

3.2 POSSIBLE INTERVENTIONS

3.2.1. Project Concept

In summary, the proposed project should cover the following area.

- 1) Facilities that need comprehensive improvement and rehabilitation:
 - Kericho District Hospital: Comprehensive facility rehabilitation and replacement of essential medical equipment
 - Kisii District Hospital: Comprehensive facility rehabilitation and replacement of essential medical equipment
- 2) Facilities that need partial improvement and rehabilitation:
 - Longisa District Hospital (Bomet): Replacement of medical equipment.
 - Nyamira District Hospital: Minor rehabilitation of building and facilities, and replacement of diagnostic medical equipment.
- 3) Installation of hospital management and referral function with the all district hospitals linked with RHF.
- 4) Revitalisation of the maintenance system with the all district hospitals

3.2.2 Improvement of Management and Accounting System

Re-establishment of organisational roles for the District Hospitals

The organisational role of newly created HMBs should be realised and co-ordinated with the other district managing and implementation bodies such as DHMTs and DHMBs. The functional role of the district hospital as a referral centre should also be discussed for the improvement of the linkage with rural health facilities. [Ref. Appendix-5: The Staff Establishment, Appendix-6: The Organisation Chart]

Improvement of hospital management and accounting

The strengthening of management in the district hospital is an urgent matter to maintain and improve the quality of curative services. It is necessary for all senior staff, in particular, the members of the Hospital Management Teams to have training to improve personal and management skills.

The creation of hospital service improvement section will be encouraged to initiate the institutional change on the performance of quality care. This will be an implementation section of quality control and patient service.

The most significant financial source for maintenance is the facility improvement fund (FIF) coming from 75 % of the collected money through the cost-sharing system. In reality, the management of the FIF needs to be further rationalised at the district level, upgrading the collection system as well as securing the fund against leakage. [Ref. Appendix-7] The fund collection system should be improved by 1) introduction of a “Cash Registering System”, and 2) integration of the System together with Health and Management Information System. [Ref. Appendix-17]

The HMBs should be re-organised in such a way that a quick and timely decision-making can be made for management of the hospital including the hospital budgetary and personnel arrangement.

3.2.3 Facilities

Basically, the hospital facilities are supposed to be harmless to the patients. Not only from the physical point of view, but also from the infectious disease viewpoint. Patients should not get infected by any disease in hospital, and the hospital also has to provide appropriate environment for patients' recovery. Therefore DHs should be rehabilitated or expanded based on the following basic concept.

Basic Concept

- a) Hospitals should be expanded based on a strategic structure plan in consideration of future expansion;
- b) Comfortable space for the patients should be secured by providing enough space with ventilation, appropriate sunlight and temperature. Needless to say, they have to be kept in a sanitary condition;
- c) Facility layout plan should be in accordance with the function of the organisation as much as possible to maximise management efficiency;
- d) Facilities should be easy to maintain and operate; and
- e) Hospitals should be provided with enough water and electricity.

Following the basic concept, the proposed major interventions for the respective DHs are shown below.

(1) Kericho DH

- a) **Functional facility arrangement:** In order to make the hospital function efficiently, the functional layout plan of facilities should be rearranged according to the logical movement pattern of people.
- b) **Facility components:** The hospital has most of the facilities required in MOH's standard, but only some of the facilities, such as Casualty, Amenity ward, and Central Supply etc. As for the casualty, the Kericho DH is located on the arterial road from the Western and Nyanza provinces that are highly populated. Road traffic accidents occur

often, which causes plenty cases of the seriously injured. Therefore the demand for the Casualty is high.

- c) **Capacity:** As mentioned above, Kericho DH has about 250 out-patient attendance daily and about 45 in-patient admissions on average. The target capacity increase of this hospital is 6% increase in the number of outpatients.
As mentioned in Fig.3-8: BOR in Kisii and Kericho DH, the average BOR in Kericho DH in 1997 was 106%. Though the number of in-patients is expected to increase in the future, the target is to be reduced the average BOR to be around 80%, because of the capacity of staff.
In the concrete, the expansion of Ward 3/Isolation ward and Ward 2/Paediatric Ward is required. Also, Ward 5/Female and Ward 6/Male should be expanded not only to meet the demand, but also to separate the Medical and Surgical patients.
- d) **Renovation of buildings:** To maintain a good environment condition for the patients, most of all the facilities which have some damages such as water leakage from the roof, damage of the ceiling, doors, windows, floors, and gutters have to be renovated. The exceptions are the new eye ward, new eye theatre, and PMIU building.
- e) **Sanitary facilities:** Some plumbing problems in the water closets, such as water leakage or low water pressure etc. should be solved. Also a small water tank should be installed on the ceiling to raise the water pressure. However, in the case of proposed new wards, water closets should be separated from wards to keep clean. Furthermore, a pit latrine or another system should be studied from the sustainability viewpoint.
- f) **Water supply:** To meet a daily demand of 220,000litres/day, an additional water tank is needed. Rainwater harvesting system used for cleaning should be installed to reduce the consumption of piped water.

(2) Nyamira DH

- a) **Renovation of roof (waterproof):** Some measure's should be taken to stop rain leakage, to reduce damage to the buildings. To put pitched roof above the existing buildings is one of the options.
- b) **Water supply:** The amount of water supply is inadequate to meet the demand. The rapid increase of population in the Nyamira town exacerbates the situation.
- c) **Renovation of plumbing work:** Leakage should be solved.

(3) Kisii DH

- a) **Functional layout:** As mentioned above, as a result of the repeated expansion, the hospital has some serious conflict in operational inefficiency. In order to accommodate more patients and improve the quality of the health services, the hospital needs a rearrangement of functional layout based on a strategic structure plan. The following items need consideration:
- Re-zoning based on the logical functional relationship of the zones will ease the congestion in the hospital, make the hospital operation more efficient, and make the control of visitors more easy;
 - Control of visitors' flow by construction of a fence, restriction on visitors' entrance and approach, and a regulation of visiting hours, etc.;
 - Building pitch should be considered to get enough ventilation; and
 - The complicated system of the water pipes and the electricity wires should be rearranged for easier maintenance.
- b) **Expansion of capacity:** The OPD needs to be expanded to handle more than 600 out-patients daily. BOR of each of the wards is shown in Fig.3-8 BOR in Kisii and Cherish DH. Though the condition of each of the wards varies, BOR is commonly over 100% on average. It is clear that the hospital's space is not enough to accommodate a large number of patients. The number of nurses in the wards is 163, and the beds to nurse ratio is 1.69beds/n. In consideration of the staff capacity, around 350 beds (2.22beds/nurse) are assumed to be able to be handled by the existing staff. It is essential that hospital has sufficient beds for the patients in the future.
- c) **Renovation and reconstruction:** Same as those of Kericho DH, most of the facilities should be totally renovated. Some seriously damaged buildings, such as OPD and Ward 1 should be reconstructed.
- d) **Sanitary facilities:** Kisii DH has the same plumbing problems as Kericho DH. The plumbing facilities should be renovated. In the case of constructing a new ward, sustainability of the system and good sanitary conditions should be taken into consideration.
- e) **Water supply:** To meet a demand of 180,000litres/day, an additional water tank is required. Rainwater harvesting system should be installed to reduce the consumption of piped water by using rainwater for cleaning. In addition, the water tank should be cleaned-up and maintained.
- f) **Maintenance system:** Damaged buildings, non-operational water supply and sewage system require a periodical maintenance. The maintenance of building, plumbing, mechanical and electrical matters should be strengthened.

3.2.4. Equipment

Replacement of the damaged medical equipment and addition of the necessary medical equipment are recommended to Kericho DH, Longisa DH, Nyamira DH and Kisii DH as shown in Table3-6.

3.2.5. New Maintenance System for DHs

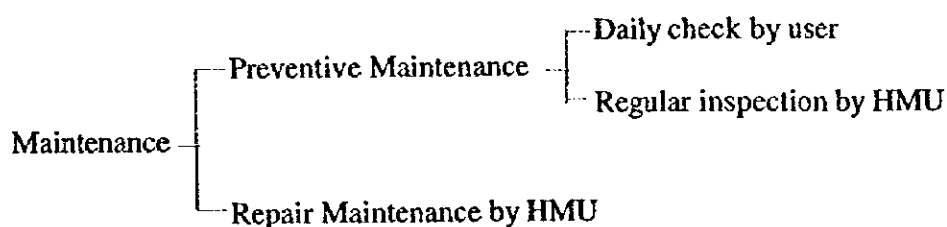
To give HMU more time for preventive maintenance and repair, a new maintenance system that involves users of medical equipment and facilities is necessary.

The proposed maintenance system is based on the current maintenance system. Characteristics of the system are as follows:

- to define procedures for maintenance,
- to involve each department of the DHs,
- to emphasise importance according to procedures,
- to define documents filing system, and
- to file the documents in order and utilise them.

For example, Kisii DH has many Departments under the Medical Superintendent. Those are Administration, Clinical Medicine, Nursing, Out-patient, In-patient, X-ray, Laboratory Eye, Dental, Physiotherapy, Pharmacy; etc. Procedures define job descriptions on maintenance for each Department. User Departments should have responsibility for making specifications of the equipment and the facilities.

As for maintenance, the following maintenance system is recommended



To promote technical exchanges among HMUs, a maintenance circle connecting HMUs should be organised.

Table 3-6 Proposed Replacement and Addition of Equipment to DHs

Kericho DH

Section	Equipment	Add./rep.	Section	Equipment	Add./rep.	Section	Equipment	Add./rep.	
Male Ward	Sterilizer	1	X-ray room	X-ray unit, general	2	IB ward	Sphygmomanometer	1	
	Sphygmomanometer	2		Mobile X-ray unit	1		Stethoscope	1	
	Suction pump	1		Ultrasound diag. unit	1		Suction pump	1	
	Stethoscope	2		Autom. processor	1		Autoclave	1	
	Drip stand	2				Dripstand	2		
	Stretcher	1	Eye ward	Sphygmomanometer	1				
	Refrigerator	1		Suction pump	1	Eye clinic	Ophthalmoscope	1	
	Autoclave	1		Sterilizer	1		Retinoscope	1	
		Autoclave		1	Tonometer		1		
Maternity ward	Sphygmomanometer	1		Refrigerator	1			Lensometer	1
	Suction pump	1				Slit lamp	1		
	Examination couch	1	Nursery	Incubator	2				
	Drip stand	2		Baby scale	1	Dental	Dental chair	2	
	Stretcher	1		Stethoscope	2		Sucker	1	
	Diagnostic set	1		Baby cot	2		Sterilizer	1	
	Autoclave	1		Suction pump	1				
	Sterilizer	1		Sterilizer	1	Laboratory	Centrifuge	2	
		Resuscitation table		1	Refrigerator		1		
					Incubator		2		
Female ward	Sterilizer	1					Water bath	1	
	Suction pump	1				Cooling unit	3		
	Stethoscope	1	Occupational therapy	Wheel chair	1	Mortuary	Ventilation fan	2	
	Sphygmomanometer	1					Instant water heater	2	
	Drip stand	2		Refrigerator	1		Trolley	2	
	Stretcher	1		Examination couch	1				
	Refrigerator	1	Adult scale	2					
	Autoclave	1	Baby scale	2	Laundry	Drier	1		
		Light source	1	Squeezer		2			
Delivery ward	Sphygmomanometer	1		Autoclave		1		Ironing machine	1
	Oxygen set	2		Sterilizer		1		Washing machine	1
	Drip stand	2							
	Delivery couch	2	Children ward	Stethoscope	2	Maintenance	Multimeter	2	
	Oper. room lamp	1		Sterilizer	1		Drilling machine	1	
	Sterilizer	1		Examination couch	1		Angle grinder	1	
	Vacuum extractor	1					Vice	1	
	Ambu bag	2		Physiotherapy	Microwave diathermy		1	Tachometer	1
Stretcher	1	Laser machine			1		Gas leakage detector	1	
							Personal computer (with printer)	1	
Baby couch	3	Electric stimulator			1				
Emergency light	1		Short-wave unit	1					
			Refrigerator	1					
Children ward	Suction pump	1							
			Operating theatre	Suction unit	2				
Laboratory	Flamephotometer	1		Sterilizer	1				
	Colorimeter	1		Operating table	2				
	Coulter counter	1		Anesthetic unit	1				
	Balance	1		Oper. room lamp	2				
	Autoclave manual	1		Small op. lamp	2				
	Autoclave automatic	1		Trolley	3				
	Diluter	1		Emerg. power source	3				
	Glucometer	1		Stethoscope	2				
	Hot air oven	2							
	Microscope	2							
	Counting chamber	1							
	ELISA machine	2							
	FSR stand	1							

Longisa DH (Bomet)

Section	Equipment	Arr/r ep.	Section	Equipment	Arr/r ep.	Section	Equipment	Arr/r ep.
Ward	Sterilizer	5	Occupational therapy	Baby walker	2	X-ray room	X-ray unit, general	1
	Sphygmomanometer	5		Standing aid	2		Manual processor	1
	Suction pump	5		Parallels bar	1		Film viewer	1
	Stethoscope	10		Walking aid	2		Others	1
	Drip stand	10		Bicycle	1	Casualties /Clinics	Examination couch	4
	Stretcher	5	Operating theater	Wheel chair	2		Stretcher	2
	Refrigerator	5		Others	1		Wheel chair	1
	Autoclave	3		Suction unit	2		Suction pump	1
	Modesty screen	10		Sterilizer	1		Sphygmomanometer	4
	Bed pan washer	5		Anesthetic unit	2		Autoclave	1
	Bed	150		Trolley	2		Trolley	2
	Bedside cabinet	150		Stethoscope	2		Footscope	2
	Thermometer	30		Operating table	1		Modesty screen	4
	Drug trolley	10		Diathermy machine	2		Instrument trolley	2
	Examination light	4		Caesarian section s.	2		Stethoscope	4
	Ambu bag	5		Laryngoscope	2		Others	1
	Forch	5		Examination lamp	2	Mortuary	Cooling unit	3
Delivery	Sphygmomanometer	2	Surgical set	Orthopaedic set	1		Trolley	2
	Oxygen set	2		Others	1		Others	1
	Drip stand	2	Eye clinic	Ophthalmoscope	1	Laundry	Drier	1
	Delivery couch	2		Slit lamp	1		Squeezer	2
	Sterilizer	1		Forch	1		Ironing machine	1
	Vacuum extractor	1	Dental	Others	1		Washing machine	1
	Ambu bag	2		Dental chair	2		Autoclave laundry	1
	Stretcher	1		Sucker	1		Boiler	1
	Baby couch	3	Laboratory	Sterilizer	1	Maintenance	Multimeter	2
	Examination light	1		Sphygmomanometer	1		Drilling machine	1
	Sterilizer	1		Stethoscope	1		Angle grinder	1
	Suction pump	1		Others	1		Vice	1
	Forch	2		Centrifuge	2		Personal computer	1
	Wheel chair	2		Refrigerator	1		Printer	1
	Adult scale	1		Incubator	1		Arc welding machine	1
	Baby scale	1		Water bath	1		Gas welding mach.	1
Physiotherapy	Stethoscope	2		Colorimeter	1	Kitchen	Others	1
	Footscope	2		Coulter counter	1		Kitchen set	1
	Drug trolley	2		Balance	1			
	Microwave diathermy	1		Autoclave manual	1			
	Electric stimulator	1		Diluter	1			
	Short-wave unit	1		Glucometer	1			
	Infrared light	1		Microscope	1			
	Wax bath	1		Eliza machine	2			
	Ultraviolet light	1		ESR stand	5			
	Ultrasound unit	1		Others	1			
	Wheel chair	2		Chemical balance	2			
	Bicycle	2		Hot plate	1			
	High strengthen u.	1		Refrigerator	1			
	Parallel bar	1	Pharmacy	Others	1			
	Plinth	1						
	Stairs	1						
	Rowing machine	1						
	Re-education mirror	1						
	Others	1						

Nyamira DH

Section	Equipment	Add. rep.		Section	Equipment	Add. rep.	
X-ray room	X-ray unit, general	1		Main theatre	Exa. light	1	
	X-ray unit, dental	1			Refrigerator	1	
	X-ray unit, mobile	1			Autoclave	2	
	Ultrasonic unit	1			Oper. light	1	
	Film viewer	1			Ambu bag	1	
	X-ray unit, abdomen	1			Suction pump	1	
Laboratory					Anaesthetic mach.	1	
	Coulter counter	1			Surgical set	2	
	Centrifuge	1					
	Water bath	1		Maternity ward	Ambu bag	1	
	Hot air oven	1			Vacuum extractor	1	
	Colorimeter	1			Sphygmomanometer	1	
	Microscope	4			Suction pump	1	
	Water distiller	1			Fetoscope	1	
	Blood sugar machine	1			Examination light	1	
	Sterilizer	1			Doppler fetal detector	1	
Physiotherapy	PH meter	1			Delivery set	2	
					Ambu bag	1	
	Infrared light	5			Gynecological exam. set	1	
	Cradle warmer	1			Incubator	1	
	Bicycle	2			Electric heater	1	
Occup. therapy	Flax bath	1					
				Maintenance	Digital multimeter	2	
	Sewing mach.	1			IC tester	1	
Pharmacy					Portable drilling machine	1	
	Balance	1			Electric planing mach.	1	
	Autoclave	1			Electric sanding machine	1	
Amenity ward					Personal computer	1	
	Wheel chair	1			Printer	1	
					Emergency generator	1	415/240 V, 191 A, 137.5 kVA, 50 Hz, 3
Female ward	Sphygmomanometer	2					
	Adult scale	2		Administration	Personal computer	1	
	Stethoscope	2			Printer	1	
	Otoscope	1					
	Gynecological exam. set	1					
	Wheel chair	1					
	Examination lamp	1					
	Stretcher	1					
	Drip stand	3					

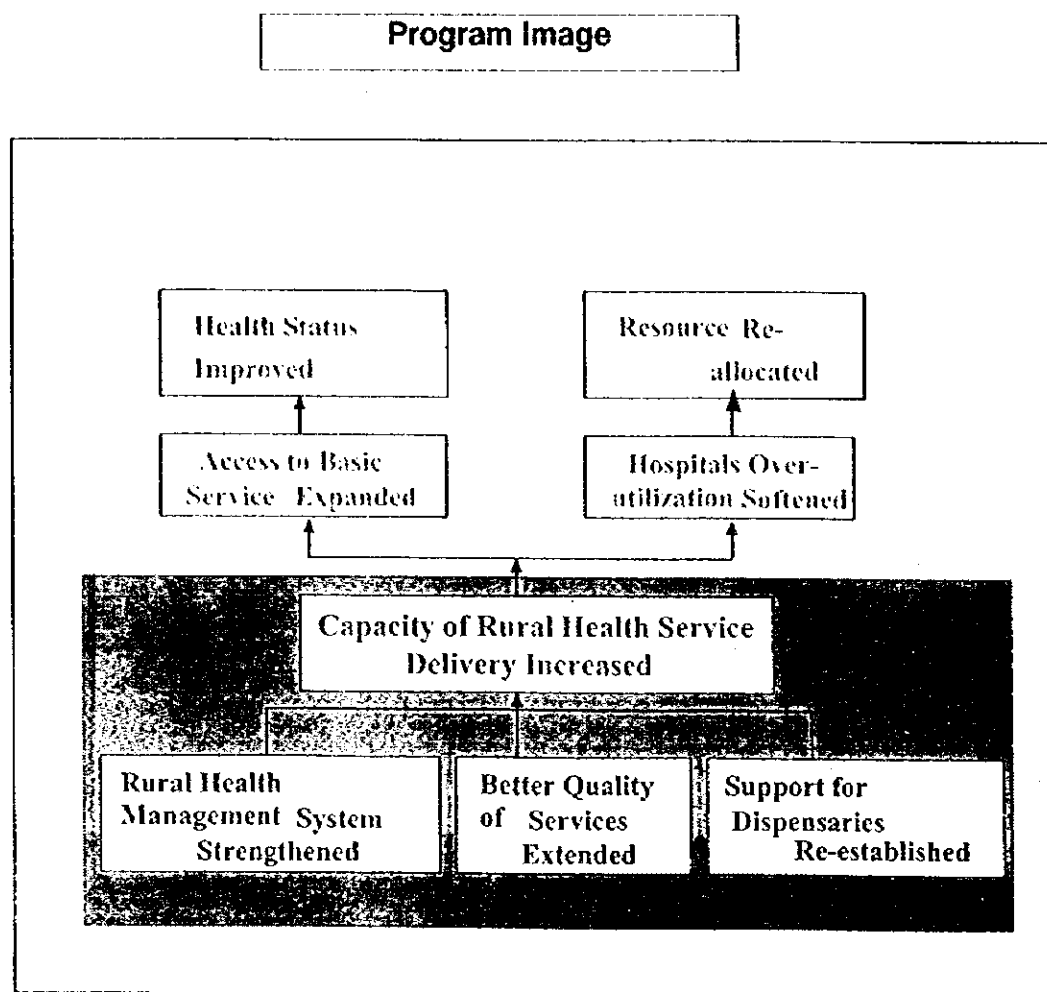
Kisii DH

Section	Equipment	Add./rep.		Section	Equipment	Add./rep.	
Laboratory	Blood cell counter	1		Dental	Dental chair	1	
	Microscope	1					
				Entomology lab.	Microscope	2	
MCH clinic	Sphygmomanometer	1			Refrigerator	1	
					Autoclave	1	
Outpatient clinic	Film viewer	1					
				Theatre for VSC	Film viewer	1	
ENT clinic	Head light	1			Operating light	1	
					Sterilizer	1	
Eye clinic	Operating microscope	1					
	Operating light	1		Theatre	Operating table	2	
					Operating light	2	
Physiotherapy	Microwave unit	3			Film viewer	1	
	Ultrasound unit	2			Diathermy machine	2	
	Infrared light	2			ECG monitor	1	
	Walking machine	2			Surgery X-ray unit	1	
	Wax bath	1			Bronchoscope	1	
	Stimulator	3			Colonoscope	1	
	Thigh strengthener	1			Cystoscope	1	
	Wheel chair	2			General set	4	
	Bicycle	1			Craniotomy set	1	
	Shortwave unit	2			Orthopaedic set	1	
	Ultraviolet light	3			Caesarian section	2	
X-ray room	X-ray unit, general	2		Ophthalmology	Slit lamp	1	
	X-ray unit, portable	1			Direct Ophthalmoscope	1	
	X-ray unit, dental	2					
	Drying cabinet	1		CSSD	Autoclave (big)	2	
	Auto. processor	1			Autoclaving drum	20	
	Heater	2					
	Film viewer	1		Maintenance	IC tester	3	
					Transistor tester	3	
Maternity	Scale	1			Multimeter	1	
	Vacuum extractor	2			Anvil	2	
	Baby incubator	4			Pipe bending machine	1	
	Sphygmomanometer	1			Personal computer	1	
	Delivery pack	5	Kidney dish, Episiotomy		Printer	1	
			scissors, Artery forceps,				
			Dissecting forceps, Galli	Administration	Personal computer	1	
					Printer	1	
Ward	Orthopaedic bed	2					
	Sterilizer	2					
	Sphygmomanometer	2					
	Stethoscope	2					
	Drip stand	4					

3.3 PROPOSED PROGRAM OUTLINE

The goal of the hospital rehabilitation project is to improve the capacity of DH so that they are functional through re-vitalisation of maintenance system, rehabilitation of facilities, provision of necessary equipment and improvement of Management.

As a result of project outputs, the excess demand on the hospital will be reduced and referral function will be strengthened, then ultimately there will be an impact on reducing the burden of the diseases from which people suffer.



3.3.1 Project Objectives

- (1) To improve the quality of essential curative services and to extend critical diagnostic and treatment capacity of the District Hospitals.
- (2) To strengthen the referral function of the District Hospitals for rural health facilities in the catchment area.

As a result of project output, the proportion of referral case to the total patients will be increased 3 times higher than the proportion of current level. (Bomet, Gucha, Kisii, Nyamira: 3%, Kericho: 15%)

3.3.2 Project Area

The project covers the districts of Kericho, Bomet, Nyamira, and Kisii.

3.3.3 Target Beneficiaries

All residents in the catchment areas of the Kericho, Bomet, Nyamira and Kisii District Hospitals.

3.3.4 Implementing Agency

Implementing agency of the project is District Health Management Board (DHMB) and District Health Management Team (DHMT)

3.3.5 Expected Benefits / Outputs

- (1) Health service environment will be improved.
- (2) The facilities will be rehabilitated and necessary equipment for the hospital service will be provided.
- (3) The quality of curative service and hospital care provided in the district hospitals will be improved.
- (4) Hospital management including finance management will be improved.
- (5) Hospital Management system will be revitalised.

3.3.6 Verifiable Indicator

- (1) Number of Appropriate referral cases
- (2) Availability of necessary diagnostic tests/ treatments
- (3) Revenue increased
- (4) Maintenance Records / Operation rate of equipment

3.3.7 Components (Major / Key Activities)

Major project activities, which are expected to achieve the project objectives, are as follows:

- (1) Strengthen capacity of hospital management.
- (2) Strengthen hospital accounting and recording system
- (3) Establish a client service improvement section to link with referred H/Cs, Dispensaries, and private practitioners
- (4) Rehabilitate comprehensively buildings and related facilities of Kericho and Kisii DH.
- (5) Minor rehabilitation of the building and facilities of Nyamira DH.
- (6) Replace and add medical equipment in the Kericho, Longisa, Nyamira and Kisii DHs.
- (7) Strengthen the Maintenance Department and establish preventive maintenance system in the DHs

The respective DHs have particular proposed project activities to be carried out as shown in the table below;

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Kericho DH	xxx	xxx	xxx	xxx		xxx	xxx
Longisa DH (Bomet)	xxx	xxx	xxx	x		xx	xxx
Nyamira DH	xx	xx	xxx		xxx	xx	xxx
Kisii DH	xxx	xxx	xxx	xxx		xxx	xxx

Of seven projects, the projects of (4), (5) and (6) are generally described in the following.

Project (4) : Comprehensive rehabilitation of buildings and related facilities of the Kericho and Kisii DHs

In order to improve the hospital environment, a comprehensive rehabilitation of buildings and facilities should be studied for the Kericho DH, based on the following design concept.

Design Concept: The following design concept should be taken into consideration in the design stage:

- In order to secure a comfortable environment for patients, the ventilation and lighting system should be improved in consideration of the climate and physical conditions of the study area.
- In order to improve the hospital management and operation system, a strategic master plan should be prepared, and relationship of the organisation's function, and the existing facilities should be taken into consideration.
- Each department should have appropriate working space for the designated activities.
- Local customs should be taken into consideration.
- Facilities and utilities should be designed so as to reduce the maintenance and operation costs.

- Local construction methods and materials should be used as much as possible (appropriate technology).
- To accommodate a lot of patients in the malaria out-break season, some large space which can be used for another purpose in the normal season should be prepared.
- To keep a good sanitary condition, sanitary facilities should be located where possible outside of wards.
- The relocation plan should be prepared so as not to disturb the hospital operation.

The project components are as follows.

Kericho DH :

a) Rearrangement of functional organisation:

- Consolidation and expansion of Administration department.
- Position of OPD section and Hospital Administration should be inter-changed with each other.
- Laboratory and X-ray should be located nearby, and where easy access from OPD and Surgical department, and also IPD.
- In-patients service should be gathered.

b) Renovation or reconstruction of buildings: With the exception of some buildings, most of the buildings require total renovation, especially for the roofing, fascia boards, rain water gutters, floor finishes, walls, (internal and external) wall finishes.

c) New departments: The following facilities are recommended to be constructed.

- Casualty: As mentioned above, to meet the demand for casualty service, facility for casualty department should be constructed.
- Amenity ward: From financial point of view, an amenity ward is supposed to increase the hospital revenue.
- Surgical ward: To separate the surgical patients from the medical ones, new surgical wards should be constructed: one for males and the other for females

d) Expansion :

- OPD: The space for OPD, especially for MCH should be expanded to accommodate more patients.
- IPD: with a target reduction in BOR from the existing 106% to 80% by increasing the bed capacity. The wards which need to increase the capacity are Ward 3 and Ward 2 as follows:
 - i. Ward 3/Isolation ward: The annual average BOR was 165%. The number of beds should be increased by at least up to 20 to reduce the BOR to less than 100%.
 - ii. Ward 2/Paediatric ward: DH has a plan to move paediatric ward to the building that is not being used. This movement needs to increase the number of beds from 30 to 40-45 beds. (BOR will be around 100%)
 - iii. Ward 5/Female ward and Ward 6/Male ward: In order to prevent in hospital acquired infections, the medical patients should be separated from others by increasing the beds up to 45 in both the wards.

Increasing the total number of beds by 40-45 beds is expected to reduce the average BOR to around 100%.

- Administration Building: The administration department should be consolidated.
- e) **Renovation of water supply system :** To reduce water consumption and to reserve sufficient water in case of water supply cut-off. Rain water should be stored from the roofs.
- f) **Renovation of sanitary facilities:** The existing water closets, which are not working, should be renovated.

Kisii DH:

- a) **Rearrangement of functional organisation:**
 - Consolidation and expansion of Laboratory
 - Out-patient services including dental and special treatment should be located near the entrance.
 - In-patients department, some wards should be gathered.
 - Laboratory and Pharmacy should be moved nearby X-ray.
- b) **Renovation or Re-construction of DHs:** With the exception of some, most of the buildings require total renovation, especially for roofing, fascia boards, walls, (internal and external) wall finishes, and plumbing works.
- c) **Expansion :**
 - OPD: OPD facility should be expanded to accommodate additional 6% patients.
 - IPD: For reduction of BOR, around 80 beds should be added. The wards that need to increase capacity are Ward 6, Ward 1, and Ward 5. Also an increase in the capacity of Ward2 and Ward3 is recommended.
 - i. Ward 6/Female Medical Ward and Ward5/Male Medical Ward: The average annual BOR in a year was 329% at Ward 6 and 233% at Ward 5 in 1996. Three or two patients usually have to share one bed. If around 50 beds are added for both the wards in total, the BOR of medical wards combined will be reduced to less than 150%.
 - ii. Ward 1/ Gynaecological ward: The BOR of Ward 1 is so high, because this ward accommodates medical patients in the Malaria season. Ward 1 was planned to be demolished when the new buildings would be completed in the World Bank Project. However, even now, a relocation site for gynaecological patients to move to, has not yet been decided. When the new building is built, the bed capacity of this section is recommended to be expanded.
- d) **Water supply system :** To reduce piped water consumption and to store enough water in case of the water supply cut-off, rain water should be stored from the roofs.
- e) **Sanitary facilities:** The existing water closets, which are not working, should be renovated.

Project (5): Minor rehabilitation of the building and facilities of Nyamira DH

The following rehabilitation is proposed for the Nyamira DH.

- a) Renovation of water proof roofs : pitched roofs should be erected immediately
- b) Plumbing works should be repaired
- c) Water supply system: To meet the demand, rainwater should be used for cleaning, and also the possibility of sinking a well should be examined.

Project (6): Replacement and addition of Medical Equipment in Kericho, Longisa, Nyamira and Kisii DHs

Replacement of the damaged medical equipment and addition of the necessary medical equipment are recommended to the Kericho, Longisa, Nyamira and Kisii DHs as shown in [Ref. Table 3-10: Proposed replacement and addition of medical equipment to DHs].

To summarise, replacement of damaged medical equipment and addition of necessary medical equipment is recommended to Kericho DH, Nyamira DH and Kisii DH as shown below. In case of Longisa DH (Bomet), further assessment for equipment should be done by an equipment specialist although the list of requested equipment is available. The projection for the future demand and the deployment of staff are also required before implementation.

	Hospital section where the equipment is required to be placed or replaced	Number of Items (include a set)
Kericho	Male Ward, Maternity Ward, Female Ward, Delivery Room, Children Ward, Physiotherapy, Operating Theatre, TB Ward, Eye Clinic, Dental Clinic, Laboratory, X-ray Room, Eye Ward, Nursery, Occupational Therapy, MCH Clinic, Mortuary, Laundry and Maintenance Room.	164 items
Nyamira	Maternity Ward, Female Ward, Physiotherapy, Main theatre, Laboratory, X-ray Room, Occupational Therapy, Pharmacy, Amenity Ward, Maintenance Room	74 items
Kisii	Laboratory, MCH clinic, Outpatient Clinic, ENT clinic, Eye Clinic, Physiotherapy, X-ray Room, Maternity Ward, Dental, Entomology Laboratory, Theatre for Vasectomy Service, Theatre, Ophthalmology, Central Sterile Supply Department, Maintenance Room	122 items
Longisa (Bomet)	Ward, Delivery, Physiotherapy, Occupational therapy, Operating theatre, Eye clinic, Dental, Laboratory, Pharmacy, X-ray room Causality, Mortuary, Laundry, Maintenance, Kitchen	135 items

3.4 NECESSARY ARRANGEMENT FOR PROJECT IMPLEMENTATION

To implement this project, the following arrangements will be necessary:

- (1) Construction of new buildings in the Kisii DH, a World Bank Population IV Project, should be finished.
- (2) MOH should secure the recurrent budget for the project and the functional role of HMBs for the hospital management.
- (3) Donors should provide a) technical assistance in terms of Hospital Management, b) rehabilitation and expansion of hospital facilities and provision of equipment for DHs, and c) technical assistance for strengthening the preventive maintenance system for equipment.

Chapter 4

Rural Health System Improvement Program

4. RURAL HEALTH SYSTEM IMPROVEMENT PROGRAM

4.1 BACKGROUND OF THE PROJECT

4.1.1 Introduction

Health Information data reveal that communicable diseases account for the majority of the morbidity (55 - 70 % of outpatients) and child mortality (55 - 80%). The diseases of most importance are malaria, ARI, immunizable diseases, tuberculosis and AIDS.

Most of these diseases could be prevented or diagnosed and treated in the rural health facilities if they were properly staffed and supplied. However, currently, the rural health facilities do not meet the community's demands and needs. Many patients, therefore, go to private facilities, traditional healers or buy drugs in shops. Others make their way to towns and crowd the District Hospitals.

While there are over 300 health facilities in the Study Area, the health centres are likely to be the most cost-effective category of facility where is expected to provide a complete unit of basic health service. However, the designation "health centre" given to many of these facilities does not follow the MOH guidelines. Many lack the staff (e.g. CO, RCN, etc), and the facilities and equipment (e.g. delivery room, laboratory, etc) essential for a functional health centre, and the preventive/promotive health activities are seldom undertaken or recorded. As a result, the quality of services provided at health centres are low and District Hospitals are very crowded with the patients who can be dealt with by lower categories of facility.

In addition, organisational mechanism is not in place in respected district health system in terms of co-ordination of vertical program, supervision and monitoring of activities being done at health facilities, dialogue with the facility improvement committees, and logistics and referral within the system.

Despite the importance of information and communication in maintaining the rural health system, information is not available for planning, and the means of communication and transportation is very limited, at almost all health facilities. For example, the reporting rate of outpatient morbidity is only 7.5% in Nyamira and 48.5% in Bomet that is the best among the Study districts. Communication between DMO and Rural Health Facilities, in many cases, depends on chance personal comings and goings.

To improve the rural health services with the limited resources available, it was decided to concentrate on the 16 health centres (hereinafter called "Priority Health Centres: P-H/Cs").

4.1.2 Criteria for Priority Health Centres

At present, there is an existing program for improving the physical facilities of dispensaries. However, there is no development program for health centres. It is necessary to optimise the benefits expected from limited resources. Prioritisation of existing H/Cs becomes inevitable. The Priority Health Centres are conceptualised to serve as intermediate referral centres for nearby dispensaries and other health centres. They are also to provide logistical and training support to other functional facilities, first and foremost based on the expected standard. The process of identification was based not only on the objective criteria but also on the discussions with the local counterparts and the MOH.

Initially the following three criteria were used to nominate potential priority health centres:

- (1) Geographical location: Balanced distribution as a surveillance site and referral linkage.
- (2) Accessibility: Road condition and distance from a market place for increasing potential service catchment area.
- (3) Activity and role of H/C in the locality: Potential Service delivery points as a complete unit of Health Centre.

In the course of nominating P-H/Cs, the JICA Study Team evaluated 27 H/Cs as to the conditions of the above criteria. Per consultation with local officials, who are more familiar with the terrain and requirements in the Study Area, the list of priorities was revised to include a total of **14 health centres**:

- a) in Kericho – Fort Ternan, Kipkelion, and Sosiot;
- b) in Bomet – Kapkoros, Ndanai, and Sigor;
- c) in Nyamira – Keroka and Manga;
- d) in Kisii – Keumbu, Masimba and Marani; and
- e) in Gucha – Kenyanya, Nduru, and Nyamache.

Finally, though the dialogue with the DHMTs and MOH, Ekerenyo in Nyamira and Ogembo in Gucha was added to the list. Ekerenyo was nominated by Nyamira DHMT because of geographical balance and local need. Ogembo was added to the list because of its functional importance and a base for future development. Ogembo is supposed to be upgraded to be at least sub-district hospital.

In the case of Kericho, the counter part nominated P-H/Cs from the area where the accessibility to quality health service are low comparatively, to fulfil under served area. Because the existing condition of health service in Kericho District is perceived to be

better than others in terms of quantity, with two Sub-District Hospitals and existence of private health facilities in the tea estates.

The following three aspects were assessed after the nomination of 16 health centres.

- (4) Site area of H/C: P-H/C should have enough land for future expansion.
- (5) Existing facility assessment - Potential Functionality: Small change can make a big improvement.
- (6) Level of community involvement.

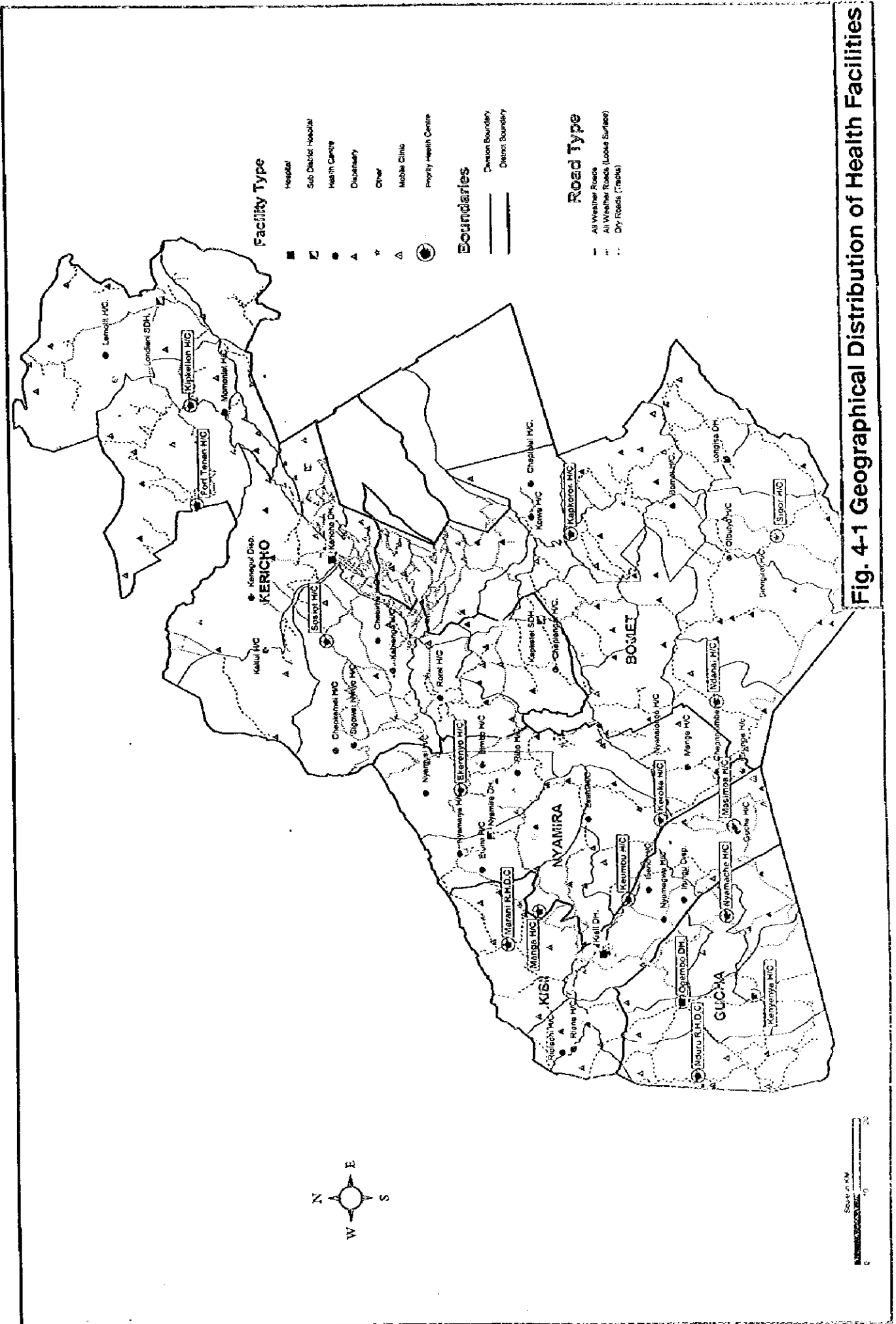
The Health Centres selected as 16 Priority Health Centres are as follows, and their locations on map are shown in Fig. 4-1.

District	Priority Health Centres				
Kericho	Port Ternan H/C	Kipkelion H/C	Sosiot H/C		
Bomet	Kapkoros H/C	Ndanai H/C	Sigor H/C		
Nyamira	Ekerenyo H/C	Keroka H/C	Manga H/C		
Kisii	Keumbu H/C	Marani H/C	Masimba H/C		
Gucha	Kenyanya H/C	Nduru H/C	Nyamache H/C	Ogembo D/H	

The evaluation of 16 H/Cs is shown in the Table 4-1. The details of the evaluation according to the above criteria (2), (3), (4) and (5) are shown in the Appendix-14, and the other evaluation based on the criteria (6) is shown in the Appendix-15.

Table 4-1 Evaluation of Priority Health Centers

	Name of HC	Accessibility	Service	Facility/Equipment	Infrastructure
Kericho	Port Ternan HC	Secondary Road 60 Km from Kericho.	OPD : 50p/d No IPD service 7 staff :CO1, ECN7	- Only 1 Main Bldg - No laboratory - No Delivery Rm.	- Water : O - Elec: X (10 km) - Tel : X
	Kipkelion HC	Secondary Road 5km from a tannak rd.	OPD : 20p/d No IPD and Maternity service, No Pharmacy 10 staff :CO1, KRN1, ECN4	- Only 1 Main Bldg. - Staff house for 3 families - No laboratory - No Delivery Rm.	- Water : Δ(River & Rain water) - Elec: X - Tel : Δ(disconnected)
	Sosiot HC	Primary Road 5 km from Sigovet HC	OPD : 80p/d Chloroquin for Prophylaxis 15 staff :CO1, KRN1, ECN4, LT1	- 2 Bldgs :OPD & MCH - OPD Bldg. has been expanded by themselves.	- Water : O - Elec: O - Tel: O
Bomet	Kapkoros HC	Primary Road (P) Silibwet-Litein Rd.	OPD : 60p/d Lack of drugs and reagents 11 staff :CO1, KRN1, ECN3, LT2	- 1 Main Bldg. - 5 Staff houses - Well maintained	- Water : Δ(Spring) - Elec: X - Tel: X
	Ndanai HC	Primary Road 21 Km from Kisii - Kericho Rd	OPD : 30-40p/d Chloroquin for Prophylaxis 17 staff :KRN2, ECN3, LT2	- 1 Main Bldg. - 5 Staff Houses - Very few medical equipment.	- Water : X (Rain water only) - Elec: X - Tel : Δ(Disconnected)
	Sigor HC	Primary Road 15 km from the tarmac road	OPD : 50 p/d (MCH 15p/d) Lack of drugs 21 staff :CO1, KRN2, ECN5, LT2	- 5 Bldgs (36 beds) - 11 staff houses - 1 vehicle (no fuel)	- Water : O - Elec: Δ (Generator, no fuel) - Tel : X
Nyamira	Ekerenyo HC	Primary Road 20 Km from Nyamira Town	OPD : 30p/d No IPD service No Maternity service 9 staff :CO1, ECN4, LT1	- Main Bldg. and small Kitchen Bldg. - Delivery Rm., Maternity ward and Kitchen Bldg. have not been used.	- Water : O - Elec: Δ(no mancy) - Tel : X
	Keroka HC	National Trunk Rd (P) 25 km from Kisii DH Over 40 km from Nyamira	OPD : 60-70p/d No Labo service 16 staff :CO3, ECN3, LT2	- 1 Main Bldg (5beds) - New Pediatric Ward(5beds) - 10 staff houses - No functioning microscope	- Water : O - Elec: O (Generator/ no fuel) - Tel : Δ(disconnected)
	Manga HC	Secondary Road 46Km from Kisii Town	OPD : 20p/d No Labo service 16 staff :KRN1, ECN3, LT2	- 3 Bldgs.: OPD, IPD and Kitchen Bldg. has not been used. - Microscope was stolen - Delivery :Emergency only	- Water : Δ(River & Rain water) - Elec: X (Generator/ no fuel) - Tel : X
Kisii	Keumbu HC	National Trunk Rd (P) 14 km from Kisii DH	OPD : 150p/d 30 staff :CO1, KRN1, ECN9, LT1	- OPD/MCH/Mat-W, Kitchen, Laundry, and Staff flats. - There is a enough space. - 1 vehicle (no fuel)	- Water: O - Elec: O - Tel : Δ (disconnected)
	Marani HC	Secondary Road Marani-Nyakoe Rd , 8.6km from the tarmac road 30km from Kisii DH	OPD : 50-100p/d Lack of drugs and Reagents. Rural Health Training Center 25 staff :CO1, KRN9, ECN4, LT1	- 3 Bldg :OPD, IPD (10beds), and MCH - Microscope is not suitable for Malaria screening.	- Water : Δ(Spring & Well) - Elec: O - Tel : X
	Masimba HC	Primary Road 20 km from a tarmac rd 35 km from Kisii DH	OPD : 80-100p/d Delivery : 2-3dly/w Lack of reagents. 15 staff :CO1, ECN8, LT1	- OPD/IPD/MCH/Kitchen, Laundry + Staff House - IPD (16 beds) is under utilized	- Water : Δ(River) - Elec: X(Generator / out of ord) - Tel : X
Gucha	Kenyanya HC	Secondary Road 5 km from a tarmac road	OPD : 40p/d No IPD and Maternity Service, No Pharmacy No Labo service 11 staff : ECN11	- Only 2 Bldgs. : OPD & MCH - Only 1 staff house. - Renovated by PMIU. - No laboratory	- Water : Δ(River & Rain water) - Elec: X - Tel : X
	Nduru HC	Secondary Road 15 km from a tarmac road 35 km from Kisii DH	OPD : 50p/d No pharmacy, Lack of drucs Rural Health Training Center 18 staff :CO1, KRN1, ECN5, LT2	- 3 Bldgs.: OPD, IPD(20 beds) , Adm. & MCH - No functioning microscope.	- Water : Δ (Spring & Well) - Elec X (5km, Generator: no fuel) - Tel : Δ (disconnected)
	Nyamache HC	Secondary Road 7 km from a tarmac road 20 km from Ogembo 40 km from Kisii	OPD : 100p/d Delivery : 14 dly/m 28 staff :CO1, ECN8, LT1	- Only 1 Main Bldg. of OPD/MCH - Kitchen has not been used yet because of lack of kitchen equipment.	- Water : O - Elec: O - Tel : O
	Ogembo DH	Primary Road (P) Kisii-Kilgoris Rd.	OPD : 200p/d Delivery : 60dly/m Lack of reagents 32 staff :MD1, CO3, KRN4, ECN8, LT2	- 5 Main Bldg - Shortage of Beds	- Water : Δ (River & Rainwater) - Elec: O.(Generator) - Tel : O



4.1.3. Health Services provided at P-H/Cs

As mentioned before (see “2.3 Available Facility-based Health Service”), the range of health services is provided in the Rural Health Facilities. Table 4-2 shows a result of the survey concerning health services provided at P-H/Cs.

Three H/Cs out of 16 H/Cs do not provide delivery and any laboratory service. In-patient service are provided at only 8 out of 16 H/Cs, though according to MOH standard such service should be provided.

Table 4-2 Description of Health Services at the P-H/C

District	Name of HC	OPD										Labo				IPD
		Curative Service	MCH	FP	Immunization	Obs./Gyn.	Nutrition	Environ mental	Physio/ Occu. therapy	Oral health/ Dental	Minor Surgery	Blood smear test	Parasitological exam.	Bacteriological exam.	Urine exam.	
Kericho	Fort Ternan HC	Y	Y	Y	Y	N	N	Y	N	N	Y	N	N	N	N	N
	Kipkelion HC	Y	Y	Y	Y	N	Y	Y	N	N	Y	N	N	N	N	N
	Sosiot HC	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N	Y	N
Bomet	Kapkoros HC	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	N
	Ndanai HC	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	N	N	Y	Y
	Sigor HC	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y
Nyamira	Ekerenyo HC	Y	Y	Y	Y	N	N	Y	N	Y	N	Y	N	N	N	N
	Keroka HC	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	N	Y	N
	Manga HC	Y	Y	Y	Y	Y ¹	Y	Y	N	N	Y	N	N	N	N	Y
Kisii	Keumbu HC	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N	Y	Y
	Marani HC	Y	Y	Y	Y	Y	Y	Y	N	N	Y	N ¹	N ²	N ²	Y	Y
	Masimba HC	Y	Y	Y	Y	Y	Y	Y	N	N	Y	N ¹	Y	N	Y	Y
Gucha	Kenyanya HC	Y	Y	Y	Y	Y ¹	Y	Y	Y	N	Y	Y	Y	Y	N	Y
	Nduru HC	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N	N	Y	N
	Nyamache HC	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N	Y	N
Ogembo DH	Ogembo DH	Y	Y	Y	Y	Y ¹	Y	Y	N	N	Y	Y	Y	Y ²	Y	Y

Note: Y / Yes N / No (These description are based on the answer from the P-H/Cs' Officer i/c to the hearing survey conducted by JICA Study Team in June and July of 1998.

4.1.4. Human Factors

The Study area is short of medical staff for outpatients and public health services, 68 medical doctors, 88 clinical officers and 525 nurses are needed. The shortage of staff is more serious in the technical level and lower level. So much so that such health facilities could fail to meet the standard of health. While districts have the power to deploy and transfer staff except for medical doctors and nurses, they do not have authority to recruit, supply, employ and deploy the staff.

For example a laboratory technician in Keroka H/C, Nyamira has not used a microscope since he was assigned to work at the facility four years earlier.

Another example, of the five enrolled nurses in Kenyeny H/C, Gucha, one is on night shift, another on leave, therefore, the other three nurses are supposed to cope with treatment / injection room, consultation room, and MCH/FP/STI room. In this setting, a public health technician will give an injection to a client of family planning instead of a nurse. A subordinate staff (who has never had any medical training) will provides a chloroquine and antibiotics injection in the pharmacy room.

While the shortage of staff definitely affects quality of health service, discipline of staff is also problematic. The following examples were observed through direct observation and interviews.

In Sigor H/C, Bomet, an administrative record clerk had a two week training as a newcomer. FIF (Cost-sharing) money correctly includes waivers and exemption with the number of service item and the amount, which is unusual custom at the visited health centres. There could be two factors why the records are kept properly: one is the availability of a properly printed register book for recording, and the other is the availability of a person who knows how to record the book. It was observed that some records in the book were filled wrongly during the absence of the administrative clerk.

In Kenyeny H/C, the consultation time for approximately 20 patients was between one minute and five minutes each in the consultation room. The shortest consultation time was one minute, out of which a medical interview was only 20 seconds. The rest was used to collect money and record casebook. The enrolled nurse did not used equipment or apparatus for any of the patients during the observation.

4.1.5. Financing

At the district level, the budget is estimated closer to 2-3 US dollars, or 120- 188 kshs per capita. This is far below the WHO-estimated level of US\$12, which is needed to finance a basic minimum package of outpatient and public health services. Some studies estimate that the Government health services are under-funded on average by about 44% of the current spending. The fund is allocated more for the rural health facilities, and somewhat less for hospital inpatients and outpatients. While personnel are under-funded to some extent and represent the largest gap in absolute terms, there is still relative under-funding for other critical inputs such as drugs, maintenance, transport, and medical supplies. [Ref. Appendix-12 and 13]

Cost sharing contributes only 5% to the total budget, or 15-20% to the budget for personnel expenses, at the hospitals and the rural health facilities in the Study area. Doubling the contribution of cost sharing is feasible by gradually raising fees to the levels originally planned, and by improving the collection and expenditure of the funds, especially by reducing leakage. At the same time, it will be necessary for equity reasons to reduce the level of waivers from the present 1-5% to perhaps closer to 20% so that poor people will not be burdened excessively by fees. [Ref. Supporting Discussion 1]

In the 2nd year field study, alternative and supplementary financial resources are explored and local reality was also assessed. The findings are as follows:

- Authority to Incur Expenditure for FIF has been transferred from Health Care Financing (HCF) secretariat to Provincial Medical Officer of Health. [Fig. 4-2 Cost Sharing Line Flow].
- The amount of money collected varies among Health Centres. Despite the malaria outbreak in March in the Study area, the fee collection at some of the health centres did not reflect the fluctuated number of outpatients. The amount of cost sharing collection depends upon the facilities for various reasons. It is assumed that the number of staff and availability of essential equipment such as a microscope can decide the functionality of the facilities, thus the demand of the residents for the facilities. The break-down of collected data of Ekerenyo H/C showed that the cost-sharing collection of laboratory service accounts for 16 - 35% of total collection[Ref. Table 4-3 Cost Sharing Collection at P-H/C]
- Prevailing "community fund" and the cost-sharing scheme possibly brought some confusion among patients. For example at Kenyanya H/C, Gucha, there is no revenue clerk, and money is collected in the three neighbouring rooms of the facility. An enrolled nurse collects 10kshs per person per month as "community fund" in the consultation room; another enrolled nurse collects

Table 4-3 : Costs Sharing Collection

APPENDIX : COST SHARING COLLECTION AT P-HC										
District	Name of HC		Drugs	Dre-ssing	Labora-tory	Total	No. of OPD	Avalability of Microscope	No. of Staff	3 month collection / staff
Kericho	Fort Ternai	Mar. 98				3,600	2,990			
		Apr. 98				3,700	497	-	7	1,514
		May 98				3,300				
	Kipkelion	Mar. 98				3,190	328			
		Apr. 98				3,600		-	10	943
		May 98				2,640				
	Sosiot	Mar. 98				40,000				
		Apr. 98				60,000		x	15	10,000
		May 98				50,000				
Bomet	Kapkoros	Mar. 98				25,040				
		Apr. 98				9,600		x	11	3,819
		May 98				7,370				
	Ndanai	Mar. 98				19,760	1,384			
		Apr. 98				8,830	397	x	17	1,893
		May 98				3,590	349			
	Sigor	Mar. 98				42,640	3,706			
		Apr. 98				12,930		x	21	3,170
		May 98				10,990				
Nyamira	Ekerenyo	Mar. 98	13,380	410	7,300	21,090	1,208			
		Apr. 98	5,080	200	2,180	7,460	501	x	9	4,078
		May 98	6,470	380	1,300	8,150				
	Keroka	Mar. 98				23,070				
		Apr. 98				2,600		-	10	2,926
		May 98				3,590				
	Manga	Mar. 98				12,490				
		Apr. 98				6,220		-	16	1,524
		May 98				5,680				
Kisii	Keumbu	Mar. 98				39,760				
		Apr. 98				26,750		x	30	2,833
		May 98				18,480				
	Masimba	Mar. 98				24,640	748			
		Apr. 98				9,400		x	15	2,864
		May 98				8,920				
	Marani	Mar. 98				3,360				
		Apr. 98				3,300		-	25	426
		May 98				4,000				
Gucha	Kenyana	Mar. 98				3,130	3,530			
		Apr. 98				6,200		-	11	1,248
		May 98				4,400				
	Nduru	Mar. 98				14,730				
		Apr. 98				9,230		-	18	1,723
		May 98				7,050				
	Nyamache	Feb. 98				14,940	3,335			
		Mar. 98				22,320		-	28	1,698
		Apr. 98				10,280				
	Ogembo	Mar. 98				68,000				
		Apr. 98				36,650		x	32	4,515
		May 98				39,840				

- 20kshs if a child has medicine given, and collects 10kshs if a woman has a contraceptive given at the MCH/FP/STI room; and a subordinate staff charges 10kshs for a syringe and a needle when a patient needs injection of medicine at the injection/pharmacy room. In addition, a patient is asked to pay 3ksh for a small notebook for medical recording when the patient doesn't have such a book. This is not the special case to Kenyena H/C but seen at most of H/Cs.
- The amount of cost sharing collection was reported to DMOH so that DHMT/DHMB can manage and control the use of FIF (Cost sharing). But the collection rate of the cost sharing including waivers, and exemption at H/Cs is hardly available or has never been assessed. For Sigor H/C, a collection assessment survey was carried out by the Study team, to assess collection rate in the period from Dec.1997 to Jan.1998. For the expected amount of money to be collected, 70% was collected; 24% was exempted and 6% was waved. [Appendix-17 Cost Sharing Collection Including Waivers and Exemptions at Sigor H/C]. It is also found that the exemption rate became slightly higher while the clerk usually in charge was on leave. Sigor H/C is a larger facility for a priority health centre, in a rural town where there is not any private facility nearby.
- Although the movement of community resource mobilisation is active (see next section), it seems that neither the resource mobilisation movement at health centres nor the government cost sharing can respond to the provision of daily necessities at the health centres, which determines the extent and perhaps the quality of the services. The health centre committees are very interested in the improvement and extension of the health facilities and the use of FIF. However, they have not been prioritised or proposed as they were originally planned.
- The authorisation of A.I.E on FIF was transferred to provinces.

4.1.6. Logistics and Referral System

Logistics and distribution of drugs and medical materials follow a "push" system that is controlled by the central MOH, except for contraceptives for family planning. On the contrary, logistics of private health facilities is a "pull" system, since drugs are supplied as necessary. The government has formulated guidelines for the review of the essential drug program. However, weak management capability of those in charge of distribution and storage, as well as lack of transport means of transport, hampers the functioning of the logistics system as a whole.

This important gap in the logistics system causes lack of drugs in general, and over-supply and under-supply of particular drugs.

The under-utilisation of facilities at lower level and the congestion of district hospitals are the logical result of referral function problems. Seeking a chest X-ray is the major reason for referral besides other laboratory diagnoses. Feedback of the referred cases from facility of higher level to those of lower level. The major constraint on the referral system is the fact that health service providers are unable to provide the services required. Lack of communication and transportation facilities for referral is also a significant constraint.

Bypassing of lower-level facilities has been observed for more pragmatic reasons such as physical accessibility through public transportation (Matatu). Although services at the dispensaries are for free, and the consultation fee at the hospitals would be cheaper if they have referral letters, many patients prefer to go directly to the hospital.

4.1.7. Management and Communication Tools

(1) Management Tools and Means

Planning is the weakest part of DHMT. Little planning even that concerning vertical programs such as STDs, FP and Control of Diarrhoea / Diseases (CDD) is undertaken.

Management tools and information for monitoring the performance of the programs such as area maps, catchment areas and women's childbirth age are poorly compiled at facilities. This implies that a quality assurance mechanism is not working within the facilities and that the quality of services has never been assessed by a third party, nor has a feedback mechanism yet been established.

Information and communication are essential to provide support, supervision and development of rural health facilities. However, the means of communication and transportation is very limited at almost all the health facilities. Communication between DMOH and Rural Health Facilities, in many cases, depends on persons who happens to come and to go by chance. The survey on "Communication Channel" conducted by the Study Team revealed that a simple request took 8 - 23 days to reach the rural facilities. Therefore, there exists a remarkable deficiency in communication.

(2) Health Information System (HIS)

All interviewed personnel who are in charge of district medical information and medical records, pointed out a current HIS problem referring to an absence of feedback from the MOH headquarters. It obviously reduces their incentive to perform collection and compilation of the data timely and accurately, thereby leading to a limit or constraint of the analytical capability at the district level.

The reporting rate of health-related data is generally low. It is observed that the districts have never received a complete set of data from all the health facilities for any one year. The Table 4-4 shows the average reporting rates of outpatient morbidity, which is requested to report to a district medical record officer monthly. In case of Nyamira, only 7.5% of outpatient morbidity reports were submitted to the district over the year. Regarding the reporting rate from P-H/C to the districts, the situation is better than that of district average. Most P-H/Cs report regularly but one third of the P-H/Cs respond below 50% of reporting. As a result, little of the data collected is utilised for planning and management at district level or at health facilities.

However, it is estimated that there are more than 2 million attendance to RHF's per year. Of the total visits to out-patient department of Hospitals and RHF's, it is estimated 90% of total visits account of or visits to RHF's.

Table 4.4 Reporting rate and estimated number of attendants through outpatient morbidity of the districts

		Kericho	Bomet	Nyamira	Kisii	Gucha
Number of Health Facilities		126	53	70	44	34
Number of Expected Reports in Year (No. facility x 12 months)		1512	636	840	528	408
Number of Actual Reports sent to District in the study year		336	308	63	199	178
Reporting Rate		22.2%	48.4%	7.5%	37.7%	43.6%
Inspection Period		1995.1 - 1995.12	1997.1 - 1997.12	1997.7 - 1998.6	1997.1 - 1997.12	
H/C, D6P	No. of case		253,277	57,505	188,838	157,825
	Reporting Rate	22.2%	48.4%	7.5%	37.7%	43.6%
	Estimated No.		523,300	766,733	500,897	361,984

Source: JICA Study Team

Recording / Production of data and Guidance

According to the direct observation at Keroka H/C, only one tenth of mothers carried "Child Health Card". This fact holds the important information on child health for both health providers and mothers. In addition, the card can be used for monitoring and surveillance based on which the districts can elaborate a plan for immunisation and nutrition status of children. The reason why the holding of the card is low is the shortage of card stock at the facility. Therefore, mothers are obliged to buy a small notebook as a substitute to a child card.

In fact, RHPs produce a lot of data and records, and wall charts, which the central ministry distributed to RHPs. There are many types of forms and books for recording. Those wall charts guide proper use of drugs, how to manage ARI, how to deal with diarrhoea, and how to care about sexual transmitted infection [Appendix-16 Daily Working Tools and Guidance]. However, there is no single facility that has all forms and guidance. Those printed forms are always in shortage.

Permanent Registration Book of childbirth has been in use at some facilities. The book keeps the complete immunisation coverage and tendency of drop out.

Frequent transfer of technical managers from one place to another could affect consistency of a plan and project implementation in the district. For instance, 20 doctors have been assumed in the position of DEMO in Kericho since 1960. In the period of 28 years, the average length of time for a doctor to hold the position was 1.4 years, the maximum 3 years.

4.1.8 Service area of Priority Health Centres

Service catchment area and patient transportation means were assessed based on the interview with patients at Priority Health Centres. The result of the survey concerning travel mode, travel distance and travel time to H/Cs in total are shown in Table 2-6 (see to section 2.2.2(4) of Chapter 2).

The geographical distribution of the interviewed patients' addresses, with the radius of the average distance to their residence is shown in Fig.4-3 Service Catchment Area of P-H/C.

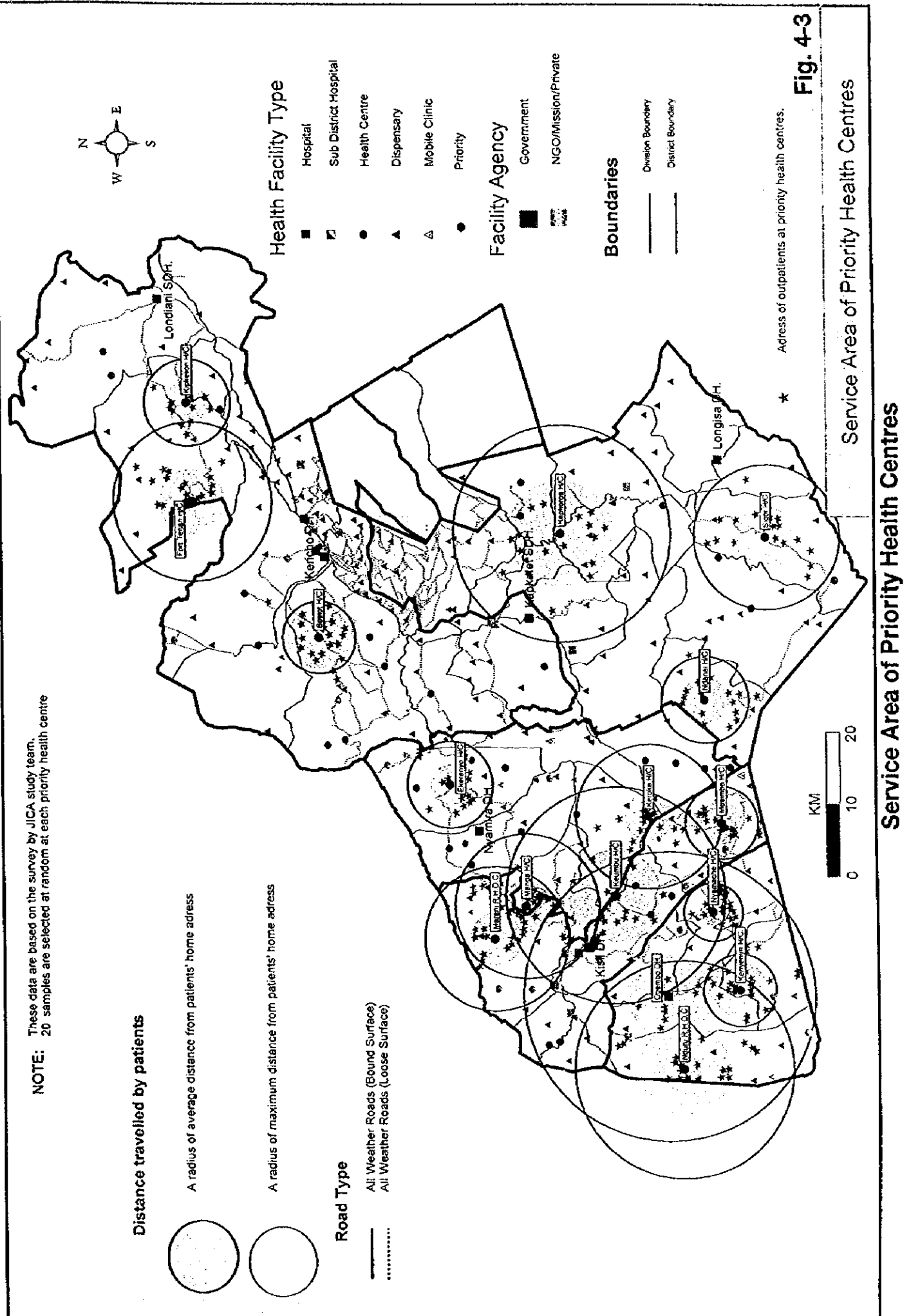
Table 4-5 shows the summary result at each P-H/Cs. The result of the interview survey showed that the proportion of patients who used Matatu to H/Cs is around 20% on average. The travel time is around 1.25 hours and the travel distance is around 4.0 km on average.

Table 4-5 Service Area of Priority Health Centres

Name of HC		Travel Time (hours)	Travel distance (km)		Percentage of patient who used Matatu (%)	Waiting Time (hours)
			Average	Maximum		
1	Kericho Fort Ternan H/C	1.43	4.42	11	5.55	0.98
2	Kipkelion H/C	1.61	2.90	6	27.00	1.32
3	Sosiot H/C	0.76	4.20	5	37.21	0.49
4	Bomet Kapkoros H/C	1.37	7.20	15	34.38	0.91
5	Ndunai H/C	1.03	3.10	6	10.53	0.68
6	Sigor H/C	1.61	4.20	10	20.00	2.70
7	Nyanira Ekerenyo H/C	1.25	2.70	6	15.38	1.04
8	Keroka H/C	1.15	3.20	5	26.47	0.85
9	Manga H/C	0.84	3.50	10	23.53	0.50
10	Kisii Keumbu H/C	1.25	6.03	31	35.00	1.65
11	Marani H/C	2.30	3.56	10	0.11	2.30
12	Masimba H/C	1.35	2.82	5	5.00	0.35
13	Gucha Kenyanya H/C	1.09	3.74	10	5.00	0.20
14	Nduru H/C	1.82	6.24	15	14.00	0.60
15	Nyamache H/C	1.24	1.76	4	0.00	1.30
16	Ogembo D/C	0.88	5.70	20	49.49	2.55
Average		1.26	3.99	11	20.76%	2.55

Source: JICA study team (Interview survey in June and July 1998)

The summary result also indicates that Kapkoros H/C, Keumbu H/C, Ogembo DH and Nduru H/C have larger service catchment areas. Ogembo DH, Sosiot H/C, Keumbu H/C, Kapkoros H/C, and Keroka H/C, which are located along tarmac roads showed higher proportion of Matatu use. Although Nduru H/C is not located on tarmac roads, it showed higher proportion of Matatu use because of the absence of other facilities of a higher level.



The number of population within the area of the radius of average travel distance from each H/C also differs from one to another. The total is less than 500,000 persons only. Some of the P-H/Cs which do not meet the standard are thought to have some problems with access.

4.1.9 Health Facilities : Current Condition of P-H/C

Existing conditions of P-H/Cs are summarised in Appendix-14 Description of P-H/C. There are some differences among the facilities in terms of quality and components of facility.

Some major findings and problems are as follows.

- (1) Facility Components: Although all the P-H/Cs are classified as Health Centres, they are quite different in their facility size and components regardless of MOH's standard [Appendix-1] . For example, Sigor H/C and Ogembo DH have four or five buildings, while Kipkelion H/C has only one building with four rooms, yet these are all Health Centres [Table 4-6 Existing Facility Components of P-H/C]
 - a) Laboratory: two out of sixteen H/Cs do not have any laboratory.
 - b) Delivery: two out of sixteen H/Cs do not have any delivery room.
 - c) Ward for hospitalisation: five H/Cs out of sixteen H/Cs do not have any ward.These limited facilities hamper the services.
- (2) Level of facilities: There are big differences in the condition of buildings as well. The condition depends not only on the building age, but also on materials used and maintenance.
- (3) Incomplete buildings: There are some incomplete buildings. Some are funded through community initiative, and others are by the government.
- (4) Facility not in use: There are some rooms that have not been used because of the absence of water, structural damage, and/or lack of equipment. Especially the kitchens are not in use, even in those H/Cs with in-patients facility. Of all the P-H/Cs only three H/Cs serve meals.
- (5) Water supply: Lack of water hampers many H/Cs from providing quality services.
 - a) Only 8 P-H/Cs have a functioning rainwater 'harvesting' system. Where rain water is collected, only a small part of the roof is used.
 - a-1 H/C which has a rain water harvesting system (8 H/Cs)
 - a-2 The rainwater harvesting system used to function, (5 H/Cs) but it has been broken.
 - a-3. No rain water harvesting system (3 H/Cs)
 - b) P-H/Cs which have a permanent water supply system in addition to rain water harvesting system are four H/Cs out of five H/Cs which have a permanent water supply system. And in seven H/Cs, though the water supply

systems are installed, they are non operational for such reasons as leakage from the tank and pipes, and trouble of pump, etc.

- b-1 H/Cs which have a functioning piped water supply (5 H/Cs) system with enough water
 - b-2 H/Cs, which do not receive water because of broken (7 H/Cs) piped, water system.
 - b-3 H/Cs which do not have piped water supply system, (3 H/Cs) but piped water supply system comes nearby.
 - b-4 H/Cs, which do not have any piped water supply (1 H/C) system.
 - c) Water reservoir for the piped water supply system is equipped only in the six P-H/Cs: Nduru H/C, Marani H/C, Masimba H/C, Sigor H/C, Keumbu H/C and Ogembo DH. However only two out of the six reservoirs are being used.
 - d) Water reservoir tanks are rarely cleaned out, and in some H/Cs, a lot of wastes and leaves are seen in the tanks.
- (6) Sanitary Facilities: Most of the water closets in P-H/Cs, are not operational, because of low pressure of piped water, water leakage, no water supply, and broken plumbing system.
- (7) Electricity: Only five H/Cs out of sixteen H/Cs are supplied with electricity by Kenya Power and Lighting Co. Ltd. In other H/Cs, Natural lighting is used for laboratory services.
- a) H/C which do receive electricity and have generator. (2 H/Cs)
 - b) H/C which do receive electricity and do not have generator. (5 H/Cs)
 - c) H/C which do not receive electricity but have a generator. (3 H/Cs)
 - d) H/C do receive electricity and no generator. (6 H/Cs)

Table 4-6 Existing Facility Components of PHC

	Kericho				Bomet			Nyamira		
	Port Tarnan	Kipkolion	Sosiol	Kapkoros	Ndauai	Sigor	Ekerenyo	Keroka	Manga	
OPD	Consultation / Treatment rooms	O	O	O	O	O	O	O	O	O
	Injection	X	O	O	O		X	O	O	O
	Laboratory	X	X	O	O	O	O	O	O	O
	Pharmacy			X	X	O	O	O	O	O
	Minor surgery Rm.	X	X	X	X	X	X	X	X	O
	PHO / PIPT		O		O	O	O	O	O	X
Del/Mat	PP / MCH	O	O	O	O	O	O	O	O	O
	Delivery	X	X	O	O	O	Δ	O	O	O
	Maternity Ward	X	X	O(4)	O(6)	O(6)	Δ(6)	O(5)	O	O
	Ward Female	X	X		X	O(6)	X	X	X	O
IPD	Male	X	X	Δ(no bed)	X	O(6)	X	X	X	O
	Paediatric	X	X		X	Δno use	X	O(5)	O	O
	Isolation					O(3)				
	Kitchen	X	X	X	X	Δ	Δ	X uncmplt	Δ	Δ
Srvs	Laundry	X	X	X	X	Δ	X	X	Δ	Δ
	Space for Health Talk	O	X	X	Δ(4)	O	O	X	X	X
	Mortuary	X	X	X	X	X	X	X	X	X
	Toilet	P	P	P	P	ΔP	P	P	ΔP	ΔP
	Staff house	4	3	8	5	11	1	10	O	O
	Water Supply sys	O No trtmt	X	Δ pipe	Δ pump	X pump	O low pressure	O	X pump	
	Rain water	Δ Tank	O	Δ Gutter	O	O	Δ	O	Δ	Δ
	Elevated tank	X	X	Δ	Δ	O	X	X	X	X
	Electricity	X	X	O	X	Δ	X	O	X	X
	Telephone	X	Δ	O	X	X	X	Δ	Δ	X
	Septic tank	X	X	X	Δ	Δ	X	X	X	X

	Name of room	Kisii				Gucha				
		Keambu	Marani	Masimba	Kenya	Nduru	Nyamacho	Ogembo		
OPD	Consultation / Treatment rooms	O	O	O	O	O	O	O	O: There is a room for this purpose Δ: There is a room but it is not used, or incomplete, or inappropriate space. X: No room.	
	Injection	O	O	O	O	O	O	O		
	Laboratory	O	O	O	X	O	O	O		
	Pharmacy	O	O	O	O	O	O	O		
	Minor surgery Rm.	X	X	O	X	X	X	O		
	P110 / P11T	O	O	O	O	O		O		
Del/ Mat	PP / MCH	O	O	O	O	O	O	O	(No. of beds)	
	Delivery	Δinempt	O	O	O	O	O	O		
	Maternity Ward (beds)	O(8)	O(6)	O(6)	O(5)+post	O(6)	O(7)	O(4)		
	Ward Female	O(6)	O(4)	O(2)	X	O(6)	X	O(8)		
	Male	O(8)	Δ	O(4)	X	O(4)	X	O(3)		
	Paediatric	O(8)			X	O(4)	X	O(3)		
Srvs	Isolation									
	Kitchen	Δinempt	O	Ono use	X	O	Δ	O		
	Laundry	Δinempt	Δ	Δ	X	X	X	Δ	P: Pit Latrine No.: No. of staff houses	
	Space for Health Talk	O	O	O		O		O		
	Mortuary	X	X	X	X	X	X	X		
	Toilet	ΔP	ΔP	P	P	P	P	ΔP		
	Staff house	4	O	O	1	O	O	O		
	Water Supply sys	O	X pump	X pmp/trt	X	Δpump	O	Δpump		Pump: The system is not working because of damaged pump.
Rain water	O	X	X	O	Δ	Δ	O			
Elevated tank	Oleak	Δ	Δ	X	Δ	X	Δ			
Electricity	O	O	X	X	X	O	O			
Telephone	Δ	X	X	X	O	O	O			
Septic tank	O	O	O	O	O	X	X			

- (8) **Communication Device:** Lack of communication device is one of the obstacles to the referral system, logistics and Health Information System. There are some H/Cs where a telephone line is connected to the facilities, however, in some cases; it is non-operational due to non-payment of bills.

4.1.10 Equipment

The condition of medical equipment at the 16 P-H/Cs are accessed in Table 4-7 Existing Medical Equipment at P-H/C. The existing condition is summarised as follows:

- (1) **Medical Equipment in the P-H/Cs:** There are few types of medical equipment available at the P-H/Cs. Some H/Cs do not have essential medical equipment such as a stethoscope, a thermometer, a sphygmomanometer, etc.
- (2) **Laboratory Equipment:** The nine H/Cs (Fort Terman, Kipkelion, Kapkoros, Sigor, Manga, Masimba, Kenyanya and Nduru) have no electricity. Consequently most of these H/Cs have no microscope or have a monocular microscope with a sunshine reflector.
- (3) **Equipment in Delivery room:** One H/C (Fort Terman) does not provide any delivery service and three H/Cs (Kipkelion, Ekerenyo and Manga) provide such service only in an emergency. Equipment and instruments in delivery room are obsolete and left in unsanitary environment.
- (4) **Vehicle:** The four H/Cs (Ndantai, Sigor, Keumbu and Marani) have vehicles, but two of them (Ndantai and Marani) are out of order and the other two (Sigor and Keumbu) are not in use because the operation cost is not funded.
- (5) **Level of equipment:** Reflecting the capacity of the H/Cs, the type and level of equipment vary among the 16 P-H/Cs.

There is a system that the repair and maintenance of equipment in the RHF depend on the maintenance unit of the district hospital. But in the actual condition this rarely occurs. Although the maintenance units of the DHs are supposed to maintain and repair equipment of the RHF, they rarely fulfil their duty.

4.1.11. Maintenance System

(1) PMIU Project

At Rural Health Facilities, the maintenance work had been improved by the PMIU (Preventive Maintenance Implementation Unit) project supported by DANIDA. The situation of PMIU project is shown in Appendix-18.

As a result of this project, the condition of DSPs has gradually improved. However this project ended in July 1998, and now is in the process of preparation for the next project, called PMSU (Preventive Maintenance Supporting Unit).

Table 4-7 Existing Medical Equipment at Priority Health Centers

	Fort Ternan	Kipkeron	Sosiot	Kapkoros	Ndianai	Sigor	Ekerenya	Keroka	Manga	Keumbu	Marani	Masimba	Kerunya	Nduru	Nyamache	Ogembo
Stethoscope	OO	O	O	O	O	OO	O	OO●●	O	OO	O	O	O	●	O	O
Thermometer	O	●				O	O	O	OO	O	OOOO	O		O	OO	O
Full diagnostic set																
Aunscope						O					O					
Sphygmomanometer	OO	O	O	●	O	O●	O	OO	O	O	O	O	●●	OO	O	O
Baby & adult scale	OOO	OxS●		OOOO	OOO	OOOO	OO	OO	OO●	OOO	Ox6	OOO	O	OOO●	OOO	O
Examination lamp								●								
Exam/treat bench	OO	△△		O	O	△△△	O	●●	OO	Ox6	△x6	OO	OO	Ox6	OOO	O
Small surgical set							O			O	O	△			O	
Electr. table autoclave															O	
Nasal aspirator																
Foetal scope	O	O	O	O	OO	OO	O		O	OO	OOO	O	O	OO	OO	OO
Delivery bed			O	●	O	O	O	O		O	△	O	O	O	O	O
Gang airway																
Neonatal mouth sucker				O	O	O		OO●●		O		△		O	O	OO
Sterilizer	OO			O		O	O	OO●●		●	O			O	O	OO
Manu. plevic exam couch										O	O					
Lid retractor																
Direct ophthalmoscope																
E.S.R. stand	●			O	O mono	O		●	△	O	△	O		O	O	●
Binocular microscope		O mono		O manual				O manual			O manual	O manual		O		OO
Centrifuge				O		O					O	O				
Hemobinometer																
Weighing scale																
Bed			4		7	11	36: few	10	10	32	18	16	7	20	5	13
Others	Autoclave	Stretcher	Refrige	Autoclave	Stretcher	Autoclave	KEPI	Generator	Delivery s	Delivery s	Delivery s	Suction u.	KEPI	Suction u.	Baby cot	Refrige
	Stretcher	KEPI	KEPI	Refrige	KEPI	Stretcher	KEPI	KEPI	KEPI	KEPI	Generator	Generator	Generator	Autoclave	KEPI	KEPI
	KEPI			KEPI		Vehicle			Ambu bag		Ambu bag	Vehicle		Generator		
						Ambu bag			Baby cot		Baby cot	Water p.		Baby cot		
						KEPI			KEPI		KEPI	KEPI		KEPI		

O: available, △: broken, but available, ●: broken

(2) Facility Improvement Committees

The Facility Improvement Committee was organised and is well involved in the resource mobilisation in terms of Harambee movement, collection and use of community fund, or so called "community kit" or "facility maintenance fund", and discussion on the use of 75% of government's FIF. There are a few committees that buy needles, syringes and chloroquine injection with the community fund during the malaria outbreak. The followings are the situation of community fund at P-H/Cs.

It was found that at least 50% of the health centre committees out of 16 P-H/Cs introduced the community fund that is a fund in addition to the government's cost sharing. The charge varies by health centres but the committee usually imposes 5-10ksh per person per month. The health facility committee usually appoints a chairman, a secretary and a treasurer out of 5 -20 members consisting of the community members and staffs from the H/C. [Appendix 15 Situation of Cost Sharing and Health Centre Committees]

Health facility committee discuss community fund, employment of extra staff, maintenance of facility, plan of facility extension, and fencing facility. When drugs run out, a few of the health facility committees buy needles, syringes and chloroquine injection from a chemist nearby with the community fund. Despite the prevalence of chloroquine-resistant malaria parasites, these committees still buy chloroquine injection.

4.2 POSSIBLE INTERVENTIONS

4.2.1 Standardisation of Rural Health Services at Each Facility Level

The type and quality of health services at RHF's should be standardised in order that attendees recognise the differences in services between health centres and dispensaries. The existing vertical programs should be integrated since health centres are a complete unit for facility-based primary health care or so-called essential health services. Facility-based preventive / promotive activities should be particularly promoted for standardisation.

It is necessary to meet the satisfaction of patients as well as health providers in terms of quality of services provided. Quality control on laboratory tests, improvement of staff morals and proper practice of diagnostic protocols are all necessary but not in place in the Study area. A simple but objective quality control program should be introduced into health centres.

Although the service level of each H/C differs from one to another, all Health Centres, at least Priority Health Centres, are supposed to provide the services described in the following Table 4-8, Proposed Health services at Various Levels.

Table 4-8 Proposed Health Services at Various Levels

1) Curative Service

1) CURATIVE SERVICE						
Hierarchy	Malaria	Anaemia	ARI	STDs	HIV/AIDS	Tuberculosis
Communities Health education including when to seek health services Organisation of CBHC e.g. TBA, CHW Home based care	C. Health education including prevention and when to seek health services	Health education including when to seek health services Oral iron tablet	Health education including when to seek health services	Health education on safer sex Promotion of condom use	Health education on HIV/AIDS Home based care	Health education on tuberculosis Home-based care
Dispensaries Primary health care Diagnosis & treatment of uncomplicated cases Detection & referral of complicated cases	Uncomplicated malaria A. Clinical diagnosis B. Oral administration of first line drug	Acute anaemia A. Suspect malaria/bleeding B. Clinical diagnosis Chronic anaemia B. Oral administration of iron/folate A. Anti-helminths to intestinal parasite	ARI without dyspnoea A. Clinical diagnosis B. Oral antibiotics ARI with dyspnoea B. Referral to health centre or hospital	A. Clinical diagnosis B. Oral antibiotics STDs refractory to initial treatment, suspected HIV B. Referral to hospital	A. Clinical diagnosis & referral C. Follow-up and support home-based care	Suspected TB A. Referral for microscopic examination of sputum Follow-up of confirmed TB C. DOT C. Home visit
Health Centres Primary & secondary health care Diagnosis supported by basic laboratory tests Short time "holding" beds Delivery care	Complicated malaria B. Diagnosis supported by microscopic examination of line drug (inc. intravenous injection of anti-malaria drug) A. Referral of patients with renal failure/severe anaemia to hospital	Acute anaemia C. Blood count, Haematocrit B. Exclusion of malaria Referral if needed Chronic anaemia Same as dispensaries, with laboratory support	ARI with dyspnoea B. Exclusion of malaria B. Administration of antibiotics B. Intravenous therapy B. Hydration through nasogastric tube C. Oxygenation and referral to hospital of severe cases	Diagnosis with laboratory support Antibiotic therapy STDs refractory to initial treatment, suspected HIV B. Referral to hospital	A. Clinical diagnosis & referral C. Follow-up and support home-based care	Diagnosis by TB B. Diagnosis by microscopic examination of sputum A. Referral to TB programme Follow-up of confirmed TB C. DOT C. Home visit
Hospitals Primary, secondary & tertiary health care Increased range of laboratory tests, inc. biopsy, X-ray, U-S Inpatient care Surgical operation	Severe malaria Same as above A. Intravenous injection of anti-malaria drug A. Anticonvulsant B. Blood transfusion A. Oxygenation	B. Diagnosis of underlying diseases supported by laboratory test B. Appropriate treatment including blood transfusion B. Blood count, haemoglobin C. Screening of G6PD deficiency and sickle cell disease	ARI with dyspnoea Same as above B. screening of HIV A. oxygenation A. X-ray B. sputum smear, culture, sensitivity test	Secondary care A. Screening of HIV A. VDRL B. Culture	A. Diagnosis supported by HIV testing B. Treatment of X-ray if required A. Screening of HIV complication A. Counselling	Diagnosis by microscopic examination of sputum, and X-ray if required A. Screening of HIV A. Inpatient service A. Patients registration to the TB programme

Note: A, B and C before each activity means actual level of services, i.e., A: good, B: fair, C: not conducted.

Hierarchy	Malnutrition	Diarrhoea	Worms/Amoebiasis	Skin/Ear/Eye	Wounds/Fractures	Mental Disorders
Communities	C. Health education on feeding	Health education on sanitary	Health education on water & latrines, etc.	Health education on water & latrines, etc.	Health education	Community diagnosis
Home based care	C. Home based care	A. ORT				Referral to health facilities
Organisation for health, including revolving fund	C. Collaboration with other sectors e.g. agriculture, social development					Community-based programme for psychiatric patients
Health education including when to seek health services						
Dispensaries	B. Growth monitoring	A. Clinical diagnosis	B. Clinical diagnosis	A. Clinical diagnosis	A. Treatment of simple wounds & burns	A. Clinical diagnosis
Primary health care	A. Food education	A. ORT	A. Anti-helminth	A. Ointment	A. Referral of suspected fracture & severe injury	A. Administration of oral tranquilliser
Diagnosis & treatment of uncomplicated cases	C. Home visits	Referral of severe dehydration	B. Anti-Protozoa	B. Oral antibiotics		A. Referral of suspected psychosis
Detection & referral of complicated cases						
Health Centres	B. Growth monitoring	Same as above	B. Clinical diagnosis	A. Clinical diagnosis	Same as above	A. Clinical diagnosis
Primary & secondary health care	A. Food education	B. Intravenous fluid therapy	B. Microscopic test of stool	A. Ointment	A. Minor surgery	A. Administration of oral tranquilliser
Diagnosis supported by basic laboratory tests	C. Home visits	B. Exclusion of malaria	A. Anti-helminth	B. Oral antibiotics		A. Referral of suspected psychosis
Short time "holding" beds		B. Microscopic test of stool	B. Anti-Protozoa	B. Drainage of abscess		
Delivery care						
Hospitals	B. Growth monitoring	Same as above	A. Microscopic test of stool	B. Secondary care	A. Care of severe injuries & fracture	A. Clinical diagnosis
Primary, secondary & tertiary health care	B. Investigation of underlying diseases	A. Treatment of severe dehydration	A. Inpatient care for complicated cases		A. X-ray	B. Inpatient care for severe psychosis
Range of tests, inc. biopsy, X-ray, U-S		B. Stool culture	A. Surgical procedure		A. Surgical procedure	C. Back referral to RHF
Inpatient care		A. Report of notifiable disease			A. Blood transfusion	C. Supervision of RHF
Surgical operation					B. Rehabilitation	

Note: A, B and C before each activity means actual level of services, i.e., A: good, B: fair, C: not conducted.

Hierarchy	Chronic Disorders	Maternal care
Communities Home based care Organisation for health, including revolving fund Health education including when to seek health services	Health education on the disorders, life style, diet etc.	Home visit by TBA/CHW Health education Detection & referral of any abnormality regarding maternal health
Dispensaries Primary health care Diagnosis & treatment of uncomplicated cases Detection & referral of complicated cases	Detection & referral of chronic diseases Follow-up of the back referral	Referral of high risk pregnancy & obstetric emergency Detection & referral of abnormal genital bleeding
Health Centres Primary & secondary health care Diagnosis supported by basic laboratory tests Short time "holding" beds Delivery care	Same as above	Normal Referral of high risk pregnancy & obstetric emergency Detection & referral of abnormal genital bleeding
Hospitals Primary, secondary & tertiary health care Range of tests, inc. biopsy, X- ray, U-S Inpatient care Surgical operation	Regular check up by Medical Doctor Evaluation of current status of the diseases Back referral & instruction to RHEs	Care of high risk pregnancy Caesarean section Obstetric emergency Gynaecologic examination & treatment

2) Preventive and Promotive Service

Hierarchy	MCH			Preventive		Monitoring
	Maternity Health	Family Planning	Child Health	Environmental Control	Health Education	
Communities Health education Organisation of CBHC, e.g. TBAs, CHWs Community based prevention Sanitation	B. Ante & postnatal care, delivery care by TBAs B. Referral of high risk pregnancy & complicated delivery B. Prevention of FGM	Health education Oral contraceptives Condoms	Health education Day-care centres	Participation in: water protection latrine construction waste disposal food hygiene vector control home improvement	B. Home based health education Prevention of diseases Behaviour change smoking, diet, alcohol & drugs	C. Notification of priority diseases
Dispensaries Promotion of community based prevention Health education and enlightenment Technical advice for community Diet guidance Monitoring of morbidity / mortality Staff training	B. Antenatal care B. Postnatal care B. Referral of high risk pregnancy & obstetric emergency	B. Family planning Counselling Oral contraceptive pills Condoms Repeat injection of Depo provera	B. Growth monitoring C. Home visits B. Immunisation	Liaison with PHC and supervision of community education	B. Patients education individual & group B. Community health education and supervision participation B. School health education	B. Epidemic of malaria B. Notifiable diseases C. Nutritional status C. Morbidity / mortality
Health Centre Health education and enlightenment Technical advice for community Diet guidance Monitoring of morbidity / mortality Staff training	Same as above Normal delivery	Same as above IUDs	B. Growth monitoring C. Home visits B. Immunisation	Technical advice & support on environmental activities	Same as above	B. Epidemic of malaria B. Notifiable diseases C. Nutrition status C. Morbidity / mortality B. Birth
Hospitals/DHMT/PH Office Educational programme provision Staff training Monitoring of morbidity / mortality	Same as above Vacuum extraction Caesarean section Care of high risk pregnancy Pregnancy test	Same as above Tubal ligation Vasectomy Therapy for infertility	B. Growth monitoring B. Home visits A. Immunisation Care for sickle cell anaemia	Technical advice & support for all District environmental activities Continuing education for all environmental staff	Patients education individual & group Community education planning & participation in IEC programme	Same as above C. Health service activities of Health Centres and dispensances

Note: A, B and C before each activity means actual level of services, i.e., A: good, B: fair, C: not conducted.

4.2.2 Establishment of a Network of Health Facilities and Health Personnel

Improvement of health status of people is achieved by well-coordinate efforts of all health-related resources. This should lead to a well-balanced distribution of the resources to be allocated into areas where most people really need the services.

The roles of health centres are not only to serve the people in its catchment area, but also to be the links of a district referral network intermediately connecting with dispensaries and district hospitals.

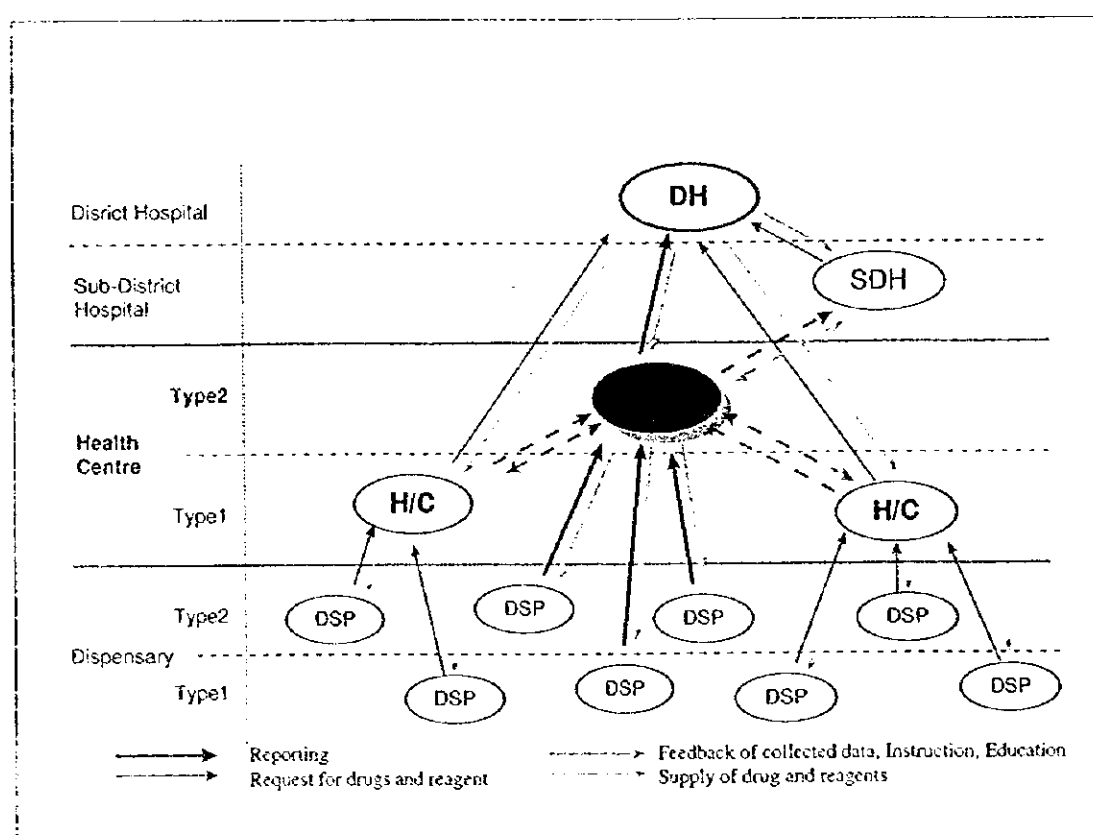
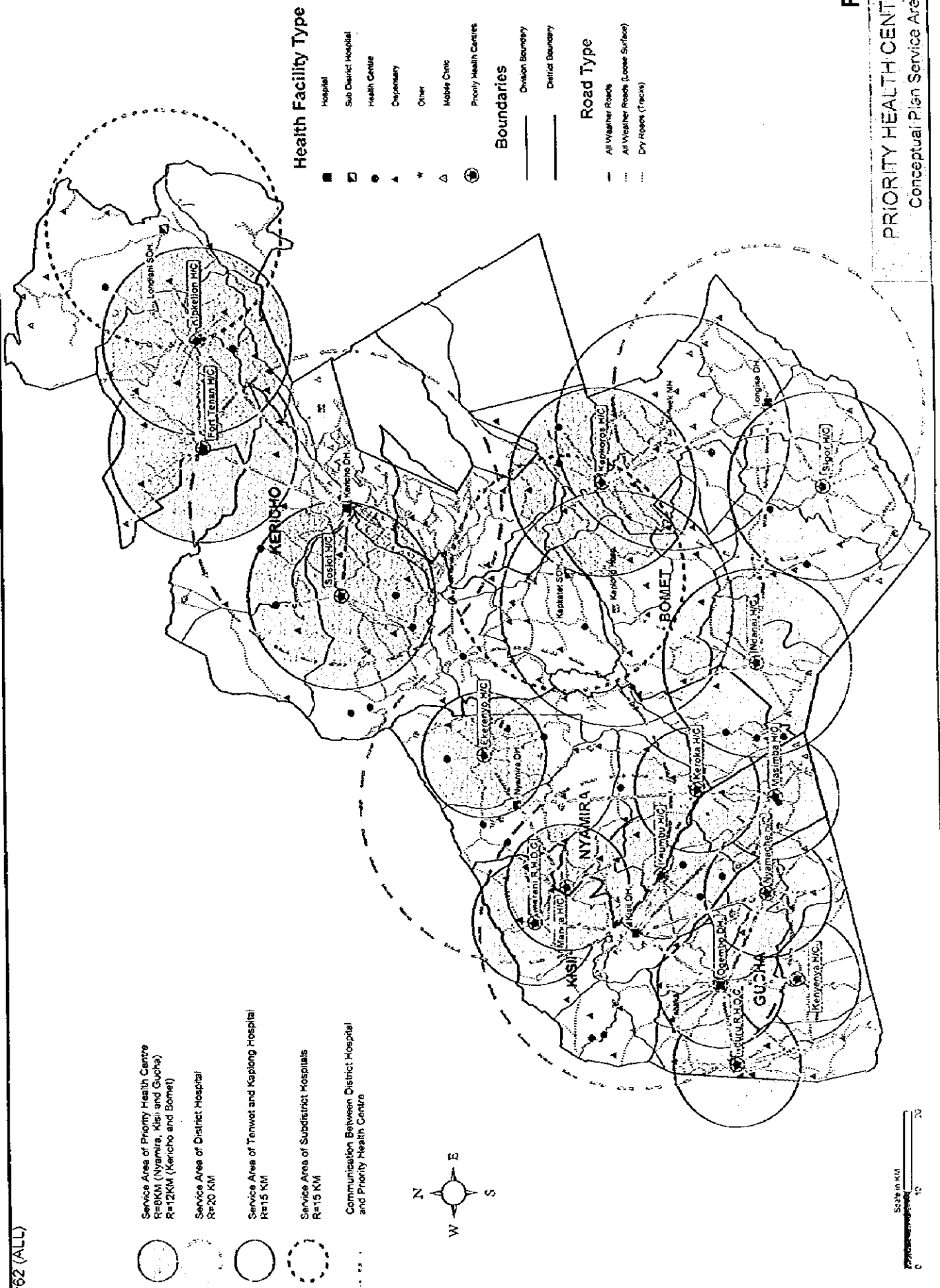


Fig. 4- 4 Conceptual referral network

In order to establish a more functional referral network, the service catchment areas of Priority Health Centres should be developed. Because of higher population density in Nyamira, Kisii and Bomet, the service catchment areas are relatively small but still hold larger population, compared to those of Kericho and Bomet, as shown in Figure 4-5.

Fig. 4-5

PRIORITY HEALTH CENTRES
Conceptual Plan Service Area



The following table shows the comparison of the catchment population described in the "Definition and Categorisation of Health Facilities" and proposal for P-H/Cs.

Category	DSP		P-H/C		SDH	DH
	Type 1	Type 2	Type 1	Type 2		
Service population	up to 10,000	up to 15,000	50,000 - 70,000	50,000 - 100,000	100,000 - 250,000	250,000 - 1,000,000

Because of higher population density in Nyamira, Kisii and Gucha, the service catchment areas of the P-H/Cs in these areas are smaller, but still hold larger numbers of population compared to the catchment areas of Kericho and Bomet.

4 P-H/Cs for which the radius of service areas are smaller than the above, are marked with a symbol in Table 4-7. It means that there are problems, such as limited service, lack of staff, lack of space and bad roads etc., which should be improved in order to expand their service area to the above mentioned size.

If all of the 16 P-H/Cs will approximately serve 100,000 people, almost half of the population in the study area will be covered.

The areas, which are not covered by the P-H/Cs, are assumed to be covered by sub-district and district hospitals, since those facilities provide the same type of service as a health centre does. With this concept, the district hospitals and Tenwek Mission / Kapkatet hospitals will be the referral centre of the P-H/Cs.

Priority Health Centres should be improved so as to strengthen the planned functions as the complete units of essential rural health care centres in terms of:

(1) Strengthening of the Referral System

The following measures should, in particular, be undertaken for Priority Health Centres to eradicate present constraints in the referral system:

- Strengthening the capacity of laboratories in Priority Health Centres;
- Improving transportation and communication;
- Establishing economic incentives for referral; and
- Educating the efficiency of the referral system.

(2) Re-organisation of Logistics

The comprehensive logistics improvement program should be implemented through:

- Provision of training on appropriate use of drugs;
- Establishing the supply system which corresponds to the demand at the district level or a shift from the "push" system to the "pull" system; and
- Administrative linkages between drug supply policies and statistics/records in the health information system (HIS) at the district level.

(3) Establishment of Communication Channels

The communication means among DHMTs/DHMBs, hospitals and RHF's should be strengthened in terms of technical support, supervision, monitoring, sharing of information, data collection and drugs/material distribution. Priority Health Centres are expected to be the information centres to establish the communication network. In this sense, the followings are necessary to be carried out:

- It is essential for the districts' managers to strengthen their managerial capacity of assessment, analysis, planning, implementation, and monitoring of the existing health programs and services either through development or through external training programs. It is essential for the districts' managers to strengthen their managerial capacity. The areas of training include: formulation and utilisation of the district health plan, supervision of health facilities, analysis and utilisation of health information for planning and management, provision and support of continuing education and community based health training etc.
- A simpler district financial management system should be designed and implemented to improve the fee collection. In addition, the financial staff should also be trained to strengthen their capability. The new system will require more transparent accounting and banking functions, a new waiving system, and a periodic fee adjustment, based on the inflation and the revenue target.
- District health information management system (i.e. database system) shall be developed. The system consists of the databases of outpatient services, inpatient services, workload services, personnel, financing, logistics of drugs and equipment, health facilities, etc. Computers and computer training should be provided.
- A simple district supervision and monitoring list for RHF's should be developed, which would includes a daily operation schedule of the vehicles. The users of vehicles (Managers) are encouraged to make a schedule in advance for this purpose. The list should include at least the following:
 - FIF collection and use
 - Filing of documents
 - Health information and record keeping
 - Drug use, supplies and stock
 - Quality control on services
 - Training and continuing education
 - Consultation with facility committees
 - Maintenance of facilities and equipment

- Provision of vehicles for support, supervision and monitoring
- In order to support the supervision and monitoring, additional communication channels should be explored particularly to link with the P-H/Cs. Radio communication and use of public transport (Matatu) for sending documents could be considered.

(4) Managerial Capacity Building of Priority Health Centres

Expansion of health staff at Priority Health Centres is of vital need. This should materialise through the proposed District Health Service Education Program. The following should be started at selected Priority Health Centres and extended to the others.

- Development of a model for facility-based preventive program focusing on essential elements of primary health care;
- Development of referral protocol for sending a patient to district hospitals and receiving a patient from dispensaries;
- Formulation of outreach programs for those who do not have access to health care services jointly with the private and/or NGOs activities;
- Provision of transportation such as motorcycle(s) for the above purpose.

4.2.3 Rehabilitation and Expansion of Priority Health Centres

The existing conditions of the P-H/C are summarised in [Ref. Appendix-14 Description of P-H/C]. In order to enable the proposed services at the P-H/C, to be provided the Study Team sets the following principles for study on rehabilitation and expansion of the facilities.

Principles of expansion

- a. Maximum use of the existing buildings. If there is a problem that hinders the H/Cs from functioning, solution of this problem should take precedence.
- b. Incomplete buildings should be completed.
- c. The facility expansion of each of the P-H/Cs should be formulated rationally based on service types (expected services as a P-H/C), activities and the number of patients.
- d. The facility should be expanded based on the combination of the proposed typical facility components.

(1) Classification of Priority Health Centres and Proposed Facility Components

Table 4-10 below shows the classification of P-H/Cs for the existing condition by the need of rehabilitation work.

Table 4-9 Classification of Priority Health Centres

Existing condition	Grade 1	Grade 2
Only OPD No Maternity and no ward for IPD	Kipkelion H/C	Fort Teman H/C
OPD and Maternity No ward for IPD		Kapkoros H/C Ekerenyo H/C Nyamache H/C
OPD and Delivery/Maternity Only one ward for IPD	Ndanai H/C Kenyenya H/C	Sociot H/C Keroka H/C
Facilities fully installed but very old. Total rehabilitation required		Marani H/C Nduru H/C
Facilities fully installed, but not fully functioning.	Manga H/C (Kitchen/laundry)	Masimba H/C (Water supply) Sigor H/C (Lack of beds) Keumbu H/C (In the process of renovation) Ogembo H/C* (Shortage of space)

Note: * = S-DH level service is required

Source: JICA Study Team

Two types of Facility Components are proposed according to the level of target capacity. The category of Grade2 needs bigger capacity in the inpatient department than Grade 1. This categorisation is based on the demand for the health service.

The following table shows the comparison of the standards of H/Cs by MOH, and by Ministry of Public Works, and the rehabilitation work for Priority Health Centres prepared by the JICA Study team.

The following proposed facility components of the P-H/C are set up based on "the Definition and Categorisation of Health Facilities" by MOH and the Drawings for Standard facilities produced by MoPW. They are planned at a little higher level than the MOH's standard.

These proposed facility components should be planned based on the following principles:

- a. All the P-H/Cs have a **laboratory**, in order to improve and strengthen diagnosis capabilities, especially diagnosis of Malaria .
- b. All the P-H/Cs have a **delivery room and a maternity ward** including a sterilisation room and a nursery room, in order to strengthen a promotion of reproductive and child health.
- c. All the P-H/Cs have at least 6 beds for **in-patients service** for observation purposes.
- d. All the P-H/Cs have several staff houses: There is no instruction regarding the number of staff houses in the above standards though there are several types of houses shown. However, the staff house is one of incentives for the staffs to remain in the facilities especially in the rural area. Therefore, staff houses should be provided at the P-H/Cs.

- e. The P-H/Cs with maternity service and in-patient service should have a Kitchen: Serving nutritionally balanced food is one of the best ways for the patients to recover from illness. A kitchen has to be built in each of the P-H/Cs.
- f. The P-H/Cs have enough waiting area and space for health education.
- g. The P-H/Cs should be fully rehabilitated.

Table 4-10 Proposed Facility Components of P-H/C

Department	Components	MOH		PW		P-H/C	
		Type 1	Type 2	Type 1	Type 2	Grade 1	Grade 2
OPD/MCH	Consultation Rm.			5 rooms	5 rooms		
	Treatment/Injection Rm.			2 rooms	2 rooms		
	Laboratory	(S)		1 room	1 room		
	Minor Surgery Rm.			1 room	1 room		
	Pharmacy			1 room	1 room		
	MCH						
	FP						
Maternity	Delivery Rm.						
	Inc. sterilisation Rm.						
	Maternity ward	8beds			6beds	6beds	6beds
IPD	Female ward				2beds		6beds
	Male ward	6-12	12-24		2beds	6-8beds	6beds
	Paediatric Ward	beds	beds		2beds		6beds
	Isolation Ward						2beds
Service	Kitchen / Laundry						
Staff house							

Explicit requirement : Implicit requirement

(2) Infrastructure and Utilities

There is no description of the building utilities in the "Definition and Categorisation of Health Facilities" by MOH. However, most of the P-H/Cs has serious problems with water, electricity and communication, which hinder functioning of most of the P-H/Cs.

- a) Water supply: Lack of water hampers H/Cs' function. In order to make the P-H/Cs function and provide quality service, availability of water is essential. Therefore:
 - 1) Every P-H/C should have a rainwater harvesting system from the roof (except for 7 P-H/C's which already have water harvesting system);
 - 2) Even in the P-H/C that are collecting the rainwater, the water is harvested from only a small part of the roofs. By providing additional tanks and accessories, their water supply will be improved;
 - 3) Every P-H/C should have a permanent water supply system in addition to the rainwater harvesting system. This can be done by extending the existing piping system if there is a piped watery supply system available nearby, or by sinking a well if the water table is high enough; and
 - 4) The P-H/C's should have a Water Reservoir : Even though the H/Cs have a piped water supply system, saving water and storing enough water are necessary in case of water shortage which exists at some H/Cs. This

- e. The P-H/Cs with maternity service and in-patient service should have a Kitchen: Serving nutritionally balanced food is one of the best ways for the patients to recover from illness. A kitchen has to be built in each of the P-H/Cs.
- f. The P-H/Cs have enough waiting area and space for health education.
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	Laboratory	(s)		1 room	1 room		
	Minor Surgery Rm.			1 room	1 room		
	Pharmacy			1 room	1 room		
	MCH IP						
Maternity	Delivery Rm.						
	Inc. sterilisation Rm.						
IPD	Maternity ward	8beds			6beds	6beds	6beds
	Female ward				2beds		6beds
	Male ward	6-12 beds	12-24 beds		2beds	6- 8beds	6beds
	Paediatric Ward				2beds		6beds
	Isolation Ward						2beds
Service	Kitchen Laundry						
Staff house							

[] : Explicit requirement [] : Implicit requirement

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 - 3) Every P-H/C should have a permanent water supply system in addition to the rainwater harvesting system. This can be done by extending the existing piping system if there is a piped watery supply system available nearby, or by sinking a well if the water table is high enough; and
 - 4) The P-H/C's should have a Water Reservoir : Even though the H/Cs have a piped water supply system, saving water and storing enough water are necessary in case of water shortage which exists at some H/Cs. This

water reservoir should be of the type that can be cleaned easily. In addition, a water treatment system should be considered where water is not treated.

- b) **Sanitary Facilities:** Most of the water closets are non-operational.
 - 1) Considering sustainability, pit latrine type will be a better option;
 - 2) Even the existing water closets need to be renovated and provided with small water tanks from the ceiling;
 - 3) Another type of toilet with a common flushing system can be studied.
- c) **Sewage system:** Newly built or renovated buildings have a sewage system with a septic tank, but others do not.
- d) **Electricity:** All of the P-H/Cs are expected to be supplied with electricity by extending wiring from the nearest point, or by generator. At least the P-H/Cs in Grade2 should be supplied with electricity to keep some reagents for the pregnancy test.
- e) **Communication :** It is better for the H/Cs to have a telephone line installed to make a smooth communication with other health facilities.
Alternatively, a Radio Communication system among the DHs and P-H/Cs could be studied.
- f) **Fire prevention measures:** The P-H/Cs which have wards need fire direction & protection measures.
- g) **Waste disposal:** In most of the P-H/Cs, waste is disposed in a pit and burned. A system of recycling bottles through incentives/discounts can be considered.
- h) **Access road:** Transportation is also one of the most important factors when communication is discussed. As a result of the survey, it is clear that the condition of roads that leads to the P-H/Cs is strongly related to the service area of the P-H/Cs. Therefore, the roads connecting the P-H/Cs to the DHs should be tarmac or at least gravel.

(3) Expansion program :

In accordance with the above mentioned items and classification, the rehabilitation and expansion of the facilities and provision for equipment will be considered, in order to meet the requirement of the proposed facility components.

Facility components required to the P-H/C are split into 4 categories; OPD, Delivery and Maternity, IPD, and Service department as shown in Table 4-12. Typical plan for each unit will be prepared. The following table shows the facility components proposed to each department unit. Renovation and expansion work should be studied by the combination of these units.

Table 4-12 Facility components in proposed plan

OPD	Maternity service	IPD	Service
Consultation Room	Delivery Room	Female ward	Kitchen
Treatment/Injection Room	Maternity ward (Sterilisation room and nursery room)	Male ward	Laundry
Laboratory		Paediatric ward (Isolation ward)	
Pharmacy			
Minor Surgery			
Pharmacy			
MCH/FP			
PHO/PHT			

At the design stage, the following design concept should be taken into consideration.

- a. Relationship with the functional organisation of the existing facilities: The flow line and the zoning plan shall be prepared, taking into consideration the existing and proposed facilities as a whole.
- b. In order to secure a comfortable environment for patients, the climate and physical conditions of this study area should be taken into consideration.
- c. Local customs and behaviour should be taken into consideration, such as style of sanitary facility.
- d. In the design of the utilities, consideration should begin to reduce the level of maintenance and operation costs.
- e. Local construction methods and local materials should be considered and used as much as possible (appropriate technology).

Ogembo DH: This facility has been changed to DH by name in accordance with independence of Gucha district from Kisii district. The authorities are concerned with elevating one facility to a referral facility in Gucha District. They have already submitted a request to expand this facility and equipment to MOH, Ogembo DH started to receive a drug kit for S-DH from July. This DH should be expanded to S-DH level at this stage, and following a strategic master plan expanded to be a DH in the future.

The components proposed to be improved at each P-H/Cs are shown in Table4-14. The proposed plan for P-H/C and Ogembo DH is shown in Appendix-21 and 22.

(4) Equipment

Upgrading of equipment should be considered, based on the following:

- a) A binocular microscope should be supplied to all the P-H/Cs to support malaria diagnosis.
- b) An equipment kit was developed for outpatient services, maternity services, laboratory, ward services and electricity respectively. These are supplied to each of the P-H/Cs according to the scale and the assessment of potential of the P-H/Cs. The contents of each kit are shown in Table 4-13.
- c) The training of laboratory technicians is required for better operation and maintenance of medical equipment.
- d) Ogembo DH, which is called DH, however its function is limited to that of H/C. It is located close to a national trunk road and takes care of many patients who are injured in the traffic accidents. Ogembo DH should be equipped as a Sub DH.

Table 4-13 Proposed Equipment Kit for Priority Health Centres

Kit ① for outpatients services		Kit ③ for malaria screening	
Stethoscope	2	Binocular microscope	1
Thermometer	4		
Sphygmomanometer	2	Kit ④ for laboratory services	
Auriscopes	1	Haemoglobinometer (Sahli method)	1
Baby scale	1	ESR stand	1
Adult scale	1	Centrifuge	1
Minor surgery set	1	Refrigerator	1
Dressing/treatment trolley	1	Kit ⑤ for ward	
Reflex hammer	1	Foot suction unit	1
Torch	1	Sphygmomanometer	1
Diagnostic set	1	Stethoscope	1
Kit ② for maternity services		Thermometer	1
Light source	1	Drug trolley	1
Baby scale	1	Infusion set	2
Adult scale	1	Resuscitation bag	1
Sphygmomanometer	1	Patient modesty screen	1
Fetoscope	1	Bed	6
Delivery bed	1	Kit ⑥ for electricity	
Vaginal examination set	1	Generator	1
Neonatal mouth sucker	1		
Delivery set	1		
Episiotomy set	1		
Vaginal specula, forceps	1		
Resuscitation bag	1		

Source: JICA Study Team

The provision and replacement of equipment is studied by the combination of the above 6 kits.

Preliminary Assessment for Renovation and Rehabilitation

District	Name of HC	Rehabilitation/Renovation						Floor Area			Equipment Kit
		OPD	Dely/ M	K/L	IPD	Water supply	Elec/Tel	Ex. Bldg. (m2)	Exp. (m2)	Major Rnvt. (m2)	
Kericho	Fort Ternan H/C	+	+++	+++	+++	Ws: ++ Rw: ++ Wt: ++	Elec: ++ Tel: ++	237.4	270	507	①②③④⑤⑥
	Kipkelion H/C	++ (Ex.)	+++	+++	+++	Ws: ++ (well) Rw: - Wt: ++		103.3	312	103.3	①②③④⑤⑥
	Sosiot H/C	+	+	+++	+++	Ws: +(Pi) Rw: + Wt: +		281.0	176	281.0	①②③④⑤⑥
Bomet	Kapkoros H/C	++ (Ex.)	++		+++	Ws: +(Pm) Rw: + Wt: +	Elec: ++ Tel: ++	202.0	222	0	①②③④⑤
	Ndanai H/C	+	+	+++	+	Ws: ++ Rw: + Wt: +	Elec: ++ Tel: ++	289.0	48	289.0	①②③⑥
	Sigor H/C	+	+		+	Ws: + Rw: + Wt: +	Elec: ++ Tel: +	1,182.0	0	0	①②③④⑥
Nyamira	Ekerenyo H/C	+	++		+++	Ws: ++ Rw: ++ Wt: ++	Elec: ++ Tel: ++	345.0	222	345.0	①②③④⑤⑥
	Keroka H/C	+	+	++	+++	Ws: + Rw: + Wt: ++		234.0	128	234.0	①②③④⑤⑥
	Manga H/C	+	+		++	Ws: +(Pm) Rw: + Wt: ++	Elec: ++ Tel: ++	198.7	0	48.0	①②③⑥
Kisii	Keumbu H/C	+	+	++	+	Ws: + Rw: + Wt: +		1,291	222	240	①②④⑥
	Marani H/C	++	++	++	++	Ws: +(Pm) Rw: ++ Wt: ++	Elec: ++ Tel: ++	945.0	128	945	①②③④⑥
	Masimba H/C	+	+	+	+	Ws: +(Pm) Rw: ++ Wt: ++	Elec: ++ Tel: ++	738.0	0	0	①②③④
Gucha	Kenyariya H/C	+	+	+++	++	Ws: ++ (f. town) Rw: + Wt: ++	Elec: ++ Tel: ++	377.4	48.0		①②③⑤⑥
	Nduru H/C	++	++	++	++	Ws: +(Pm) Rw: + Wt: +	Elec: ++ Tel: +	927.0	0	927.0	①②⑥
	Nyamache H/C	+	+		+++	Ws: + Rw: + Wt: ++		308.8	222	308.8	①②④⑤⑥
	Ogembo DH	+	+++		+++	Ws: + Rw: + Wt: +		804.0	1,130	426	Eq. for SDH
		+++ : Construction				Ws : Permanent water supply system	Ex Bldg : Floor area of existing building Exp: Floor area of proposed expansion plan prepared by JICA study team. Rnvt: Floor area needs major renovation.				Eq. for ① OPD ② Maternity ③ Labo. ④ Malaria screening ⑤ Ward ⑥ Generator
		++ : Major rehabilitation				Rw : Rain water harvesting system					
		+ : Minor rehabilitation				Wt : Water tank					
						Elec: Electricity Tel: Telephone ++ : Construction + : Renovation					

(5) Maintenance

The existing preventive maintenance system for rural health facilities has been strengthened by the PMIU project. However, there is still some damage left unrepaired due to the lack of fund, difficulty in getting support from Public Works, and limited skill of staff of PHOs and PHTs. The staff are skilled mainly for preventive maintenance.

In order to link their preventive maintenance activities to the expected maintenance work, it is recommended to organise a maintenance team in each division with the involvement of PHO and PHTs. Training in plumbing work, electrical work, and minor equipment maintenance should be given.

A backup system for maintenance materials in each division or district should be also established for a quick repair of damage and a quick response.

PMIU project does not cover of medical equipment. A maintenance system for medical equipment in the H/Cs should be established.

4.2.4 Support from the Central Level

Proper personnel assignment to the P-H/Cs is one of the key issues to make the project succeed. In the course of project implementation, proper number of staff with appropriate technical capability should be assigned, at the correct time. Budget preparation at the Central level is also an important matter to make the proposed project succeed.

4.2.5 Potential Collaboration

The donors are potential collaborators for the proposed projects. The following projects or organisations could cooperate in the study area within the scopes of proposed projects or through exchanging experience for future development of the proposed project.

DANIDA has renovated the dispensaries in the study area through PMIU Project. A preventive maintenance system for RHFs has been established. If the maintenance system for equipment is integrated with the DANIDA's future project, the impact will be increased.

GTZ supports the Community Based Distributor Program (CBD) in Nyamira. If the existing CBD program is applied and integrated with the preventive activities at the P-H/Cs in the proposed project, the CBD program will be effectively extended to other area.

World Bank supports STI program in the country. All districts are required to draw up a master plan for STI implementation under the supervision by Province. There is potential to maximise the resource use through strengthening of the district managers and program of development at the P-H/Cs.

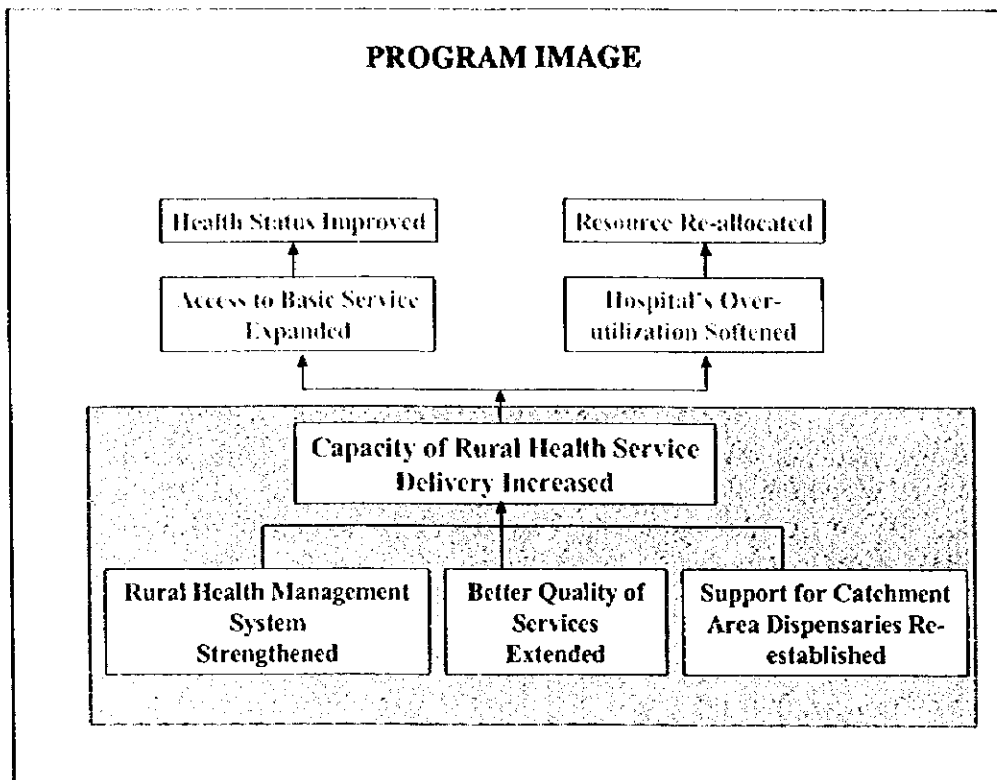
4.3 PROPOSED PROGRAM

4.3.1 Program Objectives

The goal of the rural health system improvement program is to increase the capacity of rural health service delivery through prioritising 16 health centres in the project as hubs of management and referral networks.

When the rural health management system is strengthened, better quality of services is extended, and support for catchment area Dispensaries is re-established. It is assumed that the capacity of rural health service will be increased at the end of the project.

As a result of implementation of the proposed program , there will be an impact such that access to basic health services will be expanded and over-utilisation of the district hospitals will be reduced.



4.3.2 Target Beneficiaries

All residents in the catchment area of the priority health centres

4.3.3 Project Location

Kericho, Bomet, Kisii, Nyamira and Gucha

4.3.4 Project Duration

5 years

4.3.5 Implementing Agency / Body

Project Management: District Health Management Teams

Daily Project Monitoring: Health Centre Management Teams

4.3.6 Expected Benefits / Outputs

- Management capacity at priority H/Cs institutionalised
- Epidemiological and workload data utilised
- Facility and equipment improved
- Quality of services improved
- Type of services extended including facility based preventive activities

4.3.7 Verifiable Indicators

- Management schedules and monitoring lists available and used
- Epidemiological and workload data applied to logistics program, and annual planning
- Number of attendance / referral / FIF increased
- Improved coverage area of priority H/Cs
- Contact between priority H/Cs and dispensaries increased
- Number of laboratory tests increased

4.3.8 Important Assumptions / Conditions for the Project

- MOH and PMO continue to support the project
- Key players of the project are well guided to the common goal
- Communities cooperate to improve quality of services

4.3.9 Project Linkages / Other Sector Linkage

District Health Service Education Program

4.3.10 Relevant Agencies to be Co-ordinated

PMIU (DANIDA): Future Maintenance Project (Preventive Maintenance Supporting Unit)

GTZ: CBD program in Nyamira

WB: Sexual Transmitted Infection Program

4.3.11 Project Components and Major Activities

1. Strengthening Rural Health Management
 - 1) Managerial capacity building for the DHMTs/DHMBs on support, supervision and monitoring
 - Training for planning, management, supervision and monitoring
 - Development of the district health information system
 - Development of the district financing management system
 - Development of management manual and supervision and monitoring list
 - Develop integrated supervision, monitoring and communication channel to the RHPs
2. Establishment of facility-based Management
 - 1) Managerial capacity building for the Priority Health Centres
 - 2) Guide the Health Centre Facility Improvement Committees for qualitative service
 - Develop and demonstrate the use of epidemiological data and workload at P-H/Cs
 - Training of personal skill development and team work
 - Training on diagnostic capability and treatment for the services provided at the P-H/Cs
 - Establish capacity for HMTs to monitor the activities in the proposed project
 - 3) Guide priority H/Cs committees for the project
3. Establishment of Better Quality of Services through Rehabilitation of Facilities and Provision of Equipment together with Maintenance System
 - 1) Rehabilitation of the facilities with the provision of equipment
 - 2) Rehabilitation work and distribution of equipment
 - 3) Establishment of maintenance system
4. Establishment of Quality Control and Service Network
 - 1) Establishment of quality control for the P-H/Cs
 - 2) Development of referral flow and involvement of relevant the facilities
5. Development a model for facility based preventive program
 - 1) Development a model for facility based preventive program

4.3.12 Inputs

The number of each project in the above section coincides with the number of the followings:

1. Technical Assistance with external resource (donors) or integrated in the existing MOH program
2. Through the Proposed District Health Service Education Program or other external training program
3. Grant Aid: possibly JICA, which consists of major and minor rehabilitation of health centres, expansion of essential room such as laboratory, installation of water supply system and provision of equipment for Maternal and child health and laboratory. Provision of vehicles / motorbikes for the component 1 could be included.
4. The component will be developed by the district
5. Technical assistance with external resource: Possibly Japan Overseas Co-operation Volunteers (JOCV).

4.3.13 Cost

US\$ 7.33 million (Only facility and equipment)

4.4 NECESSARY ARRANGEMENT FOR PROJECT IMPLEMENTATION

The roles and procedures among DHMTs, DHMBs, and rural health facilities are neither clear-cut nor shared among these important organisational actors. Hospital Management Board (HMB) is now in consideration to be fully responsible for the running of the district hospitals. In this context, there is a need to clarify the roles and responsibilities for the DHMB, HMB, and DHMTs.

MOH/ PMO continue to support the project since the proposed project is within the framework of Health Sector Reform.

Key players within the proposed project should be well guided to the common goal. As the health centre committees are active to some extent, the intervention should be supportive to their activities.