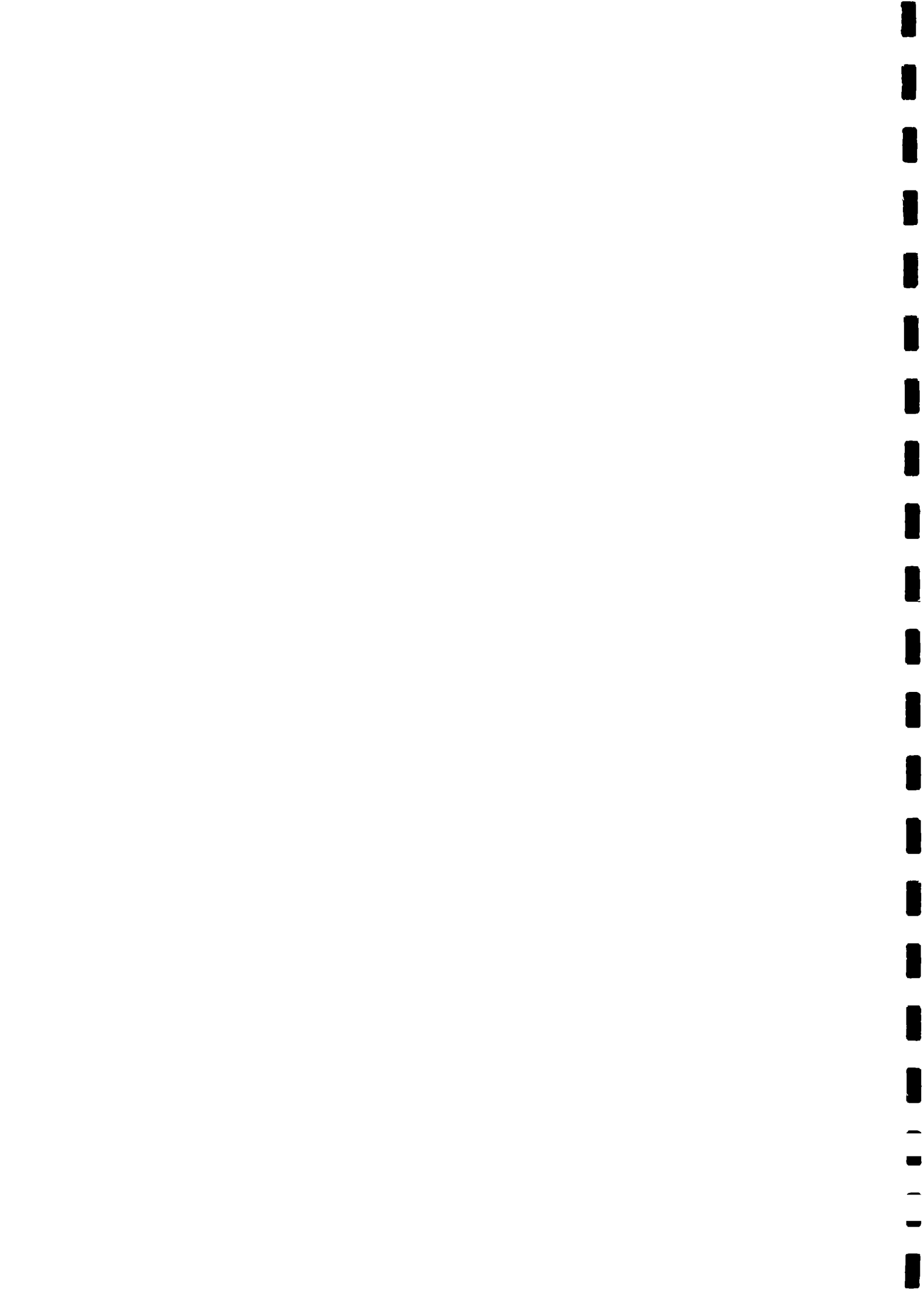
The sanitation system in Baldia was highly inadequate. Eighty percent of households had bucket latrines. The residents were exposed to extreme health hazards and inconvenience due to the disposal of excreta and dirt in the lanes. Private scavengers only cleared waste two or three times a week. As a result of these unhygienic conditions, the area became a breeding ground for flies, mosquitoes and other disease-bearing organisms.

A relatively high willingness to pay for sanitation was observed in the field. The primary reasons for this were the inconvenience and problems faced in existing sanitation practices and the experience involved in monthly payments to private scavengers.

1.3 Population characteristics

In 1988, the population of Baldia was estimated as 271,000 people with a growth rate of five percent per annum. By that time, average density of the area was 150 persons per acre.

A wide variety of ethnic groups reside in Baldia. Nearly 42 percent of the population are migrants from India, 21 percent have migrated from the North West Frontier Province (NWFP), 17 percent from Baluchistan, 9 percent from the interior of Sind, and some 8 percent from Punjab. People from the same region tend to cluster together in neighbourhoods which are usually named after their own villages, tribes or place of origin. For example, there is the Gujrat Colony and Junagadh mohalla formed by the Indian migrants, the Baluch Para consisting of Baluchis and the Campbellpur and Niazi mohallas, representing the Punjab section of the population. These people speak the language of their place of origin and by and large adhere to their original traditions, norms and practices.



1.4 Income levels

Income levels are low. A survey conducted in 1977 showed that 14 percent of households had an average income of less than Rs 300, 46 percent earned Rs 600 to Rs 999 while the remaining 16 percent earned Rs 1,000 and more.

In 1987, the income levels for a majority of households ranged between Rs 1,000 and Rs 1,500 per month.

1.5 Housing conditions

Baldia township is one of the many "katchi abadis" (literally: temporary dwelling places) in Karachi. Knowing more about the characteristics of katchi abadis provides a deeper understanding of the way in which communities in these settlements are organised.

In Karachi, two million of the four million illegal housed live in katchi abadis. A katchi abadis is initiated by a private developer who starts with organizing informal government protection for a potential settlement in the city's periphery. Following, public land is subdivided, the lay-out in the area is demarcated and some arrangements are made for the provision of water. Apart from that, no facilities are provided.

Then, the first few hundreds of lots are sold against nominal prices, or even given free. Once a few hundreds of households live in the new settlement, main problems of basic facilities and services tend to diminish. From that moment onwards, prices of land gradually rise, and the subdivision profits start pouring in.

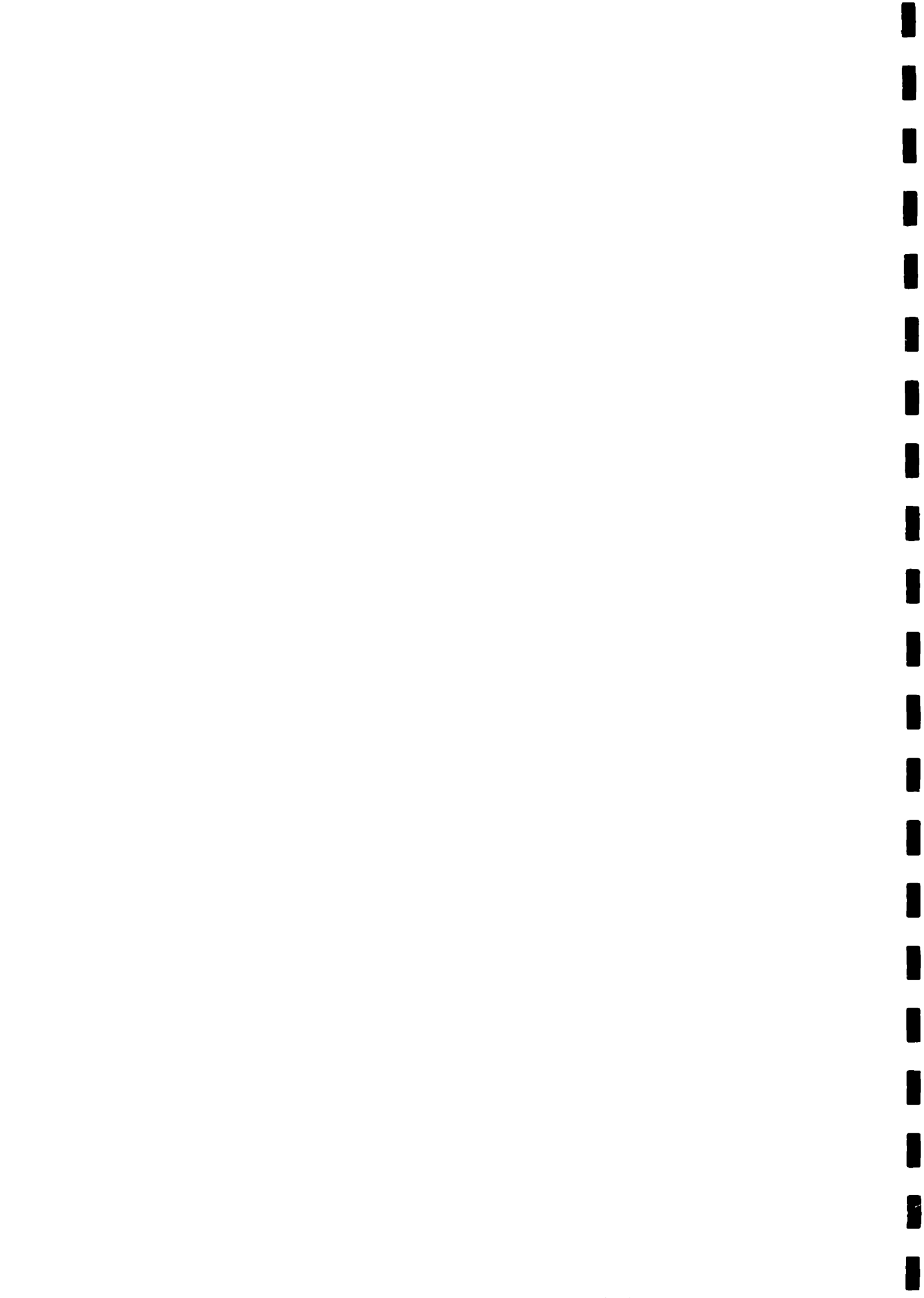
In the system of illegal subdivision, substantial profit of the system is taken by many highly and lowly placed bureaucrats; profits are gained by it and it provides one way of investing black money. Besides, the public agencies are simply relieved from the obligation to develop and service huge numbers of plots.

Finally, the system provides the government a good option to keep grip on the behaviour of the population. Since the system is illegal, demands by definition are always for favours, rather than for rights so that inhabitants of the areas can be manipulated easily.

Local leaders occupy crucial positions. They usually maintain patronage relationships with influential politicians, so that even their minority view point on an area level can ultimately become the final decision on provincial level.

The fact that katchi abadis which existed before 1978 have been legalised does not mean that an end has come to the hierarchical communication channels in katchi abadis in which the middlemen occupy a monopolistic position.

From a survey conducted in Baldia in 1987 by, among others, J.J. van der Linden, it was concluded that people in Baldia still depend on middlemen to get a lease. Furthermore, it revealed that middlemen still monopolized and misused access to and information from, public agencies.



APPENDIX 2



Appendix 2

2. Background information of Quetta

2.1 Water supply

The population of Quetta served by house connections is estimated at 40 percent. About half of the population is served by standposts and remaining 10 percent have private supply.

Especially for low-income groups, the water supply is insufficient to meet the demand. In 1984, the charge for water counted Rs 5.00 a month, which in fact every income group can afford.

However, the charge for water is not sufficient to cover the costs of operation and maintenance. So, in future charges will be raised and charge may be heightened considerably. By applying a progressive tariff structure however, the changes for low income groups may be kept low.

2.2 Sanitation

In the low-income areas, 65 to 85 percent of the population suffers from a lack of sanitation facilities or inappropriate disposal of excreta. Defecation practices vary among ethnic background, sex and age.

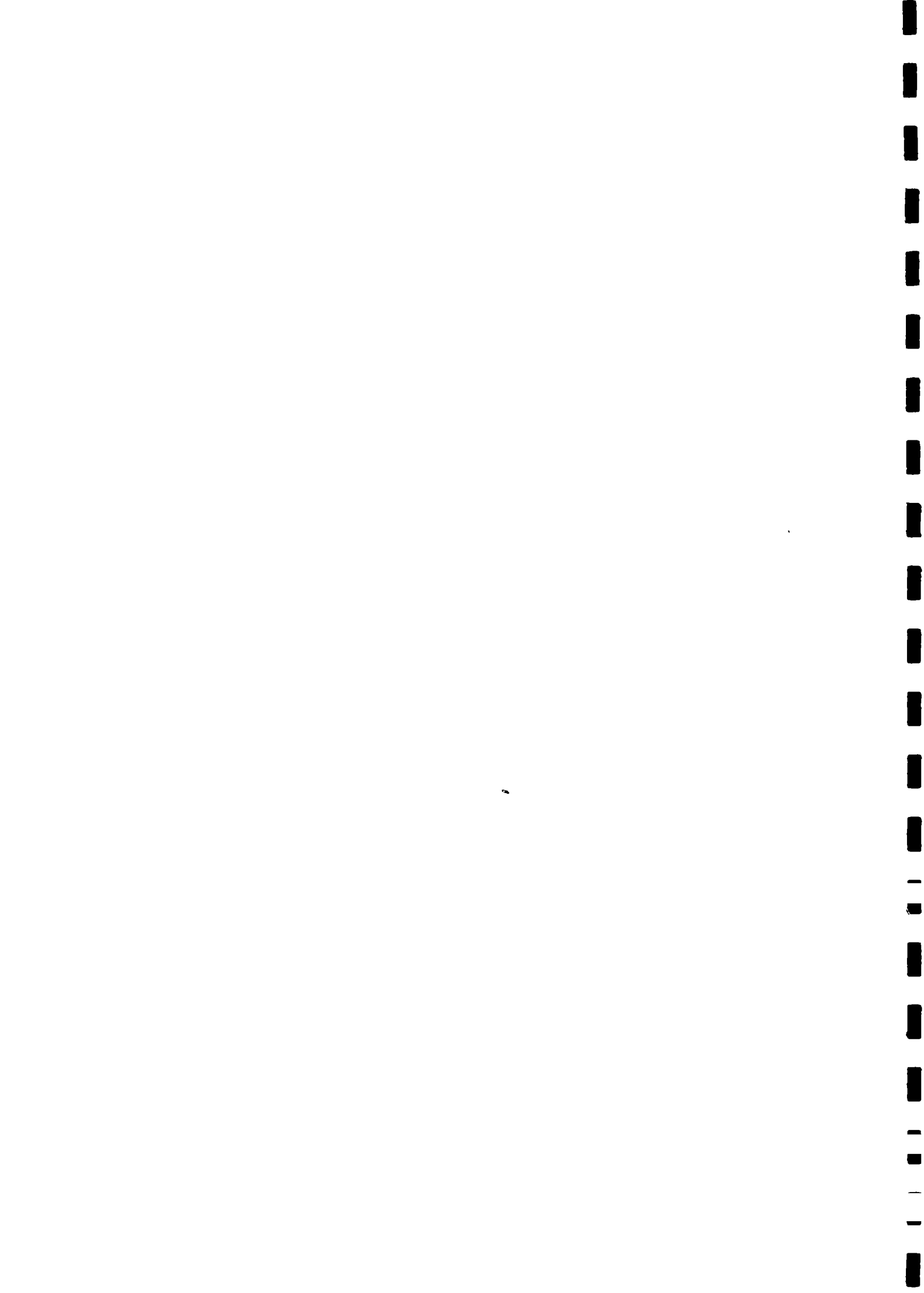
Usually a corner of the compound is utilized as a latrine area, provided, sometimes with some type of facility. For reasons of privacy the area is surrounded by a mud or brush wall. Small children may squat anywhere within the compound, and this is later cleaned up by the mothers. In areas where people have better facilities, the toilet is usually attached to or even inside the house. In general water is used for cleaning after defecation. With the Pathan communities in Quetta, the use of deep dry pits of more than 10 meter is quite common and has a long tradition. Furthermore, many people in these communities clean with sand and mud balls after defecation.

People say that they wash their hands and those of the children after defecation, which is however questionable and largely depends on the availability of water near the house. Toilet training for children is carried out by their mothers and usually begins when the child is about three years old.

Disposal outside the house is not arranged properly. Waste water from pour-flush toilets and septic tanks is mostly discharged into the drains along the streets and the waste water collected by a sewer system is disposed into the major drainage canals. Sweepers who empty the bucket latrines generally drop the excreta in an open field nearby.

Waste water is simply thrown on the ground in a corner outside the house or used as irrigation water for vegetation within the compound. Generally, people understand the danger of contact with human excreta. The danger of contact with animal excreta is however underestimated and often used as manure.

Preference of people for improved sanitation facilities concerns a connection to an underground sewerage system. It should be kept in mind, however, that people probably overlook the impact of this on their monthly family budget. Moreover, people have the bad functioning existing on-site sanitation system in mind while making their selection.



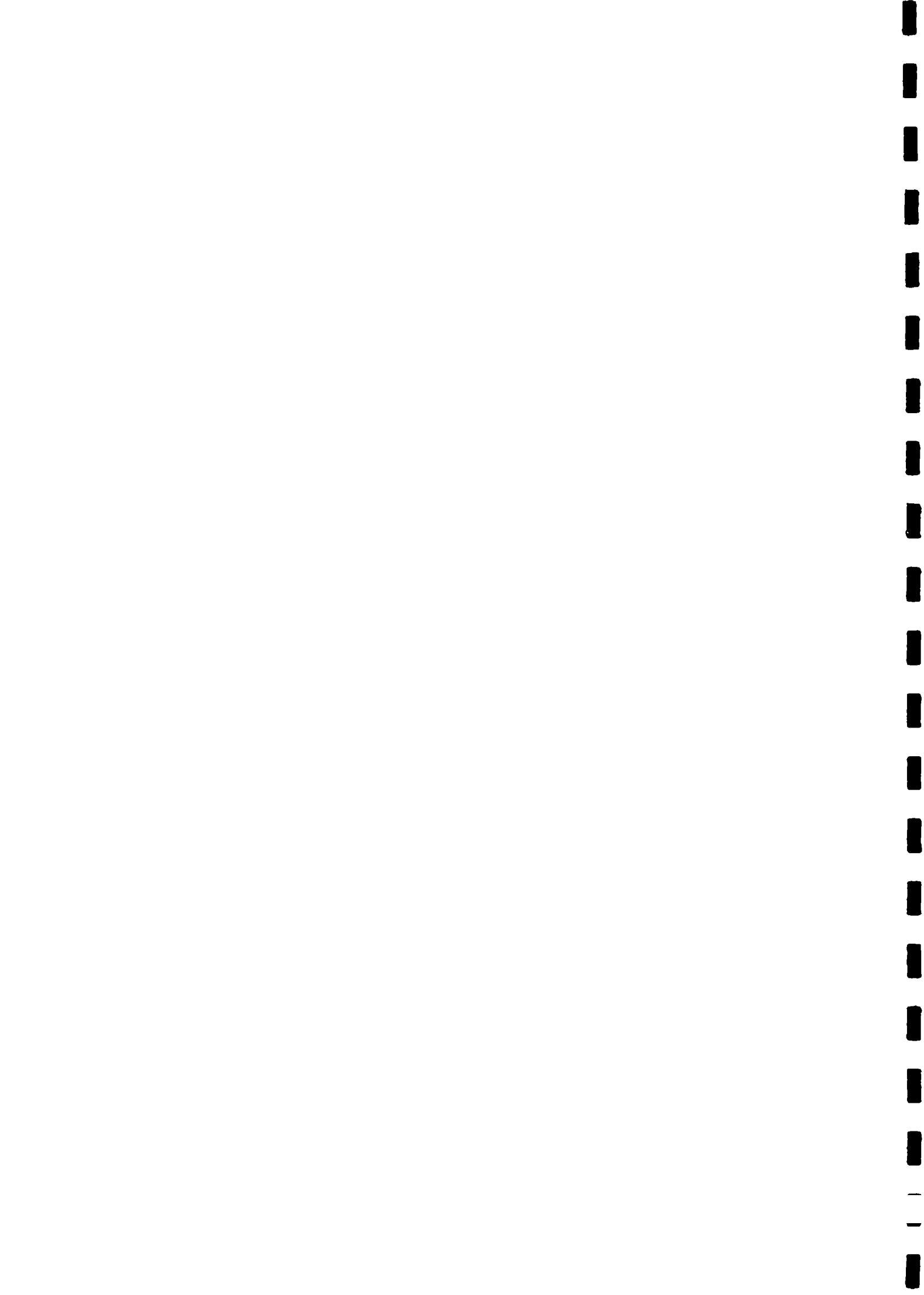
2.3 Housing conditions

Information about the status of the housing conditions of the people (legal/illegal) is not well documented. From the fact that some quarters are referred to as "katchi abadis" it can be derived that their status is illegal. The majority of the households own their house. The remaining 22 percent who rent a house generally pay Rs 125, plus 10 percent of their income for housing.

Since the arrival of Afghan refugees, costs for land and rent prices have increased considerably.

2.4 Income levels

The average income of the six areas in which the on-site sanitation programme will be implemented counted Rs. 3.000 in 1984. Among the different areas, the levels ranged from 1.600 in the poorest area to 5,260 in the richest one.



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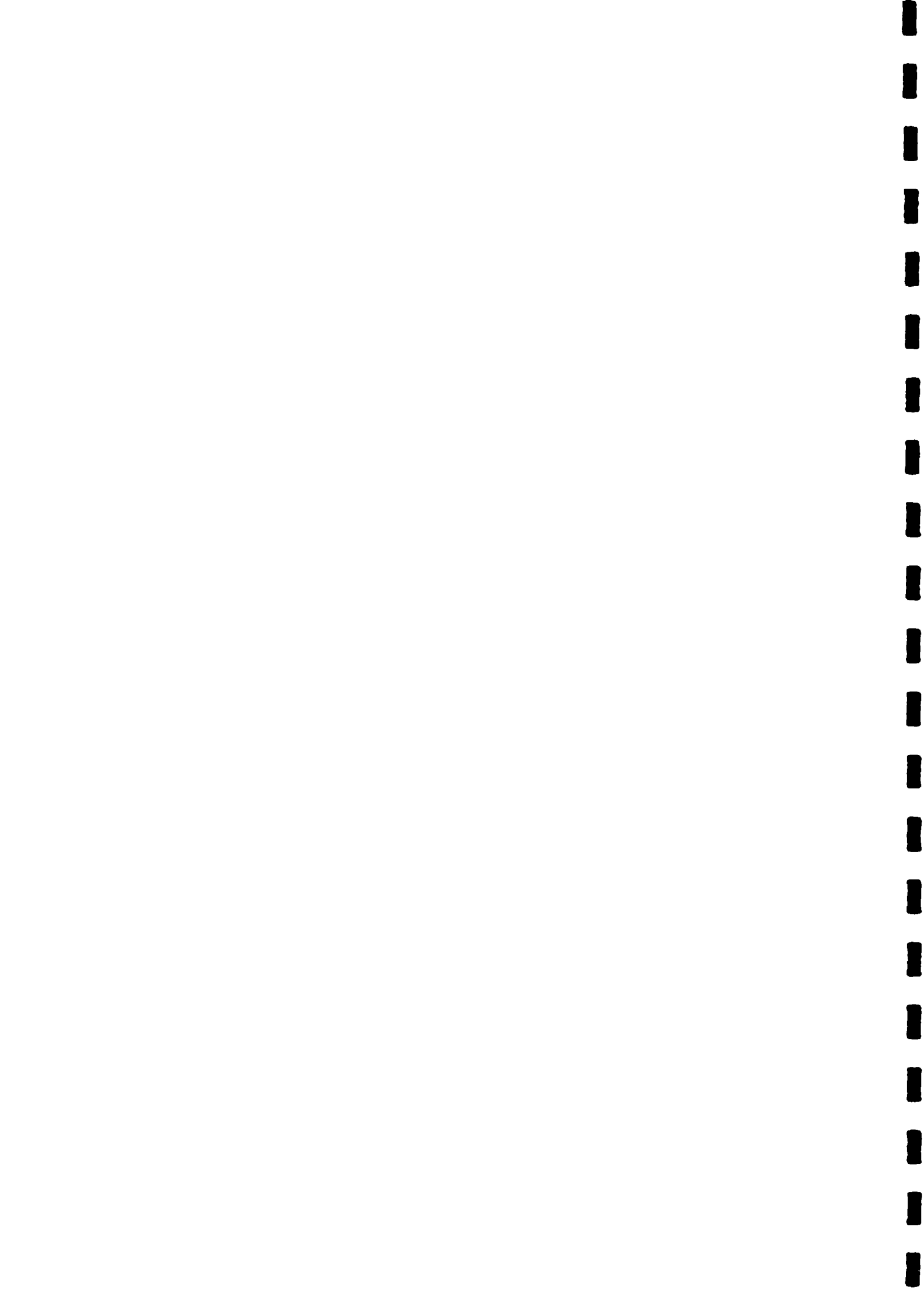
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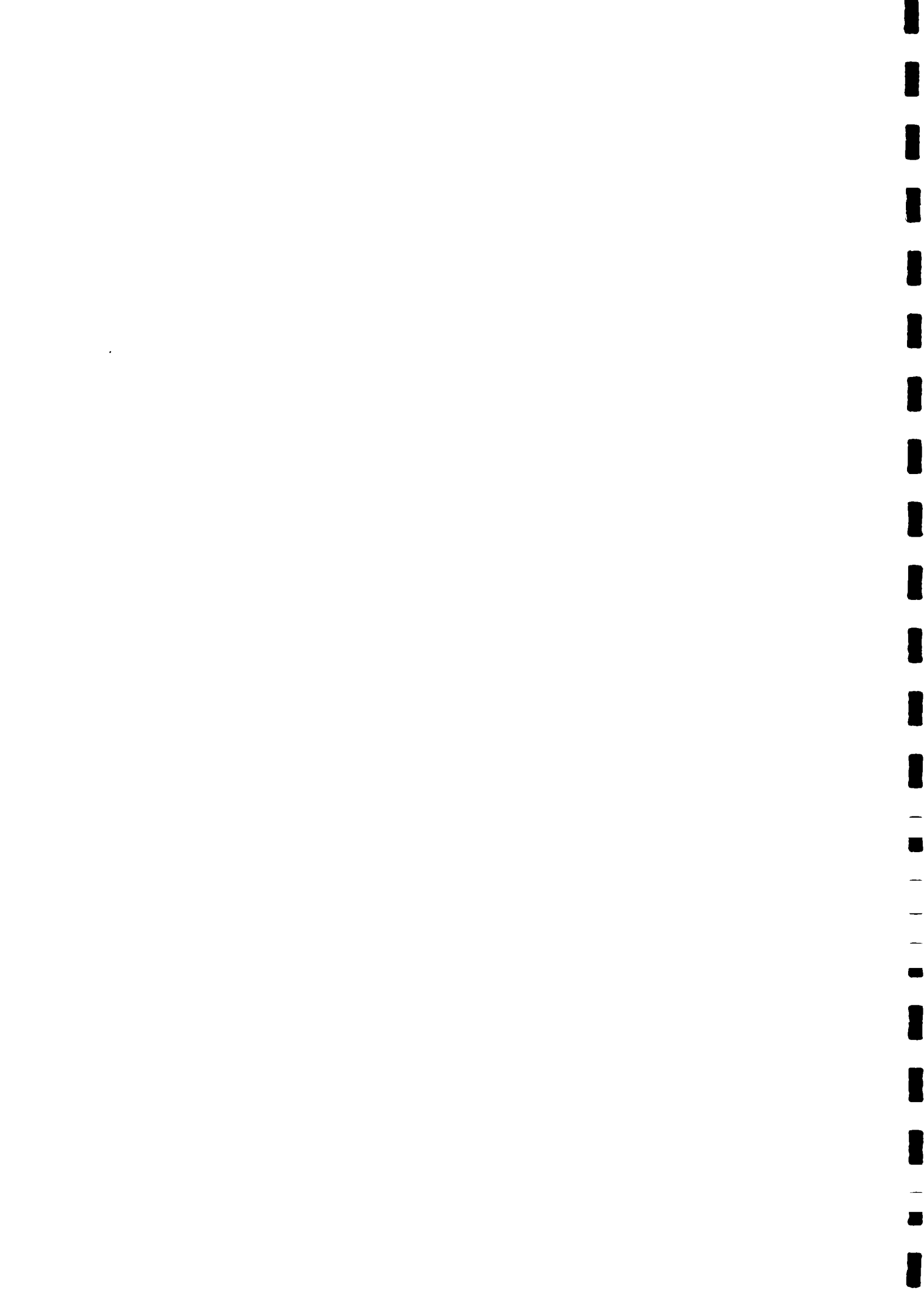
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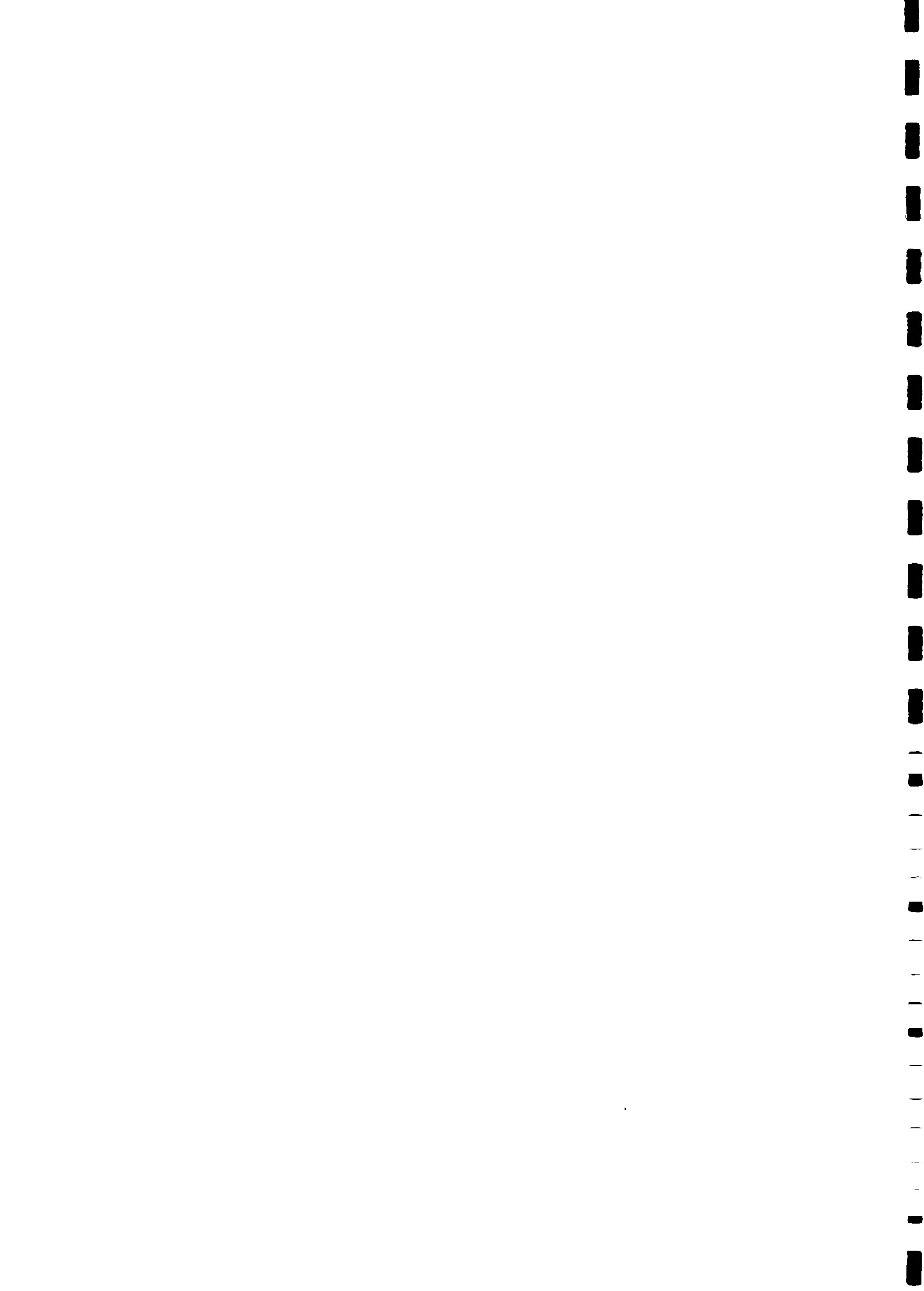
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APPENDIX 3

