OCCUPATIONAL HEALTH IN TANZANIA: A PILOT STUDY OF AN OCCUPATIONAL HEALTH CARE DELIVERY SYSTEM.

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Introduction

Occupational health in Tanzania receives less attention and comes low on the national priority list. This is due to the fact that the health authorities have concentrated their effort on "non-occupational" diseases characterising most of the developing countries including Tanzania. Given this general neglect of occupational health problems there is a need to understand how Tanzania's occupational health care delivery system has been responding to workers' health problems and needs.

This research was a result of support from the University of Dar-es-salaam and the International Development Research Centre (IDRC), Canada. The aim of the research was to analyse occupational health care delivery in a single occupational model with a view to design comprehensive studies aimed at improving occupational health policy in Tanzania. This is why, from its inception this research was conceived as a pilot project.

Objectives of the study

The general objective of the study was to study a sample of occupational health care delivery system in Tanzania. Specific objectives were:

(a) To review the statutory and policy framework for promotion of occupational health and safety in Tanzania and the perceptions held by policy makers regarding occupational health.

(b) To investigate the Knowledge, attitudes and practices of sugar plantation workers with regard to the health risk factors associated with sugarcane plantation work and the available protective interventions.

(c) To investigate the role played by the National Workers' Union (JUWATA) in the determination of interventive mechanisms and their enforcement to reduce occupational health problems.

(d) To investigate the policy, practice, and needs with regard to occupational health manpower in the sugar industry in order to identify discrepancies and to examine performance of the existing personnel.

(e) To investigate how and to what extent sugar estate workers are involved in reducing occupational health factors.

(f) To investigate the delivery of the general health services in an associated rural area to make a comparison between general health care and occupational health care delivery systems.

Methodology

Study population and sampling

This research was a pilot study of how the occupational health care system responds to health risks generated by plantation agriculture operations. The sugar plantation sector was selected for investigation because it is one of the oldest plantation undertakings in the agricultural sector in Tanzania. Secondly, it has a strategic position in the economy both as a source of food-stuff and foreign exchange earner. In terms of health impact, sugarcane plantations are still characterised by high occupational risk rates as they rely heavily on labour-intensive techniques in their operations (i.e. cane planting or ratooning and harvesting). These activities involve a large number of labourers (both casual and permanent) and are characterised by servile working conditions.

There are four large state-owned sugarcane estates in Tanzania, most of which are surrounded by private smallhold sugarcane outgrowers. These include Mtibwa Sugar Estate, Kilombero Sugar Company, Tanzania Planting Company, and Kagera Sugar Limited. Two of them, namely Kilombero and Kagera estates, have been randomly selected for intensive investigation.

Occupational health care systems are comprised of various participants; these include policy-makers, enterprise managers, workers' leaders, occupational health personnel and workers. All of these were the focus of this study. In each estate 100 permanent field workers were randomly selected to participate in the research. A stratified sample of policy-makers concerned with occupational

health in the Ministry of Health, Ministry of Labour and National Workers Union (JUWATA headquarters) was selected. At the estates, a stratified sample of managers and workers' union branch leaders was also selected. Another stratified sample of different categories of health personnel was selected for the study at the estates. For the purpose of comparing the general health care system and occupational health system 50 household were randomly selected. It was my intention to interview two adult persons (male and female) from each of the households selected for the survey. However, out of 100 respondents constituting the sample, only 89 (i.e. 43 males and 46 females) were interviewed. It was impossipble to contact 6 men and 2 women because they were absent during interview times. Furthermore, one household had no man, he had migrated for work in a distant place whereas two women were missed because 1 was admitted in hospital and in one household a woman had just passed away.

The health worker (i.e. head of the village dispensary) was also included in the study.

Data collection

Two methods of research, namely, interview and documentary research were mainly utilised for data collection. The methods used and the main items researched are discussed under each specific objective the study sought to achieve.

Occupational health policies (Objective (a))

In order to understand the nature of occupational health policies and the perceptions policy-makers hold on occupational health, key policy makers in the Ministries of Health and Labour and the National Workers' Union (JUWATA) and decision-makers (sugarcane estate managers) were interviewed. The interviews focussed on the nature of policy guidelines on occupational health formulated or adopted by each institution, efforts made to implement them and problems faced in their implementation. Sugarcane estate managers were asked to state whether they were obligated to implement policies formulated by national level institutions (i.e. ministries) or formulate and implement their own. Open ended interterview schedules were used to collect this information. Documents such as labour reports, legislation documents, ministers'

budget speeches, draft national health policy document, etc. were analysed to learn more about policy statements on occupational health as articulated by respective institutions.

Workers' Knowledge, Attitude and Practice (Objective b)

Information on workers' awareness of health risk factors and interventions (curative and preventive) for controlling them were collected by interviewing field workers. The respondents were required to name all health problems experienced in their occupation and to enumerate interventions that have been employed and those which have not been applied to deal with occupational health problems. Unstructured interview shedule was utilised for this purpose and a check-list of possible plantation health hazards was used to counter-check with those stated by respondents.

Role of workers' Union (Objective c)

To understand whether the National Workers' Union (JUWATA) is involved in the determination and enforcement of interventive mechanisms to control health problems in the work environment, in-depth interviews were conducted with trade union leaders at JUWATA headquarters and branches located in the sugarcane estates. The leaders were required to indicate interventions they have proposed, which ones have been implemented and in which way they have guaranteed their enforcement. Unstructured interview schedules were used to collect this information.

Occupational Health Manpower (Objective d)

Documentary analysis and interview methods were utilised to study occupational health manpower resources. Manpower registers and annual reports were reviewed to identify discrepances existing between the required and existing categories of health workers. The number of different categories of health workers was related to the number of workers served. With regard to performance, health statistics and accidents reports were utilised to understand the nature of health problems attended by the health workers and the frequency of occurrence of the health problems. The health workers were interviewed on the kind of problems faced in their performance of their job. The workers who are consumers of the health services were interviewed on whether they are satisfied with the services rendered. They were also required to give their experience

regarding recurrence of particular health problems and the way they have been tackled. Structured questioins to check the level of workers' satisfaction and open-ended questions to collect their opinion were formulated.

Role of workers in occupational health (Objective e)

Unstructured interviews were conducted to study involvement of workers in occupational health through health education programmes. Sugarcane estates, Trade Union leaders, health workers and field workers were interviewed on availability, operation, content, quality and impact of health education programmes in reducing health risks.

Comparison with non-occupational health services (Objective f)

Various aspects of the general non-occupational health services delivery system were investigated and compared - i.e sufficiency in different categories of health personnel, availability of drugs, supplies, and health education media. Interviews with the head of dispensary were conducted and manpower documents were reviewed to study sufficiency of manpower in terms of catchment population and attendance rates. The health workers were requested to explain the nature of problems encountered in the delivery of health services. Performance was generally measured by interviewing the consumers of the health services, i.e. the people within the catchment area.

Discussion of the findings

This study focused on six main areas which are clearly described in the six objective already mentioned above. In this section the research findings are respectively discussed under each objective.

Occupational health policy and legislation

This section looks at occupational health policy issues and implementation at both national and workplace levels. As pointed out earlier on, the focus of the study, with respect to policy was on policy-makers perceptions, policy guidelines issued and their implementation.

(a) National level

The policy-makers in the government were aware of the kind of problems related to occupational health implementation in Tanzania. They all believe that it is the responsibility of employers to take care of the health of their workers. The analysis of statements in government documents on occupational health also reveal a similar position[1]. State policy on occupational health in Tanzania, therefore, is based on what is known as "liability principle". In this principle an employer is liable for occupational health service provision.

As far as implementation of occupational health is concerned the government has created mechanisms to oversee such implementation. The formation of the Occupational Health Unit in the Ministry of Health is one of such mechanisms. In the Tanzania's Second Five Year Plan for Economic and Social Development (1969-1974), the Ministry of Health expressed that as far as occupational health is concerned, the ministry had two responsibilities. First, is providing inspectory and advisory services for medical facilities provided by industrial employers, and second, is identifying occupational diseases, industrial poisons, etc. and prescribing for their treatment[2]. To carry out these functions the ministry decided to establish an Occupational Health Unit. The Unit is manned by one person, a senior health officer, and operates under the Health Ministry's Directorate of Preventive Services.

Although the Ministry of Health is not mandated to carry out labour inspection, its Occupational Health Unit makes visits to industrial undertakings to conduct inspections and to give advise on how to improve health and safety at workplaces. The unit, therefore, does not give guidelines that employers are bound to implement. The unit plays an advisory role in ocupational health practice.

However, due to a number of factors the role of the Occupational Health Unit in improving workers' health and safety is limited. Firstly, the advisory role of the Unit can only be of help if the recommendations of inspection reports are implemented. It is the discretion of the employers to accept the advice of the Unit. Not all

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[1] See the Ministry of Health's draft national health policy, and the Factories Ordinance, 1950

[2] See United Republic of Tanzania, Second Five Year Plan for Economic and Social Development, (1969-1974).

employers implement the recommendations of inspection reports. The Unit lacks an effective mechanism to enforce its decisions. Time and other resources are wasted if the results of inspection do not create any impact on occupational health improvement.

Secondly, the unit lacks manpower for the job. The unit depends on the health officers stationed in the districts to visit workplaces. But these officers have a big workload for they are at the sametime needed by the general health care services to do preventive work.

Thirdly, one notes lack of cooperation between the Unit and, let say, the Factories Inspectorate which does similar duties. Although the Ministry of Health talks about multisectoral collaboration in its Primary Health Care oriented policy[3], the Occupational Health Unit does not put it into practice. Occupational health is one of the areas that multisectoral collaboration is urgently needed. This limitation reveals the underlying weakness of the national health policy in relation to guiding occupational health in Tanzania.

However, some problems related to occupational health implementation were revealed at the Occupatinal Health Unit. These are lack of a clear policy to guide occupational health in the country, lack of guidelines to ensure standards, lack of supervision of occupational health services, more emphasis on economic considerations than occupational health provision (e.g. no foreign exchange allocation for procurement of protective devices), lack of coordination of occupational health and safety activities, and lack of manpower trained in occupational health.

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[3] See Ministry of Health, PHC guidelines, 1983.

The other mechanism which the government has created for occupational health implementation is enactment of occupational health related pieces of legislation and establishment of the labour inspectorate known as the Factories Inspectorate. These mechanisms were provided during the colonial period and were inherited by the post-colonial government. The government issues occupational health guidelines through laws and regulations. The Factories Inspectorate is a special government body entrusted with enforcement of these laws and occupational health related regulations issued by the government from time to time. The main occupational health related pieces of legislation are the Workmen's Compensation Ordinace, Factories Ordinace and Employment Ordinance and The Factories (Occupational Health Services) Rules. Before looking at the Factories Inspectorate let us examine these pieces of legislation.

The Workmen's compensation Ordinance[4] was enacted in 1948 and came in force on 1st July, 1949. The ordinance was based on the British Workmen's Compensation Act of 1925 and the International Labour Conventions relating to both compensation for work accidents and occupational diseases. The Workmen's Compensation Ordinance statute covered all workmen, regardless of the type and duration of their contracts of service whether manual or non-manual except a person whose earnings axceeded shs. 10,000 per year and a person whose employment is of a casual nature.

The workmen's compesation law imposed strict liability on employers to compensate workmen who have suffered personal injury or other disability. Section 5(1) of the Ordinance provided that:

> "If in any employment personal injury by accident arising out of and in the course of employment is caused to a workman, his employer shall.....be liable to pay compensation in accordance with the provisions of this ordinance."

To be entitled to compensation under the ordinance, the workman must have been incapacitated from earning full wages for at least three consecutive days.

Occupational diseases, were defined as those contracted within twenty four months prior to the workman's disablement or death and listed in the Third Schedule appended to the ordinance, were

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[4] See the Workmen's Compensation Ordinance, 1948.

considered as work injuries in the same way as personal injury caused by occupational accidents.

The amount of compensation payable was linked with the type of injury and the amount of earning of a workman. Thus if a workman suffer death as a consequence of an accident at work his dependants are entitled to thirty six months' earnings or shs. 14,000, whichever is less. In case of temporary incapacity the injured person was entitled for periodic payments which in the case of total temporary incapacity was half the monthly earnings every month up to the maxmum of ninety six months. For total incapacity the compensation payable was fourty eight months' earnings or shs. 34,000, whichever is less, although the minimum should not be less than shs. 2,000. Compensation for permanent partial incapacity was computed by reference to the second schedule which gives the list of possible permanent injuries against each of which is given a percentum, to indicate the degree of disablement.

However, in 1983, this law was amended. The earnings ceiling in respect of non-manual employees covered by the legislation has been removed and all workmen irrespective of their earnings are on the whole covered by the compensation legislation. The maximum compensation in fatal cases is now shs. 83,000, and the maximum for occupational injuries is shs. 108,000. The list of compensable occupational diseases (Third Schedule) has also been expanded from 16 to 35 classes of diseases[5].

Two types of compensation systems, namely employer's liability system and social insurance are common. In employer's liability system the employer is held responsible by law, even if no fault attaches to him, to compensate an employee at prescribed rates for any injury suffered by him while at work. Social insurance is based on the principle of "socialisation" of compensation. In other words, social insurance schemes provide for the pooling of the cost of benefits. This means that financial contributions have to be made to a fund intended for compensation purposes. The former is the predominant system in Africa. It is the system still applied in Tanzania. However, The employer's liability system has many serious shortcomings.

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[5] See Workmen's Compensation (Amendment) Ordinance, 1983.

Firstly, the payment level, nature and duration of benefits are sometimes circumscribed. In the case of permanent disability and survivors' benefits, the victim or his survivors can only quality for a lump-sum payment. This mode of benefits payment entices the victim to spend the entire grant within a fairly short space of time. Under such circumstances effective protection is not guaranteed since the victim finds himself both penniless and helpless. This problem exposes the basic weakness of workmen's compensation systems, that they are not built on the principle of social security. Compensation payment for occupational disability is made as long as employment relations exist. Once these are terminated disability or death effects are taken care of by the victims.

Apart from this anomaly the law is basically discriminatory for compensation payment is based on the wage level. For example, if two workers suffer same disability but belong into different wage scales the amount of compensation would be different. In this respect compensation is not based on pain, suffering and other related consequences.

The quantum of compensation is usually very small. (Shivji, 1986). This observation was confirmed at the Factories Inspectorate. Since it is the lowly paid workers who are involved in, and are likely to suffer the consequences of production processes, the amount of compensation for disability is bound to be small. The study by Barker, et. al. (1986) rightly commented that in Tanzania the amount of compensation was ridiculously inadequate. The study gave an example of a worker in a certain enterprise who suffered a permanent disability (lost a whole hand) but got a mere Tsh. 3,000 in compensation.

Moreover, the amount of compensation is not only small but also vulnerable to adverse effects of high inflation levels. (Marin Quijada, 1979; Kapinga, 1989). At the current inflationary rate (between 20 and 30 percent) in Tanzania, the amount of compensation prescribed by the law for permanent disability (i.e. Tsh. 108,000) is not sufficient to sustain the life of a handicapped person. Clearly, this compensation system does not take into consideration the social and economic consequences of disability.

Another problem with the system is related to administration of compensation. Difficulties have been felt in the area of procedure for obtaining the compensation. The settlement of a compensation claim is

so slow and bureaucratic that it takes several months before compensation money is paid. A number of researches conducted in Tanzania have revealed this problem. One researcher refers to a report that of the 7,569 claims for compensation lodged between 1976 and 1978, 1,687 (22%) had not yet been processed by March 1980[6]. Another research observed that it takes more than one year for a worker to be paid his compensation money[7]. A recent research conducted in Dar-es-salaam and Coast regions found that of the 6,256 claims for compensation lodged between 1979 and 1982, 3,606 (58%) had, by the end of October 1983, not yet been processed[8].

Furthermore, undertakings are sometimes faced with financial constraints leading to failure in benefits payment. This is the case, for example, with small and medium-sized undertakings who usually have relatively modest financial resources at their disposal. It is not surprising that employers in large undertakings may as well become insolvent.

Secondly, the employer's liability principle necessitates keeping an eye on employers to ensure that the obligation to pay benefits, for example, medical costs is effectively fulfilled. If no checks are instituted employers may employ all sorts of manoeuvres to keep the cost of compensation down. For example, employers can exert pressure on their workers to limit their claims, or persuade them to start work again before they are completely cured. This may happen, particularly, in situations where workers are faced with unemployment threats.

Thirdly, coverage is limited. Many categories of workers, for example, domestic workers, casual workers, and others, especially workers in small undertakings are excluded under the employer's liability system. When the question of compensation is raised in relation to controlling occupational injuries of self-employed workers (e.g.peasant workers) the weakness of the existing compensation system is glaringly exposed.

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[6] Hirji, K.F. "Accidents at Work: The case of Motor Vehicle Workshops" National Institute of Transport, Dar-es-salaam, mimeo, 1980.

[7] See Baker et al., 1986, p.161

[8] See Kapinga, W., 1989, p.92

This limitation is an important one since the economies of the developing countries mainly comprise of small agricultural and industrial enterprises. The question of health care for self-employed workers and those employed in small undertakings is a real challenge to policy-makers in the developing countries including Tanzania.

Fourthly, compensation for occupational diseases is another controversial area. The controversy sorrounds the definition of an "occupational disease". As we have seen above a list of 35 classes of compesable diseases has been drawn and appended to the Workmen's Compensation Ordinance. Several other African countries have drawn such lists under the influence of the ILO Workmen's Compensation (Occupational Diseases) Convention, 1925 and the Workmen's Compensation (Occupational Diseases) Convention (Revised), 1934 (No. 42)[9]. Nevertheless, the lists are limitative because the inclusion of diseases in a list is based on how occupational diseases are defined. Diseases which are intimately linked to the conditions of work, for example, heart diseases, psychosomatic diseases, physical and mental stress, are not included in the lists.

In addition there are other factors explaining inadequacy in compensation for occupational diseases. Information about occupational diseases is fragmentary and sometimes non-existent. For example, looking through the annual reports of the Labour Department (1980-1985) it is evident that not even a single occupational disease is reported to have been compensated during 1980-85 period. This may be attributed to under-reporting and lack of trained occupational health manpower and diagnostic facilities to detect diseases. Thus some diseases pass unrecognised. Even if trained manpower and diagnostic facilities were in place still the problem remains; that some diseases such as cancers manifest after a long period. In case of termination of employment the sufferer of diseases of such kind would not receive compensation.

Due to these and several other shortcomings the workmen's compensation system was abandoned in Britain. It is hard to understand why the Tanzanian government has not discarded this system despite the fact that the legislation (Workmen's Compensation Ordinance) which introduced the system was tailored along the British Workmen's Compensation Act of 1925.

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[9] See Mouton,p. and Voirin, M, 1979, p.474

Apart from the problems associated with the implementation of compensation procedures, it is questionable if compensation, in itself, is a sufficient deterrent against occupational health hazards. Compensation procedures are not in place to prevent the occurrence of occupational accidents and diseases. (Mouton and Voirin, 1979; Marin Quijada, 1979). Inspite of the fact that legislation and compensation systems have existed for quite some time in many countries, occupational accidents and diseases have continued to damage workers' health. Prevention approaches are considered to be better than compensation arrangements.

The question of prevention is not simple, it touches on policy, i.e. commitment of resources by both government and employers so that the basic requirements relating to hygiene and safety can be provided.

Social security can be adopted in order to take care of the problems associated with the existing compensation systems. The effects of disability could be dealt with fairly with social security arrangements. This study did not go into details of social security arrangements that could be adopted in Tanzania. The subject requires further research.

The other occupational health related piece of legsiation is the Factories Ordinance, 1950 which came in operation on 1st January, 1952. This ordinace, like the Workmen's Compensation, was borrowed from Britain (the UK Factories Act of 1937).

Part IV of the ordinance deals with general health. This includes provisions on cleanliness, overcrowding, ventilation, lighting, drainage of floors, sanitary convenience, etc. The ordinance, in part V, deals with safety ralated to fencing of dangerous machinery, guarding against dangers emanating from lighting machines and equipment such as ropes, chains, crains and tackles. There are provisions to guard against fire, poisons, liquids, inflammable dust, gas vapour, etc[10].

The ordinance placed the responsibility of its administration and enforcement on the labour commissioner (head of the labour department) and gave the Governor powers to appoint a chief factory inspector and other inspectors. Hence, the Factories Inspectorate was

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[10] See the Factories Ordinance, 1950.

created by the provision of the Factories Ordinance, 1950 as a mechanism for its implementation.

The Factories Ordinace (sections 68, 69 and 70) gave the inspectors fairly wide powers of inspection, examination and investigation as well as prosecution in law courts for non-compliance of the ordinace.

As Shivji (1986) has argued this ordinance was "fairly comprehensive so far as safety at the workplace was concerned and theoretically should have played an important role in safeguarding the life and limb of the workmen". Implementation of the Factories Ordinance is examined below together with the Factories Inspectorate.

Another occupational health related piece of legislation which is the Employment Ordinance. The ordinance was passed in 1955 and was brought in force on 1st February, 1957. Part VIII of the Employment Ordinance stipulated the "care and welfare" provisions on housing, feeding and medical care of the recruited employees. Under these provisions employers in Tanzania are obliged to provide proper medicines during illness and also if procurable with medical attendance during serious illness[11]. Also under section 47(1) medical examination was made compulsory for every employee before he took up employment. The ordinance also provided for labour officers to inspect workplaces.

In 1985, the government issued a statement on Workers' health care services. The statement was announced in the form of rules. Under section 55 of the Factories Ordinance the Minister for Labour is empowered to make rules for health, safety and welfare of workers. Thus, "The Factories (Occupational Health Services) Rules, 1985" were published on 3rd january, 1986[12].

These rules defined "occupational health servises" as "services entrusted with essentially preventive functions". According to the rules the main role of an occupational health service is to advise employers, workers and their representatives on matters pertaining to workers' health and safety in general.

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[11] See the Employment Ordinance, 1955.

[12] See The Factories (Occupational Health Services) Rules, 1985.

The functions of occupational health services are given in section 3 of the rules. These can be summarised in four broad functions:

> 1) surveillance of factors in the working environment which may affect workers' health and surveillance of hygiene of sanitary installations and all other facilities for the welfare of the workers
>
> 2) compilation and periodic review of statistics concerning health conditions in the workplace and providing the workers with necessary information and training about health hazards arising from work and working environment.
>
> 3) conducting pre-employment and periodic medical examination to ascertain workers' health conditions.
>
> 4) organisation of curative health services for the workers, including first aid and emergency treatment provisions and if necessary for the workers' families.

Under these rules employers were made responsible for making occupational health services available to the workers. It is stated in section 4(1) that 'If the number of workers exceeds four hundred but less than seven hundred, in one single place, the establishment shall employ an experienced trained nurse who will undertake such medical attention and provide a medical doctor to attend and treat them at a place chosen by the establishment for this purpose' and 'If the number of workers exceeds seven hundred, the establishment will in addition provide them free of charge with all necessary treatment whatever they need including treatment by specialists, surgical operations, hospitalisation and medicines'.

Different modalities of occupational health services organisation are provided in section 5 of the rules. That, services can be organised for a single undertaking or as a service common to a number of undertakings or as institutions independent of the undertaking.

Workers are required by the rules to participate in medical examinations conducted by the occupational health services and are obliged to excute workers' health an safety instructions designed by employers. The rules also require employers to keep necessary records concerning workers' health and development of illness at workplaces.

As pointed out above the Factories Inspectorate is responsible for enforcement of occupational health and safety legislation in Tanzania. Let us see how it fulfills this responsibility.

The Factories Inspectorate is a section of the Labour Department, with its headquaters in Dar-es- salaam, the capital city. At the headquaters, the inspectorate is structured into four units, namely, the technical, occupational health, industrial hygiene and training and statistical units. The technical unit is generally responsible for all safety engineering matters whereas the occupational health unit takes care of all medical aspects, including occupational diseases. The industrial unit deals with monitoring of the work environment. The training and statistics unit is responsible for coordination of training for inspectors as well as for organising training to employees from industry and employers alike. The unit also takes care of record keeping and information dissemination.

Table 1: Staff position, Factory Inspectorate,

Staff Category	1983	1984	1985	1989
Chief Inspector	-	-	-	-
Sen. Inspector I	-	-	1	1
Sen.Inspector II	5	5	4	7
Inspector I	4	4	4	12
Inspector II	18	24	28	15
Inspector III	-	-	-	2
Asst. Inspector	2	2	2	1
Medical Inspector Occpational	2	2	2	2
Health Nurses	2	3	4	4
Nursing Asst.	-	-	-	3
Statistical Asst.	1	1	1	2
Total	34	41	46	49

Source: Labour Department, Annual Reports, 1980-85, p.23; figures for 1989 are from Monyo, R., "Situational analysis of occupational health and safety in Tanzania", East African Newsletter on Occupational Health and Safety, Supplement 2/1991, p.9

Besides the headquaters which is the nucleus of the Factories Inspectorate, there are 20 regional Area Labour Offices, out of which 12 are staffed with at least one factory inspector each. All these units are under the leadership of the Chief Factory Inspector.

The Factories Inspectorate has faced a number of problems in its activities particularly with regard to labour inspection. The first problem relates to shortage of manpower, financial and material resources. There exists a strong belief at the factory inspectorate that if the inspectorate is adequately staffed and regular visits to the workplaces made, occupational health and safety hazards would be minimized. The inspectorate has been unable to render labour inspection services efficiently due to shortage of labour inspectors.

Table 2: Budgetary Allocations, Labour Inspectorate, 1987/88 - 1990/91. (Tshs-'000)

Year	Ministry of Labour Budget.	Trai-ning.*	occupa-tional Health Clinic	Factory Inspe-ction.	Trans-port& trave-lling*
1987/88	489,972 (0.20%)	973 (0.10%)	495 (0.08%)	440 (0.40%)	2,000
1988/89	677,353 (0.13%)	921 (0.10%)	701 (0.07%)	493 (0.43%)	2,925
1989/90	845,246 (0.12%)	992 (0.09%)	756 (0.06%)	531 (0.37%)	3,150
1990/91	1,045,526 (0.36%)	3,812 (0.08%)	874 (0.05%)	575 (0.50%)	5,250

* budgetary expenditure for all sections of the Labour Department and not only for the labour inspectorate.

Source: Factory Inspectorate, Department of Labour.

The staffing levels indicate that the inspectorate has never been adequately staffed since independence. In 1964, for example, there was one inspector; by 1968 there were only four inspectors to assist the chief inspector[13]. Due to shortage of inspectors during the 1960s inspection services had been carried out on a contract basis by individuals who were approved inspectors, on a fee and expenses basis. These expenses were paid by the inspected workplaces[14]. These arrangements, however, were considered to be

[13] See Monyo, R.,"Situation analysis of occupational health and safety in Tanzania", East African Newsletter on occupational health and safety, Supplement 2/1991, p.8.

[14] United Republic of Tanzania, Second Year Plan, 1969-1974, p. 160

unsatisfactory. During the Second Five Year Plan (1969-1974), the government proposed that inspections should be carried out by qualified civil servants under the direct control and supervision of the chief factory inspector. But the proposal retained the idea of inspection services costs to be borne by employers.

In the early 1980s the labour inspectorate embarked on a recruitment drive. As table 1 shows, in 1985, out of 46 inspectorate staff 41 were inspectors of different categories. There was a negligible decline in the number of inspectorate from 41 in 1985 to 39 during 1989/90 period. The number of inspectors rose again to 45 in 1991[15].

This number is small relative to inspection work the inspectorate is required to do. In 1991, 15,000 factories were registered with the Factories Inspectorate. It is the inspectorate's policy that each factory should be visited at least once per year. Which means with 45 inspectors each inspector has to carry out inspection services in 334 enterprises per year. Since it was practically impossible to visit all these enterprises more hazardous ones were inspected. This means implementation of the safety and health provisions of the Factories Ordinance in the workplaces which are left without inspection services is not known. It is, therefore, clear that the government has no knowledge of whether or not the health problems and needs of workers in these workplaces are met.

Apart from the shortage of manpower problem inspection services are adversely affected by lack of adequate financial and material resources. Table 2 shows budgetary allocations to the Factory Inspectorate. The figures show clearly that the inspectorate is underfunded. The amount of money allocated to factory inspection is very small relative to the work to be done. For example, table 2 shows that the Ministry of labour allocated 0.08, 0.07, 0.06 and 0.05 percent of the total ministry budget in 1987/88, 1988/89, 1989/90 and 1990/91 respectively for inspection services. It is interesting to note that there has been a decreasing trend in the financing pattern of inspection services since 1987.

Inadequate financial resources at the inspectorate's disposal explains why shortage of inspectors exists. With such financial constraints recruitment of labour inspectors becomes a difficult task.

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[15] Interview with Chief Factory Inspector.

It is not easy to attract good or properly qualified personnel to join the inspectorate service and to retain qualified staff since no financial incentives are offered. (Baloyi, 1989).

In addition, under such circumstances inspection services are likely to suffer from lack of proper office equipment and supplies and transport facilities. There were complaints related to this problem at the Factory Inspectorate. Acute shortage of transport was one of the problems hampering efficient running of inspection services. Transport problems negatively affect inspection services since the frequency of visits to the workplaces by inspectors is reduced.

Secondly, the quality of labour inspection services is affected by lack of professional training and experience. In most developing countries training facilities for inspectors are limited. (Baloyi, 1989) Lack of proper training affects the inspectors' ability to inspect, spot the hazards and render suitable advice for remedial measures. In Tanzania, the Factory Inspectorate still faces the problem of training its manpower. The inspectorate has begun recruiting university graduates but opportunities for training in occupational health are limited since training is allocated meagre resources. Table 2 shows that the Ministry of Labour allocates less than 1 percent of its budget for training the manpower of the Labour Department as a whole.

However, in the early 1970s the Tanzanian government approached the ILO in order to seek assistance in strenghtening the inspectorate. That assistance was obtained through the ILO-FINNIDA project, "Strengthening of the Factories Inspectorate", which lasted for two years, beginning in 1983. Under this project inspectors received on-the-job training locally, a few were trained abroad through study tours, certificate courses and post-graduate courses. The problem with projects such as this one is that once assistance ceases everything stops. Assistance can only give relief but does not solve the problem. The only effective way is the government to commit sufficient resources to meet the training requirements of the labour inspectorate.

Thirdly, enforcement of the provisions of occupational health and safety legislation remains a basic problem. The sanctions provided for under the Factories Ordinance are not a sufficient deterrent against unsafe working conditions. The main assumption

built into the law is that for fear of prosecution employers would pay attention to the health and safety of their workers. There are some who argue that fear of prosecution cannot be counted upon to prevent infringement of law.

Prosecution of recalcitrant employers may sometimes prove to be a difficult task. Only small percentage of infractions are brought to court. For example, Shivji's (1986) study based an a random sample of fifty five industrial accidents notified to the Tanzanian labour department over a period 1956 to 1962, found that there were only six prosecutions when in three-fourth the labour inspectorate found the conditions to be unsafe. Moreover, when employers are taken to court, they are sometimes acquited on some technicality. Furthermore, if employers who violate the law are convicted the fine imposed are nomally not very high. (Greenberg, 1973; Shivji, 1986; Noweir, 1986).

The fines have no impact at all on profitability of the convicted undertaking since they may be deducted from income tax and treated as business expenditure. Sometimes an undertaking may reckon that it is cheaper to be fined than to make the outlay required to rectify the situation. (Greenberg, 1973).

Fourthly, coverage of inspection services is circumscribed. Labour legislation generally applies to registered undertakings especially large ones. Factory units which employ 10 to 49 workers are covered by the Factories Ordinance. But those employing less than 10 workers are not covered by the law. The latter are categorised as non-factory or artisanal establishments. Apparently those enterprises which are not registered by the Factory Inspectorate are not inspected. Since the majority of small industrial concerns are not registered many workers are left unserved by inspection services.

Although labour legislation covers large undertakings, inspection services are not carried out in large plantations in Tanzania. The flaws of the law with respect to coverage was noted by the Tanzanian minister for labour during official opening of the Regional ILO-Finnish Symposium on Occupational Health and Safety in East Africa, at Marangu, Tanzania. He noted that:

> "it is unfortunate that occupational health and legislation in most African countries takes care of factory workers

only. Workers in farms and offices, and peasants are not covered[16].

Under the Factories Ordinance plantations are not categorised as factories. The inspectorate is therefore not empowered by this law to carry out inspection services in the plantations. Although the inspectorate is aware of the hazards associated with the use of pesticides in plantations there is nothing it can do to control them.

Furthermore, when the question of self-employed peasants (who are the majority in most developing countries) is taken into account the Factories Ordinance becomes irrelevant. It is not fully suited to the actual conditions of work in Tanzania.

All these shortcomings discussed above indicate that the Factories Ordinance lacks effective mechanisms for its implementation. Demands for improvement of the ordinance so that its stipulation should be based on the real work situations of Tanzania have been voiced. For example, a national seminar on prevention of fire accidents in industries in Tanzania made out demands and several suggestions to the government for industrial safety. One of the demands was revision of the Factories Ordinance. The revision started ten years ago by the Labour Department but up to the present day it has not been forwarded to the parliament for approval.

To overcome the shortcomings of the colonial legislation such as the Factories Ordinance, some countries in Africa have enacted new laws corresponding to the realities of work conditions in their countries. Examples of these countries are Kenya, Seychelles and Mauritius.

Similarly, to encourage promotion of occupational health, the government has been requested to elevate the Factories Inspectorate to the status of a department. One of the recommendations made by the ILO-Finnish-Tanzania Symposium on Occupational Health, Marangu, 1984, was that "a special department of occupational health and safety with sufficient resources and authority should be established

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[16] See the opening speech of the workshop on occupational health in East Africa, by the Minister for Labour, in Kurppa, K., et al., (eds), Proceedings of the Regional ILO-Finnish Symposium on Occupational Health and Safety in East Africa, Marangu, Tanzania, Nov., 1986, p. 6.

within the Ministry of Labour". The government had not made a decision on this issue when this study was conducted.

At the National Workers' Union (JUWATA) headquarters, there was almost nothing in terms of influencing occupational health policy formulated at national level. However, workers' union had already considered to establish a department to take care of occupational health in the country. Apart from that the workers' union's agriculture department had once issued guidelines on protection of farm workers against health hazards arising from pesticides use. The workers' Union headquarters issued a circular[17] to all its agricultural sector branches and regional and district offices alerting them on the dangers of hazardous chemicals used in plantations. The circular urged the branch officials to take necessary measures to protect workers against the chemicals and was copied to all heads of important organisations employing agricultural labour in the country.

(b) Workplace level

The managements in the sugarcane enterprises were aware of the kind of health hazards faced by workers in the sugarcane plantations. They have responded variously to these health hazards. The managements of both sugar enterprises i. e. Kilombero Sugar Company (KSC) and Kagera Sugar Limited (KSL) agreed that the government has created mechanisms for occupational health implementation at enterprise level. However, sometimes the enterprises adopted their own policies. For example, apart from the national policy framework, KSC adopted its own company safety policy. Now let us see how occupational health has been implemented and the problems encountered in its implementation.

One of the measures created as a response to workers' health problems is organising health services for workers. Both KSC and KSL have relatively large hospitals serving the workers, their families and the communities surrounding the estates. For example, KSC has a 120-bed hospital manned by 3 Medical Officers, 8 Assistant Medical Officers and a large number of other health personnel. In addition to the hospitals, satellite health units (health centres and dispensaries) have been established in the camps. KSC has 1 health centre and 3 dispensaries while KSL has 5 dispensaries.

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[17] See circular Ref. No.AG. 10/15/1/102 dated 15 December, 1990)

These plantation health services were heavily biased toward cure given the heavy burden of infectious diseases in those areas (see Apendix 1 and 2). However, these health services have some component of prevention (i.e. general preventive services, e.g. maternal and child health, immunization, etc.) and some elements of occupational health.

At KSL I was made to understand that the company had not considered occupational health in its plans. During my interviews at KSL the management admitted that the company had not invested in protecting workers against occupational hazards. The reason for this was that the company had been facing serious financial problems. According to the managers the financial problem was so acute that the company could not provide the workers with protective devices. It was in the 1991/92 financial year that the management had budgeted for provision of protective equipment.

Attempt was made at KSC to organise prevention oriented health services for the workers. The company took three steps to promote occupational health. It secured membership in the Tanzania Occupational Health Services (TOHS), established a Health and Safety Committee and adopted the company safety policy and regulations.

KSC became member of group occupational health services since the Dar-es-salaam Group Occupational Health Service (later TOHS) was started in 1967. KSC remained member of the group service for a long period, attended every Group annual meeting and during that period 3 of its employees were given training in occupational health by the Group service[18]. Notwithstanding, it became apparent that KSC was not benefitting from the group service arrangements because of the great distance separating the company and the Dar-es-salaam-based TOHS. Hence in 1980 KSC withdrew its membership quietly[19].

KSC established the Health and Safety Committee on 25 April, 1983. The committee was formed out of pressure from some of the company employees. The idea of health and safety committee

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[18] See Mwalla, T., "Afya za Wafanyakazi Viwandani, Kiwanda cha Sukari Kilombero kama mfano", Paper presented at the Regional and Urban Health Inspectors, Morogoro, November, 1988.

[19] Interview with the company health officer who is secretary of KSC health and safety committee. See also Mwalla, T., op. cit.

formation was introduced to the management as far back in May, 1980 by some of those employees who had undergone training in occupational health. But it was not until 1982 when the idea began to materialise. It was during a lengthy and intensive meeting held on 16 and 23 June, 1982 that the formation of the health and safety committee was determined[20].

The health and safety committee is the KSC's policy making body for all matters pertaining to health and safety. The structure of the committee follows the KSC's organisational structure. KSC is structured into two main agro-industrial units (K.I and K.II) under one organization. Likewise, the Health and Safety Committee is structured into two sub-committees, one at K.I and the other at K.II with the KSC main committee above them. The sub-committee is composed of:

- Chief Engineer (Factory)
- Chief Chemist (Factory)
- Medical Officer
- Assistant Agricultural Manager
- Assistant Chief Mechanical Engineer (Workshop)

K.I and K.II sub-committees report all occupational health related problems to the main committee. The main Health and Safety Committee is composed of:

- Head of health service/Med. Officer - Chairman
- Health Officer - Secretary
- Production Manager - Member
- Chief Mechanical Engineer (Workshop) - Member
- Insurance officer - Member
- Representative of Party branch (CCM) - Member
- Trade Union (JUWATA) branch secretary - Member

KSC's health and safety committee was formed with three main objectives:

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[20] See the minutes of the meeting on the formation of the Health and Safety Committee, Kilombero Sugar Company Health and Safety Committee file.

"to protect the workers against any injurous occupational health hazards at work and work environment".

"to provide a conducive environment to the workers so that they feel they are part and parcel of the work physically, mentally and environmentally".

"to make sure that the working environment is safe for the workers and protective facilities are provided and used as required by national laws".

The Health and safety committee was assigned the following responsibilities:

i) to visit all working places and advise the areas of occupational hazards where necessary.

ii) to scrutinise and deliberate on all different accidents occurrances.

iii) to coordinate with the insurance office in order to get statistical data and any other related information regarding compensation.

iv) to make sure that proper measures are taken in advance to prevent accidents in the working

v) to give advice to the management on safety as a whole.

vi) to make evaluation and analysis of the occurrances and interprete them as required.

Since the inception of the occupational health and safety committee the analysis of all agro-industrial occupational health hazards have been identified and much of the basic data on them have been collected[21].

After the formation and operation of the health and safety committee, KSC formulated a health and safety policy. The policy was adopted on 1st May, 1986[22]. The policy was released in form of regulations. Some of the important regulations are as follows:

"Everybody is expected to cooperate in minimizing or preventing potentially dangerous safety hazards."

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[21] See the Annual report of the Health and Safety, Committee for 1986, Kilombero Sugar Company.

[22] See the Company Safety Policy and Regulations, Kilombero Sugar Company.

> "It is the duty of every employee to keep his workplace and working environment tidy. Report to his/her supervisor any impeding safety hazards."
>
> "ensure that every employee is provided with protective devices as recommended by the safety regulations. For non-compliance while on duty, action will be taken in accordance with the Factories Act. All protective devices should be in good condition and suitable for the job."

However, when the workers, trade union leaders and the commpany health workers were interviewed, it was clear that the objective for which the Health and Safety Committee was established had not been achieved. Although the monitoring of the work environment was done and the main occupational health problems had been identified by the committee[23], effective measures to protect all workers were not forthcoming from the management. For example, almost all plantation workers, particularly the casual and seasonal workers[24], were not provided with protective equipment (clothing, boots, rain coats, etc.). Only a few departments, and in those departments, only a few workers were given protective gear.

There were also complaints from some members of the health and safety committee that the committee was inactive. The committee inaction was attributed to change of the company's management in 1988. The committee had stopped to meet as it used to do in the past. According to a letter to the chairman of the committee dated 7 October, 1989 from one of the committee members[25] , the committee had not met since 18 March, 1988. The letter urged the chairman to call a meeting since there were a number of occupational health and safety issues which needed the committee's attention.

When the issue of financial support for occupational health programmes was raised with the managers, it was clear that little had been done to protect workers againsts health hazards. For example, when the question of lack of protection of farm workers'

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[23] See the Annual Report of the Health and Safety Committee for 1986.

[24] See minutes of the Kilombero Sugar Company Health and Safety Committee meeting of 18 March, 1988. Casual workers, particularly cane cutters were provided with only sandals as protective equipment. The minutes show that on top of sandals the management was planning to provide casual workers with shorts.

[25] This committee member is also KSC Trade Union (JUWATA) branch secretary.

health was raised the management argued that the company was doing what it could for occupational health and observed that the health and safety committee chairman knows the company's contribution towards occupational health. Actually one of the managers observed that the company was spending enough money compared to the profit made by the company. However, the chairman of the health and safety commitee argued that the company was spending very little on occupational health. As already noted above workers' needs for protective equipment in all departments and sections had not been met by the company. Lack of support from the management was a major problem affecting performance of the health and safety committee which had made concrete proposals for improving occupational health in KSC.

In both KSL and KSC workers were aware of the health risks associated with agricultural occupations. In fact all the possible health hazards of agricultural operations (i.e. snake bites, insect bites, injuries due to accidents, pesticides poisoning, falls, allergies from plants, dangerous animals and parasitic diseases) were mentioned by the workers who participated in the study.

Table 3: Health hazards in Kilombero and Kagera sugar estates.

	KSC		KSL	
Type of hazard	No. of Respond.	(%)	No. of Respond.	(%)
Snake bites	65	75.5	63	70.0
Skin irritation (due to cane leaves)	59	68.6	19	21.6
Injuries (thorns)	41	47.6	61	68.3
Injuries (cuts)	48	55.8	59	65.0
Harsh climate	49	56.9	36	40.0
Dangerous animals	-	-	21	23.3
Insect bites	38	44.1	10	11.6
Dust	33	38.3	-	-
Hard work	31	36.0	-	-
Chemical poisoning	18	20.8	-	-
Falls	4	4.6	6	6.6

As table 3 shows snake bites is a number one health problem in both sugar estates. The problem was mentioned by 75.5 and 70.0 percent in KSC and KSL respectively. Skin irritation was second, after snake bites, mentioned by 68.6 percent of the respondents in KSC. It is interesting that this problem was mentioned by a small proportion of respondents in Kagera, (only 21.6 percent). Thorns, a cause of a large number of injuries is another important health risk in the plantations. It came second (68.3 percent) and third (47.6) on the list of hazards mentioned respectively by KSL and KSC respondents. The other health problems with high scores in table 3 are injuries caused by various objects including instruments of work, and harsh climate including rain and high temperatures.

Table 4: Interventions by managements, KSC and KSL

	KSC		KSL	
Type of intervention	No. of Respond.	(%)	No. of Respond.	(%)
First Aid	-	-	10	11.1
Medical care	71	82.5	73	81.1
Protective equipment	11	12.7	-	-
Nothing	15	17.4	7	7.7

With respect to interventions by management to control the health hazards the responses are concentrated on health services provision (i.e. 82.5 and 81.1 percent in Kilombero and Kagera respectively). Table 4 shows that medical care is the dominant intervention (i.e. 82.5 and 81.1 percent in Kilombero and Kagera respectively). In KSL there was not even one respondent who mentioned personal protective equipment. This indicates total lack of personal protective equipment provision in KSL. However, provision of protective gear in KSC is little as the percentage indicates (17.7 percent). Those who mentioned protective gear came from the tractor workshop which was included in the study as part of plantation operations. The workers said that whenever they asked for protective equipment in meetings they were told by the managers that the company cannot afford to provide the equipment because the number of field workers is large. In general the attitude of

workers in both estates is that the managements have done very little to protect their health.

Table 5: Adequacy of health services

	KSC		KSL	
	No. of respond.	(%)	No. of Respond.	(%)
Adequate	15	17.5	36	40.0
Not adequate	71	82.5	54	60.0
	86	100.0	90	100.0

The respondents were also asked to say whether the health services organised for them were adequate. Table 5 shows that in KSL, 40 percent of the respondents said the health service was adequate while 60 percent said it is not adequate. When those who indicated that the health service was insdequate were asked to say why they thought so, the majority mentioned lack of suitable medicines. In KSC 17.5 percent of the respondents indicated that the service was adequate whereas the majority, i.e. 82.5 percent, mentioned that the health service was inadequate. The reasons given for inadequacy of the health service were shortage of medicine in the company hospital and dispensaries and lack of first aid in the farms during the working hours. However, as we shall see below there was no shortage of drugs problem in KSC. The problem then lies in distribution and prescription of the required drugs.

It can be concluded from these survey results that the health services are not yet responsive to the health needs of plantation workers in both estates. This is due to the fact that these services do not operate as the Factories (Occupational Health Services) Rules, described above, stipulates.

Role of workers' union in occupational health

At national level the workers' union has practically done nothing to influence occupational health policies. It was admitted during the interviews at the union's headquarters that the union has lagged behind in occupational health field. As alredy noted above, it was only once, and by chance, that the head of the union's agriculture department issued some circular asking employers of

plantation workers to protect them against toxic chemicals having been informed in an international serminar that toxic chemicals where widely used in plantations in East Africa.

In the estates trade union leaders' consciousness with regard to occupational health was very high. They had pushed through their demands for improvement of occupational health. For example, in KSC the trade union leaders union leaders did not only demand revival of the activities of the health and safety committee, as we have seen above, but also they wrote a strong letter to the secretary of the committee wanting him to arrange visits to six sections of the plantation to raise workers awareness on the dangers of the toxic chemicals they were exposed to[26]. The KSC workers' leaders managed to put occupational health on the agenda of KSC Management Committee Annual Meeting of 1988/89 as well. The matter was discussed and postponed simply because the company's finacial position was poor[27]. At KSL the leaders had, in the past, advised the management to take measures for protection of the workers (i.e. provision of protective equipment and improvement of sanitary conditions) but the management had not considered this advice.

Although trade union leaders in the estates were generally active in occupational health one notes absence of formal structures for involvement of the trade union in decision-making over occupational health matters. The health and safety committee in KSC, of which the trade union branch secretary is a member, could be a good forum for the trade union to influence decisions on workers' health made by the company. But the trade union is not well represented and has no control of the committee. Existence of the committee is determined by the management and not the workers' representatives (i.e. workers' leaders). The committee should be transformed so that it is under firm control of the workers.

Occupational health manpower

In studying occupational health manpower, all categories of health workers were regarded as occupational health workers. This

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[26] See the letter to the secretary of the Health and Safety Committee, Ref. JUW/KSC/M/FF32/87, dated 24 April, 1987 from Kilombero Sugar Company trade union branch secretary.

[27] This was observed by the members of the Executive Committee of the trade union during discussions and interviews.

does not mean that the companies have no occupational health workers. For example, of KSC health workers (1 health officer and 2 Medical Assistants) were trained in occupatinal health. In KSL there was none[28]. Due to curative orientation of KSC health service the knowledge aquired by the health workers trained in occupational health was hardly put into practice.

Table 6: Staff position of KSL health services, 1991.

Health staff category	Establishment	Available staff	Discrepancy
Medical officer	3	-	3
Senior Nursing Off.	3	2	1
Medical Assistants	3	3	-
Laboratory Techn.	1	-	-
Sen. Trained Nurse	1	1	-
Health Officer	1	1	1
Rural Med. Aid	6	3	3
P/Nurse Midwives	2	2	-
Health Assistant	1	1	-
Nurse Midwives	12	8	4

Source: Manpower Development and Administration office, Kagera Sugar Limited.

Table 6 shows that in 1991 there were discrepancies in certain categories of health manpower. For example, KSL hospital had no even one medical officer. The hospital is under the management of the Senior Medical Assistant, assisted by other 2 medical assistants. This remains a basic problem facing KSL health service since medical assistants cannot effectively deal with complicated health conditions. They have to refer patients to a distant government hospital located in Bukoba town. Shortage of manpower can also be noted in Rural

[28] The management has been advised to make arrangements for occupational health training.

Medical Aid category. These are crucially important for running the 5 satellite dispensaries located in the camps.

KSL employs a total of 2,723 workers (1489 field workers and 1234 factory workers). This is the number of workers served by the health service. However, it must be born in mind that the health services are utilised by both workers, their families and the neighbouring communities. It is estimated that KSL health service is utilised by 10,000 population. If this figure is related to the number of the medical assistants available, then the medical assistant-population ratio is 1:3,333. However, this ratio is the not high but given the absence of doctors, limited capability of medical assistants and the disease burden (see Appendix 1) the health service is overstretched.

Interviews with the Senior Medical Assistant (head of hospital) revealed a number of problems affecting performance of health manpower. First, is lack of up-to-date mobile first aid unit. In case of acute health problems such as injuries due to accidents and snake bites occurring in the farms a slow-moving transport (tractor) is used to take injured workers to the hospital. They cannot be taken to the nearby satellite dispensaries because these are manned by the Nurse Assistants who cannot handle such complicated cases.

Second, it is difficult to control some of the health problems encountered by the workers. For example, frequency of malaria bouts is high; recurrence of gastroenteritis is due to lack of sanitation, especially in the camps, ignorance among workers, and impure water supplies; skin rashes are very difficult to treat because of continuous exposure to cane leaves and fertilisers; pig bites are treated but it has been difficult to deal with pigs.

Thirdly, the health service faced transport problems, manpower shortage (lack of medical doctors to manage complicated cases), and shortage of finance to purchase the required medical equipment, supplies and drugs. All this creates pressure on health workers.

Fourthly, the health service lacks an occupational health orientation to be able to deal more effectively with workers' health problems. For example, occupational health manpower is needed to gi lvice on disease prevention, some preventive approaches are needed, e.g. provision of protective equipment, drainages in the

farms to kill malaria vectors, water carriers (bowzers) for clean and safe water, etc.

Table 7: Staff position, KSC health service.

Health staff category	Establishment	Available staff	Discrepancy
Medical officer	3	3	-
Medical Assistants	8	8	-
Nurse & Midwives	45	36	9
Nurse Assistants	60	25	35
Rural Medical Aid	25	25	-
Laboratory Techn.	2	2	-
Sen. Health Officer	1	1	-

Source: Kilombero Sugar Company Hospital Annual Report, 1990, and Kilombero Hospital.

As table 7 shows KSC has shortage of manpower in nursing categories. However, looking at the available staff in each category there was no acute shortage of health manpower in KSC. In general KSC staff position was good.

The KSC health service is utilised by 8,500 company workers and 63,146 population from the neighbouring village communities of Kidodi, Kidatu and sanje[29]. In total 71,646 people make use of KSC health service. The doctor-population ratio then is 1:23,882. This ratio is high compared to the national ratio of 1 physician per 19,775[30]. When this is combined with the disease burden (see Appendix 2) the workload is big.

From interviews with Medical Officer incharge of the KSC hospital and according the hospital report for 1990, KSC is not faced with shortage of drugs and medical supplies and equipment. The only complaint was that half of the company health budget allocation is

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[29] KSC hospital annual report, 1990.

[30] See Nations of the world, 1990, p. 7

spent on drugs purchases. The main problem faced by the health service is the pressure from outsiders seeking company services.

As we have already seen KSC had made progress in occupational health through establishment of the health and safety committee. This committee adopted a prevention orientation which is the main principle of any occupational health service. But, the committee was no longer active as it used to be. Its recommendations such as provision of personal protective devices to all workers, particularly plantation workers, has not been implemented. Surveillance of the working environment to facilitate evaluation of the health hazards was no longer done and the sub-committees and the main committee were not meeting regularly. This has rendered the occupational health component of KSC health service weak.

However, during interviews with head of KSC health service who was also chairman of the health and safety committee, underlying occupational health implementation problems were pointed out. That enteprises cannot implement occupational health effectively due lack of support from the national level. There is no link at all between the enterprises and national level. For example, it was observed that inspections conducted by the Factories Inspectorate are not effective.

Table 8: Workers' attitude towards performance of health workers

	KSC		KSL	
	No. of respond.	No. of (%)	Respond.	(%)
Satisfied	63	73.3	49	54.4
Not satisfied	23	26.7	34	37.8
Don't know	-	-	7	7.8
Total	86	100.0	90	100.0

The workers who are consumers of the health services rendered by the health workers were required to indicate whether they were satisfied with the health workers' performance. As table 8 shows the majority of the respondents (i.e 73.2 and 54.4 percent in KSC and KSL respectively) were satisfied with the performance of their health workers.

Table 9: Level of workers' satisfaction

	KSC		KSL	
	No. of Respondents	(%)	No. of respondents	(%)
High	10	15.9	14	28.6
Moderate	39	61.9	26	53.0
Low	14	22.2	9	18.4

Those respondents who indicated satisfaction were asked to indicate how satisfied they were. Table 9 shows that the majority were moderately satisfied with the health workers' performance.

Table 10: Staff position, Mkamba Dispensary, 1991.

Health manpower category	Establish ment	Available	Discrepancy
Rural Medical Aid	2	2	-
Nurse Auxilliary	1	1	-
Nurse Attendant	1	1	-
MCH Aid	2	2	-
Health Assistants	2	2	-

Source: Mkamba dispensary, Kidatu.

This means that in general the workers' had trust in the health services organised by the companies. As their opinion indicates, if the health services would be adequately staffed and equipped (for instance in the case of KSL) and problems related to distribution of drugs are eliminated (e.g. in the case of KSC) the health workers would perform their job effectively.

Role of workers in occupational health

The study focussed on the role that health education could play in the prevention of occupational health hazards. In both estates there were no health education programmes for workers. In Kilombero, health education was given once in a year when new employees were starting their work. Some of the health problems

would have been prevented if workers are fully involved in occupational health programmes.

Comparison with non-occupational health service

The KSC health service (which we regarded as occupational health service) was compared with the neghbouring general health service. The Mkaba dispensary which is the only health unit available in Kidatu ward, was used for this comperative study. However, in terms of their characteristics, there was a big difference between KSC health service and Mkamba health service. KSC is relatively a big hospital manned by medical officers while the other is a small dispensary manned by a Rural Medical Aid. KSC hospital serves a larger population (63,146 population) with the attendance rate of 7,711 (out-patients and in-patients) per month whereas Mkamba dispensary serves only 6,936 population with an attendance rate of about 2,000 patients per month.

Two criteria were used to compare the two services, namely manpower sufficiency and medical supplies and drugs. As far as health manpower is concerned, we have already seen that there was no shortage in KSC. Table 10 shows that Mkamba dispensary, like KSC health service is not faced with health manpower shortage.

With regard to medical supplies and drugs, Mkamba dispensary faced shortages with the exception of the drugs. Regular supply of drugs was attributed to efficient distribution of the Essential Drugs Programme under which Mkamba dispensary is covered. It is noted in table 11 that Mkamba dispensary faced acute shortage of essential supplies such as needles and syringes. The other area of serious concern is acute shortage of health workers clothing. When compared to KSC health service, with respect to drugs and supplies area, Mkamba dispensary is worse off.

Table 11: Drugs and Supplies , Mkamba dispensary, 1991 (for every 3 months)

	Requirements	Provisions	Shortage
DRUGS.			
Chl quine tabs	15 tins	15 tins	-
Asprin tabs	12 tins	12 tins	-
Antibiotics (PPF)	300	150 (bottles)	150
SUPPLIES			
Bandages	72 rolls	36	36
Cotton	6 rolls	3	3
Gauze cloth	6 rolls	3	3
Plasta	9 rolls	3	6
Gloves	12 pairs	12	-
Needles	144 pieces	72	72
Syringes	60 pieces	3	57
Clothing (uniforms)	16 pieces	-	16

Source: Mkamba dispensary, Kidatu.

The consumers (Villagers) of health services delivered by Mkamba dispensary were asked to indicate whether they were satisfied with performance of the dispensary workers. Out of 89 respondents, the majority of them, 84 (94 percent) indicated that they were satisfied with the performance of the health workers while only 5 responnets (6 percent) were not satisfied with the performance of the health workers. According to these result the villagers still have trust in their health service.

The health workers at Mkamba dispensary where asked to mention the problems encountered in the delivery of services. Two probles were mentioned. First, is lack of trust in the health service on the part of the villagers particularly when injectable drugs which are highly demanded, are not available. Second, is lack of transport. This complicates the management of patients, especially when patients are referred to the district hospital located far away from the dispensary (about 50 miles away).

Conclusions and Recomendations

The analysis of information has indicated a number of problems in the occupational health system. The following items needs our attention for improvement of occupational health in Tanzania:

Review of occupational health policies and legislation is needed. Given the production characteristics of Tanzania with large peasant and small scale sectors, it appears the liability principle upon which Tanzania's occupational health policy is based is antiquated. More research is required to establish elements of policy and legislation (e.g. employment injury benefits arrangements) which need to be improved.

Collaboration of occupational health related institutions at national level is important. Coordination of functions, e.g. of the Occupational Health Unit of the Ministry of Health and the Factories Inspectorate is required to avoid duplication of effort and government resources. This entails looking into organisational issues. Research is needed to clarify organisational and management aspects at nationanal level for occupational health improvement.

Related to the foregoing there is very little contact between natinal level institutions and the workplaces, the implementors of occupational health. Contact is through inspections. But inspections have little impact on occupational health implementation. For example, agricultural and small scale industrial workers are not served by inspections. Moreover, inspection services are dependent on employers (who may frustrate them) as far as financing is concerned. Furthermore, the frequency of inspections is low.

There is a need to involve workers' organisations in occupational health at national, industry and workplace level. Some of the problems encountered at workplaces could be resolved if a workers' participation approach in occupational health implementation is adopted. Experience has shown elsewhere that occupational health problems are easily overcome if workers are involved in occupational health activities.

Occupational health in Tanzania cannot be improved if it is not allocated sufficient resources. There are chronic shortages of financial, manpower and material resources within the whole occupational health system. This situation need to be improved.

The curative orientation of workplace health services need to be changed if they are to play a positive role in sustaining the health of workers. The prevention element of the health services is very weak. This is partly due to lack of health workers trained in occupational health at workplace level. Changing the orientation is only possible if occupational health manpower is available to operate the services. The government should look into how workplaces could be helped to acquire such important manpower.

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APPENDIX 1

Kagera Sugar Hospital Disease Pattern, 1991.

Disease	Out-patients	In-patients	Total
Malaria	16572	1584	18156
Diarrhoeal Diseases	3096	132	3228
Measles	2	5	7
Helminthiasis	1352	58	1410
Anaemia	144	54	198
Skin Diseases	2583	62	2645
Pregnance Related Diseases	60	216	276
Nutritional Disorders	89	6	95
Respiratory Diseases	9847	574	10421
Accidents	252	12	264
Eye Diseases	1164	6	1170
Ear Diseases	936	6	942
STD	480	10	490
Septic Wounds	8704	120	8824
U.T.I.	456	9	465
A.R.C	11	23	44
Dental Diseases	564	0	564
Hernias	7	2	9
Meningitis	0	55	55
Others	2224	206	7430

Source: Kagera Sugar Limited Hospital Annual Report, 1990.

APPENDIX 2

Infectious and parasitic diseases reported at Kilombero Sugar Company Hospital, 1990.

Type of Disease	Cases		Deaths	
	Males	Females	Males	Females
Malaria (all forms)	1847	1376	10	10
Measles	113	133	16	29
Whooping Cough	-	2	-	-
Tetanus	3	2	2	2
Cerebral Spinal Meningitis	18	11	2	2
Chicken Pox	1	2	-	-
Infective Hepatitis	1	-	1	-
Syphillis	1	1	-	-
Other Venerial Diseases	26	46	-	-
AIDS	29	29	3	15
Ankylostomiasis	613	534	4	-
Ascariasis	275	315	-	-
Gastroentiritis & other Diarrhoea Diseases	175	195	8	14
Paratyphoid	5	-	-	-
S. Haematobium	124	95	-	-
S. Mansoni	107	104	-	1
Onchocerciasis	7	2	-	-
Bacillary Disentry	183	70	1	-
Trachoma	7	8	-	1
Kwashiokor	-	6	-	3
Marasmus	7	4	1	1
Anemias	90	108	9	8
Mumps	-	1	-	-

Source: Kilombero Hospital Annual Report for 1990.