

**MOTIVATION, PERFORMANCE AND MOTIVATING
FACTORS OF COMMUNITY HEALTH WORKERS
IN SIAKAGO COMMUNITY BASED HEALTH
CARE PROGRAMME.**

BY

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DECLARATION.

I hereby declare that this thesis is my original work and has not been presented for a degree in any other University.

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DEDICATION.

To all the members of my family.

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List of abbreviations.

1. AMREF African Medical and Research Foundation.
2. CBHC Community based health care.
3. CHW Community health worker.
4. DHMT District Health Management Team.
5. IMI Individual Motivation Index.
6. IPI Individual Performance Index.
7. KANU Kenya African National Union.
8. Km² Square kilometres.
9. Ksh Kenya shillings.
10. MCH/FP Maternal child health and family planning.
11. MEI Met Expectation Index.
12. MOH Ministry of Health.
13. NGOs Non-governmental organizations.
14. PHC Primary health care.
15. Rs Indian rupees.
16. SRDP Saradidi Rural Development Programme.
17. TBAs Traditional birth attendants.
18. TOT Training of trainers.
19. UNICEF United Nations Children's Fund.
20. US \$ United States dollar.
21. VHCS Village Health Committees.
22. WHO World Health Organization.
23. Yrs Years.
24. Z \$ Zimbabwe dollars.
25. No. Number.

ABSTRACT.

Lack of a reward system for community health workers (CHWs) is of major concern in many community based health care programmes as this reduces the effectiveness of CHWs or makes them stop work. This study was meant to give a starting point in laying down guidelines for a systematic reward system, for the CHWs, when planning the implementation of a community based health care (CBHC) programme.

The study was carried out in the Siakago CBHC programme in Embu District of Kenya. The programme was started in 1986 through the Ministry of Health and World Health Organization collaboration. Training of community health workers was started during the last half of 1986. By the time of the study 110 CHWs had been trained in 89 villages in Siakago Division. 55 CHW-areas were visited in which 52 CHWs and 549 community members were interviewed. 5 (9.6%) of the CHWs had left work, cumulatively since the inception of the programme, among those interviewed. 3 of the CHWs could not be traced.

The case study took advantage of the variability of the characteristics among the CHWs and the community members. The conclusions based on the findings of the study are:

1. The CHWs were highly motivated despite the lack of cash, material and labour support from the members of

their village and the programme organizers.

2. The motivating factors that were abundant among the CHWs were: high social status; history of a traditional healer in the family; support by family; support by village health committee; support by the local health services staff and; support by the local leaders or administrators.
3. Majority of the CHWs who had expected to get improved village health status; improved social status and; new health knowledge and skills had the expectations satisfied.
4. The level of performance of the CHWs increased with the level of motivation.
5. The community members were willing to support their CHWs by giving them cash, material and labour rewards. The ability of the community members to support their CHWs was limited by the fact that they were low in resources, Siakago being in a low-agricultural potential zone. Yet the reward expectations of the majority of the CHWs can be satisfied by what the community members can be able to contribute.

Therefore, the community members, local leaders or administrators, and local health services staff would approve of the use of community resources to establish a reward system for the CHWs.

CHAPTER 1.

INTRODUCTION.

1.1. Philosophy of PHC and basic definitions.

In 1978, The International Conference on Primary Health Care (PHC), at Alma Ata, endorsed "Primary Health Care" as the strategy for achieving "Health for All by the year 2000". Kenya was a signatory to that strategy [1,2]. Kenya is also a signatory to two other events that stimulated the development of primary health care in Kenya. One of them is the adoption, by 1977 World Health Assembly, of "Health for All by the year 2000 ". The other is the adoption, at the 1981 World Health Assembly, of the "Global strategy for Health for All by the year 2000" [2].

PHC addresses the main health problems in the community and provides promotive, preventive, curative and rehabilitative health services. It includes the following elements: [1]

- (1). Education concerning the prevailing health problems and the methods of controlling them.
- (2). Promotion of food supply and proper nutrition.
- (3). An adequate supply of safe water and basic sanitation.
- (4). Maternal and child health care, including family planning (MCH/FP).
- (5). Immunization against major infectious diseases.
- (6). Prevention and control of locally endemic diseases.

(7). Appropriate treatment of common diseases and injuries.

(8). Provision of essential drugs.

In Kenya the following have been added: [2].

(9). Mental health and,

(10). Dental health.

The Alma Ata conference also reiterated that health is complete mental, physical, and social well-being and not merely the absence of disease or infirmity. It stated that health is a fundamental human right. Furthermore, PHC was defined as *"essential health care, based on practical, scientifically sound, methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and the country can afford at every stage in their development in the spirit of self-reliance and self-determination. It forms an integral part of the country's health system, of which it is the central function and the main focus, and of overall social and economic development of the community. It is the first level of contact of individuals, the family and the community with the national health system, bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process"* [1].

World Health Organization (WHO) is a specialised organ

of United Nations Organization. WHO deals with matters related to health of the member countries. Its decisions are made at conferences attended by representatives of the member states. The Alma Ata conference is such an example.

Implementation of PHC in part depends on a CHW, (community health worker) variously called community health volunteer, village health worker, village health volunteer, and primary health care worker among other names. The term community health worker is widely used and has gained universal acceptance. The CHW is usually a member of the community, selected and supported by the community and trained to carry out tasks that help improve the community socioeconomic and health status [2,3]. For the purpose of this study this definition of a CHW was strictly adhered to. Thus such community health workers as traditional birth attendants (TBAs) were not included in the study. (TBAs usually have inherited skills and are usually middle-aged or elderly women. They are highly esteemed in their communities and attending to health work is not their main occupation. [4]). The health services staff, such as public health technicians and family health field educators, who may claim to be community health workers because they work closely with the communities are not included in this definition.

In the Ministry of Health (MOH) community based health care (CBHC) programmes, the government is responsible for

training, technical support and supervision of the CHWs [2,3]. The local health services staff (workers from the local hospital, health centre or dispensary) are assigned the responsibility for the technical support and supervision of CHWs. The CHW can, usually, read and write and is responsible to the community for the non-technical supervision. The CHW may spend a large proportion of his/her time serving the community [5]. Usually the community is left to decide on the reward system for the CHW [6]. The health services, after training the CHW, is supposed to lay down the strategy for his/her continuing education. [3].

Continuing education is equivalent to on-the-job training. That is the education given to a worker during his/her working period. It increases the workers knowledge and skills as he/she works.

After the training, the CHW becomes the main agent for preventive and curative health action in the community with the support of conventional health services [7].

The village health committee (VHC) is responsible for making PHC operational at the community level. A VHC is made up of people elected by the community. The committee has the responsibility for planning and implementing community health activities, usually with the help of programme organizers, and ideally with the community members. The activities planned for, ideally, should

enhance general socioeconomic development, which includes health improvement, in the community [2,5,8]. This is the definition of a VHC that is adopted in this report.

Programme organizers are usually agencies that contribute financial resources and technical expertise to enable a CBHC programme to start and continue. Such agencies could be governmental, such as the Ministry of Health, or NGOs.

1.2. The theory of motivation and performance.

To cope with the demands of his/her work in the community and at home, the CHW needs to be highly motivated. Motivation is defined as a force or impulse which moves a person towards the desired behaviour. The worker may be conscious or unconscious of the force. Despite extensive studies by psychologists, philosophers, sociologists and educators, there has not emerged a generally acceptable concept of the nature of motivation. Any behaviour is ultimately caused by unsatisfied needs and unless the needs are satisfied a person strives to get them satisfied [9,10,11].

Intrinsic motives (motivating factors) are those that are associated with the activity undertaken in contrast to non-intrinsic (material) motives which are associated with factors outside the activity such as cash or material reward. The goals associated with the intrinsic motives are feelings of satisfaction such as pride or friendship

resulting from certain kinds of activities. In contrast to intrinsic motives, non-intrinsic motives do not lead to real satisfaction or pride. However their absence can lead to dissatisfaction or frustration. [12,13]. Intrinsic motives include: [12]

- i. The need for achievement in which case the worker desires to accomplish something unusual and important and hence advance in his/her career.
- ii. The need for power in which case the worker desires to influence and control the other people.
- iii. The need for affiliation in which case the worker desires to have friendly relationships with the other people.

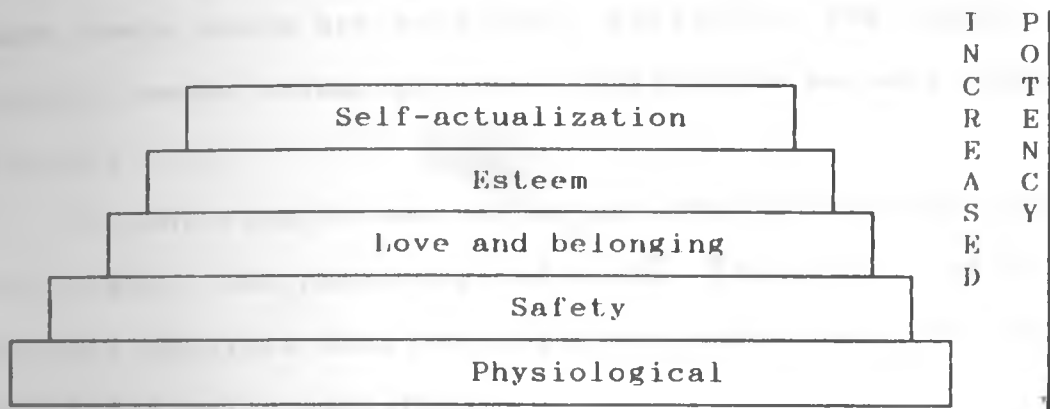
The wants or motives that have been shown to lead to appreciable differences in performance are the ones termed as non-material or intrinsic motives which are associated with the fact that the activity itself is satisfying. The non-intrinsic or material motives which include rewards such as salary can lead to dissatisfaction and frustration if not met but account to a lesser degree than the intrinsic motives for the variation in the performance level [12,13].

According to the theory of basic needs, behaviour patterns develop from man's efforts to satisfy his/her needs. Maslow has placed these needs in a hierarchy of potency (figure 1.1) in which the lower ordered needs must

be at least minimally satisfied before higher ordered needs can be attended to. The satisfaction of needs is not rigidly fixed to the order of potency in the hierarchy. One activity may satisfy one or more needs. [10].

FIGURE 1.1

MASLOW'S HIERARCHY OF HUMAN NEEDS.



From Educational Psychology, page 199. [10].

Maslow's hierarchy of human needs helps one identify which needs, normally, must be satisfied before others. Physiological needs include the need for air, water, food, sleep, and sex. These are concerned with survival and unless they are met, they override any higher needs. Safety needs are expressed through anxiety concerning threats of physical bodily harm or emotional insecurity. Love and belonging needs are satisfied when relationships are secured with key persons. These satisfactions are best obtained at home. Where homes are inadequate in satisfying love and belonging needs, affection may be sought from outside the home. Self-esteem needs are viewed as the desire for a person to be seen as a worth member of a

group. Self-actualization needs are expressed through the desire that a person does what he/she is best suited to do. The person desires to fully realize and exploit his/her potentials. Thus a person in a well-paying profession may not be satisfied until he/she gets into a profession that he/she feels is best suited for him/her. [9,10]. Once the more basic needs are relatively satisfied, the higher ordered needs assume greater significance as motivating factors [14].

Voluntarism is one way of satisfying the needs that are higher than physiological needs. Therefore, voluntarism is only possible when physiological needs have been at least minimally satisfied.

In this study motivation and performance are seen as two different entities each influencing the other one very strongly. A person who is highly motivated has a high level of performance [15]. A high level of performance may increase the level of motivation as the results of the activities become a source of feelings of satisfaction and pride.

1.3 The major aspects of the study.

The study looked at whether the CHWs did what was expected of them. That involved the measurement of the level of performance based on the activities that the CHWs were supposed to carry out. Also studied was what made them do what they did (the motivating factors). The study also

aimed at establishing whether the motivating factors actually created a drive to keep the CHWs at work. This was established by measuring the level of motivation based on their attitudes. The role of the community in contributing towards keeping their CHWs motivated was also examined.

CHAPTER 2.

THE STUDY AREA.

2.1 Embu District socioeconomic profile.

The study was carried out in the Siakago Division of Embu District of the Eastern Province of Kenya. The headquarters of Embu District is Embu Municipality. This town is connected to Nairobi (the capital city of Kenya) by a tarmac road. Embu District has a population of about 421,000 people and occupies an area of 2,714 Km². Population pressure in the high agricultural potential areas, such as Runyenjes, has caused migration of people to the lower agricultural potential areas such as Siakago. The district is bordered by Meru to the north, Kitui and Machakos to the south, and Kirinyaga to the west [16,17] (map 3).

Embu District rises from about 515 metres above the sea level at River Tana basin to over 4,570 metres above the sea level on the top of Mount Kenya in the northwest. The district is served by six major rivers. These rivers mainly serve the northwestern and southwestern parts of the district. The district experiences the long rains between March and May and the short rains between October and December. The central and southern parts of the district are dry, experiencing an annual rainfall of less than 550 mm. [16,17].

The southern part of the district is covered by Mwea

plains. The land then rises northwards culminating in hills and valleys to the north and the northeastern parts of the district. There are a few hills such as Kianjiru, Kiambere and Kiang'ombe and some steep slopes at the foot of mount Kenya [16].

In the 1988 Literacy Survey of Kenya, 52.1% were females and 47.9% were male among the literate population of Embu District. Thus the proportion of the literate males is almost equal to the proportion of literate females in Embu District. Primary school enrolment ratio (the ratio of number of children enroled to the number of children of school going age) was 98% in 1975 and 99% in 1987 [17].

The health facilities in Embu District (map 5) are:

[17]

| <u>Facility</u> | <u>Total No.</u> | <u>MOH</u> | <u>NGO</u> |
|-----------------------------------|------------------|------------|------------|
| Hospitals | 3 | 2 | 1 |
| Rural health demonstration centre | 1 | 1 | 0 |
| Rural health training centre | 1 | 1 | 0 |
| Health centre | 5 | 5 | 0 |
| Dispensaries | 28 | 20 | 8 |
| Total | 38 | 29 | 9 |

Embu Provincial Hospital has 310 beds and an average daily out patient attendance of 500 patients. Ishiara District Hospital has 80 beds. Kyeni Consolata Hospital, a mission hospital, has 157 beds. [6].

All the five health centres in the district are ran by

the government. They all offer MCH/FP services. Only 3 of the dispensaries provide MCH/FP services. Kangaru Nursing Home is privately owned and offers mainly MCH/FP services. It has 23 beds. [6].

The health facilities in Embu District, as elsewhere in Kenya, provide curative services predominantly [6].

There are NGOs in Embu who have established nutrition programmes. These include Foster Parents International, Meals for Millions/Freedom from Hunger Foundation, Catholic Food Relief, Church of the Province of Kenya and the Netherlands Child Welfare Project. [6].

Foster Parents International and the Church of the Province of Kenya carry out PHC activities in Gachoka Division. Meals for Millions/Freedom from Hunger Foundation has established community development programmes aimed at improving health and nutrition in the communities. Kyeni Consolata Hospital carries out sporadic PHC activities at Kyeni, Kagaari, Ishiara and Siakago Locations. CARE-Kenya-Embu Project, provides technical and material support to small scale water projects in the district [6].

Embu district has, among others, the following health constraints: [18]

1. Shortage of transport.
2. Shortage of health personnel.
3. Poor response by the beneficiaries of environmental health programmes.

4. Shortage of drugs.

The following top ten diseases were reported in the district in 1986: [17]

| <u>Disease</u> | <u>Cases reported per 1000 population</u> |
|----------------------------|---|
| 1.Malaria | 329.0 |
| 2.Respiratory diseases | 392.0 |
| 3.Skin diseases | 109.0 |
| 4.Intestinal worms | 79.0 |
| 5.Bilharzia | 53.0 |
| 6.Diarrhoeal diseases | 0.3 |
| 7.Anaemia | 4.0 |
| 8.Urinary tract infections | 13.0 |
| 9.Eye infections | 38.0 |
| 10.Joint diseases | 23.0 |
| 11.Gonorrhoea | 12.0 |
| 12.Accidents | 43.0 |

All the diseases shown above can be handled at the community-level in one way or the other. Health education in addition to improved environmental sanitation can help reduce the incidence of malaria, intestinal worms, skin diseases, diarrhoeal diseases and eye infections. Improved houses would help reduce the incidence of malaria and respiratory tract infections. Referral of sick patients appropriately would reduce the morbidity and mortality associated with these diseases as people would be treated before complications set in. These activities are among

those that CHWs are expected to carry out [6].

Embu is a MOH pilot area for PHC. The activities of CHWs would decrease the workload of the health personnel by reducing morbidity through prevention and appropriate early treatment of common diseases and injuries. The health education effected by the CHW would make the communities accept the environmental health programmes more readily. Thus an effective CBHC programme is expected to minimize the factors that contribute to ill health in Embu District.

2.2. Siakago Division socioeconomic profile.

The administrative divisions and agricultural zones are shown on maps 2 and 3. 1,299 Km² of Embu District is too dry for rain-fed agriculture and Siakago is in the semi-arid zone. The Siakago Division covers an area of 779 Km² and has a population density of 65 persons per Km². [16,17]. This is much lower than the district population density which is 151 persons per Km² [19]. In 1986, Siakago Division had 50,921 inhabitants in 11,106 household [6] giving an average household size of 4.6 persons per household. Therefore, the household density was about 14.2 households per Km².

The division lies within livestock-millet and marginal cotton zones (map 2 and 3). [16,17]. Non-mechanized small scale farming is widespread in Embu District and Siakago is no exception [17].

The food crops grown in the Siakago Division include

millet, sorghum, beans, maize, cow-peas and green-grams. Mangoes are plentiful between the months of December and February. The cash crops grown in this region are mainly cotton and tobacco. Livestock farming is usually limited to a few animals. Marasmus and kwashiorkor occur during draughts [6,17]. The main water sources in the division: are streams and wells (which dry up during the dry season); springs and; holes dug in the dry river beds. About 40% of the homesteads in Siakago have and use pit-latrines. Most of the houses in the division have earthen walls and grass thatched roofing. Few houses have corrugated iron roofing and still fewer are made up of bricks or stone. About 80% of the mothers in the division are delivered at home. [6].

Beliefs in witchcraft and magic are widespread in Siakago Division. Uvulectomy and female circumcision are also widely practised in this division [6,49,50].

Food for Millions and Freedom from Hunger Foundation did a household survey in 1987 in Kyeni South Location. This location borders Siakago Division. However Kyeni South is a coffee growing zone (map 3) and so its inhabitants are likely to be better off, socioeconomically, than those of Siakago Division. However the results of the 1987 Kyeni South survey enlighten one on the likely socioeconomic status of the communities in Siakago Division. The majority of the households (84%) in Kyeni South Location had monthly incomes of less than 600 Ksh

120]. The incomes are expected to be lower in Siakago which has less agricultural potential than Kyeni South (map 2 and 3).

About 3 kilometre from Embu town, along Embu-Kiritiri road (map 4), the road has an easterly branch that leads to Siakago town. That is a small town in Siakago Division (map 3). From the tarmac road, the road to Siakago town is a dry-weather one and is about 25 kilometres long. Siakago town is in Nthawa location and is the Siakago divisional headquarters. That is the town that houses Siakago Health Centre where the Siakago CBHC programme divisional office is located. Nthawa is the most westerly of the four locations that make up Siakago Division. The other locations are Evurori, Mumenje and Kiang'ombe. These locations are connected to Siakago town by dry-weather roads (map 4).

Siakago town has 30 business premises [17]. The other major town in the Siakago division is Ishiara town. This is at the northeastern corner of the division. The town is connected to Siakago town by about 35 kilometres of dry-weather road which passes through Runyenjes division (map 4). Ishiara is also connected to a tarmac road (Embu-Meru road) about 12 kilometres from Embu town, by 25 kilometres of a dry-weather road (map 4).

Ishiara shopping centre has 50 business premises [17]. The town is connected to smaller towns in Mumenje and

Kiang'ombe locations by dry-weather roads. Ishiara District Hospital, the second largest government hospital in Embu District, is found in Ishiara shopping centre.

The health facilities are more scattered in Siakago Division than in the rest of the district (map 5). In Siakago Division the average distance a person travels to reach a health facility is 20 kilometres [16].

2.3. Siakago CBHC programme.

Through the collaborative effort of MOH/WHO the Siakago CBHC programme was started in 1986. This was part of a nationwide effort to strengthen PHC in Kenya and involved Embu, Baringo and South Nyanza Districts. [6].

The programme had the following objectives: [6]

- I. To orient the health service staff at all levels so as acquaint them with their roles in PHC.
- II. To improve health services management at the district level with particular emphasis in inter-sectoral collaboration, community participation, programme integration and financial management.
- III. To improve the collection, analysis and use of information at all levels of the health care system.
- IV. To undertake operational research relevant to PHC.

The PHC programme, in Embu District, was launched in the Office of the Provincial Commissioner in Embu town on

5th of February, 1986. One month later, a three-day inter-sectoral workshop was held in Embu town. The participants included civil servants from the Office of the President and such ministries as Agriculture, Water Development, Social Services, Education and Health. NGOs whose work was relevant to health care were also represented at the seminar. A Provincial PHC coordinating Team was formed and comprised of: Provincial Medical Officer; Provincial Nursing Officer; Provincial Health Education Officer and; Provincial Public Health Officer. [6].

After the seminar the District Development Committee (DDC), Embu District, was familiarized with the planned PHC programme objectives and activities. The District Health Management Team, DHMT, was assigned the responsibility of managing the PHC programme in Embu District. The DHMT established the District PHC Coordinating Team. That team had the responsibility of implementing PHC activities in Embu District. [6]

It is obvious that decisions were made at high hierarchical levels and handed down to lower hierarchical levels and communities for implementation. Dominant top-down management approach suppresses initiative, and hence participation in the decision-making process, at grass-root level [21]. Therefore, the role of community participation in making the decisions that regarded the running of the CBHC programme in Siakago must have been minimal.

The District PHC Coordinating Team carried out a district health needs assessment. Siakago Division was selected as the entry point for MOH PHC activities in Embu District as it was seen to: be economically deprived; have higher infant and childhood mortality rates than the rest of the district; have poor accessibility to health services; have poor transportation and communication infrastructure; have the lowest literacy rate in Embu District and; have a high incidence of endemic diseases. [6].

The District PHC Coordinating Team established a divisional PHC coordinating team in Siakago Division. This team comprised of the MOH staff in Siakago Health Centre. The divisional team had the responsibility for the day-to-day running of the PHC programme in Siakago Division. That team conducted a series of one-day workshops for community leaders, school teachers, chiefs, and women-group leaders. Those workshops were aimed at creating awareness on the advantages and implications of PHC. "Barazas" were held in all the 96 villages to create awareness to the community members. (However only 89 villages were recorded as having had a CHW recruited, at the time of the study, probably due to changes in boundaries between the time the CHWs were recruited and the time of the study). "Baraza" is an adopted Kiswahili word which means an open-air meeting. At those "barazas" VHCs were selected until every village had

VHC. CHWs were also selected in those "barazas." [6].

A training of trainers (TOT) course was organized and various extension workers from government ministries were trained. Those extension workers included: Public Health Technicians; Family Health Field Educators; Nutrition Field Workers; Agricultural Extension Workers; Adult Education Teachers; Water Assistants; Social Development Assistants; Enroled Community Nurses; Clinical Officers; Chiefs; Assistant Chiefs and; members of NGOs. [6].

The TOT course emphasized the 10 PHC elements and also taught communication and project management skills. The TOT graduate became the trainer of CHWs. No TOT graduate got any payment in his/her capacity as a TOT. [6].

The candidates for VHC membership were supposed to be respected and mature village residents with a history of interest in community work [6]. The interpretation of those terms was left to the community perception of them. The principle that the community makes CBHC decisions implies that their perception of the right candidate is correct. The same goes for their perception of the right candidate for a CHW.

In Siakago, VHCs had between 7 and 13 members. 90% of those members were men. There is a general belief in Siakago that men make better leaders than women. Thus more men were elected despite the fact there were more women voters than men voters. [6].

VHCs were trained in three one-day workshops which were separated by 2 to 4 weeks intervals. After the training, the VHC was expected to: [6].

- (i). Identify community health problems through their own experience and on discussion with the other community members.
- (ii). Identify possible solutions to health problems in the community by identifying community resources.
- (iii). Liaise with government extension workers and NGOs within their communities to solve community health problems. They were expected to seek technical advice on interventions that the community wished to carry out to solve their health problems.
- (iv). Mobilize and sensitize communities to actively participate in PHC activities.
- (v). Supervise the CHW in the non-technical activities.

VHC members received no reward either in cash or material form. However they had increased social status. Some of the VHC members were employed as assistant chiefs based on their merit as VHC members. The local administrators allowed the VHC members to address public meetings which increased their social status. [6].

Of the 700 to 800 VHC members in the whole division,

only 10 members had defaulted, by 1989, since the inception of the programme. Most of them left work after emigrating from the villages of work or after securing jobs outside the villages of work. Some of those VHC members defaulted when they learnt that they would not be paid by the government. Poor attendance at meetings by VHC members was a common phenomenon. The VHCs members with very poor attendance records were occasionally replaced, by their communities, with more zealous persons [6].

Poor relationships between the VHC members and some village elders existed. That was explained by the fact that the VHC members had a higher social status than the village elders. The village elders were laymen while the VHC members had some training on basic management and PHC elements. Hence the higher social status of the VHC members than of the village elders. [6].

CHWs were selected in "barazas" by their communities. The criteria for selection included that the candidate be: a resident of the village; mature; with independent means of existence; respected and socially acceptable; able to communicate effectively in the local language; literate; ready to volunteer; development conscious; ready to become a model of good health practices to the other community members after the training and; ready to accept any remuneration offered by the community. Most of those criteria were vague. However one assumes that the community

members understood them in accordance with their perceptions and hence chose CHWs who were acceptable to them. [6].

Once selected, the CHW underwent a three-week training in three phases each of one week at Karurumo Rural Training Health Centre. During the interval between the phases, which was three to four months, the CHWs trainees carried out some given practical assignments with the help of their trainers. [6].

The CHW was expected to carry out the following functions after the training: [6]

1. Give health education on:

(i). Sanitation such as on personal cleanliness and cleanliness around the house.

(ii). Make water safe for drinking through boiling and the use of "the three pot system". This system ensures that water is stored at home for two days before it is drunk. By standing the impurities as well the disease causative agents settle to the bottom of the pot. Some disease causative agents such schistosomes become harmless to man during the period that the water stands.

2. Teaching "first aid" treatment to individuals and tracing the clinics defaulters.

3. Motivating: parents to take their children for

immunization; community members to plan their families and; pregnant mothers to attend antenatal clinics.

4. Mobilize community members to improve their houses and bedding.
5. Encourage the community members to have good dental and mental health practices and appropriately refer the dental and mental problems of community members.
6. Encourage the community to practice kitchen gardening and give advise on appropriate diet for children and pregnant and lactating mothers.
7. Keep records on births and deaths in the community.

Thus in Siakago, as in many other CBHC programmes, the CHW was expected to have a formidable task if the activities were actually carried out. All those activities had to be carried in scattered homesteads [6,16].

CHAPTER 3.

STUDY MATERIALS AND METHODS.

3.1. Justification/rationale.

Establishing a reward system for the CHW is taken to be the responsibility of the community he/she works for [5,6]. The community takes up a large proportion of the CHW's time and does not provide him/her with enough cash and/or materials to meet his/her physiological needs [5]. This frustrates the CHW who may stop work or become ineffective as he/she goes to look for food or employment outside the area where he/she works as a CHW [5,6].

Lack of a reward system for the CHWs leaves them at the mercy of their community members which may be low in resources or unwilling to take up financial responsibility for rewarding the CHWs [5,23,36]. The CHWs in the Bombay slums, in India, were paid by the programme organizers as the communities were too poor to support them [26].

There is a strong feeling that if a CHW is to spend a large proportion of his/her time on health work, financial support must be forthcoming [26]. The CHWs may be paid in money, praise, prestige, recognition or reciprocal obligation. However, (quote), "*In many countries 'kind' comes once a year with the rains and it is insufficient, so remuneration in cash becomes a necessity.*" [2]. Used in this context, the word 'kind' means material or labour rewards.

A systematic study that would help lay guidelines on establishing a reward system for the CHWs is yet to be done [23]. Yet the success of any PHC programme at the community level depends to a large extent on the CHW. By leaving a CBHC programme without guidelines for the reward system for CHWs the CBHC programme planners are not just risking losing the CHWs but are also leaving the CHWs' means of survival and personal development to chance.

Therefore, there is an urgent need to formulate some guidelines for a reward system of the CHWs at the design stage of any CBHC programme other than relegate this difficult task to community members. This study is meant to facilitate the task of laying down such guidelines.

Relating the motivating factors to the level of motivation will enable one determine the strength of a motivating factor relative to the others. This will help one identify which motivating factors to emphasize when designing a reward system for a CBHC programme. Relating the level of performance of the CHW to the level of motivation will help one justify the use of the motivating factors, that will be identified, to increase the effectiveness of CHWs. Determining the willingness and ability of the members of the community to provide the CHWs with the motivating factors will help one establish the extent to which the community can be expected to support their CHWs and hence establish a rational reward system

when planning the implementation of the CBHC programme.

3.2. Objectives of the study.

General objective.

To determine the relationship between the motivating factors, the level of motivation and the level of performance of CHWs.

Specific objectives.

- (1). To determine the levels of motivation of CHWs based on their attitudes towards their work.
- (2). To determine the motivating factors among the CHWs.
- (3). To determine the motivating factors that the community members are willing and able to give to their CHWs.
- (4). To determine the level of performance of the CHWs based on the activities they are expected to carry out.

3.3. The null hypotheses.

- (1). There is no difference in the levels of motivation of CHWs with different motivating factors.
- (2). There is no difference in the levels of performance of CHWs with different levels of motivation.

3.4. Study type.

This is a descriptive study. Like any other case study, the inferences from it are inevitably limited in terms of generalization (see *limitations to generalization* in this chapter). The greatest value of the study is, basically, to provide an in-depth picture of the

performance, motivation and and the determinants (motivating factors) among volunteers such as CHWs. This is a subject that has not been studied quantitatively before.

Therefore this study is expected to lay a foundation for analytic studies on the motivation and performance of such volunteers as CHWs.

3.5. Study area.

While a lot has been written about NGOs' CBHC programmes, very little literature is available on the governmental CBHC programmes. Thus an evaluation of the MOH CBHC programme in Siakago was timely.

The MOH/WHO CBHC programme in Siakago was chosen for this study because it is one of the pilot CBHC areas for the MOH and had been going on since 1986. Therefore, there had been enough time for the motivating factors to have an effect on the motivation and the performance of the CHWs. Details of the study area are given in Chapter 2.

3.6. Study population.

This comprised of the CHWs who had been trained in the Siakago CBHC programme since its inception and the community members served by those CHWs.

3.7. Sample size.

From all evidence available, there is no documentation regarding the prevalence of any motivating factor among CHWs or any other group of volunteers. Quantitative determination of sample size based on the expected

difference in the level of motivation, performance or motivating factors among the CHWs is therefore impossible. Faced with such a dilemma, one is forced to take as large a sample as possible. In any case, the larger the sample size the stronger the inferences from the sample [27,28]. The number of the CHWs in the Siakago CBHC programme was small. Therefore, studying all the 110 CHWs in the Siakago CBHC programme would have been ideal in this case study. However, a 50% (other than 100%) sample, for the 110 CHWs was decided on because of financial limitations. It was not possible to get a list of CHWs in the division. Therefore, the sampling unit was taken to be the village as the CHWs were listed by the names of the villages which they served (it was known, by the Divisional CBHC Programme Coordinator, that a particular village had a CHW). The list of all the villages where CHWs had been trained was available. The number of those villages was 89.

Based on the principle of probability, half the number of villages selected at random were expected to contain about half the number (55) of CHWs in the division. That was also observed in reality. All the CHWs in each village selected at random were studied. The sample size of the household heads was determined as below:

$$\begin{aligned} \text{Ratio of households to CHWs} &= 11106 / 100 \\ &\approx 100 \text{ households per CHW.} \end{aligned}$$

A CHW covered about 100 households in the division.

10% of the households were selected. Thus 10 households per CHW were interviewed. As argued below the minimum distance between the first and the last household visited would have been 3 kilometres in a straight line. The households along the line of the households visited would be influenced by the CHW's activities to varying degrees. As an example, the household closest to the home of a CHW may be influenced the most and the furthest may be influenced the least.

In reality, the interviewers nearly always reached the edge of the CHW-area by evening. Logically, the household heads at the edge of the CHW-area would have felt that the activities of the CHW benefited them least while those next to the home of the CHW would have felt that they benefited most from the activities of the CHW. This follows from the fact that the CHW had limited time available for PHC activities [6,8] and hence might have found it easier to attend to health problems of his/her nearby neighbours than the village members further from his/her home. There was therefore a need to match the distances of households from the home of the CHW by taking the households at numerous possible distances from the home of the CHW. There were about 10 possible distances from the home the CHW in each village. The numerous distances from the household of the CHW had the effect of reducing the bias that might have resulted from the difference in influence of the CHW on household heads at various distances from the CHWs home.

The average household density in Siakago Division is 14.2 households per Km². Take a situation where there are 16 households per Km². If the houses were uniformly distributed, on a square ground they would appear viz:

| | | | | |
|---|---|---|---|---|
| 1 | X | X | X | X |
| k | X | X | X | X |
| i | X | X | X | X |
| l | X | X | X | X |
| o | X | X | X | X |
| m | X | X | X | X |
| e | X | X | X | X |
| t | X | X | X | X |
| r | X | X | X | X |
| e | X | X | X | X |

1 kilometre

Let X represent a household.

The average shortest distance between two households is $1/3 = 0.3$ kilometres. Using the Pythagoras theorem (which states that the sum of the squares of the shorter sides of a right-angled triangle is equal to the square of the longest side (hypotenuse, H,)) the distance between the households diagonally can be calculated viz:

$$H^2 = 0.3^2 + 0.3^2.$$

$$H^2 = 0.18.$$

$$H = 0.42 \text{ kilometres.}$$

Thus assuming a uniform distribution of households, the greatest distance between two households would about 0.4 kilometres. Taking a sample size of 10 households in each village, the furthest household from the home of the CHW would have been 3 to 4 kilometres. Thus the 10 possible distances from the home of the CHW in each village lay within that range of distances shown.

It took about 1 hour to interview a CHW, 30 minutes to interview a community member and about 2 hours of walking to cover a village for interviews. Thus each village was covered in a total of 8 hours ($1 + \frac{1}{2} \times 10 + 2 = 8$ hours). That duration excluded the time taken to get to a village and that was 2 to 3 hours. Thus interviewing more than 10 household heads would have required about double the amount of resources put in data collection as interviewing the extra community members would have meant going to one village for two days.

A CHW-area comprised of the household of the CHWs and all the households he/she was supposed to serve. In Siakago the boundaries of those areas were marked by rivers, roads, valleys, hills or known homesteads of villagers. Each CHW knew his/her boundaries and so did the community members.

A total of 549 community members were interviewed in 55 CHW-areas.

3.8. Sampling method.

Siakago CBHC programme was selected as shown elsewhere (*study area* in this chapter). After the case was selected, a list of the villages where CHWs had been recruited was obtained from the divisional CBHC programme coordinator. Those villages numbered 89 and out of those 45 were selected at random using the "Epistat" programme table of random numbers. The villages selected are shown in annex 2. All the CHWs in a given village were interviewed.

The household head of one of the households in the homestead closest to the home of the CHW was interviewed after the CHW. Then the household head, of one of the households in the homestead closest to the homestead of the household head previously interviewed, was interviewed. Only one household was visited in each homestead to increase the scattering of the households visited and hence reduce the bias due to the closeness of households to the CHWs' home. After a homestead was visited the next nearest homestead was visited. The process was continued until evening when about ten household heads had been interviewed. The details regarding the sampling of household heads are given in *data collection* section of this chapter.

3.9. Data collection.

Permission to carry out research was obtained from the Office of the President. Afterwards, the Chairman of the Department of Community Health of the University of Nairobi introduced the investigator to the Medical Officer of Health, Embu District, who introduced the investigator to the Siakago Division CBHC programme coordinator.

The divisional CBHC programme coordinator introduced the investigator to the Siakago District Officer, who wrote a memo to his chiefs informing them that a primary health care research was to be carried out in the division. The chiefs informed their respective assistant chiefs and asked

them to give the investigator and his assistants any assistance required. The study therefore received support from local administrators as well as the health services staff in Siakago Division.

The villages studied were spread in the whole division. Transportation to the villages depended on public vehicles and walking. Vehicles were scanty and were available only in the major market places, usually on market days. Availability of vehicles and motorable roads determined where one could get a vehicle to a certain place. Thus while it was possible to get access to most of the villages in the western part of the division from Siakago shopping centre, only from Ishiara shopping centre could one get access to most of the villages in the eastern part of the division (maps 3 and 4).

The villages in the western part of the division were covered from Siakago shopping centre while those in the eastern part of the division were covered from Ishiara shopping centre.

To avoid preempting the "Programme Questionnaire" during pre-testing of the questionnaire, the Divisional CBHC programme coordinator was asked to respond to that part of the questionnaire before pretesting began.

The purpose of pre-testing the questionnaire was to find out whether the questions would be easily understood by the interviewee. Also, pre-testing the questionnaire

helped find out whether the questions were relevant to the Siakago CBHC programme setting. The Divisional CBHC programme coordinator and five CHWs trainers were interviewed regarding the relevance of the questionnaire to the local setting. After the interviews, it became clear that there were no set standards of performance for the CHWs. The performance section was then modified. The rest of the the questionnaire was not modified at that stage. In the modification, a list of the activities that the CBHC programme coordinator expected the CHWs to carry out was used. Since it was not stated how much of each activity a CHW was expected to carry out, a scoring system was formulated. The scoring system was based on whether a CHW had carried out, or had not carried out, a specified activity in the previous month. The scoring system is described elsewhere in this chapter (*measurement of motivation and performance*).

Five CHWs and ten members of the community were interviewed at Siakago Health Centre. It was intended that the questions be unknown to the interviewees in the study area before the administration of the final questionnaire to them. Their knowledge of the nature of the questions would have influenced their answers to the questions and hence create a bias. Therefore, only the CHWs and community members from the villages not selected for the study were interviewed during the pre-testing of the questionnaire.

Arrangements were made, through the Divisional CBHC programme coordinator, to invite the CHWs to the health centre for the interviews. The community members interviewed were patients who came from the villages not sampled out for the study. As result of the interviews the questionnaire was modified to make it easier for the CHWs and the members of the community to understand the questions. The final questionnaire was then printed.

Four field assistants were trained. These were "A"- or "O"-level school leavers. The training comprised of a one-day theory session during which time the assistants were made to understand, in details, the contents of the questionnaire and translate the questions into Kiembu. The practical sessions were held in the field and each assistant asked questions in the presence and with the assistance of the investigator. This went on for three days after which the investigator was satisfied that the assistants were able to ask the questions accurately and in a way that CHWs or members of the community could understand. Then the assistants were paired up and each pair visited one village. The investigator spent a day with each pair alternatively and all the assistants met the investigator in the evenings to sought out any problems that emerged in the field. To hasten data collection three more assistants were later trained, and paired up with the ones originally in the study (this was done during the last

week of the study).

The chiefs and assistant chiefs were visited and the purpose of the research was explained to them.

Kiambu, the mother-tongue of the majority of Siakago Division residents, was the language used for the interviews but the questions were written in English. All the CHWs in a given village were interviewed. After getting into a village selected for the study, the home of the CHW nearest the point of entry was sought. The interviewers then introduced themselves, and the purpose of their visit, to the CHW. The CHW was then asked to indicate to the interviewers the boundaries of the area he/she served and explain to them how to get to the home of the other CHWs (if the village had more than one). He/she was then asked to respond to the questions in the *community based health worker questionnaire*, annex 1. Probing for answers was done while avoiding suggesting answers to questions. When necessary a question was repeated for clarity. After answering the questions the interviewee was thanked. Then the interviewers proceeded to the homestead nearest to the home of the CHW and introduced themselves and the purpose of their visit.

The household head, or his representative (the wife of the household head in a male headed-household), of one of the households in the homestead was asked to respond to the questions in the *community member questionnaire*, annex 1.

Effort was made to trace one household head in each homestead. After the questions were answered the interviewers proceeded to the next nearest homestead and interviewed the head of any one of the households. This procedure was repeated till evening by which time an average of ten heads of households were interviewed. In a village with more than one CHWs the interviewers visited the other CHW and interviewed him/her as well as the heads of the households he/she served. To cover a CHW-area took a whole day. After the village had been covered the interviewers proceeded to the next village. Any CHW not found was traced later with the help of the trainers at the health centre, the local public health technicians or the local administrators or leaders.

Apart from the use of the questionnaire the investigator recorded some general information pertaining to the programme. The information was on: organization and management of the programme; reaction of the community members to the CBHC programme activities and the CHWs; reaction of the chiefs, assistant chiefs and village leaders to the CBHC programme activities and; statements made by the CHWs and members of the community about the CHWs and the CBHC programme.

The survey took a total of thirty-five days in the field and covered forty-five villages and fifty-five CHW-areas (some villages had more than one CHW-areas). Fifty-

two CHWs were interviewed and five hundred and forty-nine members of the community. This is summarized viz:

| | |
|---|--------|
| Number of villages visited | = 45. |
| Number of CHW-areas visited | = 55. |
| Total number of CHWs interviewed | = 52. |
| Number of CHWs not continuing work interviewed | = 5. |
| Number of CHWs who could not be traced | = 3. |
| Number of community members interviewed | = 549. |

3.10. Measurement of motivation and performance.

The measurement of motivation, because of the nature of the variable, is difficult. It involves measuring human behaviour. Most of the forces that direct human behaviour are hidden. Indeed the individual whose motivation is being measured may be unaware of the motives directing his/her behaviour. It is therefore a challenge to come up with a simple method for measuring the motivation for the CHWs. Attempts to meet this challenge have been made in this study.

Scoring systems (such as the one used to determine the level of motivation in this study) have been used to determine the level of motivation successfully (29).

The attitude towards work was used to grade the level of motivation in each CHW. The attitudes were determined through opinion questions which were as in the questionnaire annexed (annex 1).

The level of motivation was determined using a scoring system. Each CHW was asked five questions that indicated the attitude towards his/her work (annex 1) and each response was graded based on whether it revealed: willingness to support the programme (A); uncertainty on willingness to support the programme (B); or unwillingness to support the programme (C). Response "A" got a score of 3, "B" a score of 2 and "C" a score of 1. The average score for each CHW was obtained and constituted the Individual Motivation Index (IMI). The IMI was used to compare the level of motivation of a CHW with that of other CHWs in that programme.

Assessment of performance ideally depends on the comparison of the output of a worker against a set standard but the performance of an individual may be compared with the performance of others doing the same job [51]. Where performance standards have not been set, such as among the CHWs studied, objective measurement of performance becomes difficult. The performance of the CHWs was determined through a scoring system that was based on the activities that the CHWs were supposed to carry out (see annex 1). For each activity that the CHW had carried out during the previous month a score of 1 was entered. If no activity had been carried out during the previous month a score of 0 was entered against the activity. The average score of the activities constituted the Individual Performance Index

(IPI) for each CHW. The IPI was used to compare the level of performance of one CHW with that of other CHWs in the same programme.

3.11. The measuring instruments.

Data was collected using a questionnaire (*annex 1*). The questionnaire was divided into three parts. The first part was the *programme questionnaire* which was used to collect data on general information regarding the programme. The data was obtained from the Divisional CBHC programme coordinating office. The information so obtained gave a general picture regarding the whole programme. There was only one respondent to that part of the questionnaire.

The second part of the questionnaire was the *community based health worker questionnaire*. The first section was used to gather data on the demographic characteristics of the CHWs. The second section was used to gather data on the motivating factors (the events and phenomena that helped keep the CHW motivated for his/her work). *Attitudes section* was the third section of this part of the questionnaire. This section comprised of the questions meant to determine the attitude of the CHW towards his/her work as a CHW. The responses were then graded based on whether they favoured, were uncertain or did not favour continuing work in the programme. Their average grade constituted the IMI (Individual Motivation Index). The performance section was based on the activities listed elsewhere (*list of*

variables, in this chapter and annex 1). These were the activities that the CHWs was expected to carry out routinely. Each activity was scored and the average grade constituted the IPI (Individual Performance Index).

The third part of the questionnaire was used to determine the demographic characteristics of the head of households and their attitudes towards their CHWs.

3.10. List of variables.

- A. Motivation: Attitude of CHW towards their work were used to determine the level of motivation. The questions used to determine the attitudes are in annex 1.
- B. Performance: The list below was based on the activities that the CHWs were expected to carry out by the divisional CBHC programme coordinating office.
1. Presence of up-to-date records.
 2. Records of births and deaths.
 3. Number of health education talks in a month.
 4. Number of houses improved in a month.
 5. Number of soil conservation trenches dug in a month.
 6. Number of latrines constructed in a month.
 7. Number of dish racks constructed in a month.
 8. Number of energy saving fire places constructed in a month.

9. Number of mothers motivated for immunization of their children in a month.

10. Number of people motivated for immunization in a month.

11. Number of patients referred to the nearest health facility in a month.

C. Motivating factors:

Rewards in cash material or labour; regularity of drug supply; support by family; support by village health committee, support by local health services staff and the local administration; history of a traditional healer in the family; improved social status; prospects of career development; continuing education; religious conviction and; availability of free treatments to CHW and his/her family.

3.13. Validity and reliability.

Reliability: Can the questionnaire be used by a different or the same investigator on the same group of CHW with the same results? The questionnaire was extensively structured to increase the chance that different interviewers got the same answers for a particular question. The interviewers were trained together to ensure that they had a common perception and understanding of the questions and that increased the probability that they would make similar questions carry the same meaning to the interviewees. After the training, experience showed that there was no

unacceptable divergence in the answers elicited by different interviewers on similar questions.

The questions used were structured which increased the reproducibility of the answers elicited by different interviewers for similar questions. That increased the reliability. However, with structuring categorization of certain responses became inevitable. Therefore other investigators would have to concur with the one who formulated the categories to get his perception of the various groupings. Without such concurrence, reliability would be reduced.

Validity: The measurement of the level of performance and motivation was objective. It is accepted that the performance of a individual is nearer to the maximum for a person who is motivated for his/her work than for a person who is not motivated for the work [15]. Thus the level of performance is expected to increase with the level of motivation, from theory.

There is no direct way of measuring the level of motivation that is known. Attitudes towards work may be used to determine the level of motivation. Positive attitudes (those that favour a high output from the worker) would be associated with a high level of motivation. Negative attitudes (those that favour a low output from the worker) would be associated with a low level of motivation. However accurate determination of attitudes depends on the

honesty of the respondent.

Another indirect way of measuring the level of motivation is using the performance of the worker. With set standards, the measurement of performance would be highly objective. However the high level of motivation would only produce a high level of performance when certain conditions have been met. Such conditions would include availability of working tools and time.

Did the measuring instruments really measure what they were meant to measure? The study established that the level of motivation is directly related to the level of performance as expected from theory. That fact indicated that the measuring instruments had construct validity.

3.14. Sources and control of biases.

1. Inter-observer bias was minimized by training the interviewers together and close supervision, during interviews, thereafter. The structuring of the questions also helped minimize this kind of bias as it reduced the number of ways that similar responses could be interpreted by different interviewers.
2. The CHWs, due to fear of victimization, would have withheld some information but this was minimized by:
 - a. reassurance of the CHWs that the information obtained was confidential until after the analysis when it would not be identified with individuals and;

- b. interviewing the CHWs in the absence of the health services staff.
3. Dishonesty among the community members as they would not like to portray a bad image of their CHWs. They were assured that their CHWs would not be told what they said. The interviews were carried out in the absence of the CHWs.
4. A reporting system from the community to the division CBHC programme office was lacking. The number of the villages recorded to be having CHWs differed from the number recorded elsewhere [6]. Therefore, there might have been a difference in the boundaries set up when the programme was started and the ones recorded in the CBHC programme divisional office. Since the data recorded when the programme was set up was not available it was decided that the existing boundaries be used. That might have caused overlap of some CHW-areas. This was avoided by asking the CHW to describe their boundaries to the interviewers as they perceived the boundaries. The community members were also asked to state whom their CHWs were as they perceived them to be. Even when a community member sought help from two CHWs the community member usually perceived one CHW as the one responsible for the area his/her household was in.
5. The distance from the home of CHW would have

influenced the attitude of the community members towards him. That bias was reduced by getting the households at numerous possible distances from the home of the CHW. That was done as described elsewhere in this chapter (*sample size, sampling method and data collection*).

3.15. Limitations to generalization of inferences.

The limitations are those expected of any case study. The fact that one CBHC programme was selected (not randomly) from many CBHC programmes renders the inferences limited to CBHC programmes with the same characteristics as the Siakago CBHC programme. Since the MOH programmes, in Kenya, have the same policy [2], the inferences would be generally applicable to other MOH CBHC programmes. Those are likely to have CHWs with similar motivating factors.

Motivation and performance are universal characteristics of any worker. Thus the inference on the relationship between the level of motivation and performance for the Siakago CHWs can be generalized for not only CHWs but also other volunteers, if not all workers.

CHAPTER 4.

LITERATURE REVIEW.

4.1. Requirements for PHC implementation.

As the National PHC Programme, Kenya, has recognized, effective implementation of primary health care requires the following factors: [2]

- (1). Increased knowledge, attitude and practice in health personnel and the communities through orientation and training programmes initiated by the Ministry of Health (MOH) and/or non-governmental organizations (NGOs). This is to ensure that CBHC (community based health care) is accepted as complementing institutional based health care other than be seen as being inferior to institutional based health care by the communities and the health personnel.
- (2). An increase in motivation of health personnel and the communities so as to increase their zeal for, and their commitment to, PHC activities.
- (3). Greater inter-sectoral collaboration and multi-disciplinary action. This is to ensure that all the government ministries, departments and parastatal organizations as well as the NGOs work together to achieve general socioeconomic development, including health improvement, among the people.
- (4). Political will to ensure support of PHC by policy makers at the highest and all other levels (including

the community leaders at the village level).

- (5). Community participation in which the community members contribute ideas, material, labour, money and time to achieve socioeconomic development (including health improvement) in the community. The CHW is deemed as a contribution from the community.
- (6). Equitable redistribution of available resources. This would involve the formulation of policies aimed at preferentially enabling the poor people (such as city slum dwellers, occupants of arid and semi-arid lands, and peasant farmers) acquire more resources. Thus the socioeconomic status of such people would improve and more resources would be available to them for health improvement.
- (7). More appropriate and affordable health technology. Such technology should be: affordable; durable; reliable (able to produce the desired results); can be repaired in the country (and preferably in the community where it is used) when it breaks down; available to the community and; socio-culturally acceptable to the community.

In addition, the implementation of primary health care depends on the CHW [2]. The role of CHW is described viz:

[2]

1. Motivating the communities through education concerning health matters in the community.

He/she organizes and mobilizes the community for PHC activities.

2. The link between the community and the health care system. This includes referring the health problems, that can not dealt with at the community level, to higher levels of health care. The CHW keeps the record of the main health events in the community and transmits the same information to higher levels of health care. The information collected should be translated by the CHWs who should take any action that is possible at the community level to solve any problem revealed by the information. He/she may receive patients requiring prolonged rehabilitation in the community from the higher levels of health care and help them settle in their families and the community at large.

The first level of health care is the individual or family level. The family, ideally, seeks help from the CHW who is expected to have more health knowledge and skills than the non-trained community members. The CHW seeks help on health matters in a peripheral services unit such as an out-reach clinic, dispensary or health centre. The peripheral health services unit refers health problems to the district or the sub-district hospital. When the need arises, the district and the sub-district hospital refers

the health problems to specialised health care units. These could be specialised health care units within the district with the capacity to handle special category of patients. They include infectious disease centres and nutritional rehabilitation centres. The other category of specialised health care units are the ones that serve regional and national needs such as provincial hospitals and Kenyatta National Hospital. At each of the levels of health care, promotive, preventive, rehabilitative and curative health care services are provided to varying degrees. [6].

WHO working group selected the problems that a CHW deals with viz: [3]

- (1). Care of the health of inhabitants and look after community hygiene. Therefore he/she should have skills on curative and preventive/promotive health care. This includes the ability to diagnose and treat common ailments in the community and carry out measures to keep the environment clean such as encouraging and demonstrating the construction and the proper use of pit latrines.
- (2). Give health care and advice according to guided instructions. These should be simple enough to be easily understood by the CHWs. They should also, be suited for the local needs. The knowledge and skills of the CHWs need to be updated constantly

to suit the changing community health needs.

(3). Refer the cases that he/she can't deal with.

Transport arrangements should be made to facilitate easy referral of cases that the CHW can not deal with. The CHW should be made aware of his/her limitations (particularly in his/her curative role) so that he/she can refer as early as possible the cases he/she can not deal with.

(4). Give health education on disease prevention and hygienic habits. Thus in addition to the technical curative, preventive and promotive health care skills, he/she should have adequate human and communication skills so that he/she can effectively give health education to the community.

The Kenya government recognizes health as a basic human right and views good health as a precondition for overall socioeconomic development as stipulated in Sessional Paper No. 10 of 1965, the KANU manifesto, the constitution and successive National Development plans since independence. The Kenya Government has been having the following as the main objectives for the development of health services since independence [2]:

1. To strengthen and carry out measures for the eradication, prevention and control of diseases.
2. To provide adequate and effective diagnostic,

therapeutic and rehabilitative health services for the whole population.

3. To carry out biomedical and health services research as a means of identifying more efficient and cost-effective methods for the delivery of health services.

The cumulative health policies guiding the development of health services since independence include [2]:

1. To increase the coverage and accessibility of health services to the rural areas.
2. To further consolidate urban, rural, curative health and preventive/promotive services.
3. To increase the emphasis on maternal and child health and family planning (MCH/FP) services in order to reduce morbidity, mortality and fertility.
4. To strengthen MOH management capabilities with an emphasis on the district level.
5. To increase inter-ministerial co-ordination.
6. To increase alternative financing mechanisms for health care.

The above objectives are in line with the international PHC policy. The MOH, Kenya, developed a policy to foster community based health care (CBHC), which is centred around the CHW. Based on this policy, the MOH in collaboration with the WHO established a CBHC programme in

the Siakago Division of Embu District (details in chapter 2).

As Mburu et al view it, CBHC is an extension of PHC to the community. CBHC is part and parcel of PHC but the term serves to emphasize community participation, which is the cornerstone of PHC. [30]. The community members contribute money, material, labour and time to a CBHC programme.

4.2. Role of community participation.

Community participation is essential for achieving sustainable community development. The community should be involved in making the decisions regarding all the activities in the CBHC programme. [8,30]. If the community is not involved in the decision-making process the programme activities decided on may not be carried out as they receive mere lip-service [21].

Organization of the community is a major requirement for effective community participation. A dialogue must exist between the beneficiary community and the programme organizers. This involves a long process. [21]. The process is illustrated by the events that took place at Saradidi [8,21].

In 1975, the Anglican Church of the Province of Kenya began a community development programme at Saradidi. Saradidi is a rural area located in Siaya District of Kenya. Anglican congregations were encouraged to elect development committees. The Saradidi Rural Development

programme (SRDP) was began in 1979. The programme originated in one Anglican congregation. A discussion was held among the eventual programme director, two medical students from the area and the community leaders. The participants elected an interim committee by popular vote. The duty of the committee was (quote) "*to create community-wide awareness of the programme, to elicit total community involvement and to start community organization.*" The committee members held informal discussions with recognized community leaders and other individuals in the community. The committee also visited other church congregations and clan meetings. Through these forums the committee publicised and popularised the idea that community members could work together in solving their own health problems [8].

With the involvement of community elders and local administrators, the community was mobilized, the project area was defined, and the community was organized for action. Homesteads were grouped into 23 villages each consisting of 200 to 500 households. Each village elected a village health committee (VHC) [8].

Three months after the formation of the interim committee, a one week seminar was held at Saradidi. The seminar was attended by: three representatives from each of the 23 villages; the local leaders and government administrators; members of the interim committee and;

church leaders [8].

Discussed at the seminar were the following issues: major community problems and priority problems; possible reasons for the problems; possible solutions to the problems and; what actions the community was going to take to solve the problems. Programme objectives were agreed upon at the end of the seminar. [8].

Three representatives from each village were elected to the programme development committee which replaced the interim committee. 14 members of the village development committee, including the programme director, were elected to serve as an executive committee which later became the executive board. The executive committee was responsible to the programme committee but had the authority to manage the day-to-day running of the programme [8].

In 1981, the first annual general meeting was held at Saradidi. Any resident of Saradidi was allowed to participate. The meeting elected four committees. The Programme Development Committee consisted of: three representatives from each village health committee; the programme director and the chairman to the committee and; the treasurer and secretary to the executive board (previously the executive committee). The purpose of the committee was to monitor the progress of the programme and develop new approaches to solve village developmental problems. The Administrative Committee managed the

programme centre. The Evangelism Committee coordinated the developmental activities of the different churches. The Income Generating Committee helped develop income generating activities at the programme centre. Fund raising groups were formed in Nairobi and Kisumu (these are two major towns in Kenya). Such was the level of community organization in Saradidi. Not surprisingly, the drop-out rate between 1979 to 1985 was only 2.6% [8].

The Saradidi CHWs (in 1984 and 1987) said that some of the problems that they faced were lack of financial support and non-functioning VHCs. [31].

The CHWs in Saradidi participated in annual general meetings. That participation (quote) "*provides a forum for recognition, status, indelible leadership, decision-making capacity and personal worth not easily tangible even to the individual*". Thus the social status of the CHWs is enhanced. [21].

To quote from Mburu, [21]

"Hurried projects are intractably weak in both technical and management support. Invariably most government programmes typify such weaknesses with in-built bureaucratic strictures which are exacerbated by shortage of resources to perform adequately. The process involved in the formulation of SRDP was admittedly slow and protracted. It could be argued that many non-indigenous PHC innovators do not have

the time available to SRDP to achieve the level of mobilization of the community. From all evidence available, dialogue with the community is critical to the success of a truly (community based) PHC project."

The experience in Mvumi, has demonstrated clearly the importance of prolonged dialogue between the programme organizers and the community. Mvumi hospital is situated in a semi-arid zone in central Tanzania. Mvumi hospital started a nutrition rehabilitation unit in 1967. In 1974 a community health department was started and it trained village health workers, apart from taking mobile clinics to the villages without static health facilities. The programme had very little success, if any. The village health workers received little support and had an attrition rate of 77% as assessed in 1981. [32].

The failure of the programme between 1974 and 1981 was due to: vast programme area and poor communication between the programme and the community; non-involvement of local health services staff; lack of communication and adult training skills among the trainers and; lack of general staff orientation. [32].

Between 1981 and 1986, the Mvumi community was involved in defining its own goals and actions. The programme organizers took time to listen to and learn from the community before they took any action. They tried to adjust their value systems to those of the community. Nine

villages situated between 5 and 50 kilometres from Mvumi hospital were selected. Only one of the villages had dispensary services. Mvumi health team started approaching the villagers in 1981. The team discussed health related problems with them. Village elders and leaders and group representatives were involved in the discussions. Public meetings were also held in the villages for the purpose of creating awareness about the programme. [32].

Awareness seminars were conducted for village leaders, extension workers, head-teachers, ward and divisional leaders. Monthly mobile MCH clinics, in each village, were conducted by the Mvumi health team. Those clinics kept contact between the village members and the health team. Eventually a health development committee was formed. The committee comprised of village chairmen, local and religious leaders and the Mvumi health team leader. The committee met for a day every 2-3 months in various villages in turn. Such meetings discussed and decided on desired health activities. A sub-committee of the development committee visited villages that were not doing well to encourage them. There developed a high demand for health education and technical health services. As the Mvumi team could not meet all those demands the villages decided to have their own resource people trained. Those were village health workers or promoters and traditional midwives and they were strongly supported by the village

leadership. The villages requested the training of their traditional midwives in 1982 and over 100 of them had been trained by the end of 1986 [32]. However only in 1985 did the villagers feel the need for village health workers after the traditional midwives could not cope with the volume of work [33]. The villages contributed substantially towards the cost of training the village health workers [32].

Experience elsewhere, also, has demonstrated the importance of a prolonged dialogue between the programme organizers and the community for effective community participation [34,35].

4.3. CHWs' remuneration problems.

Even in programmes where community participation has been elicited unquestionably, such as Saradidi, VHCs have not been appreciably supportive of their CHWs. Lamborary described the stages of development of health committees viz: [33]

1. *Stage I* during which period group members deal with their own functioning and internal relations problems.
2. *Stage II* during which period the group members search for the personal benefits that they can get from their membership.
3. *Stage III* during which period group members take interest in the most obvious aspects of health services such as drugs, new health facilities and

ambulances.

4. *Stage IV* during which period members concentrate on the problems they can manage in collaboration with the local health services staff. They understand that their major health problem have local causes which can be solved through local collective action.

After stage IV the VHC members become ready to effectively implement PHC activities. The implication of the group development process is that time is required for the VHCs to become effective for CBHC activities. One of these activities is to establish a reward system for CHWs. While more research is needed on how to make VHCs more effective in their role in establishing a reward system for their CHWs, various CBHC programmes have tried different ways to motivate their CHWs.

The Nangina church supported CBHC programme in Samia location of Busia District of Kenya mainly depended on spiritual motivation of CHWs though some of them kept part of the profit made from sale of drugs [36]. Each CHW was supposed to cover 60-80 households and carry out the following activities [36]:

1. To give health education on health matters at homes, mobile clinics, celebrations, church meetings, primary schools and catechism classes.
2. Help sick people to get to hospital (it is not clear how this was to be done).

3. Follow up cases referred to them by the public health team at the nutrition rehabilitation unit.
4. Assist with home deliveries.
5. Helping at the MCH (mother child health) clinics.
6. Keep records of all health activities in the community.
7. Take part in general socioeconomic developmental activities in the community.
8. Dispensing of drugs by the CHWs was started in 1982. Then, selected CHWs were trained to diagnose and treat some common ailments and dispense drugs such as aspirin and chloroquine. Those drugs were bought from the hospital pharmacy and sold at a profit. Part of the profit was kept by the CHW dispensing the drugs. The rest of the money, so obtained, went to a community fund [36]. The CHWs not involved in the dispensing of drugs did not benefit from such a reward system.

The CHWs at Nangina were supervised by the health committees in each sub-parish in the non-technical activities while technical support came from the programme headquarters. In an evaluation done in 1979 94% of the CHWs trained were still in service. However 38% of those continuing to volunteer found working without a salary difficult [36].

In the AMREF (African Medical and Research

Foundation), supported CBHC programme at Kibwezi in Machakos District of Kenya, the CHWs with more than 2 years of continuous service were issued with bicycles to ease their transport problem. In studies done in 1981 and 1983 the CHWs spent an average of 25-30 hours per month (about 10% of their total working time) on health promotion activities. The CHWs reported the following problems: long distances covered without food or money; lack of drugs when the community members needed them (the CHWs did not prescribe drugs as this, it was argued, would have given them a curative role and make them neglect their promotive and preventive work) and; lack of money or other rewards for work. No solution was found to the problem of lack of a reward system for CHWs as (quote) "*satisfactory long-term methods of remuneration are yet to be worked out and be agreed upon universally*". [23].

The Northwestern Somalia MOH/UNICEF supported CBHC Programme is another example of what may happen when guidelines for a reward system are not clear. There was almost a universal failure by the community members to meet their promises for the remuneration of CHWs without pressure from the project staff until definite methods were used for money collection as below [25]:

1. A tax was instituted on the village water pump.
2. A levy was instituted on the shops and tea shops.
3. Households payed a small fee to ensure regular visits

by the CHW but poor families were added to the list without payment at the discretion of the health committee.

4. Herds and grains were collected once per year.
5. CHWs' families got water without cash payment.

The example discussed above indicates that communities need clear guidelines so as to avail their resources for use to reward the CHWs.

The CHW is taken to be a contribution from the community [2,6]. Yet it is difficult to contemplate any society in which individuals are collectively owned by the community. So, the community has to convince the CHW to volunteer. In Some CBHC programmes, the community has given their CHW prestige. In Siakago, Kenya, community members regard their CHW as a community leader, "munene" [investigator's experience]. The CHWs in Siakago are also allowed to address public gatherings by the local administrators as a sign of recognition [6]. In Saradidi, Kenya, the CHWs participate in the annual general meetings and their involvement in decision-making is a source of prestige [21].

Despite the prestige they get from the attitude of the community members and the programme organizers towards them, many CHWs express hope that their work will eventually enable them improve their capacity to fend for their families [6,31,36].

Evaluators of various CBHC programmes have expressed concern over the lack of a reward system for CHWs. In the Kitui MOH CBHC programme, remuneration of CHWs did not receive much attention from the MOH or the community leaders and an evaluation team wondered for how long the CHWs would have continued working without remuneration [37]. Evaluators of the Siakago CBHC programme wondered for how long the CHWs would continue work without remuneration [6,24].

The degree to which the CHWs are devoted to their work is indicated by their perseverance. They continue work without food or money. Food is a basic human need. This goes further to illustrate the fact that the CHWs need a reward system for a need that is more basic than need for appreciation of their work. They need the rewards for their survival and personal development. The rewards should not be seen as a favour. After all, it is generally agreed that their role is crucial to success of CBHC in the tenets of PHC [6,38]. Besides, the work of CHWs is risky as they may be victimised during political upheavals [39] which is another reason as to why they should be compensated.

Various programme organizers have tried to solve the problem of lack of a reward system for their CHWs by giving money to their CHWs. In the Western Kenya CBHC project, started in 1977, each CHW was paid Ksh 50 per month and charged a token of Ksh 1 per child treated and Ksh 3 per

adult treated and kept that money [40]. The communities hoped that this could be raised to Ksh 100 per month on the view of the heavy task placed on the CHWs [41]. Though the community members were sympathetic of their CHW's plight, they did not see themselves as a possible source of funds. So long as the responsibility for rewarding the CHWs financially was not theirs they even suggested an increase in the pay.

Many programme organizers have attempted to solve the remuneration problem of CHWs in different ways. In a PHC programme in Bombay slums, CHWs were expected to work for two and a half hours per day and were paid Rs 150 per month by the project organisers [26]. In Zambia CHWs were paid by the community 15-50 Kwacha (US \$ 1=12.5 Kwacha) per month [5].

Some governments have also tried to find solutions for lack of a reward system for CHWs. In Tanzania some district councils paid half or full minimum salaries (the government controlled minimum wage for salaried workers in the country) [42]. Local authorities, in Botswana, paid salaries to Family Welfare Educators (the equivalent of CHWs). [5]. The Zimbabwe Government paid CHWs (Z \$ 36 in 1986 when US \$ 1 = Z \$ 36). In Jamaica, CHWs were absorbed into the government service and became full-time employees with a salary structure and promotional opportunities [42]. In the Bamako Initiative WHO/UNICEF alongside the African

countries recognized the need to pay the CHW some salary from the money obtained from the sale of drugs [43].

In Nicaragua CHW were motivated by their commitment to the government (revolution) and the recognition they got from the community and the free medication they got for themselves and their families [44].

The Maseno South, Church of the Province of Kenya, Diocese supported CBHC programme evaluation in 1989 revealed 28% attrition rate attributable to lack of a reward system for the CHWs. By the time of evaluation only 33 out of 46 CHWs trained were active as CHWs [45].

One of the greatest problem that faced the Kisii CPK Diocese supported CBHC programme was a high attrition rate mainly due to lack of a reward system for CHWs. The factors contributing to the attrition rate included: lack of support from the community members, particularly the leaders; lack of regular technical supervision; lack of a clear selection criteria; long distance between homes and husbands who did not understand why their wives could work without pay [46]. Thus a reward system for the CHWs would have reduced the attrition rate.

In the Tenwek mission hospital supported CBHC programme in Kericho District of Kenya, it was shown that the CHWs who received non-financial incentives performed better than the controls who did not receive such incentives [22]. This is a strong case for some form of rewards for CHWs. It does

not rule out financial incentives as money was not used as an incentive in the study.

4.4. Conclusion for chapter.

Though people may volunteer to work they still desire to have rewards. The rewards may be a means of making the work possible or comfortable. That may explain why the CHWs at Samia found work without financial support difficult and those at Saradidi complained of lack of financial support. The Saradidi CHWs must have felt cheated because they were supposed to get financial support from VHCs that were not able to honour the promise [47].

While waiting for the VHCs to develop through the stages described by Lamborary (elaborated elsewhere in this chapter) a method that uses the community resources to reward the CHWs must be worked out. This may mean circumventing the VHCs.

The fact that many VHCs have been unable to support their CHWs [21,47,48] suggests that, at the present level of community participation, the VHCs are not ready to establish a reward system for the CHWs. In cases cited in this chapter some CHW got tangible rewards when allowed to get money directly from the community members as in Bamako initiative [43] and Samia [36].

Whatever method of remuneration of CHWs is used, it has to be sustainable in the long run. Involvement of the community in making the decisions makes such decisions

acceptable to the community members as they are their own decisions [21,33,47]. Community resources are usually continuously available as they are pooled from many different individuals. Thus community involvement would ensure long term survival of the programme [21].

The above narrative brings to the fore the fact that many CBHC programmes have found out that the lack of a reward system for the CHW is a source of dissatisfaction among many CHWs. The motivating factors for the CHWs alluded to include: financial incentives; material rewards; support by the village health committees; support by the health services staff; support by the local leaders; continuing education; support by the family; improved social status; being patriotic to the nation and; free medication for the family. Therefore, a reward system for the CHWs would be based on such factors.

CHAPTER 5.

RESULTS.

5.1 Introduction.

The collected data was first tallied and then the "Epistat" programme was applied to analyze the data. Observed variability was taken advantage of and those individuals with a certain characteristic were compared with those individuals without the characteristic. As expected, there were some rare characteristics among the CHWs in Siakago. Those included: continuing education; use of cash, labour and material rewards and; leaving work. Those were just described without further analysis.

Regression of: IPI on IMI; IMI on the proportion of the community members who were unwilling to support their CHWs and; IPI on the proportion of the community members who were unwilling to support their CHWs was carried out. The procedure, linear regression, was used to find out whether the measurements of each of those pairs of variables had a statistically significant association.

One-way analysis of variance was done. The method was used to compare the means of IPI and IMI for CHWs with different motivating factors and *met expectations*.

Also the averages and standard deviations of the amount of money the community members were willing and able to contribute monthly for their CHWs were calculated. The difference in the proportions was shown using the standard

error of the difference.

Through cross-tabulation the difference between the number of CHWs with different levels of performance and motivation for different motivating factors and *met expectations* was shown.

Demographic characteristics for the CHWs and household heads are described. These characteristics include age, sex, educational level and occupation.

Motivating factors are also described and their relationships with IMI and IPI are shown (tables 5.3 and 5.4). As stated elsewhere, IMI stands for Individual Motivation Index. That is the average of scores based on the attitudes of the CHWs towards their work (elaborated in chapter 3, under *measurement of motivation and performance*). IPI stands for Individual Performance Index which was the average of scores based on the activities that the CHWs were expected to carry out (elaborated in chapter 3, under *measurement of motivation and performance*).

The relationship between *met expectations* and IMI and IPI is also described in tables 5.9 and 5.10. *Met expectations* are regarded as a special category of motivating factors. To compare the extent to which expectations were met MEI (Met Expectation Index) was used (table 5.5 and 5.8). MEI is the ratio of the number of people who had the expectation met to the number of the

people who had the expectation at the selection of CHWs.

The types of rewards that a community member prefers to give to his/her CHW have been compared with the type of rewards that the CHW preferred to be given by the members of his/her village (table 5.7). Table 5.6 shows the *most important reason* for continuing work as stated by a CHW.

Table 5.11 shows the amount of money that the CHWs would prefer to get from his/her villagers per month. The amount of money that the household heads were willing and able to give to their CHWs has been tabulated (table 5.12 and 5.13). A community member was taken to be willing to support his/her CHW if he/she suggested a value that was greater than 0 Ksh per month for his/her CHW. A community member was taken to be able to support his/her CHW if he/she said he/she was able to contribute any amount of money monthly to his/her CHW. A community member was taken to be unwilling to support his/her CHW if he/she refused to suggest any value for his/her CHW or valued him at 0 Ksh per month.

It was only the Divisional CBHC programme coordinator who had any documented information pertaining to specific activities of CHWs. Thus there was only one respondent to *Programme Questionnaire*. The information obtained from her is described in this chapter (*general observations*).

5.2. Results.

58.7% of the households heads or their representatives and 88.5% of the CHWs were aged between 25 and 45 years. The median age of the CHWs was 37.5 years and the median age of household heads was 41 years giving a difference of only 3.5 years. Therefore, the ages of the majority of CHWs and the majority of the household heads corresponded.

64.3% of the heads of households or their representatives were females (significantly different from the percentage of male household heads interviewed ($p < 0.01$)) and yet the percentage of male CHWs (53.9%) was not significantly higher than that of female CHWs (46.2%) ($p > 0.05$).

From table 5.1 about 81% of the CHWs had attained primary school educational level and above. Only, 7.7% of the CHWs had completed secondary school education. No CHW had attained an educational level higher than *completed* "O"-level. 78.5% of the male CHWs had completed primary school education but not "O"-level education and 66.6% of the female CHWs had completed primary school education but not "O"-level education. 10.7% of the male CHWs had not completed primary school education while 29.2% of the female CHWs had not completed primary school education. 10.7% of the male CHWs were educated beyond primary school education while 4.2% of the female CHWs were educated beyond primary school level of education.

TABLE 5.1.

CHWS' EDUCATIONAL LEVEL BY SEX.

| Educational level | Male (M) | | Female (F) | | M plus F | |
|---|----------|------|------------|------|----------|------|
| | No. | % | No. | % | No. | % |
| Not completed primary education | 3 | 10.7 | 7 | 29.2 | 10 | 19.2 |
| Completed primary education but not "O"-level education | 22 | 78.5 | 16 | 66.6 | 38 | 73.1 |
| Completed "O"-level but not educational level above it | 3 | 10.7 | 1 | 4.2 | 4 | 7.7 |
| TOTAL | 28 | 100 | 24 | 100 | 52 | 100 |

Applying Fishers exact test, no significant difference was found between the level of education of male and female CHW ($p = 0.092$). That was not surprising considering the fact that the proportion of the literate males is almost equal to that of the literate females in Embu District where Siakago is located. [17]. Therefore, the level of education was not one of the factors that would have explained the disproportionately high proportion of male CHWs as compared to the proportion of males among the community members.

The majority (90.3%) of the CHWs continued work. 70% of the CHWs continuing work had worked for 48 months and over since the of inception of the programme.

Since, 94.2% of the CHWs were selected by the community, then the majority of the CHWs were acceptable to

the members of their community who selected them. It is therefore not surprising that 63.5% of the CHWs were assisted by the members of their village when they had a problem related to their work. That partly explained why all the CHWs had increased social status (the respect given to them by members of their village). The increased social status partly explained the low drop-out rate among those CHWs.

73.1% of the CHWs were assisted by the local health services staff when they had a problem related to their work. 63.2% of the CHWs who got the health services staff support were satisfied with the support. Therefore only 46.2% of all the CHWs were satisfied with the support they got from their local health services staff. That percentage was not significantly different from the percentage not satisfied with the support ($p > 0.05$). Also, 90.4% the CHWs were encouraged by their families to continue working as CHWs. Again, 80.8% the CHWs were assisted by the local leaders and administrators when they had a problem related to their work. This support also partly explained the low drop-out rate.

57.7% of the CHWs had a traditional healer among their close relatives at one time or another. That was likely to be another motivating factor that explained the low drop-out rate. After all, a high mean of IMI was associated with a history of a traditional healer in the family of the CHW.

TABLE 5.2.

DURATION OF WORK BY CHWS BEFORE STOPPING WORK.

| Duration (Months) | % (N=5) |
|-------------------|---------|
| <12 | 20 |
| 12-23 | 20 |
| 24-35 | 40 |
| 36+ | -- |
| No response | 20 |

The majority of those stopped work had worked for less than 36 months.

About 88% of the CHWs were aged between 25 and 45 years and the majority of those who left work (80%) were in that aged group. That was not unusual as the age group that was over-represented among the CHWs was also over-represented among the drop-outs.

The two drop-outs who had not completed primary school education represented 20% of all the CHWs with that level of education. The three drop-outs who had completed primary school education but not "O"-level education represented only 8% of all the CHWs with that level of education. There was no drop-out among the CHWs who had attained an educational level of "O"-level and above. Indeed, three of the four CHWs who had "O"-level education had worked for more than 36 months in the programme. Thus there was a tendency for the CHWs with a low education to stop work.

Two female and three male CHWs left work. There was no

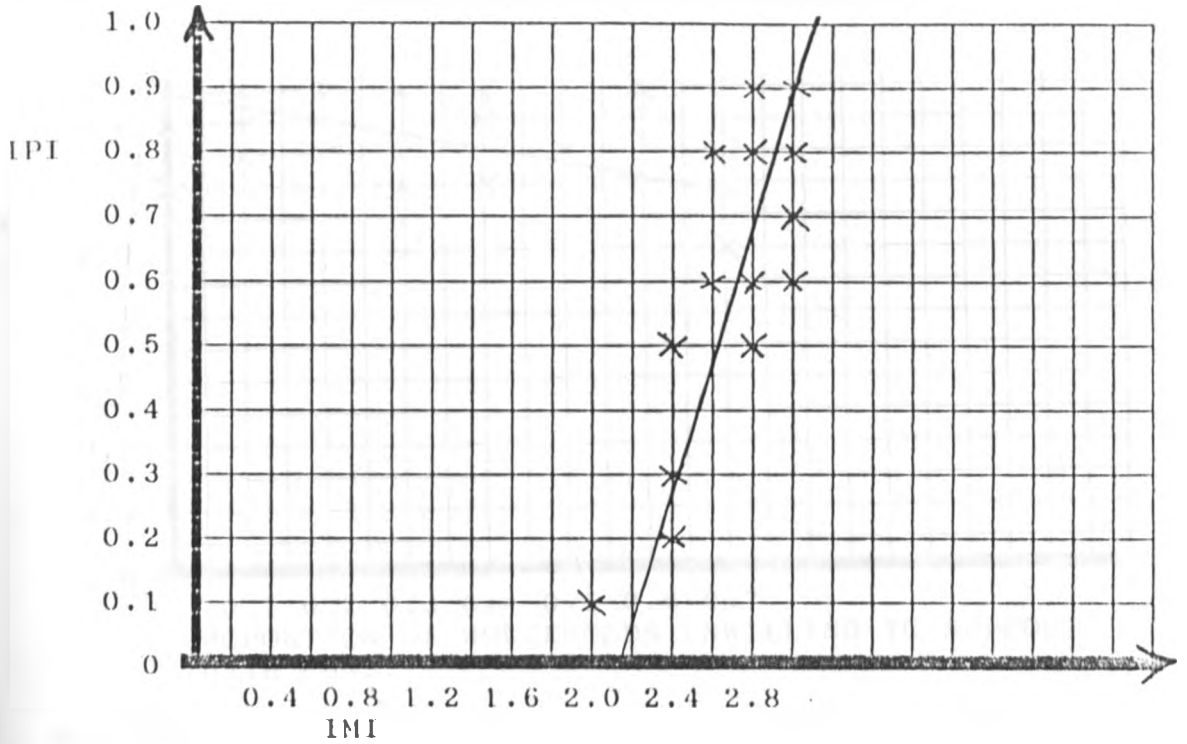
conclusive evidence to show any sex predisposition to stopping work as CHW.

Only 9.6%, of all the CHWs interviewed, had stopped work as CHWs in the CBHC programme since the inception of the programme. 80% of the CHWs who had left work had worked for less than 36 months before they left. 76.7% of the CHWs who continued working had worked for more than 36 months.

One CHW left work because of lack of financial rewards. Another CHW abandoned work due to lack of cash reward, discouragement by the family and an uncooperative village health committee. A 60 years old lady felt that she was too old to continue and so she stopped working. An uncooperative village health committee made another CHW abandon work. The community rejected one CHW because he did not keep the standard of sanitation, in his home, that the community expected of a CHW.

FIGURE 5.1.

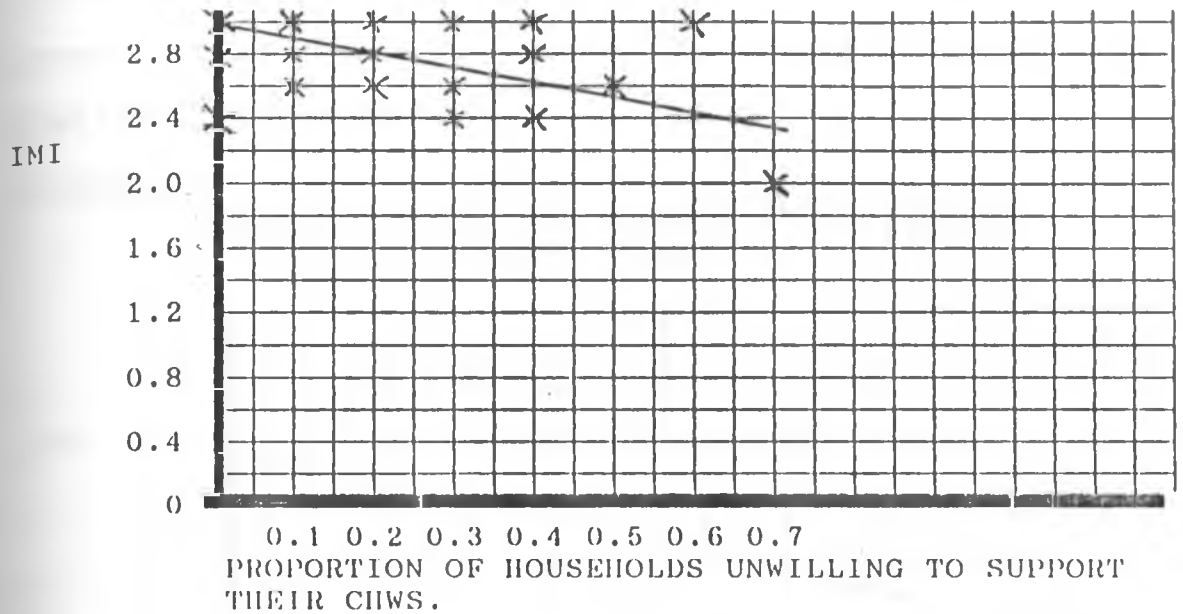
SCATTER PLOT OF IPI AGAINST IMI.



From figure 5.1, the level of performance of CHWs increased as the level of motivation increased. To determine whether there was a significant association between the level of motivation and the level of performance regression of IPI on IMI was done. The slope was significantly different from zero (Regression equation: $Y = -0.87 + 0.56X$; Significance of the slope: $t = 6.21$, $df = 44$, $p < 10^{-6}$). Therefore, the level of performance of CHWs increased significantly with the level of motivation. Thus the higher the level of motivation, the higher the level of performance.

FIGURE 5.2.

SCATTER PLOT OF IMI AGAINST PROPORTION OF HOUSEHOLDS UNWILLING TO SUPPORT THEIR CHWS.

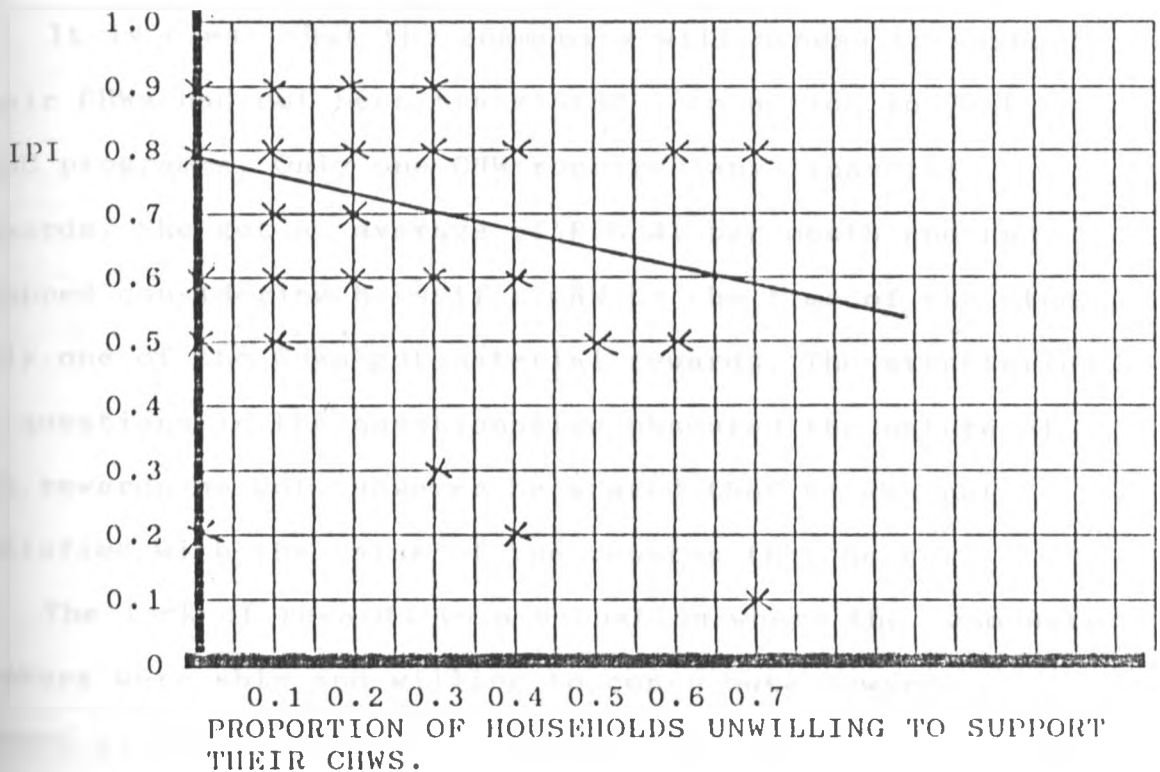


From figure 5.2, the level of motivation of CHWs decreased as the proportion of community members unwilling to support their CHW increased. To determine whether there was a significant association between the proportion of the community members unwilling to support their CHW and the level of motivation of the CHW, regression of IMI on the proportion of community members unwilling to support their CHWs was done. The slope was significantly different from zero (Regression equation: $Y = 2.95 - 0.61X$; Significance of the slope: $t = 3.48$, $df 44$, $p < 0.001$). Therefore, level of motivation of CHWs decreased significantly as the proportion of the community members who were unwilling to support their CHWs increased. Therefore, the higher the proportion of the community members unwilling to support

their CHWs the lower the level of motivation of the CHWs. As shown in figure 5.1, a highly motivated CHW had a high level of performance which might have encouraged a high proportion of community members who wanted to support their highly motivated CHWs.

FIGURE 5.3.

SCATTER PLOT OF IPI AGAINST PROPORTION OF HOUSEHOLDS UNWILLING TO SUPPORT THEIR CHWS.



From figure 5.3, the level of performance of CHWs decreased as the proportion of community members unwilling to support their CHW increased. To determine whether there was a significant association between the proportion of the community members unwilling to support their CHWs and the levels of performance of CHWs, regression of IPI on proportion of community members unwilling to support their

CHWs was done. The slope was not significantly different from zero (Regression equation: $Y = 0.78 - 0.29X$; Significance of the slope: $t = 1.86$, $df = 44$, $p = 0.07$). Thus the study did not provide enough evidence to show that the level of performance of a CHW decreased significantly as the proportion of the community members who were unwilling to support their CHWs increased.

It is clear that the community willingness to support their CHWs had not been translated into action in Siakago CBHC programme. Only one CHW received any financial rewards. She got an average of Ksh 31 per month and had stopped considering herself a CHW by the time of the study. Only one of the CHWs got material rewards. The structuring of questions in the questionnaire obscured the nature of the rewards he got. However he stated that he was not satisfied with the value of the rewards that he got.

The lack of rewards in a situation where the community members were able and willing to contribute towards a reward system for the CHWs (tables 5.12 and 5.13) implied that a reward system was not existent. That VHCs are ineffective in rewarding their CHWs in the Siakago CBHC programme is argued elsewhere in this chapter (*general observations*).

TABLE 5.3.

CROSS-TABULATION OF IMI AGAINST MOTIVATING FACTORS.

| Motivating factor | level of IMI | | Total percentage |
|---|--------------|------------|------------------|
| | 1.0-2.4 | 2.5-3.0 | |
| Support by family | 5 (11.6%) | 38 (88.4%) | 100 |
| Support by VHC | 3 (10.7%) | 25 (89.3%) | 100 |
| Support by health service staff | 4 (11.8%) | 30 (88.2%) | 100 |
| History of a traditional healer in family | 3 (11.5%) | 23 (88.5%) | 100 |
| Social status | 5 (10.9%) | 41 (89.1%) | 100 |
| Support by local leaders/administrators | 5 (13.9%) | 31 (86.1%) | 100 |

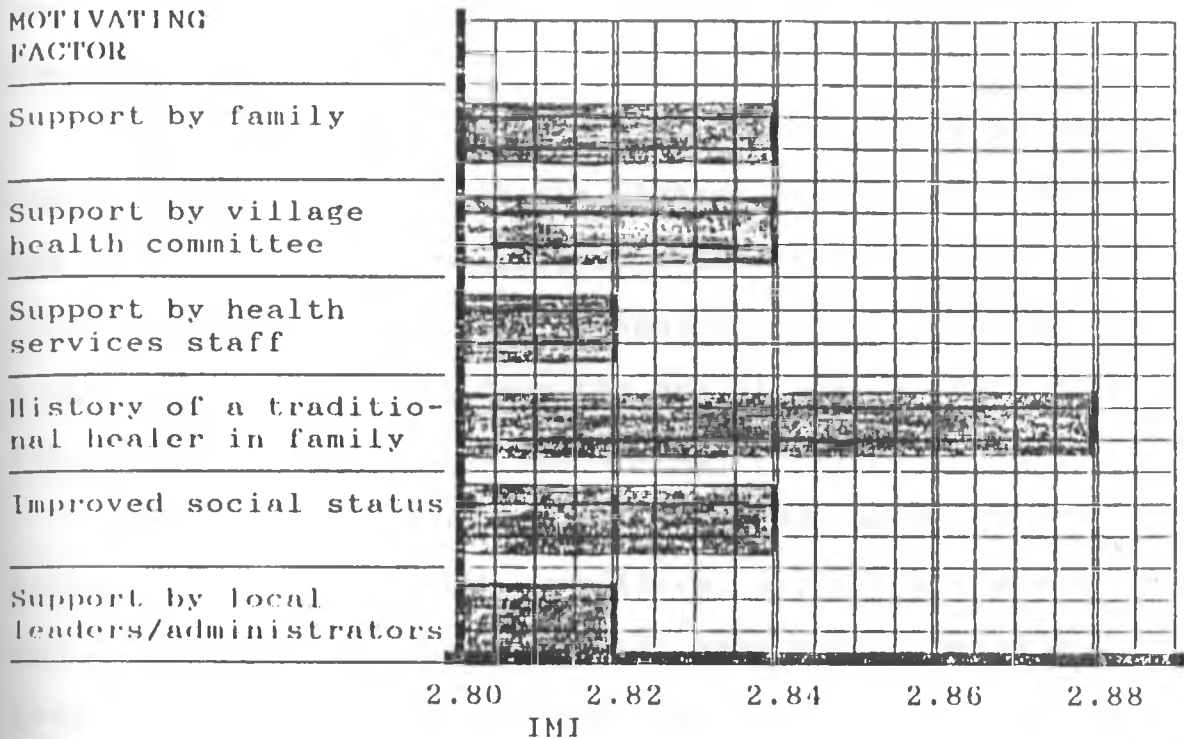
Generally, even at the high cut-off level for IMI the percentages of CHWs with high level of motivation (IMI 2.5-3) far much exceeded the percentage of CHWs with a lower level of motivation (IMI 1.0-2.4). That applied for all the motivating factors in table 5.3. Thus in accordance with the scale used, most of the CHWs were highly motivated. The scale compared the level of motivation of a CHW with that of his/her peer in the same programme.

The means of IMI for the CHWs with each motivating factor were: 2.84 for support by family; 2.84 for support by VHC; 2.82 for support by health services staff; 2.88 for history of a traditional healer in family; 2.84 for improved social status and; 2.82 for support by the local leaders or administrators. These means are depicted in

figure 5.4.

FIGURE 5.4.

IMI AGAINST MOTIVATING FACTORS.



The IMI for the active CHWs ranged from 2.0 to 3.0 with an average of 2.83 and a standard deviation of 0.24. The lowest mean of IMI was 2.82 and the highest mean of IMI was 2.88 with a small difference of 0.06. All the means were very close to the maximum IMI which was 3.

The means of IMI for CHWs with family support, village health committee support and increased social status were equal. The means of IMI for the CHWs with history of a traditional healer in the family was higher than the means of IMI for CHWs with any of the other motivating factors. The mean of IMI for the CHWs who got the support of local administrators or leaders was equal to the mean of IMI of

those who got the support of the local health services staff but was lower than the mean of IMI of those with improved social status, family support and village health committee support.

Apparently, a history of a traditional healer in the family was associated with the highest mean of IMI. About 58% of the CHWs had a history of a traditional healer among their relatives at one time or another. This percentage was significantly different from the one without a history of a traditional healer in the family ($p < 0.05$).

There was a striking pattern among the means of IMI. Support by village health committees, support by families and improved social status had the same rating based on their means of IMI. These motivating factors represent the communities' contribution towards enhancing the level of motivation of their CHWs.

Support of the CHWs by the local health services staff and the local leaders or administrators were rated as having the same strength in sustaining the level of motivation for CHWs based on their means of IMI. In the Siakago CBHC programme, those constituted the government contribution towards motivating the CHWs. They had the lowest rating as motivating factors.

To find out whether there was a significant difference among the means of IMI for the CHWs with the motivating factors shown in table 5.3 and figure 5.4, a one-way

analysis of variance was done. There was no significant difference among the means of IMI for the CHWs with the different motivating factors ($F_{(5,207)} = 0.214, P > 0.05$). Thus all those motivating factors were equally important in enhancing the level of motivating of the CHWs.

TABLE 5.4.
CROSS-TABULATION OF IPI AGAINST MOTIVATING FACTORS.

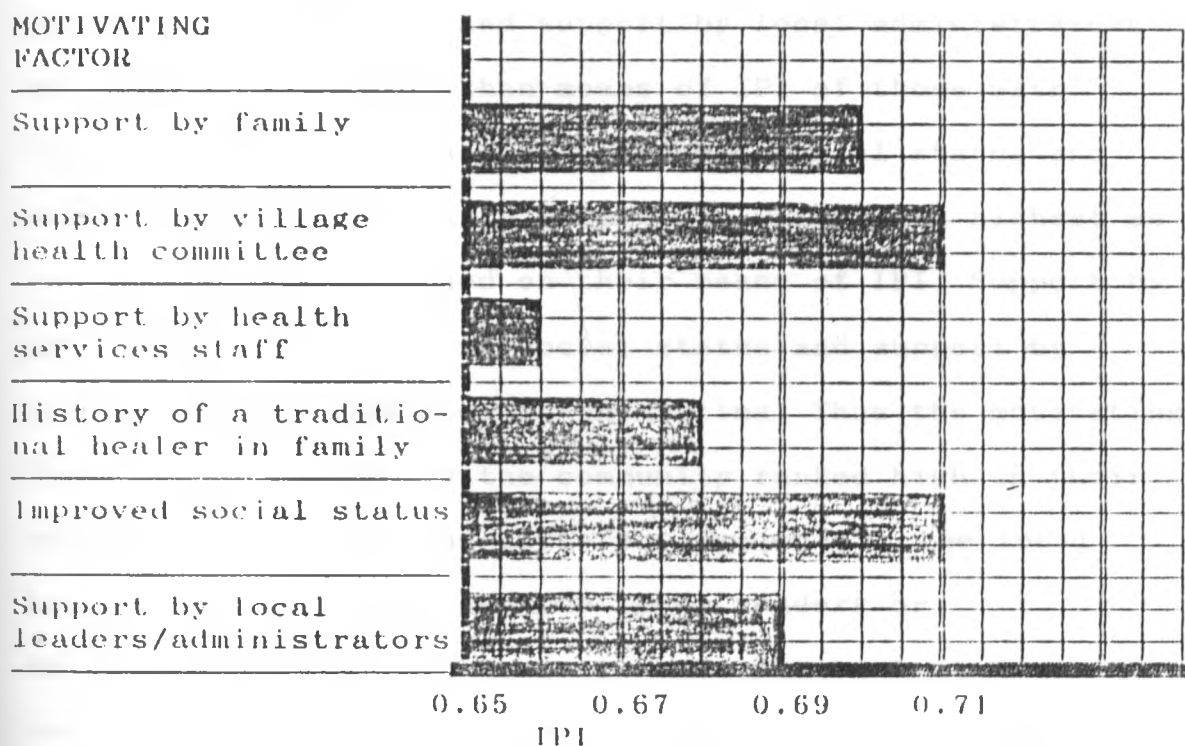
| Motivating factor | level of IPI | | Total percentage |
|---|--------------|------------|------------------|
| | 0.0-0.4 | 0.5-1.0 | |
| Support by family | 4 (9.3%) | 39 (90.7%) | 100 |
| Support by VHC | 2 (7.1%) | 26 (92.9%) | 100 |
| Support by health service staff | 4 (11.8%) | 30 (88.2) | 100 |
| History of a traditional healer in family | 2 (7.7%) | 23 (92.3%) | 100 |
| Social status | 4 (8.7%) | 42 (91.3%) | 100 |
| Support by local leaders/administrators | 4 (11.1%) | 32 (88.9%) | 100 |

Despite the high cut-off level for IPI, the percentage of CHWs with a high performance level (IPI 0.5-1.0) by far exceeded the percentage with a low performance level (IPI 0.0-0.4). The scale used compared a CHW with his/her peer in the same programme. The high level of performance was consistent with the high level of motivation observed among those CHWs. That the CHWs had a high level of performance was also partly supported by the fact that 87.4% of the heads of households were familiar with their CHWs. Besides

93.5% of the heads of households who were familiar with their CHWs thought that the work the CHWs were doing was important despite the fact that only 34.1% of the heads of households participated in the selection of the CHWs. Thus the CHWs had carried out activities that made them be recognized by the community members.

FIGURE 5.5.

IPI AGAINST MOTIVATING FACTORS.



The overall mean of IPI for all the active CHWs was 0.71, ranged from 0.1 to 0.9 and had a standard deviation of 0.194. The mean of IPI for CHWs with each motivating factors were: 0.7 for support by family; 0.71 for support by VHC; 0.66 for support by the local health services staff; 0.68 for a history of a traditional healer in the family; 0.71 for improved social status and; 0.69 for

support by local leaders or administrators. The means are depicted in figure 5.5. The means differed only slightly from each other. The lowest of these means was 0.66 and the highest was 0.71. All the means of IPI were close to the maximum IPI of 1.

The mean of IPI for the CHWs with family support, health services staff support, history of a traditional healer in the family, and support by local administrators or leaders were lower than means of IPI of those with improved social status. Thus improved social status and support by village health committees were rated highest as motivating factors based on their means of IPI. Support by the family came close to social status and support by village health committee in the rating. Thus the motivating factors contributed by the community ranked high in their strengths as motivating factors. Support by the local health services staff and the local leaders or administrators (the government contribution towards enhancing the CHW's performance) was rated lower than the community contribution to the motivating factors. History of a traditional healer in the family contributed less to enhancing the level of performance than in enhancing the level of motivation. Explanation for that is attempted elsewhere (chapter 6, *discussion*).

To find out whether the means of IPI for CHWs with different motivating factors differed significantly from

each other, a one-way analysis of variance was done. The means of IPI were not significantly different for the six motivating factors in table 5.4 ($F_{(5,207)} = 0.341, p > 0.05$). Therefore, all the motivating factors were equally important in enhancing the high level of performance among the CHWs in Siakago CBHC programme.

TABLE 5.5
INITIAL EXPECTATIONS AND MET EXPECTATIONS OF CHWS.

| Expectation | Number (N=52) | | MEI |
|---|---------------|-----------|-----|
| | expecting | achieving | |
| Reward in cash | 8 | 2 | 0.3 |
| Material reward | 3 | 0 | 0.0 |
| Reward in labour | 2 | 1 | 0.5 |
| Improved social status | 16 | 15 | 0.9 |
| Free family medication | 13 | 1 | 0.1 |
| Acquire new health knowledge and skills | 30 | 30 | 1.0 |
| Get sympathy from government officials when in need | 10 | 3 | 0.3 |
| Eventual entry into government employment | 8 | 0 | 0 |
| Improved village health status | 40 | 37 | 0.9 |
| Others | 10 | 4 | 0.4 |

Met Expectation Index (MEI) for CHWs is operationally defined viz:

$$MEI = \frac{\text{No. of CHWs with a particular expectation met}}{\text{No. of CHWs with the expectation at their selection}}$$

MEI was used to compare the extent to which each expectation had been met. If the number of CHWs with the expectation met was lower than the number that had the expectation at selection, then MEI was less than 1. If the number of CHWs with the expectation met was equal to the number of CHWs with the expectation at selection, then MEI was equal to 1. The lower the MEI the higher the level of dissatisfaction associated with the expectation.

As table 5.5 shows, the expectations associated with high MEI were: acquire new health knowledge and skills; improved social status and; improved village health status. Thus most of the CHWs who had these expectations at selection got satisfied. The most frequently stated *most important reason* that made the CHWs continue working were among those *met expectations* (table 5.6).

Low MEI was associated with the expectations for: cash rewards; free family medication; get the sympathy of government officials when there was a need requiring the officials' attention and; eventual entry into government employment. The implications of MEI are explained elsewhere (chapter 6, *discussion*).

TABLE 5.6.

THE MOST IMPORTANT REASON FOR
CONTINUING WORK AS STATED BY CHWS.

| <i>Most important reason</i> | Number | Percentage |
|----------------------------------|--------|------------|
| Respect given by the villagers | 16 | 34.04 |
| Improved village health status | 14 | 29.79 |
| Develop my village | 4 | 8.51 |
| Get health knowledge and skills | 4 | 8.51 |
| Support by health services staff | 2 | 4.26 |
| Service to God. | 2 | 4.26 |
| Support by VHC | 1 | 2.13 |
| Others | 4 | 8.51 |
| Total | 47 | 100 |

As table 5.6 shows, the most frequently stated *most important reason* for continuing work as a CHW was the respect given by the villagers. The next most frequently stated *most important reason* was improved village health status.

Remarkably, the support given by the VHC to the CHWs was the least frequently stated as the *most important reason* for continuing work. That implied that village health committees in Siakago were not appreciably supportive to their CHWs.

The fact that only 5.8% of the CHWs had any on-the-job training after they became CHWs explained why only 8.5% of

the CHWs gave increased health knowledge and skills as the *most important reason* for continuing work. 98.1% all the CHWs would like to have on-the-job training.

TABLE 5.7.

CHWS AND COMMUNITY MEMBERS REWARD PREFERENCES.

| Type of reward | Percentage preferring reward | |
|------------------------------|------------------------------|--------------------------|
| | CHW (N=52) | community member (N=549) |
| Labour | 48.1 | 11.7 |
| Material | 21.2 | 15.3 |
| Cash | 7.7 | 18.4 |
| Combination of above rewards | 19.2 | 29.5 |
| No response | 0.0 | 19.9 |
| Others | 3.9 | 5.3 |
| TOTAL | 100 | 100 |

A person was considered not to have responded when he/she refused to suggest any form of rewards for his/her CHW.

There was an obvious difference between the percentages the community members and the CHWs concerning their reward preference (table 5.7). While 48.1% of the CHWs preferred to get reward in labour, only 11.7% of the community members preferred to give rewards in form of labour. That disharmony was observed for all the reward preferences. The dissimilarity in the form of rewards suggested by the CHWs and the community members suggested that there had not been a forum in which the CHWs discussed their reward preferences with the members of their communities. All the

CHWs suggested one form of reward or another. 19.9% of the community members did not like the idea of rewarding their CHWs.

The fact that over 80% of the households preferred to give one form of reward or another shows that most of the community members were willing to support their CHWs.

MEI, for the community member, is operationally defined viz:

$$MEI = \frac{\text{No. of household heads with the expectation met.}}{\text{No. of household heads with that expectation at CHWs' selection.}}$$

From table 5.8 high MEI for the community members was associated with the expectations get advice and help on health matters and get advice on non-health matters.

It is interesting to note that despite the fact that the CHWs were not mandated to prescribe drugs a substantial number of community members had their expectation of getting medication for the family from near home met. (All the CHWs in Siakago would like to give drugs as part of their work). Three of the CHWs were supported by both the Anglican church and the MOH. Those three were allowed to prescribe drugs for common ailments such as malaria. However those were too few to account for the high rate of satisfaction associated with that particular expectation.

TABLE 5.8.

INITIAL EXPECTATIONS AND *MET EXPECTATIONS*
OF COMMUNITY MEMBERS.

| Expectations | Number of household heads | | |
|---|---------------------------|-----------|-----|
| | Expecting | Achieving | MEI |
| Get medication for the family from near home | 85 | 50 | 0.6 |
| Get advice on health matters | 106 | 91 | 0.9 |
| Help on health matters | 100 | 91 | 0.9 |
| Get transport for sick relatives | 7 | 4 | 0.6 |
| Avoid visiting health facilities for minor ailments | 15 | 6 | 0.4 |
| Introduction to health services staff | 1 | 0 | 0.0 |
| Get advice on non-health matters | 127 | 99 | 0.8 |
| Others | 20 | 13 | 0.7 |

It is also interesting to note that some of the CHWs had been able to get transport for some of the community members. It would be useful to find out how the CHWs had been going about solving the transport problem despite the scarcity of motor-transport in Siakago Division.

A substantial number of the community members who expected to avoid going to the health facilities for minor ailments still went there. The fact that the CHWs were not allowed to prescribe drugs even for minor ailments may partly explain that.

TABLE 5.9.

CROSS-TABULATION OF IPI AGAINST *MET EXPECTATIONS*.

| <i>Met expectation</i> | level of IPI | | Percentage total |
|-------------------------------------|--------------|------------|------------------|
| | 0.0-0.4 | 0.5-1.0 | |
| Improved social status | 2 (14.3%) | 12 (85.7%) | 100 |
| Get new health knowledge and skills | 3 (10.3%) | 26 (89.7%) | 100 |
| Improved village health status | 2 (6.2%) | 30 (93.8%) | 100 |

Despite the high cut-off level for IPI, the percentage of the CHWs with a high level of performance (IPI 0.5-1.0) exceeded the percentage of CHWs with the low level of performance (IPI 0.0-0.4) by far. Therefore, the level of performance of the CHWs was generally high.

The means of IPI for the CHWs with each *met expectation* (table 5.9) were: 0.65 for improved social status; 0.71 for obtain new health knowledge and skills and; 0.72 for improved village health status. The means were almost equal, the lowest being 0.65 and the highest being 0.72. The means were close to the maximum IPI which was 1.0.

The mean of IPI for the CHWs with the *met expectation* improved village health status was higher than the mean of IPI for the CHWs with the *met expectation* improved social status and obtain new health knowledge and skills.

To find out whether there was a significant difference among the means of IPI for the CHWs with the *met expectations* shown in table 5.9, a one-way analysis was

done. There was no significant difference among the means of IPI for CHWs with the three *met expectations* ($F_{(2,72)} = 0.75$; $P > 0.05$). Therefore, regardless of the type of expectations fulfilled, the CHWs had a high level of performance.

The mean of IPI for CHWs with at least one *met expectation* was 0.74 while the mean of IPI for CHWs without any *met expectation* was 0.52. Those means were significantly different ($t = 2.4$, $df = 44$, $p = 0.02$). Therefore, a CHW with an expectation satisfied was likely to perform better than one who was frustrated because none of his/her expectations had been fulfilled.

TABLE 5.10.

CROSS-TABULATION OF IMI AGAINST *MET EXPECTATIONS*.

| <i>Met expectation</i> | level of IMI | | Percentage total |
|-------------------------------------|--------------|------------|------------------|
| | 1.0-2.4 | 2.5-3.0 | |
| Improved social status | 0 (0%) | 14 (100%) | 100 |
| Get new health knowledge and skills | 3 (10.3%) | 26 (89.7%) | 100 |
| Improved village health status | 2 (6.2%) | 30 (93.8%) | 100 |

Despite the high cut-off for the IMI the percentage of the CHWs with the high level of motivation (IMI 2.5-3.0) exceeded the percentage of the CHWs with the low level of motivation (IMI 1.0-2.4) by far for all the *met expectations* depicted in table 5.10. The means of IMI for the CHWs for each *met expectation* were: 2.81 for improved

social status; 2.81 for obtain new health knowledge and skills and; 2.83 for improved village health status. Those means were almost equal the highest being 2.83 and the lowest being 2.81. The means were very close to maximum IMI which was 3.0. These expectations were in the realm of intrinsic motives. All the CHWs were highly motivated, most likely because those *met expectations* and all the motivating factors, described in this chapter, worked together to sustain that high level of motivation. Thus any *met expectation* was associated with a high level of motivation.

To find out whether the means of IMI for the CHWs with different *met expectations* were significantly different, a one-way analysis of variance was done. There was no significant difference among the means of IMI for the CHW with the *met expectations* shown in table 5.10 ($F_{(2,72)} = 1.19, P > 0.05$).

The mean of IPI for CHWs with at least one *met expectation* was 2.84 while the mean of IPI for CHWs without any *met expectation* was 2.80. There was no significant difference between the means ($t = 0.35, df 44, p = 0.73$). Thus regardless of whether their expectations were met or not, the CHWs had a high level of motivation. The implications of this finding are discussed under *discussion*, (chapter 6).

TABLE 5.11.

AMOUNT OF MONEY PREFERRED BY THE CHWs.

| Ksh per month | Number | Percentage |
|---------------|--------|------------|
| <500 | 5 | 9.6 |
| 500-999 | 19 | 36.5 |
| 1000 | 16 | 30.8 |
| >1000 | 12 | 23.1 |
| TOTAL | 52 | 100 |

As shown in table 5.11, 53.9% of the CHWs preferred to get Ksh 1000 and over per month. 23.1% of the CHWs wanted over Ksh 1000 per month. 30.8% of the CHWs preferred to get Ksh 1000 per month. 36.5% of the CHWs preferred to Ksh 500-999 per month. 90.4% of the CHWs preferred to get Ksh 500 and over per month. Only 9.6% of the CHWs preferred to get less than Ksh 500 per month.

TABLE 5.12.

AMOUNT OF MONEY THAT COMMUNITY MEMBERS WERE WILLING TO GIVE THEIR CHWS.

| Ksh per household per month | Willing to give | |
|-----------------------------|-----------------|------|
| | No. | % |
| Nil | 12 | 2.7 |
| 1-19 | 139 | 31.6 |
| 20-49 | 147 | 33.4 |
| 50+ | 142 | 32.3 |
| TOTAL | 440 | 100 |

109 (19.9%) of the community members did not suggest any financial rewards for their CHWs.

The majority (80%) of the heads of households were willing to make monthly financial contributions to support their CHWs. About 32% of the households were willing to contribute up to Ksh 20 per month. About 33% of the households were willing to contribute between Ksh 20 and 50 per month. About 32% of the households were willing to contribute Ksh 50 and over per month. Only 2.7% of the community members who responded were not willing to give their CHWS any amount of money. Those, alongside the non-respondents, formed the number of community members unwilling to support their CHWs (22.0% of the household heads).

The median monthly contribution a household was willing to make was 32.4 Ksh. The mean monthly contribution that each household was willing to give was Ksh 73.5 with a standard deviation of 151.

TABLE 5.13.

AMOUNT OF MONEY THAT COMMUNITY MEMBERS
WOULD BE ABLE TO GIVE THEIR CHWS.

| Ksh per household per month | Able to give | |
|-----------------------------|--------------|------|
| | No. | % |
| Nil | 21 | 4.8 |
| 1-19 | 264 | 60.6 |
| 20-49 | 101 | 23.2 |
| 50+ | 50 | 11.5 |
| TOTAL | 436 | 100 |

113 (20.6%) of the community members did not suggest any financial rewards for their CHWs.

The majority (76%) of the heads of households would be able to make monthly financial contributions to support their CHWs. About 61% of the households would be able to contribute up to Ksh 20 per month. About 23% of the households would be able to contribute between Ksh 20 and 50 per month. About 12% of the households would be able to contribute Ksh 50 and over per month. Only 4.8% of the community members who responded would not be able to give their CHWS any amount of money. 24.4% of the household heads would not have been able to support their CHWs financially.

The median monthly contribution that a household would be able to make was 13.3 Ksh. The mean monthly contribution that each household would be able to give was Ksh 27.6 with a standard deviation of 60.3.

Based on the means and the medians, it is clear that the community attached a greater value to the work done by the CHWs than it could be able to pay for. Clearly, the community members were willing to support their CHWs. However the degree to which they could support their CHWs was limited by an inadequacy of resources. That was due to the fact that the majority (87.8%) of the heads of households were peasant farmers/housewives in an area where the agricultural potential was low (6,16). Below is a calculation to illustrate how able the community would be to meet the financial expectation of their CHWs.

Proportion of households willing and able to give
monthly financial contributions = $\frac{436}{549} = 0.79$.

Number of households in Siakago = 11,106 [15].

Number of households willing and able to give
monthly financial contributions = $0.79 \times 11,106$
= 8773.

Number of CHWs in Siakago = 110. [15].

Number of households willing and able to
support each CHW = $\frac{8773}{110} = 79.75 \approx 80$.

To raise Ksh.1000 per month each household
would need to contribute = $\frac{1000}{80} = 12.5$ Ksh

Since 53% of the households were able and willing to contribute Ksh 12.5 and over monthly (not significantly different from the percentage willing and able to contribute less than Ksh 12.5 per month { $p > 0.05$ }) half the number of the willing household heads in one village could raise over Ksh 500 for their CHW per month.

The required monthly contribution, per household, to raise Ksh 1000 per CHW was less than half the mean amount of money (Ksh 27.6) that each household was able to contribute per month. From table 5.11, raising 1000 Ksh per month would satisfy at least 76.9% of the CHWs regarding their financial expectations.

General observations.

The divisional CBHC coordinator in Siakago Division was

a Public Health Officer. Indeed the management of PHC in Siakago was the responsibility of the Public Health Office. That was where the scanty programme data available was filed. The data comprised of sporadic information sent by the public health technicians in the field. There was no data available from individual CHWs. The reason given was that the CHWs lacked stationery. Indeed, none of the CHWs had up-to-date records of their activities.

In reality the Clinical Officer In-charge of the Siakago Health Centre was not involved in the management of PHC in Siakago. The management of Ishiara District Hospital was also not involved in the management of PHC activities in Siakago CBHC programme. A chief narrated to the investigator how the management of Ishiara Hospital was apathetic to the PHC activities because the coordinating office was at a lower category of health facility (a health centre) than Ishiara District Hospital.

The divisional CBHC programme office could only supply the list of the villages where CHWs had been recruited. The coordinator had no idea how many CHWs had been recruited at what time and how many were still working. However the family field health educators and the public health technician attached to Siakago Health Centre had extensive knowledge on how the CHWs could be contacted.

Siakago CBHC programme faced a transport shortage. There was no vehicle attached to Siakago Health Centre. Any

vehicle required for any PHC activities had to come from the the Public Health Office at Embu at the convenience of the District PHC Coordinator.

During the study some VHC members were visited as household heads. The investigator noted an open hostility towards the CHWs from two VHC members. Though the study was not out to investigate the relationship between the CHWs and the VHC, it is worth noting that the relationship between the VHCs and the CHWs might not have been cordial. The fact that the least frequently stated as the *most important reason*, by the CHWs, for continuing work was support by their VHCs gives another reason to suspect a strain in the relationship between VHCs and the CHWs. That was not unusual as even in CBHC programmes where community participation has been elicited to unquestionable levels, such as Saradidi [8] VHCs have not been appreciably supportive of their CHWs [21].

A CHW talked of his ambition to become the supervisor of CHWs in the division and eventually the district. Most of the CHWs expressed hope that the results of the study would influence the policy makers to institute some payment for the CHWs.

CHAPTER 6.

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS.

6.1. Discussion of results.

The ages of the majority of the CHWs corresponded to the ages of the majority of household heads. Also, the majority of the CHWs were married and hence were likely to have their own households. The criteria of selection of the CHWs (described elsewhere) required that a candidate be mature and self-supporting [6]. Those characteristics were most likely to be found among the household heads. In any case, majority of them were married and men were expected to have shelter and food for their families, by the community, before they got married [49,50]. Thus the household heads formed the potential pool for the CHWs.

All the CHWs in Siakago CBHC programme had a high social status. A CHW in Siakago was considered a community leader. There is a general belief in Siakago that men make better leaders than women [6].

The high social status associated with the work of CHWs was also supported by the fact that:

1. All the CHWs stated that the respect they got from the members of their villages increased after they became CHWs.
2. The most frequently stated *most important reason* for continuing work by the CHWs was the respect given to them by the members of their village.

3. Of the 16 CHWs who expected to get improved social status at selection, 15 of them had that expectation fulfilled.
4. The majority of the CHWs had completed primary school education while an appreciable number (7.7%) had completed secondary school education. Thus working as a CHW in Siakago was acceptable to those who were literate in the community.

The majority of the CHWs were married with families to support. The men were expected to have shelter, and food for their families, by the community, before they got married [49,50] and hence were expected to have their physiological needs fulfilled and so were striving to have their higher needs met in accordance to Maslow's hierarchy of needs (figure 1.1). That partly explained why social status and other esteem needs had gained potency as a motivating factor for the CHWs.

Only 9.6% of the CHWs had stopped work as CHWs in the CBHC programme as compared to 28% [45] and 77% [32] drop-out rates cited elsewhere. The low drop-out rate was partly explained by the abundance of intrinsic motives (defined elsewhere) among those CHWs. It is generally accepted that the intrinsic motives are more powerful motivating factors than non-intrinsic motives [12,13].

Based on MEI (table 5.5), the expectations associated with a high level of satisfaction were: get new health

knowledge and skills; improved social status and; improved village health status. These are in the realm of intrinsic motives.

Free medication for the family would have meant that the CHW need not buy certain drugs from shops or would not need to pay for payable services in government hospitals such as in-patient fees. The fact that this expectation was associated with such a low MEI means that quite a substantial number of CHWs still felt that their expectation for free medication had not been satisfied. This was expected as the CBHC programme in Siakago does not allow the CHWs to keep and dispense any drugs [6].

Obviously, a relationship with a government worker who was placed in such a position that he/she could assist a CHW in time of need, be it personal or communal, would have been an added advantage to the CHW. That would have ensured that problems that the government worker was capable of solving were dealt with promptly. That some of the CHWs had that expectation was further proof of their desire to be known to some government workers. The government worker could have been the chief, the assistant chief or a clinical officer among others.

None of the CHW who expected to get one form of government employment or another got it. That expectation indicated that some of the people took up the responsibility of becoming CHWs in the hope that it would

have enabled them get into government employment. That expectation was not unfounded as some VHC members in Siakago had been appointed as assistant chiefs based on their merit as VHC members [6].

Consistent with the *met expectations* described was the fact that the reasons cited frequently (table 5.6), by the CHWs as the *most important reasons* for continuing work, revealed the presence of intrinsic motives. Those reasons were: respect given by the villagers; improved village health status and; general village development.

The motivating factors found in abundance among those CHWs were: support by the family; support by the village health committees; support by the local health services staff; support by the local administrators or leaders; history of a traditional healer in the family and; improved social status. Also the CHWs with each of these motivating factors had a high level of motivation and performance (tables 5.3 and 5.4). The means of IMI and IPI for CHWs with the different motivating factors were not significantly different. Therefore each of the motivating factors was important in contributing to the high level of motivation and performance among those CHWs.

Only 5.8% of the CHWs had any on-the-job training after they became CHWs. However, 98.1% of all the CHWs would have liked to get on-the-job training. Elsewhere continuing education was an important reason for continuing work

[5,311 (see Chapter 4).

Most (80.8%) of the CHWs were assisted by the local leaders when they had a problem related to their work. Thus establishing a reward system, through the participation of the community would meet with administrative and political support from local leaders. It is surprising that almost all the CHWs worked without rewards despite the support from the local leaders and the willingness of the community members to reward their CHWs in cash, material and labour. Therefore, one concludes that the machinery for use of some the community resources to the reward CHWs was lacking.

Even in CBHC programmes where community participation was unquestionable VHCs were not appreciably supportive of their CHWs [8,21]. In the Siakago CBHC programme, VHCs had the responsibility of ensuring that community resources were used optimally for community development [6]. Thus the VHCs in the Siakago CBHC programme were very likely to be ineffective in the use of community resources to reward the CHWs. No attempt was made to quantify the support the CHWs got from their VHCs. Though the majority of the CHWs were assisted by their VHCs when they had a problem related to their work, it would be useful to quantify that support. It was obvious that the VHCs had not been able to use the community resources to reward the CHWs.

It is possible that VHCs were reluctant to support their CHWs because the VHCs members did not want the CHWs

to become wealthier than they. The VHC members were themselves volunteers without any form of remuneration [6,8]. It might, therefore, have seemed reasonable to them that CHWs should also not have any form of remuneration. Alternatively the VHCs might still have been in the earlier stages of development as described by Lamborary (Chapter 4). Thus if a reward system for the CHWs is to be established by a VHC the VHC members would have to establish their own reward system first.

Majority (73.1%) of the CHWs were assisted by the local health services staff (workers from the local hospital, health centre or dispensary) when they had a problem related to their work. 63.2% of the CHWs who got the health services staff support were satisfied with the support. Thus only 46.2% of all the CHWs were satisfied with the support they got from their local health services staff. This was partly due to the fact that the Siakago CBHC programme lacks transport making the technical supervision of the CHWs by the health services staff extremely difficult. Thus it is not surprising that only half the CHWs were satisfied with the health services staff support. Elsewhere, technical supervision by the health services staff has helped keep CHWs working [5] and lack of technical supervision has contributed to a high drop-out rate [5] and low morale among CHWs [23].

Majority (90.4%) of the CHWs were encouraged by their

families to continue working as CHWs. Elsewhere, lack of family support has been shown to contribute to a high drop-out rate among CHWs [46].

Over 57.7% the CHWs had a history of a traditional healer among their relatives at one time or another. Certain families (the clan of "Agwe"), in Embu, have been associated with traditional medical practitioners ("ago") [49,50] and a person coming from such a family may have the urge to continue that family tradition by becoming a CHW. The CHWs with history of a traditional healer in the family was associated with the highest mean of IMI among the motivation factors shown in figure 5.4. Thus persons coming from the family with a history of a traditional healers are highly motivated to continue their family tradition as CHWs.

Only one CHW got material rewards. The structuring of questions obscured the nature of the rewards he got. However he stated that he was not satisfied with the value of the rewards.

Table 5.7 gives the percentages of the CHWs and the community members by the types of rewards preferred.

When asked to suggest the types of rewards they would prefer, the CHWs were hesitant to suggest financial rewards but when financial rewards were suggested to them, they liked the idea to an extent of suggesting the amount of money they would prefer per month. Their high expectations

are reflected in table 5.11. Their reluctance to suggest rewards before assurance was not surprising on the view of the fact that it was the programme policy that (as quoted) "All CHWs should accept whatever remuneration or reward that may be decided by the community for their services" [6]. Unfortunately, the Siakago community seemed not to have decided on any remuneration for their CHWs. As has been shown earlier, intrinsic motives such as improved social status and increased health knowledge and skills were abundant among the CHWs in that CBHC programme. So the CHW was faced with a dilemma: to continue working despite the dissatisfaction and frustration due to lack of rewards or sacrifice the fulfilment of the expectations associated with intrinsic motives. The Siakago CHWs had chosen to remain in the programme which was consistent with the fact that intrinsic motives are stronger motivating factors than the non-intrinsic motives [12,13]. Once they were assured that they would not be victimized for suggesting financial incentives the CHWs readily suggested the amount of money that they would prefer per month.

IMI scores were high among those CHWs (table 5.3) which is consistent with the fact that:

1. The level of performance among the CHWs in that CBHC programme was remarkably high. A high level of performance is associated with a high level of motivation [15].

- ii. Intrinsic motives were abundant among the CHWs in that CBHC programme. Intrinsic motives are strong motivating factors [12,13].
- iii. In more than 48 months of the programme only 9.6% of the CHWs had stopped working.
- iv. The CHWs were supported by their families, the village health committees, the local administrators and other local leaders and the local health services staff. That would be expected to enhance the CHW's motivation.

The level of motivation of CHWs decreased significantly as the proportion of the community members who were unwilling to support their CHWs increased. A community that was willing to support their CHW was more likely to provide adequate motivating factors, to keep their CHW highly motivated, than a community that was unwilling to support their CHW. On the other hand a highly motivated CHW was more likely to attract more support from the community than one who was lowly motivated. A lowly motivated CHW was also likely to have a low level of performance. Thus the willingness of the community to support their CHW and the high level of motivation of the CHWs were factors that reinforced one another.

For each of the motivating factor abundant among those CHWs, (support by the family, support by the village health committees, support by the local health services staff,

support by the local administrators or leaders, history of a traditional healer in the family and improved social status) the percentage of the CHWs with a low level of performance was far much smaller than the percentage with the higher level of performance (table 5.4). Thus each of the motivating factors contributed towards motivating the CHWs for the attainment of the high level of performance among these CHWs.

The average level of performance of CHWs with at least one *met expectation* was higher than the average level of performance of the CHWs without any *met expectation*. Obviously a CHW with an expectation met was likely to perform better than one who was frustrated because none of his/her expectations had been satisfied. However, there was no significant difference between the average level of motivation for the CHWs with at least *one met expectation* and those without any *met expectation*. Thus regardless of whether their expectations were met or not, the CHWs had a high level of motivation. That is explained by the fact two of the *met expectations* found in abundance (improved village health status and obtain new health knowledge and skills) required that the CHWs carry out some deliberate activities for them to be fulfilled. Thus there was a direct relationship between those *met expectations* and the level of performance. The CHWs with those expectations fulfilled must have performed the activities that brought

about their fulfilment. Obviously, the CHWs who did not have the expectations met had not performed the activities that would have led to the fulfilment of the expectations. However even those CHWs who had not performed such activities might have been highly motivated but failed to perform the activities because of reasons other than a low level of motivation. Such reasons could have been lack of working tools or time. Hence, despite their high level of motivation, such CHWs would not have had the expectations satisfied as fulfilling the expectations would have required a high level of performance. Thus the fact that the CHWs with no *met expectation* did not have a level of motivation that was significantly higher than the level of motivation of the CHWs with at least one *met expectation* does not contradict the finding that the CHWs with at least one *met expectation* performed better than those without any *met expectation*.

The level of performance of the CHWs did not decrease significantly as the proportion of the community members unwilling to support their CHWs increased. Similarly, the level of performance of the CHWs did not increase as the proportion of the community members who were willing to support their CHWs increased. The willingness of the community members to support their CHWs, though expressed, had not been transformed into action because of lack of a machinery that would use the community resources to reward

he CHWs. While, as an example, a CHW may be highly motivated because he/she perceives a friendliness from the community members, a high level of performance may only become evident when material or cash support is forthcoming. That there are intermediate variables that ensure that a highly motivated person has a high level of performance is an obvious fact. Such factors include provision of working tools. Also, if provided with means to satisfy the physiological needs, a worker would devote more time to the allotted work as he/she devotes less time to seeking for the means of fulfilment of such needs.

The high level of performance was consistent with the fact that:

- i. 87.4% of the household heads were familiar with their CHW and 93.4% of the household heads who knew their CHW thought the CHW was doing useful work. Thus the CHW's work was evident to the community members.
- ii. The majority of the CHWs were supported by their families, the village health committees, the local administrators and other leaders and the local health services staff. That was likely to boost the CHW's performance.
- iii. The majority of the community members with expectations which required the mandated activities of CHWs had them met [table 5.8]. High

MEI was associated with the expectations get advice and help on health matters and get advice on non-health matters.

It is interesting to note that some CHWs had been able to get transport for some of the sick community members. It would be useful to find out how the CHWs had been going about solving the transport problem despite the scarcity of transport in Siakago [6,16].

A substantial number of the community members who expected to avoid going to the health facilities for minor ailments still went there. The fact that the CHWs were not allowed to prescribe drugs even for minor ailments may partly explain that.

It also is interesting to note that despite the fact that the CHWs were not mandated to prescribe drugs a substantial number of community members had their expectation of getting medication for the family from near home satisfied. (All the CHWs in Siakago would like to give drugs as part of their work). Three of the CHWs were supported by both the Anglican church and the MOH. Those three were allowed to prescribe drugs for common ailments such as malaria. However those were too few to account for the high rate of satisfaction associated with that particular expectation. This raises a few questions. Could the CHWs have been getting access to drugs despite the fact that it was against the programme policy to supply them

with drugs? Could CHWs activities, among other PHC activities, have availed enough knowledge and change of attitudes to enable the community members use the accessible sources of drugs such as shops? Obviously, for the time being one can only speculate as to what the reasons for the satisfaction associated with this expectation were.

Again more evidence is needed to explain the fact that some of the community members went to health facilities for minor ailments and yet others got medication from near home as a result of the activities of the CHWs.

The study showed that the level of performance among those CHWs increased with their level of motivation. Elsewhere, it has been shown that a highly motivated person is much closer to his/her top performance than one in whom motivation is lacking [15].

The majority of the household heads (about 80%) were willing to give one form of reward or another to their CHWs partly because they thought the work of the CHWs was important. Again the majority (about 80%) of the household heads were willing to make monthly financial contributions to support their CHWs.

Despite the fact that only 34.1% of the heads of households participated in the selection of the CHWs, the majority of the household heads found their CHWs acceptable as shown by the fact that they were willing to support

their CHWs by giving them cash and material rewards. Therefore acceptability of a CHW by the community seems to be determined more by his/her performance than by the community involvement in the selection of the CHW.

When asked to give a value to the work done by the CHWs in financial terms, the community members valued them at a higher price than they could afford (see the argument under *results*, chapter 5). The feeling that the CHW was offering services that were too expensive for them to pay for through the use of money, made them prefer to give material and labour rewards in addition to the money (table 5.7).

Clearly, the reward expectations of the CHWs differed from what the community preferred to give. While 48.1% of the CHWs preferred to get reward in labour, only 11.7% of the community members preferred to give rewards in form of labour. That disharmony was observed for all the reward preferences. The fact that the form of rewards suggested by the CHWs and the community members did not correspond suggests that there had not been a forum in which the CHWs discussed their reward preference with the members of their community. Such ideas could be shared in meetings between the community members and the CHWs. All the CHWs suggested one form of reward or another. Generally, money can be converted into any form of reward. Thus the use of money to reward the CHW would make the dissimilarity in the form of rewards that the CHWs would like to receive and those that

the community members would like to give immaterial.

The fact that over 80% of the households preferred to give one form of reward or another shows they were willing to support their CHWs. 10.2% of the household heads did not suggest any form of reward while 9.7% preferred to give no rewards to their CHWs. Those, (19.9% of the household heads) are the people who were likely not to have understood and accepted the benefits of their CHWs' activity. They may only need an explanation based on the visible benefits such as improved houses [6] that had been brought about by the PHC activities. That proportion, though appreciable, may not be large enough to prevent a reward system for the CHWs from being established. However it would be useful to find out whether those opposed to supporting the CHWs have enough influence on other community members to dissuade them from contributing towards supporting their CHWs. If the community members opposed to rewarding the CHWs are the opinion leaders, a reward system does not stand a good chance of success.

Only one CHW received any financial reward. She got an average of Ksh 31 per month and had stopped considering herself a CHW by the time of the study. Financial incentives have been used successfully to motivate CHWs [40] and lack of financial incentives demoralizes CHWs [5,46]. CHWs who were given non-financial incentives performed better than their counterparts who did not get

such incentives [22].

In the Siakago CBHC programme 53.9% of the CHWs would have liked to get Ksh 1000 and over per month and 36.5% of the CHWs would have liked to get between Ksh 500 and 1000 per month. Thus 90.4% of the CHWs would have preferred to get Ksh 500 and over per month. The community is willing and able to contribute more than the stated amount of money monthly (see the argument under *results*).

The fact that 94.2% of the CHWS were selected by the community shows that majority of the CHWs were acceptable to the community members, at the time they were selected, who selected them. That the community members were ready to support them was therefore not surprising.

The majority (80%) of the heads of households were willing to make monthly financial contributions to support their CHWs. The median monthly contribution a household was willing to make was 32.4 Ksh while the median monthly contribution that a household was able to make was 13.3 Ksh. The mean monthly contribution that each household was willing to give was Ksh 73.5 with a standard deviation of 151. The mean monthly contribution that each household was able to give was Ksh 27.6 with a standard deviation of 60.3. Thus the community attached a greater value to the work done by the CHWs than it could have been able to pay for. Clearly, the community members were willing to support their CHWs. However the degree to which they could support

their CHWs was limited by an inadequacy of resources. That was due to the fact that the majority (87.8%) of the heads of households were peasant farmers/housewives in an area where the agricultural potential is low (6,16).

As shown elsewhere, 53% of the households were able to contribute Ksh 12.5 and over monthly and so half the number of the willing household heads in one village can raise over Ksh 500 per CHW per month.

Since the required monthly contribution, per household, to raise Ksh 1000 per CHW was less than half the average amount of money (and about equal to the median monthly contribution) that a household was able to make, one concludes that the Siakago community was willing and able to meet the financial expectations of their CHWs.

One CHW left work because of lack of cash reward. Another CHW left due to lack of cash reward, discouragement by the family and an uncooperative village health committee. A 60 year old lady felt that she was too old to continue working and so she stopped working. An uncooperative village health committee made another CHW stop work. The community rejected one CHW because he did not keep the standard of sanitation, in his home, that the community expected of a CHW. Thus there was no evidence, among the CHWs who left work, to suggest that any one motivating factor was associated with stopping work.

All the CHWs would have liked to give drugs as part of

their work. The low MEI for "free medication for family" can be, partly, explained by the fact that the CHWs were not trained and allowed to prescribe and dispense drugs [6]. The fact that the MOH offers free medical services in their out-patient departments explained the fact that only 25% of the CHWs had felt the need for free medication for their families at selection. Free medication for the family has been found to be a strong motivating factor elsewhere [44].

Allowing the CHWs to prescribe drugs, after training them, would help fulfil the community members' expectations of getting treatment from near home and avoid going to the health facilities for minor ailments.

A prolonged dialogue with the community is thought to be mandatory in eliciting optimal community participation [21,32,33,47]. Such a prolonged dialogue is not documented, if it ever took place, for Siakago CBHC programme. Actually, the documentation of community participation process in the Siakago CBHC programme is sketchy. A dialogue might have taken place but was not documented. Also, the dialogue might have been going on parallel with the other PHC activities. The other possibility is that opinion leaders were involved initially and later continued popularizing the PHC activities.

The local health services staff were not involved in the planning of the Siakago CBHC programme [6]. Medical

officers, clinical officers and other clinically-oriented staff were not involved in the running of PHC in Siakago. That could have been due to the fact that they had not been involved in the planning, implementation and evaluation of the PHC activities.

6.2. Conclusions and recommendations.

- (1). The CHWs in this CBHC programme were highly motivated as a result of an abundance of the motivating factors that fall in the realm of intrinsic motives and intrinsic motives are known to be strong motivating factors [12,13].
- (2). The high level of motivation and performance among those CHWs was explained by the presence of the following motivating factors in abundance among the CHWs:
 - i. Support by the village health committee existed though it did not reach the level of using community resources to reward the CHW.
 - ii. Support by the local health services staff existed though only half of the CHWs found the support satisfying. The number of CHWs satisfied by the support from their local health services staff could be increased by providing transport for the Siakago CBHC programme to enable the local health services staff carry out effective technical

supervision of the CHWs.

- iii. Support by their families which encouraged the CHWs continue working as CHWs.
- iv. Support by the local administrators or leaders who helped the CHWs when they had a problem related to their work. They allowed the CHWs address "barazas" [6] enhancing the CHWs' social status.
- v. Improved social status as the work of CHWs was perceived as a leadership role by the community.
- vi. History of a traditional healer among the CHW's close relatives which could make the CHW want to continue that socially esteemed family tradition.
- vii. At least one *met expectation* of the expectations that a CHW had at his/her selection. With increased satisfaction the CHW was likely to have a high level of performance.

- (3). Improved social status and improved village health status were the reasons stated, most frequently as the *most important reasons*, by the CHWs, for continuing work. Those were in the realm of intrinsic motives. The reason stated least frequently as the *most important reason* for

continuing work was support given by the village health committee. This suggests that village health committee may be limited in the quality of support they gave their CHWs and this would be consistent with findings elsewhere [8,21]. The VHC support needs to be quantified in a later study.

- (4). The level of performance increased with the level of motivation as expected from theory. This was an assurance that the measuring instruments were valid.
- (5). The community was willing and able to support their CHWs by giving financial, material and labour rewards. The community ability to support their CHWs was limited by their low level of resources as the majority of the community members were peasant farmers in an area with low agricultural potential.
- (6). For the VHCs to carry out their responsibility of using the community resources to reward the CHWs their members may also need a reward system. Thus establishing a reward system for the CHWs, at the moment, may mean that the organisers circumvent the VHCs. This may be done by allowing the CHW have direct access to community resource as has been done elsewhere [36,43]. Sale of drugs, as was recommended in the Bamako Initiative [43], could

be used as the entry point in establishing a reward system for the CHWs. They would keep part of the profit made from sale of drugs (*annex 3*) as is done in the Bamako initiative.

- (7). Many of the CHWs would like to give drugs as part of their work. This would increase the accessibility of drugs needed to treat common ailments such malaria to the community members in addition to facilitating the establishment of a CHWs reward system.
- (8). The management of the Siakago CBHC programme needs to be streamlined to involve all the health services staff in Siakago Division as one team. Re-orientation of clinically oriented health services staff, such as nurses, clinical officers and medical officers in Siakago Division to PHC is necessary. The re-orientation would help them understand the relevance of PHC activities to curative health care. They should be involved in the the planning, implementation and evaluation of the PHC programme. That would also help them become effective PHC managers in the division.
- (9). A study to establish the extent to which VHCs, local leaders, local health services staff and community members would support a pooling up of community resources to enable reward the CHWs, as

was done in Somalia [25], needs to be done.

(10). Almost all the CHWs felt the need for continuing education. Intensifying technical supervision by the local health services staff by providing transport for the CBHC programme would be one way of introducing continuing education for the CHWs [52].

(11). Popularizing PHC activities may make the one-fifth of the community members unwilling to support their CHW see the benefits of the PHC activities. They may therefore change their attitudes and support a reward system for their CHWs. The popularization of the activities would involve frequent meetings between the programme organizers and community members and use of mass media such as radio to publicize the benefits of PHC activities.

This is but a first step among the many that are required to establish a reward system for the CHWs. It is hoped that this study takes the programme organizers a step nearer towards solving the complex problem of the CHWs remuneration.

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Annex 1.
UNIVERSITY OF NAIROBI,
DEPARTMENT OF COMMUNITY HEALTH,
SIKAGO COMMUNITY BASED HEALTH CARE
PROGRAMME (EMBU DISTRICT) STUDY QUESTIONNAIRE.

A. PROGRAMME QUESTIONNAIRE.

1. Designation of the respondent _____

2. Number community based health workers who had been trained by 1st July, 1989.

3. Number of CHWs (exempting those trained between 1st July, 1989 and 1st July 1990) active on 1st of July 1990.

If the number in 4 is: (a). less than the one in 5, go to 6
(b). greater than the one in 5, go to B.

4. What are the reasons that make the community based health workers in your area to stop being active?

(a). Inadequate cash rewards Yes 1.
 No 2.

(b). Inadequate rewards in kind (in form of food, clothing, providing labour for his/her personal work or any other reward in material form). Yes 1.
 No 2.

(c). Inadequate and/or irregular supply of drugs. Yes 1.
 No 2.

(d). Discouragement by his/her family. Yes 1.
 No 2.

(e). Uncooperative village health committee. Yes 1.
 No 2.

(f). Inadequate supervision by health facility staff. Yes 1.
 No 2.

(g).Lack of social status associated with the work.

Yes 1.
 No 2.

(h).Inadequate continuing education.

Yes 1.
 No 2.

(i).Uncooperative local administrators/leaders.

Yes 1.
 No 2.

(j).Any other reasons.

Specify_____

Yes 1.
 No 2.

B.COMMUNITY BASED HEALTH WORKER QUESTIONNAIRE.

1.LOCATION _____ 2.VILLAGE _____.

1.b.SUBLOCATION _____

3.Name of the community based health worker _____

4.Code number of the community based health worker _____

a.DEMOGRAPHY SECTION.

1.Sex Male 1.
Female 2.

2.Age in completed years Years.

3.Marital status Married 1.
Single 2.
Widowed 3.
Divorced or separated 4.

4.Level of education
mark the corresponding number
in the box provided)

- 1.Did not complete primary school or has attended adult literacy classes.
- 2.Completed primary school but not secondary school.
- 3.Completed secondary school but not high school.
- 4.Completed high school but not college education.
- 5.Completed college education.
- 6.Did not attend any school or adult literacy classes.

b.MOTIVATING FACTORS SECTION.

1.When were you selected as a community based health worker? MONTH _____
YEAR _____

2.Who selected you as a community based health worker?

a.By my community. Yes 1.
No 2.

- b. By a local administrator. Yes 1.
 No 2.
- c. By my village elder(s). Yes 1.
 No 2.
- d. By the village health committee. Yes 1.
 No 2.
- e. Others. Yes 1.
 No 2.

Specify _____

3. What did you expect to gain from the work as a community based health worker at the time you were selected?

- a. Improved earnings in cash Yes 1.
 No 2.
- b. Adequate rewards in kind Yes 1.
 No 2.
- c. Reward in labour Yes 1.
 No 2.
- d. Improved social status Yes 1.
 No 2.
- e. Free medication for my family Yes 1.
 No 2.
- f. Obtain new health knowledge and skills Yes 1.
 No 2.
- g. Get the sympathy of government officials when I have a need Yes 1.
 No 2.
- h. Eventual entry into the government employment Yes 1.
 No 2.
- i. Eventual entry into politics Yes 1.
 No 2.
- j. Improve the health status of my village Yes 1.
 No 2.

k.Others.

Yes 1.
 No 2.

Specify _____

4.Of your expectations which ones have been met?

a.Improved earnings in cash Yes 1.
 No 2.

b.Adequate rewards in kind Yes 1.
 No 2.

c.Reward in labour Yes 1.
 No 2.

d.Improved social status Yes 1.
 No 2.

e.Free medication for my family Yes 1.
 No 2.

f.Obtain new health knowledge and skills Yes 1.
 No 2.

g.Get the sympathy of government officials when I have a need Yes 1.
 No 2.

h.Eventual entry into the the government employment Yes 1.
 No 2.

i.Eventual entry into politics Yes 1.
 No 2.

j.Improve the health status of my village Yes 1.
 No 2.

k.Others. Yes 1.
 No 2.

Specify _____

5. Do you still consider yourself a community based health worker in the programme? Yes 1. No 2.

(If NO proceed to 6, if yes proceed to 8).
6. When did you quit the work? MONTH _____
YEAR _____

7. What made you quit the work?

(a). Inadequate cash rewards Yes 1. No 2.

(b). Inadequate rewards in kind (in form of food, clothing, or any other reward in material form). Yes 1. No 2.

(c). Not being allowed to prescribe drugs. Yes 1. No 2.

(d). Discouragement by my family. Yes 1. No 2.

(e). Uncooperative village health committee. Yes 1. No 2.

(f). Inadequate supervision by health facility staff. Yes 1. No 2.

(g). Lack of social status associated with the work. Yes 1. No 2.

(h). Inadequate continuing education. Yes 1. No 2.

(i). Uncooperative local administrators/leaders. Yes 1. No 2.

(j). Any other reasons. Yes 1. No 2.
Specify _____

8. Would you like to give drugs as part of your work? Yes 1. No 2.

9. Have you ever had additional training since you completed your first course?

Yes 1.
 No 2.

10. Would you like to have additional training?

Yes 1.
 No 2.

11. Does your village health committee help you when you have a problem concerning your work?

Yes 1.
 No 2.

12. Do the health workers from your nearest dispensary, health centre or hospital help you when you have a problem related to your work?

Yes 1.
 No 2.

13. Are you satisfied with the help you get from health workers from your nearest dispensary, health centre or hospital?

Yes 1.
 No 2.

14. Do members of your family encourage you to continue working as a community based health worker?

Yes 1.
 No 2.

15. Do you get any money from your work as a community based health worker?

Yes 1.
 No 2.

If yes proceed to 16. if no, proceed to 17.

16. About how much money do you get per month from your work as a community based health worker? _____ Ksh.

17. About how much money would you like to get per month from your work as a community based health worker? _____ Ksh.

18. Do you get any gifts, other than money from the members of your village?

Yes 1.
 No 2.

If yes, proceed to 19, if no, proceed to 20.

19. Are you satisfied with the value of the gifts you get from members of your village?

Yes 1.
 No 2.

20. What type of rewards would you prefer?
(kind means material or labour)

Cash 1.
 'Kind' 2.
 Others 3.

If the response is 3, specify

i. _____

ii. _____

iii. _____

21. Does your assistant chief, chief and/or any other leader help you when you have a problem related to your work as a community based health worker?

Yes 1.
 No 2.

22. Has there ever been any traditional health workers among your close relatives?

Yes 1.
 No 2.

23. Do you think becoming a community based health worker has increased the respect you get from members of your village?

Yes 1.
 No 2.

24. Which is the most important reason that has made you continue working as a community based health worker? (fill the number of the response in the box)

1. Cash reward.
2. Reward in kind (any gift or service other than money)
3. Support by village health committee.
4. Support by family.
5. Support by health workers from nearest dispensary, health centre or hospital.
6. Family tradition of healers.
7. Respect given by the villagers.
8. Additional courses after initial training.
9. Free treatment for the family.
10. Adequate/regular supply of drugs.
11. Service to God.
12. Support by local administrators/leaders.

13. Any others. Specify _____

c. ATTITUDES SECTION.

(Score 3 for A, 2 for B and 1 for C).

1. Would you advise your friend
to become a community based
health worker?

A. Yes B. I am not sure C. No.

Response

Score

2. Do you enjoy your work as a
community based health worker?

A. Yes B. Somehow C. No.

Response

Score

3. Have you ever considered
quitting your work as a
community based health worker?

A. Never B. Sometimes C. Often.

Response

Score

4. For how long do you think you
will continue working as community
based health worker?

A. A long time (more than one year)

B. I don't know

C. A short time (less than one year)

Response

Score

5. Do you consider working as a
community based health worker
as being good enough to satisfy
your ambitions?

A. Yes B. Somehow. C. No.

Response

Score

d. PERFORMANCE SECTION.

(Score 0 for NO and 1 for YES).

| | YES | NO |
|---|--------------------------------|--------------------------|
| 1. Do you keep any records as part of your work? (If YES observe the records) | SCORE <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Are the records up to date (filled up to the end of last month)? | SCORE <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Do the records cover deaths and births? (ask for name or place or observe the records). | SCORE <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Did he/she give any health education talk last month? | SCORE <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Did he/she help improve any house last month? | SCORE <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Did he/she help dig any soil conservation trenches last month? | SCORE <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Did he/she facilitate the digging of any composite pit last month? | SCORE <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Did he/her help construct any pit latrines last month? | SCORE <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Did he/she help construct any dish rack last month? | SCORE <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Did he/she help make any energy saving fire places last month? | SCORE <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Did he/she motivate any mother for immunization of their children last month? | SCORE <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Did he/she motivate any person for family planning last month? | SCORE <input type="checkbox"/> | <input type="checkbox"/> |
| 13. Did he/she refer any patient to the nearest health facility last month? | SCORE <input type="checkbox"/> | <input type="checkbox"/> |

C.COMMUNITY MEMBER QUESTIONNAIRE.

1.Household number_____

2.Age of the respondent_____

3.Sex Male 1.
 Female 2.

4.Occupation_____

5.Do you know your community based health worker?
 Yes 1
 No 2

If yes, go to 6 if no, go to 7.

6.Do you think he/she is doing useful work in your village?
 Yes 1.
 No 2.

7.Did you take part in the selection of your community based health worker?
 Yes 1.
 No 2.

(If yes go to 8 if no, go to 10)

8.What did you expect to gain from his/her activities?

a.Get medication for my family from near home Yes 1.
 No 2.

b.Get advice on health matters from near home Yes 1.
 No 2.

c.Get help regarding health matters all the time Yes 1.
 No 2.

d.Get transport for my sick family members all the time Yes 1.
 No 2.

e.Avoid going to the health centre or dispensary for minor ailments Yes 1.
 No 2.

f.Get a person who can introduce me to the health services staff when a member of my family is ill Yes 1.
 No 2.

g.Get advice for non-health matters when I need it Yes 1.
 No 2.

h.Others

Yes 1.
 No 2.

Specify _____

9.Of your expectation of your community based health worker at the time of selection which ones have been met?

a.Get medication for my family from near home Yes 1.
 No 2.

b.Get advice on health matters from near home Yes 1.
 No 2.

c.Get help regarding health matters all the time Yes 1.
 No 2.

d.Get transport for my sick family members all the time Yes 1.
 No 2.

e.Avoid going to the health centre or dispensary for minor ailments Yes 1.
 No 2.

f.Get a person who can introduce me to the health services staff when a member of my family is ill Yes 1.
 No 2.

g.Get advice for non-health matters when I need it Yes 1.
 No 2.

h.Others Yes 1.
 No 2.

Specify _____

10. What type of rewards do you think he/she should get from the villagers?

A. Cash. B. material. C. labour. D. A, B, and C.
E. Others. Specify _____

11. What is the approximate value of the rewards that you think your community based health worker should get from your household every month? _____ Ksh.

12. What is the approximate value of the rewards that you, as a household, can afford to give to your community based health worker in a month? _____ Ksh.

ANNEX 6.

Study Villages by divisions and locations.

I. KIANG'OMBE LOCATION.

A. THAMBU SUB-LOCATION.

- 01. Manoria.
- 02. Karambari.
- 03. Kigwambiti.
- 04. Kiambiti.

B. IRIAITUNE SUB-LOCATION.

- 05. Kamwaa.

C. KATHERA SUB-LOCATION.

- 06. Ndithiri.
- 07. Munyori.
- 08. Kariru.
- 09. Kiaragana.

II. EVURORI LOCATION.

A. KAMARANDI SUB-LOCATION.

- 10. Kamutu.
- 11. Kogari.
- 12. Kamarandi.

B. EVURORI SUB-LOCATION.

- 13. Njura.
- 14. Kagandari.
- 15. Ciamugo.
- 16. Kiamacheiki.

C. NGITHI SUB-LOCATION.

- 17. Kanyuambora area.
- 18. Cianthia.

II. NTHAWA LOCATION.

A. SIAKAGO SUB-LOCATION.

- 19. Mathai.
- 20. Kabachi.
- 21. Makunguru.
- 22. Siakago.

B. RIANDU SUB-LOCATION.

- 23. Riandu.
- 24. Kageri.
- 25. Kianthuku.
- 26. Muthanu.
- 27. Magaca.

- 28. Kambaru.
- 29. Gatitu.
- 30. Kune.
- 31. Rukira.

C. GITBURE SUB-LOCATION.

- 32. Gitibure.
- 33. Kamugu.
- 34. Muchonoke.
- 35. Kanyariri.

IV. MUMENJE LOCATION.

A. GANGARA SUB-LOCATION.

- 36. Mugoro.
- 37. Karambari.
- 38. Mukuegomana.
- 39. Karetha.
- 40. Micegethio.
- 41. Itira.

B. KIRII SUB-LOCATION.

- 42. Mbaruari.
- 43. Marembo.
- 44. Cieria.
- 45. Itambararia.

ANNEX 3.

DRUGS RECOMMENDED FOR USE BY CHWS.

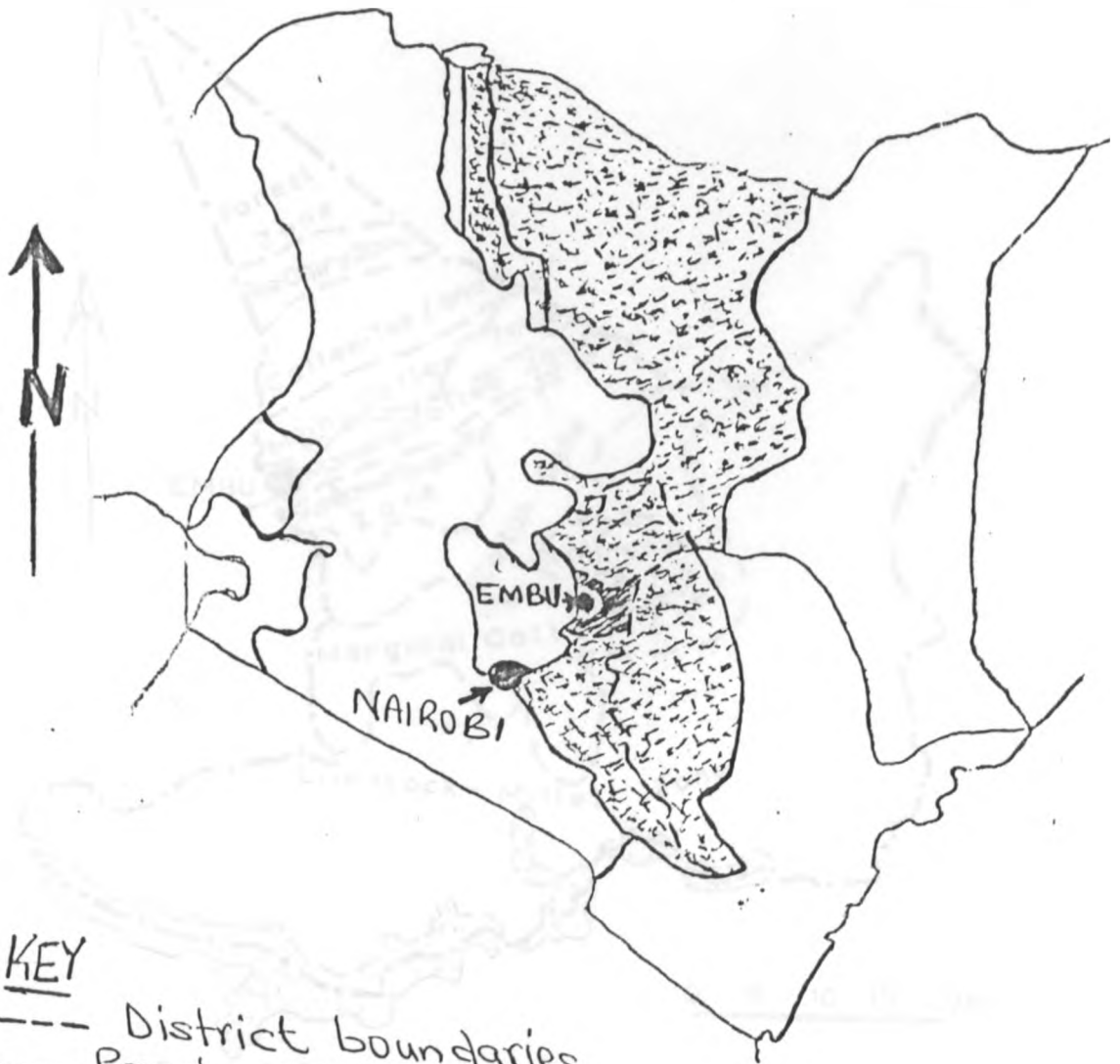
- | | |
|-----------------------------------|-------------------------------|
| 1. Analgesics | Aspirin, paracetamol. |
| 2. Eye-ointment | Tetracyclines eye ointment. |
| 3. Anti-helminthics | Mobendazole. |
| 4. For anaemia | Ferrous sulphate, folic acid. |
| 5. Anti-malarials | Chloroquine. |
| 6. Anti-acids | Magnesium trisilicate. |
| 7. Dermatological preparations | Benzyl Benzoate emulsion |
| 8. Oxytocics | Ergometrine tablets. |
| 9. Anti-histaminics | Piriton. |
| 10. Contraceptives. | |
| 11. Oral rehydration salts. | |

From *National Guidelines for Implementation of Primary Health*

Care in Kenya [2].

ANNEX 4
MAPS OF THE STUDY AREA.
MAP 1

KENYA: EASTERN PROVINCE
AND EMBU DISTRICT.



- KEY
- District boundaries
 - Provincial boundaries
 - ▨ Embu District
 - ▩ Eastern Province

Embu District MAP_2

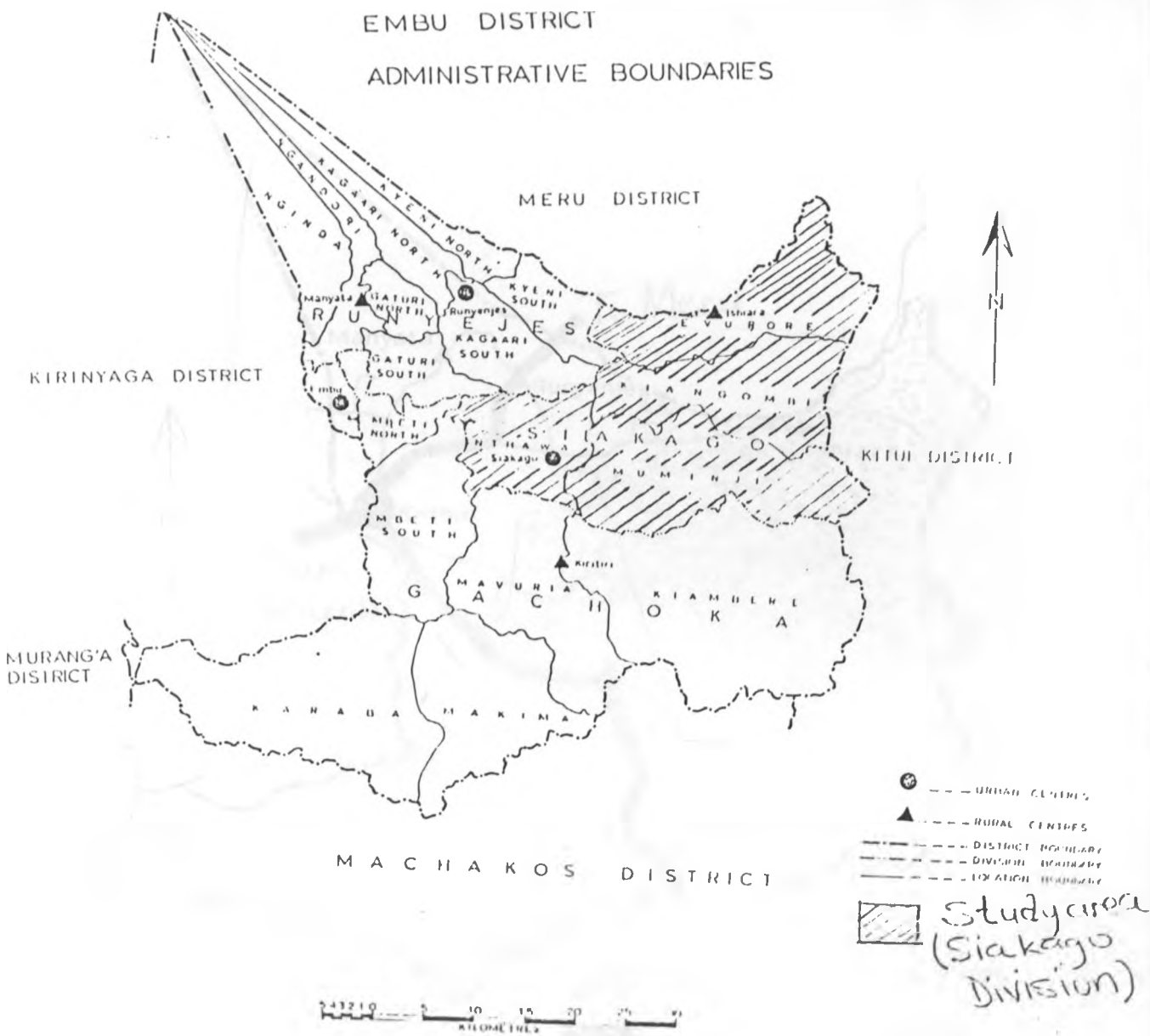
Simplified Agro-Ecological Zones



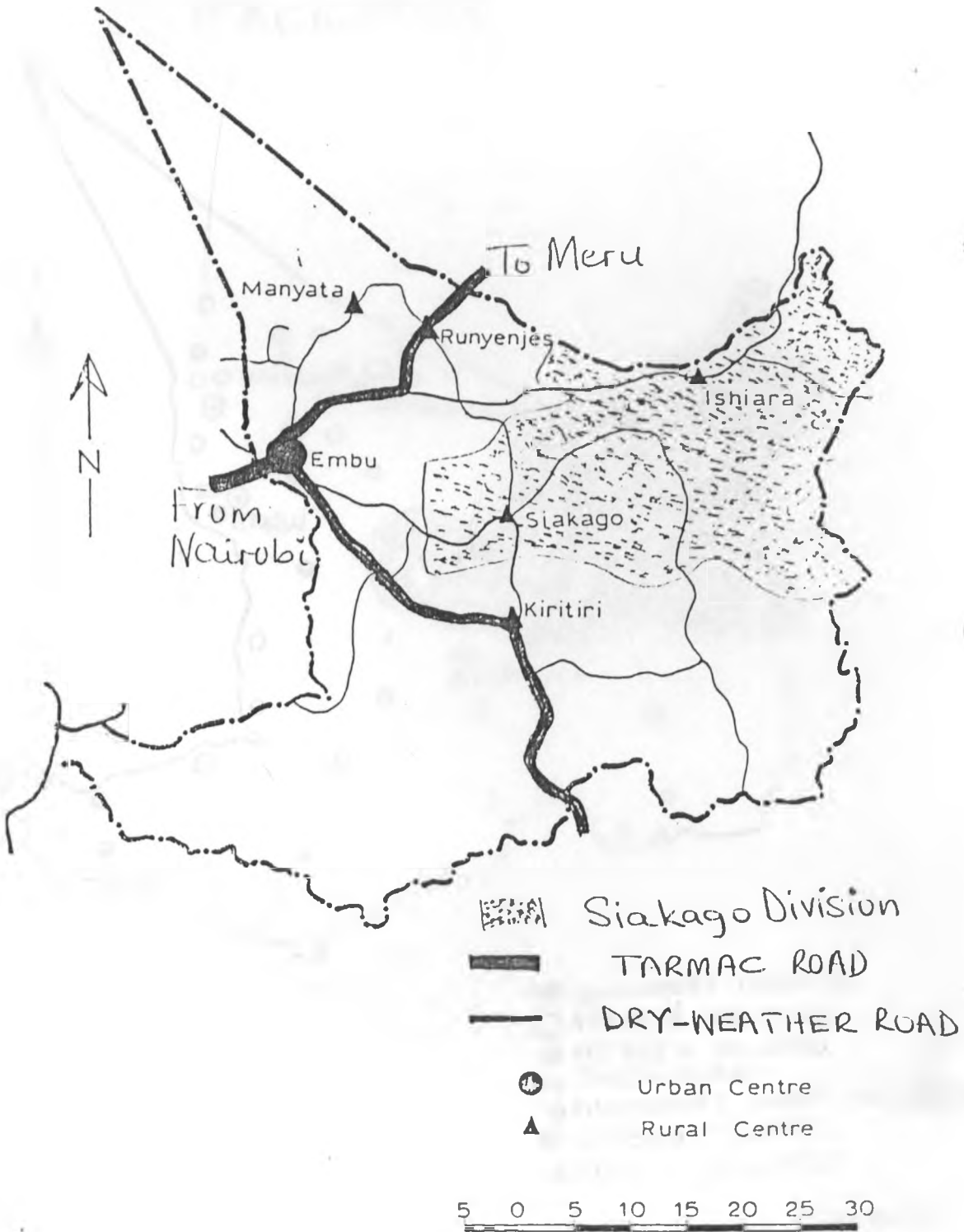
From Farm Management Handbook Of Kenya 1982
153

MAP 3

EMBU DISTRICT
ADMINISTRATIVE BOUNDARIES



MAP 4
Embu District
Roads



EMBU DISTRICT HEALTH FACILITIES

