

### **3.11 PHYSICAL AND SOCIAL INFRASTRUCTURE DEVELOPMENT AND GEOGRAPHICAL INFORMATION SYSTEM (GIS)**

#### **3.11.1 Current Use of GIS in Malawi**

- Currently there are eight government departments and institutions that use GIS in their operations. One (the Agricultural Policy Research Unit, Bunda College, Malawi University) provides GIS software training mainly by Malawian trainers.
- International, Regional, District, Traditional Authority, and census enumeration unit boundaries have been digitised for Malawi.

#### **3.11.2 GIS and the Ministry of Health and Population**

- Prior to the arrival of the JICA PHC Study team, MOHP had identified GIS as a tool for improving physical assets planning and management and planned to include GIS in the new health policy.
- A substantial number of staff at the Ministry use spread sheets and database functions for their daily work, which is sufficient computer knowledge to advance to GIS.
- Despite the relatively high computer literacy at the national level, additional computer training will be required at the district level.
- With the decentralisation of the health management system and Health Information System, it is expected that computer literacy at the district level will improve.

#### **3.11.3 Social Infrastructure Inventory Exercise**

- Digitisation for Salima District has been completed. The location of human settlements, health centres, transportation networks, rivers, and other natural features are all digitised.
- Based on the digitised geographical information linked with the 1987 census data, physical access to health services was measured for three districts in the Central Region (see section E. Referral System Assessment for details).
- A catchment population analysis revealed that population per health facility is not evenly distributed among health facilities.

#### **3.11.4 Health Infrastructure Planning**

- Population distribution and distance to health facility were taken into consideration to calculate the potential health service demand points in Salima District. In order to achieve 80 percent population coverage at the five kilometre radius level and minimising the number of closures of existing health facilities, the government would need to add eleven health centres and close one. Assuming that one health centre costs approximately US\$ 40,000, Salima District alone would require US\$ 440,000.
- To minimise the number of health facilities and maximise the population coverage at the

- five kilometre radius level, the system requires a total of 22 facilities in Salima District.
- A mathematical model developed for this analysis allows users to incorporate distance factors, financial factors, and political factors to calculate requirements and geographical location of additional health facilities in relation to existing ones. It also allows users to visualise the distribution and simulation results by using GIS.

### 3.11.5 Situation Analysis

It is next to impossible for the government to improve access to health facilities and services under increasing financial pressures. However, government is committed to improving access because access to health services is one of the two most frequently cited access problems in the country (the other is access to water). At the same time, the recent devaluation of the currency has further strained government finances. As a result, the Ministry is pressured to develop more rational development plans. With the shift of management functions to the district level, the central level role should be on monitoring and simulation.

With the relatively high computer literacy at the national level, the Ministry has strong potential to successfully implement GIS and infrastructure planning. Considering that management responsibilities are shifting to the district level, it would be too optimistic to expect districts to handle data management and analysis at the same time. Certainly districts would benefit from the output of the system, for example, maps illustrating disease distribution and catchment population. But for the time being, it would be more cost effective and sustainable to build technical and analytical capacity at the central level. Skills to interpret data shall be transferred to the district level in line with other decentralisation efforts.

The potential benefits of GIS are not limited to the health sector. Problems of access exist in other sectors including education, water supply, and urban planning. Strengthening health GIS will impact other sectors as well, so the study paid careful attention to them.

## 3.12 SOCIAL MEDICINE/MEDICAL ANTHROPOLOGY

This chapter focuses on villagers' perceptions of health and diseases, pregnancy and delivery, as well as health facilities and health care providers in the central region of Malawi. It was written after reviewing both the existing data and the results of the qualitative research conducted in the villages in Salima District as part of the JICA PHC study (i.e., focus group discussions and key informant interviews). A household survey was also conducted as part of the study, and its results were taken into consideration, as well. The study team also held a series of discussions with Malawian research assistants and resource people to ensure a correct understanding of various cultural concepts and perceptions.

### 3.12.1 Health and Disease

- Villagers perceive a healthy child as one whose weight increases steadily as a result of being well fed. The other major characteristics of a healthy child are strength and happiness, smooth body/skin, and good looks.
- When a small child is not gaining weight and is having health problems, some people believe that this is caused by extramarital affairs on the part of the father.
- The perception of the severity of disease is related to fatality and the acuteness of the disease.
- In terms of the perception of the different health facilities, people recognise the advantages of the district hospital and the health centres; in particular, the free service, as well as treatments and examinations that are only available at hospitals.
- However, the distance to these health facilities is a problem. Transportation (by bicycle, ox-cart, or ambulance) may not be affordable, and even if it is, it may not be available. In fact, one of the strongest incentives for villagers to buy medicine at the grocery or to visit traditional healers is the distance to the government health facilities.
- Another perceived disadvantage to the hospital is the unavailability of medicine, as well as that of health personnel, even in emergencies. Furthermore, people also report encountering unpleasant attitudes on the part of some health personnel and other hospital employees.
- One of the perceived advantages of going to see a traditional healer is that they are welcoming to patients. Furthermore, some villagers think that there are certain types of diseases or conditions that can only be cured by traditional healers, such as those related to witchcraft. Other people think that the practices of the traditional healers are questionable.

### 3.12.2 Pregnancy and Delivery

- Women report that pregnancy always comes as a surprise, and that they are not ready. They worry about many things: the youngest child is still very young and needs more care; the pain and bleeding at the time of delivery; and the risk of losing life—their own or the life of the fetus/baby, or both. Men, on the other hand, feel happy when they find that their wives are pregnant. They feel that they are strong men. It is usually difficult for them to accept family planning.
- In Chichewa, *pakali* is translated as “pregnant,” but it can also mean “(in) between.” The sense of this latter meaning is that when a woman is pregnant, she is actually in a state between life and death: she may eventually deliver the child with no problems or she may die.
- Regarding delivery, some people have a negative perception of delivery at the hospital, because they associate it with a caesarean section and death. This perception can be a major obstacle to convincing a woman to deliver at a hospital. There are also other reasons why women avoid hospital delivery, including transportation costs and the expense for the guardian (e.g., food, soap).
- When women try to deliver at home and something goes wrong, they normally seek outside

help. However, there are a number of factors that often delay them from seeking appropriate help. For instance, even if they are already with a traditional birth attendant (TBA), they may not be referred to the hospital in a timely manner when a problem occurs. Consequently, some women die before they can be treated appropriately at the hospital.

### 3.12.3 Malnutrition

- Not all mothers take their children to Growth Monitoring. Even when the child is having a problem of malnutrition and needs more attention, the mother may not take the child precisely because she feels embarrassed by how the child looks, and because of the criticism that this may expose her to.
- People perceive the causes of the malnutrition as follows: poor spacing (between births), insufficient food, frequent sickness, and lack of care by the mother.
- The food supplement program may work as an incentive for people to visit Growth Monitoring, but the food is not necessarily consumed by the malnourished child. Since all family members may be suffering from hunger, they may all share it.

### 3.12.4 Conclusions

- The problems presented in this short summary are complex and interrelated, and careful analysis will be required to arrive at sound ideas for future interventions. Regarding the type of interventions to be implemented, we have to think carefully about which level of causes we want to work through.
- For example, if we want to address the problem of malnutrition, and if we decide to work only through the immediate causes, the provision of food might seem a solution. Our study showed, however, that the existing food supplement program is not always effective, and that some of the underlying causes, such as insufficient food security within the household and inadequate maternal and child health, have to be taken into account if we are to come up with more effective interventions.
- People are aware of an important cause of malnutrition; that is, not enough time between births. One of the reasons why women are worried when they find that they are pregnant is that the youngest child is still small. They are aware that this child may suffer from lack of attention because the mother will be occupied with her pregnancy and the newborn child. However, even if a woman wants to prevent pregnancy because she is not quite ready, she can't do so unless her husband cooperates. In general, however, men want to have more children, and they don't want to accept family planning.
- Thus, if we decide to address the underlying causes of malnutrition, it is important to link this with other interventions, such as safe motherhood and food security programs. Furthermore, in order for these interventions to be successful, not only the women and children, but also other members of the family, such as the husband, parents, parents-in-law and others, need to be aware of the importance of the interventions and need to participate.

### **3.13 COMMUNITY, GENDER AND PARTICIPATION**

#### **3.13.1 Social Structure of the Community**

The village chief is in charge of resolving disputes in the community with the assistance of councillors called *Nduna*. When villagers aren't satisfied with the chief's judgement, they go to the higher chiefs such as the group village chief or the TA.

People produce maize, groundnuts, and potato as food crops, and cassava, tobacco and cotton as cash crops. In Malawi, people suffer from food insecurity and 70 percent of smallholder households run out of food before the next harvest season.

Over 70 percent of female-headed households (FHHH) have holdings of less than 1.0 hectares as compared to 50 percent for male-headed households. FHHH are mostly engaged in food production, and less in cash crops as these are more labour intensive. The majority of FHHH are poor, and women and children in this group are at the greatest risk.

The period of heavy workload is from December to February since the majority of people are farmers. The hunger period is almost the same and comes just before the harvest season (from March to June). This is also the rainy season and access to health facilities becomes very bad. Therefore, people have to endure many burdens in this period.

In the Central Region, a matrilineal system dominates but a patrilineal system is also practised in some parts. In the matrilineal system, the husband moves to the village of his wife and has little authority in the management of his children. In the patrilineal system, women have the right to hold the title to the land. However, in both matrilineal and in patrilineal systems, it is men who control the land because most of the time the husband becomes the head of household and people think that the household head can control everything.

#### **3.13.2 Status of Women and Gender Roles**

Circumcision is not practised for girls, although it is often performed for boys especially in the Yao tribe. During the female initiation ceremony, girls are instructed on how they should respect elders or husbands and this would influence a girl's sense of values greatly.

Most women get married when around 15-18 years old. Some get married or become pregnant just after the initiation. Some of them face severe problems during deliveries and this contributes to the high maternal mortality rate in Malawi. At the same time, many girls stop going to school during pregnancy. This also contributes to the high dropout rate among women.

Most of the household chores are performed by women. Men are in charge of livestock management and construction work. It was revealed in a FGD that men feel strong negative peer pressure when they assist their wives during their pregnancy. This prevents men from helping their wives doing heavy workload at home. Among children, there is less gender bias on their role and responsibility.

Both men and women go to the garden to cultivate their land. It is men's responsibility to get money or food to support the family. Some men engage in piecework (*ganyu*) to obtain some cash on daily basis. Often, when they come back to their own gardens, they find it is already too late to grow or harvest any crops. This vicious cycle could be one of the main reasons for the never-ending starvation in the community.

### **3.13.3 Key Factors for Community Development**

#### **1) Strategy of GOM**

In 1994, the GOM launched the Poverty Alleviation Programme (PAP) which provides a framework for addressing poverty in the national development strategy. Within the PAP initiative, Malawi Social Action Fund (MASAF) was designed as a quick disbursing instrument to support development activities at the community level with the financial support of the World Bank. MASAF assists many villages in constructing roads, health facilities, boreholes and schools. MASAF implementation strategy requires that communities be involved in decision making, identification and prioritisation of their needs, implementation of projects, and maintenance of project outputs.

#### **2) Needs assessment and prioritisation by the community**

According to the research conducted in Salima, the needs for a borehole, a health centre, and credit for farm inputs were great among villagers. However, priorities may differ depending on the community. It should be community members themselves who analyse the needs and priorities of the community. Therefore, a key factor for effective development would be whether the chief discloses information to all the villagers equally and tries to listen to the voice of the villagers.

#### **3) Preparation and management by the community**

Most self-help activities by the community are in line with the GOM's strategy. Communities generally have begun to prepare for their development activities (e.g., by moulding the necessary bricks) before they apply for MASAF funding. Also, many committees including borehole committees and village health committees are composed of men and women in equal numbers from the viewpoint of gender equality. It is important to ensure that women can appreciate necessary technical assistance from sectoral agencies as well as men. At the community level, it is most important for community members to acquire the management skills that are necessary for operating the health related committees including the Drug Revolving Fund (DRF) as well as other development activities such as income generating activities (IGA).

#### **4) Sustainable development**

For successful and sustainable development, it is crucial to ensure that the community can obtain real benefit. Utilising local resources as much as possible and applying the appropriate technology in the respective areas are also important. If these are not taken into consideration, it may result in not only failing to achieve the project purpose, but also discouraging the people to participate in future development activities.

In addition to the activities directly related to health care such as borehole/toilet construction and DRF, IGA could contribute to improved health status of community people. IGA could also change social and cultural factors and enhance women's status in the family.

# Chapter 4

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## *OVERVIEW OF MAJOR PROBLEMS AND CONSTRAINTS IN THE HEALTH SECTOR*



## **CHAPTER 4: OVERVIEW OF MAJOR PROBLEMS AND CONSTRAINTS IN THE HEALTH SECTOR**

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Following the first cycle of the study in Salima District, the situation of the health care delivery system and the needs on the demand side were clarified. Although the study focused on Salima District, most of the findings apply to other districts and the country as a whole. The following are the major problems and constraints identified in the study which were taken into consideration in the development of the Central Region's Master Plan. Also mentioned are some existing plans for the health sector.

### **4.1 DEMOGRAPHIC TRENDS AND THEIR IMPLICATIONS**

- The high rate of population growth is exerting increasing pressure on development efforts. On the basis of the 1987 population census, the 1977-87 intercensal growth rate was 3.2 percent, and using this figure the total population was estimated at 10.9 million in 1996. Malawi's population density is one of the highest in Africa, with 230-460 persons per square kilometre of arable land.
- The age structure indicates a youthful population with about 46.1 percent of the population comprised of children under 15 years, implying a very high dependency ratio.
- The population is projected to continue increasing to the year 2002 although the growth will slow down due to the HIV/AIDS pandemic in the country. There are high losses of workers in the 15-49 age group due to HIV/AIDS, which is affecting the age structure of the population.
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### **4.2 HEALTH STATUS, DISEASE PATTERNS AND TREATMENTS**

- The nutritional status of children in the study area as well as in the whole of Malawi is one of the worst among sub-Saharan African countries.
- Prevailing gross undernutrition combined with deficiencies of some micronutrients seems to be the primary factor precipitating vulnerability to various infectious diseases.
- In Malawi, all HIV-related conditions will increase steadily over the next decade. Life expectancy in 2010 is expected to decrease significantly compared with the projected index in the absence of AIDS, and U5MR in 2010 is expected to increase similarly.
- WHO ranks Malawi fifth among countries most severely affected by the AIDS pandemic,

and the adult HIV infection rate is estimated at 14 percent. The Malawi National AIDS Control Program estimates that one million people may be carrying HIV today and close to 200,000 people have died of AIDS-related illnesses.

#### **4.3 WATER AND SANITATION**

- Just over one-third (37%) of all individuals in Malawi have convenient access to safe water at a distance of less than half a kilometre.
- The most common sources of water are unprotected wells and springs.
- Only 5.5 percent of the population have access to adequate sanitary facilities located within a convenient distance to their dwelling.

#### **4.4 DISTRICT HEALTH POLICY, ORGANISATION AND MANAGEMENT**

- During the next five years (1998–2003), the MOHP plans to decentralise the management of health facilities and services to operational managers at the district and facility levels as a first step towards comprehensive decentralisation in line with local government and the ministry's hospital autonomy policy.
- Each district was encouraged to create a "district profile" and a "district health plan" based on the draft of District Guidelines provided by MOHP.

#### **4.5 HEALTH FINANCING**

- The most important problem relating to finance is the gross underfunding of health services, which at present is well below the level needed to fund a package of essential health services, as estimated by WHO.
- Related to the overall shortfall in funding is the decentralisation of authority to control expenditures at the district level.
- Another problem is the general high level of poverty in the rural population, which will affect efforts to increase extra-budgetary revenues for health services through user charges or drug revolving funds (DRFs).
- Central Medical Stores experiences a financial constraint to the management of the DRFs.

#### **4.6 HUMAN RESOURCES**

- There is shortage of trained staff particularly on the clinical side at both the national and district levels.

- Maldistribution of trained staff is observed in the country.
- At present, human resource management and supervision is weak, and because little feedback is given or received, personnel often lack motivation.

#### **4.7 HEALTH CARE SERVICES**

- Although a relatively large percentage of the population has physical access to health facilities in Malawi, some still lack access to basic health services. This lack of access to basic services is one of the main issues that need addressing.
- At the national level a total of 43 percent of deliveries were done at home while 55 percent of deliveries were at health facilities. The main causes of maternal death include incomplete abortion, antepartum and postpartum haemorrhage, and anaemia during pregnancy.
- Although awareness of family planning is high, the rate of contraceptive use is low. Only 13 percent of people reported that they were currently using a contraceptive.
- The immunisation coverage rate especially among infants has declined since 1990.

#### **4.8 HEALTH FACILITIES AND EQUIPMENT**

- Most health facilities have an array of infrastructure problems, such as broken windows, doors, and ceilings, blocked pipes and water leaks that are left without repair. Preventive maintenance would eliminate many of the problems.
- All the health facilities visited lacked adequate basic medical equipment.

#### **4.9 LOGISTICS SYSTEM**

- There is evidence of weak financial management of the national drug budget.
- Supplies of drugs and medical supplies are not sufficient due to lack of funding and inefficient management. The districts are without some essential items for relatively long periods when CMS is out of stock.
- Districts often collect ordered supplies at RMS due to irregular and delayed deliveries by CMS.

#### **4.10 REFERRAL SYSTEM ASSESSMENT**

- Eighty percent (80%) of the population in the Central Region reside within eight kilometres distance to a health facility. However, despite the relatively high physical access and high

utilisation of health facilities in comparison to other Sub-Saharan African countries, the health indicators in the country reflect one of the worst situations in the region. (It should be noted that access to health facilities and access to quality health care are two very different issues.)

- The essential communication and transportation systems between primary and secondary level facilities are inadequate, especially considering the relatively high rate of deliveries at health facilities in the region.
- The links between villages and primary level facilities are also weak, particularly with regard to emergency obstetric care. For example, there are no antenatal homes or wards for pregnant women with identified risks.

#### **4.11 HEALTH INFORMATION SYSTEM**

- The stagnant Health Information System has been recognised as one of weaknesses of current health system in the country.
- Weak HIS structure and organisational capacity are observed.
- Non-availability of updated data and information on health status of the country reduced the reliance of the Ministry and regional/district health management teams on the Health Information System.

#### **4.12 PHYSICAL AND SOCIAL INFRASTRUCTURE DEVELOPMENT AND GEOGRAPHICAL INFORMATION SYSTEM (GIS)**

- Currently there are eight governmental institutions and departments using GIS as part of their operations.
- Prior to the arrival of the JICA PHC Study team, the Ministry identified GIS as a tool to improve physical assets planning and management and planned to introduce GIS into the new Health Policy.

# **Chapter 5**

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## ***FORMULATING THE MASTER PLAN FOR THE CENTRAL REGION***



## **CHAPTER 5: FORMULATING THE MASTER PLAN FOR THE CENTRAL REGION**

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### **5.1 BASIC STRATEGY FOR FORMULATING THE MASTER PLAN**

#### **5.1.1 Basic Strategy**

Physical access to health facilities in Malawi has been reported to be better than that of other Sub-Saharan African countries and similar low-income countries in other regions. According to UNICEF, since the late 1980s, about 80 percent of Malawi's population lives within one hour's travelling time to a health facility. In addition, the Demographic Health Survey 1992, reported that 82 percent of sample communities are located within 10 kilometres from the nearest health facility. Utilisation of health services in the country is quite high in comparison to other Sub-Saharan countries. On average, Malawians make about two outpatient visits per year and about four contacts per year for children under five. More than 90 percent of pregnant women receive some antenatal care at least once during their pregnancy. Delivery at health centres is also quite common with about 50 percent of deliveries taking place at a health facility.

Despite these relatively favourable indicators of health provision, the country's health outcome indicators are among the poorest in the world. The high infant and under five mortality rates begin to highlight the factors that cause the gap between the positive quantitative indicators on access and utilisation of health care and actual health status. Knowledge of these factors will be key to developing the basic strategy to strengthening primary health care in the Central Region. The gap is not caused by a single major factor, but rather by a combination of multi-level factors ranging from socio-cultural issues to management of the health system in the country.

Thus the key issue addressed in the study was the improvement of the quality of health care, which includes health system management, human resource development, and access to health services. Physical access to health facilities was not considered a key issue.

#### **5.1.2 National Health Policy Framework**

Since the completion of the Third National Health Plan 1986-1995, the MOHP has been engaged in the process of developing its Fourth National Health Plan. In the Policy Framework Paper published in September 1995, the Government expressed a commitment to embark on

health policy reforms that would transform the health care delivery system by placing a greater emphasis on under-served remote rural areas and on women and children.

Following several nation-wide consultations and workshops, the MOHP identified six priority issues: decentralisation; human resources development; financing; hospital autonomy; an essential health package (EHP), and the managerial capacity of the districts. A core team, comprising six senior-level managers with donor representation under the chairmanship of the Principal Secretary, was formed. Six team members were selected from within the core team to establish committees to explore each of the six priority issues, and the recommendations and findings from the respective studies were passed on to the districts in the form of District Planning Guidelines.

In the District Planning Guidelines as well as in the draft of the Strategic Health Plan, the MOHP emphasises the following:

- A commitment to Primary Health Care as a strategy for rationalising the use of all its internal health resources,
- A move away from the current piecemeal project approach to a more sustainable Sector Wide Approach to health development,
- The development of the capacities and competencies of the local planning and administrative systems,
- Formation of a Health Care Financing Coordination committee within the Planning Unit for coordination of donor and government inputs to the health sector.

### **5.1.3 Primary Health Care Activities in Malawi**

#### **1) Concept of primary health care in Malawi**

The aim of the National Health Policy in Malawi is "to raise the level of health of all Malawians by reducing the incidence of illness and occurrence of death in the population." This is to be achieved through the development of a sound delivery system capable of promoting health, preventing and reducing disease, protecting life, and fostering general well being and increased productivity. The main objective of the Ministry is "to reduce the high morbidity and mortality rates." To achieve these goals, the Ministry has identified a number of specific programmes aimed at solving/tackling specific health issues, and/or problems. One such programme is PHC, whose main objective is to strengthen community-based activities.

The specific objectives of PHC are as follows:

- Empower individuals, households, and communities to take responsibility for their own health.
- Encourage the establishment of drug revolving funds which would be supported by income generating activities.
- Strengthen the community health volunteer system by conducting a study to determine the causes of the high dropout rate and to develop an incentive scheme.



- Accelerate the training of health surveillance assistants and community health volunteers.
- Facilitate the formation of and conduct training for Village Health Committees in various basic skills.
- Target resources to the priorities identified by communities.

PHC is, therefore, essential health care made universally accessible to individuals, families and communities through their full participation and at a cost that the community can afford in order that lives are improved in the spirit of self reliance and self determination.

## **2) Target activities of PHC programmes**

The long-term goal of the PHC programme is to have in each of thirty-six thousand villages a fully functioning Village Health Committee that will be able to:

- Disseminate Information, Education, and Communication (IEC) messages on various health issues.
- Conduct community nutrition education, and communicate messages on related issues.
- Construct, protect, and repair shallow wells; construct ventilated and improved pit latrines; dig proper refuse pits; teach people the importance of washing hands with soap and clean water after using the latrine; teach people to use the two-cup system when drawing water for drinking from a pot.
- Encourage the use of modern methods of family planning; arrange to train traditional birth attendants (TBAs) ; construct an antenatal clinic shelter and a shelter for the TBAs.
- Request the nearest health worker to come to the village and immunise the children against all immunisable diseases. Use the community health workers as resource persons and facilitators for comprehensive health activities.
- Disseminate information on the prevention of all locally endemic diseases. Have the resources to treat all minor ailments and refer difficult cases to nearby health institutions.
- Start and maintain drug revolving funds, and have in stock all essential drugs at all times.
- Teach the community about preventive mental health. Make arrangements to refer all difficult mental health cases to the nearest health institution.
- Teach the community about preventive oral health. Arrange for the village health volunteers to conduct health talks on oral health. Conduct oral health talks in nearby schools.
- The Ministry of Health and Population runs PHC programmes with assistance from a number of donor organisations through bilateral and other agreements.

## **5.2 PLANNING OBJECTIVES AND FUTURE PROJECTIONS TO THE YEAR 2007**

### **5.2.1 Goal of Regional Master Plan**

The overall goal of the regional master plan is to strengthen PHC activities in order to improve the health condition of people residing in the Central Region of Malawi through an effective and

sustainable mobilisation of available resources targeted to health care.

### 5.2.2 Basic Principles for Achieving Goal

Based on the overall strategy outlined in the previous chapter, the basic principles for achieving the above goal are as follows:

- 1) To place emphasis on the quality of health care through strengthening the management of the health care system, human resources development, and improving access to health services.
- 2) To prioritise projects based on the core issues identified by MOHP such as decentralisation, human resources development, health finance reform, self-management of the hospitals, provision of an essential health package, and capacity building of local management staff within the framework of the national health care policy.
- 3) To make plans based on the basic principles and primary health care activities in Malawi, particularly taking into account the improvement of community-based activities.

### 5.2.3 Future Projections

#### 1) Demographic situation

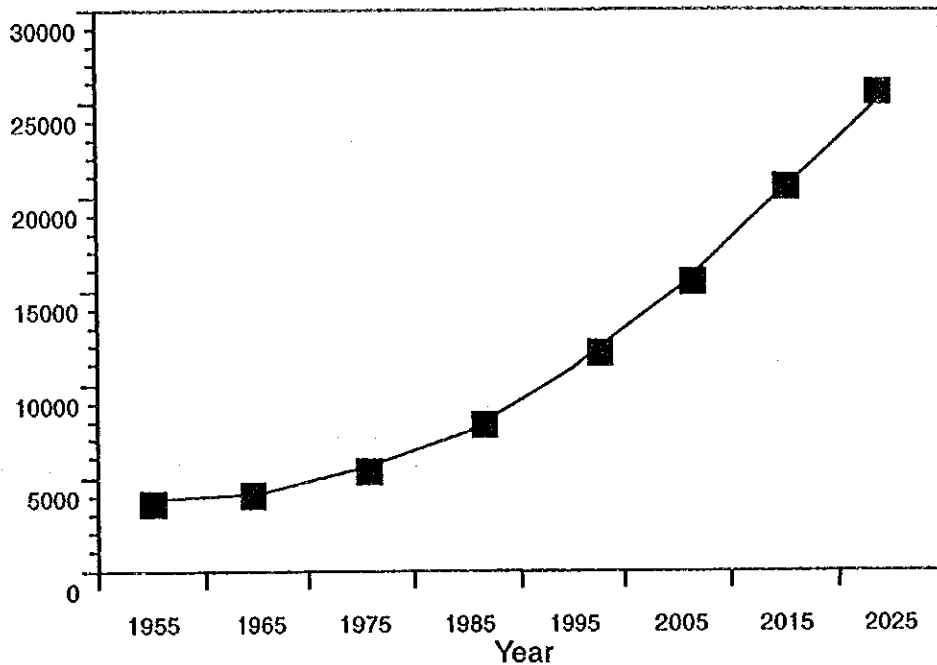
Since independence from Britain in 1964, three national censuses have been carried out (approximately every 10 years) in Malawi. The fourth census started in September 1998, and the detailed demographic data is expected to be available after one to two years. Therefore, most of the current demographic data is calculated by multiplying the 1987 census results by the estimated population growth rate.

According to the 1987 national census (National Statistics Office), the total population of Malawi was 7,982,607. The annual population growth rate was estimated to be 3.7 percent on average between 1977 and 1987. Given this rate of increase, the total population was estimated at approximately 10.93 million in 1996 and will be around 16.3 million by 2007. The census data shows that 45 percent of the total population is under five years of age, which indicates a significant dependent population. If the current mortality and growth rates remain unchanged to the year 2002, people under 15 years will constitute nearly 50 percent of the total population.

#### 2) Influence of AIDS on demographic situation

It is estimated that with the high prevalence of AIDS, an additional 120,000 Malawians will die each year over the number of deaths if there were no AIDS. Using this estimate, the additional deaths from AIDS will reach 620,000 by 2005. However, it is also predicted that AIDS will cause the population growth rate to decline from the current high level, meaning that the overall population will be substantially reduced due to the prevalence of AIDS.

Population (x1,000)



**Fig. 5.1 Estimated Change In Total Population (Malawi)**

(source: United Nations, *World Urbanization Prospects 1990,1991*)

One significant result of the AIDS pandemic is a change in the age composition of the Malawian population, or more specifically the loss of many in the skilled working population. While the mortality rate of those aged 15 to 49 was 10.8 percent from 1980 to 1985 prior to the spread of AIDS, it stood at 14.7 percent between 1990 and 1995, and is estimated to be 21.2 percent between 2000 and 2005.

### 3) Economic growth

Malawi is a remarkably low-income country with GNP per capita of 170 dollars in 1995. During the first half of the 1990s Malawi faced substantial economic instability and was burdened with a huge fiscal deficit, rapid inflation, and a fluctuating GDP compounded by two major droughts. However, an economic growth rate of 9.5 percent was attained during 1996 and 5.3 percent during 1997. The government has predicted that the medium-term projection for economic growth will be around 4 percent per annum, which will result in a modest rise in GNP per capita. This will depend on factors such as sufficient rainfall for agricultural production and continued implementation of measures to stabilise economic growth.

On the other hand, AIDS-related mortality has had a significant impact on the younger work force, thus contributing to a substantial decline in GNP per capita. Coupled with the devaluation of the kwacha in excess of 40 percent following the deterioration of the tobacco industry, this optimistic view of the economic situation is considered unrealistic.

#### **4) Summary of major issues**

The Malawi health sector is plagued with many problems such as financial constraints, a shortage of human resources, insufficient health facilities and equipment, and weaknesses in the management and information systems. In addition, the pressures of rapid population growth and economic instability have contributed significantly to the deterioration of health conditions for the poorest. However, despite the difficulty in projecting the morbidity and mortality situation to the year 2007, the main contributors to morbidity and mortality need to be vigorously tackled. These include communicable diseases such as acute respiratory infection, diarrhoea, malaria, and tuberculosis, as well as malnutrition in children under five and the high mortality of pregnant women.

Although many health projects such as EPI, food supplementation programmes, and PHC activities have been implemented to combat the main health issues, progress has been slow. In fact, health conditions have actually deteriorated as demonstrated by the recent outbreak of measles in many districts, which had markedly decreased until the beginning of the 1990s due to vaccination. Therefore, the future for the health sector will not be bright unless the current health system is improved.

# Chapter 6

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## *PROBLEM ANALYSIS*



## CHAPTER 6: PROBLEMS ANALYSIS

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### 6.1 OVERVIEW OF THE TWO MAIN ISSUES

As detailed in Chapter 4, Problems description, the Malawi health sector has numerous problems. But most significant is the wide disparity between the provision of health services and the actual health needs of the people. Therefore, individual problems were prioritised in consideration of this disparity.

Malnutrition in children under five and high maternal mortality contribute most significantly to the poor health situation in Malawi. Acute respiratory infection, diarrhoea, malaria, TB and HIV/AIDS are the main diseases that contribute to malnutrition in children, while haemorrhages and abnormal deliveries are the main contributors to maternal mortality.

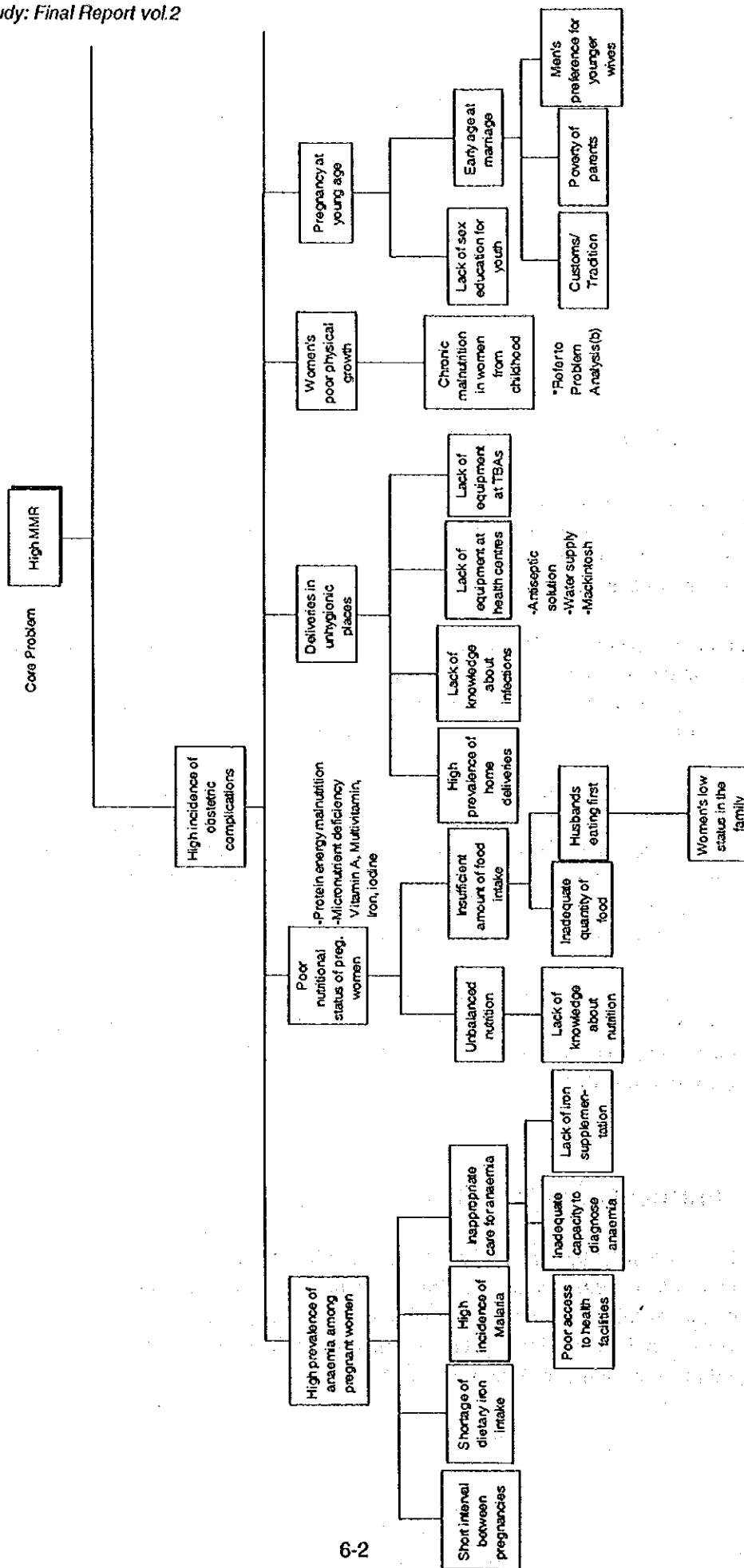
The two main issues of infant malnutrition and high maternal mortality can be reduced through the strengthening of the health care system and its management, the provision of necessary facilities and equipment, human resources development, community participation, and other means that improve the delivery of primary health care. In addition, an integrated approach is necessary in order to address the comprehensive health situation rather than developing programmes that deal with one illness at a time.

Since children under five and pregnant women are selected as the target populations in accordance with the scope of our research study, it is logical to focus on the health problems of pregnant women and infant malnutrition. Based on the problem framework, five comprehensive projects were formulated.

### 6.2 PROBLEMS ANALYSIS

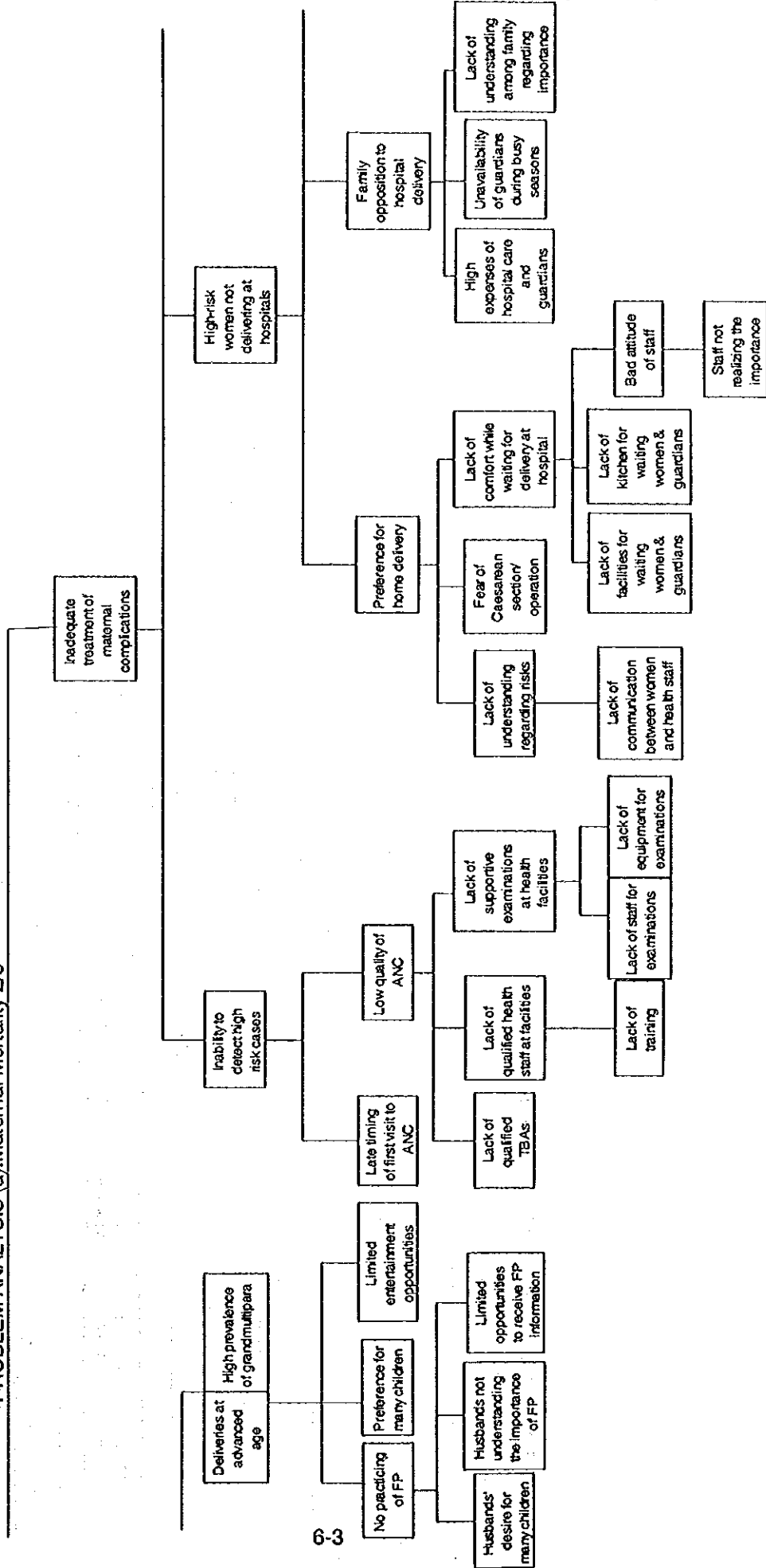
A problem analysis of the two critical issues, namely malnutrition in children under five and high maternal mortality, was conducted. The problem trees shown in the following pages are the result of the exercise in which causes-effect relationships were visualised. Concrete action plans were then developed based on the analyses of the relationships depicted in the problem trees and the selection of effective solutions.

PROBLEM ANALYSIS (a): Maternal Mortality 1/3

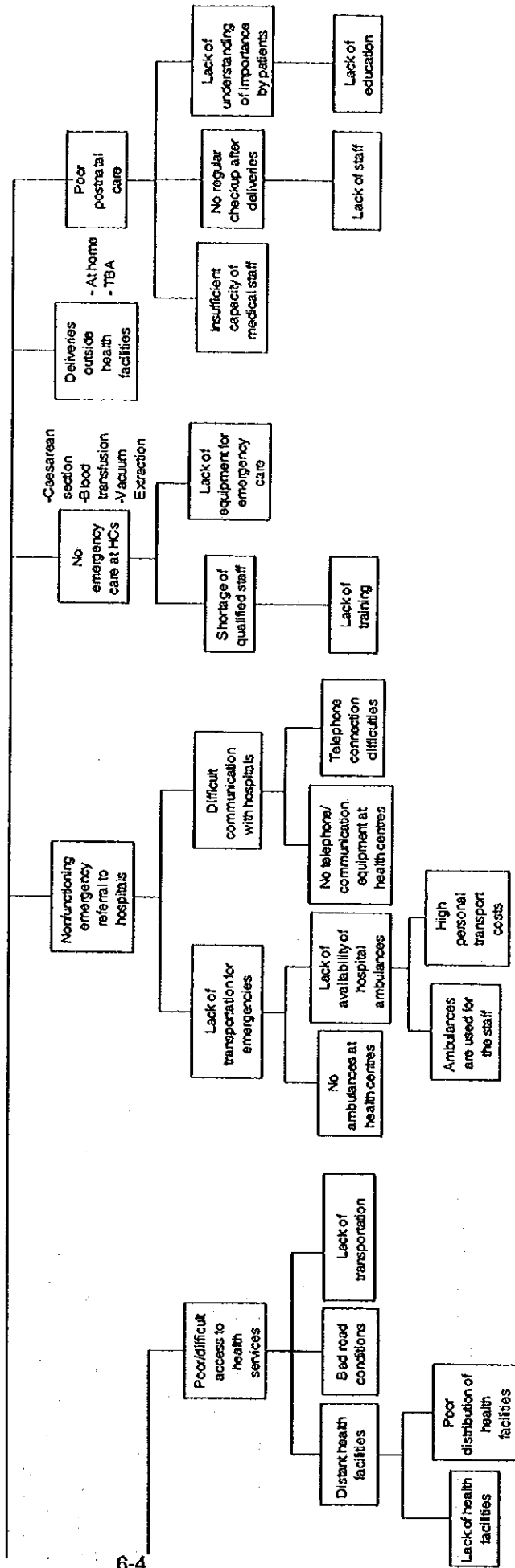




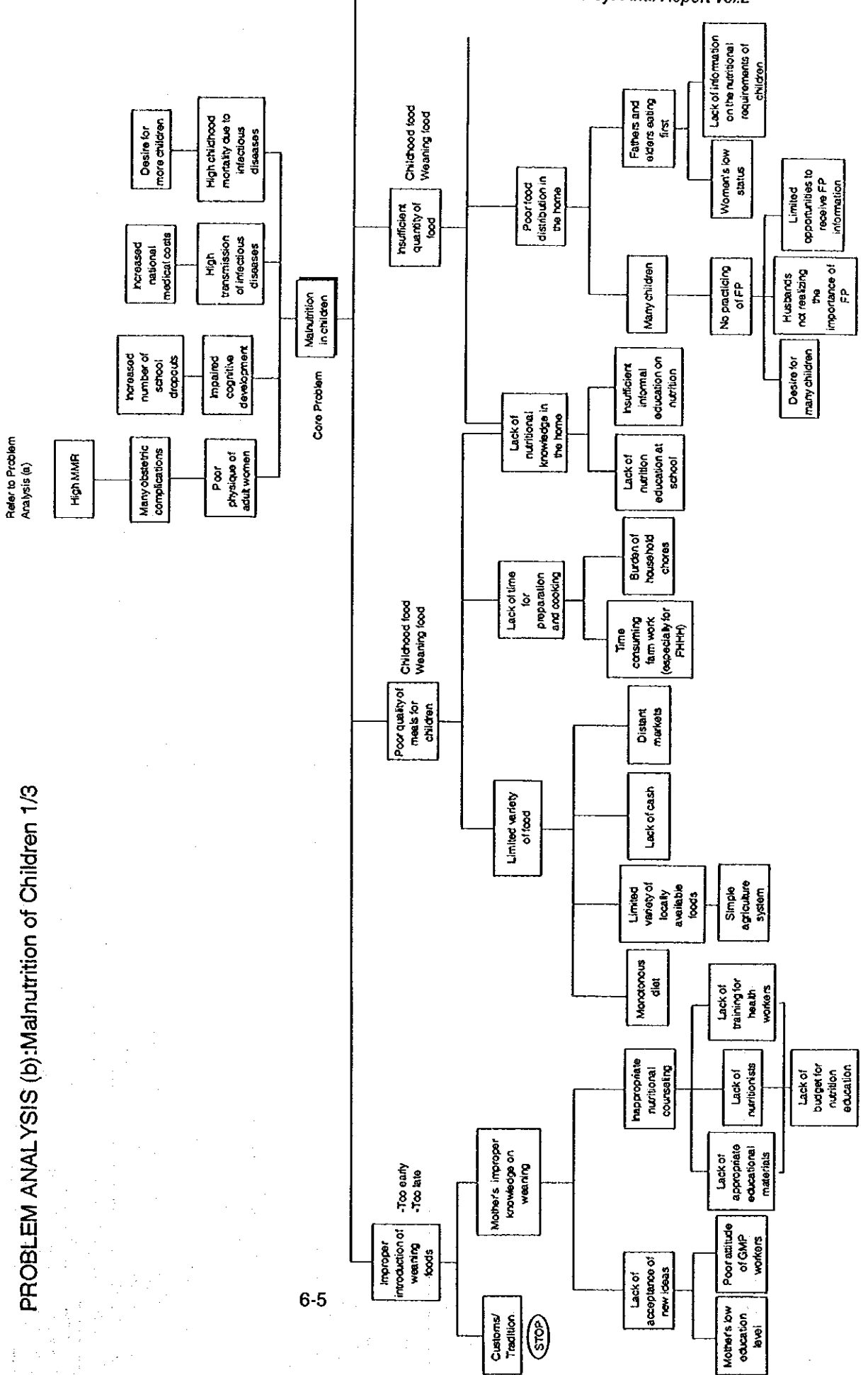
PROBLEM ANALYSIS (a): Maternal Mortality 2/3



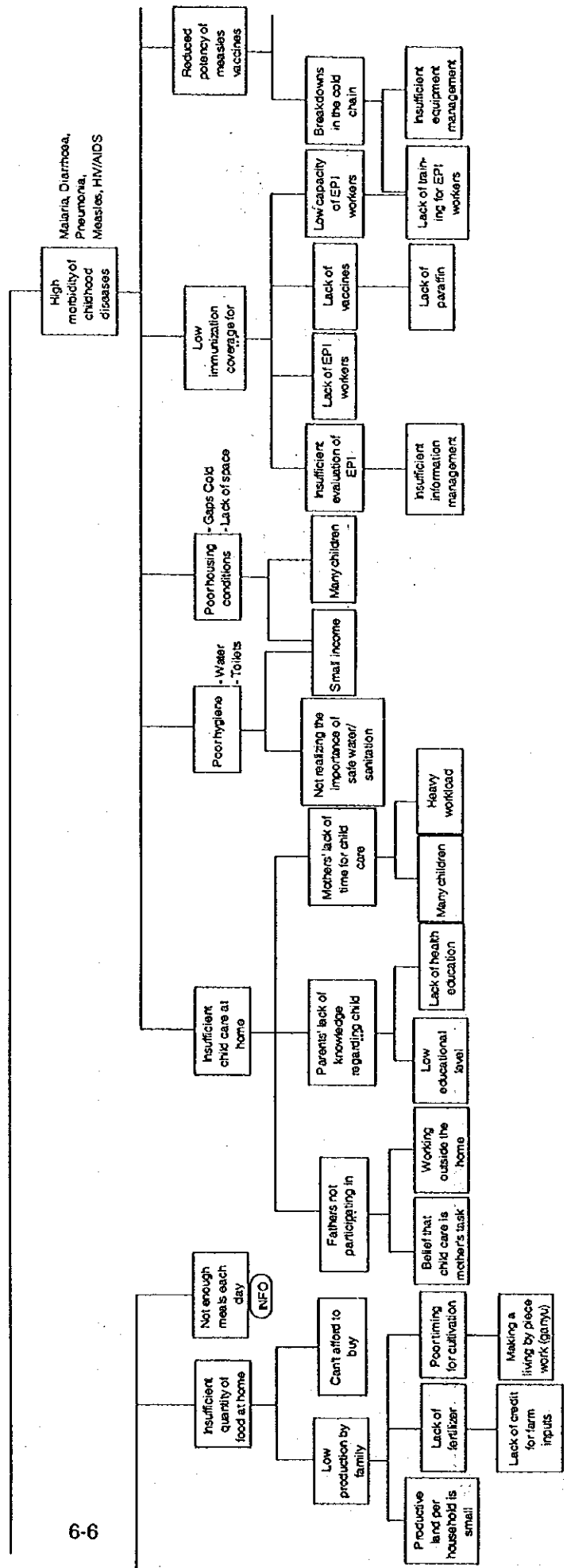
PROBLEM ANALYSIS (a): Maternal Mortality 3/3



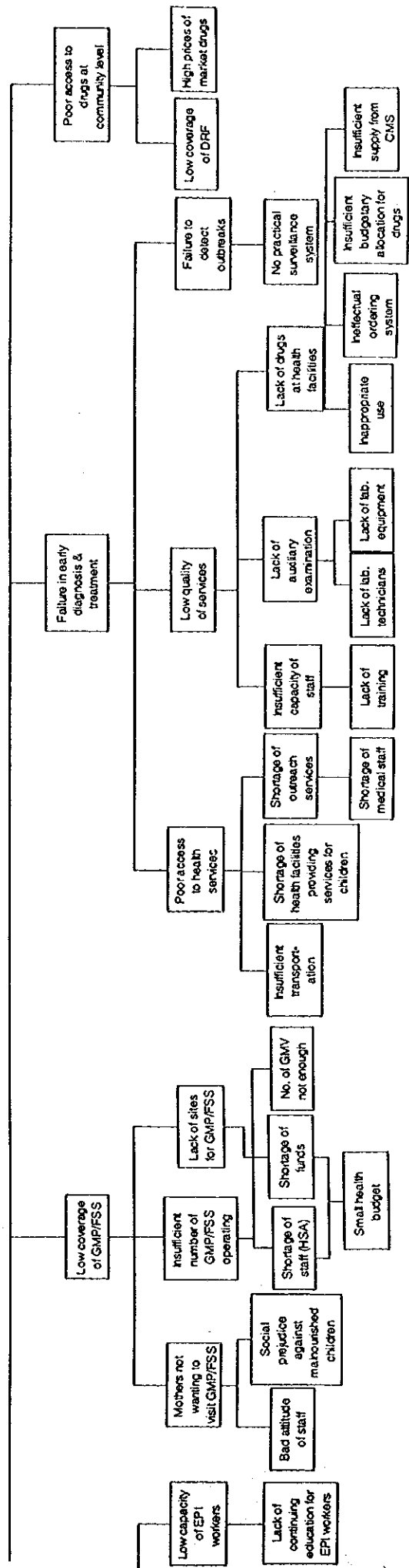
PROBLEM ANALYSIS (b): Malnutrition of Children 1/3



PROBLEM ANALYSIS (b): Malnutrition of Children 2/3



PROBLEM ANALYSIS (b): Malnutrition of Children 3/3



# Chapter 7

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## *POSSIBLE INTERVENTIONS*

## **CHAPTER 7: POSSIBLE INTERVENTIONS**

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Following the problems analysis of the two major issues (the high maternal mortality rate and the heavy burden of diseases and undernutrition among children), possible interventions addressing the various 'causes' were considered. This long list of projects is presented below.

### **A: POSSIBLE INTERVENTIONS TO REDUCE MATERNAL MORTALITY**

- A-1 Prevention and Treatment of Anaemia in Pregnancy
- A-2 Improvement of the Nutritional Status of Pregnant Women
- A-3 Strengthening Existing Family Planning Programmes
- A-4 Improvement of Access to Health Services for Maternal Care
- A-5 Improvement of Obstetric Emergency Care
- A-6 Capacity Building of Maternal Health Workers
- A-7 Improvement of Health Facilities and Equipment for Maternal Care
- A-8 Strengthening of IEC Activities for Maternal Care
- A-9 Improvement in the Quality of Maternal Care
- A-10 Health Planning Capacity Building

### **B: POSSIBLE INTERVENTIONS TO IMPROVE CHILDHOOD NUTRITION AND HEALTH**

- B-1 Strengthening of the Existing EPI System
- B-2 Improvement of Water Supply and Sanitation
- B-3 Strengthening Existing Family Planning Programmes
- B-4 Improvement of Access to Health Care Services for Child Malnutrition
- B-5 Improvement of Growth Monitoring and Food Supplementation Programmes
- B-6 Capacity Building of Health Workers
- B-7 Improvement of Health Facilities and Equipment for Childhood Malnutrition
- B-8 Strengthening of IEC Activities for Childhood Nutrition and Health
- B-9 Improvement of the Management of Childhood Illnesses
- B-10 Improvement of the Referral System
- B-11 Strengthening of the District Health System Management
- B-12 Promoting Community Activities that Benefit Childhood Health
- B-13 Improvement of Access to Essential Drugs

A. Possible Interventions to Reduce Maternal Mortality

No.	Objectives	Components	Linked Projects	Major Inputs*
A-1	Prevent and treat anaemia in pregnancy	<ol style="list-style-type: none"> <li>1) Provide pregnant women with iron/folate supplementation at ANC</li> <li>2) Fortify maize flour with iron</li> <li>3) Provide pregnant women with malaria prophylaxis</li> <li>4) Improve laboratory equipment at health facilities to detect anaemia, malaria and worm infection</li> <li>5) Re-train ANC workers on the care of anaemia in pregnancy</li> <li>6) Promote IEC on anaemia in pregnancy</li> <li>7) Support existing family planning programmes</li> </ol>	A-7 A-6 A-8 A-3	TA, F TA, F TE, Eq TE TE See A-3
A-2	Improve nutritional status of pregnant women	<ol style="list-style-type: none"> <li>1) Provide nutrition education to women, their husbands and community</li> <li>2) Improve female children's nutritional status</li> <li>3) Extend food supplementation programmes for pregnant women</li> <li>4) Re-train ANC workers on nutrition in pregnancy</li> </ol>	A-8 B-5 B-5 A-6	TA, TE See B-5 See B-5 TE
A-3	Strengthen existing family planning programmes	<ol style="list-style-type: none"> <li>1) Train FP workers regularly</li> <li>2) Develop better materials for FP education</li> <li>3) Promote practice of FP to husbands</li> </ol>	A-6 A-8	TA, F TA, F
A-4	Improve access to health services	<ol style="list-style-type: none"> <li>1) Strengthen MOHP's capacity at central, regional and district levels</li> <li>2) Analyse existing health system</li> <li>3) Develop health infrastructure development plan</li> <li>4) Construct health facilities in a rational distribution</li> </ol>	A-10	See A-5 TA, TE TA, TE, R Con
A-5	Improve obstetric emergency care	<ol style="list-style-type: none"> <li>1) Re-train health workers on basic/advanced life support techniques for obstetric and neonatal emergencies</li> <li>2) Provide health facilities with essential emergency kits</li> <li>3) Equip all health centres with radio communication system</li> <li>4) Upgrade selected health centres to provide emergency obstetric care</li> </ol>	A-6 A-7 A-7 A-7	TE Eq Eq TA, Con, Eq

\* TA: Technical Assistance, TE: Training and Education, F: Funds, Con: Construction, Eq: Equipment, R: Research and Study



No.	Objectives	Components	Linked Projects	Major Inputs*
A-6	Strengthen capacity of maternal health workers	<ol style="list-style-type: none"> <li>1) Re-train ANC workers on detection and care of anaemia in pregnancy</li> <li>2) Re-train ANC workers on nutrition in pregnancy</li> <li>3) Train FP workers regularly</li> <li>4) Re-train health workers on basic/advanced life support techniques for obstetric and neonatal emergencies</li> <li>5) Re-train health workers on interpersonal communication</li> </ol>	A-1 A-2 A-3 A-5 A-9 B-6	TE TE TE TE TA, TE
A-7	Improve health facilities and equipment	<ol style="list-style-type: none"> <li>1) Install a solar power system, a radio communication system, and an electric pump for a borehole in all health centres</li> <li>2) Construct waiting wards for high-risk pregnant women at hospitals and selected health centres</li> <li>3) Establish regular maintenance system at health centres</li> </ol>	A-5 B-7 A-9	TA, TE, Eq Con TA, TE
A-8	Strengthen IEC activities	<ol style="list-style-type: none"> <li>1) Promote IEC on anaemia in pregnancy</li> <li>2) Provide nutrition education to women, their husbands and community</li> </ol>	A-1 A-2	TE TA, TE
A-9	Improve quality of maternal care	<ol style="list-style-type: none"> <li>1) Provide health education on maternal care</li> <li>2) Construct waiting wards for high-risk women at hospitals and selected health centres</li> <li>3) Re-train health workers on interpersonal communication</li> <li>4) Recruit and train health volunteers to provide maternal care at the</li> </ol>	A-8 A-7 A-6 A-6	TA, TE Con TA, TE TE

\* TA: Technical Assistance, TE: Training and Education, F: Funds, Con: Construction, Eq: Equipment, R: Research and Study

No.	Objectives	Components	Linked Projects	Major Inputs*
A-10	Strengthen capacity of health planning	1) Set up health GIS unit at MOHP 2) Train identified personnel on basic GIS software operation 3) Conduct seminars on health GIS for MOHP and related projects 4) Train identified personnel on health system assessment methodology 5) Conduct long term training of selected staff on health policy and planning 6) Train identified personnel on health infrastructure planning		TA TA, Eq TA, TE TA, TE TE TA, TE

**B. Possible Interventions to Improve Children's Health/Nutritional Status**

No.	Objectives	Components	Linked Projects	Major Inputs
B-1	Strengthen existing EPI system	1) Provide health education on EPI 2) Equip all health centres with solar-driven refrigerators 3) Increase outreach of GMP/child health clinics for immunisation 4) Train EPI workers to keep more accurate statistics	B-8, A-9 B-7 B-4 B-11	TA, TE TA, TE, Eq F, Eq TA, TE
B-2	Improve water supply and sanitation systems	1) Promote IEC on safe water and sanitation 2) Train HSAs to conduct regular surveillance of water sources 3) Construct new wells 4) Construct model toilets at health facilities and schools	B-8	TE TE Con Con
B-3	Strengthen existing family planning programmes	Same as A-3	A-3	
B-4	Improve access to child health care services	1) Improve accessibility to health services 2) Increase the sites and frequency of outreach of GMP/child health clinics	A-4 B-5	See A-4 F

\* TA: Technical Assistance, TE: Training and Education, F: Funds, Con: Construction, Eq: Equipment, R: Research and Study

No.	Objectives	Components	Linked Projects	Major Inputs*
B-5	Improve growth monitoring and food supplementation programmes	<ol style="list-style-type: none"> <li>1) Provide people with health education</li> <li>2) Increase the number of GMVs and HSAs</li> <li>3) Increase sites of GMP/child health clinics outreach</li> <li>4) Visit households to follow up on the participants of food supplementation programme</li> <li>5) Re-train GM workers on interpersonal communication</li> </ol>	B-8 B-6 B-4	TA, TE F TA, TE
B-6	Strengthen capacity of health workers	<ol style="list-style-type: none"> <li>1) Train EPI workers to keep more accurate statistics</li> <li>2) Increase the number of GMVs and HSAs</li> <li>3) Train existing health workers regularly</li> <li>4) Establish advanced training courses for GMV/HSA/HA/EHO</li> <li>5) Re-train health workers on interpersonal communication</li> <li>6) Increase the number of DRF volunteers</li> </ol>	B-1 B-5	TA, TE
B-7	Improve health facilities and equipment	<ol style="list-style-type: none"> <li>1) Install a solar power system and an electric refrigerator in all health centres</li> <li>2) Establish a system of regular maintenance for health centres</li> </ol>	B-1 A-7 A-7	TA, TE, Eq TA, TE,
B-8	Strengthen IEC activities	<ol style="list-style-type: none"> <li>1) Provide health education on EPI</li> <li>2) Promote IEC on safe water and sanitation</li> <li>3) Provide health education on the importance of children's nutrition</li> <li>4) Conduct cooking demonstrations to promote kitchen gardening</li> </ol>	A-8, B-1 B-2 B-5 B-12	TA, TE TE TA, TE TE
B-9	Improve management of childhood illnesses	<ol style="list-style-type: none"> <li>1) Standardise the management of childhood illnesses by using the WHO/UNICEF manual for IMCI</li> <li>2) Revise the prescriber's manual reflecting the IMCI manual and new monthly out-patient return form</li> <li>3) Re-train health workers based on the updated standard of patient</li> <li>4) Establish a better referral and back-referral system</li> </ol>	B-6 B-10	TA, TE TA, TE, F TA, TE, F See B-10

\* TA: Technical Assistance, TE: Training and Education, F: Funds, Con: Construction, Eq: Equipment, R: Research and Study

No.	Objectives	Components	Linked Projects	Major Inputs*
B-10	Improve the referral system	<ol style="list-style-type: none"> <li>1) Formulate standardised referral forms with detachable reply sheet</li> <li>2) Establish obligatory reply system from referred facility to referring facility</li> </ol>	B-9	TA, TE, F
B-11	Strengthen the district health management system	<ol style="list-style-type: none"> <li>1) Train District Health Management Team on health system analysis and infrastructure development planning</li> <li>2) Train DHMT on disease control and human resource management</li> <li>3) Strengthen district's capacity to improve drug availability</li> </ol>	A-10 B-1, 5, 6 B-13	See A-10 TA, TE TA, TE, F
B-12	Enhance community based health activities	<ol style="list-style-type: none"> <li>1) Promote kitchen gardening for food diversification</li> <li>2) Promote community-based income generating activities</li> </ol>	B-8	TA, TE TA, TE, F
B-13	Improve access to essential drugs	<ol style="list-style-type: none"> <li>1) Strengthen the drug procurement system in collaboration with CMS</li> <li>2) Increase the number of drug revolving funds</li> <li>3) Conduct a research study on informal drug-sellers to determine possible interventions</li> </ol>	B-11 B-6,11	TA, TE TA, TE, F TA, TE, R

\* TA: Technical Assistance, TE: Training and Education, F: Funds, Con: Construction, Eq: Equipment, R: Research and Study

# Chapter 8

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## *PRIORITISED PROJECTS*



## CHAPTER 8: PRIORITISED PROJECTS

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### 8.1 FORMULATION OF PRIORITISED PROJECTS

Childhood malnutrition and high maternal mortality have been identified as prioritised health problems in Malawi, and to address these two issues potential interventions were proposed in a long list of projects. This list was then reviewed in light of the overall strategy described in Chapter 5 and revised into a final list of five prioritised projects (Fig. 8.1). The general aim is for an improvement in the quality of health care and to reduce the gap between the relatively well organised network of health facilities and poor health indicators. This will be achieved primarily through improvements to the health management system, human resource development, and access to health services.

The five projects described in this chapter were developed following the view that the two core problems are a manifestation of a complex mix of factors, and that interventions focusing on single factors alone would have limited results. Therefore, from the problem frameworks, comprehensive and integrated projects were developed. The overall planning capacity of the Ministry of Health and Population (MOHP) is considered key to improving access to health services and the capacity of human resources to provide these services. **Project 1, Capacity Building for Health Services Planning**, addresses the need for improved planning. **Project 2, An integrated Approach to Improve Childhood Nutrition and Health**, focuses on the main issue of malnutrition, but also covers many other problem areas including immunisation, water supply and sanitation, and the referral system. High maternal mortality is a result of many factors including women's poor nutritional status, lack of knowledge regarding pregnancy and health issues, and the limited emergency obstetric care available in the country. These issues and others are addressed in **Project 3, Comprehensive Maternal Care**. The provision of basic infrastructure such as a safe water supply, electricity, and communication equipment is a necessary foundation to providing quality health care. The poor status of many health centres drew attention to the need for routine maintenance and repairs. This need for additions and improvements to facilities and equipment culminated in **Project 4, Improvement of Physical Health Care Facilities and Equipment**. Finally, the significance of the drug sellers including groceries in providing health care to the public has been largely neglected in the past, despite studies that show that a large proportion of the population goes to the drug sellers first for medications. The household surveys and exit interviews carried out for this study confirmed this trend. In order not to overlook this potential partner in the provision of quality health care, **Project 5, Improvement of Curative Care through Better Self-Treatment with Market**

Drugs, was formulated.

## 8.2 SELECTION OF PRIORITY

Project priority was determined by the potential impact on the macro health status of the country, that is, the greater the contribution of the project to improved health care, the higher the priority. Based on this concept, Project 1, Capacity Building for Health Services Planning, was given highest priority because the benefits from capacity building will spread throughout the entire health system. Projects 2, An Integrated Approach to Improve Childhood Nutrition and Health, and 3) Comprehensive Maternal Care, are considered equal in priority. Project 4, Improvement of Physical Health Care Facilities and Equipment, will support Projects 2 and 3. Finally, Project 5, Improvement of Curative Care through Better Self-Treatment with Market Drugs, will primarily aid Project 2.



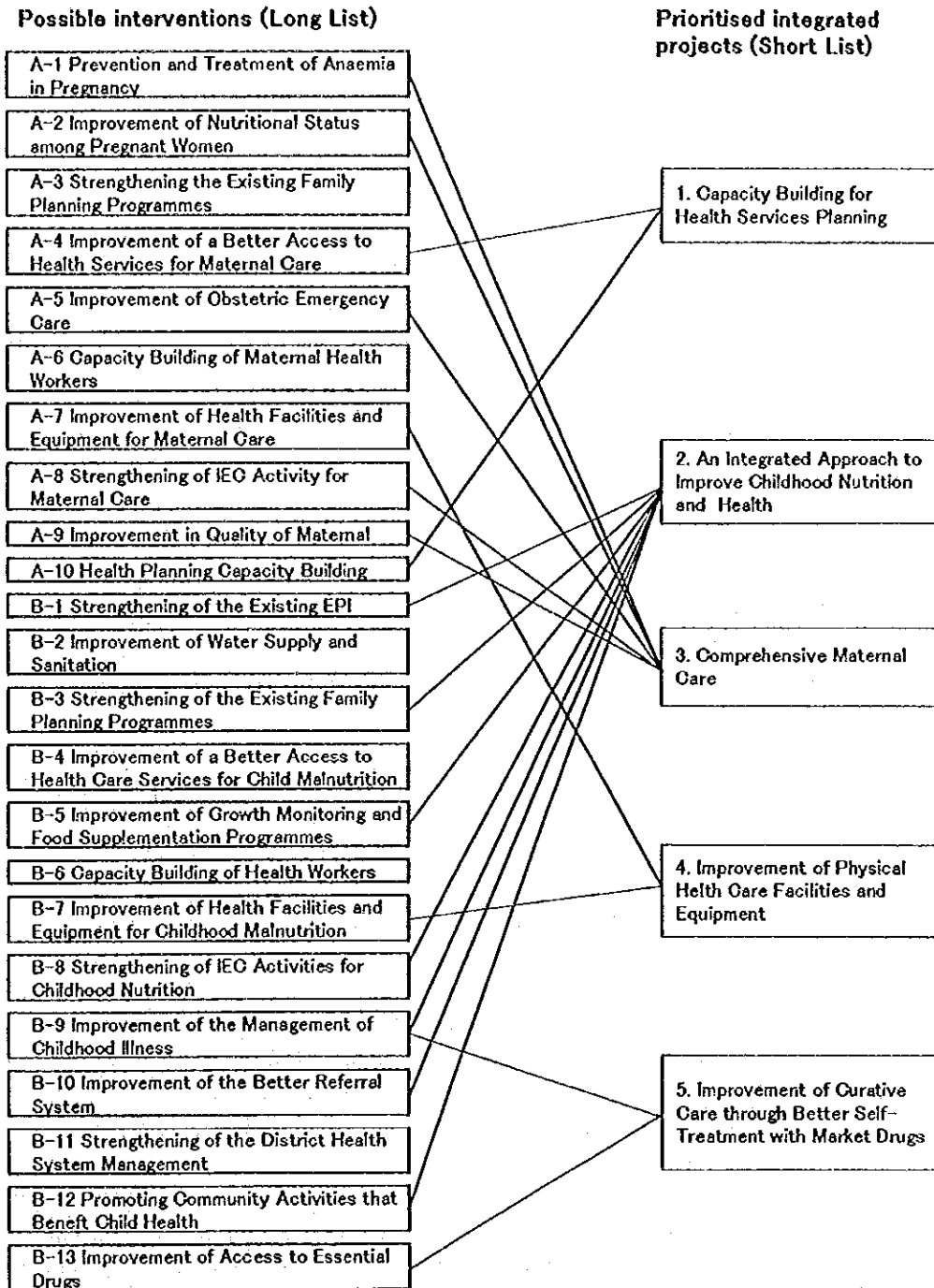


Fig. 8.1 Linkage between Possible Interventions (Long List) and Prioritised Projects (Short List)

## PROJECT 1: Capacity Building for Health Services Planning

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### 1. JUSTIFICATION

Physical access to health facilities is one of the key indicators to measure the level of health care provided to a population. Malawi has achieved a relatively favourable situation as 80 percent of people live within eight kilometres of the nearest health facility. Although this figure shows the geographic situation at the district and national levels, it fails to provide the information needed for building an effective health services delivery network at the sub-district level. The high population density of the country masks the true situation of the rural population, whose access is far worse than that of the urban population. The average access rate in a district does not reveal the inequitable distribution of health services, nor generally reflect seasonal variations of access. In addition, access to health facilities is different from access to particular health services such as obstetric care.

Physical access is a main determinant of health service utilisation. In Malawi, the level of utilisation drops considerably among populations residing more than five kilometres from a health service provision point. Therefore, looking at access with a cut-off distance of five kilometres from a primary level facility, only 50 percent are within range and once road networks are considered, the figure drops to about 35 percent.

Access to health services also determines the outcome of health problems. A good example is access to emergency obstetrics care since a delay in a blood transfusion in the case of haemorrhage during delivery often results in maternal death.

Many people are involved with decisions regarding the health care network such as the siting of facilities and types of services to be provided. Politics and similar factors also come into play, such as when politicians exert influence to have a new health facility built in his or her constituency, and the tendency for urban areas to be favoured over rural areas. But considering the growing financial pressures, the government needs to make rational plans on health services provision by prioritising locations for additional health facilities and types of services in a way to maximise the limited resources.

The methodologies used in the first cycle of the study to measure physical access to health services and to identify potential sites for additional health services are in line with the current government's interest in rationalised planning capacity and the Ministry has shown keen interest in the methodology. This project was therefore proposed with the aim to transfer the technical capacity for health system analysis and planning with particular focus on building of a sound health services network.

## 2. OBJECTIVES

### Overall objective

To build capacity for health services planning at national, district and local levels

### Specific objectives

- 1) To strengthen the planning capacity of MOHP staff by equipping them with the skills and knowledge to:
  - Conduct health system analyses
  - Complete the analysis on physical access to health facilities for all districts
  - Complete the five-year health system services network development plan for the entire country
  - Review the network development plan and make adjustments as required
  - Utilise Geographical Information System (GIS) technology
  - Write and submit detailed requests for assistance to donor agencies
- 2) To provide district health managers with an understanding of the principles and tools of the methodologies used in carrying out the above planning exercises
- 3) To provide key stakeholders in the health system with an exposure to the principles of development planning and the ability to work interactively with government officials

## 3. ACTIVITIES

- 1) Establish Geographical Information System database
  - Digitise 1:50000 scale map for Northern and Southern and Regions
  - Verify location of health facilities
- 2) Capacity building at MOHP
  - Establish a health facility GIS Unit at MOHP in collaboration with other projects relating to the Health Management Information System
  - Train on basic GIS software operation
  - Conduct seminars on Health GIS for MOHP, other ministries, politicians, and donor agencies
  - Train on health system analysis methodology
  - Train selected staff on health policy and planning (long term)
  - Train on health infrastructure planning
- 3) Health system analysis
  - Conduct survey on health facility catchment areas and utilisation
  - Conduct Central District wide analysis on facility access and utilisation

- 4) Capacity building at district level
  - Train district level managers on health system analysis and health services network development planning
- 5) Health services network development plan
  - Conduct health service network development planning in collaboration with district health management team based on results of studies and analyses
  - Review plans with District decision makers (members of the District Development Committee)
  - Publish study results and hold information workshops for politicians and donor agencies to garner their future support

#### 4. TARGET POPULATION

Since the project aims to improve access to health services and by this means improve health status, the ultimate beneficiaries of the project are the general public. However, concerning project activities, the primary target group is the national level planning staff of the Ministry of Health and Population (Table 8.1). They will be trained to conduct primary analyses in collaboration with district managers in the health system and other government officials such as those in the Ministry of Local Government and Rural Development. District planners and managers are a secondary target group as their understanding of the methodology and outcome is crucial to working effectively with other district decision-makers. An understanding of the methodology among this group will be key for the success of the project in light of the recent decentralisation.

**Table 8.1 Potential Target Groups**

Level	Target Group
Primary	Planning Staff at National Level
Secondary	Regional and District Health Managers Other Ministry
Tertiary	Politicians Health Stakeholders General Public

#### 5. TIME FRAME

In light of on-going health strategy reforms, it would be ideal to initiate the project in the latter half of 1999. Expected time frame for completion of the project is 24 months.

## 6. MONITORING AND EVALUATION

The following indicators will be used to monitor and evaluate the project:

- 1) Number of District infrastructure development planning training sessions conducted
- 2) Number of health system managers trained on GIS, health system assessment, and infrastructure development
- 3) Publication of the Health Infrastructure Development Plan

## 7. REQUIRED TECHNICAL SUPPORT

One (1) long term expert on health system analysis and planning (12 person-months)  
 One (1) short term expert on health sector human resource planning (8 person-months)

## 8. ESTIMATED COSTS

1) Establish Geographical Information System Database Digitisation and equipment:	US\$100,000
2) Capacity Building at the MOHP Training:	US\$20,000
Establishment of GIS Unit:	US\$40,000
3) Health System Analysis Research and Publication:	US\$30,000
4) Capacity Building at District Level/Health Services Network Development Plan Workshops and seminars:	US\$20,000

Total: US\$210,000

The methodologies for health system assessment and GIS can be applied to other areas than health services development planning, such as the health management information system and disease surveillance. Also, with a more efficient siting of health facilities and the rationalising of limited resources, the benefits of the system will exceed the costs of establishment.

## **9. FOLLOW UP**

After the planning exercises have been completed, the construction and renovation of health facilities may be required under the leadership of MOHP. Minor adjustments to the plan may be required once the results of the 1998 census are published in electronic form.

## PROJECT 2: An Integrated Approach to Improve Childhood Nutrition and Health

---

### 1. JUSTIFICATION

Disease control is not enough to reduce the infant mortality rate (IMR), the under five mortality rate (U5MR), and the burden of diseases among Malawian children as a whole. Because a high prevalence of undernourishment is an important underlying factor for the high IMR and U5MR, it is essential to reduce the population of underweight children. Considering the serious limitations of the health budget and human resources, it is most effective to establish a well coordinated health care system that targets several problems simultaneously.

### 2. OBJECTIVES

#### Overall objective

To reduce the IMR and U5MR through improving childhood nutrition and health

#### Specific objectives

- 1) To improve children's diet at the household level through promoting exclusive breastfeeding until four months of age, proper weaning practices, and more nutritious solid foods for infants
- 2) To improve the detection and follow-up of undernourished children at the community level
- 3) To improve the diagnosis, management and prevention of childhood diseases at the community level
- 4) To improve the management of childhood diseases at health centres
- 5) To develop the patient referral system
- 6) To strengthen the capacity of health system management and coordination at the district and community levels

### 3. ACTIVITIES

- 1) Create more effective IEC to improve feeding and weaning practices and to promote communal/kitchen gardening
  - Re-train Growth Monitoring Volunteers (GMVs) and Health Surveillance Assistants (HSAs) on nutritional counselling and interpersonal skills
  - Develop teaching materials for nutrition education

- Hold regular sessions of nutritional education at the community level targeting mothers, fathers and community leaders
  - Promote communal/kitchen gardening
  - Monitor childhood feeding and weaning practices for evaluation purposes
- 2) Improve growth monitoring and food supplementation programmes
- Increase the number of GMV and re-train GMV/HSA on new programmes
  - Conduct regular growth monitoring campaigns at the community level
  - Extend the household visits by GMVs for following up on the health and food supplementation of malnourished children
- 3) Improve the diagnosis, management and prevention of childhood diseases at the community level
- Re-train GMV/HSA on diagnosis of common childhood diseases at the community level
  - Re-train GMV/HSA to survey communicable diseases and immunisation coverage
  - Hold regular health education sessions at the community level targeting mothers, fathers and community leaders
  - Expand drug revolving funds
- 4) Improve the management of childhood diseases at health centres
- Re-educate health workers based on the Integrated Management of Childhood Illnesses (IMCI) manual
  - Promote the standardised management of childhood illnesses
  - Remodel the drug procurement system
- 5) Establish a better referral system
- Standardise referral forms and their distribution
  - Train health workers on the patient referral system using standardised forms
  - Train District Health Officers (DHOs) on referral data analysis and interpretation
- 6) Strengthen the district health system management

#### **4. TARGET POPULATION**

Children under five years of age

#### **5. TIME FRAME**

Five years (2000 – 2005)



## 6. MONITORING AND EVALUATION

The following indicators will be used to monitor and evaluate the project:

- 1.1) Ratio of babies exclusively breastfed until 4 months of age
- 1.2) Frequency of eating nuts, beans or green leafy vegetables
- 2.1) Actual coverage by GMP/FSP
- 2.2) Ratio of severely (<-3SD) and moderately (<-2SD) underweight children
- 2.3) Number of hospital admissions due to malnutrition
- 3.1) Immunisation coverage
- 3.2) Number of DRFs actually operating
- 4.1) Monthly outpatient returns statistics
- 5.1) Use of standardised referral forms

## 7. ESTIMATED COSTS

### 1) Start-up

Training of newly recruited GMV	@US\$100 x 300=	US\$ 30,000
Re-education of GMV/HSA	@US\$100 x 1,000=	US\$ 100,000
Training of DRF volunteers	@US\$100 x 300=	US\$ 30,000
Seed drugs for 300 DRF	@US\$100 x 300=	US\$ 30,000
Training of health workers (CO, MA, HA, etc.)	@US\$300 x 200=	US\$ 60,000
Teaching materials for nutritional education		US\$ 5,000

### 2) Running

Operational costs for outreach GMP (fuel and allowances)	US\$50/month x 12/year x 100 sites =	US\$ 60,000
Supplementary foods	US\$12/year x 30,000 =	US\$360,000
Seeds for communal/kitchen gardening		US\$ 10,000
Referral forms		US\$ 10,000

Total

US\$695,000

## PROJECT 3: Comprehensive Maternal Care

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### 1. JUSTIFICATION

One of the main health problems in Malawi is the high incidence of maternal death. It is estimated that one in twenty-nine women dies due to pregnancy related causes. High maternal mortality is not caused by a single factor, but is a manifestation of a complex combination of issues ranging from poor nutrition to the low socio-cultural status of women in the country. Therefore, a comprehensive set of interventions is required to tackle this important reproductive problem. After reviewing the list of problems and their relationship to each other, three overall strategies were identified: improving the quality of antenatal care, improving the nutritional status of pregnant women, and strengthening emergency obstetric care services. The three strategies must be implemented together in order to achieve the greatest impact.

### 2. OBJECTIVES

#### Overall objective

Reduce the number of maternal deaths

#### Specific objectives

- 1) Increase the proportion of women with complications delivering at a health facility
- 2) Reduce the length of time required to transfer a patient with an obstetric emergency to a health facility capable of providing emergency obstetric care
- 3) Improve health workers capacity to identify pregnant women with high risk
- 4) Improve the quality of antenatal care
- 5) Improve the quality of emergency obstetric care
- 6) Increase client satisfaction regarding the quality of care
- 7) Reduce the prevalence of anaemia in pregnant women

### 3. ACTIVITIES

- 1) Improve the quality of antenatal care
  - Re-train antenatal care (ANC) workers (nurses/midwives, medical assistants [MAs], Health Surveillance Assistants [HSAs], and Traditional Birth Attendants [TBAs]) including strengthening interpersonal skills to enable them to better identify women at risk and to better communicate the importance of antenatal care and going to a health facility when referred

- Improve laboratory services at upgraded health centres (core health centres) to detect anaemia and STDs and provide blood transfusions
- 2) Improve nutritional status of pregnant women
- Provide iron/folate supplementation at ANC sessions
  - Provide malaria prophylaxis to pregnant women in endemic areas
  - Improve laboratory services at core health centres to detect anaemia, malaria and worm infections
  - Promote IEC on how to prevent anaemia during pregnancy through HSAs and Village Health Volunteers (VHVs).
  - Promote communal gardens/kitchen gardens
- 3) Strengthen emergency obstetric care services
- Upgrade selected health centres (core health centres) to provide emergency obstetric care
  - Supply the basic equipment for emergency obstetric care to core health centres
  - Construct waiting wards (rooms) for pregnant women at risk in district hospitals and core health centres
  - Train/re-train workers (MAs, nurses/midwives) of district hospitals and core health centres on basic/advanced life support techniques for obstetric and neonatal emergencies
  - Upgrade MAs to clinical officers at core health centres
  - Equip all health centres with radio communication systems
  - Supply essential emergency kits to core health centres
  - Improve management of ambulance use
  - Train ambulance drivers in basic life support techniques
  - Improve supervision of workers

#### **4. TARGET POPULATION**

As the project aims to reduce the number of maternal deaths through improving the nutritional status of pregnant women and improving access to quality maternal care including emergency obstetric care, the target beneficiary population is women of child bearing age (15-49). Project activities, however, primarily target the health workers who provide emergency obstetric care and antenatal care at district hospitals, health centres and in the communities.

#### **5. TIME FRAME AND TARGET AREA**

The project period will be 5 years (2000 – 2005).

The target area is all nine districts in the Central Region. However, during the first two years of the project the activities will be carried out mainly in one pilot district, and then will be expanded to other districts based on the experiences gained in the pilot district. At the beginning of the project a baseline survey will be carried out to identify nutritional status and knowledge, attitudes and practices (KAP) of pregnant women in the pilot district.

## 6. MONITORING AND EVALUATION

The following indicators will be used to monitor and evaluate the project:

- 1) Immediate impact
  - Number of pregnant women who receive supplementation of iron tablets
  - Number of pregnant women who receive malaria prophylaxes
  - Number of IEC materials distributed
  - Number of health talks held on nutrition
  - Number of health workers trained on dissemination of IEC messages
  - Number of health facilities with a radio community system
  - Number of health workers re-trained on basic/advanced life support techniques for obstetric and neonatal emergencies
- 2) Medium and long-term impact:
  - Percentage of pregnant women with severe anaemia
  - Number (%) of deliveries at facilities
  - Number of health facilities capable of conducting caesarean sections
  - Number of health facilities capable of providing emergency obstetric care
  - Number of health facilities capable of conducting laboratory examinations

## 7. REQUIRED SUPPORT

- 1) Ten (10) long term experts:
  - Two (2) programme managers (60 person-months)
  - Two (2) experts on emergency obstetric care (60 person-months)
  - Two (2) laboratory technologists (60 person-months)
  - Two (2) nutritionists (60 person-months)
  - Two (2) IEC experts (60 person-months)
- 2) Funds for training/retraining, printing IEC materials, upgrading selected health centres and constructing maternal waiting wards
- 3) Provision of equipment/kits

## 8. ESTIMATED COSTS

- 1) Training/refresher courses for nurse/midwives, MAs, HSAs and trained TBAs
  - Teach importance of antenatal care to nurse/midwives, MAs, HSAs and TBAs
  - Teach emergency obstetric care to nurse/midwives and MAs

Trainees: Total of approximately 54 Nurse/midwives, 36 MAs, 150 HSAs and 150 TBAs will be chosen as trainees

2 nurse/midwives and 2 MAs from each district hospital  
2 nurse/midwives and 1 MA from each core health centre  
HSAs and TBAs who are active in the Central Region

Subtotal: US\$ 400,000 for 5 years

- 2) Laboratory equipment for detecting pregnant women with anaemia and STDs and providing blood transfusions at core health centres
  - Aim to establish 2 core health centres in each district, a total of 18 for the Central Region

Equipment: Hemoglobin/saline metre  
Malaria parasites  
Blood total protein & Albumin  
Urine protein  
Microscope  
Typing seta/cross matching items  
Refrigerator  
VDRL shaker/plate  
Block heater

Subtotal: US\$ 150,000

- 3) Construction of theatres at core health centres for operating (caesarean sections) and waiting wards at district hospitals and core health centres
  - Aim to establish 2 core health centres in each district, a total of 18 for the Central Region

Facilities to be constructed: 18 theatres and 27 waiting wards

Subtotal: US\$ 390,000

4) Theatre equipment at core health centres

Equipment: Anaesthetic machine  
Theatre light  
Oxygen concentrator/cylinder  
Suction machine (electric)  
Suction machine (foot pump)  
Pulse oximetre  
Beds (1-2)  
Incubator  
Ambubag

Subtotal: US\$ 1,700,000

5) Production of IEC materials and provision of seeds for communal or kitchen garden

Subtotal: US\$ 40,000

Total US\$2,680,000

## 9. COUNTERPARTS

The project's principal counterparts will be the Planning Department and Mother and Child Health/Family Planning (MCH/FP) Services of MOHP at the central level and District Health Management Teams (DHMTs) at the district level.

## 10. CO-ORDINATION WITH OTHER PROJECTS

UNICEF, WHO and the Department for International Development (DFID) have been the main donors supporting initiatives for strengthening safe motherhood services. A project under Population Health and Nutrition (PHN) sector credit has nutrition, malaria, human resources and other components. Close co-ordination will be required to avoid duplication of efforts and share experiences to obtain maximum impact.

## PROJECT 4: Improvement of Physical Health Care Facilities and Equipment

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### 1. JUSTIFICATION

As the primary contact point for the majority of the population, the health centres play a key role in providing health services. After reviewing the physical conditions of the health centres, it was found that many lack the basic infrastructure required in a health facility, such as water supply, electricity, and communication equipment.

Lack of emergency communication equipment at health centres hampers the rapid transfer of patients from primary level health centres to hospitals.

Electricity is important to provide basic health services such as nighttime deliveries. A lack of paraffin for refrigerators has caused EPI services to be disrupted. Recent improvements in solar energy systems have increased durability and reduced costs. Power management systems are now capable of storing sufficient energy for a refrigerator, water pump, and illumination at night. Therefore, solar energy as a practical and renewable power source, is proposed to equip the health centres.

Treatment is not the only function of the health centres. They are also expected to demonstrate the basic essentials for leading a healthy life such as clean and hygienic latrines and a constant supply of safe drinking water. For this reason, it is important to improve the water and sanitation systems.

### 2. OBJECTIVES

#### Overall objective

To improve the capacity of health centres to provide curative and preventive health services

#### Specific objectives

- 1) To establish a functional health service network among the health facilities of the Central Region
- 2) To improve the basic infrastructure in health centres

### **3. ACTIVITIES**

- 1) Review basic infrastructure requirements for health centres and revise if required
- 2) Check status of health facilities not yet visited and identify requirements
- 3) Develop a maintenance training program for district staff in collaboration with the Physical Assets Management Project and Lilongwe Central Hospital
- 4) Install basic infrastructure at selected health centres as a field test
- 5) Evaluate outcomes of the field test
- 6) Amend implementation plan in accordance with the outcome of the evaluation
- 7) Implement large scale improvement plan
- 8) Evaluate

These activities will be carried out based on the following strategies:

- 1) Basic infrastructure requirements will be identified and a detailed requirement plan will be made in accordance with the national standard at all health facilities.
- 2) Use of solar energy as the means of power supply will be considered.
- 3) Coordination with the Physical Assets Management Project will be planned in order to ensure that maintenance can be carried out properly by the domestic maintenance system.
- 4) Working relationship with the electro-medical engineering department at Lilongwe Central Hospital will be established.

### **4. TARGET AREA**

Central Region

### **5. TIME FRAME**

Two years (2000 - 2002)

### **6. MONITORING AND EVALUATION**

Selected indicators, including the number of health facilities with functioning water supply, electricity, communication equipment and latrines, will be used to monitor and evaluate the project.



## 7. REQUIRED TECHNICAL SUPPORT

Five (4) long term experts:

One (1) project manager (24 person-months)

Two (2) electrical engineers (48 person-months)

One (1) expert on water pumping systems (24 person-months)

## 8. ESTIMATED COSTS

Baseline study:		US\$	30,000
Equipment: solar energy system	US\$12,800/facility x 100 facilities	= US\$	1,280,000
solar refrigerator	US\$1,600/facility x 100 facilities	= US\$	160,000
wireless radio	US\$2,400/facility x 70 facilities	= US\$	168,000
water pump and lighting	US\$3,200 x 100 facilities	= US\$	320,000
spare parts		US\$	400,000
Capacity building: training and workshops		US\$	150,000
Maintenance system: computer and other equipment		US\$	200,000
Others:		US\$	100,000
 Total			 US\$2,808,000

## PROJECT 5: Improvement of Curative Care through Better Self-Treatment with Market Drugs

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### 1. JUSTIFICATION

Because of limited access to health facilities (due to both geographic and financial constraints) many people in the urban but especially the rural areas seek out drug sellers for treatment and medicine. In Salima District and the whole of Malawi, approximately 25 percent of child illness cases were dealt with in this way, as compared to about 40 percent treated at MOHP health centres.

The main problem with this type of self-treatment is receiving inappropriate medication. While some cases that are not diagnosed by a trained health provider are minor self-limiting conditions that would improve even with no medication, in a significant number of cases the patient receives an ineffective drug, or a potentially effective drug in a quantity that is insufficient for proper treatment. This can result in the progression of the illness, so that by the time the patient is brought to a health facility the disease has become much more difficult to treat.

A second problem of self-medication is the rise in resistance of disease organisms over time in a community. For example, it is thought that in some countries the resistance of malaria parasites to chloroquine is due to the common practice of patients buying and using only a few tablets each time they have malarial symptoms. The same may become true of Fansidar, or of other drugs such as antibiotics when used inappropriately.

An additional consideration is the expense. When inappropriate or unnecessary medicines are purchased in place of food, this can have a serious health impact, particularly in areas where childhood malnutrition is prevalent.

While there have been few attempts to change the behaviour of drug sellers including groceries and consumers in the area of antimalarial and antibacterial drugs, there is considerable worldwide experience with this market segment in the field of condom distribution and, to a lesser extent, oral rehydration salts.

### 2. OBJECTIVES

#### Overall objective

To improve curative care through better self-treatment with market drugs, with an emphasis on childhood illnesses

### **Specific objectives**

- 1) To educate consumers of informal drugs sellers on appropriate drugs and dosages
- 2) To change drug purchasing and usage patterns

## **3. ACTIVITIES**

### **1) Research Study**

First, a study of both informal drug sellers and consumers will be carried out to determine the extent of the problem. Drug sellers will be counted and information collected on the type of products sold, the kind of advice given to customers, prices, and sources of supply. Consumer behaviour will also be studied, that is, the reason for buying drugs (and not going to a health facility), the details of the particular health problem, the amounts purchased and paid, and how the medicines were used. The possibility of substituting cheaper generic drugs sourced from Central Medical Stores for expensive brand-name products will be examined, in effect incorporating drug sellers into the Drug Revolving Fund system.

### **2) Intervention design and testing**

Once the nature and extent of the problem is known in detail, focus group discussions will be held with groups of consumers and informal drug sellers, and a range of possible solutions will be formulated. Additional discussions will be held with drug wholesalers and distributors to learn if there are any practical incentives that can shift seller and buyer behaviour.

### **3) Action programme**

Based on the outcome of the study, a range of strategies will be proposed. Likely activities include a public information campaign based at the point of sale and a training program coupled with incentives for drug sellers.

Since one aim is to encourage people to buy and use complete courses of drugs, some type of financial subsidies may be required to make this possible.

## **4. TARGET POPULATION**

Since nearly everyone uses this form of treatment at one time or another, the potential beneficiaries of this project are the entire population in the target area. Project activities will primarily target an unknown number of informal drug sellers, including kiosks, groceries, and market peddlers in the project area. An IEC campaign will all potential consumers of informal drugs. Emphasis will be placed on the use of appropriate drugs for children's malaria, diarrhoea, and respiratory diseases.

## 5. TIME FRAME

- 1) Research study: approximately 6 months
- 2) Intervention design and testing: 3 months
- 3) Action programme: 3-9 months depending on the number of drug sellers and the human resources available

## 6. MONITORING AND EVALUATION

The effectiveness of the project can be evaluated by measuring the increase in appropriate drug purchases from informal drug sellers.

Indicators to measure the progress of the project include:

- 1) Completion of research study
- 2) Number of discussions held (with both sellers and consumers)
- 3) Number of IEC visits
- 4) Number of drug sellers trained

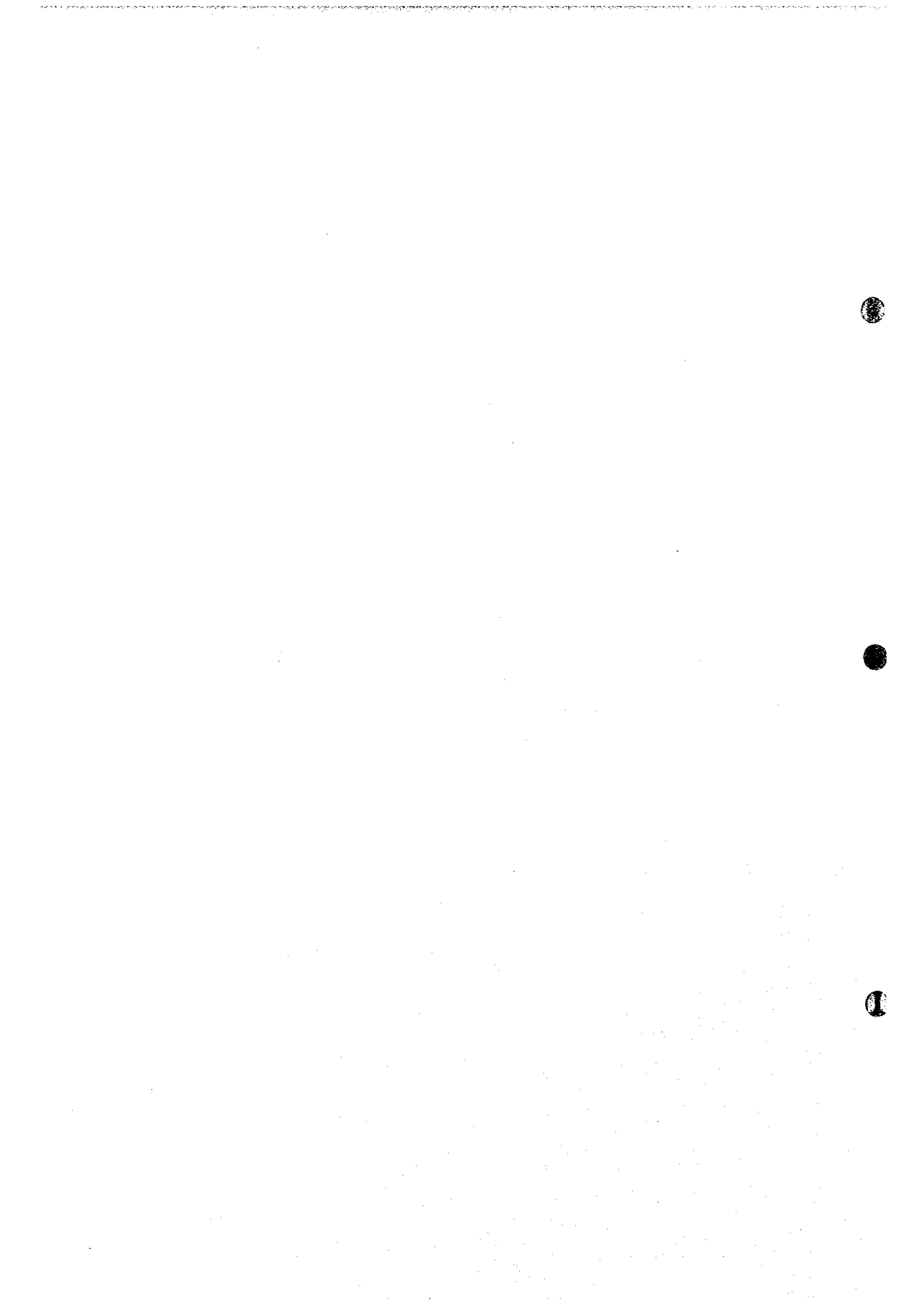
## 7. REQUIRED TECHNICAL SUPPORT

Two (2) long term experts (one year each) 24 person-months  
Three (3) short term experts (three months each) 9 person-months

## 8. ESTIMATED COSTS

Baseline survey on informal drug sellers	US\$ 200,000
Consumer survey	US\$ 50,000
Intervention design and testing	US\$ 50,000
Public information campaign	US\$ 50,000
Training programme	US\$ 30,000
Monitoring and evaluation	US\$ 30,000
Total	US\$ 410,000







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