

**A COMMUNITY-BASED HEALTH EDUCATION PROJECT ON SANITATION  
AND PERSONAL HYGIENE IN GETEMBE ZONE PRIMARY  
SCHOOLS, KISII DISTRICT, KENYA**

**BY**

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## ABSTRACT

This thesis describes a health promotion project which was conducted in 29 Primary Schools in Getembe Zone, Kisii District, Kenya. The overall aims of the project were: (1) to raise awareness on sanitation and personal hygiene; and (2) to enhance participation in providing and improving basic sanitation facilities and activities; and (3) to help school personnel to develop a more practical approach to the teaching and learning of health education.

The project was centred on access to the minimum requirements of primary health care (PHC): basic sanitation, water supply, and health education concerning proper sanitation and personal hygiene. This is in line with Kenya's health development policies of promotive and preventive health care and the National Guidelines for the implementation of PHC which call for intersectoral collaboration. The Community-Based Health Care (CBHC) approach was used as a strategy to promote health in the Getembe Zone Primary Schools. This approach requires informed and active participants. To this end, Health Education, an important element of PHC was used to address the sanitation and hygiene issues in the school.

The results showed notable achievements in sanitation facilities and activities. The number of pit latrines increased significantly from 230 at the beginning of the project to 287 at the time of evaluation. Sixty three pit latrines were under construction. Twelve schools had provided their pupils with urinals and 7 had water supply provided in their premises. Only 2 schools

did not have refuse pits, while schools with fenced compounds increased from 14 to 24. Health education clubs were formed in 22 schools and 18 schools kept a record of sick pupils. However, performance was not uniform in all the project schools due to various environmental factors. The thesis describes 2 case studies to illustrate the factors that enhanced performance in the most successful school and those that hindered project activities in the least successful school.

Analysis of the teachers' and parents' response to the project indicates the need for more involvement by the parents. On the other hand, analysis of the pupils' sanitation and hygiene knowledge and practice showed positive relationships with the availability of certain facilities and activities in the schools. This points to the need to strengthen social support for sanitation facilities and activities. It also requires that the project be approached from the homes to increase the parents' participation and to ensure constant follow-up by the project coordinating team. The conclusions drawn from the present study would be strengthened by a well-designed, longitudinal study.

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## CHAPTER ONE

### INTRODUCTION

Primary health care (PHC) has been described as a system which is responsive to socio-cultural and political conditions. In theory, it is also tied to the development of other sectors of society. The Alma Ata declaration (WHO-UNICEF, 1978) describes PHC as an integral part of the overall social and economic development of a community. It aims to be a health care system that can be made universally available to communities and individuals. Access to PHC requires people's participation with means that are acceptable and affordable (Gish, 1983).

In view of the last factor, considerable attention is now being given to methods that make PHC strategies more practical. To be effective, PHC must include a system whereby the people have access to the available resources to sustain their health at physically, mentally and socially acceptable levels. Kaseje et al. (1987) point out that a good health care system should be geographically, financially, culturally and functionally within easy reach of the people.

The success of PHC depends on many factors. Among them are:

- (a) the organization of the existing health system,
- (b) availability and distribution of resources,
- (c) cultural-environmental factors such as beliefs and attitudes,
- (d) intersectoral collaboration and cooperation.

In examining equity considerations in health care delivery, Joseph and Philips (1984) indicate the importance of access to primary health care. Although they are referring to the geographical

distribution of general practitioners, it can be inferred that geographical organization of PHC, whether of personnel or facilities, has a considerable impact on overall patterns of accessibility.

Spatial inequalities, together with inaccessibility to health care due to socio-cultural and environmental (predisposing) factors, should challenge concerned governments, organizations and individuals into seeking solutions. Wilkins (1983) points out the need to think beyond improvements in the health care system and to readdress social inequalities in health services. Taylor (1988) agrees that Wilkins' (1983) comments are consistent with current thinking about determinants of health. He believes that strategies for health promotion should move beyond health care services.

This changes the traditional view of focusing on poor health to that of promoting good health, and developing skills and information that are conducive to healthy lifestyles. The purpose of **Health Promotion** (HP) is thus to enable people to create an environment that increases their probability of adopting and maintaining health promotion behaviours. Health challenges facing governments include "reducing inequalities, increasing the prevention effort and enabling the communities to be involved in health care activities" (Epp, 1986). Although in the article, these challenges are discussed within the context of a developed country, there is no doubt that they apply to many developing countries as well. The need to identify mechanisms that are responsive to the

challenges is pointed out, as well as reference to relevant strategies for effectively implementing them.

One mechanism of health promotion that has been identified is referred to as **Community Based Health Care** (CBHC). This approach is to enable people to involve themselves. As indicated elsewhere (Kaseje et al. 1987; Matomora 1989; Johnson et al. 1989) CBHC has been shown to improve accessibility to health care services, to influence knowledge and attitudes, and to motivate communities to be involved by a process of continuous dialogue.

To achieve the important goals of PHC, the Alma-Ata declaration (WHO-UNICEF, 1978) points out that the PHC methods have to be acceptable, affordable and implemented in a way that fully involves the community. **Health Education** (HE), an important element of PHC, is a technique which can be used to address the prevailing health problems. In this context health education will be discussed within a socio-ecological framework of health. It takes into account learning experiences designed to assist and mobilize individuals and communities to take control of their own health (McDonald et al. 1988). As noted by White (1981), the inextricable links between people and their environment constitute the basis for a socio-ecological approach to health education.

Despite improvements that have been made in the area of health and general development since Kenya's independence, the provision of basic needs, facilities and services continues to be a prominent government problem. The government policies of free medical services and free primary education since 1965 and 1978

respectively, have tended to give communities the feeling that the government is responsible for providing basic facilities, in these fields. On the other hand, the "District Focus for Rural Development Strategy" and the "cost containment strategy" of user fee for service in government hospitals, have shifted the responsibilities back to the community. To bridge this gap there is a need for community-based approaches to accommodate this shift. Furthermore, there is a need to develop supporting structures to assist the communities in their new role.

### **1.1 SCOPE OF THE THESIS**

This thesis is based on a community based health education project on sanitation and personal hygiene in Getembe Zone Primary Schools in Kisii District, Kenya (hereafter referred to as the "Getembe Zone Project"). The project objectives emphasized proper school sanitation and personal hygiene practices. The concept of PHC was introduced through health education involving 29 primary schools in addition to the Ministries of Education and Health. **The project aimed to achieve significant improvements in the sanitation level of primary schools and in the personal hygiene practices of the respective children.**

This thesis describes the development and implementation of the project and provides a partial evaluation of its achievements in the 14 months after its inception. The extent to which the health education was consistent with the school community's understanding of their sanitation needs and subsequent action, is

described. Of importance was the role of parents in providing the basic facilities (latrines, urinals, refuse pits, water) for proper sanitation. Also important was the role of teachers in promoting relevant knowledge and skills for the appropriate use of the facilities and personal hygiene practices. The project was intended to provide the pupils with opportunities to develop health promoting attitudes and skills. The methods to effectively communicate health education information are discussed, together with the factors contributing to inconsistency between knowledge, and the observed sanitation and personal hygiene practices.

With regard to project evaluation, observational data were collected on facility provision before and after implementation as a basis for determining the type and degree of change. Survey and interview data were obtained from teachers, parents and pupils after implementation. This provides the basis for describing the involvement of these various groups in the project. Given the absence of baseline information, however, a formal evaluation of project efforts on knowledge, attitudes and practices of these groups is not attempted.

## **1.2 PROJECT RATIONALE**

The rationale for a sanitation project in primary schools was based on the need to address health issues beyond the health care system. According to the Alma Ata declaration (WHO-UNICEF, 1978), PHC is described as an integral part of the overall social and economic development of a community. The aim of the sanitation

project was to implement some of the PHC concepts in line with the District Focus Strategy for Rural Development in Kenya.

The community based approach, focusing on health education emphasized the importance of sanitation facilities for schools. This emphasis was based on the assumption that availability of such facilities would reduce morbidity from certain diseases (Stevens, 1985; Hornick, 1985). In support of this assumption, Okun, (1988) indicates that:

improved water supply and sanitation addresses the causes of diarrhoea and at the same time prevents the transmission of other diseases and provides benefits not directly related to health.

Esrey and Habicht (1986), in their detailed review of epidemiologic evidence for health benefits from improved water and sanitation in developing countries, conclude that there are beneficial health impacts despite lack of adequate studies. As an element of PHC, health education is essential for effective utilization of the facilities, as well as for enhancing a better understanding of good health. Since the provision of basic facilities is a social right, the increasing number of children in the schools demands that this basic need be met. At the same time the difficulty of providing health education in the absence of adequate sanitation facilities, needs little elaboration.

The provision of the sanitation facilities in schools is contingent upon active community participation and effective health education. To this end the project utilized a selection of

educational approaches and methods to reach the various sub-groups of the school community.

### **1.3 WHY SANITATION IN SCHOOLS?**

Since the school is a learning institution, in principle it provides a very appropriate setting for health promotion. The increasing number of children enrolled each year necessitates an increase in basic sanitation facilities (Statistical Abstracts, 1987). The greater number of children in the school environment potentially exposes each child to more health problems related to poor sanitation. Young children have the potential to develop new cognitive competencies which permit better understanding of health and health related concepts. The children are also an important component of the community since they are often left with responsibilities - such as looking after younger siblings, collecting water, and cleaning the home. The number of health personnel in Kenya is inadequate (Economic Survey, 1988) to reach the majority of people, particularly in rural areas. Thus, there is a need to strengthen the health education curriculum in schools. There is also a need to equip the teachers with the concepts of health care so that they are able to meet the challenging situation in schools. Finally, the school as an institution brings together various groups of people; parents, teachers and pupils on the one hand, and various government ministries on the other. This makes the school an ideal experimental environment for testing the implementation strategies of health promotion.



#### 1.4 CHAPTER OUTLINE OF THE THESIS

This thesis is organized into six chapters. The literature review contained in chapter two gives an overview of the geography of health care and health promotion; community based health care (CBHC); and health education in the context of PHC. These are discussed as mechanisms of health promotion, meeting the minimum requirements of PHC:

Health education concerning prevailing health problems and the methods of preventing and controlling them; ... an adequate supply of safe water and basic sanitation ... (Epp, 1986).

Chapter three gives the background information to the Getembe Zone Project. This includes a brief discussion of Kenya's school system, health situation and health development policies, Education for Community Health Action (ECHA) programme in Kenya, and the physical and social environments of Getembe Zone. Chapter four describes the materials and methods used in implementing and evaluating the Getembe Zone project, after which the results are given in chapter five. These set the context for the discussion and recommendations in chapter six.

## CHAPTER TWO

### HEALTH AND HEALTH PROMOTION IN A COMMUNITY CONTEXT

This chapter is devoted to a brief review of the geography of health and health promotion. A conceptual framework for health promotion is adopted which focuses on the health challenges of developing countries. This sets the context for the discussion of CBHC mechanism of health promotion in rural communities. The arguments centre on CBHC as a mechanism of enhancing accessibility to basic facilities in an acceptable way and with the community's involvement. However, the mechanism is not without limitations. These are analysed within a socio-ecological model of health (White, 1981). This leads to a discussion of health education strategies which take into consideration the multiple and complex nature of the environment (physical, economic, political and cultural). Emphasis is given to a combination of methods that focus on predisposing, enabling and reinforcing factors as they influence the effectiveness of health education. This is followed by a brief discussion of the scope, purpose and types of information collected in the evaluation of health education.

#### 2.1 THE GEOGRAPHY OF HEALTH CARE AND HEALTH PROMOTION

Health is expressed in this context as a positive concept emphasizing social and personal resources to enhance it. It gives us the ability to accomplish everyday tasks and paradoxically it is supported by the environment we live in. Our culture, beliefs and attitudes and behaviours resulting from our interactions with the

physical environment influence it, as well as the socio-economic and political structures which are part of the larger environment.

As expressed in the "Charter for action to achieve health for all by the year 2000 and beyond" (Epp, 1986), health promotion is not the responsibility of the health sector alone, but goes beyond healthy life-styles to wellbeing. To apply the principles of wellness to health promotion programmes, the various determinants of health need to be disclosed as a precedence to their analysis and explanation. The geography of health care makes this possible through its analysis, description and explanation of the interrelationship of humans and the environment. The environment here is being defined to include the physical, biological, economic, socio-cultural and political aspects. Implicit in what the geography of health care can offer is the view that health promotion strategies should take into account careful consideration of environmental factors. This demands methodologies that are within the capabilities of geography as it borrows from other disciplines to blend and integrate ideas into acceptable models.

Health promotion, which is defined as the systematic effort of enabling people to increase control over and to improve their health (Epp, 1986), implies that everybody regardless of current health condition is capable of making improvement in the quality of her/his life. Dignan and Carr (1987) express health promotion as advocating increased awareness of personal and community health, changing attitudes so that changes in behaviour are possible and searching for alternatives to improve health. In the context of

developing countries where the individual is entangled between an environment of poverty, illiteracy and politico-economic situations that perpetuate poor health status, the enabling efforts have to consciously involve the political and economic systems (Malcolm, 1983). Even then, beliefs, attitudes and behaviours may still be embedded in a history that needs to be understood before mechanisms and strategies for health promotion are addressed (Semour and Jenkins, 1972).

Health promotion, a concept which has received attention in the 1980s, is marked by a socio-ecological and multidisciplinary orientation. This is an orientation that puts geography at a central point of linking the various environmental factors as they impinge on human health. By shifting the focus from an individual to a broader environmental perspective, the health promotion concept challenges the involvement of the geography of health care. Thus, it necessitates collaboration and coordination across political, geographical, professional and technical boundaries. This has led to a conscious recognition of the often ignored interdependencies (Health and Welfare Canada, 1989).

While in the past, the geography of health care has focused on disease ecology and health service research (Earickson et al., 1989), not much has been done in the area of health promotion. To achieve the "Health For All (HFA)" goal by the year 2000 set by the World Health Assembly and endorsed by member states of the United Nations, a strong need for a framework for health promotion and a new approach to public health action has become necessary (WHO,

1983). This is in the light of persisting health inequalities despite the escalating costs in medical care (Black, 1983), and the existence of infectious diseases and infections related to poor sanitation, in an era when prevention, control and treatments are known and available. The changing mechanisms and strategies of addressing communities and individuals call for a framework of health promotion. The call for action (Health and Welfare Canada, 1989) is not only timely but challenges the geography of health care to provide a context for the health promotion mechanisms and implementation strategies. Although the framework is discussed in the context of welfare state health systems, the concept fits well into developing state health systems (Pyle, 1989). However, it should be borne in mind that health problems in developed and developing countries differ. Environmental differences may also make the mechanisms and implementation strategies different. The framework describes the conceptual linkage between mechanisms and implementation strategies that aim to achieve the HFA goal by the year 2000.

... Health promotion implies a commitment to dealing with the challenges of reducing inequalities, extending the scope of prevention and helping the people to cope with their circumstances. It means fostering public participation, strengthening community health services and coordinating health public policy. Moreover, it means creating environments conducive to health in which people are better able to take care of themselves and to offer each other support in solving and managing collective health problems (Epp, 1986).

It should be noted, however, that the challenges facing many developing countries, while they include reducing inequalities and increasing prevention efforts, differ in context and include

advocating for political commitment (Gish, 1983; Heggenhogen, 1984; Malcolm, 1983; Mburu, 1979, 1983). While the prevention efforts in developed countries focus on chronic and degenerative diseases, the developing world is still addressing diseases related to malnutrition, infectious diseases, and those related to poor sanitation, (Gesler, 1984). The mechanisms needed for health promotion in developing countries need to be comprehensive. They also need to focus on a wider environment. This is necessary because of the complexity and multicausality of human health, requiring a multidisciplinary view of the environment. The implementation strategies would be meaningful if they were in line with the identified intersectorality of health promotion and in the context of historical, political, economic, cultural and other environmental determinants of health.

To get hold of the right health promotion mechanisms and implementation strategies for a particular health intervention programme, important components of the health problem have to be identified together with the predisposing, enabling and reinforcing factors. Programmes related to the provision of water and sanitation facilities and chemotherapeutic interventions illustrate the need for this. Such programmes (e.g., for intestinal nematode infections) have not shown long term benefits (Anderson, 1986; Holland, 1989; Roundy, 1979; Tingley, 1988). As expressed by Anderson (1986):

The intensity of efforts and associated costs required to control intestinal helminths has meant that little success has been achieved in developing countries.

He continues to argue that given the evidence for predisposition (of certain individuals or age groups) to heavy infection with intestinal nematodes (particularly multispecies predisposition), even with the advent of broad spectrum anthelmintics, there is need for a "reappraisal of this problem". Anderson (1986) draws a conclusion which is shared with Tingley (1988):

Paradoxically, therefore, future research in epidemiology... should focus greater attention on trends within individuals. In particular we need to understand more about the factors that determine parasite aggregation and predisposition.

As indicated by Gesler (1984), improved health will have to come from sources wider than curative health care alone. This view is echoed by Holland (1989). He calls for a greater communication and interdisciplinary exchange between biomedics and social scientists. Knowledge development for health promotion relevant to local situations, is urgently needed as health intervention programmes encounter more unanswered questions than solutions.

## **2.2 HEALTH PROMOTION THROUGH COMMUNITY BASED HEALTH CARE (CBHC)**

Identified as one approach to health promotion, CBHC has been claimed to make health care accessible as people themselves participate in decisions, implementation and management of programmes that affect them (Oakley, 1989). This is in response to the recognition that in the past, conventional health care systems have not paid much attention to the involvement of the people. They have been said to only care for the few and privileged people (Djukanovic, 1979). Reappraisal of this kind of health care system

in the 1970s influenced thinking in health practice and led to developments which have incorporated people's participation.

Considered to be central to achieving the HFA goal by the year 2000, the CBHC definition adopted for this thesis is that developed by Shaffer, (1984). That is:

"initiatives, resources and responsibilities put forth by people, either individually or corporately to beneficially change their health habits and conditions."

This takes people into consideration as active participants who possess knowledge and perceptions that are relevant for a successful programme in the development process. The definition emphasizes the need for local initiatives, use of local resources and individual or community involvement. A distinction between CBHC and **Community Oriented Health Care** (COHC) approaches is important here, as the two are often treated to mean the same. The COHC model operates when medical staff plan and dispense their knowledge and care to people in the hope of reducing morbidity and mortality. It is a prescriptive approach to health promotion. In the absence of a good foundation of social epidemiology and limited resources the model's contribution to improved health status needs supplementary approaches to bring about a significant change in the health of the people. In this thesis, the approach discussed is community-based. CBHC originates from the people, and with the initiatives of a facilitator, leads to participatory learning and community organization (Dave, 1988). In a process of continuous dialogue under a dynamic and charismatic leadership, identification of



needed resources for specific problems is made. This promotive approach to health promotion may lead to a process that enables people to understand their situation and what they can do about it (Kaseje et al., 1987).

CBHC approach has been claimed to have certain advantages:

1. A community participation approach is a cost-effective way to extend a health care system to the geographical and social periphery of a country - although it is far from being cost free.

2. Communities that begin to understand their health status objectively rather than fatalistically may be moved to take a series of preventive measures.

3. Communities that invest labour, time, money and materials in health promoting activities are more committed to the use and maintenance of the things they produce, such as water supplies.

4. Health education is most effective in the context of rural activities (MacCormack, 1983).

A Report of a WHO Expert Committee (1983) points out how, in the past, participation has been equated with the provision of local labour to construct basic facilities, while public funds are used to build sophisticated hospitals in cities. While the "Harambee movement" ( i.e. pull together) in Kenya in the 1960s and 1970s may be described as participation of this kind, its contribution to rural development cannot be overlooked. Basic facilities (schools and health centres) were built through the community's own efforts and later taken over by the Government for management and maintenance. The trend of the late 1980s has been to put the whole responsibility back to the communities in the new approach to development, "The District Focus for Rural Development Strategy". The attitudes developed and the beliefs held about the

provision of social services in the past need to be incorporated in the new approaches to the provision of basic services. This calls for development education to prepare the communities for their new responsibilities. This is a process whereby individuals and communities identify with, and take responsibility jointly with, the concerned others for making decisions, planning and carrying out activities. This is clearly a process that health education can promote.

As pointed out by Oakley (1989), community participation in health cannot be divorced from the broader aim of encouraging the active participation of local people in the development process as a whole. It therefore may be seen as a means to achieving a set objective or goal, and hence a management technique intended to benefit both the consumers and providers of a programme, and as an end in itself. Participation on its own has been described as a process in which confidence and solidarity among rural people are built up (Oakley, 1989). In this case, participation can be viewed as a dynamic, unquantifiable and essentially unpredictable element. It is created and moulded by the participants in response to local needs and changing circumstances. Participation as an end is likely to lead to educational experiences, community control of activities, development of community confidence, motivation and sustainability of the programme (Kaseje, et al. 1987; Mburu, 1989). However, success of such participation depends on the socio-economic and political aspects of the environment. In particular the community has to be well informed - if not literate. As an

important strategy of PHC, a shift in resource relocation is also implied, requiring a strong political will and support at both national and community level reinforced by a firm national strategy (Vaughan, 1984). It is important to note that, planning of CBHC programmes in Kenya still remain on paper, as resources and logistics continue to be embedded in a system that has not structurally changed (Sessional Paper Number 1, 1986).

### **2.3 HEALTH PROMOTION IN SCHOOLS**

The need for health promotion in schools cannot be over emphasized. Drawing on results from a World Health Organization Cross-National Study of children's health behaviours, the conclusions drawn from it reflect the need to understand relationships between individual behaviours and a range of social and environmental influences. Implications for a wide range of effective communication strategies of health education are pointed out (Nutbeam, et al., 1989). In defining health as a state of wellbeing, its achievement requires a conscious effort on the part of the individual and the community. Efforts made should be within the range of social and environmental influences that impact on the individual and the community. As opposed to public health programmes of disease/disorder prevention which promote expansion of secondary and tertiary care systems with a health prescription approach, the health promotion approach depends on the coordinated efforts of all units of society (Kickbusch, 1981). The need to differentiate between disease prevention education, and health

promotion education, is important in enhancing the health of young people who are still growing and developing capacities and competencies to cope with the environment. An enabling or promotive approach to health education in young people should therefore play an advisory and supportive role and possibly lead to social action without social control.

The rationale for focusing health promotion in primary schools has already been highlighted in the introduction. To be meaningful and to meet both the national and individual goals of self reliance, health promotion opportunities have to be provided for effective health education. The kind of set up (classroom) that exists for health education does have limitations for offering the pragmatic use of social skills required for a healthy life. School health education needs to develop various means of extending learning outside the confines of the classroom walls. Parch (1976) points out that whereas cognitive competencies may be developed in the classroom, social learning needs a much wider environment including the home environment. In addition the existence of youth networks (school clubs, e.g., health education club) may offer an alternative structure for health promotion. A close relationship between classroom health education and other activities initiated by the pupils, teachers and parents provides a natural opportunity for the practice and reinforces proper sanitation and personal hygiene.

### 2.3.1 COMMUNITY BASED HEALTH PROMOTION THROUGH HEALTH EDUCATION

The definition of health education adopted for this thesis is any combination of learning experiences designed to facilitate voluntary actions meant to improve individual and environmental conditions conducive to good health (Isley, 1988). It is one that recognizes the skills and competencies of lay persons as promoters of health. Starting where the people are, it provides individuals and communities with the opportunity to make informed choices and decisions about sanitation facilities and practices. The basic challenge here is for health education to find appropriate ways, approaches and methods to influence individuals and communities to take actions that promote health.

This sub-section is devoted to health education strategies in CBHC programmes of health promotion. With a focus on primary schools as institutions of learning, and recognizing that resources are limited, the need for the development of suitable opportunities for health education and suitable support systems are discussed. The health education approaches or methods are described from an enabling or promotive point of view of health and takes into consideration the complex nature of health practice determinants. The discussion is in the context of a socioecological model of health (White, 1981) and takes the total environment into consideration. It recognizes that educational activities and programmes are not the only way to develop and sustain positive health behaviours. The awareness to multicausality of health related behaviours points to the need for a variety of educational

approaches. It is recognized that whereas health education is a body of knowledge, opportunities for target groups to critically evaluate the ideas and beliefs must be created. These include creating learning situations, improvements in the environment (provision of sanitation facilities) and the provision of incentives through social support mechanisms for promotive health activities. As Green (1980) points out, knowledge of the nature of a problem does not imply an ideal solution but it is a necessary step in developing a rational and effective solution. A combination of health education approaches and methods is therefore deemed necessary for community health action. These are described as preventive and supportive health education strategies to health promotion.

Like other educational activities health activities in Getembe Zone Primary Schools were deliberate and planned (Bates, 1984). Recognizing that sanitary conditions determine the frequency with which people come into contact with infectious disease - causing agents, the purpose of health promotion in Getembe zone Primary schools was to try to close the gap between known optimum sanitation practices and what was actually being practised (Hornick, 1985). The educational activities were varied to take the heterogenous nature of the community into consideration (Bennett, 1979; Knowles, 1970). As illustrated by Bates (1984), no one learns from having conclusions presented to him. Learning takes place only when there is a need, curiosity, an interest, correction of error - all carried out by the individual or community. The resulting

behaviour or lack of it should be analysed in the context of the socioecological model of health (Figure 1). As described by White (1981) a health outcome (w, x, y, z) is the result of the interaction of a person or group of persons (P) with several environmental factors ( $e_1$  to  $e_6$ ) which are simultaneously interacting among themselves. The model offers an alternative, complex, explanation of health related behaviours from that of a linear relationship. In this context the outcomes of the health education project should be seen as being influenced not by lack of awareness or knowledge on sanitation but a wide range of factors and interrelationships.

The school community is composed of three groups of people (parents, teachers and pupils) who not only relate to each other but also to a wider environment (physical, social, economic, cultural). At the same time the school as an institution for learning relates to the socio-political, economic, historical and physical environments. A clear picture of activities in the schools therefore requires a comprehensive view of the wider environment as much as it needs to understand the school communities (Eyles and Woods, 1983).

As providers of education, schools are constrained by matters of social policy and efforts to reduce the gaps between human needs are also matters of social policy (Boulding, 1967; Titmus, 1968). Health education efforts directed toward the formulation of sound social measures that will create an environment conducive to health must therefore claim a high priority at a different level other

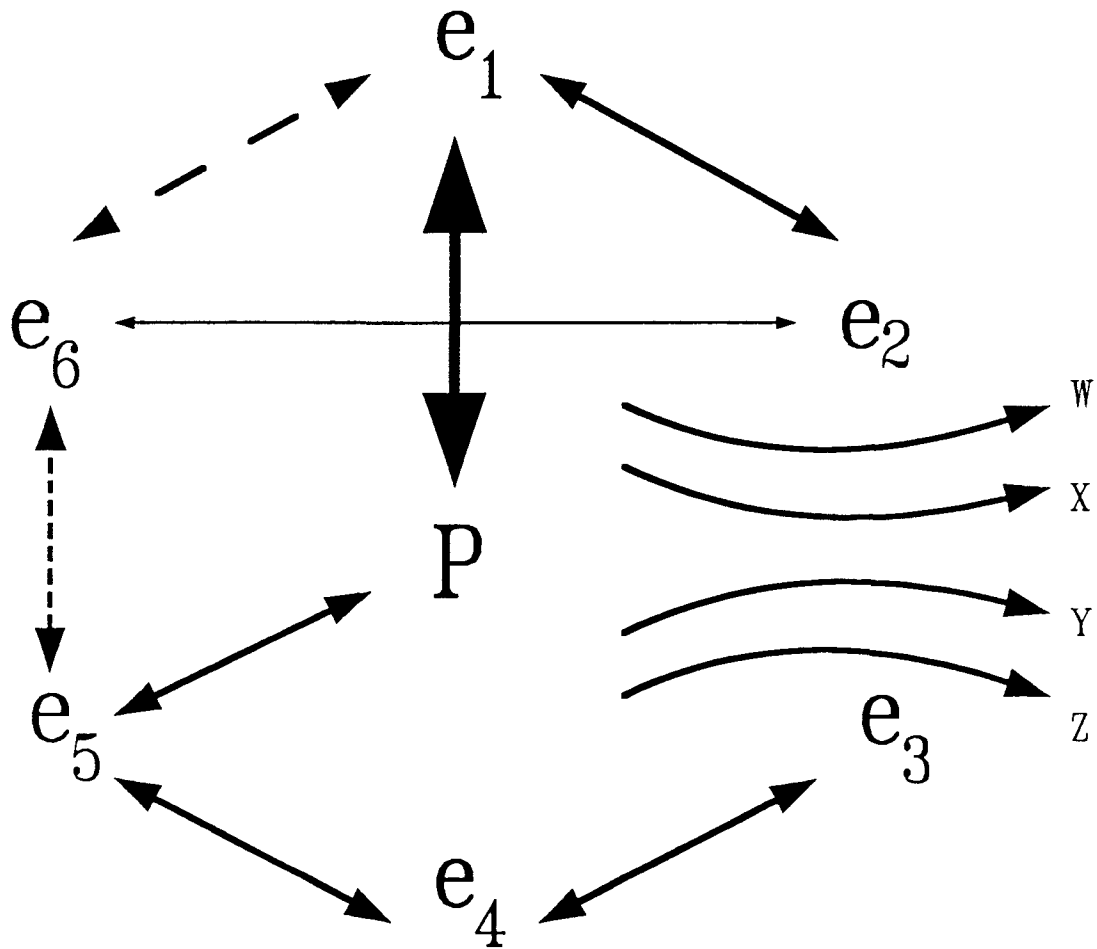


FIGURE 1: Socio-Ecological Conceptual Framework of Actions due to Health Education (White,1981)



than the school. Nevertheless, while schools are structurally constrained in their actions, the various groups constituting the school community have some measure of freedom. In recognition that sanitation facilities are basic needs which are a right to human welfare, health education offers school communities the opportunity to make informed decisions about their sanitation situation. School communities therefore have freedom of choice to have the facilities once the need is recognized.

The health education project in Getembe Zone was directed toward helping school children develop and be well equipped with proper sanitation and personal hygiene practices. Equally important are policies and decisions affecting the provision of basic facilities which make the practices possible.

### **2.3.2 HEALTH EDUCATION APPROACHES TO CBHC**

In view of the role that health education plays in the entire system of PHC, new approaches must be reviewed that bring these into full harmony with the principles of PHC (WHO, 1983). PHC objectives can be achieved only if health education plays a part. PHC objectives point to self-reliance relying as much as possible on local resources. To be effectively achieved, suitable educational activities aimed at enabling people to cope with pressing health problems have to be planned.

The Global Strategy for HFA by the year 2000 provides further guidance by pointing out that communities must be given more opportunities to define their own goals, mobilize their own

resources, control and evaluate their own efforts (WHO, 1981). This also means that mechanisms must be developed (or strengthened) to ensure that individuals and communities can express their views on health problems that affect them. Ways of building up the process of community involvement and creating opportunities for communication of opinion must be sought. The role of health education is therefore to:

1. develop new policies in harmony with the principles of PHC;
2. facilitate the development of human resources with the skills to translate social goals into educational objectives for HFA by the year 2000;
3. reflect on educational technology most appropriate to promote individual and community involvement and self-reliance;
4. strengthen its multisectoral approach; and
5. pay more attention to monitoring and evaluation (WHO, 1983).

Paternalistic approaches and the imposition of decisions have been shown to be seldom effective (WHO, 1983; Bates, 1984; Dignan, 1987; Isley, 1982). In view of this, health education approaches must therefore reflect not only knowledge of disease ecology but also sound knowledge of human ecology, taking into account the interactions between the communities along with environmental factors. It is also important to note that health involves socio-economic issues that often have political implications. In planning for health education Green (1980) points that social,

epidemiological, behavioral and educational diagnoses have to be made. The educational diagnosis is indicated to be an indispensable part of determining how best to initiate the process of behaviour change.

The notion of multiple causation of health related behaviour with reference to the socioecological model of health (White, 1981), allows health education planning to take into account not one but several influencing factors. The consideration of predisposing, enabling and reinforcing factors is not to form an all-inclusive causal model of health related behaviour change. The purpose is to sort the determinants of behaviour changes that may be responsive to health education into categories convenient for implementation of the health education project. The health education approach chosen is one that includes a combination of methods and techniques that are used to address the predisposing, enabling and reinforcing factors which directly or indirectly influence behaviour (Green, 1980).

The classification of health approaches developed by Green (1980) is adopted for this thesis. They fall into the following three categories:

1. Communication methods including lecture-discussion, individual counselling, audio visual aids and use of songs, poems and drama;
2. Training methods including skills development, small group discussions, inquiry learning, simulation and games;
3. Organizational methods including community development

(using school committees and the teaching staff as central organs for organizing the activities in the school).

Approaches that address both the predisposing, enabling and reinforcing factors at the same time have been indicated to have the greatest payoff in long term behaviour changes compared to those that address individual factors (Green, 1980).

Communication may be defined as a means of exchanging messages or ideas or an act of giving information and receiving a response (MacDonald, 1984). Communication is a two way process with a sender, a receiver and a channel of communication. With the awareness that now exists about the multicausal nature of health related behaviour, the choice of an appropriate channel of communication is as important as the message. Principles of good communication identify important features for effective communication. These include simplicity, clarity and specificity of the message, the level and appropriateness of the language used and choice of audience for effective use of charts, pictures and other audio visual materials. Focusing on predisposing, enabling and reinforcing factors, the methods are expected to create awareness, influence opinion, stimulate thought and develop critical thinking. Employing a variety of learning methods is said to enhance instructional effectiveness and learner interest (Green, 1978). Organized songs, poems and drama is also a way of raising awareness in the schools and among parents during meetings. On a subjective and anecdotal level, the response to this kind of communication has been found to be tremendous (Fehrsen et al., 1979).

Training methods which were adopted were meant to develop skills and increase competencies in activities related to proper sanitation and personal hygiene practices. Literature on this method shows potential for effective communication particularly for infectious diseases (Green, 1980). Inquiry learning was encouraged particularly for the groups responsible for construction work. However, its reliance on technical know-how and technical personnel rendered it ineffective as such resources were in short supply.

Organizational methods included community development and social planning. Existing literature on this method indicates that the assessment of its effectiveness is difficult as unanticipated results are frequently encountered and the difficulties of differentiating between project and non project effects on outcomes. This necessitated use of anecdotal case studies as one way of evaluation (Clark and Wolderfael, 1977).

### **2.3.3 EVALUATION OF A COMMUNITY BASED HEALTH EDUCATION PROJECT ON SCHOOL SANITATION AND HYGIENE PRACTICES**

Project evaluation reflects not only what happens during implementation but also the basic decisions that were made throughout the period of project development (Green, 1980). Evaluation as used in this thesis is a process of inquiry into project performance (Dignan, 1987). Incorporated in this definition are three concepts that are basic to understanding the type of evaluation carried out. First, evaluation is an inquiry. Second, it sets out to assess project performance and lastly, it employs a set

of standards, making judgements using the standards.

In this thesis evaluation focused on project performance using a level of specific activities as indicators. A goal-attainment model of evaluation was adopted (Dignan, 1987)). Using the project objectives as the standard, the evaluation set out to assess whether the short term goals were met. The resulting data are quantified in terms of number of latrines, water supply, urinals, refuse pits, health education clubs, etc. The limitations of this approach are taken into account. The qualitative approach, was meant to supplement the goal-attainment approach. It recognizes the importance of participant experiences of the project. This gives one a wider perspective of gaining an understanding of the contribution of the physical, socio-cultural, economic and historical environments. Existing literature indicates that an understanding of project process requires qualitative approaches of evaluation (Bates, 1984; Dignan, 1986, 1987; Green, 1980).

Case studies and key informants provided the data that has been used to assess project processes.

Evaluation contributes to decision making. To this end, this evaluation was meant to make a contribution to the following groups involved in the project: project participants who include school committees, teachers, parents, pupils and project coordinators; project sponsors; and the Government Ministries of Education and Health. This leads us to understand another important aspect of evaluation. Green (1980) calls this aspect accountability, while Dignan (1987) describes it as weighing results and effects against

efforts or resources. This challenges project participants to critically evaluate their planning, implementation and management strategies. However, the nature of health education poses the dilemmas for its evaluation. Because it cannot stand on its own, it may not be expected to accomplish much without adequate, timely and well directed support.

## CHAPTER THREE

### THE GEOGRAPHIC CONTEXT OF THE PROJECT

This chapter describes the context of the Health Education for Community Action on Sanitation and Personal Hygiene Project in Getembe Zone primary schools. The chapter begins with a brief description of the school system and health care situation in Kenya in sections 3.1 and 3.2 respectively. This is followed by a summary of "Education for Community Health Action" (ECHA) programme objectives in section 3.4, which sets the context for the Getembe Zone Project Goals in section 3.5.

#### 3.1 KENYA'S SCHOOL SYSTEM

In 1985, Kenya adopted the 8.4.4 system of education. This was a change over from a 7.4.2.3 structure whereby 7 years were spent in primary school, 4 in secondary school, 2 in high school and 3 in university. In the present system primary and university education are longer by one year and there is no "A"-level in high school. This change over was supposed to be accompanied by fundamental changes in the curriculum content and in the methods of teaching, learning and assessing pupils (Syllabuses for Primary Schools, 1986).

For many of the children, primary school level is terminal. To equip those for whom primary school education is terminal, the system is broad based and lays emphasis on practical skills and independent learning. The national goals of education emphasize national unity, national development, individual development,



social equality, respect for cultural heritage and international consciousness (Syllabuses for Primary Schools, 1986). The primary schools curriculum has been developed to achieve the national goals by setting objectives that are meant to meet both the national and the individual's needs. Being a time of growth both physically, socially and psychologically, the schooling period is a stage in which the children need guidance in all aspects of life. The school system plays an important role in the development of health, expressed as a state of complete physical, social and psychological wellbeing. Health education is therefore important in enhancing this optimum state of mankind. However, health education is not taught in its own right, but instead is incorporated into home science and science subjects.

An examination of primary school enrolment figures shows that the number of children joining primary schools has been increasing (Kisii District Development plan, 1989-1993; Economic Survey, 1988). The district development plan indicates clearly that the education development in the district is:

realistically in line with the available scarce government resources and cost sharing scheme seeking the support of local communities and leaders (Kisii District Development Plan, 1989-1993).

The education development plan along with the stipulated government guidelines, have shifted the responsibility of meeting the basic facilities to the communities. This is not always easy as expressed by a local news magazine:

One of the major constraints facing the education system is that of numbers. This puts a lot of strain on the existing facilities: classrooms, latrines and water supply. To this end, primary schools in the country have degenerated into facades of learning institutions (Weekly Review, Jan. 10, 1986).

It is important to note that for most rural schools, clean water is not a priority and latrines are not related to the number of pupils. With an increasing enrolment of primary school-age children, Getembe Zone typically reflects the demographic changes and the accompanying socio-economic and environmental challenges that people must face. At a local level, when the enrolment figures for Getembe Zone are related to the available basic facilities (quality and quantity), an interesting picture emerges. Not only are classrooms inadequate but a number of schools have temporary structures that put the children and teachers at risk to various environmental health hassles. Most schools have not given enough attention to the provision of latrines and clean water. The district development plan (1989-1993) points out that:

the burden on parents providing all the required physical facilities and yet provide essential textbooks in cost sharing scheme is immense and requires joint efforts from leaders of all walks of life.

### **3.2 HEALTH EDUCATION IN THE SCHOOL CURRICULUM**

The health education materials in the health science and science syllabuses are meant to equip young people with an understanding of the need for a healthy society. School health education therefore offers the children learning opportunities. For the purpose of this thesis and the project in Getembe Zone, the

children were expected to learn more about human excreta and refuse disposal, in addition to general cleanliness and personal hygiene. Although school health services are non-functional, the teachers were expected to use their educational training to expose the children to relevant knowledge and skills related to proper sanitation and personal hygiene. They could also use their own initiatives to invite resource personnel who are experts in a specific area of knowledge related to sanitation. Theories on how children learn, and how learning leads to or influences behaviour, indicate the need to seek opportunities that reinforce positive behaviour. They support the need to develop social skills for health promotion (Parcel, 1976).

Since teaching is the foundation of health education practice in schools, teachers could draw upon these theories and develop various models for effective communication of health promotive messages. Parcel (1979) classifies these models into information processing models, social interaction models, personal development models and behavioral models. The teacher can use these models to meet specific needs and objectives for health education instruction. The social context of children's behaviour, as well as environmental opportunities and constraints, should be borne in mind when identifying mechanisms for supporting or reinforcing acceptable sanitation and personal hygiene practices (Nutbeam et al., 1989). In their study on the WHO "Cross-National Survey of Health Behaviour among Schoolchildren", Nutbeam et al. (1989) concluded:

The results illustrate clearly the relationship between 'health behaviour' and a range of social and environmental influences. ... It is apparent that the complex range of factors which influence behaviour can only be understood by considering behaviour from a range of perspectives starting with the individual, and ending with the broad social and economic environment.

In view of this, the school may develop activities or educational strategies which recognize a variety of dimensions to health related behaviour. Parental support, social change, communal and political action may be required in addition to direct interaction with children.

### **3.3 KENYA'S HEALTH SITUATION AND HEALTH DEVELOPMENT POLICY**

With a population of 22.1 million (1987 estimates) and an annual growth rate of 3.9% (1986) (Statistical Abstracts, 1987), Kenya faces various health problems that are worsened by the expanding population. Identified national health problems fall into four major areas: Maternal and Child Health, Family Planning, Nutrition, Communicable and Environmental Health Problems. The environmental health problems are closely related to problems of sanitation and water supply (Sessional Paper Number 1, 1986; WHO, 1980, 1987).

An examination of Kenya's health development policies since independence (1964 -1988) point to a health care system that is meant to provide adequate health services to all people. The main objective was to facilitate access to promotive, preventive and curative services to the majority of the people, of whom 80% live in rural areas (Mburu, 1979). The 1974-88 health development

policies explicitly stated that emphasis would be on promotive and preventive health for rural areas. However, the stated objectives have not been fully achieved in each planning period (Government Development Plans, 1988-1993). Identified problems relate to high population growth, lack of reliable data for effective planning and inadequate resources (Sessional Paper Number 1, 1986).

An examination of the physician distribution reveals that whereas the national physician-population ratio is 1:8,000, the ratio for the major urban centres is 1:1,000 compared to 1:70,000 for rural areas. Only 30% of the physicians are in government service (Sessional Paper Number 1, 1986). The rest are in the private sector, the majority of whom practice in urban areas. Less than 15% of Kenyan physicians practice in rural areas outside the major cities. The nursing personnel, particularly the registered nurses, follow the same trend as that of the physicians (Mburu, 1979; Mwangi and Mwabu, 1986).

With the health personnel already concentrated in urban centres where facilities exist, the allocation of the health budget follows a similar pattern (Mwangi and Mwabu, 1986). In an effort to reduce the share of the national budget that goes into financing health, the government has introduced user fee in government hospitals (1988-1993 Development Plan). The new idea is expressed as cost-sharing, and the arguments put forth to support it as a cost containment strategy, only goes a step further to reduce accessibility to health care for those in need of such services (The Weekly Review, Feb. 23, 1990).

In addition to the cost containment policy (of user fee) in government hospitals, the 1988-1993 health development policy stresses accessibility of health services in rural areas. It also identifies preventive and promotive health programmes as being cost effective if adequately supported. However, there is no doubt that this requires improvement in service delivery methods. It also points out the need for a multidisciplinary approach to health care.

Indicators of health status point to considerable improvement in health since 1963 when Kenya gained independence (Ewbank, 1986). However, while major advances have been made in the general health status, infectious and parasitic diseases, together with poor sanitation, are among the main causes of morbidity and mortality (Ewbank, 1986; WHO, 1980, 1987). Effective preventive measures of these diseases are available, but control can only be achieved by a focus that goes beyond the individual: the total environment. With increasing population and limited resources, the geography of health care and health promotion may be applied to address the ecological, socio-economic, behavioral and historical factors that predispose human populations to these "environmental insults". Increased interministerial coordination and strengthened collaboration may play an important role in enhancing accessibility to basic social needs for healthy living. Emphasis could be placed on those activities that would reduce risk factors. Because environmental health problems are a national issue, priority must be placed on preventive and promotive health measures, choosing

mechanisms that involve the people and are action oriented. This also calls for comprehensive health education which goes beyond the mere imparting of knowledge.

#### **3.4 EDUCATION FOR COMMUNITY HEALTH ACTION (ECHA) PROGRAMME IN KENYA**

The Education for Community Health Action (ECHA) Programme is a collaborative effort between the department of Health Education of the Ministry of Health and the Health Behaviour and Education department of the African Medical Research foundation (AMREF) (ECHA Guidelines for Implementation and Supervision, 1989). The programme is intended to assist community development personnel, both in the Government and in Non-Governmental Organizations (NGOs) by giving grants to initiate low cost forms of communicating health information. This is meant to stimulate community participation and action in solving priority health problems. The various projects of the ECHA programme are conceptually and operationally PHC activities (ECHA Guidelines for Implementation and Supervision, 1989).

The Getembe Zone Project is one among 35 projects in 23 districts under the ECHA programme (Kanyi, 1989). It is one of the two projects that deal with school communities and addresses school sanitation and personal hygiene. As an effort to foster interministerial and intersectoral collaboration, The Getembe Zone Project is the only one coordinated by the Ministry of Education (Kisii Teachers Training College). To achieve ECHA's programme objectives of community participation in health education and

development, and intersectoral collaboration in health promotion, the coordinating institution (Kisii Teachers' College) adopted various educational methodologies for the Getembe Zone Project.

### **3.5. THE GETEMBE ZONE SANITATION PROJECT GOALS**

The project had 3 major goals:

1. To raise the level of awareness of primary school communities (pupils, teachers and parents) in the area of school sanitation and personal hygiene.
2. To enhance school communities' participation in providing and improving basic sanitation facilities.
3. To help schools develop a more practical approach to teaching and learning of health education.

More specifically, the project objectives focused on:

- i. the provision of pit latrines and their maintenance;
- ii. the provision of refuse/compost pits for solid waste disposal;
- iii. the development of conducive attitudes for personal hygiene by the pupils;
- iv. the formation of health education clubs with specific health oriented activities as identified by the school;
- v. keeping records of sick pupils and follow-up by the teachers of individual pupils;
- vi. draining grounds of stagnant water; and
- vii. accessibility to safe water for use in the school.



## CHAPTER FOUR

### MATERIALS AND METHODS

The Education for Community Health Action on Sanitation and Personal Hygiene Project involved 29 primary schools of Getembe Zone in Kisii district. To implement activities and assess progress in these schools, a number of educational methods were used. This chapter describes the materials and methods used to implement project activities in the 29 schools and assess their performance. Section 4.1 outlines how the zone was selected to participate in the ECHA programme. This is followed by a brief description of the study area in section 4.2, which sets the context for discussing the project's implementation methods in section 4.3. The chapter concludes with section 4.4 on monitoring and evaluation of project activities.

#### 4.1 SELECTION OF THE EDUCATIONAL ZONE FOR THE PROGRAMME

The Getembe Zone Primary Schools have a population of 17,303 pupils and 668 teachers. 6,094 parents have children in these schools (Ministry of Education records, 1989).

The selection of the Getembe Zone to participate in the ECHA programme was based on administrative reasons. Firstly, the coordinating institution (Kisii Teachers' College) is in the same Educational Zone (Figure 2). Secondly, accessibility to the Ministry of Education offices was considered an advantage, as they are also close to the coordinating institution. In addition, lack

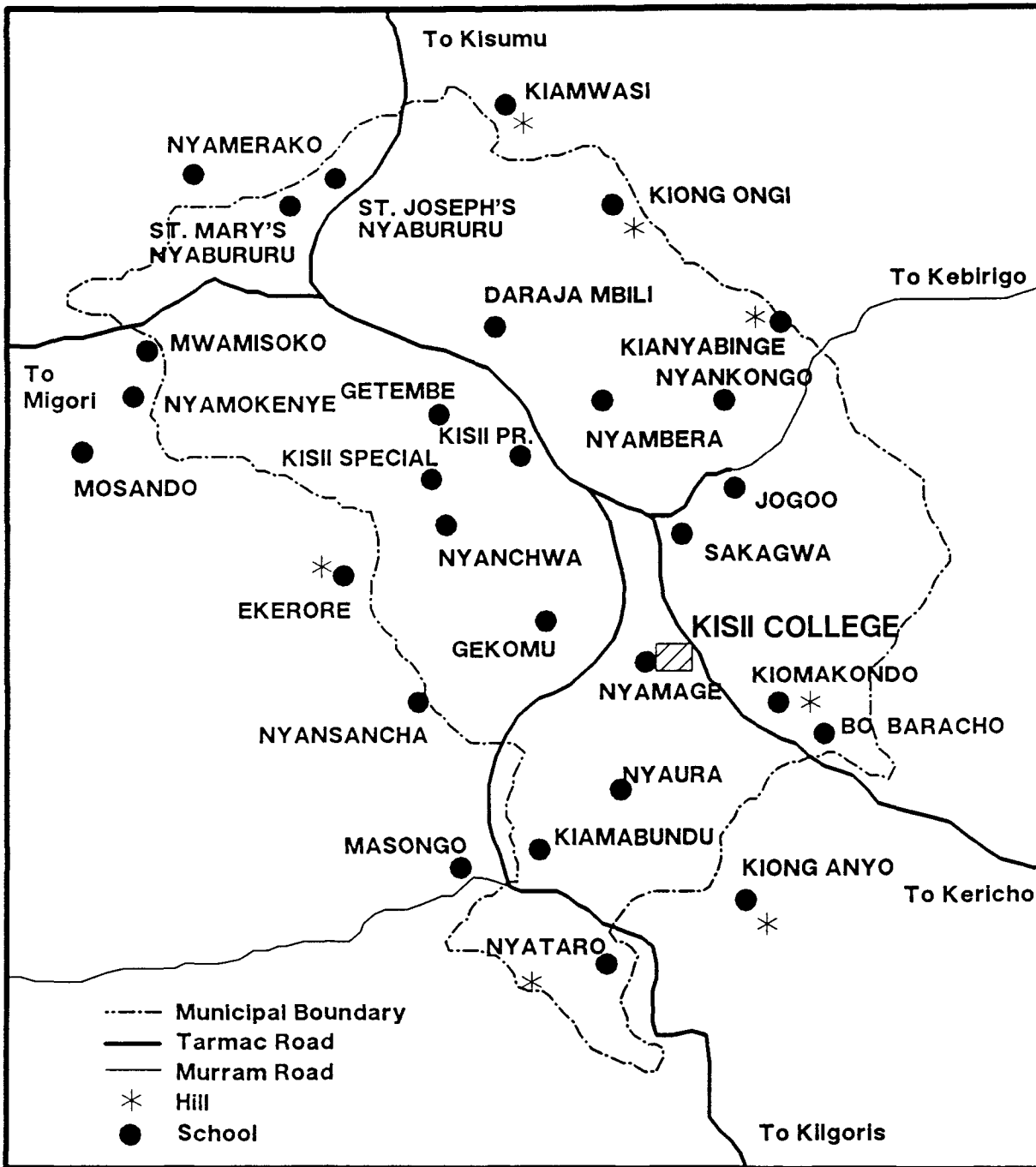


FIGURE 2: The Getembe Zone Project Schools

of transport was seen as a handicap right from the beginning. To overcome this problem, the Assistant Primary Schools Inspector's (APSI) office facilitated communication between the Zonal Primary Schools and the coordinating institution.

#### **4.2 THE GETEMBE ZONE PRIMARY SCHOOLS PROJECT: DESCRIPTION OF THE STUDY AREA**

The Getembe zone project lies in Kisii District within the Lake Victoria Basin, Nyanza Province, western Kenya (Figures 3 and 4). Lying below 1500m, the climate is of the highland equatorial type without major climatic variations. The mean annual rainfall is 2000mm. January is the hottest month with a mean of 28.7<sup>0</sup> C. and July the coldest with a mean of 15<sup>0</sup> C. The mean annual temperature is 24<sup>0</sup> C.

The soils are relatively fertile allowing mixed farming to be widely practised. The fertile soils coupled with the relatively reliable rainfall and a terrain that supports farming activities, have given rise to a high population figure of 1.3 million people (1989 estimates, District Development Plan 1988-1993). This puts the population density at 396 per square Km., one of the highest in the country. Of this population, 54% are below 14 years old and 33% are of primary school going age. Of this primary school age group, 17,303 (4%) are enrolled in the 29 primary schools of Getembe Zone. Because of the demand for agricultural land, most schools are located on hill tops or valley bottoms. This hill top/valley bottom location of schools poses environmental challenges that have to be

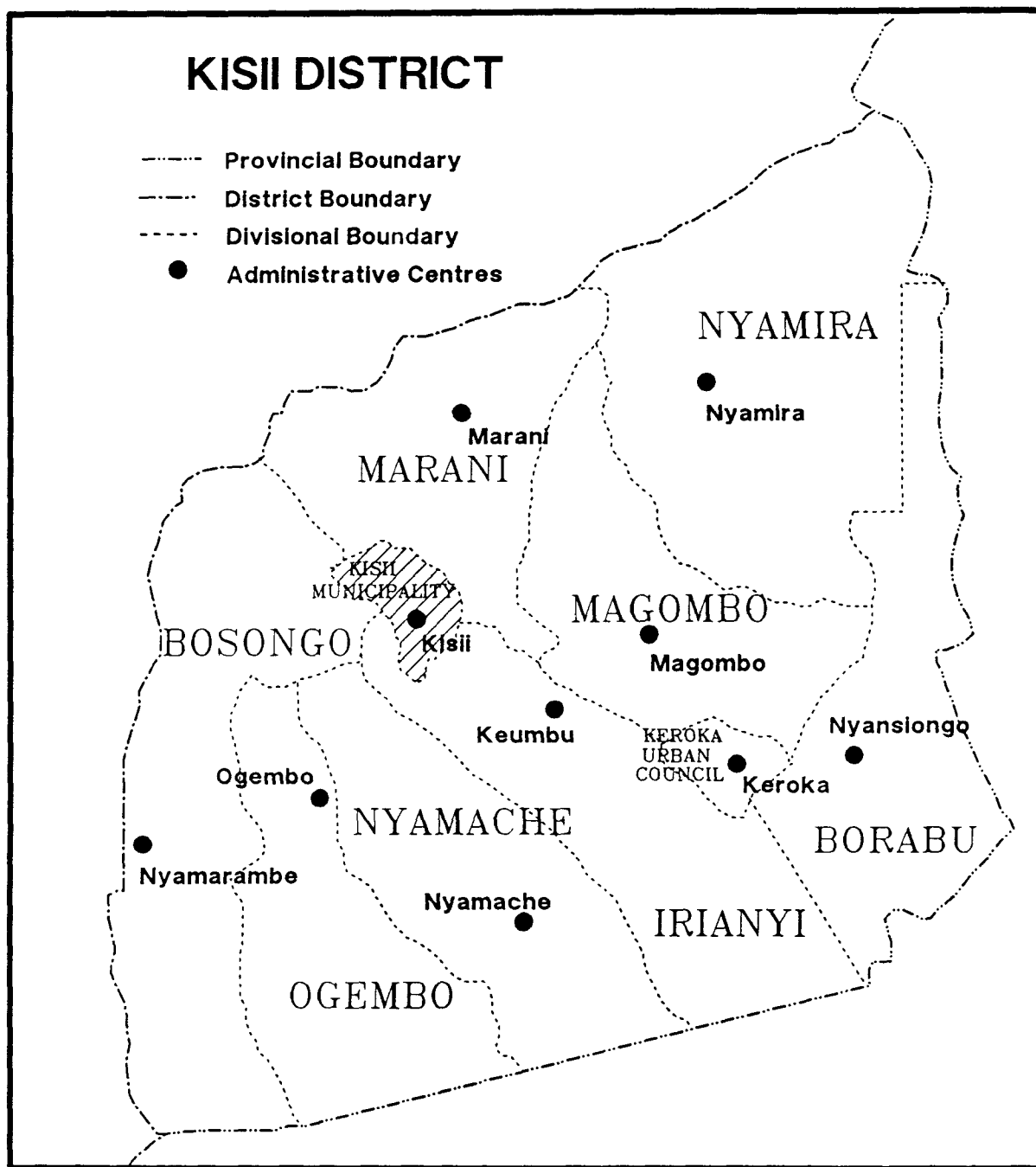


FIGURE 3: Map of Kisii District Showing the Location of Getembe Zone.



FIGURE 4: Map of Kenya Showing Location of Kisii District.

faced in the provision of water and latrines. The terrain also makes it difficult to construct roads, thus reducing access to schools.

Getembe Zone is an educational, administrative unit under an Assistant Primary School's Inspector (APSI). Of these schools there are 4 that are a little different from the others. They include a special school for the mentally handicapped, a girls' boarding school run by the Catholic Mission, a private school and a public school that used to serve the non-African children before independence. The other 25 schools may be described as public schools which have been initiated by the community to meet the demand for basic education. Together these form the 29 Getembe Zone Project Schools.

Geographically, 21 of the project schools are within the Kisii Municipal Council boundary whereas the remaining 9 lie in the neighbouring County Council Wards (see Figure 2). Politically the schools lie within 4 constituencies under different members of parliament. This locational framework of the project schools is important in the understanding of some of the problems associated with the process of community participation and the role of community leadership.

#### **4.3 METHODS OF PROJECT IMPLEMENTATION**

Project planning took into consideration various strategies for its implementation. To create awareness of its existence, it was officially launched. Two committees were formed to steer and

coordinate the project activities. Charged with the responsibility of developing policy guidelines for implementation, management and evaluation, the steering committee did not become functional. Constant transfers of the officers involved from the coordinating institution, Ministry of Education and the Municipal Council's Department of Public Health was the major reason for the non functional state of the steering committee. The operational committee was charged with the responsibility of coordinating the project activities in consultation with the Ministries of Education and Health. To facilitate health promotion activities at the school level, the school committee was to take responsibility.

The health education strategy adopted to implement the project activities used a combination of educational approaches and methods. They included seminars and workshops for parents' and teachers' representatives and the personnel involved in the project from the Ministries of Education and Health; educational excursions, demonstrations, school parents'/PTAs' meetings and use of audiovisual materials. Methods employed range from lectures, group discussions, reports and audiovisual aids to community development (formation of school committees, health education clubs and folk media).

Predisposing factors which include knowledge, beliefs, attitudes and values were addressed by some of the educational methods (Green et al., 1980). Although behaviour change was not guaranteed, an increase in knowledge was assumed to be a necessary factor in motivating the parents, teachers and pupils to take

actions related to proper sanitation and hygiene in the schools. It was argued that availability of knowledge would lead to a re-examination of the existing beliefs, attitudes and values in the context of other variables. To this end the project relied on the teachers' initiative to make the teaching of health education more practical with assistance from the Department of Health Education, Ministry of Health. On the other hand, the Health Education Office was expected to organize health education activities as part of the Family Health Field Educators' duty within the area of work.

Enabling factors pertain to the accessibility of various resources. These resources in the context of the project included toilet facilities, urinals, water supply, refuse pits and educators (teachers and health personnel) with relevant skills. Teachers as caring educators together with the school committee, were considered to be influential in promoting health enhancing behaviour. They were to facilitate availability and accessibility to basic sanitation facilities. To this end the public health technician was supposed to work closely with the school committees/parent-teacher associations (PTAs) to ensure that standard facilities are provided.

Reinforcing factors determine whether health actions are supported (Green et al., 1980). To demonstrate good sanitation practices and community participation, five ventilated improved pit (VIP) latrine units and three roof catchment water tanks were be constructed in eight schools. Materials for these units were to be shared between the school community and the project fund for the



demonstration of materials. Organization and actual construction was to be the responsibility of the school community. The schools were encouraged to seek technical assistance from the public health technician. These demonstration units were meant to reinforce the communities' initiative and motivate them for farther actions. However, it must be realized that there are many other factors that would have mediated whether actions were taken or not (Ajzen and Fishbein, 1975).

#### **4.4 MONITORING AND EVALUATION OF THE GETEMBE ZONE PROJECT**

As part of the implementation process, monitoring and evaluation were built into the project using simple impact and process indicators. Defined as the comparison of objects of interest against project objectives, evaluation was to be taken as a management tool and a means to improving the planning and implementation processes of the project. In particular the purpose of evaluation was to determine the level of attainment of project objectives, and to ascertain strengths and weaknesses and monitor performance. Impact indicators of evaluation or objects of interest set out in the planning stage included:

1. Improvement in the number and type of latrines and their state of cleanliness.
2. A fenced, clean and well maintained school compound.
3. A well maintained refuse/compost pit.
4. Access to a source of safe water.
5. Record keeping of sick pupils.

6. Development of audiovisual materials for health messages.

7. Formation of health education club.

Indicators which were to be used to assess the project process include:

1. Number of seminars held for participants from the project schools.

2. Meetings held by the implementing/coordinating committee.

3. Meetings organized at the school level for the purpose of the project.

4. Participation in communicating health messages for health.

A visit to schools as part of the monitoring efforts during the implementation of the project (July, 1988) revealed that schools were in desperate need of information and materials, not only for latrines but classrooms as well. This shifted the project attention to include classroom maintenance and school committees were encouraged to seek guidance from the public health office when erecting buildings.

#### **4.4.1 EVALUATION OBJECTIVES**

The objectives of the evaluation were:

1. to describe the position and state of the sanitation facilities and activities in the 29 schools;

2. to describe teachers' and parents' involvement in the project activities, and pupils' knowledge on sanitation and personal hygiene practices.

#### 4.4.2 SELECTION OF THE EVALUATION TEAM

Between May and July 1989, a series of activities were planned to accomplish the evaluation exercise. These included a pre-evaluation workshop organized in order to interact with representatives from the schools, and to outline the objectives for the evaluation exercise. The workshop participants included headteachers and teachers in charge of the sanitation project and parent representatives from the 29 primary schools in Getembe Zone. The workshop participants chose 1 headteacher, 2 teachers and 1 parent to represent the school communities in the evaluation. These 3 teachers and 1 parent together with 3 members from the Ministry of Health, the Zonal Assistant Primary Schools Inspector, 3 members from the coordinating institution (Kisii Teachers' College), a representative from the African Medical Research Foundation (AMREF), the local chief and 2 drivers formed the evaluation team. The team was given a three day training session by the investigator and the head of the education department in the coordinating institution. During this time, discussions focused on the purpose of evaluation, evaluation procedures, and instruments that were to be used. A checklist for recording sanitation facilities and activities, that had been used earlier during a monitoring exercise, was adopted (Appendix 1). The questionnaires (Appendices 2, 3 and 4) were assessed and pretested in two schools. Duties were allocated as follows:

1. The 2 teachers administered the pupils' questionnaire.
2. The headteacher and the parent administered the teachers'

questionnaire.

3. 2 public health technicians from the Ministry of Health were responsible for the checklists.

4. The health education officer from AMREF and a member of staff from the coordinating institution interviewed teachers in charge of the sanitation project in the schools.

5. The headteachers and parent representatives were interviewed by the district health education officer and a member of staff from the coordinating institution.

6. The local chief and the assistant primary schools inspector acted as guides to the team.

7. Two drivers offered their services to all 29 schools.

8. A member of staff of the coordinating institution was given the responsibility of ensuring that the exercise went on smoothly.

As an effort to minimize bias that may have arisen due to interviewer variability and differences in the administration of questionnaires and checklists, and in carrying out the interviews, the whole team evaluated 2 schools together. Thereafter, the team was divided into 2 groups. Each group chose one person responsible for the duties outlined in 1-7 above.

#### **4.4.3 ASSESSMENT OF SANITATION FACILITIES AND ACTIVITIES IN THE 29 SCHOOLS, BEFORE AND AFTER THE SANITATION PROJECT**

An assessment of the sanitation facilities and activities was carried out in all the 29 schools. Attention was focused on the following factors:

1. The number and type of latrines and their cleanliness. Data was collected on the total number of latrines, the number of latrines for teachers, the number of latrines for boys and the number of latrines for girls before and after project intervention. The presence or absence of a ventilated improved pit (VIP) latrine was also recorded. Latrine cleanliness was categorized as dirty, fair or clean. Latrines were described as dirty if there were faeces and urine on the floor; fair if there was only urine on the floor and clean if there were no faeces or urine.

2. Presence and state of urinals, before and after the sanitation project.

3. General appearance of the school compound. This factor included observations on: whether the school compound was fenced before and after the sanitation project; the general state of refuse disposal including the presence or absence of refuse pits before and after the sanitation project; and the number of classrooms and their adequacy. The cleanliness of the refuse pit and surrounding area was described as poor, fair or good. Poor described a pit that had refuse all round it, with indiscriminate disposal of biodegradable and nonbiodegradable materials. Fair indicated no refuse was found near the pit, while for good, there was no refuse around the pit and biodegradable and nonbiodegradable materials were separated.

The number of classrooms and their adequacy was assessed as follows: the number of temporary and permanent classrooms was indicated as inadequate if they were less than the actual number of classes; or adequate if they numbered the same or more than the

actual classes. The general state of the classrooms was described as maintained or not maintained. A maintained classroom had a permanent floor that was easy to clean or one that was 'smeared' (with a paste of clay mixed with water to reduce dust) regularly using local resources. A classroom indicated as not maintained lacked these characteristics. General cleanliness was reported as fair, good or very good. Classrooms which did not have permanent floors, and were not regularly smeared (but were swept), were described as fair. Classrooms with no permanent floors which were smeared occasionally and swept regularly, were described as good, while classrooms with permanent floors, or those which were regularly smeared and swept, were described as very good.

4. The activity of keeping a record of sick pupils in the schools: this was described as kept or not kept.

5. The formation of health education clubs. This activity was described as formed or not formed.

#### 4.4.4 SELECTION OF 2 SCHOOLS FOR CASE STUDIES

The above factors formed the basis for determining the extent of project performance in the schools. To further investigate the sanitation situation in the schools and to put the project's sanitation and hygiene activities in a wider perspective, 2 schools were chosen as case studies. The selection of these 2 schools was done by first rating all the 29 schools in the zone on the basis of the following variables:

1. Improvement in number and type of latrines;
2. Availability and use of urinals;
3. Appearance of school compound;
4. Classroom adequacy and maintenance;
5. Record keeping of sick pupils;
6. Efforts made to solve existing sanitation problem;
7. Availability and use of refuse pits; and
8. Formation of an active health education club.

Appendix 5 shows the format and criteria used to score the schools using the above variables. The school with the highest score, and the one with the lowest, were chosen for the case studies. Observations and informal discussions were combined to obtain the data. Data collection took three consecutive days in each of the 2 schools, and was carried out by the investigator. Once the 2 schools were chosen, discussions were held with a group of 17 pupils in case one and 23 in case two. These represent a 10% sample of pupils in grades 1-6 in each of the 2 schools. The sample was randomized by preparing folded papers of which 10% had a "yes" and the rest were blank. The pupils who picked a "yes" participated in the discussions with the investigator. The investigator also interacted informally with members of the teaching staff in each of the two schools, during their tea and lunch breaks. The scores were also used as the basis for rewarding the best 3 schools for their performance in the project.

#### **4.4.5 EVALUATION OF TEACHERS' AND PARENTS' PARTICIPATION IN THE PROJECT**

To collect data on teachers' involvement in project activities, along with their perceptions on its implementation in their schools, a 10% sample of teachers was randomly chosen to respond to a questionnaire (Appendix 2). This sample excluded the headteachers and teachers in charge of the project in the schools. The constraint of time and personnel dictated the sample size. Through the headteacher, all teachers present in each of the 29 schools were requested to gather in a room with a member of the evaluating team. The aim of the evaluation exercise was explained to them, and their participation was requested. The simple procedure of using folded papers with 10% indicating "yes" and the rest blank, was presented to the teachers by a member of the evaluation team. The resulting 10% sample (61) of teachers responded to the questionnaire on their own by writing out the answers, but were free to interact with the member of the evaluation team who was in charge, for clarification of questions.

#### **4.4.6 SELECTION OF PUPILS**

A 10% pupil sample was randomly drawn from pupils in grades 6-8 in each of 25 schools, using the same method outlined above. Only grades 6-8 pupils were chosen because they were able to read and write on their own. The administration of pupils' questionnaire (Appendix 3) was carried out by a teacher who was a member of the evaluation team. With the assistance of a regular staff member from



each school, folded papers equivalent to the number of pupils present were distributed to the girls and boys separately in each class. The 10% sample who picked the "yes" papers were assembled together in one room in order to respond to the questionnaire. This was accomplished under the supervision of the teacher in charge of the pupils' questionnaire. The procedure was repeated in each of the 25 schools. In all, 369 pupils responded to the questionnaire.

The exclusion of four schools from this exercise was based on the level of sanitation facilities, pupil composition and school management, which were in general superior to the other 25 schools. They were: a public school endowed with modern sanitation facilities; a girls' boarding school run by Catholic Missionaries; a privately-owned primary school; and a special school for the mentally handicapped.

#### **4.4.7 SELECTION OF HEADTEACHERS, TEACHERS IN CHARGE OF SANITATION PROJECT IN THE SCHOOLS AND PARENT REPRESENTATIVES**

Head teachers, teachers in charge of the sanitation project in the schools and parent representatives were purposively chosen to give information on project administration and constraints in the schools. This data was collected by use of a structured interview (Appendix 4). The district health education officer and a member of staff from the coordinating institution were responsible for the interviews. For the purpose of cross-checking, the interview items were the same for headteachers, teachers in charge of the sanitation project and parent representatives.

A post - evaluation workshop was held for the headteachers, teachers in charge of project activities in the schools and parent representatives to give immediate feedback on sanitation facilities. The evaluation team shared their experiences during the workshop sessions.

## CHAPTER FIVE

### ANALYSIS OF THE SANITATION SITUATION IN THE GETEMBE ZONE SCHOOLS

The purpose of this chapter is to report the empirical analysis of the sanitation situation in the 29 Primary Schools of Getembe Zone. The analysis is based on the data collected during the development of the project proposal in May 1987, a formative (monitoring) exercise carried out in July, 1988 and an evaluation exercise carried out in June-August, 1989. The analysis is divided into five sections. Section 5.1 describes the sanitation situation before the project started and focuses on facilities and the state of teacher/parent awareness of sanitation issues. This is followed in section 5.2, by an analysis of the sanitation situation after the start of the project. It focuses on facilities and activities. Teacher/parent participation and compliance follows in section 5.3. Data is drawn from parents' representatives, headteachers, teachers in charge of the sanitation project in the schools and a 10% sample of other teachers. These data are supplemented with information from the informal interaction with pupils and teachers in 2 schools as an attempt to understand the processes that are relevant to the existing situation.

An analysis of 2 case studies is presented in section 5.4 as an effort to show that working towards effective school sanitation, like any other development process, is like untying a series of knots. Some knots cannot even be reached until others are untied first (Greg, 1988). Health improvement factors cannot be considered and evaluated separately but in combination with other factors in

the total environment. This leads to section 5.5 which describes pupils' sanitation and personal hygiene practices. These are analysed in the context of existing facilities in the schools. Schools are grouped according to availability of water supply in their compounds, improvement in number and type of latrines, adequacy of latrines, adequacy of classrooms and existence of social support materials. Pupils' responses are analysed in relation to these facilities. It is argued that sanitation and personal hygiene knowledge is likely to be translated into practice if sanitation facilities are provided and social support mechanisms developed to enhance social skills for health promotion. Section 5.6 gives a summary of the results.

#### **5.1 THE SANITATION SITUATION IN SCHOOLS BEFORE PROJECT INCEPTION**

Because of their proximity to the coordinating institution, five schools were chosen for an initial observation survey in May, 1987 to find out the general sanitation situation in the primary schools. It was clear that all was not well. The compounds were littered with paper, tins and bottles. Despite this all the five schools except one had refuse pits. The available pit latrines were in a terrible state that needed the attention of the pupils (users), parents (providers) and teachers (educators). In the 5 schools observed, the number of latrines was inadequate to meet the demands of the users. On average, a pit latrine served 116 pupils. Most of them had faeces on the floor, needed shutters and a floor that could be cleaned easily. Only 2 of the 5 schools had access to

piped water. Generally the school compounds needed more attention than they were receiving.

These initial observations led to the development of a questionnaire (Appendix 6) that was sent to headteachers in all the 29 primary schools in the zone in September, 1987. A summary of the results is shown in Table 1. The table indicates the number of schools with the identified facilities and activities.

The questionnaire was followed in October, 1987, by visits to a few schools to take photographs and videotape the situation. These materials formed the basis for discussions during seminars and workshops that started in January, 1988. Furthermore, there were educational excursions to project schools for headteachers, teachers in charge of the sanitation project in the schools, and parent representatives to gain first hand experience of the situation, and to primary schools in Bahati Division of Nakuru District where similar activities have been undertaken. It was clear, following the seminars and workshops which began in January 1988, that the parents and teachers gained an awareness that they did not have before. Some cases are cited to indicate how some of the educational strategies were an eye opener. One of the schools visited did not have latrines for pupils although there were two for teachers. After the first two seminars in January-February, 1988, the teachers and parents could critically assess the sanitation facilities in the school. They recognized that the existing structures were filled up and were a health hazard to the users. They also discovered that the nearby coffee garden had been

converted into an excreta ground. In April, 1988 a group of seminar participants visited the school and saw that the structures had been demolished and that new ones were under construction. A visit to the same school in July, 1988 showed the presence of thirteen new pit latrines. One of them was a ventilated improved pit (VIP) latrine. Another school did not have any facilities before the project started, but by July, 1988 4 pit latrines for use in the school had been erected.

During the initial post - seminar visits to schools (March-June, 1988), the parents together with the health education officer, were shocked at the state of latrines in some of the schools. Many had faeces on the floor and some were in need of repair. The water supply situation was no better. While some schools are close to the municipal council's water system and could be equipped with piped water, most of them are located on hill tops. An important observation made in schools which have an opportunity for piped water is the public's attitude displayed toward such facilities. Some schools had missing pipes, broken taps and unpaid water bills. This is an indication that problems go beyond physical boundaries - it also points to the need for a deeper understanding of human social behaviour.

One other finding during these visits was the position of health education in the school curriculum. Being part of the home science and science syllabuses, its purpose was not clearly differentiated from the other 2 subjects. Health education materials were subsequently extracted from the home science and

science syllabuses by the coordinating committee. Educational needs were then identified, and objectives were developed to meet them. It is important to note that no formal arrangements were made to interact with teachers of health education during the project's implementation period (March, 1988-May, 1989).

During a monitoring exercise in July, 1988, a team (which included teachers' and parents' representatives), visited schools and added one more aspect to the project. It was noted that as parents strive to meet the demands for basic facilities (mainly classrooms), they tend to use poor materials for building and quite often use cheap labour that becomes expensive in the long run. Evidence for this was the collapse of tuition blocks in two schools and numerous cracks on several buildings. Although the walls are said to be permanent, they need plastering and flooring. Where doors and windows have not been fixed (which is the case in almost all schools), the spaces left for the fittings keep on enlarging. This requires extra material if the doors and windows are later fixed.

## **5.2.THE SANITATION SITUATION IN THE SCHOOLS AFTER PROJECT INCEPTION**

This section describes sanitation facilities and activities in schools after the project started. These include: number and type of latrines, their maintenance and adequacy; introduction of urinals to ease latrine congestion; access to a safe water source; availability and maintenance of refuse pits; keeping a record of sick children; initiation of health education clubs; and fencing of

Table 1  
**TYPES OF SANITATION FACILITIES AND ACTIVITIES  
 IN THE 29 SCHOOLS  
 BEFORE AND AFTER PROJECT INTERVENTION  
 (N=29)**

Schools	Refuse pits	Sickness records	Health education club	Compound fenced	Latrines	Urinals	Water supply			Adequate classrooms
							tp	rc	ps	
<u>Before</u>										
Number	25	3	-	14	27	-	5	-	-	NA
%	86.2	10.3	-	48.3	93.1	-	17.2	-	-	NA
<u>After</u>										
Number	27	18	22	24	29	12	9	3	2	14
%	93.1	62.1	75.9	82.8	100	44.8	31	10	7	48.3

*Types of water supply:*

TP = piped water supply

RC = water tanks for rain water from roof catchment

PS = protected spring



school compounds. Table 1 shows what was accomplished after fourteen months (March, 1988-June, 1989) of project implementation.

Refuse disposal had improved in most schools. However, no discrimination was made between biodegradable and non-biodegradable materials when disposing refuse. Also the area around the refuse pits was frequently uncared for. Schools where teachers work with pupils had well - cared for refuse pits, particularly those that had different pits for biodegradable and non-biodegradable materials.

Keeping a record of sick pupils was a new undertaking in most schools. Although 3 schools kept such a record before, it was merely for the purpose of knowing why a pupil was absent. The additional dimension encouraged the teachers to take more interest in and help the pupils to seek treatment, enhancing recovery. Eleven (38%) schools still do not keep a record of sick pupils. Pupil and parent counselling was encouraged to address the predisposing, enabling and reinforcing factors. Because of the intricacy of the environment, very few schools interacted successfully with parents at the personal level. It was noted that schools keeping a record of sick children tended to report common health problems more than those that were not carrying out the activity.

Formation of health education clubs was seen as a social support strategy that could enhance project activities in the schools. Only 7 schools (24%) did not have such a club. However, the clubs clearly needed more support from all teachers.

The pupils' ingenuity and creativity was reflected in materials developed and messages presented (songs, poems and drama) for health competitions (June, 1989) to raise community awareness. However, only 14 schools participated in singing, 15 in poetry and 7 in drama.

School grounds are frequently a cause for conflict with the surrounding communities. Schools tend to have certain facilities that are not available in the community. Such facilities include open grounds (including play grounds), piped water or protected springs, latrines and classrooms. These facilities are open to misuse - particularly during weekends and holidays. To alleviate this, the compound was fenced in most schools. A fenced compound improves the ease with which facilities can be maintained and cared for. The school communities that were successful in fencing used open dialogue and involved the local administration (area chief). The number of fenced schools increased from 12 (41.4%) to 24 (82.8%).

Classroom adequacy was expressed as the number of classrooms compared with the number of classes in a school. Inadequacy of classrooms leads to congestion and pupils may be forced to learn in the open (under a tree or some other unsuitable place), or come to school in shifts. Of 29 project schools, only 14 (48.3%) had adequate classrooms (Table 1). Thus, one classroom may be used by more than one group. As various groups use the same classroom in shifts, the timetable may not allow the cleaning of the classroom for the next users. The reported practice indicated that the group

that used the classroom last was responsible for the cleaning. When classroom adequacy was related to classroom cleanliness a significant association ( $X^2=6.89$ ,  $p=0.032$ ) was observed. Inadequate classrooms also tended to be dirty due to overuse.

Two schools did not have latrines before project intervention (Table 1), but all 29 had this basic facility after the start of the project (Table 1b). In addition to the increase in the number of latrines, there were 63 still under construction at the time of evaluation. Table 2 shows the number of latrines before and after project intervention, for teachers, boys and girls. Teachers seemed to be well provided for even before the start of the project. Using a t-test, the increases are statistically significant at  $p < 0.01$  for the total number and the number of latrines for girls, and at  $p < 0.05$  for teachers' and boys' latrines. The results show a slightly higher increase in the number of latrines for girls compared to those for teachers and boys, a recognition which is in part due to the fact that there are now similar number of boys and girls in the schools.

The number of latrines was weakly related to their cleanliness (Kendall's tau=0.20,  $p=0.097$ ) such that as the number of latrines increased, their general state of cleanliness also increased. Furthermore, although there was no significant association ( $X^2=4.28$ ,  $p=0.12$ ) between latrine cleanliness and water availability, latrines were more frequently recorded as dirty in schools having no water in the compound. Of the 10 schools judged as 'dirty', 6 (60%) had no water in the compound; 7 (58.3%) out of

12 schools judged as 'fair' had no water in the compound; and of the 7 schools judged as 'clean', only 1 (8.3%) had no water source in the compound.

Urinals were constructed to ease congestion in latrines. Schools did not have urinals at the beginning of the project, but at the time of evaluation 12 (41.4%) schools had undertaken the activity (Table 1).

The water source facilities were not easy to quantify as most schools depended on water from springs, which were often located at quite a distance. At the same time, no school depended on one water source all the time. However, 2 schools had protected springs within their compounds, 4 had installed piped water after the start of the project and 3 benefited from the project's rain water roof catchment activity. Schools were judged to have easy access to water if they had piped water systems, protected springs or wells within their school compounds or water tanks for rain water from roof catchment.

In summary, the sanitation situation in the 29 schools before and after the start of the project indicates that there were some notable improvements in terms of the number and type of latrines, provision of water, presence of urinals, refuse disposal and classroom cleanliness, fenced school compounds, health education clubs and records for sick pupils. However, in the absence of a control group of schools, the achievements may not be attributed to the project with confidence. The contribution of other factors cannot be ruled out and as Clark and Wolderfael (1977) point out,

Table 2.

NUMBER OF LATRINES IN THE SCHOOLS, FOR TEACHERS AND PUPILS, BEFORE  
AND AFTER PROJECT INTERVENTION IN THE 29 SCHOOLS

(N=29)

	Before project inception	Mean per school	After project inception	Mean per school	t-values	1-tail p value
Total	230	8.2	287	9.9	-2.58	0.0075
Teachers	51	1.8	57	2.0	-1.86	0.037
Boys	91	3.3	115	4.0	-2.09	0.023
Girls	88	3.2	113	4.0	-2.68	0.006

there is a possibility of overlooking other factors in understanding project processes. On the other hand, the type and degree of changes reported strongly imply the direct effects of the project initiatives.

### **5.3 TEACHERS' AND PARENTS' COMPLIANCE AND PARTICIPATION IN THE PROJECT**

This section describes how teachers and parents responded to the project activities. The data on compliance and participation was obtained from headteachers and teachers in charge of the activities in the schools, and from parents who are members of the school committees. A semi-structured questionnaire (Appendix 2) was administered to a 10% random sample of teachers in each of the 29 schools. Data was also collected by way of interviewing (Appendix 4).

An analysis of how teachers participated, the time they devoted to sanitation and pupils' personal hygiene activities and their perception of project implementation was undertaken. Table 3 shows the teachers' participation, Table 4 the time they devoted to project activities, and Figure 5, their perception of various aspects of the project.

Most teachers indicated that they were involved in various activities related to the project (Table 3) but many of them spent less than two hours per week in these activities (Table 4). Figure 5 shows their perception of various aspects of the project. On average, project introduction and coordination in the schools were

Table 3.

## TEACHERS PARTICIPATION IN PROJECT RELATED ACTIVITIES

(N=61)

	YES	NO	NON-RESPONSES
1. Acquaintance with the project	53 (86.9%)	8 (13.1%)	--
2. Teach health education	53 (86.9%)	5 (8.2%)	3 (4.9%)
3. Demonstrate to pupils how to use and clean latrines	53 (86.9%)	4 (6.6%)	4 (6.6%)
4. Show pupils how to dispose of refuse	52 (85.2%)	3 (4.9%)	6 (9.8%)
5. Demonstrate to pupils personal hygiene practices	53 (86.9%)	3 (4.9%)	5 (8.2%)
6. Participation in developing materials for communicating health messages and other activities			
Songs	35 (57.4%)	26 (42.6%)	--
Poems	27 (44.3%)	34 (55.7%)	--
Drama	31 (50.8%)	30 (49.2%)	--
Latrine construction	21 (34.4%)	40 (65.6%)	

Table 4.

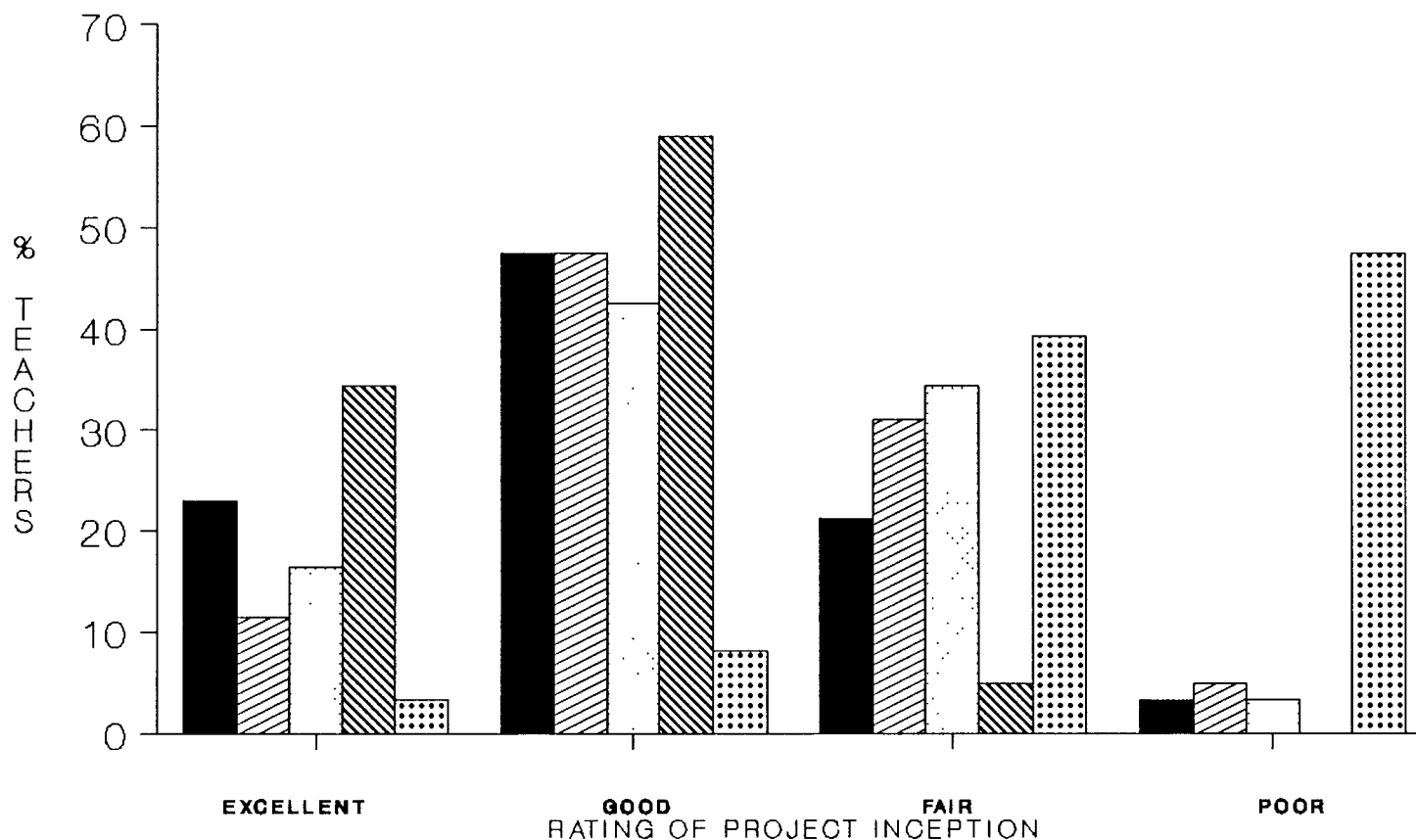
## TIME DEVOTED BY TEACHERS TO PROJECT ACTIVITIES PER WEEK

(N=61)

	None	Less than 2 hours	More than 2 hours	Non-response
1. Latrine cleanliness	1(1.6%)	45(73.8%)	14(22.9%)	1(1.6%)
2. Pupils personal cleanliness	1(1.6%)	49(80.4%)	11(18.1%)	--
3. Refuse disposal	1(1.6%)	50(82.2%)	9(14.8%)	1(1.6%)
4. Obtaining safe water for use in school	29(47.5%)	23(37.7%)	7(11.5%)	2(3.3%)



**FIGURE 5: TEACHERS' PERCEPTION OF PROJECT INCEPTION IN THEIR SCHOOLS**



N=61

PI - PROJECT INTRODUCTION

PC - PROJECT COORDINATION

SR - PUPIL'S RESPONSE

TR - TEACHERS' RESPONSE

PR - PARENTS' RESPONSE

which may have been influenced by various environmental factors. The case studies described below will help to illustrate this point.

#### **5.4 CASE STUDIES**

This section is devoted to a brief description of 2 case studies in an effort to understand factors that contribute to project impact and level of performance. In describing each of these cases, the following aspects are taken into account:

1. Physical and social characteristics of the school: physical environment, physical facilities, parent, teacher and pupil population;
2. Interrelationships between, teachers, parents and pupils: their attitude toward sanitation activities, commitment and cooperation, administrative ability of the headteacher and the school chairman;
3. Sanitation and pupils' personal hygiene practices. This is an effort to give a sense of context and a wider perspective for assessing project performance. The method of selecting the two schools for case studies is described in section 4.2.1. The first case describes a school where the project met little success. In contrast, the second case is a school where considerable improvements occurred.

#### 5.4.1 CASE ONE

The school is situated in a low lying area, two kilometres from a major road. Located on a 0.03ha plot of land, the school is bordered by a swamp. During heavy rain, water flows freely on the surface and the latrine pits are nearly full. The high water table poses a problem for the digging of pits as the required depth of eighteen feet cannot be reached. The deepest they can get is eight feet and this has to be during the dry season. Four years after the school started, heavy rain caused floods that not only destroyed books and other items in the store but brought the latrine contents to the surface. The situation aroused concern which led the school committee to consult with the Public Health Office. A visiting team from the municipal council's engineering department made empty promises to drain the swamp.

Started in 1981, the school has a population of 193 pupils and 9 teachers. 65 parents have children in the school. Of the available classrooms, 4 have permanent walls with no doors, windows and concrete floors. A temporary structure houses the other 4 classrooms. Most of the parents are peasant farmers. They depend on a subsistence economy growing crops such as maize, beans and bananas for home consumption. They also grow coffee as a cash crop.

Certain personality and social characteristics are important in the success of CBHC programmes (Kaseje, 1987). This seemed to be absent in the school leadership. Observations made during the actual visits to schools and informal interactions with some teachers revealed that when teachers are dissatisfied with the

school leadership, there is lack of cooperation and commitment to duty. An interview with the chairman of the school committee, indicated that he spends five hours per week attending to the activities of the school. He considered this time to be interfering with his normal working hours as an employee elsewhere. In an effort to elicit community participation, he mentioned initiatives for involving leaders, particularly in the construction of classrooms.

Methods required to ensure effective community participation (as described by the headteacher, chairman to the school committee and the teacher in charge of project activities) include: calling meetings and asking parents to participate, and asking local leaders to help. The first method did not seem to be effective as some failed to attend and only a few availed themselves of planned activities at the school. Commitment to other activities and lack of finance were given as the reasons for the slow pace of project activities in the school.

During the period of observation (three consecutive days), pupils were seen sweeping classrooms and latrines every evening before going home. Interaction with a group of pupils confirmed that this was the practice when only 3 of the 9 teachers were on duty. Otherwise a prefect supervised the cleaning. Most pupils were not neat. Contributing factors (as indicated by them) included financial constraints, parents' low level of awareness, drunkenness, and lack of teachers' example. Moreover, inadequate sanitation facilities and an inconsistent sanitation project in the

school, did not offer the pupils an opportunity to practice personal hygiene. The school had not formed a health education club, had taken a low profile in developing communication support materials and did not keep a record of sick pupils.

#### **5.4.2. CASE TWO**

Situated on a major road, the school is located on a 1.2ha well drained piece of land. The school started in 1958. It has 520 pupils and 15 teachers. 210 parents have their children in the school. The school has had a stable administration since the project started. Prompted by the first 2 seminars in January-February, 1988 on the importance of proper sanitation in schools and realizing that pupils had no latrines, the school built 13 latrines in less than 4 months. Three were still under construction. Because of the headteacher's commitment to the project, the school committee, most of the teaching staff and the pupils were well aware of the project activities.

Teachers attend parent meetings, while project matters are mentioned at parade every morning and are discussed during teachers' staff meetings. The headteacher was assessed as a dynamic and committed initiator who worked for the benefit of the community. Relationships between the various sub-groups in the school community were also assessed as positive. Team work seemed to prevail as most teachers took interest in cleanliness, particularly when on duty, and worked with the pupils to accomplish the tasks. Parents were described as cooperative by teachers and

the chairman of the school committee. Parent representatives, teachers and pupils had participated in various project activities. Pupils were relatively neat and had good knowledge of personal hygiene and sanitation.

However, there were certain constraints that project activities faced in the school. The pupils did not practice some of the personal hygiene which they professed to know because of socio-economic and other environmental factors both at home and at school. Located on well drained ground with deep fertile soils, the pit latrines collapse if not well supported. Thus extra resources and technology are required. The school once experienced a landslide which left it without a source of water and an entrance. But through the initiative of the school committee and other members of the teaching staff, the school had a protected spring constructed by a contractor who was rehabilitating the area. The school had also suffered from vandalism which left the latrines without doors.

With 520 pupils, there were only 12 classrooms for 15 classes. Six of them were permanent, 6 had permanent walls and earth floors and 3 were under construction. Some parents were not able to contribute financially to the construction of the school facilities, but they offered to do some jobs in the school that may be required. Cases of non-compliance, particularly drunkenness, that are not easy to handle, were referred to the area chief for counselling. The chairman of the school committee put aside 2 hours per week to attend to school activities and believed that the time

was within his normal working hours. "It is a parent's/teacher's duty to improve the standards of the school including sanitation," he said. Methods which were used to solicit community participation included parent meetings. Contributions from parents were either in the form of cash or labour. Parents were described as cooperative and willing to work together for a common good.

It is not difficult to conceptualize the various aspects of the environment that determined how school communities responded to the project. The description of the 2 case studies allows an examination of the relative influence of the project among other factors influencing sanitation activities. Other important factors which can be noted include the physical environment, historical factors, economic status of the parents and leadership qualities. In combination with the results discussed in section 5.2, the case studies improve the validity and reliability with which interpretations can be made (Herman, et al., 1987; Stecher and Davis, 1987).

#### **5.5 PUPILS' SANITATION AND PERSONAL HYGIENE PRACTICES**

This section describes pupils' knowledge and practice of sanitation and personal hygiene. Its aim is to assess pupils' actions in relation to what they claim to know and believe and in relation to the available basic facilities and social support activities in their schools. These include water supply, latrines, refuse pits, classrooms, health education clubs and record keeping for sick pupils. The 25 schools where pupils responded to the

questionnaire were grouped together on the basis of the 5 factors. Figure 6 shows how pupils were distributed among schools with the above mentioned factors. Less than 25% of the pupils were from schools with water facilities and adequate latrines. 52.8% of the pupils were from schools where the number of latrines had increased. Whereas the number of latrines in schools had increased, they were still perceived as inadequate. More than 68% of the pupils were from schools with inadequate classrooms.

A school facility index was constructed from the five factors: water availability in the compound, number and type of latrines, latrine adequacy, classroom adequacy and existence of social support materials (health education clubs and record keeping of sick pupils). A score of 1 was given to schools which did not have the facility or activity and a score of 2 to schools which had the facility or activity. Figure 7 shows how the pupils were distributed between the indices. The minimum and maximum expected facility indices are 5 and 10 respectively. An index of 5 means that all the 5 factors were lacking whereas 10 indicates the presence of all of them. From the figure, 15.7% of the pupils were from schools where all the 5 factors were lacking, and only 9.5% were from schools with 4 of the factors present. In all the 25 schools, there is at least one facility or activity lacking.

The analysis of pupils' knowledge and hygiene practices is based on a questionnaire which was administered to a 10% sample (369) of class 6 to 8 pupils (Appendix 3). Figure 8a shows their responses to the frequency of latrine use. Most pupils use latrines



**FIGURE 6: PUPIL DISTRIBUTION AMONG SCHOOLS WITH THE INDICATED FACILITIES / ACTIVITIES**

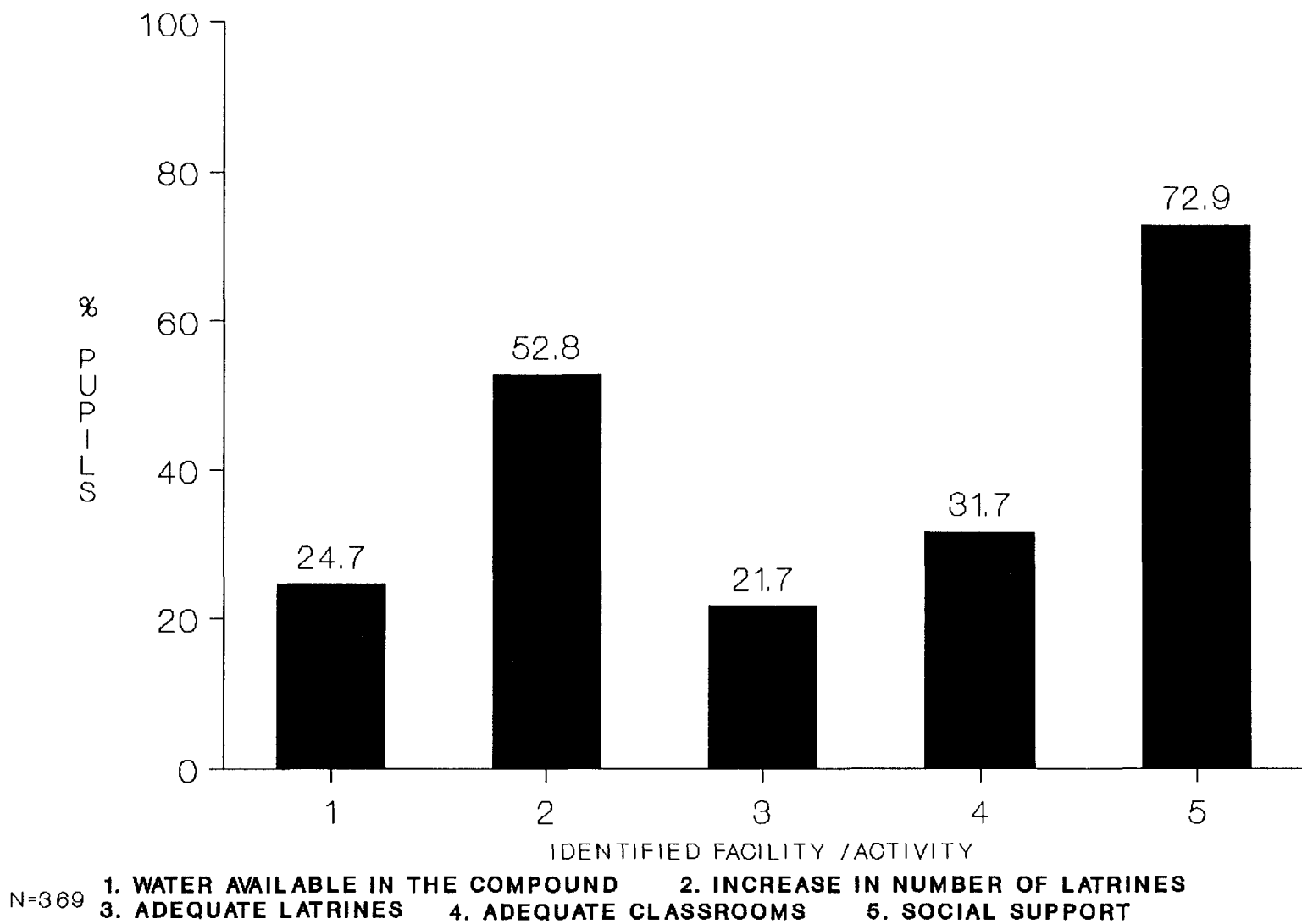
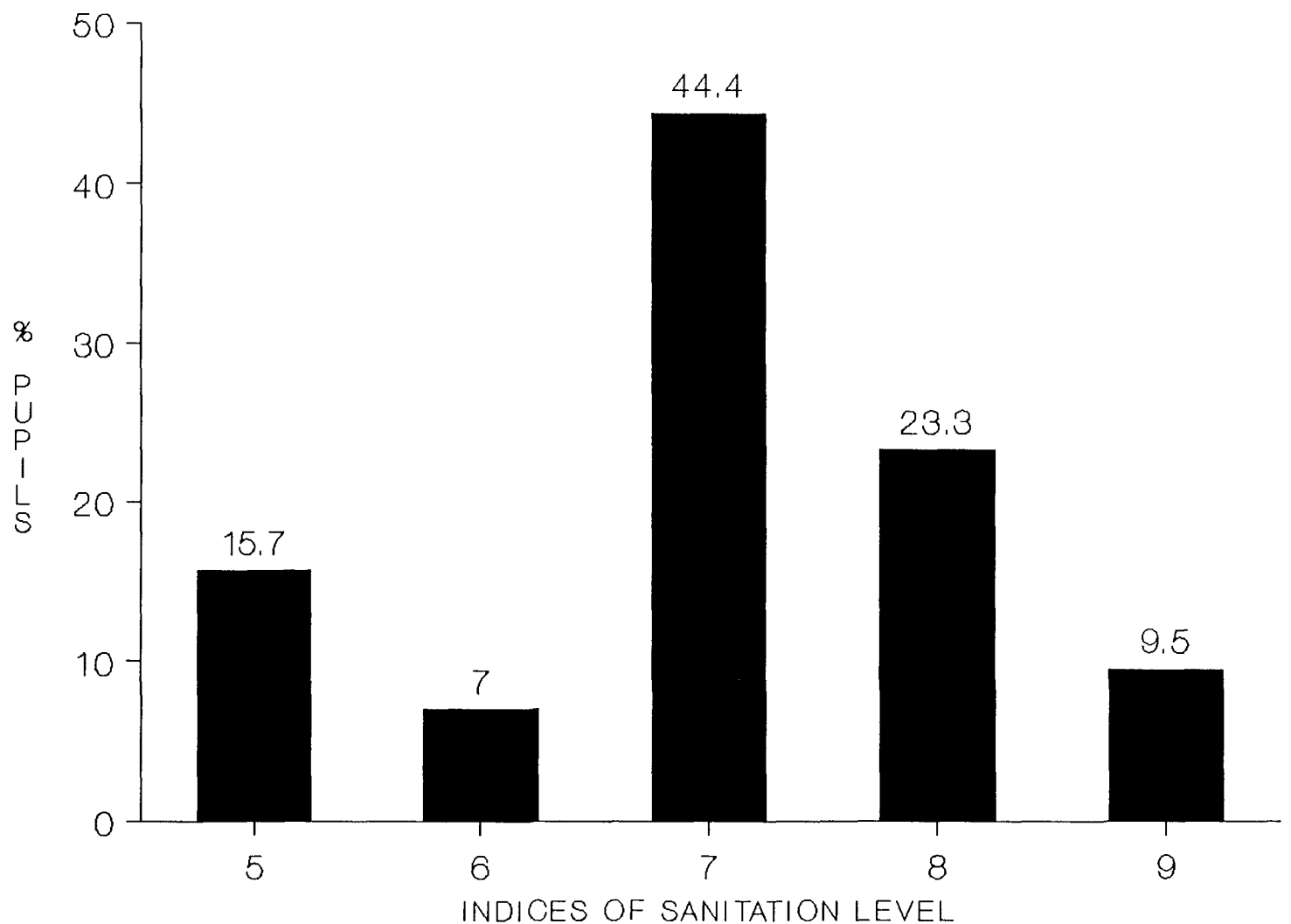


FIGURE 7: DISTRIBUTION OF PUPILS BY FACILITY INDEX



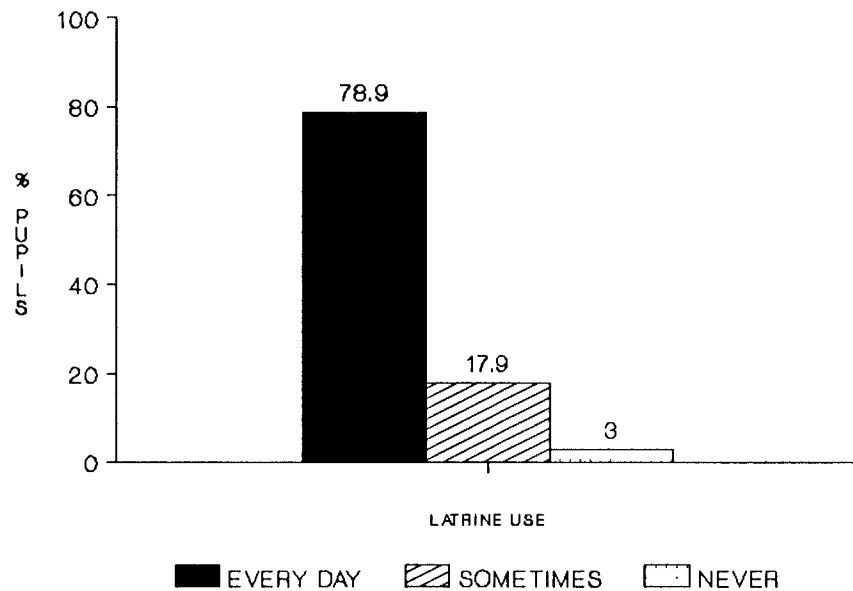
N=369

**5. ALL INDICES MISSING**  
**6. FOUR INDICES MISSING**

**7. THREE INDICES MISSING**

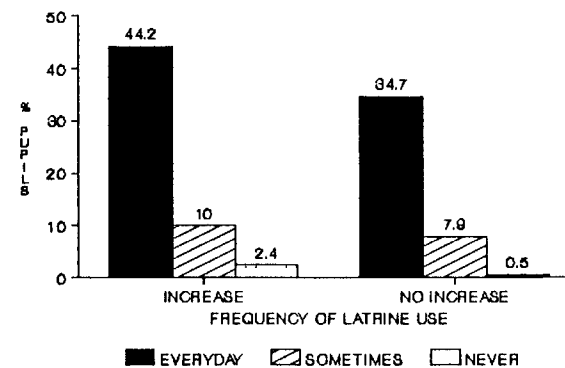
**8. TWO INDICES MISSING**  
**9. ONE INDEX MISSING**

**FIGURE 8a: PUPILS' FREQUENCY OF LATRINE USE**



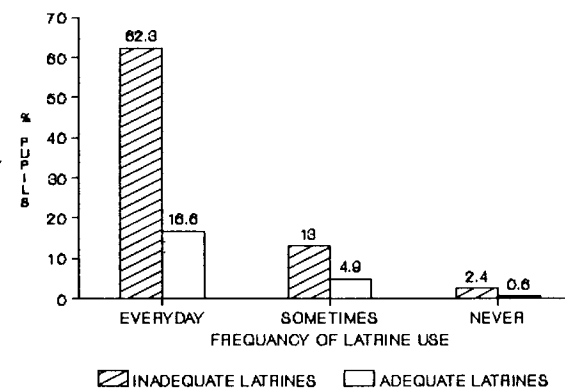
N=369

**FIGURE 8b: PUPILS' FREQUENCY OF LATRINE USE IN RELATION TO LATRINE INCREASE**



N=369

**FIGURE 8c: LATRINE USE AND ADEQUACY**



N=369

everyday. The number of latrines may contribute to the frequency of using them by reducing congestion, particularly during the short breaks between lessons. With more latrines, the queue shortens, the pressure on the user that others are waiting is less, and the use is likely to improve. The frequency of latrine use showed a statistically significant ( $X^2=8.20$ ,  $p=0.017$ ) relationship when related to improvements in number and type of latrines (Figure 8b). Frequency of using latrines was not significantly related to latrine adequacy. More pupils who indicated use of school latrines everyday were from schools with inadequate latrines (Table 5 and Figure 8c). However, it is important to note that adequacy of latrines was the headteacher's subjective expression of how pupil numbers relate to the available latrines. Even with the improvements in number, latrines were still inadequate. The inadequacy of pit latrines is not the only predisposing factor to frequent and proper use of such facilities. Access to information is also important. Table 6 and Figure 9 show how pupils obtained information on proper use of latrines. Teachers seem to be an important source of information for latrine use. The health education club members are also an important source of information (in fact, overall, they were quoted as being a commoner source).

The purpose of proper sanitation and personal hygiene practices is to prevent diseases and to promote health. Pupils were expected to know this fact and relate it to hygiene practices. Out of 369 pupils, 273 (74.0%) agreed to the proposition that well kept latrines prevent diseases compared to 76 (20.6%) who did not.

Table 5.

## FREQUENCY OF LATRINE USE AND LATRINE ADEQUACY

(N=369)

## Frequency of latrine use

	Everyday	Sometimes	Never	Total
Adequate	60 (20.6%)	18 (27.3%)	2 (18.2%)	80 (21.7%)
Inadequate	231 (79.4%)	48 (72.7%)	9 (81.8%)	288 (78.0%)
Total	291 (78.9%)	66 (17.9%)	11 (2.9%)	368 (99.7%)

Table 6.

## FREQUENCY OF LATRINE USE AND SOURCE OF INFORMATION

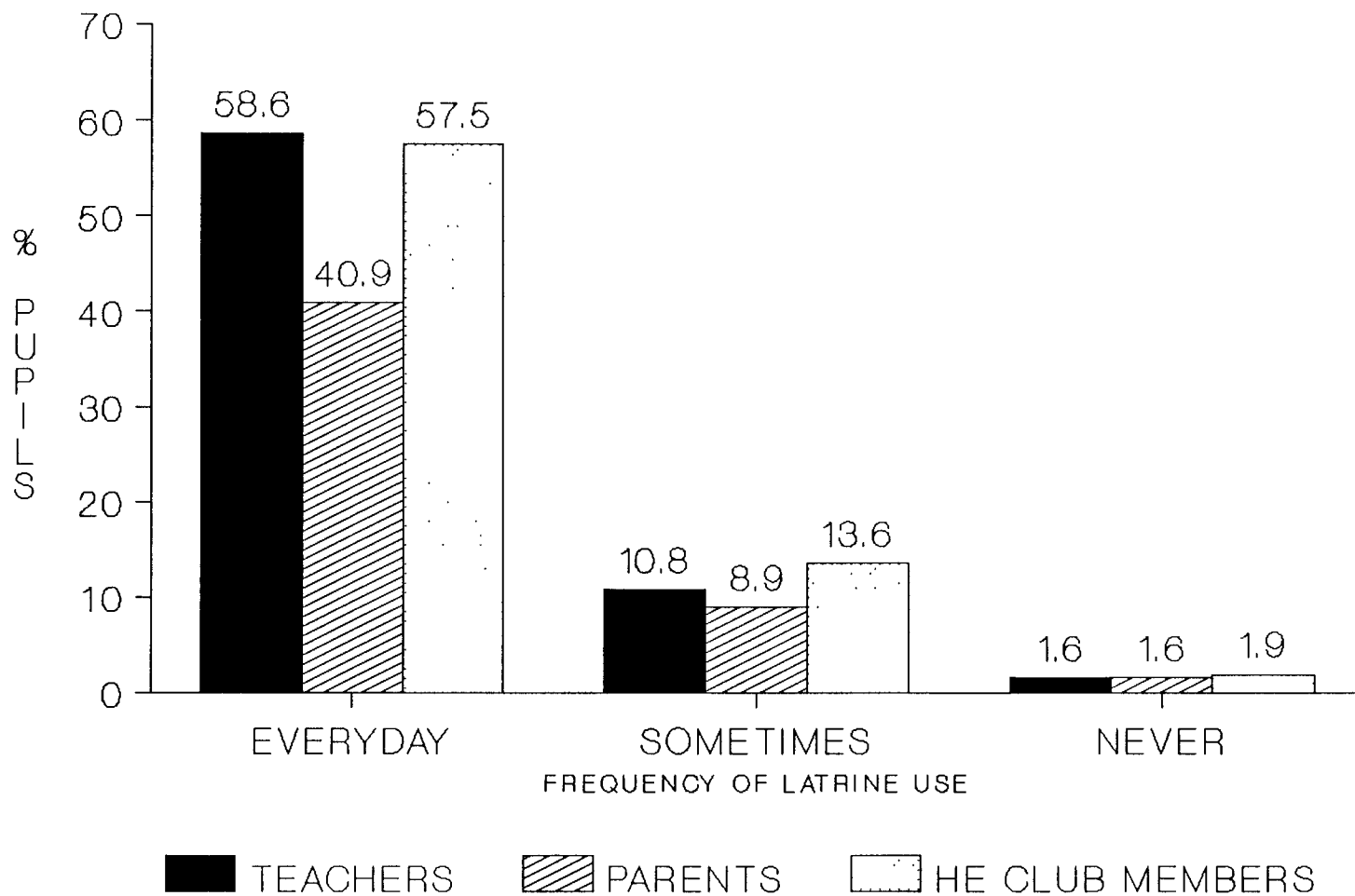
(N=369)

## Frequency of latrine use

Source of information	Everyday	Sometimes	Never	Total %
Teachers	216(58.5%)	40(10.8%)	6(1.6%)	70.9
Parents	151(40.9%)	33(8.9%)	6(1.6%)	51.4
Health Education club members	212(57.5%)	50(13.6%)	7(1.9%)	73.0
Friends	13(3.5%)	3(0.8%)	1(0.3%)	4.6

The responses were not mutually exclusive.

**FIGURE 9: FREQUENCY OF LATRINE USE AND SOURCE OF INFORMATION ABOUT THEIR USE**



N=369

Table 7 summarizes pupils' perception of the state of the school latrines. The responses indicate dissatisfaction with the state of the latrines. The responses were tallied along with variables associated with personal hygiene practices. Table 8 summarizes the information on how often latrines perceived as dirty should be cleaned, and who should clean them. Most pupils think that latrines should be cleaned everyday and that those in upper classes should take this responsibility. It was noted that pupils still see latrine cleaning as a punishable activity.

Hand washing after latrine use is known to be a good practice because latrines are often dirty, and the pupils do not use proper materials for cleaning themselves. Of the 120 (32.5%) pupils who perceived the latrines as dirty, 118 ((98.3%) indicated that they wash their hands after latrine use, i.e. only 2 did not wash their hands. However, the relationship was not statistically significant ( $X^2=2.68$ ,  $p=0.10$ ).

Other perceptions on latrines which were expressed by pupils and found to be fairly important included lack of shutters and fear of falling in (see Table 7). There were slightly more responses (50, 1.4%) to lack of shutters and fear of falling into the pit latrine (45, 1.2%) from schools with inadequate pit latrines than in schools where latrines were adequate. This was an indication that latrines were not only inadequate but were also not well maintained.



Table 7.

## PUPILS PERCEPTIONS OF USING SCHOOL LATRINES

(N=241)

	Number of responses	% responses
No shutters	61	25.3
Dirty	128	37.5
Fear of falling in	52	21.6
Use latrines at home	39	16.2
Fear of being bitten by snakes	37	15.4
Fear of being seen going to the latrine	32	13.3

Table 8.

PUPILS' OPINIONS ABOUT FREQUENCY OF CLEANING LATRINES  
PERCEIVED AS DIRTY AND WHO SHOULD CLEAN THEM

(N=241)

	Yes	No
1. How frequently latrines should be cleaned		
Everyday	102 (42.3%)	89 (36.9%)
2-3 times per week	22 (9.1%)	17 (7.1%)
Once per week	4 (1.7%)	7 (2.9%)
2. Who should clean latrines		
Pupils in lower primary	5 (2.1%)	5 (2.1%)
Pupils in upper primary	56 (23.2%)	45 (18.7%)
Both groups (lower & upper primary)	31 (12.9%)	42 (17.4%)
Those under punishment	35 (14.5%)	21 (8.7%)

Table 9 shows the responses of pupils to being asked what they use to clean themselves after defecating. Although use of toilet paper was reported by the majority (339, 91.9%) of the pupils, it is suspected that this may not be the case in practice. Some of the items that pupils use to clean themselves after latrine use predispose them to various infections if they do not observe certain hygiene practices. The relationships between items used to clean oneself after latrine use, hand washing practice and availability of water in the school were examined. The 3 (0.8%) pupils who said they use nothing to clean themselves were from schools with water facilities. Of the 19 (5.1%) who said that they use grass, 11 (3.0%) were from schools with water facilities compared with 8 (2.1%) from schools without. Use of leaves, scrap and toilet paper was not significantly related to water facilities. Schools without water facilities had more pupils reporting use of leaves (146, 39.6%) and scrap paper (100, 27.1%) compared to 52 (14.1%) and 34 (9.2%) respectively in schools with water facilities.

Predisposition to infection was examined by comparing the reported practice of hand washing after latrine use with what the pupils said they use to clean themselves. The results are shown in Table 10. Although many pupils (342, 92.7%) indicated that they wash hands after latrine use, only 85 (24.9%) were from schools with water facilities. This could indicate that pupils have the knowledge of good hygiene practices but lack the facilities to put them into practice.

Table 9.

WHAT PUPILS USE TO CLEAN THEMSELVES AFTER DEFECATION  
ACCORDING TO THEIR RESPONSES

(N=369)

Item	Responses		Non-responses
	YES	NO	
Nothing	3 (0.8%)	364 (98.6%)	2 (0.5%)
Grass	19 (5.1%)	348 (94.3%)	2 (0.5%)
Leaves	198 (53.7%)	169 (45.8%)	2 (0.5%)
Scrap paper	134 (36.3%)	233 (63.1%)	2 (0.5%)
Toilet paper	339 (91.9%)	28 (7.6%)	2 (0.5%)

Responses were not mutually exclusive.

TABLE 10.

RELATIONSHIP BETWEEN HAND WASHING AND MATERIALS USED  
TO CLEAN ONESELF AFTER LATRINE USE.

(N=369)

Materials used to clean oneself	Wash hands	Do not wash hands
Nothing	3 (0.8%)	-
Grass	16 (4.3%)	-
Leaves	190 (51.5%)	2 (0.5%)
Scrap paper	129 (35.0%)	1 (0.3%)
Toilet paper	318 (86.2%)	8 (2.1%)
Non-responses=19		

Drinking water in most schools was obtained from springs, most of which were at a distance from the school compound. Only two schools had protected springs within their compounds, 9 had piped water and 3 had tanks for rain water from roof catchment. As indicated elsewhere, water availability and safety are important aspects of sanitation and hygiene practices (Anderson, 1986; Esrey and Habicht, 1986; Okun, 1988). In light of this, pupils' perception of the safety of the water they drink at school was assessed. Table 11 shows the results. A higher number of pupils believe water to be safe if it is piped than if it is from a spring.

Reasons that the pupils gave for thinking that the water was unsafe were: because it is not boiled 102 (27.6%); not chemically treated 61 (16.5%); smelled bad 4 (1.1%); and looked dirty 12 (3.3%). The relationship between source of drinking water at school, and whether the pupils thought the water was safe for drinking was statistically significant ( $X^2 = 92.26$ ,  $p < 0.001$ ). Two sources of water were considered safe: protected springs and piped water. Water from a spring was considered safe because it was protected whereas the piped water was chemically treated.

Water which was collected from an unprotected spring, was considered unsafe. Pupils believe that boiling makes the water safe for drinking. Many of the pupils who indicated school water to be safe for drinking were from schools with water facilities. It is important to note that schools were considered accessible to water if they had piped water or protected springs within their

Table 11.

PUPILS' PERCEPTION OF THE SAFETY OF THE  
WATER THEY DRINK AT SCHOOL

(N=369)

Water source	Water safe for drinking			Total
	Yes	No	Do not know	
Spring	47 (30.1%)	76 (48.7%)	33 (21.2%)	156 (42.3%)
Piped water	119 (77.3%)	26 (16.9%)	9 (5.8%)	154 (41.7%)
Tank	20 (58.8%)	9 (26.5%)	5 (14.7%)	34 (9.2%)
Well	2 (14.3%)	9 (64.3%)	3 (21.4%)	14 (3.8%)
Non-responses	11 (3.0%)			

compounds.

Personal hygiene practices are learned and developed both at school and at home. In an effort to gauge pupils' personal hygiene practices, the frequency with which they brush their teeth and wash their bodies was assessed. Figures 10a and 10b show their responses. A talk with a group of pupils in 2 schools revealed that the frequency of bathing and brushing teeth may not be as often as reported. Of 17 pupils in one school, only 2 said they brush their teeth every morning. All of them bathed 2-3 times a week. Most of them were generally untidy as judged by the investigator. Factors which they mentioned as hindering personal hygiene included lack of money to buy soap, tooth paste, scissors and clothing, and lack of concern from parents.

In another school, only 3 of 23 pupils said they brush their teeth every day. 18 of them indicated that they bathe 2-3 times a week. The pupils were relatively tidy. The same factors as above were mentioned as hindering personal hygiene practices but they also said that teachers take note if they were not clean.

Many of the pupils help keep their schools clean by carrying out hygiene activities, e.g., sweeping, collecting refuse and cleaning latrines. Figure 11 shows their reasons for carrying out these practices. Statistically significant relationships emerged when the practices were related to the reasons the pupils gave. Keeping the environment clean and healthy was reported as the major reason for sweeping ( $X^2=10.8$ ,  $p=0.001$ ), collecting refuse ( $X^2=19.2$ ,  $p=0.001$ ), and cleaning latrines ( $X^2=10.5$ ,  $p=0.001$ ).

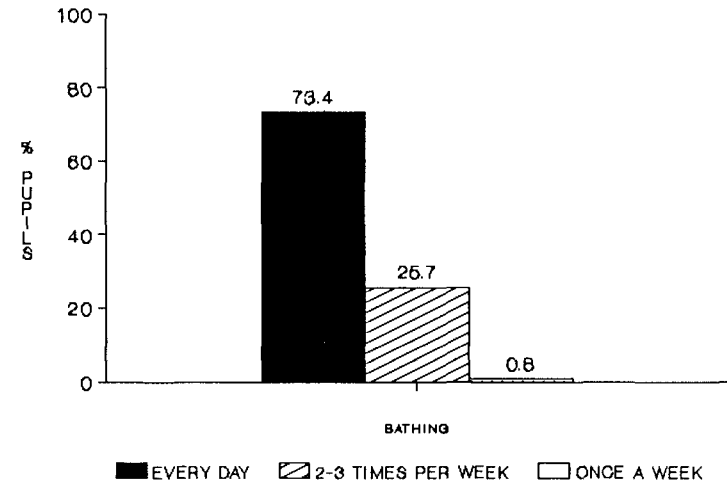


FIGURE 10a. FREQUENCY OF BRUSHING TEETH



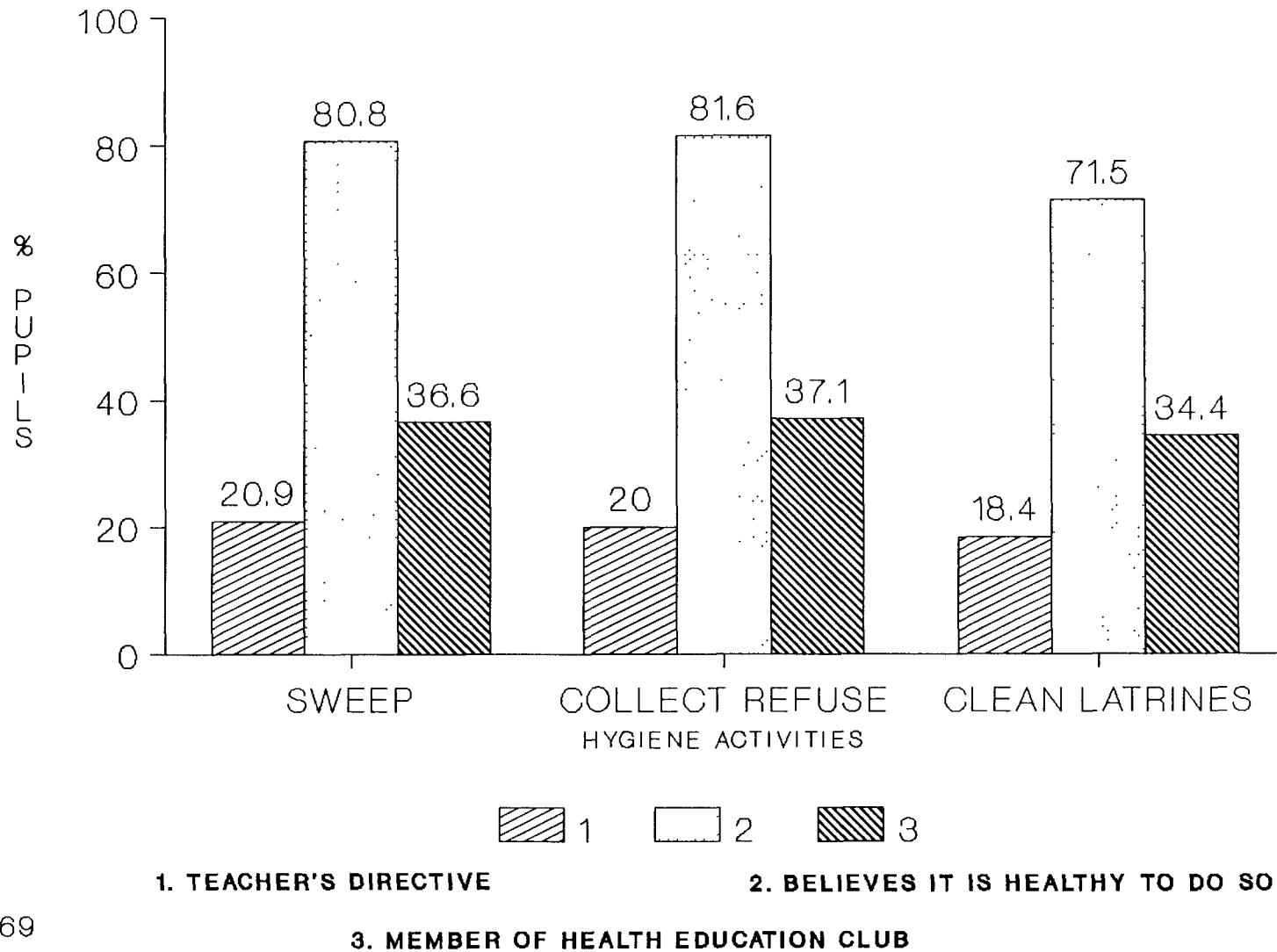
N-369

FIGURE 10b. FREQUENCY OF BATHING



N-369

**FIGURE 11: FACTORS WHICH INFLUENCE PUPILS' HYGIENE PRACTICES**



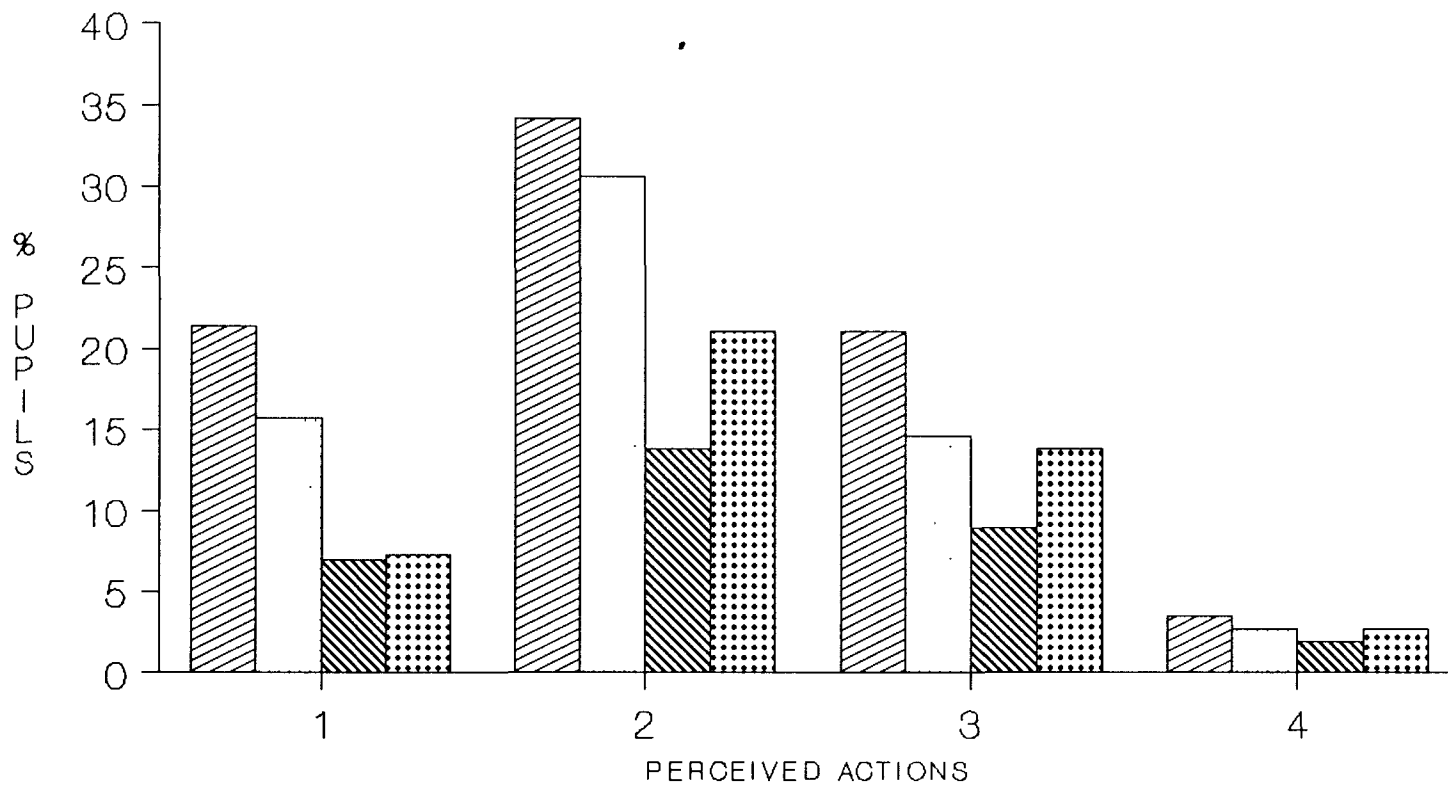
N=369

Membership in a health education club was also significantly associated with sweeping ( $X^2=5.1$ ,  $p=0.02$ ), collecting refuse ( $X^2=7.8$ ,  $p=0.005$ ), and cleaning latrines ( $X^2=13.7$ ,  $p=0.001$ ). Involvement due to a teacher's directive was also significantly associated with sweeping ( $X^2=7.9$ ,  $p=0.005$ ) and latrine cleaning ( $X^2=4.2$ ,  $p=0.04$ ).

A familiar sight in many schools was the presence of discarded sugar-cane husks and banana peels on the ground. Figure 12 summarizes the results of the pupils' stated reaction on finding such refuse. The dangers of husks and banana peels to health were recognized by the pupils. Their responses showed they believed that husks and banana peels increase the chances for fly breeding, for bad smell, unsightliness, and potential for injury. Pupils' responses to the actions they would take if they found sugar-cane husks and banana peels on the ground were statistically significant when related to fly breeding ( $X^2=8.90$ ,  $p=0.031$ ), bad smells ( $X^2=9.22$ ,  $p=0.027$ ) and potential injury ( $X^2=12.25$ ,  $p=0.007$ ). Pupils' class was also statistically significant ( $X^2=28.28$ ,  $p=0.001$ ) when related to the actions they would take if they found sugar-cane husks and banana peels on the ground.

The aim of introducing social support materials (health education clubs and sickness records) was to enable and reinforce the pupils to develop a sense of sanitation and personal hygiene. As an attempt to find out the level of reinforcement to sanitation practices, pupils' responses to sanitation practices were related to the existence of social support materials in their schools.

**FIGURE 12: PUPILS' PERCEPTION OF DANGERS OF REFUSE AND ACTIONS THEY WOULD TAKE**



FLY BREEDING

BAD SMELL

UNSIGHTLY

POTENTIAL INJURY

1. COLLECT SELF

2. TELL OTHERS TO COLLECT

3. REPORT TO THE TEACHER

4. STOP VENDORS

N=369

The aim of introducing social support materials (health education clubs and sickness records) was to enable and reinforce the pupils to develop a sense of sanitation and personal hygiene. As an attempt to find out the level of reinforcement to sanitation practices, pupils' responses to sanitation practices were related to the existence of social support materials in their schools. Many of the pupils who said that latrines prevent diseases (72.2%), that latrines should be cleaned at least 2-3 times per week (69.6%), that they wash their hands after latrine use (72.4%), always wash hands before eating (73.2%) and that they eat fruits only when washed (73.1%), were from schools with social support materials. Teachers and health education clubs were mentioned as the major sources of information.

## **5.6 SUMMARY**

This chapter has examined sanitation facilities, beliefs and behaviours in the Getembe Zone Primary Schools before and after the project started. Notable achievements include an increased number of sanitation facilities and the introduction of activities not present before the project in some of the schools. The number of latrines increased, urinals were provided, where it was possible water facilities were provided, refuse disposal improved, the number of schools with fenced compounds increased, health education clubs were formed, and records of sick pupils were kept. However, some schools were not able to achieve all the project objectives.

Analysis of teachers' and parents' response to the project indicates the degree of participation and the contributions made. The analysis shows that parents were the least responsive to the project. However, it should be borne in mind that the teachers who provided the data for this analysis do not form a representative sample of the school community. Data from the headteachers, teachers in charge of the project activities in the schools, and the parent representatives indicate that teachers in some schools were also not as responsive. Nevertheless, the degree of participation can still be gauged from the project performance in the light of other factors.

The case studies fill the gaps left by the data from the teachers. They do this by giving a wider perspective of the factors that influenced the degree of achievement in the schools which made some progress and those that did not. The analysis points out the importance of historical, social, economic and physical factors to the understanding of project performance.

Since baseline data on pupils' hygiene knowledge and practice were not available, the data used for this analysis cannot be used to draw definitive conclusions about project effectiveness. However, the results show relationships between the availability of certain facilities and activities in the schools, and pupils' knowledge and hygiene practices. From the results, more pupils used latrines more frequently in schools where the number of latrines had improved. However, even with an increase in number of latrines, latrine inadequacy was still an important sanitation problem.

Pupils' perceptions of the state of the latrines in their respective schools, indicated the need to have standard pit latrines provided with shutters and firm floors. They also point to the need for more attention to the existing latrines. Frequent cleaning of latrines by older pupils was suggested as one way of maintaining them. Training of the younger ones by involving them was also expressed.

Pupils' perception of the safety of the water they drank at school, was related to its source. Although the relationship between the safety of water drank at school and its availability in the compound was statistically significant, more (124, 64.9%) pupils who indicated the water to be safe were from schools without such facilities. However, it should be noted that some schools got water from protected springs which were located at a distance outside their compounds. Pupils also carry water for drinking at school from their homes. Hygiene practices (washing hands after latrine use, washing fruits and sugar-cane before eating, brushing teeth, bathing) related to water availability indicated that pupils have the knowledge and believe they should put it into practice, but frequently lack the facilities to do so.

Pupils carry out other hygiene activities (sweeping, collecting refuse, cleaning latrines) related to school cleanliness. Their reasons for doing so point to the need for more social support. The results show that pupils who had positive beliefs about sanitation facilities and professed to practice proper hygiene, were from schools with social support activities.

The results also indicated that health education clubs and teachers were important sources of information for hygiene practices. However, it should be noted that the parents were not at the same level of awareness about the project as the teachers.



## CHAPTER SIX

### SUMMARY AND CONCLUSIONS

#### 6.1 SUMMARY

The school age population in Kenya is expanding rapidly (Economic Survey, 1988) and therefore the demand for basic needs in the schools is more apparent, i.e, clean water supply, latrines, classrooms, etc. Furthermore, the existing health situation in Kenya points to the importance of environmental health problems. The prevalence of infectious and parasitic diseases together with poor sanitation are indicated as major causes of morbidity and mortality (Sessional Paper Number 1, 1986; WHO, 1987).

The Getembe Zone Project was carried out with above points in mind. This thesis describes a Health Education for Community Action on Sanitation and Personal Hygiene Project in 29 Primary Schools in Getembe Zone of Kisii District, Kenya. The project was centred on the school communities' access to the minimum requirements of PHC: basic sanitation and water supply, and health education concerning proper sanitation (Epp, 1986). This aspect was investigated in an attempt to address the prevailing health problems, and to determine suitable methods of preventing and controlling them (Bennett (ed.), 1986; Sessional Paper Number 1, 1986; WHO, 1987). It was also an effort to operationalize the idea of an intersectoral and collaboration approach in PHC, through the involvement of the Ministry of Education. The initiatives for the project came from a Teacher Training College (the project's coordinating institution). The overall aims of the project were to raise the school

communities' level of awareness on sanitation and personal hygiene; to enhance their participation in providing and improving basic sanitation facilities; and to help school personnel to develop a more practical approach to teaching and learning of health education.

The rationale for this work has been discussed in Chapter 1 and the relevant approaches have been addressed in Chapter 2. The information given in the first 2 chapters creates the context in which the background information to the project arose, which is described in Chapter 3.

The Getembe Zone Project is one example of efforts to assess the feasibility of the approaches described in chapter 2. There were 3 project objectives: to raise the school communities' level of awareness; to enhance their participation in providing and improving basic sanitation facilities and activities; and to help school personnel to develop a more practical approach to the teaching and learning of health education. The project evaluation set out to assess the level of achievement. There were 2 objectives. The first was to describe the position and state of the existing sanitation facilities and activities in the schools. This was in a bid to assess the extent to which facilities were provided to enable pupils to practice sound personal hygiene. It also gave the teachers an opportunity to have access to facilities of reference when dealing with health education on sanitation in the promotion of health.

The second objective addressed teachers' and parents' involvement in the project activities in their schools and the pupils' knowledge of sanitation and hygiene practices after the project was implemented. This information was helpful in understanding the difference between the project performance in the schools before and after the start of the project. The results will be used to re-examine the project objectives and methodology and revise the strategies in the light of the new information.

## 6.2 THEORETICAL CONSIDERATIONS

The literature reviewed in chapter 2 describes the work that has been done on health care and health promotion. Health promotion is an area that has received a lot of attention in the 1980s. While extensive work on health care by geographers has been undertaken, it has been mainly concerned with disease ecology and health service research (Earickson, et al., 1989). Not much attention has been given to health promotion despite the important role that it is expected to play in achieving the HFA goal by the year 2000. Furthermore, efforts on health promotion in schools in the developing world have focused more on levels of disease infection and selective control of intestinal infections (Chunge et al., 1987). There has not been enough attention given to the role of health education in addressing the predisposing and enabling factors. Stevens' (1985) work on giardiasis in developing countries illustrates how control measures using intermittent treatment for infected persons along with improved water supply and sanitation,

have only short term benefits unless they are coupled with community involvement and hygiene education. The prevention efforts to date (Cornelis and Malcolm, 1989; Jacobson et al., 1989; Johnson et al., 1989; Matomora, 1989; UNICEF, 1987) have also tended to be community oriented and dispensed by the medical staff rather than community based.

The literature also reveals that community involvement that meets the intersectoral and collaborative requirements of PHC, needs considerable commitment by those involved (Kaseje et al., 1987; Johnson et al., 1989). Its theoretical basis, that is, CBHC, depends on a recognition of basic needs and initiatives for activities to meet the recognized needs. This requires a well informed populace which is capable of organizing its resources to meet its needs. In other words, a community must be in a state of preparedness: cognitively, attitudinally and behaviourally to take the required actions. The feasibility of this approach in enabling school communities to meet their basic sanitation needs has been expressed already (UNICEF, 1987), but may require clear demonstration under "normal" conditions. While the Ministry of Health's PHC efforts in Kenya are well expressed on paper (Bennett, 1986), the CBHC and intersectoral approaches have not been assessed. Evidence from the Aga Khan Health Service PHC Project in Kisumu, indicates lack of collaboration and intersectoral support in many activities except for water supply (UNICEF, 1987). Furthermore, the primary schools being areas with special needs for health promotion have not been well addressed. Results from the

same Aga Khan project (UNICEF, 1987) point to the need for increased information on health, developing a school health programme, linkage with health facilities, improved environmental sanitation and improved water supply as the means to improving the pupils' health. Results of the sanitation facilities and activities data in the Getembe Zone Primary Schools reveal that much can be achieved through promoting health by the CBHC approach. The fact that the activities were coordinated by the Ministry of Education also points to the usefulness of intersectoral collaboration in activities that are health related. However, the work requires a stable, committed, and a well - coordinated team which is also able to solicit support from other sectors. The degree of commitment which is required may not easily arise if there is no motivation and reward for the participating personnel. If recognition and reward are give to those who participate in community activities, they may gain morale and raise their level of participation.

The required process of consistent educational interventions, persistent community organizing, health related knowledge and development demanded at the grass-root level could then be accomplished.

Literature on health promotion in schools demonstrates the need for more social support for pragmatic use of social skills both in the school and home environments (Parch, 1976). However, much of the information that exists on health promotion concerns schools in developed countries. Literature on this topic in developing countries is sparse, despite the importance attached to

self-reliance for individual well-being and national development. The results from the Getembe Zone Project demonstrate that teachers and health education clubs can provide information for various hygiene practices. The suggestions that were given by the headteachers, teachers and parent representatives also show that there needs to be a village approach to the project so that the children's social skills are reinforced by their parents.

### **6.3 METHODOLOGICAL CONSIDERATIONS**

It can be argued that the choice of Getembe Zone primary schools for a CBHC sanitation project was unrepresentative of a rural Kisii district situation. The zone's proximity to the coordinating institution and to the Ministry of Education offices may have also biased the activities. Furthermore, due to the proximity of the schools to an urban centre, there may have been certain influences which are not typical of a rural area. For example, the Municipal Council's management of refuse had a negative effect on how the schools near the dumping site responded to the project's activity of refuse disposal. The desire to give the municipal council the responsibility of providing water to the schools within its boundary was also expressed by some of the teachers. The sample size (29 schools) was also small so that reliable statistical analysis could not be carried out on some of the sanitation variables. Nevertheless, the descriptive analysis clearly shows that the several achievements were made by the school communities.

The data from the 10% sample of teachers which has been used to assess the level of community involvement in the project should also be interpreted with caution. While the choice of the 10% sample was objective, it was unrepresentative of the school community (teachers, parents and pupils). On the other hand, data from the headteachers, teachers in charge of the project in the schools and parent representatives was descriptive and was included to enhance understanding of project processes. Together with the two case studies, they improved the validity and reliability of the results.

The data from pupils which was related to the sanitation facilities and activities in the schools was objectively collected. However, it may not be used to draw firm conclusions because of the lack of baseline data. Nevertheless, the positive associations and trends between pupils' knowledge, hygiene and sanitation facilities and activities allow strong statements to be made on project performance.

In conclusion, the method of choosing Getembe Zone for the Education for Community Health Action on Sanitation and Personal Hygiene Project limits precise interpretation of the results. Lack of a complete set of baseline data is also a limiting factor. Nevertheless, the objectivity of data collection, the combination of quantitative and qualitative methods, and the systematic analysis of the data permit strong conclusions to be made. Specifically, there were positive trends towards an overall improvement in sanitation practices in the Getembe Zone.

#### 6.4 RECOMMENDATIONS AND DIRECTION FOR FURTHER RESEARCH

Experiences from the Getembe Zone Project point to the existence of various factors inhibiting positive response to the project. The factors range from those which directly involve the Ministries of Education and Health to those that may require collaboration with other ministries and organizations. Constant transfers of officials led to inconsistencies and low level or lack of participation of certain offices and schools. This led to the activities lagging behind, and in some cases being completely abandoned. In most cases, the transfers could have been avoided. Lack of collaboration between ministries in activities that involved schools was a hindrance to project activities. In particular, there was lack of enforcement of policy guidelines for standard facilities (classrooms, latrines) in schools by the Ministries of Planning and National Development and Health. There was also an incomplete inventory of facilities available in the schools. On average, school plots in Getembe Zone are 3.5 acres or less. Their hill-top/valley-bottom location poses environmental constraints for the development of physical facilities. In addition, the increasing number of children in these schools demand an increase or improvement in facilities. Based on these arguments, the need for proper planning and collaboration is apparent. In particular, collaboration between the Ministries of Education, Health, Planning and National Development, Public Works and Water Development will facilitate development in schools leading to a positive impact on school welfare. An active school health



programme would probably address environmental issues that are relevant to schools and set priorities. With the multiplicity of factors that determine what goes on in schools, a comprehensive programme that goes beyond the school communities (parents, teachers and pupils) seems to be a logical step in addressing the physical (high water-table, poor drainage and clay soils in valley bottom schools, rocky and steep grounds on hill-top schools) conditions; economic (poverty) factors; and social (large families, low level of awareness, drunkenness) problems.

Community awareness and subsequent involvement requires educational and social meetings for sensitization. These demand time, financial and human resources. The need for officers in charge of such activities in higher offices to understand the context of the activities is necessary. Site visits and field trips offer such opportunities. The District Environmental Office, the Zonal Education Office and the School Committees offer opportunities for facilitating activities in schools. In future, the District Environmental Office would be involved more in coordinating, lobbying and soliciting collaboration to support activities which demand local participation.

CBHC projects require not only community involvement in understanding problems and needs, but also motivation in recognizing skills, resources and experiences (Kaseje and Sempebwa, 1989). Technical back-up and support for project activities has already been expressed. All these demand a well informed and organized community. It also requires ample time for project

initiators to raise the awareness to a level where the community will begin to participate. Furthermore, time is needed to notice the effects of the project. With this in mind the ECHA programme in Kenya needs to give the projects more than the proposed 15 months (ECHA workshop, 1987). To have further input to health issues from teachers, collaborative efforts are required not only from the Ministry of Health, but also from other ministries and institutions that relate to health. The Ministries of Agriculture, Water Development, Local Government, Public Works and Planning and National Development could, in a collaborative way, support sanitation activities in the schools.

Various strategies may be used to address economic constraints, social problems and parents' level of awareness, factors that have been shown to hinder the project in the Getembe Zone Primary Schools. Science projects involving teachers and pupils would be a starting point to subsidize the costs of sanitation activities. Activities such as raising fish, rabbits, growing vegetables, are feasible but require financial and technical support which can be provided by the Ministries of Agriculture and Livestock Development. Although the activities involved households, experiences elsewhere (Johnson et al., 1989; Kaseje, et al. 1987) show that this is possible. Two schools in Getembe Zone which have initiated such activities indicate some success in the area. The pupils will learn from the activities and the produce sales will support sanitation activities.

Involving the local administration in the counselling of alcoholic parents is another strategy. One school in the project area tried this approach and the indications were that it can work. However, there may be other factors which will determine the degree of success. The health education activities on sanitation if approached from the homes may receive more attention from the parents. This will lead to the recognition for such facilities in schools, thus reinforcing the teachers' efforts.

In order to make strong assertions about what health education can achieve in terms of health promotion in schools, there is room for a comprehensive, well-designed longitudinal study. Future studies of this nature could be strengthened by:

1. the inclusion of other zones as controls. This will improve the strength with which conclusions can be drawn about the performance of the project (Fletcher et al., 1982; Friedman, 1974; Sackett et al., 1985).
2. establishing the prevalence of infections related to poor sanitation in the different zones. This could be accomplished by carrying out treatment of infections, and health education on sanitation and hygiene practices in one zone, and subsequently assessing the incidence of reinfection with time; carrying out treatment in a second zone and assessing the incidence of reinfection; providing health education only in a third zone; and by doing nothing in a fourth zone and assessing the prevalence of infection.

3. conducting a complete baseline of knowledge, attitude and practice (KAP) survey related to sanitation and personal hygiene issues in the schools. Pupils', teachers' and parents' awareness on sanitation could be included in the baseline information.
4. having a representative sample of the school community in the assessment of the level of participation.

The need for this kind of approach has already been pointed out by the results of epidemiological studies and chemotherapeutic interventions (Anderson, 1986; Holland, 1989; Hornick, 1985; Roundy, 1979; Tingley, 1988). As expressed by Gesler (1984), improved health has to come from contributions beyond curative health care. The role of geography in assessing the various aspects of the environment (physical, historical, socio-cultural and economic), is important. At the district level, there is a need to map health related information as well as assessing the risk factors. This information would be important in planning and in adopting or enforcing legislation. Geographic studies of associative factors could also produce meaningful information, not only on health status as pointed out by Jones and Moon (1987), but also in identifying predisposing factors to poor health. This could be accomplished by the epidemiological methods for data collection, organization and analysis. This information would also make it possible for the creation of a geographic base file (Pyle, 1979). This would embrace the CBHC approach to enable the communities to promote their own health and to take into consideration the multiple factors that influence observed actions.

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## APPENDIX 1.

AN EVALUATION OF A COMMUNITY-BASED HEALTH EDUCATION PROJECT,  
GETEMBE ZONE PRIMARY SCHOOLS, KISII, KENYA.

## Check-list on School Health Education on Sanitation.

District----- Division-----  
 Location----- Sub-location-----  
 Name of School-----  
 Number of pupils----- Boys----- Girls-----  
 Number of parents-----  
 Number of teachers-----

## 1. General conditions of the school:

- (a) Compound  
 (i) Very good            (ii) Good            (iii) Fair  
 (iv) Compound fenced-----  
       Not fenced-----
- (b) Classrooms  
 (i) Number-----  
 (ii) Permanent----- Temporary-----  
 (iii) Adequate----- Inadequate-----  
 (iv) Floor: Maintained-----  
           Not maintained-----

## 2. Latrine number, type and cleanliness:

- (a) Total number-----  
 (i) For teachers-----  
 (ii) For boys-----  
 (iii) For girls-----
- (b) Cleanliness  
 (i) Clean-----  
 (ii) Fair-----  
 (iii) Dirty-----
- (c) Covers  
 (i) Available-----  
 (ii) Not available-----
- (d) V.I.P. latrines  
 (i) Number-----  
 (ii) Condition-----
- (e) Location of latrines with respect to water source  
 -----  
 (f) Facilities for washing hands after latrine use  
 (i) Provided-----  
 (ii) Not provided-----

## 3. Urinals:

- (i) Available-----
- (ii) Not available-----

## 4. Refuse collection and disposal:

- (a) Refuse pit
  - (i) Available-----
  - (ii) Not available-----
- (b) Dumping indiscriminately in the open
  - (i) Yes-----
  - (ii) No-----
- (c) Burning in the open
  - (i) Yes -----
  - (ii) No-----
- (d) Compost pits
  - (i) Available-----
  - (ii) Not available-----
- (e) Cleanliness of refuse disposal place
  - (i) Good-----
  - (ii) Fair-----
  - (iii) Dirty-----

## 5. Water supply:

- (a) Source of water for use in the school
  - (i) Piped-----
  - (ii) Spring
    - Protected-----
    - Unprotected-----
  - (iii) Regularity of water
    - Constant-----
    - Intermittent-----
  - (iv) Is the source of water in the school compound?
    - Yes-----
    - No-----

## 6. What are the most serious sanitation problems in your school?

-----  
 -----

## 7. Has the school formed health education club?

- (a) Yes-----
- (b) No-----

If yes, what are the activities of the club?

-----  
 -----

If no, what are the reasons?

-----  
-----

8. Pupils' sickness record:

(i) Available-----

Not available-----

(ii) Average number of pupils who fall sick per month

(iii) Common diseases

-----

-----

-----

(iv) Do you have follow-ups?

with pupils-----

with parents-----

9. Any remarks or comments related to the information given above.

-----  
-----  
-----

Name of Office-----

Designation-----

Signature-----

Date-----

APPENDIX 2.

SCHOOLS SANITATION PROJECT - GETEMBE ZONE PRIMARY SCHOOLS  
KISII, KENYA

Q U E S T I O N N A I R E

Dear teacher,

Hello.

The Ministries of Health and Education, Kisii Municipal Council and Kisii College are in the process of evaluating the above project on school sanitation and personal hygiene.

You are kindly being asked to complete the attached questionnaire. There are no "right" and "wrong" answers to the questions. Your participation will help the institutions (named above) understand the factors that have enhanced or hindered the project's success.

If you have any questions please ask Mr. J. Gichana / Mr J. Makinda. Please be as sincere and honest as you can. Your information will be treated as confidential. Don't indicate your name.

Thank you very much.



PLEASE CIRCLE (O) THE NUMBER WHICH REPRESENTS YOUR RESPONSE

1. a) Do you teach health education?
  1. Yes
  2. No -- Please skip to question 2
  
- b) Do you demonstrate and show your pupils:
  - i) how to use and clean latrines?
    1. Yes
    2. No
  - ii) how to dispose of refuse to make the school clean?
    1. Yes
    2. No
  - iii) how to keep their bodies clean and healthy?
    1. Yes
    2. No
  
- c) How do you evaluate the effectiveness of the health education lessons?
  1. Test
  2. Observe
  3. Any other, please specify,-----  
-----  
-----
  
2. How many hours A WEEK do you spend in the following activities?
  - a) Latrine cleaning and maintenance
    0. None
    1. Less than 1 hour
    2. 1 hour
    3. 1 to 2 hours
    4. 2 to 3 hours
    5. More than 3 hours
  
  - b) Pupils personal cleanliness
    0. None
    1. Less than 1 hour
    2. 1 hour
    3. 1 to 2 hours
    4. 2 to 3 hours
    5. More than 3 hours
  
  - c) Refuse disposal in the school
    0. None
    1. Less than 1 hour
    2. 1 hour
    3. 1 to 2 hours
    4. 2 to 3 hours
    5. More than 3 hours

d) Obtaining safe water for use in the school

- 0. None
- 1. Less than 1 hour
- 2. 1 hour
- 3. 1 to 2 hours
- 4. 2 to 3 hours
- 5. More than 3 hours

3. Are you acquainted with the sanitation project in your school?

- 1. Yes
- 2. No

If no, please explain -----  
 -----  
 -----

4. Please rate the following aspects of the project administration:

Excel- Good Fair Poor Unable  
 lent to judge

a) Introduction to the project activities	1	2	3	4	5
b) The coordination of the project activities within the school	1	2	3	4	5
c) Pupils' response	1	2	3	4	5
d) Teachers' response	1	2	3	4	5
e) Parents' response	1	2	3	4	5

Suggestions for improvement:

-----  
 -----  
 -----

5. In your opinion do you notice any differences in school health activities since the inception of the project?

Please comment:

-----  
 -----  
 -----  
 -----

6. Please give suggestions how the project activities can be improved in your school

-----  
-----  
-----  
-----

7. In which sanitation project activities do you participate?  
Circle all that apply.

- 1. Songs
- 2. Poetry
- 3. Drama
- 4. Cleanliness
- 5. Construction of latrines
- 6. None
- 7. Any other, Please specify:

-----  
-----  
-----

8. What suggestions can you make to enhance acceptability of such projects in your school?

-----  
-----  
-----  
-----

9. Please answer the following questions about yourself.

- i) Have you had formal training in teaching?
  - 1. Yes            2. No
- ii) For how long have you been teaching?
  - 1. Less than 5 years
  - 2. 5-10 years
  - 3. 11-15 years
  - 4. 16-20 years
  - 5. Over 20 years

**THANK YOU FOR YOUR TIME AND EFFORT IN COMPLETING THIS QUESTIONNAIRE**

## APPENDIX 3.

## QUESTIONNAIRE FOR PUPILS

Please tick your answer

1. How many times do you use the school latrines during the week?
  1. Everyday
  2. Sometimes (2 to 3 days)
  3. Never
  
2. If you never use the school latrines, what are some of the reasons (you can circle more than one answer).
  1. No shutters
  2. They are dirty
  3. Fear of falling in
  4. Use latrines at home
  5. Fear of being bitten by snakes
  6. Fear of being seen going to the latrines
  
3. How often should latrines be cleaned?
  1. Everyday
  2. Every 2 to 3 days
  3. Once a week
  4. once a month
  
4. Who should clean school latrines?
  1. Pupils in lower primary
  2. Pupils in upper primary
  3. Both groups (lower and upper primary)
  4. Those under punishment
  
5. Write True or False
  - i) After latrine use I wash my hands -----
  - ii) Latrines help prevent diseases -----
  - iii) There is no latrine in my home -----
  
6. What do you use to clean your anus when you have used a latrine? (You can circle more than one).
  1. Nothing
  2. Grass
  3. Leaves
  4. Scrap paper
  5. Toilet paper
  
7. Who has given you information about latrine use? (You may circle more than one).
  1. Teachers
  2. Parents
  3. Health education club members
  4. Friends

8. What is the source of water that you drink at school?
  1. Spring
  2. Tap at home
  3. Tap at school
  4. Well
  5. Tank
  
9. Do you think the water is safe for drinking?
  1. Yes
  2. No
  3. Don't know (not sure)  
If your answer is yes skip to 11
  
10. Why do you think the water is not safe for drinking?
  1. It looks dirty
  2. It is not boiled
  3. It smells
  4. It is not chemically treated
  
11. If you went to the river and found a dead mouse in the water, would you take it out of the river and fetch water?
  1. Yes
  2. No
  3. Not sure  
If your is YES, answer 13
  
12. Why will you not fetch water from a river containing a dead mouse?
  1. Because the water is already contaminated
  2. Because I fear a dead mouse
  3. Any other
  
13. Does your mother boil water for drinking?
  1. Yes
  2. No  
If your answer is Yes, answer 14
  
14. How often does your mother boil water for drinking?
  1. Always
  2. Sometimes
  3. Never
  
15. How often do you brush your teeth during the week?
  1. 2 to 3 times a day
  2. Once a day
  3. 2 to 3 times a week
  4. Once every two weeks
  5. Once a month

16. How often do you wash your body?
1. Every day
  2. 2 to 3 times a week
  3. Once a week
  4. Once every two weeks
  5. Once a month
17. Write True or False to the following statements
- i) I always wash my hands before I eat -----
  - ii) I don't eat any fresh fruits unless I know they are washed -----
  - iii) Sugar-cane does not need to be washed before eating -----
18. Do you keep your school clean?
1. Yes
  2. No
19. What do you do to keep your school clean? (You can circle more than one answer).
1. I sweep my class
  2. I collect rubbish
  3. I clean the latrines
  4. I tell others to collect rubbish
  5. I ask my mother to sweep the class
20. Why do you keep your school clean? (You can circle more than one answer).
1. Because the teacher tells me to
  2. Because it is healthier to keep our compound clean
  3. Because I am a member of the health education club
21. You have just come from lunch and you notice sugar-cane husks and banana peels as you walk to class. As you walk you notice some of your classmates eating sugar-cane and others bananas. What will you do?
1. I will collect the peels and husks
  2. I will ask them to collect the peels and husks
  3. I will wait and report them to the teacher
  4. I will ask those selling the items to be stopped
22. What are the dangers of husks and peels to health? (You can circle more than one answer).
1. Breeding of flies
  2. Gives bad smell
  3. Bad sight
  4. Can cause injury
23. What class are you in?
- 6.
  - 7.
  - 8.

24. How old are you?

-----

25. Who do you stay with presently?

1. Parents
2. Mother only
3. Father only
4. Brother or sister
5. Relatives
6. Other

**THANK YOU FOR FILLING OUT THIS QUESTIONNAIRE**

## APPENDIX 4.

**QUESTIONS FOR SCHOOL COMMITTEES AND TEACHERS IN CHARGE OF THE  
SANITATION ACTIVITIES**

1. What sanitation activities do you have in your school?
  - a) Construction of more pit latrines, proper use and maintenance.
  - b) Digging of refuse pits, proper use and maintenance.
  - c) Provision of safe water for drinking.
  - d) Teaching and inspecting pupils on personal hygiene.
  - e) Keeping the school compound clean:
    - rubbish collection
    - trimming of hedges
    - flower beds
    - sweeping
    - draining of stagnant water
    - removing cob-webs
  - f) Holding meetings and staging demonstrations
  - g) Forming clubs to support the sanitation programme
  
2. What are the objectives of the activities?
  - a) To prevent diseases
  - b) To improve the standard of latrine use and maintenance
  - c) To increase the number of latrines
  - d) To improve the disposal of human waste
  - e) To improve the disposal of refuse
  - f) To improve personal hygiene
  - g) To help the pupils develop habits conducive to personal hygiene
  - h) To keep the school environment healthy
  - i) To create awareness of the sanitation programme
  
3. Why are you focusing on the activities you have mentioned? (Those that are specific to the school in question).
  - a) Financial constraints
  - b) Limited land
  - c) Community disturbances
  - d) Community commitment (support)
  - e) Time factor

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4. What resources have used to implement the activities?
  - a) Money
  - b) Personnel
  - c) Materials
  - d) Land
  - e) Time



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-----  
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5. What support did you need?

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-----  
-----  
-----

6. How did you get it?

-----  
-----  
-----  
-----

7. a) Who is responsible for organizing and facilitating each activity?

-----  
-----  
-----  
-----

b) What is the cost of each activity? (materials, labour, etc).

-----  
-----  
-----  
-----

8. How much time do you give to each activity?

-----  
-----  
-----

9. Do you see this time as being outside your normal working time?

Please explain:-----

-----  
-----  
-----

10. What methods have you used to ensure effective community participation?

-----  
-----  
-----  
-----

11. Why do you think the methods have been effective?

-----  
-----  
-----

12. What methods have not been effective?

-----  
 -----  
 -----

13. Why do you think they have not been effective?

-----  
 -----  
 -----

14. What can you say about the level of participation of the following groups?

	Uncooperative	Fairly cooperative	Cooperative
Parents	-----	-----	-----
Teachers	-----	-----	-----
Pupils	-----	-----	-----
Others (specify)	-----	-----	-----

15. Health education is taught as part of the science syllabus, why do you think children may not be practicing what they learn in class?

-----  
 -----  
 -----  
 -----

16. Can you give suggestions how this could be improved?

-----  
 -----

18. Have you tried any of the suggestions you have made? Yes/ No  
 If yes what was the outcome?

-----  
 -----  
 -----  
 -----  
 If no, explain:-----  
 -----

Name of the school-----  
 Number of pupils ----- boys ----- girls  
 Number of teachers ----- males----- females  
 Number of parents -----  
 Hectarage -----  
 Number of classrooms -----  
 Number of streams -----  
 The year school started -----

## APPENDIX 5.

SCORING OF THE GETEMBE ZONE PROJECT SCHOOLS AND  
THE CRITERIA FOR AWARDING MARKS

1. Compound appearance
  - (a) Very Good - 3 Marks
  - (b) Good - 2 Marks
  - (c) Fair-1 Mark
  
2. Classrooms
  - Adequate and maintained - 5 Marks
  - Inadequate but maintained - 3 Marks
  - Adequate but not maintained - 2 Marks
  - Inadequate and not maintained - 1 Mark
  
3. Improvement on number and type of latrines
  - (a) Pit alone - 1 Mark
  - (b) Built latrine - 3 Marks
  - (c) V.I.P. own effort - 5 Marks
  - (d) Supported V.I.P. completed on schedule and presentable - 2 Marks
  - (e) Usage
    - Clean - 3 Marks
    - Fair - 1 Mark
    - Dirty - No Mark
  
4. Urinals
  - Before - 1 Marks
  - After - 2 Mark
  - Usage
    - Good - 1 Mark
    - Poor - No Mark
  
5. Refuse disposal pit
  - (a) Available after the programme - 2 Marks
  - (b) Available before and after - 1 Mark
  - (c) Not available - No Mark
  
6. Health Education Club
  - (a) Formed and active - 3 Marks
  - (b) Formed but not active - 1 Mark
  - (c) Not formed - No Mark
  
7. Sickness Record
  - (a) Kept - 2 Marks
  - (b) Not kept - No Mark
  
8. Serious sanitation problems
  - (a) Efforts to solve them - 2 Marks
  - (b) No efforts to solve them - No Mark

MAXIMUM OF 32 MARKS

## APPENDIX 6.

## SCHOOL SANITATION AND ENVIRONMENTAL AWARENESS SURVEY

(September, 1987)

(Information to be provided by the headteacher)

1. Name of school-----
2. Number of pupils in the school-----
3. Male----- Female-----
4. How many usable latrines do you have in the school?
  - (a) For boys -----
  - (b) For girls -----
  - (c) For teachers -----
5. Who constructed the latrines?-----
6. Who maintains the latrines? (Cleaning, repair)
 

-----
7. What problems do you experience in maintaining latrines?
 

-----
8. How do you solve them?-----
9. Do you think all pupils use school latrines?-----
10. Do you provide any hand washing facilities for the pupils?
 

-----
11. If yes, specify-----
12. What are the uses of water in your school?
 

-----
13. What is the source of water that you use at school?
 

-----

14. What is the distance from your school to the water source?

-----

15. How do you collect the water from the source?

-----

16. How do you store the water at school?

-----

17. Do the pupils drink the water from the source you have mentioned above? -----

18. Is the water drunk by pupils treated in any way, i.e, boiled or filtered or chemically treated? -----

19. Who maintains the water source?

-----

20. Do you keep a record of pupils who get sick? -----

21. On average how many pupils get sick in a month? -----

22. Do you try to follow the cases? -----

23. How do you discard refuse in your school?

-----

24. Does your school have small gardens for agriculture?

-----

25. Please provide any other information relevant to the questions above and has not been given.

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