

**HUMAN RESOURCES FOR HEALTH
STRATEGIC
PLAN 2006-2010**

Foreword

All over the world today, human resources (HR) for health pose a serious challenge to the delivery of good quality health care and overall shortage of essential skills worldwide seems overwhelming. This leads to brain drain from the South to the North, yet the health challenges that threaten humanity are in the South. It is for this reason that the World Health Organization (WHO) refocus on the issue and has set its 2006 focal theme as “*Human Resources for Health*”.

In Rwanda as from March 2005, The Government adopted the Health Sector Policy as well as the Health Sector Strategic Plan (2005-2009). Both Policy and Strategic Plan identify human resources as the major challenge if quality care for our people and the Millennium Development Goals (MDGs) are to be attained. It is for this reason that the Ministry of Health is elaborating a strategic approach to ensure availability of the HR for health.

This capacity building plan for Human Resource for Health (HRH) is a sector wide approach and it addresses issues pertaining to planning and improvement of the legal environment; skills development of the health professionals through improved pre-service and in-service training while also strengthening post-basic and post-graduate training. The capacity created is retained by establishing a supporting system to better manage health workers performance, provide attractive compensation packages and ensure equitable distribution and utilization across the country.

The decentralization policy initiated by the Ministry of Local government, the multiplicity of donor programs especially in the HIV/AIDS sector just to name these two pose a major coordination challenge to the healthcare delivery system. A lot of training activities take place to improve health professionals’ skills but health indicators remain among the worst in the region with 96/1000 and 750/100000 live birth respectively for infant mortality rate and maternal mortality rates. As a result a major policy orientation has been adopted the performance based financing after successful experiences to improve health workers performance from pilot projects in Cyangugu and Butare; the Ministry of Health shall buy outputs instead of continuously pushing inputs that do not yield the expected results. After the development of the strategic plan, it is our understanding at the Ministry of Health that this HRH plan will be better coordinated if managed through a basket fund where all partners can participate allowing those unable to put funds in a basket for various reasons to participate by funding earmarked activities thus contributing to the same performance indicators. The basket fund serves as a the financing mechanism to enable the remuneration of performance indicators, post basic and postgraduate trainings for health professionals and the establishment of a guarantee fund to enhance capacity of health workers to access essential loans like housing .

This document is structured into 5 sections: (section 1) an introduction that states the purpose and uses of the plan, the main issues and dimensions, and an overview of the health care system organization and structure; (section 2) an analysis of the current health workforce; (section 3) on training programs and training issues and (section 4) the

planned change for HRH. This plan is also costed over 3 years and shows the level of intervention of each development partner and the role of the Ministry of Health while identifying financing gaps. The fifth section examines likely expansion of a number of cadres of health professionals in order to assess the appropriateness of the numbers of people being trained.

It is our hope that the HRH plan will give sufficient guidance and represent a useful and user friendly tool to whoever wishes to intervene in the capacity development for the human resources for health. Special thanks are herein given to the human resources technical working group of the health cluster that assisted the Ministry of Health HR task force to refine and finalize this document.

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ACRONYMS

AIDS	Acquired Immuno-Deficiency Syndrome
ARV	Anti Retro-Viral (Drugs)
CAMERWA	Central Drug Purchasing Agency for Rwanda
CBO	Community Based Organisation
CEPEX	Central Public Investments and External Finance Bureau
CHUB	Butare University Hospital
CHUK	Kigali University Hospital
CHW	Community Health Workers
CNLS	National AIDS Commission
CNTS	National Blood Transfusion Centre
CDLS	District AIDS Commission
DEHP	Unit of Epidemiology and diseases Control
DHS	Demographic and Health Survey
DOTS	Directly Observed Treatment Short Course
DSS	Department of Health Care
EPI	Expanded Programme for Immunisation
ESI	Ecole des Sciences Infirmieres
FBO	Faith Based Organisation
FOSA	Health Facility
GESPER	Government Human Resources Management System
GOR	Government of Rwanda
HIV	Human Immuno-Deficiency Virus
HMIS	Health Management Information System
HSSP	Health Sector Strategic Plan
ICT	Information, Communication, Technology
IEC	Information, Education, Communication
IMCI	Integrated Management of Childhood Illnesses
KAP	Knowledge, Attitude and Practices
KHI	Kigali Health Institute
LNR	National Referral Laboratory
MDG	Millennium Development Goal
MDR	Multi-Drug Resistant (TB)
MIFOTRA	Ministry of Public Service, Skills Development, and Labour
MINALOC	Ministry of Local Administration, Community Development & Social Affairs
MINECOFIN	Ministry of Finance and Economic Planning

MINEDUC	Ministry of Education, Science, Technology, and Research
MOH	Ministry of Health
MTEF	Medium Term Expenditure Framework
NGO	Non-Governmental Organisation
NHA	National Health Accounts
OVI	Objectively Verifiable Indicator
PBF	performance based financing
PETS	Public Expenditure Tracking Survey
PLWHA	People Living With HIV and AIDS
PMTCT	Prevention of Mother-To-Child Transmission (of HIV)
PNILP	National Malaria Control Programme
PNILT	National Tuberculosis Control Programme
PRSP	Poverty Reduction Strategy Paper
RAMA	Rwanda's Medical Insurance Agency
SFB	School of Finance and Banking
SPH	School of Public Health
STI	Sexually Transmitted Infection
SWAp	Sector Wide Approach
TB	Tuberculosis
TBA	Traditional Birth Attendant
TRAC	AIDS Treatment and Research Centre
UFMIR	Unit in charge of Finance and Management of Internal Resources in the Ministry of Health
UNICEF	United Nations Children's Fund
VCT	Voluntary Counselling and Testing
WHO	World Health Organisation

The preparation and format of this plan have been based on the health workforce planning model developed at the WHO Regional Training Centre, Sydney, under contract for the World Health Organization, Western Pacific Regional Office, Manila.

HUMAN RESOURCES FOR HEALTH STRATEGIC PLAN

SECTION 1

1. INTRODUCTION

1.1 Purpose and use of the plan

1.1.1 Overall purpose

The purpose of this human resource for health (HRH) plan is to provide guidance for the staffing of the health services and the training of health service personnel to the year 2020. It analyzes main issues and dimensions in HRH and proposes strategies to meet the targets for the wellbeing of the population as defined in the vision 2020 for Rwanda (See Annex 1.)

The plan provides staffing targets for each of the major categories of health personnel. Taking into account the present level of staffing, losses from the workforce due to retirement, resignation and other causes, and entry into the workforce from training programs and other sources, the plan will indicate how intakes should be adjusted in order to match staffing requirements with the number of staff actually employed. The plan will also provide some indication of the future costs of staffing.

The current *Health Sector Strategic Plan 2005-2009* provides the framework for the development of annual program budgets and activity plans for the units and desks within the MOH. The content of the *Strategic Plan* has been taken into account in the development of this HRH plan.

Of course, the plan does not predict what will happen. It simply shows what would happen if the various assumptions made prove to be correct and the proposals presented in the plan are implemented. Thus, one can see “in advance” the consequences of actions and events, can monitor whether the various assumptions are true or not, and then take whatever action is appropriate to the situation.

The plan concentrates on health professionals but it is recognized that support staff are essential in the delivery of an equitable health service throughout the country.

1.1.2 Specific uses of the plan

The specific uses to which the plan may be put include:

- providing a framework within which consistent decisions may be made
- indicating where resources are inadequate or likely to become inadequate unless corrective action is taken.
- estimating the costs of staffing the service with professional people and of their training; these estimates are of obvious use in budget negotiations and in monitoring costs
- providing a realistic indication to staff and potential entrants to the service of their likely career paths and prospects of advancement
- identifying needs for external assistance and so assisting the health authority in formulating proposals to be put to external funding agencies.

1.2 Plan review

The plan cannot be regarded as remaining static over the whole planning period. Inevitably the economic and political events which will occur during the next fifteen or so years, and indeed developments in the fields of health care and environmental management, cannot be predicted with certainty. Therefore, as mentioned above, regular, preferably annual, review of the plan should be undertaken to revise and extend the plan forward. In this way the plan becomes a regularly updated “rolling plan”. More details of the arrangements for review and revision are given in Section 4 of this document.

1.3 Overview of the health care system organization and structure

The health portfolio within the Government of Rwanda is held by the Minister for Health who is assisted by the Minister of State in Charge of HIV/AIDS and Other Epidemics. The Secretary General’s Office directs, manages and coordinates all government sector health care activity/administration throughout the country; he/she is the accounting officer.

As in most countries in Africa, there are people providing health care outside the Ministry and private, not-for-profit sectors; namely profit oriented facilities, community health workers, traditional healers and traditional birth attendants. Information will be collected about these providers during the forthcoming year and included in subsequent plans.

The health system has a pyramidal structure, consisting of three levels: central, intermediary and peripheral. The central level includes the central Units and programmes of the Ministry of Health and the national referral hospitals. The central level elaborates policies and strategies, ensure monitoring and evaluation, and regulation in the health

sector. It organizes and coordinates the intermediary and peripheral levels of the health system, and provides them with administrative, technical and logistical support.

Relative to health care delivery, the central level has four national referral hospitals including Butare University Teaching Hospital, Central University Hospital of Kigali (CHUK) which together forms the University Teaching Hospitals (CHU), Kanombe Military Hospital and Ndera neuro-psychiatric hospital. The King Fayçal Kigali hospital was created to provide a higher level of technical expertise than that available in the national referral hospitals to both the private and public sector; its mission is mainly to ensure a reduction in the number of transfers for medical treatment abroad.

Based on the dynamic nature of decentralization policy, general principles of decentralization have been elaborated in order to reinforce the institutional arrangements of local health services. A health district corresponds to an administrative district, the resource allocation of a district hospital is determined by coverage, capacity and performance.

The intermediary level is represented at the district by an administrative unit in the Mayor's office. This unit is responsible for family health and gender, a district hospital and a network of health centres that are either public, government assisted not-for-profit, or private. The district is the operational level for the health system; it deals with the health problems of its population in the catchment area. The health functions of a district level include: (i) the organization of health services in health centres and the district hospital in terms of the minimum and complementary package of activities, (ii) administrative functioning and logistics, including the management of resources and supply of drugs, under the responsibility of the district medical officer who heads the district hospital and (iii) the supervision of community health workers under the responsibility of the family and health unit.

At all levels of the district, health decisions are made collectively through various committees, which serve as vehicles of community participation in the health sector. Community participation is a key element in the implementation of the primary health care strategy: it plays a role in the planning, execution and monitoring of primary health care activities, including the provision of certain services at the grass roots level (nutrition, mental health, family planning etc) and the search for appropriate solutions to local health problems and the mobilization of resources.

Until recently, the Minister of Health carried out the assignment and movement of qualified health professionals from A1 upward. This maybe revised. The district management team for health activities is defined as one director of the unit in charge of family and health and one officer in charge of epidemiology and health information. The health centre and the district hospital depend administratively on the district within which they are situated. Activities within the non-government sector of the health care delivery service are regulated and monitored by the Ministry of Health through decentralized units.

With the introduction of performance based financing (pbf) or contractual approach, health care providers shall be contracted and managed by the health facilities i.e. health centres and district hospitals. The central level will continue to regulate issues requiring national level planning like setting standards and norms for quality health care delivery. Within the implementation of pbf, it also assesses the performance of the teams at each health facility, community and administrative district. The various health facilities will have authority to hire and fire based on their performance needs.

The initiative of communities is recognized as a crucial component in successful delivery of health services. The government facilitates this by supporting community lead initiatives, such as the creation of community demanded dispensaries. To ensure a coordinated and viable approach, the Ministry of Health is in charge of supervising and validating such activities.

1.4 Main issues and dimensions

HRH main issues evolve around challenges related to policy, regulation and planning, management and performance improvement, the labour market, education, training and research, issues pertaining to priority health programmes and monitoring and evaluation.

Policy, regulation and planning:

Health professional workers in the public sector are governed by the organic law regulating employment in the public service. The specific human resource sub policy for the Ministry of Health is not yet available as a legal document. Following a recent public service reform and the decentralization policy, the government Cabinet has approved the organic structure for the Ministry of Health as it did for other departments. This organic structure limits the number of budgeted positions and the profiles of the required staff for each position at a maximum of 35 for the MOH. The methods used to determine numbers of required staff at central level were based on broad tasks definition to achieve the department's mission in a resource constrained setting. There was no detailed study to evaluate the staffing needs according to defined workload indicators for staffing needs. Since the policy environment is very dynamic, issues on the workload shall evolve as time goes by. The same applies to health facilities where the advent of HIV/AIDS and the focus on quality care improvement have increased the types and volume of activities requiring new highly skilled healthcare providers and not only health auxiliaries as it has been set in the health district norms. Staffing norms for health facilities were developed in 1997 then revised in 2003. There is an urgent need to review and revise these norms in light of the new decentralization policy and the introduction of performance based financing. In general, there hasn't been any comprehensive planning for HRH so far with projections over 15 years, though many attempts in the past to develop such a plan with external consultants were made but information was not widely disseminated nor utilized.

Recently, the Government Cabinet authorized the formulation of specific statutes to govern health professionals in recognition of the unique nature of their work and hardship requirement compared to other civil servants; it is now under scrutiny in parliament, the challenge shall be to enforce this law. Rwanda has professional bodies for Medical Doctors soon to add Dentists, and a Nurses' Council whose legal status is still to be approved by the parliament. Other health professionals are still few in numbers and not organized into recognized professional bodies.

Management and performance of health workers

The unit in charge of finance and management of internal resources has the management of HRH in its mandate. With regard to distribution of health workers, there is an imbalance between rural and urban deployment of health professionals. Recruitment of health workers was still centralized until recently, but to improve on the identified disparities in the distribution of health professionals in the country, health care providers will be hired by facilities. Retention and motivation of qualified health workers in rural areas is also an issue. The MOH has strategically classified health facilities into rural and urban and attached incentive packages to rural posting for medical doctors. Though this was not sufficient in itself, it was a first attempt to improve the deployment of health professionals. Other more sustainable motivation schemes should be sought to retain health professional in the system. While improving incentives, the Ministry of Health should set performance standards and increase supervision of health staff delivery. The management challenge for the central level in MOH shall be to regulate HRH through definition of norms, standards and HR management tools, long term trainings, management of careers and settling of conflicts that may arise from insufficient understanding of policy orientations. At this stage the performance appraisal of health professionals is in development, and will be an integral component of effective management.

There is need to define the scope of practice for each category of health workers. Job descriptions have been developed for some categories of health workers; often however the definitions are broad or implicit and because of the shortage of qualified staff tasks may be overlapping between two different categories of health professionals; this is the case especially for the categories in nursing. It is not yet very clear for example how an A1 nurse scope of work is different from A2 nurses on site. This is due in part to inadequate design of pre-service training along the continuum and rapid changes towards a more sophisticated healthcare system to respond to health needs of the population.

Within the new decentralized organic structure of the MOH, the functions of HRH have been split into the administration of HR that remains with the unit in charge of finance and management of internal resources and the human resources development policy desk that deals with HR policy and planning issues and reports to the Unit director of policy, planning and capacity strengthening. Though this move clarifies the necessity to plan and develop HRH, the departments in charge remain understaffed both in numbers and skills mix and would require a robust action to improve management of HRH at the central level endowed with regulation and coordination of HRH at national level.

Labour market:

The Ministry of Health has approximately 7000 budgeted positions for professional staff encompassing central and peripheral levels. While the private sector is quite small in Rwanda, stark differences are noted in terms of salaries between health personnel employed in public compared to private facilities. Results from a recent evaluation conducted by Furth et al (2004) revealed that physicians employed by NGOs to delivery HIV/AIDS services are paid almost six times as much as physicians paid by the MOH. Such differences in salaries make it particularly challenging to keep well qualified health personnel in the public sector.

Education, training and research:

The Ministry of Health has taken over from the Ministry of Education the provision of basic professional training for major categories of allied health personnel. There is close collaboration between the two ministries on topics like curricula development and planning. The challenge posed by such move is to review pre and in service curricula of health professionals and get highly qualified trainers for the training institutions. It is in this plan to open postgraduate training for medical specialization in obstetric and gynecology, pediatrics, general surgery, internal medicine, family medicine and anesthesiology. The set up of these programs requires tremendous efforts and strong partnerships from all stakeholders to ensure their accreditation by internationally recognized accreditation institutions.

HRH and priority health programmes: HIV/AIDS, Malaria, TB, Reproductive and child health are programs of major concern for the country and require an increase in the number and quality of health workers. The government of Rwanda created TRAC to deal with treatment and research to control HIV/AIDS. This institution is soon to be reorganized into *TRAC Plus* to enable an integrated control of Malaria, TB and HIV/AIDS as there is often co-infection. Reducing Maternal and Child Mortality rates will also require more skilled workers to deliver adequate healthcare services.

Monitoring and evaluation

The UFIRM performs tasks related to administration of HRH. Health personnel are monitored in terms of numbers, qualifications, deployment sites and date of posting and salary. However, no performance appraisal and evaluation is consistently performed though this is statutory; each worker should be evaluated at the end of the year. There is need to develop performance indicators and establish regular supervision to improve HRH management. The design of career plans for each category of health workers and introduction of meritocratic career advancement criteria are strategies that may improve the performance and retention of health professionals and shall be basis for their performance evaluation.

The professional bodies will contribute to effective monitoring of standards.

The current tool for personnel data collection and management (GESPER: Gestion du Personnel) is insufficiently exploited for data analysis to provide information on trends and gaps. The software should be upgraded to include performance indicators and a monitoring system established to produce reports that can inform future policies.

SECTION 2

2. ANALYSIS OF THE CURRENT HEALTH WORKFORCE

2.1 Introduction

Almost all health personnel in Rwanda work in public health sites that fall under the domain of the Ministry of Health. The MOH hires approximately 62%¹ of the health workforce, and pays their salaries directly through the health district offices. The remaining 38% of employees at public health sites are paid through a variety of mechanisms, including through direct contracts with *agrée* health centres (24%), and contracts with NGOs, volunteer organizations, or districts (14%). Health personnel working in public health sites also include some expatriates whose salaries are paid by NGOs, bilateral, or volunteer organizations. Irrespective of their source of payment, all personnel working in public health sites are considered MOH personnel.

A very small number of health personnel work in the private sector of the health care delivery system (no available statistics).

This workforce plan is principally concerned with the staffing in the public health sector, and the training of personnel working, or being prepared to work, within the health centres, district and referral hospitals. This plan is based on data obtained at the end of December 2005 from a survey of health personnel conducted by the Kigali Health Institute. This database includes personnel data from all health sites, 365 health centres, 35 district hospitals, and 5 referral hospitals. As the majority of modern health services are provided through public health sites, private sector staffs are not included in this review of the current health workforce situation.

¹ Dr Dariya MUKAMUSONI & al : Human Resources inventory as of December 2005

2.2 The size, composition and deployment of the current MOH workforce

2.2.1 The Ministry of Health workforce - posts and personnel - December 2005

Personnel norms established in February 1997 established posts for health centres and district hospitals. The health personnel group includes all staff who received formal training to qualify them to work in a health professions. The “other personnel” group includes all the other personnel within MOH who provide the managerial, administrative, maintenance, housekeeping, transport and other ancillary services necessary for the effective functioning of the Ministry’s services. When comparing these norms with the current reality, it was noted that not only are most posts not filled, there are some posts that currently exist but were not included in the norms (i.e. doctor specialists, medical assistants, dentists). Medical assistants, sometimes called clinical officers, are used in some countries to fulfill some of the roles of a doctor in places where doctors are unlikely to settle. Other cadres exist in the norms but are not included in this plan (i.e. laundry staff, gardeners, guards, drivers and other support and administrative staff). Thus based on these norms, health centres and district hospitals meet less than 30% of required staffing norms. Shortages are seen for almost every category of staff. Table 2.1 summarizes these findings.

Table 2.1: Rwanda MOH – Established posts filled and vacant, December 2005

	referral hospitals		district hospitals		health centres		NGOs	other	total exc NGO/other		
	posts	filled	posts	filled	posts	filled			posts	filled	
doctor specialist	85	28	175	5	0	2			260	35	13%
doctor generalist	57	48	66	114	465	24	1	3	588	186	32%
nurses A0	83	11	207	6		2			290	19	7%
nurses A1	382	97	769	94	1155	63	1	10	2306	254	11%
identified midwife A1 *	96	19	180	2	465	5	1	3	741	26	4%
nurse A2	190	618	409	1021	930	2135	6	63	1529	3774	247%
nurse A3		72		63		130		1	0	265	
nurse other		12		9		58			0	79	
anesthesiologist A1	20	24	70	7					90	31	34%
physiotherapist	20	24	70	26		4			90	54	60%
nutritionist	8	5	41	22	465	92	1	2	514	119	23%
pharmacist A0	8		9						17	0	0%
pharmacist A1	43	5	35						78	5	6%
env/public health A1 plus		3	70	9		11		11	70	23	33%
mental health A1 plus	28	6	35	9		5			63	20	32%
social worker A1		8		1		5		1		14	
social worker A2	40	26	41	68	465	192	5	2	546	286	59%
social worker aide		7		4		12		1		23	
dentist	10	13	35	3					45	16	36%
dental technicians	10	18	35	13		3		1	45	34	76%
radiology tech	17	10	17	13					34	23	69%
laboratory staff A0	8	3	0			1			8	4	50%
laboratory staff A1	68	18	41	15		3			109	36	33%
laboratory staff A2	0	49	83	101	930	280	3	1	1012	430	42%
laboratory staff A3		7		9		36			0	52	
laboratory staff other		7		1		34			0	42	
	1173	1138	2388	1615	4875	3097	18	99	8436	5850	69%

* there are at least another 26 A1 midwives in unknown locations

the posts for nurses and midwives is not consistent with Tables 2.3, but based on discussion with Head of Nursing Task Force and the Nursing Council

The current health services utilization rate of 38%² is far from WHO's recommendation of 50-60% for Sub-Saharan Africa. With the current rate, severe shortages were noted for general physicians, medical specialists, dentists, nutritionists, social workers, and laboratory technicians. Current MOH policy does not encourage the placement of physicians at health centres. Further analysis revealed disparities between health centres, district and referral hospitals in terms of numbers of available key clinical staff, as well as type of available staff. For example, in spite of the fact that close to 80% of all care is provided at health centres, staffs at such facilities represent only 53% of all professional staff, and the majority of health centres do not have lab technicians.

Various mechanisms are planned or have been recently put in place to increase utilization of health services. These include efforts to increase the general population's access to mutuelles de sante, community based health assurance scheme. Additionally, the MOH is proposing partial physician coverage at health centres as part of its strategy to increase use of services, as it has been noted that the presence of a physician may increase client's perception of quality of service delivery. In light of these events, the MOH has decided to design the 5 year human resources strategic plan based on a projected utilization rate of 50%. As methodology for projecting human resources needs, the MOH has opted to plan in terms of expected workload, or provider to patient ratio. While detailed data is not yet available for exact workload recommendations, approximate estimations are used to develop this current plan. A detailed workforce assessment is in planning stages, and data obtained from this assessment will be used to modify current estimations. Table 2.1b summarizes these recommendations.

Table 2.1b. Rwanda MOH Summary of Recommended Daily Provider: Patient Ratio for Health Centres, District and Referral Hospitals

Provider Type	Recommended Daily Provider: Patient Ratio HEALTH CENTRES	Recommended Daily Provider: Patient Ratio DISTRICT HOSPITALS	Recommended Daily Provider: Patient Ratio REFERRAL HOSPITALS
General Physicians	1:40	1:25	1:30
Specialist Physicians	-	5 per hospital (Ped, Ob-Gyn, Internist, Surgeon, Anesthesiologist)	1:20
Medical Assistants	1:40	1:40	n/a
Nurses A1	1:40	1:25	1:20
Nurses A2	1:25	1:20	1:30
Nutritionists	1:40	1:40	2 per hospital
Social Workers	1:40	1:40	10 per hospital
Lab technician A0	-	-	2 per hospital
Lab technician A1	-	1:40	1:25
Lab technician A2	1:20	1:20	-
Pharmacists A0	-	1 for every 4 hospitals	2 per hospital
Pharmacists A1	-	1 per hospital	1:50

² Rwanda DHS plus, 2005

2.2.2 The Ministry of Health workforce – gender and age distribution – Dec 2005

Gender	Age group (years)							Total	
	<21	20-29	30-39	40-49	50-59	60-64	>65	Number	%
Female	1	1868	1640	536	257	45	16	4363	63
Male	1	1009	949	379	137	31	21	2527	37
Total	2	2877	2589	915	394	76	38	6890	100

Seventy nine per cent of health personnel currently in established posts are aged less than forty years and of about one third of these will have reached the official age of retirement by the end of the period covered by this health workforce plan i.e. year 2020.

2.2.3 Categories of MOH personnel – December 2005

The major categories of health personnel and the numbers employed within public health sector are listed in Table 2.1a above. Table 2.1b provides a list of key clinical providers. Section 5 of this plan gives more detailed information regarding individual categories of health personnel with projections over the next 15 years.

2.2.4 The Ministry of Health staff - salaries - December 2004

A review of staffing salaries carried out recently illustrated a disparity among different categories of health workers, and to some extent, between those paid by the MOH vs. Agree institutions. Table 2.2.4 displays median salaries listed on the government salary scales provided by the unit in charge of internal resources management and public relations. For nurses, social workers, and lab technicians paid by the MOH, the median salary of A2 category are represented as this category of workers represents the majority for each of the three categories of health providers.

Table 2.2.4 Average Monthly Salaries for Health Staff (basic salaries)

	Civil Service Salary (MOH)	Average Salary at Agree Institutions	Average Salary paid by NGOs, Volunteer Organizations, Districts
Doctor	39,200	66,875	
Nurse	23,100	25,000	
Social Worker	23,100	23,000	
Lab Technician	23,100	23,800	
Aux. Staff	9,900	13,700	
Nurses Aides	13,500	13,700	

The above salary statistics relate only to basic salaries - they do not include allowances or other emoluments paid to staff occupying established posts.

2.2.5 MOH - places of work

MOH staff are employed at the central and district level Ministry of Health offices, at 5 referral hospitals, 35 district hospitals, and 365 health centres throughout the country.

MOH Central Headquarter:

Located in the ONAPO building in the centre of Kigali, this is the administrative centre of the health services and policy analysis and making. The offices of the Minister, Minister of State, the Secretary General, senior managerial personnel, and their staff are based here.

National Referral Hospitals

The five national referral hospitals are all located in urban areas. Four are found in Kigali, one in Butare. Below is a brief description of each.

Centre Hospitalier Universitaire de Kigali (CHUK)

This 511 - bed institution is located in the centre of Kigali, the capital of Rwanda. CHUK has four main missions: to train doctors and specialists and other health professionals, to carry out scientific research, and to provide high quality tertiary services to patients in need. Further, it and other referral hospitals, are responsible for supervision of district hospitals. However, CHUK does provide a wide range of hospital services at all levels of care for both in-patients and out-patients. Outreach services are provided to the population living in the immediate vicinity of the hospital. It acts as the national referral centre and is one of two principal training centres for medical doctors.

Kanombe Military Hospital (KMH)

This 200-bed institution is located in Kicukiro district in Kigali, approximately 8 kilometers away from the centre of town. While its primary mission is to serve the military, over the past few years, KMH has been serving an increasing number of civilians as well, and currently reorganizing to be integrated in the MOH network of hospitals country wide. The hospital provides a wide range of hospital services at primary, secondary and tertiary levels for both in-patients and out-patients. Outreach services are provided to the population living in the immediate vicinity of the hospital.

King Faycal Kigali Hospital

This 141-bed institution is located in Gasabo district in Kigali, approximately 5 kilometers away from the centre of town. The primary mission of this hospital is to provide tertiary specialty services. Outreach services are provided to the population living in the immediate vicinity of the hospital. It acts as the national and regional referral centre.

Butare University Hospital (CHUB)

This 500 -bed institution is located in Butare, the second largest urban city and home to the National University of Rwanda. Similar to CHUK, its mission is three-fold: to train doctors from the national university, to conduct scientific research, and to treat patients. However, the hospital does provide a wide range of hospital services at primary, secondary and tertiary levels for both in-patients and out-patients. Outreach services are provided to the population living in the immediate vicinity of the hospital. It acts as the national referral centre and is one of two principal training centres for medical doctors.

Ndera Hospital

This 150-bed institution is located in Ndera, Gasabo district in Kigali, approximately 10 kilometers away from the centre of town. The primary mission is to serve the mentally ill.

District Hospitals

There are 35 District Hospitals located in 30 districts, and ranging from 75 to 400 beds. District hospitals provide primary and secondary level hospital services to in-patients and out-patients in their health Districts. Close to 70% of these hospitals serve rural areas. While the system for referrals is quite weak, some referrals are made and received from community health centres within the district covered by that district hospital.

District hospitals staff have technical supervisions of the health centres in their mandate.

Health Centres

There are 365 health centres located within all 30 districts of Rwanda. These health centres provide primary health care to close to 80% of the Rwandese population. Services include out-patient and some limited in-patient care. The majority of these health centres are located in rural areas.

2.2.6 Distribution of posts and deployment of MOH personnel by type of facility– Dec 2005

Table 2.3 on the following page shows the distribution and the deployment of personnel at health centres, district and referral hospitals. The table shows the differences between current and recommended norms staff levels for health personnel by health centres and district hospitals. Norms for referral hospitals have not yet been established by the MOH.

The National Referral Hospitals are the centres to which patients are referred from throughout Rwanda, and thus the medical, nursing and other hospital staffs serve a population which extends beyond the geographic boundaries of the districts within which these hospitals are based. Also, medical and other health personnel based at these

referral hospitals are required in principle to conduct scheduled clinics at district health centres throughout the country and make other supervisory, supportive and training visits to all district hospitals. However, in reality this rarely happens.

In all health districts, “general practitioner” workforce may be seen as made up of medical doctors and nurse practitioners (A1) - registered nurses who have completed basic training in advanced clinical practice. Experienced nurses at the district hospitals and health centres are trained to diagnose and treat common health problems.

It should be noted though that data received from the Health Information system is under representative of activities in health facilities. All HIV/AIDS related activities are not captured in the HIS. But a recent study of Furth and al. (2004) recommends that ‘to reach the national target of 100,000 clients receiving ART by the 2007, approximately 1,145 full time equivalent (FTE) staff will be required’³.

2.2.7 Functional allocation of MOH posts and personnel

The staffing of the referral hospitals is aimed at providing personal and community health services at primary, secondary and tertiary levels. Staffing at district hospitals permits the delivery of both primary and a range of secondary level services. Health centre staffing provides some essential elements of primary health care. Major concerns of staff at both district hospitals and health centres include health surveillance and problem identification, triage and referral. A 24-hour-a-day radio/telephone network links many health centres to the hospitals within their health districts.

³ R. Furth and Al: *Rwanda HIV/AIDS HR assessment report 2004*

Table 2.3: Rwanda MOH workforce - posts and deployment of personnel by type of health facility, December 2005

Current staff	<i>Health Centres</i>	<i>District Hospitals</i>	<i>Referral Hospitals</i>	<i>Admin/ Other</i>	Total
Specialist physician	2	5	28		35
generalist physician	24	114	48		186
nurse A0 and A1	70	102	127		299
nurse A2 and A3	2264	1084	702		4050
anesthesiologist tech A1		7	23		30
anesthesiologist tech A2			1		1
nutritionist A0 and A1	9	11	3	2	25
nutritionist A2	56	10	2	1	69
nutritionist A3	27	1			28
social worker	205	76	44	9	334
lab technician A0	1	0	3		4
lab technician A1	3	15	18		36
lab technician A2	280	101	49		430
Pharmacist	0	0	5	9	14
dentist (inc in doctors for present)	0	0	0		0
dental technician	3	13	17	2	35
radiologist technician		16	13		29
public health/sante environment	12	10	3	11	36
mental health	5	9	6		20
physiotherapist	4	26	24		54
	2965	1600	1116	34	5715

NB

The 1246 individuals in the other jobs do not give a primary specialization and there is insufficient data to be sure they are doing any of the above jobs or are purely administrative.

Dentists – who have been included in generalists above - and further specialists are still being identified

There are 38 registered (A1) and 48 enrolled (A2) midwives; they are still being identified and have been included amongst nurses

Tables 2.3 a-c summarize projected human resources needs for health centres, district and referral hospitals. For health centres, these calculations are based on 251 operational days, as health centres are not open on the weekends or on the 10 public holidays. District and referral hospitals are open 365 days per year. It is assumed that all staffs are available to work 216 days per year. This number represents a 40 hr work week, and includes vacation, public holidays, and training time. While utilization rate is projected at 50%, the observed distribution between the three levels of health services delivery is maintained. To this end, it is assumed that health centres serve 82% of all

contacts, district hospitals serve 9%, and referral hospitals serve the remaining 9% of all patient contacts.

Major changes include the introduction of partial coverage of health centres by general physicians. Strategies for this include fixed schedules of physician shifts at selected health centres. Thus in one district with 5 health centres, a physician may work in each health centre one day per week. In addition health centres are expected to refer patients to the district hospitals.

A second initiative is to improve the number of specialists available at district hospitals. According to adopted Rwanda norms, each district hospital should be staffed with at least 5 specialists (1 pediatrician, 1 Ob-Gyn, 1 surgeon, 1 internist, and 1 anesthesiologist). A third major initiative is the proposal to strengthen the link between health sites and the community through social workers. The gaps identified in Tables 2.3a-c reflect not only the current situation, but also these desired initiatives given a projected increase in utilization of health services.

Table 2.3a. Number of additional key clinical staff needed at health centres (projected yearly utilization = 4,016,821)

Provider Type	Recommended Daily Provider: Patient Ratio HEALTH CENTRE	Total Number Available	Total Number Needed	GAP
General Physicians	1:40	24	465	441
Specialist Physicians	-	2	-	-2
Medical Assistants	1:40	0	465	465
Nurses A1	1:40	70	465	395
Nurses A2	1:25	2265	744	-1520
Nutritionists	1:40	92	465	373
Social Workers	1:40	86	381	295
Lab technician A0	-	1	-	-1
Lab technician A1	-	3	-	-3
Lab technician A2	1:20	280	930	650
Pharmacists A0	-	0	-	-
Pharmacists A1	-	0	-	-

+ Calculations of provider to patient ratio based on 216 provider work days:

1:40 translates to 8,640 patients per provider per year; 1:30 translates to 6480 patients per provider per year; 1:25 translates to 5,400 patients per provider per year; 1:20 translates to 4,320 patients per provider per year.

Elsewhere in this plan is reference to the potential use of medical assistants in lieu of generalists at health centres

**Table 2.3b. Number of additional key clinical staff needed at *district hospitals*
(Projected yearly utilization = 357,130; 365 operational days; 35 district hospitals)**

Provider Type	Recommended Daily Provider: Patient ratio DISTRICT HOSPITALS	Total Number Available	Total Number Needed	GAP
General Physicians	1:25	114	66	-48
Specialist Physicians	5 per hospital (Ped, Ob-Gyn, Internist, Surgeon, Anesthesiologist)	5	175	170
Medical Assistants	1:40		41	41
Nurses A0 -A1	1:25	102	66	-36
Nurses A2-A3	1:20	1084	83	-1001
Nutritionists	1:40	22	41	19
Social Workers	1:40		41	41
Lab technician A0	-	0	-	-
Lab technician A1	1:40	15	41	26
Lab technician A2	1:20	101	83	-18
Pharmacists A0	1 for every 4 hospitals	0	9	9
Pharmacists A1	1 per hospital	0	35	35
Dentists	1 per hospital	0	35	35

+ Calculations of provider to patient ratio based on 216 provider work days:
1:40 translates to 8,640 patients per provider per year; 1:30 translates to 6480 patients per provider per year; 1:25 translates to 5,400 patients per provider per year; 1:20 translates to 4,320 patients per provider per year.

In this table the utilization rate is thought to be low, and consequently the requirements for several professional health providers are exceeded by the numbers in post.

**Table 2.3c. Number of additional key clinical staff needed at *Referral Hospitals*
(Projected yearly utilization = 368,000; 365 operational days; 4 referral hospitals)**

Provider Type	Recommended Daily Provider: Patient ratio	Total Number Available	Total Number Needed	GAP
REFERRAL HOSPITALS				
General Physicians	1:30	48	57	9
Specialist Physicians	1:20	28	85	57
Medical Assistants	1:40			
Nurses A0-A1	1:20	127	85	
Nurses A2	1:30	702	57	-
Nutritionists	2 per hospital	5	10	5
Social Workers	10 per hospital		50	50
Lab technician A0	2 per hospital	3	10	7
Lab technician A1	1:25	18	68	50
Lab technician A2	-	49	-	
Pharmacists A0	2 per hospital	8	10	2
Pharmacists A1	1:40	7	43	36
Dentists	1 Kanombe; 3 in each other referral hospitals	3	13	13

+ Calculations of provider to patient ratio based on 216 provider work days:

1:40 translates to 8,640 patients per provider per year; 1:30 translates to 6480 patients per provider per year; 1:25 translates to 5,400 patients per provider per year; 1:20 translates to 4,320 patients per provider per year

SECTION 3

3. TRAINING PROGRAMS AND TRAINING ISSUES

3.1 Training policy and principles

The following principles underlie Ministry of Health policy regarding training of health personnel.

- So far as is practicable, staffs are to be trained in-country rather than elsewhere so that they can be exposed to solving real problems in their environment while delivering care to the communities in need.
- So far as is practicable, the modular approach to curriculum design, course programming and the development of teaching/learning materials should be adopted. This will economize in the use of expertise required for course development and delivery, and facilitate sharing of materials both across in-country courses and with health training authorities in other countries.
- Training program development should reflect the desirability of providing for career progression by means of the completion of successive levels of training.
- The Ministry of Health will maintain close liaison with the Ministry of Education, other government agencies and non-government organizations that offer programs for the training of health personnel.
- For post graduate studies, priority should be given to candidates that have spent at least 2 years of public service in health district postings
- In selecting candidates the principles of geographical, age and gender equity should be respected
- MOH personnel awarded out-of-country scholarships remain on the staff of MOH for all administrative purposes and must sign an agreement to work for the MOH for a minimum period of 3 years upon return.

3.2 Training responsibilities

The Ministry of Health in collaboration with the Ministry of Education provides basic professional training for major categories of allied health personnel through programs conducted at Kigali Health Institute, the nursing schools and other health professional schools. Government provides funding for students to undertake basic and post-basic training in nursing at KHI. Other pre-service, post-basic and post-graduate training of health professionals out-of-country, and in-service and continuing education activities in-country, are funded either directly by MOH budget or under agreements between MOH, the Ministry of Education and a number of international development assistance arrangements.

The Scholarship Committee (SC) advises the Minister on health personnel training matters. The Director of UFMIR and his staff provide the secretariat for the SC in matters relating to training and maintain the MOH training database.

Local training of health personnel is coordinated by the MOH Training Coordinator. This person is directly responsible to the UFMIR for the organization and overall supervision of all the local training activities undertaken by the Ministry of Health. Units and desks within MOH play a major role in the actual design and conduct of relevant local training activities.

The Human resource development and policy desk within the MOH Policy, Planning and Capacity Strengthening Unit in the new organic structure will be responsible for identifying training needs and executing research activities in matters related to the training of health personnel through pre-service education, post-graduate training and short courses.

3.3 Types, location and duration of current training programs

Listed below are the main types and duration of training programs pursued by staff of the Ministry of Health or people aspiring to enter a health occupation.

3.3.1 Out-of-country training

Pre-service training (undergraduate diploma or degree 3-6 year courses) at out-of-country institutions:

Dental surgeons, Biomedical Maintenance, Dietetics and nutrition, Medical records administration, Health service management, Public health nursing

Post-basic and post-graduate training leading to formal qualification out-of-country while in MOH employment but on study leave (course duration varies but at least one year - usually longer)

Medical specializations (other than Obs-Gyn, Surgery, Pediatrics, Internal Medicine and Anesthesiology); dental and nursing specialist training;

3.3.2 In-country training:

Basic professional training (local certificate 3 year courses-6 years courses) - training undertaken in training institutions or training programs under the control of the Ministry of Health or at the National University and Kigali Health Institute

A0 General Medicine (NUR)
A0 Public health & health services management (School of Public Health, Butare)
A0 Pharmacy (NUR)
A0 Nursing Bachelor in Nursing (KHI)
A0 Nurse Tutors/Educators (KHI)
A1 Nursing (MOE diploma course- KHI)
A1 Midwifery
A1 Psychiatric Nursing
A1 Radiographers
A1 Physiotherapy
A1 Environmental health science
A1 Ophthalmology assistants
A1 Anesthetics
A1 Dental technicians
A2 Nursing (MOE-ESI certificate- Byumba, Kibungo, Rwamagana, Kabgayi and Nyagatare)
A2 Laboratory Technician (MOE certificate course- Gatagara, St Andre)

Post-basic training undertaken in-country while in MOH employment (9-12 month courses)

All Courses offered at KHI, SFB and KIST

Medical specializations training at Master degree undertaken in-country while in MOH employment (3-5 years)

Internal Medicine, General Surgery, Obstetrics and Gyneacology, Anesthesiology, Pediatrics and Family Medicine (NUR)

3.3.3 In-country or out-of-country training

In-service training to refresh, up-date and extend specific knowledge, skills and performance of MOH staff (duration from a few days to a few weeks)

Local workshops and seminars are generally conducted in-country within MOH; MOH staffs may be nominated to attend short courses offered by CEFOCK, SFB, RIAM or outside the country, the Public service department or other local training agencies. MOH personnel may be funded by MOH or nominated for funding by other agencies for participation in short-term training related activities out-of-country.

Continuing education (CE)/continuing professional development (CPD) activities whereby individual health workers undertake activities to maintain and extend their professional competence and performance

MOH may nominate staff for participation in CE/CPD activities such as seminars, conferences etc both in-country and elsewhere where other agencies meet some or all of the costs involved. Applications for MOH support are treated on a case by case basis.

3.4 Teaching/learning facilities in Rwanda

The scope and scale of health personnel education and training that can be carried on in Rwanda are obviously limited by factors such as large numbers of students, few qualified teachers, and limited teaching material and so on. The principal in-country teaching/learning facilities are:

Nursing schools and other paramedics: The schools offer a three year course after the common branch (*Tronc commun*) of secondary school. In other east African countries, this is a level comparable to enrolled nurses. The Government of Rwanda decided to keep 5 model nursing schools that provided adequate standards for the teaching facilities. These schools are located near district hospitals that serve a variety of cases for practicum. These are ESI Byumba, Nyagatare, Kibungo, Rwamagana and Kabgayi. There are meant to temporarily phase out the A2 training by 2007 and remain A1 level nursing/midwifery training centres. Curriculum revision is underway to harmonize definitions of scope of work for each level along the continuum. Private sector actors willing to be involved in training of health professionals can do so upon Ministry of Education approval if they meet required standards

Kigali Health Institute: This is a training institution that offers 3 year courses in A1 Nursing (comparable to Registered Nurses), A1 Midwifery (comparable to Registered Midwives), A1 Psychiatric Nursing, A1 Environmental health science, A1 Ophthalmic technicians, A1 Radiographers, A1 Physiotherapy, A1 Anesthetics and A1 Dental technicians. The School can accept an annual intake in the region of 20 new students in

each category of allied medical professionals. Students undertake practical work at the CHUK and in other hospitals in the country.

CEFOCK: The Centre for Continuing Education that is part of Kigali Health Institute was established to serve as a training centre for the skills development of the MOH personnel, especially the professional development for trainers. Unfortunately, it has not been given sufficient support to undertake its activities and does not function today to its full capacity. However, it holds good potential to develop and serve according to its prime mandate. In this planning process for HRH, the MOH will consider it an asset on which to build the performance of health personnel.

Faculty of Medicine: The Faculty of Medicine at the National University of Rwanda provides training leading to a medical doctor's degree after a 6 year programme, including a 1 year internship. It is soon to offer postgraduate studies in the main specializations of general surgery, pediatrics, internal medicine, obstetrics and gynecology and anesthesiology. The University teaching hospitals (CHUB, CHUK and KFH) house the practical trainings under close supervision of qualified hospital staff.

School of Public Health: The mission of the SPH is to train health professional and other suitable candidates in management of public health programs and management of health services. Supported by Tulane University-USA and Johns Hopkins, it delivers Master's degree programs for trainings of 2-3 years in modular sequences combining theory and practicum. District management team members are the main category of their students.

3.5 Curriculum development and approval

Curricula for the courses offered within the health professional schools are developed by the staff of the respective schools with the help of consultants from WHO and elsewhere and this is done under close supervision of the Ministry of Education. Departments in which trainees are to be employed are most of time invited to participate. Draft curricula are submitted to the National Curriculum Development Centre of the Ministry of Education for approval after passing through all authorized channels for internal approval such as the academic senates of the school introducing the new curriculum.

Registration/enrolment under the provisions of the nursing registration legislation as an enrolled nurse, registered nurse, nurse practitioner, midwife, psychiatric nurse or community health nurse shall be conditional upon completion of training approved by the Nursing Council.

3.6 Recruitment and training of teaching personnel

Each of the schools and training programs referred to in sub-section 3.4 above is headed by an experienced senior practitioner who has formal professional training. However, most lecturers have not completed training in teaching methodologies to prepare them to teaching efficiently. Some staff members who participate in teaching programs may have completed short training of trainers' courses. It is in this plan to train nurse educators and institutions of learning should ensure that recruited staff get the necessary teaching skills. Teaching staff are required to hold qualifications acceptable to the Higher Education Commission.

Finding medical experts to teach post graduate students is a major challenge. The MOH shall support the Faculty of medicine to mobilize experts from the region and abroad, keeping in mind that this is the prime responsibility of the NUR/Faculty of medicine.

3.7 Recruitment, selection, retention and employment of trainees

The recruitment and selection of trainees to the local pre-service training programs is the responsibility of the Ministry of Education through the National Examination Board. For MOH Personnel the Secretary General in the Ministry of Health nominates appropriate officers to participate in the selection process.

The authority for appointment of trainees to the Public Service resides in the Ministry of Health. Once the MOH selection process is completed qualified staffs from A1 and above are deployed based on the expressed needs of decentralized levels.

The award of scholarships to school-leavers and other non-MOH employees for pre-service training at out of country institutions is a function of the Ministry of Education. Holders of pre-service overseas scholarship remain under the supervision of the Ministry of Education until they complete their training and then may enter MOH employment.

The process for selecting MOH personnel for longer term training out of country involves the scholarship committee. When sponsorship involves another agency such as WHO, the Belgian Cooperation etc... This committee will co-opt representation from the agency concerned or vice versa. MOH personnel awarded out-of-country scholarships remain on the staff of MOH for all administrative purposes.

All holders of formal tertiary training scholarships and fellowships for overseas study must sign a bond with government prior to their departure overseas. The bond states that they will return to the country upon completion of their training and work for a minimum period of 3 years.

On completion of their training, MOH post-basic or postgraduate trainees are normally appointed to available posts within MOH and are employed subject to the provisions of

the Public Service Regulations. Subject to satisfactory performance and good behavior they may expect security of tenure and entitlement to a pension on retirement.

3.8 Current training capacity statistics

Table 3.1 shows the numbers of trainees in each of the major health personnel training programs.

Table 3.1: Current training statistics – public sector, Rwanda 2005

Course	Location	Year of entry	Number of new entrants	Year of graduation	Expected number of graduates
General Medicine (6 yrs)	NUR	1999	78	2005	73
		2000	109	2006	111 ⁴
		2001	97	2007	94
		2002	98	2008	91
		2003	102	2009	109
		2004	53	2010	50
Dip Nursing A1 (3 yrs)	KHI	2002	57	2005	51
		2003	64	2006	62
		2004	99	2007	52
Nurse Certificate A2 (3yr)	MOH	2002		2005	
BDS (5 yrs)	ooc	none currently studying			
Dip Dental Therapy (3yrs)	KHI	2002	25	2005	25
		2003	23	2006	23
		2004	21	2007	21
		2005	-	2008	-
B Pharmacy (4 yrs)	UNR	2001-2002		2005	18
		2003	41	2006 ⁵	38
		2004	59	2007	57
		2005	27	2008	26
		2006	37	2009	37

⁴ Some students have had to repeat years

⁵ The course runs from January to December, the students taking four full years of study

B Laboratory Science (3 yrs)	ooc	none currently studying			
Dip Laboratory Sc (3 yrs)	KHI	2002	33	2005	33
		2003	45	2006	45
		2004	49	2007	49
Dip Radiography (3yr)	KHI	2002	13	2005	13
		2003	17	2006	17
		2004	13	2007	13
Dip Physiotherapy (3yr)	KHI	2002	23	2005	23
		2003	21	2006	21
		2004	27	2007	27
Dip Anesthesia	KHI	2002	20	2005	19
		2003	30	2006	30
		2004	36	2007	36
Dip Mental Health Nursing	KHI	2002	58	2005	58
		2003	47	2006	47
		2004	25	2007	25
Dip Environmental Health	KHI	2003	50	2006	50
		2004	47	2007	47
Dip Ophthalmology Assistants	KHI	2004	10	2007	10
Midwifery Diploma	KHI	2002	27	2005	27
		2003	15	2006	15
		2004	14	2007	14

* ooc - Course is conducted at an out-of-country institution.

3.9 Current training issues

The following matters are among the major training-related issues confronting the Ministry of Health.

3.9.1 Bonding arrangements

Despite the existence of “bonding” arrangements, some students who complete their training overseas fail to return to employment in Rwanda or leave government employment very shortly after their return to the country. There is a need to review the conditions and operation of the bonding system. This review will involve both MOH and other government agencies including the Ministry of Education and the Public Service.

3.9.2 Development of a detailed plan for the post-graduate training of medical graduates as specialists

Over the next few years a number of new medical graduates will enter MOH employment. A number of specialist medical officers will retire shortly especially in CHUK. Other specialists’ positions are held by expatriates. A schedule for the post-graduate training of Rwanda medical officers is required to ensure that over the next two decades an appropriately trained cadre of national medical specialists is built up.

Postgraduate medical training locally resumed this year 2006 after being suspended for about 3 years. These local trainings include 5 M.Med programs: Internal medicine, General surgery, Anesthesiology, Pediatrics and Obs-gyn. Preparations are underway to organize a sixth department i.e. family medicine. In general, these programs hold potential to improve the coverage of specialized care as defined in the primary health care strategy at district level. With family medicine the aim shall be to strengthen the capacity of graduate medical doctors through a vocational training program designed to take place over 3 years and produce specialists in general medicine to serve both in district hospitals and in the private sector as General Practitioners.

3.9.3 Lack of integration of local trainings for skills development

Various local trainings are regularly offered to personnel in the health sector. But these are organized by vertical programs in an uncoordinated manner. Often, the same people get trained for the different subjects and they have no time to implement what they have been trained for. As a result, some health workers put undue focus on certain aspects of healthcare like HIV/AIDS, Malaria and neglect others like IMCI, reproductive health etc...There is need for an integrated training plan and this at district level.

3.9.4 Pre-service training for nurses

Many schools that delivered nurses training A2 did not meet the standards to be nurses' education centres. Some of them did not provide enough time for nursing practicum nor did they have a specific hospital assigned for such training. Graduate of these schools went out without mastering the right nursing skills and in fact among this group relatively few choose to enter a career in nursing. As a result Rwanda has an inflated number of "trained nurses" 1/3900 (according to WHO norms for developing countries ratio is 1/5000 population) while still experiencing shortage of qualified skilled nursing staff.

After evaluation, 5 schools were found to fulfill the standards set by the Directorate of nursing (currently the Nursing task force) and Ministry of Education and were allowed to continue training A2 nurses, a programme to be phased out by 2007 to better prepare organization of enrolled nurses training.

As Rwanda is upgrading the requirement for nursing education, there is need to train A0 nurse educators who will teach the A1 streams. At present, there is a programme for training nurse/midwife educators that was organized by Ministry of Health and KHI to start the bachelor of nursing degree course by 2006. Qualifying graduates will staff the nurse training schools for the upgrading A2 nurses to A1 standard.

3.9.5 Up-dating and expansion of knowledge and skills of trainers in local training programs

The knowledge and skills of staff who are engaged as trainers in local training programs require up-dating through a planned program of in-service training and continuing education activities.

SECTION 4

4. HRH STRATEGIC PLAN 2006-2010

4.1 Goal:

Available HRH that can understand and sustain health reforms for better health outcomes as enshrined in the vision 2020 to improve quality of health care.

4.2 Purpose:

The purpose of this plan is to provide guidance for the staffing of the health services through the training and development of health professionals and management to the year 2010. This will be achieved through focused investments to create and enable qualified human resources to deliver health services throughout the country and implement MOH policies.

Capacity building axis for HR

- Planning for Human Resources
- Development of HRH
- Support system for HRH

Link with Health Sector Strategic Plan

- All activities in the Human Resources Strategic Plan are reflected in Health Sector Policy and Strategic Plan
- The national targets to be achieved by the end of 2009 are :
 - Increase from 30% to 50% the proportion of health facilities that meet the minimum staffing norms
 - Decrease the doctor to population ratio from 1/50,000 to 1/37,000
 - Maintain the nurse to population ratio at 1/3900 but improve their skills
 - Increase the percentage of midwives assigned to rural areas from 17% to 55%

4.3 Strategic objectives 2006-2010

Objective 4.3.1: to improve policy, regulation and planning of HRH

Activity 4.3.1.1 Develop specific statutes governing health professionals

Recently, the Government Cabinet authorized the formulation of specific statutes to govern health professionals in recognition of the unique nature of their work and hardship requirement compared to other civil servants; it is now under scrutiny in parliament. These statutes shall describe the entry point for health professionals, their career advancement and performance appraisals and management. Upon approval by the parliament the law shall be published in the official gazette and disseminated to all health workers and facilities.

Activity 4.3.1.2 Develop or update HRH policies (employment, management, etc.)

Owing to the recent public service reform and the introduction of a performance based financing or contractual approach strategy as a financing mechanism, health care providers shall be contracted and managed by the health facilities i.e. health centres and district hospitals. These will have authority to hire and fire based on workers performance and facility needs to carry on activities. The central level shall have to develop policies to regulate issues requiring national level planning such as setting standards and norms for quality health care delivery, long term trainings, etc.

There is need to carry on a job analysis and define scope of work for each category of health workers and definition of profiles for standard jobs. An inventory shall be carried out to determine the current staffing levels needs in view of further recruitment. Though recruitments shall be carried out locally, the Unit in charge of management of internal resources shall constitute and maintain a detailed database for all health workers. Operational policies to manage health professionals for each level of the healthcare shall be formulated and disseminated for use at decentralized level.

Activity 4.3.1.3 Develop a training policy

Over the next few years a number of new medical graduates will enter MOH employment. A number of specialist medical officers will retire shortly especially in CHUK. Other specialists' positions are held by expatriates. A schedule for the post-graduate training of Rwanda medical officers is required to ensure that over the next two decades an appropriately trained cadre of national medical specialists is built up.

Upon identification of training needs, candidates for post-basic and post-graduate training leading to formal qualification will be encouraged for all specializations available in-country but also those available only out-of-country (course duration varies but at least one year - usually longer, Medical specializations other than Obs-Gyn, Surgery, Pediatrics, Internal Medicine and Anesthesiology; dental and nursing specialist training etc...)

Activity 4.3.1.4 Review laws to strengthen professional bodies

The Law governing the Medical Council shall be revised to include the Dentists. The law governing the nursing profession needs revision and should be sent through all validation steps to be enacted. The Council of Pharmacists and other councils shall be encouraged. An overarching Health Professionals Council will be formed by members appointed from the various health professional bodies

Activity 4.3.1.5 Establish accreditation systems for health professionals and health facilities

As it stands today, there is neither a system for accreditation of health professionals, nor for health facilities, but it is the MOH policy to establish such a system. The MOH has contracted an external accreditation agent to evaluate quality performance of CHUs. At a later stage district hospitals and health centres shall be evaluated and national standards for quality care developed. Quality will also be achieved through strengthening of the professional regulatory bodies and the capacity of the quality of care desk in the policy and capacity strengthening Unit to develop accreditation standards and monitor their implementation.

Objective 4.3.2: to improve management and performance

Activity 4.3.2.1 Design career plans for each category of health professionals

The Ministry of Health in conjunction with the Ministry of Public service worked together to establish job classifications and career advancement plan for each category of health workers and determine the salary structures that reflects the new indices. The human resource manager in the UFMIR will carry out the daily management of health personnel and propose their nominations to the multidisciplinary permanent commission for decisions on career advancement. This commission will become basis of the Health Professionals Council. A Prime Minister's decree shall define the mandate of the multidisciplinary permanent commission and detailed tasks and appoint its members. It is anticipated that this structure will in future evolve into the overarching Health Professionals Council that should be established by a law.

Activity 4.3.2.2 Assess workload staffing needs

The MOH proposes to conduct a study to further clarify workload issues at all levels of the health system in the near future. Results of this study shall be incorporated in this plan during the review process. However, available evidence, based on current utilization rates show high workload for certain types of staff, and relatively low workload for others, including nurses A2.

Activity 4.3.2.3 Update definitions of scope of practice and standard job descriptions for each category of Health Professionals

Jobs are checked, analyzed and graded. A major activity ahead is to define scopes of work for each category of health professionals and define standard job descriptions to bring in specialization of the staff through a clear designation of duties. This will involve mainly professional bodies and consultations with other countries to harmonize our standards to those of the East and Southern African regions. After defining standards, all workers in service shall be re profiled and classified for appropriate grading in the new system.

Specialization of jobs holds potential to improve the quality of service rendered to the populations living in Rwanda and a source of motivation for the specialist.

Activity 4.3.2.4 Support recruitment and redistribution of health professionals in the public health sector to ensure geographical equity

There is predominance of health workers in urban areas, currently only 17% of health professionals are posted in the rural area. Contributing factors are among other reasons that health professionals earn more and have access to wider range of opportunities such as better schools for their children in urban areas, this means that rural areas often suffer from acute shortages of trained workers.

The Ministry of Health has conducted a study with both quantitative and qualitative analysis to understand motivations as to why health workers prefer urban areas and what it would take to keep them in the rural public health facilities. The study will guide the incentive packages offered to health professionals to ensure better deployment of health professionals across the country. The central level shall disseminate guiding tools on transparent recruitment procedures for the newly autonomous health facilities and give them administrative support.

Activity 4.3.2.5 Assess training needs, maintain a training database

A training needs assessment shall be conducted in view of the activity in 4.3.1.3 training plan to guide the scholarship commission in the selection of candidates. This work will be completed by a well maintained training database to ensure the roll out plan is not disruptive of daily activity requirements in health facilities. It is the prime responsibility of the health professional in charge of HR development and policy to execute an electronic training data base that will be the working tool for the scholarship committee.

Activity 4.3.2.6 Improve supervision, leadership and performance assessment

The Ministry of Health intends to improve HR management through introduction of modern recognized management methods. It is in this plan to introduce performance indicators and performance evaluation tools for improved supervision, leadership and performance of HR among the measures to move towards better managed HR.

Contractual approach for performance based financing is a major strategic orientation to effect this better management of HR.

Activity 4.3.2.7 Develop mentoring scheme for young health professionals

Mentoring is an informal process whereby an older more experienced member of an organization counsels/supports a younger colleague about the way the organization works. The experienced health professional explains the job, asks the trainee questions to test his or her knowledge and often exercises general supervision over the trainee to check whether the employee is making the correct use of the knowledge. All new and inexperienced recruits shall be paired to senior officers for mentoring and coaching to build an adequate pool of highly skilled qualified health professionals to deliver quality health care services.

Activity 4.3.2.8 Develop motivation strategies and schemes to improve performance of personnel

Factors that have been identified by many to contribute to poor staff morale are among others: lack of job descriptions and career plan, poor compensation packages etc. Findings of the study in 4.3.2.4 shall be integrated in retention and motivations strategies through contractual approach. Beside the revision of the salary structure, the MOH wishes to facilitate access to housing and other loans through a guarantee fund to be deposited at the National Bank of Rwanda. Eligibility criteria are to be defined together with the commercial bank that will award the loans and the technical analysis of requests for loans shall be the responsibility of these banks. A basket fund is established for human resource for health retention and motivation; all development partners in health are encouraged to adhere to its principle.

Activity 4.3.2.9 Update and disseminate management tools

There is a great need to document all district management tools that have been produced to date. All the operational policies and tools mentioned above must be gathered and documented into a management tool kit binder to be disseminated at each level of the health system for use. These shall include but not limited to HR procedures manual and various formats for data collection or health care services management guidelines

Objective 4.3.3: to stabilize the labour market

Activity 4.3.3.1 Conduct a comprehensive human resources assessment of public and private sector health personnel

While the health public sector is relatively well known, the private sector is quite small in Rwanda and we do not have accurate statistics on its size and composition as far as HR is concerned. Data from some samples reveal stark differences in terms of salaries between health personnel employed in public versus private facilities. Results from a recent evaluation conducted by Furth et al (2004) revealed that physicians employed by

NGOs to delivery HIV/AIDS services are paid 570% more than physicians paid by the MOH. Such differences in salaries make it particularly challenging to keep well qualified health personnel in the public sector. The first part of the database was executed by Kigali Health Institute. It involved health workers in the public sector. The second phase shall include the private sector in data collection and analysis.

Activity 4.3.3.2 Develop appropriate compensation packages for HRH

Ministry of Health and Ministry of Public Service and Labour (MIFOTRA) worked together to classify jobs for health professionals and proposed a new salary structure following new indices as defined by MIFOTRA. The new salary structure has been approved by the government Cabinet; salary supplements shall be based on performance. As a result some guidelines developed for salary and wages to be offered to health workers both in public and private sector to stabilize the labour market.

Activity 4.3.3.3 Improve healthcare access to all health personnel and families (Including for HIV/AIDS)

There are short term and long term activities to improve healthcare access to health personnel. All workers in the health sector shall be encouraged to get health insurance coverage for themselves and their families. Medical staffs will be encouraged to get insurance against medical malpractice in case of medical errors. Other short term activities would be to appoint a focal point for HIV/AIDS at the facility level, and institute workplace HIV prevention programs including post exposure prophylaxis and psychosocial support groups for staff in HIV/AIDS and other infectious diseases services.

Activity 4.3.3.4 Improve working conditions for health personnel

Norms and standards of healthcare delivery services need to be reviewed, revised and published. These standards will constitute the basis for assessment of working conditions at each health facility and the development of an investment plan. Also, the study on retention of health personnel will conduct a work climate assessment to determine which leadership practices need to be strengthened and to implement a leadership development program at all levels. Long term activities will be to strengthen partnerships with non governments, community-based, and religious organizations (including organizations of people living with HIV/AIDS) to work at grassroots level to influence human capacity development.

Objective 4.3.4: capacity creation - to strengthen education, training and research

Activity 4.3.4.1 Improve the development and implementation of continuous education training programs that address priority health areas

This may be in-country or out-of-country training. There is need to coordinate in service training and establish a Continuing education (CE)/continuing professional development (CPD) programme. These activities shall require recruitment of an officer in charge with a medical or health training background to support the UFMIR in their coordination. Other activities include development or harmonization of training modules for priority health areas. The School of Public Health, CEFOCK, Civil society organizations or other private sector actors will support the MOH in the organization of these courses. MOH may nominate staff for participation in CE/CPD activities such as seminars, conferences etc both in-country and elsewhere where other agencies meet some or all of the costs involved. Applications for MOH support are treated in the scholarship committee and on a case by case basis.

Activity 4.3.4.2 Support review of curricula for competence-based programs in pre-service education

Curricula for the courses offered within the health professional schools are developed by the staff of the respective schools with the help of consultants from WHO and elsewhere and this is done under close supervision of the Ministry of Education. Departments in which trainees are to be employed are most of time invited to participate. Draft curricula are submitted to the National Curriculum Development Centre of the Ministry of Education for approval.

Health professional schools are now under MOH, there is need to review all curricula to adapt to new health needs of populations living in Rwanda and a more sophisticated health system. The process to review specific curricula started with Nursing and midwives curricula, the other training programmes shall also need revisions and new ones introduced. The role of the MOH as the major employer is to determine the required skills and competences required to deliver quality health care based on the epidemiologic profile of the country. Training institutions shall coordinate these review activities. The MOH will assist them to mobilize the required resources. KHI, Nursing schools, faculty of medicine and the nursing task force are embarked on the task. During this revision, teaching material and instructors needs both in numbers and skills mix will be assessed.

Activity 4.3.4.3 Develop a post-graduate and post-basic training schedule

A training plan shall be developed to improve coordination and management of HRH at all levels and a training database maintained by the desk in charge of HR development and policy. Regular reports shall be produced and information disseminated to all staffs especially with regard to training opportunities to ensure equity. Training policies should be streamlined to ensure that districts are involved in planning and training needs assessment. The Ministry of Health shall maintain close liaison with other government agencies and non-government organizations that offer programs for the training of health personnel to expand funding opportunities.

For post graduate studies, priority shall be given to candidates that have spent at least 2 years of public service in health district postings.

The principles developed in this planning document for HRH shall be reviewed regularly to integrated and adapt to any significant changes in the policy environment

Also see **Activity 4.3.1.3**

Activity 4.3.4.4 Develop funding mechanisms for post-graduate education of health Professionals

This costed strategic plan is expected to be implemented through a basket funding mechanism. For some development partners unable to pool funds into a basket, they are encouraged to fund earmarked activities that have been identified within the context of this plan. Mechanisms for participation and management of the HR basket “Akebo” will be streamlined in the HR basket fund management modalities.

Activity 4.3.4.5 Support establishment of a health services, policy and management research centre for research activities at the SPH/NUR

The Planning and capacity building Unit within the MOH in the new organic structure will be responsible for executing research activities in matters relating to the training of health personnel through pre-service education, post-graduate training and short courses. Together with all stakeholders, the centre will be responsible of developing research questions and conduct studies that can inform policy making. Mainly, these will be impact assessment, capacity building and policy analysis activities.

Activity 4.3.4.6 Ensure use of evidence-based mechanisms for health policy development

The results of studies in activity 4.3.4.6 shall be proposed for policy development and implementation of evidence based interventions.

Objective 4.3.5: to monitor and evaluate progress

Activity 4.3.5.1 Establish a monitoring system for performance indicators

Health personnel are today monitored in terms of numbers, qualifications, deployment sites and date of posting and salary. Performance appraisal and evaluation is to be consistently performed. Each worker will be evaluated at the end of the year.

Upon completion of production of monitoring tools, the UMIRPR shall disseminate them and establish regular supervisions.

Data collected should be exploited for analysis that provides evidence on trends and gaps. The HR software shall be upgraded to include performance indicators and a close monitoring system established to produce reports that can inform future policies.

Responsibility for monitoring the implementation of the approved national health workforce plan will be the responsibility shared between the top level management personnel of MOH and the heads of divisions and units.

Information to facilitate monitoring will be supplied by way of regular reports to heads of units on the staffing situation from MOH human resource office. Reports will be prepared from the workforce and training databases to be maintained by the Human resource office.

Activity 4.3.5.2 Improve the HR health information system (HRHIS)

The current *GESPER* software for HRH information system has become inadequate for HR management needs, it shall be upgraded to include more relevant information. Capacity Project of IntraHealth International (PEPFAR Funding) and the Belgian cooperation project to strengthen institutional capacity are collaborating to establish the HR data base soon to be finalized for the public sector. The second phase concerns the study of the private sector and shall also identify traditional birth attendants and recognized traditional healers by the MOH. A data base administrator must be hired to maintain this national health workforce tool.

Activity 4.3.5.3 Regular review of the HRH plan

In view of inevitable and sometimes unforeseeable changes in the health field and in the wider political and economic situation it is essential to make regular and systematic reviews of the health work force. The *HR task force* composed of all unit heads and the human resources development manager is responsible to the Secretary General of health for the conduct of the review of human resource for health plan. This annual, revision and

rolling over of the workforce plan is to be undertaken in association with the annual budget preparation process.

The MOH Human Resources development and policy professional will be responsible for the preparation of an annual overview report of staffing statistics, training statistics and other matters relevant to the review of the plan. Much of the data required for the preparation of this overview should be readily accessible through the MOH information system network.

The Policy and capacity strengthening Unit will act as coordinator of any operational studies or other investigatory activities regarding staffing and training matters which relate to the revision of the workforce plan.

SECTION 5

5. HRH PROJECTIONS 2006-2016

5.1 Introduction

The purpose of conducting the following projections is to ascertain whether the current decisions regarding training and development levels are likely to achieve sufficient numbers of each type of health professional required throughout the country in order to provide an equitable health service for the whole population. If they are not going to achieve these goals, what actions could be undertaken to improve the situation. These projections endeavour to cover all health facilities, except those in the private-for-profit sector.

Any projection is based on assumptions. These can be put into four main categories:

- Demand – how many people of each type do we need at each type of health facility;
- Supply – how many of each type do we currently have at each type of health facility;
- Losses – how many current, and future, people are we likely to lose from the health sector in the country; and
- Gains – how many of each type are being trained as new entrants to the health sector, or developed from one job to another within the system.

5.1.1 Demand:

The assumptions concerning how many of each type of health professional are laid out in Tables 2.3a, 2.3b and 2.3c for health centres, district hospitals, and referral hospitals respectively. In most instances, one of two methods has been used. In the first, a facility should have a specified number of a particular type of health professional, e.g. 5 specialist physicians at each district hospital or 10 social workers at each referral hospital. In the second method, the numbers of staff required are related to projected yearly utilisation. So a specialist at a referral hospital would be expected to deal with 20 patients a day; assuming he or she works for 216 and that 368,000 patients present themselves for specialist care at referral hospitals, then there is a need for 85 $[368,000/(216*20)]$ specialists. In the cases of the nurses and midwives projections, the calculations are a little more complex, taking into account beds, occupancy rates, average hours of care per occupied bed per day, supervisory ratios and management positions too.

Nonetheless, the principle remains the same. The method used to determine the demand was selected according to which was thought more appropriate. The resulting “posts” are presented in Table 2.1.

5.1.2 Supply:

The basis for the statement of current strengths within this plan is a survey of all professionals working in the health sector, both Ministry and NGOs. There were just under 7,000 people who responded and, whilst it is impossible that this survey covered everyone, it is believed that this response is remarkably complete. Certain checks were made by cross checking with other sources of data, e.g. Nursing Council and individual knowledge about specialists. It was felt that physicians in particular had probably not completed the forms. For example at one institution, it was found that only 12 out of 26 named generalists and specialists had completed the survey.

As they are an area of particular concern, a lot of effort was made to identify all the midwives in the country, including those who may not be currently employed. These are presented in the table below.

	Operational				Study	teach	Mgt	query	other	total
	r.h.	d.h.	h.c.	ngo						
A0 +	2				1	1	3		1 @ ICTR	8
A1 2000	7		1	3	4			2		17
A1 2001	2		1		1			4		8
A1 2002	2	1				2		6		11
A1 2003	5		1	1				7	1 in Malawi	15
A1 other	9		2	1				13		25
	21	1	5	5	6	3	3	32	2	84

A1 2000 refers to those midwives who graduated from KHI in 2000 as A1 midwives.

This demonstrates a number of points. Just because someone graduates does not mean they immediately start to operate as operational midwives in a health facility. Some of the graduates have gone on to further studies to learn to teach more midwives in the future. Some are known to have moved out of the country or out of midwifery. A high number have either not responded to the survey and/or they are not currently working. It was apparent when a registration exercise was conducted for all nurses and midwives two years ago, that some of them were not working.

5.1.3 Losses:

Some losses are easy to predict. The survey included information about each individual's year of birth, so with a fixed retirement age, it is possible to anticipate when anyone is due to retire.

Nonetheless, not everyone who graduates immediately becomes an operational nurse or physiotherapist or whatever. Some, as shown above, go onto further training; some may choose not to even start to work. Either of these actions means that we cannot assume that just because someone qualifies, they then start to improve the delivery of health services in the country.

Others may commence, but then leave the health sector altogether. Yet others may start in one health profession, but then develop their skills and move into another profession. This is particularly true of the nursing profession, where individuals might move into nutrition or counseling or public health or a number of other fields. Yet others might die, or be dismissed. Unfortunately there are no historical data to use to establish any patterns of these types of flow of staff.

For the purposes of the projections some loss rates have been introduced, based on the very low end of patterns observed in other countries. The implication of using low rates is that retention is assumed to be very good, and therefore the projected progress to achieving the levels of staffing required is optimistic.

5.1.4 Gains:

Information was taken from the enrolment records at KHI for anaesthesia, dentistry, laboratory, ophthalmology, physiotherapy, radiology, environmental health, nursing and upgrading evening courses for A2 nurses. Further information on the enrolment of physicians and pharmacists was supplied by the National University of Rwanda.

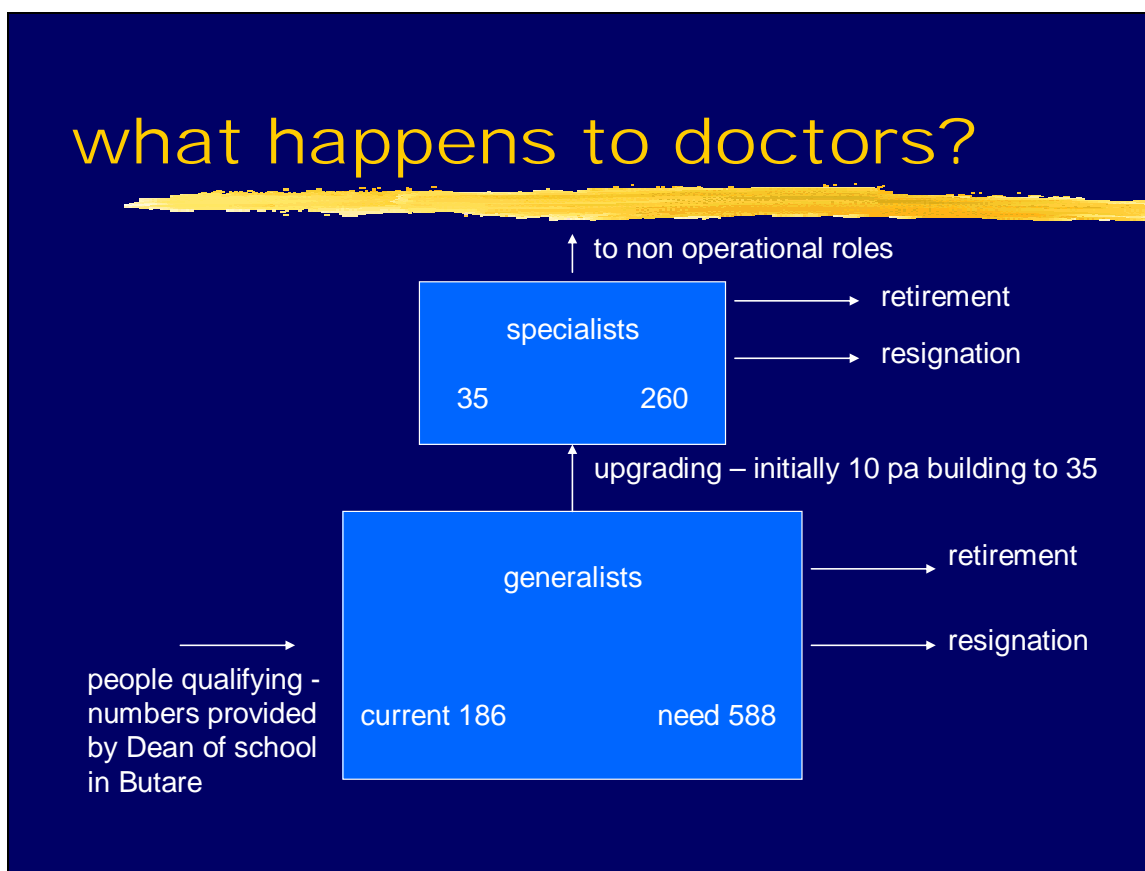
As the survey was conducted over the end of 2005 and early 2006, the projections originate from this point and the first year of the projection is therefore taken as the calendar year of 2006. Anyone known to be due to graduate in 2006 will be assumed to be an "entrant" into the first year.

5.2 Projections

5.2.1 generalist and specialist physicians

The following is taken from Table 2.1

	<i>referral hospitals</i>		<i>district hospitals</i>		<i>health centres</i>		<i>ngos</i>	<i>other</i>	<i>total exc NGO/other</i>		
	<i>posts</i>	<i>filled</i>	<i>posts</i>	<i>filled</i>	<i>Posts</i>	<i>filled</i>	<i>filled</i>	<i>filled</i>	<i>posts</i>	<i>filled</i>	
Doctor specialist	85	28	175	5	0	2			260	35	13%
Doctor generalist	57	48	66	114	465	24	1	3	588	186	32%



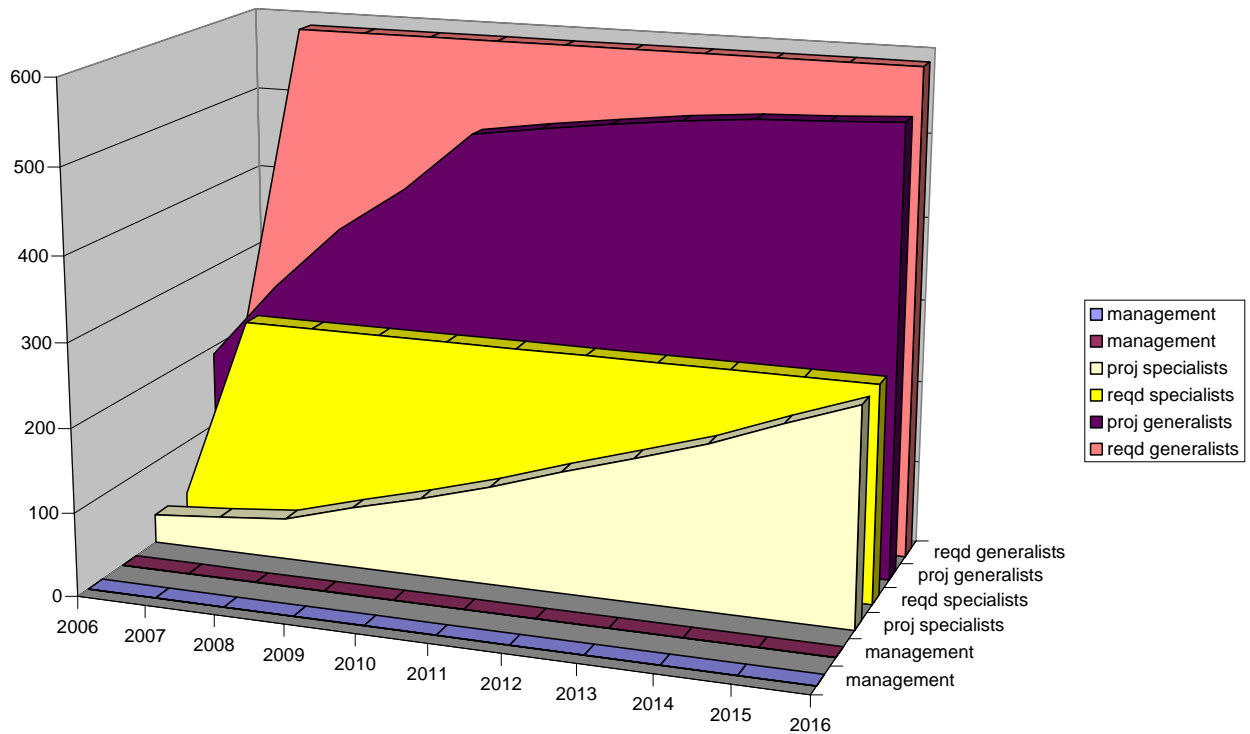
The 465 generalists are based on a projected utilisation of over 4,000,000 at health centres and that a general practitioner should see 40 cases a day. There is some debate as to whether it would be better to establish the medical assistant cadre and use these people in this role, but for the projections it is assumed the tasks are undertaken by fully trained generalists. The current supply of 24 at health centres is clearly inadequate.

By way of contrast, at district hospitals the low utilization of approximately 350,000, even with the generalists only seeing 25 cases a day, means that there are already more generalists in post than required.

It would appear that all future graduates should be deployed to the health centres. Those currently under training at NUR are all assumed to graduate and enter the health sector, and later levels of training will be 55 a year.

There is a tremendous shortfall of specialists at both district and referral levels. In the projections there is an assumption that the number of generalists to be developed into specialists will commence at around 10 a year, and build up to 35 a year over the ten year period.

Projections of doctors and specialists



The flat topped area at the back of the chart represents the 588 required generalists and the area “in front” of this shows how the number of generalists will increase from just under 200 to 540 with all the various movements described above. The current level of “production” will go a long way to satisfying the shortfalls at health centres. If utilization was to increase, particularly at district hospital, then the requirements would increase, but even if doubling the district utilization would only mean another 66 generalists would be needed.

The proposed levels of taking generalists to be developed to specialists described above would satisfy the defined requirements at the end of the ten year period.

Basically, under the assumptions described, Rwanda should have nearly sufficient numbers of both generalist and specialist physicians within the next ten years. What is not considered here is the progression of either generalists or specialists away from operational roles into management.

As an aside, within the survey 72% of the physicians are Rwandese, with almost 20% from Congo and the others in small numbers from all over the world. These projections have not assumed the replacement of non-Rwandese as a priority, but the proportion of Rwandese will increase assuming all the students are nationals.

5.2.2 nurses and midwives A2 and A1

The following is also taken from Table 2.1 and excludes midwives

	<i>referral hospitals</i>		<i>district hospitals</i>		<i>Health centres</i>		<i>ngos</i>	<i>other</i>	<i>total exc NGO/other</i>		
	<i>posts</i>	<i>filled</i>	<i>posts</i>	<i>filled</i>	<i>Posts</i>	<i>filled</i>	<i>filled</i>	<i>filled</i>	<i>posts</i>	<i>filled</i>	
Nurse A0	83	11	207	6		2			290	19	7%
Nurse A1	382	97	769	94	460	63	1	10	2306	254	11%
Nurse A2	190	618	409	1021	930	2135	6	63	1529	3774	247%

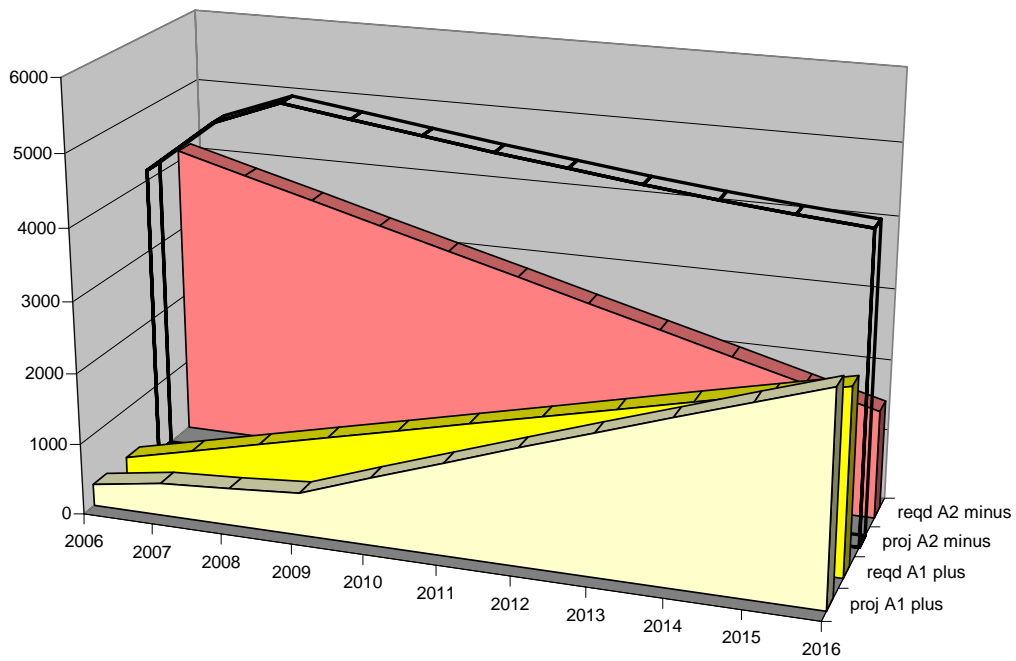
Clearly the supply of A1 nurses is currently far from adequate, particularly at the district hospitals and health centres. At the same time, the supply of A2 nurses exceeds the requirements by a massive margin. Much depends on how these requirements are derived. The Nursing Task Force has a small tool to determine the requirements, based on bed occupancy, type of nursing care, hours of care per patient, and the broad rule of thumb that, excluding midwifery, supervisory and management posts, there should be approximately equal numbers of A1 and A2 “operational” nurses. It is the lack of A2 midwifery, and therefore the requirement that all midwifery positions are A1 that leads to the greater A1 requirements. At health centres the staffing patterns vary according to the size, but again the lack of A2 midwives leads to substantial requirements for A1 nurses and midwives. Once again, at hospital facilities, these requirements are based on the low utilization at these facilities.

The A2 nurse category is by far the single greatest category of health worker in the country. By being present in large numbers, over and above requirements, it would appear that the overall percentage of posts filled is almost 80%. Whilst this is true, this category being so much overstaffed masks the shortfalls in the other cadres. Reference is made in section 4 of this document to the need for over additional 1,145 people to reach a target of providing ART to 100,000 clients. One obvious solution would be to train many of these nurses A2 to fulfill this identified need.

Given this shortfall, the question is whether the current nurses in training, together with the planned programme to introduce 360 qualifying nurses a year into the system from 2009 on, is sufficient to achieve these target requirements.

Assuming the low loss rates mentioned elsewhere, within the ten year period the requirements for A1 nurses and midwives combined will be achieved. In fact this should be achieved around 2013. However, the number of A2 nurses (presented as the transparent block above) will remain way in excess of the stated requirements. In fact, due to A2 nurses still to graduate, the numbers will exceed present levels.

projections of nurses A1 plus and A2 minus, including midwives



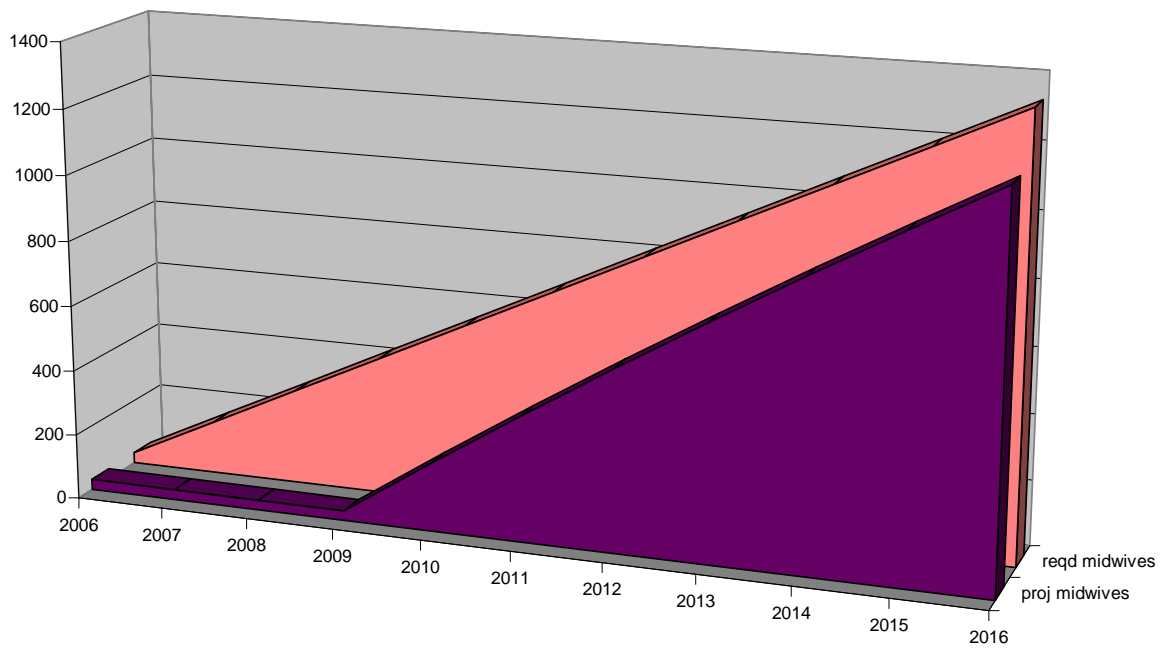
5.2.3 midwives A1

As there is particular concern about the lack of midwifery care in the country, a projection was done purely on these people.

From the very small base of 32 midwives currently operating at health facilities, if half the 360 A1 nurses to be trained each year are to be midwives, then that will almost achieve the required level of midwives by the end of the ten years.

By far the greatest need for midwives is in district hospitals and health centres. The referral hospitals currently have a fifth of their requirements but the other two types of facilities have only 1% each of the numbers needed.

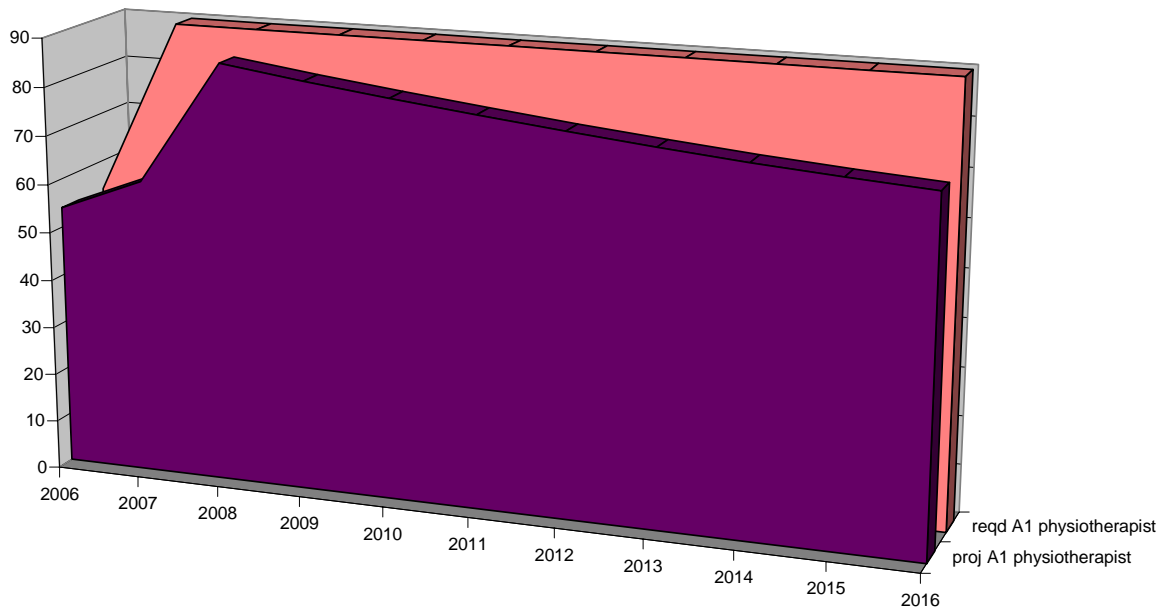
projections of A1 midwives



5.2.4 physiotherapists A1

For physiotherapists, the numbers currently being trained at KHI should enable almost all the requirements to be met in the next two years. Further numbers will be required to reach complete fulfillment of the targets, but this should only be at the rate of 3 to 5 a year. Once again, this is assuming an overall low loss rate, which there is no evidence to support at present, and on the levels of utilization at district and referral hospitals.

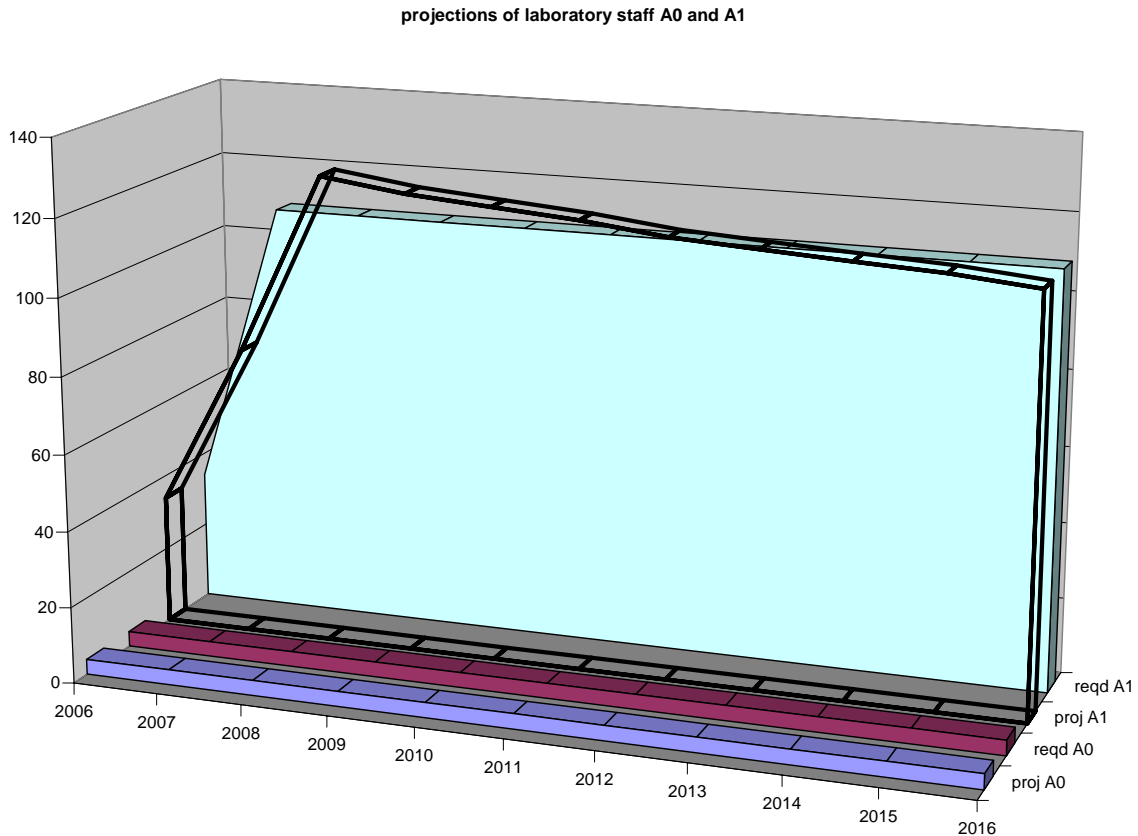
projections of A1 physiotherapists



5.2.5 laboratory staff

Like the physiotherapists, it would appear that sufficient A1 laboratory staff will be produced over the next two or three years to satisfy the currently assessed requirements. They are needed in both referral hospitals and district hospitals, where both types of facility have currently about a third of their need, but there are 94 currently at KHI and the shortfall is only 75.

If one person every other year was trained to A0 level, this would satisfy the stated requirements at this level. Selection from A1 candidates with high potential would seem an appropriate means to acquire these people.



5.3 Limitations

- The data on the hr supply is not completely accurate, and the proportion of generalists and specialists believed not to have returned information has probably meant there is an underestimate of the base form which the projections have been made

- The assumptions about future losses are not based on any Rwandan evidence and are probably low
- It is also assumed that all those trained are employed by the health sector, but it is not known, for example, where some qualified midwives are employed
- The nursing sector requirements are based on many assumptions, particularly the level of staff required and service expected
- Other requirements relate to information from the Health Information Systems, which suggest low utilization, particularly at district hospitals.

ANNEXE 2

Table of Indicators for RWANDA Vision 2020

Indicators	Situation 2000	Objective 2010	Objective 2020	International Norm
1. Rwandan population	7,7 million	10,2 million	13 million	
2. Literacy level (%)	48	80	100	100
3. Life expectancy (yrs)	49	50	55	
4. Women fertility rate	6.5	5.5	4.5	
5. Infant mortality rate (0/00)	107	80	50	
6. Maternal mortality rate (0/00.000)	1070	600	200	
7. Child Malnutrition (Insufficiency in %)	30	20	10	
8. Population Growth rate (%)	2.9	2.3	2.2	
9. Net primary school enrolment (%)	72	100	100	100
10. Growth secondary school enrolment (%)		100	100	
11. Secondary school transitional rate (%)	42	60	80	
12. Growth Secondary school enrolment (%)	7	40	60	
13. Rate of qualification of teachers (%)	20	100	100	100
14. Professional and technical training center		50	106	
15. The rate of admission in tertiary education. (0/00)	1	4	6	
16. Gender equality in tertiary education (F %)	30	40	50	50
17. Gender equality in decision making positions (F %)	10	30	40	
18. The rate of AIDS prevalence (%)	13	11	8	0
19. Malaria related mortality (%)	51	30	25	
20. Doctors per 100,000 inhabitants	1.5	5	10	10
21. Population in a good hygienic condition (%)	20	40	60	
22. Nurses per 100,000 inhabitants	16	18	20	20
23. Laboratory technicians Per 100,000 inhabitants	2	5	5	
24. Poverty (% < 1 US \$/day)	64	40	30	
25. Average GDP growth rate (%)	6.2	8	8	
26. Growth rate of the agricultural sector (%)	9	8	6	
27. Growth rate of the industry sector (%)	7	9	12	
28. Growth rate of the service sector (%)	7	9	11	
29. Ginni Coefficient (income disparity)	0.454	0.400	0.350	
30. Growth national savings (% of GDP)	1	4	6	
31. Growth national investment (% of GDP)	18	23	30	30
32. GDP per capita in US \$	220	400	900	
33. Urban population (%)	10	20	30	
34. Agricultural population (%)	90	75	50	
35. Modernized agricultural land (%)	3	20	50	
36. Use of fertilizers (Kg/ha/year)	0.5	8	15	
37. Financial credits to the agricultural sector (%)	1	15	20	
38. Access to clear water (%)	52	80	100	100
39. Agricultural production (kcal/day/pers. (% needs)	1612	2000	2200	
40. Availability of proteins/pers/day (% of needs)	35	55	65	70
41. Road network (km/km ²)	0.54	0.56	0.60	
42. Annual electricity consumption (Khw/inhab)	30	60	100	
43. Access to electric energy (% of population.)	2	25	35	
44. Land portion against soil erosion (%)	20	80	90	
45. Level of reforestation (ha)				
46. Wood energy in the national energy consumption (%)	94	50	50	
47. Non-agricultural jobs	200.000	500.000	1.400.000	