

Lessons from the evolution of human resources for health in Ethiopia: 1941-2010

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Abstract

Human resources for health (HRH) policy and planning is highly challenging in any setting but the more so in underdeveloped countries. Ethiopia has relatively vast and distinctive experience in accelerated training, use of substitute categories/task-shifting... from which important lessons could be drawn.

Based on thorough analysis of documents (official, unofficial, government and others) and 1st hand experience of the authors, the paper explores the major issues in HRH development between 1941 – end of the Italian Occupation - and 2010 – end of the Health Sector Development Program (HSDP) III.

The socio-cultural and economic context; development in education, higher education in particular and the general human resources development policy, strategy and plans in the successive periods are assessed briefly.

Major developments of

- **Reconstruction and Basic Health Services Period (1941-1974):** the successive five-year plans; the training of orderlies/dressers, the 1st nursing schools, training abroad...; the Gondar Public Health College and the Gondar Team; the beginnings of medical education ...
- **Primary Health Care Period (1974-1991)** the Ten Years Perspective Health Plan; the training of Community Health Workers - Community Health Agents and Trained Traditional Birth Attendants -, nurse practitioners, health assistants; discontinuation of the health officers (HO) training, the initiation of Jimma College of Health Sciences and of post-graduate training in medicine at the Faculty of Medicine Addis Ababa University...
- **Sector-Wide Approach Period (1991-2010)** the Health Sector Development Programs I-III, the reintroduction of Health Officers training, the accelerated training/‘Flooding Strategy’, Health Extension Workers, retention/‘Brain-Drain’ of health workers...

are explored in some depth and lessons drawn for future HRH development in the country.

The **conclusions** underscore the laudable efforts in all periods but difficulties of learning from the past; the continued very low workforce density and the highly skewed distribution; the recurring challenges of sustained human resources development – quality, motivation, retention... - of the task-shifting and accelerated training attempts and the need to develop specific HRH policy and strategy. [*Ethiop. J. Health Dev.* 2013;27 Special Issue 1:6-28]

I. Introduction

More than ever before, health is recognized as important for development (1, 2) and “The key barrier to scaling up in health is staff...” (3, emphasis ours). Human resources for health (HRH) are recognized as critical, ‘the human equation’, “the glue of the health system”, in achieving these goals (1,2,4). Ethiopia has embarked on major development efforts based on its current policies and strategies (Agricultural Development Led Industrialization, Health Policy ...) and its international commitments (Plan for Accelerated and Sustainable Development to End Poverty, MDGs ...). It has launched ambitious and accelerated development programs in health (Health Services Extension Program, Accelerated Expansion of Health Officers Training ...). However, as in many parts of the world, there are concerns that development may be hampered by the HRH crisis in Ethiopia which has several aspects and raises complex issues as evidenced by studies from a number of countries (4,5).

The current health workforce density (HWD) of 0.2 per 1000 in Ethiopia, compared to the minimum of 2.3 required to achieve MDGs in Africa (1), clearly indicates the challenges ahead (5). The frenetic acceleration is, in this context, laudable as an effort to ‘catch up on the

years lost’. However, history shows that a lot of programs foundered because they started with the erroneous but appealing frontal and vertical attack neglecting, among others, the human resources development (HRD) aspects. This HRD neglect was also buffeted by emerging and re-emerging diseases including the HIV/AIDS crisis implying increased workload and skill requirement; reduction of the workforce; and psychological stress. There was also the additional challenge of emigration to richer countries (1,2,4).

Human resources for health (HRH) policy and planning is highly challenging in any setting but the more so in underdeveloped countries (3, 6). As a large and diverse country, Ethiopia presents even more daunting challenges to HRD. Big by any standards - 1.2million km², 28.7 million people, 90% rural in 1976; 1million km², 80 million people, 84% rural in 2010 – it harbors over 80 ethnic groups and highly diverse climatic zones. Highly complex socio-political conditions, “constants of Ethiopian history” - difficult transitions, internal conflicts (liberation movements...), complex disasters... - have rendered sustainable development difficult (see 5).

On the other hand, Ethiopia has relatively vast and distinctive experience in HRD from which important

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lessons could be drawn. “Il faut comprendre le passé pour comprendre l’avenir, c’est indispensable” (8 - understanding the past is indispensable to understand the future *loose translation by authors*). This paper attempts to draw the lessons in HRD since 1941 (end of the occupation by the Italians) and provide the most significant insights into major potential challenges, plausible opportunities and approaches/responses in the future.

The **Objectives** of the study were, therefore, to, in the various (Basic Health Care, Primary Health Care and Sector Wide Approach) periods, associated with major changes in regime and health care policy, described in a previous book (5):

- Explore the major issues in HRH development
- Analyze the socio-cultural and economic context; development in education, higher education in particular, and the general human resources development policy, strategy and plans; with emphasis on the Health Sector
- Elucidate the principal concepts/policies and strategies in HRD and the determinants of these positions
- Describe and analyze the implementation processes, achievements and problems and determine factors that affected outcomes
- Draw lessons that will stimulate policy and strategy dialogue and advocacy for increased political and social support for the development of a sound programs for HRH in Ethiopia for the future

Methods

The study attempted a structured review and thorough analysis of reference materials on HRH covering essentially the period from the end of the Italian Occupation (1941) to the end of The Health Sector Development Program (HSDP) III (2010). It attempts to analyze the responses given during the various periods to the *perennial issues that have plagued HRD in Ethiopia* such as ‘What kind of a health worker does Ethiopia need?’ What is appropriate for Ethiopia? In what mix, team approach, delegation of tasks... in what numbers? What should their working condition be - remuneration, other incentives, conducive working environment etc? Who should train them, how, for how long, to what standard/quality? Who should certify, license... them?

While the focus was on government initiatives in HRH, the role of NGO/FBO and the private sector was also explored. Potential resource centers included MOH (library, archives...); Health Workers’ Register; Medical Faculty Addis Ababa University [AAU] (main library, Department of Community Health library, faculty archives...); AAU Libraries (Ethiopian Studies, Kennedy, Institute of Development Research...); Libraries and archives of Gondar and Jimma Universities; the National Library; WHO Representative’s Office (Library, archives...) etc. Web

search was also conducted using following key words: Ethiopia, HRH/D, Health Manpower, Health Workforce, Basic Health Services, PHC, HSDP.

Sources of data/information analyzed included trustworthy accounts by eyewitnesses, friends or foes; letters, speeches, pamphlets, newspaper reports; minutes of meetings, proceedings and other documentary evidences; manuals, guidelines, memorandums; books and published articles. Initial identification of sources was made by research assistants while evaluation of the sources and data/information extraction was made by the principal investigators.

Three research assistants – post-graduate students in history - were employed to assist in identifying and recording HRH related policies, plans, strategies and historical documents and literature; and support the researchers in tasks related to the above.

The paper presents the findings in the Reconstruction and Basic Health Services Period (Part II), the Primary Health Care Period (III) and the Sector Wide Approach Period (IV) and closes with Conclusions (V).

II. Reconstruction and Basic Health Services (BHS) Period: 1941-1974

2.1 Background

With life expectancy of 43 years, infant mortality rate of 160 per 1000 and maternal mortality ratio of 870 per 100,000 live births, Ethiopia had, in 1953, a very low health status (4,9). In 1952, the government officially proclaimed the basic health care policy with a strategy to reach the largest population possible with effective services with minimum qualified staff in the most distant areas with poor communications. Health Centers (HC) with 5 satellite Health Stations (HS) for 50000 people, were to be established to cover preventive and curative needs of the country especially in rural areas. The HC were to be staffed by a team consisting of a health officer (HO), 2 community nurses and a sanitarian. The Gondar Public Health College was opened in 1954 to prepare these teams. The HS (most often called clinics) were to be run by two dressers.

In 1952, only about 1 person in 200 of all Ethiopians was enrolled in any school. There were no Ethiopian doctors of medicine in the country. The Ministry had on its staff only 2 Ethiopians who were trained in public health; one had training in sanitation, and the other in statistics. There were 38 hospitals with 2315 beds (0.15 per 1,000 estimated populations) and 3 leprosariums with 8000 patients. There were some 80 physicians, all foreigners, or 1 per 200, 000 people (7).

The period saw the preparation and implementation of three 5-year plans all of which, except the 1st, had specific chapters for health. By 1974, when the Revolution started, there were only 93 HC, 650 HS and 87 hospitals. Professional human resource, doctors in

particular, was solely foreigner until the early 1960 and mostly foreigners even at the end of the period (Table 2.1 for details see 10).

Table 2.1: **Health facilities in Ethiopia, selected Years (GC)**

Category	1945	1952	1966	1974	1977
Hospitals	24	38	77	87	85*
Beds	280	2,315	7,881	8,681	8623*
Health Stations And Clinics	50	82	503	661	1133*
Health Centers	0	0	66	93	110*
Physicians				376	
Foreigners	47?	80	290		315
Ethiopian	-	-	29		290
Estimated Population (Million)	10	12	26	28.7	51.2

Source: Adapted from 7,9,10 *1978

2.2. Findings

Early Health Personnel Training Programs

With the growing number of health facilities early in the 20th century, formal training started for medical auxiliaries at the Menelik Lycée in 1935 but the project was brought to an end by the Italian Occupation (1936-1941). There were only a handful doctors and nurses, all foreigners and a few orderlies after the Occupation (12, 13, 14). A Medical Education Board was appointed in 1948 and a "Health Personnel Training Program for Ethiopia" launched in 1949, sponsored by UNNRA and the WHO Interim-Commission, mostly to train auxiliaries (dressers, sanitary inspectors etc.) (15).

The training program, aimed at building up three groups of medical and auxiliary personnel (medical care, nursing care and sanitation), was planned to be carried out in three successive stages (14). The first, covering very simple training for nursing and sanitary aids, required only reading and writing in Amharic as entry requirements; in fact, even that was to be dispensed with in the case of in-service personnel for the first two or three successive short courses. Because there were so few graduate nurses (all, except two, foreigners), it was argued that patient care would have to depend largely on supervised dressers. It was also argued that even when there would be a much larger number of locally trained graduate nurses, there would still be a need for dressers to free the fully qualified nursing personnel for the most important responsibilities.

Dressers training

This consisted of a primary course designed to give the understanding and the acquisition of certain basic procedures for the care of patient and some elementary knowledge of the healthy and the diseased body. This was followed by a secondary course which enlarged on the knowledge and skills acquired during the primary course and, in addition, included surgery and operating techniques and certain specialties such as ophthalmology, general hospital and clinic administration, and ethics. A third course was required for specialization or work in a subject not included in the secondary course, such as maternal and child health and care. All the courses, which lasted about six months each, were essentially practical, with short lectures enough to enable them to

understand why they should follow certain procedures for the care of patients and not continue their own untrained practices (for details see 4). Some of those from the secondary course were expected to upgrade to nursing or medical assistant.

The same pattern of courses but even more practical was designed for sanitary inspectors/aids. The aim of the primary courses was to give the students an idea of the fundamentals of environmental sanitation and a proper conception of sanitation problems in general and, at the same time to provide specific training in the control of certain insect-borne diseases. The secondary course built on the primary and not only provided the students with additional knowledge, rounding off their training in all basic aspects of environmental sanitation, but also gave them guided opportunities in planning, organization of work, and leadership so that they may function, wherever stationed, with maximum autonomy and minimum supervision.

The second stage, aimed at providing training of nurses and medical assistants, required knowledge of English and as much secondary school education as possible. The third stage, covering university training, was deliberately left for consideration in the future when enough candidates for admittance to a university medical school would be available - possibly around 1955. The training of nurses and medical assistants as foreseen in this scheme was overtaken by events as the 1st World Health Assembly changed policy from in-country training to concentrating on large scale training abroad and later events related to the establishment of the Gondar program and the medical school (14, 16). At the departure of the international staff, seven institutions were conducting training of both primary and secondary courses for dressers, and two primary and secondary courses for Sanitary Inspectors. Thus, training of dressers continued and there were, by 1968, some twenty dresser schools graduating about 200 dressers [Table 2.2] (5, 16).

Nursing education

The first nurses' school, established and operated by the Ethiopian Red Cross Society at the then Haile Sellassie I Hospital presently the Yekatit 12th Hospital, started in 1949 with eight female students for 3 ½ year training.

The first group graduated in 1953. Empress Zewditu Memorial Hospital, sponsored by the Seventh Day Baptist Mission, opened the second nurses' school in

1950 enrolling both male and female students and graduating nine in 1953.

Table 2.2: Number under training and supply of medical and public health personnel, 1968/69, Ethiopia

Category	No. Institutions	Annual intake capacity	Period of training	Number under training (% female)	No of graduates
1. Dressers	18	413	1-2 yrs	437 (14.4)	346
2. Nurses	6	122	3-4 yrs	337 (82.2)	69
3. Community Nurses	1 ¹	40	3 yrs	104 (100)	33
4. Sanitarians	1 ¹	35	3 yrs	85 (0)	25
5. Medical Technicians	4				
o Laboratory		43	2 yrs	62 (8.1)	28
o X-ray		20	2 yrs	22 (n.a)	11
o Pharmacy		20	2 yrs	17 (5.9)	12
o Malaria eradication		200	3-6 mns	220 (n.a)	220
6. Public health officers	1 ¹	50	4 yrs	169 (2.4)	38
7. Pharmacists	1 ¹	36	4 yrs	75 (17.5)	-
8. Medical Doctors	1	33	5 yrs	120 (7.5)	-
Total	28	1,012	-	1,684 (28.9)	782

Source: IEG 18 ¹ Courses given in institutions counted in other categories; n.a= not available

Tafari Mekonnen School of Nursing was established by the Swedish Mission in 1951 in a hospital with the same name in Nekemet, Wollega province. The school enrolled about ten male and female students per year. The Princess Tsehai School of Nursing, a government school training only female nurses, was established in 1951 in the Memorial Hospital with the same name in Addis Ababa (18). By 1967, there were 6 nursing schools graduating over 50 nurses per year (Table 2.2).

Gondar Public Health College and Training Center

A major step in HRD in the period was the launching of the Public Health College and Training Center and the start of the Gondar Team training in 1954 (5, 7, 19). The project was launched after a study by the US Technical Co-operation Administration (TAC) upon request of the Ethiopian government to "recommend a specific project for public health preventive measures for the empire". Cooperation Agreements were signed between the Ministry of Public Health, TCA, WHO and UNICEF in April 1953 setting up an administrative health department and field training school for medical assistants (later the name changed to Health Officer [HO] probably through American influence) in Begemidir province and Gondar town (7, 20).

Three categories of students, about 30 per year from each, were to be trained and assigned together as a team in rural areas (20):

Health Officers

Selected from applicants with secondary education to matriculation standard, health officers were to receive approximately three years' training in basic public health and clinical medical care techniques. After qualification the Government agreed to employ them in health centers to be established in small towns and rural districts where

they would receive limited supervision from the provincial health office.

Community nurses

Selected from female applicants with primary or secondary school education of less than matriculation standard, community nurses were to receive approximately twelve to eighteen months' education, specializing in mother and child care and including basic midwifery, hygiene, first aid, and simple nutrition and health education. After qualification the Government agreed to employ them for staffing clinics and health centers, mainly in towns in the first instance.

Sanitarians

Selected from male applicants with primary school education, sanitarians were to receive six to twelve months' training, specializing in environmental sanitation including water supply, excreta disposal, insect control, immunizing techniques, first aid, elementary health education and registration, and reporting of vital statistics and communicable diseases. After qualification the Government agreed to employ them in health centers and municipal health administration.

The first batch - 20 HO, 15 community nurses and 12 sanitarians - graduated on August 15, 1958 and a hasty preparation was made to introduce them to the public and the health 'system'. They were assigned to various service health centers in rural areas of the country. Later, a policy statement, entitled "Program for Local Health Services in Ethiopia", concerning the health center program and the function of the health team was released in 1960 (20).

With the establishment of the Haile Selassie I University (HSIU) in 1961, the training center became a chartered

college of the university. This resulted, among others, in major changes in the curriculum of HO training to meet university requirements including change from diploma to degree; reduction of the internship period from one year to six months; reduction of practical training periods; inclusion of social science, humanities etc. In 1965, the Ministry of Public Health and the Medical Faculty of the Haile Selassie I University developed a special scheme to up-grade selected experienced health officers to physician level by providing a tailored course that took account of the Gondar College training and their field experience. It was envisaged that through this

scheme 10 experienced public health oriented physicians would be made available yearly from 1970 to 1975 to fill the key public health posts both in the Ministry's Headquarters and the provinces (5).

Training at the college continued despite the major changes in its curriculum (for HO in particular) and had produced a large number of graduates (Table 2.3) until it went through major reorganization after the 1974 revolution (21).

Table 2.3: **Gondar Public Health and Training Center, distribution of graduates by place of work 1958-1973 G.C**

Place of Work	Health Officer		Community Nurse		Sanitarian	
	No	%	No	%	No	%
Ministry of Public Health (Mainly H.C)	216	61.6	234	65.3	228	68.7
Specialized Projects/Agencies	44*	12.5	65	18.2	38	11.5
Followed Advanced Studies	12	3.4	52**	14.4	6	1.8
Became Medical Doctors	71	20.2				
Changed Profession					12***	3.6
In private Business					22	6.6
Joined Health Officer Course					18	5.4
Whereabouts unknown			4	1.1	3	0.9
Dead or Disabled	8	2.3	4	1.1	5	1.5
Total	351	100	359	100	332	100

Source: 21 * Out of 44, 2 were from Armed Forces; 2 Air Force and 8 from the Police Force. They returned to their respective organizations on graduation and later all became doctors.

**52 CN became midwives

***Joined Veterinary School

Medical Education

The idea of establishing a medical school dates from before the Italian Occupation. Post-Liberation, there was a long debate on "what kind of doctors does Ethiopia need?"(20,22). In the spring of 1962, the Rockefeller Foundation, following a request by the President of the Haile Sellassie I University, invited six academics, two each from the U.K, the USA, and Sweden to form an advisory group with the aim of studying the need, desirability and feasibility of establishing a medical school in Ethiopia. The group could not make it to Ethiopia together ending up with two recommendations. The 1st group from Philadelphia, Brooklyn and Bristol essentially endorsed the Gondar model stating "From our observations, we are convinced that the present educational program of the College at Gondar for health officers, community nurses mid-wives, sanitarians, and laboratory technicians and the work of the graduates in the village health centers, are more than satisfactory and will pay increasing dividends in the coming years... hence our first and foremost recommendation is that the program of the Haile Sellassie I Public Health College and Training Center should be continued, strengthened and expanded essentially in the present form... urged that consideration be given to permitting a limited number of the able graduate health officers to pursue further education in the field of public health and medicine. On the other hand, no education program should be established which would result in two classes of physicians" (emphasis ours). The President of the Haile

Sellassie I University and indeed his Imperial Majesty¹, the Chancellor of the University, were not pleased with the report of the first Rockefeller Foundation which recommended the opening of the Medical School to be delayed up to 1967 or there after (18).

The 2nd Commission (with one member from London and two from Uppsala), which followed a few months later, seemed unequivocal "We were invited by the Rockefeller Foundation on behalf of the President of Haile Sellassie I University to advise upon the formation of a Medical School in Ethiopia" (emphasis ours). It recommended the opening of a medical school immediately. The commission described in great details the type of doctors to be trained and how they should be trained by Ethiopia. Thus the Ethiopian authorities' dictate prevailed and a medical school was started in 1963 but with limited intake and an eye on quality. Academic support was provided by the British government (5, 23, 24). By 1974, there were 376 doctors (234 in Addis Ababa) mostly employed in the public sector (9, 18) but health workforce density remained low (Fig 5.1).

Training abroad

The first Ethiopian medical doctor was Hakim Workeneh who was taken to India as a child after the battle of

¹ That this might also not be to the liking of The Foundation could be surmised from its general position (see Background) even though it was being challenged even from within – as probably reflected in the 1st Report – by some of its own staff members (see 23).

Meqedela (1868). He later returned to his country and served as a physician to Emperor Menelik and in various other capacities including Director of Tafari Mekonnen School, provincial governor, and later as Ambassador to the United Kingdom during the aggression by the Italians (19). The first Ethiopians sent abroad for medical studies went to Russia during the reign of Emperor Menelik (19). The first to fully qualify as a medical doctor prior to the Italian Occupation seems to have been Dr. Melaku Beyan who received his MD from Howard University just before the outbreak of the Italian War which forced him to go back to the USA and play an important role in rallying African-Americans to the Ethiopian cause (25,26). A number of others also trained in various fields of health in Italy, Beirut, Austria and France (19,25).

Training of large numbers of Ethiopians abroad started when, WHO, based on its new policy, offered scholarships for undergraduate studies abroad. Thus, five young female students were sent to Uganda for undergraduate nursing training in 1950, and returned after graduating in 1953/1954. Similarly, three students each in 1951 and 1952 were sent to Uganda and the America University of Beirut, respectively to be trained as sanitary inspectors. Even before WHO began awarding fellowships, many students were sent abroad by the Ministry of Education or under private fellowship. The first post-occupation medical graduates started returning from their training abroad in the late 1950s (18) and by 1964, over 150 had trained abroad in medicine and allied fields through WHO and other international agencies' fellowships (26).

2.3. Conclusions

Human resources for health policy and planning is highly challenging in any setting but the more so in post-Italian Occupation Ethiopia (10), a large (1.2 million km²), highly underdeveloped country with a very diverse population of about 23 million (1966) and limited transport network (27, 30). Education had to be started from scratch (31) and illustrates the opportunities and challenges in post crisis (Italian occupation) situation. HRD decisions tended to be ad hoc, dictated by external forces and internal political expediencies rather than consistent evidence-based planning.

Thus, the support to the "Health Personnel Training Program for Ethiopia" was abruptly terminated because of change in WHO's policy illustrating the vulnerability of such programs to policy shift beyond the control of the country. The Basic Health Services approach was a quest for integrated services for all (7, 11, 27, 28). Under the circumstances the continuation of the rapid and extensive training of auxiliaries and other professional-substitutes (e.g. HO) and the decision to start medical education of 'quality' but adapted to the need of the country was defensible even though medical education in the period was dominated by the Rockefeller Foundation's mission to export the Flexnerian model (23).

The experience of the period clearly demonstrates that i) resolving the HRH crisis requires long-term vision and a highly participatory process so that inevitable changes are not disruptive but build on experience and ii) close inter-sectoral collaboration is required to address service and academic requirements and conflicting individual and professional group aspirations. In-depth study of the experience with the Gondar Team could yield important lessons on task-shifting, stop-gap measures and related problems for the country and globally (for more details 4).

III. Primary Health Care (PHC) Period: 1974-1991

3.1. Background

In the early 1970s, a study initiated to reassess the experiences of the Basic Health Services period judged as dominated by a vertical approach and less sensitive to the socio-political determinants of health, and to explore the experiences of a number of countries that had committed themselves politically to primary health care, outlined the principles and the achievements of the approach (32) which evolved as a new way to act for health embedding concepts such as the delivery to the whole population of preventive and curative services; developing inter-sectoral approaches to health; integrated approach to health care within the health service itself (intra-sectoral); decentralization and active involvement of the mass of the people in health promotion, as well as in the political and economic institutions that affect their lives. It was explicitly underscored that PHC did not mean just the incorporation of an additional tier to the health service delivery at the bottom using community resources but implied reconfiguring priorities to enable all levels and sectors to promote Health for All. The Primary Health Care (PHC) approach was accepted by the international community as "...essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination. It forms an integral part both of the country's health system... and of the overall social and economic development of the community..." (33). It emphasised participatory, inter-sectoral, integrated approach to planning and implementation with focus on promotive and preventive health (12,33).

Ethiopia, during the period, remained a large and diverse country with an area of 1.2 million km², a population of 28.7 million people (1976), mostly rural (90%), over 80 ethnic groups, living in diverse climatic zones (34). It manifested complex socio-political conditions characterized by the "constants of Ethiopian history" – difficult transitions, internal conflicts (liberation...), complex disasters... (5) but, the determinant event of the period was the Ethiopian Revolution of 1974.

Modernization efforts since the end of the Italian Occupation, 1941, created new forces with new demands on the *ancien régime*. An abortive *coup d'état* in 1960 by the Imperial Body Guard and the Public Security sewed the seed of discontent and challenges. The student movement in subsequent years raised basic issues of land reform and other political demands and punctuated them with repeated demonstrations and other manifestations including spectacular plane high jacking (35).

All this culminated in the 1974 'creeping revolution' and the eventual take over of power by the Provisional Military Committee – *Derg*, which came to power on the back of mutinies in the armed forces and demonstrations of various urban groups spearheaded by students, teachers, the intelligentsia and the working class. The *Derg* proclaimed the Ethiopia *Tikdem* (loosely translated as Ethiopia First) philosophy (July 1974) meaning among others "...the interest of the many must be given precedence over the interest of the few...a government of the people, by the people for the people". Subsequently, the *Derg* proclaimed a shift from a 'Feudal' to a 'socialist' system through the National Democratic Revolution Program but eventually and gradually subverted the revolution and consolidated its dictatorial power through brutal elimination of all opposition. This led to growing discontent, civil unrest, war (e.g. with Somalia) and to the deterioration of the country's socio-economic and security conditions and the eventual overthrow of the regime by EPRDF forces in 1991 (5, 36).

In education, the period saw a rapid expansion in recognition of lag compared to other African countries but also to attempts at major reforms of the education policy which, with the "sector review", was one of the triggers of the revolution. There was a major emphasis on literacy which increased from less than 10% to over 75% but with increased concerns of sustainability. Another landmark event was the launching of postgraduate education under highly challenging conditions (5, 37).

In health, the major problems of Ethiopia remained communicable diseases (80%) that were amenable to simple preventive measures (7). Health status remained low with high infant mortality rate at 155/1000, child mortality rate at 247/1000 and maternal mortality rate at 1000/100000 live births (5). Potential health service coverage, about 15% at the beginning of the period (7), reached 47% by 1991 (38) while health service utilization (per capita OPD) remained constant between 0.25 and 0.3 (MOH Annually Published Health Indicators 1991-2002).

3.2. Findings

Legal/Policy Background

Various health policies were elaborated and successive health plans developed starting from 1957. However, it

was in the "Fourth Five –Year Health Plan (1974 – 1979)" that the importance of public health service and with it the need of adequate trained HRH were clearly expressed for the first time. The plan postulated the development of nationwide community-based health services and the training of community-based health workers to deliver health services and increase the estimated 15% health service coverage to 30% but was not implemented as the regime was overthrown by the revolution of 1974 (5).

Shortly before the international declaration of primary health care (PHC), the *Derg* declared "a National Democratic Revolution Program (NDRP)" one of whose provisions was to ensure "a full and meaningful life for the broad masses" by undertaking all the necessary efforts to provide adequate health services with particular emphasis on rural areas where the majority of the population lived (36). The Program also mandated the Ministry of Health to issue a policy embedding the principles of emphasis on disease prevention and control; priority to rural health services and their expansion; and promotion of self-reliance and community involvement in health activities (7). Subsequently, Ethiopia became a signatory to the Alma Ata Declaration and adopted PHC as a strategy for achieving health for all by the year 2000 which was considered as an additional drive to further strengthen the principles embraced in the NDRP.

The major legal instrument for implementing these principles was the Ten-Year Perspective Plan (1984 – 1994) which contained quite elaborate objectives and implementation targets for human resources for health (Table 3.1).

Significant measures were taken in the development of HRH during the period. The intake of medical schools and training abroad was increased substantially, more than quadrupling the number of physicians (Table 3.1). Until 1976 there were two types of nurses in the country: conventional nurses (also called bedside nurses) trained primarily for hospital nursing, and community nurses trained primarily to perform public health nursing activities as members of the Gondar Team in health centers. As of the academic year 1976/1977 Gondar Public Health College stopped admission to the health officer course, thus starting the phasing out of the profession. Nurses' training was converted into comprehensive nursing. Another key change was the training of health assistants who, unlike their predecessors, the dressers, who carried out only curative services, were expected to provide preventive and curative services to rural communities (17). Community health services were also initiated with the training of community health agents (CHA) and trained traditional birth attendants (TBA) to jointly man a kebele health post managed by the kebeles' farmers associations.

Table 3.1: Health personnel and health facilities of ten-year plan (1984-1994) and achievements 1974-1990

Health Personnel	Actual 1974	Actual 1976	Actual 1984	Planned 1994	Actual 1990	% Increase 1974-1990
All physicians	376		323	2315	2313	515.2
• General practitioner		315	243	1464	1658	426.4***
• Medical specialist		97*	72	851	655	575.3***
Health officer	256		194	-	94	-63.3
Pharmacist	104		203		377	263.0
Nurse (all)	1140		1838	7336	7336	543.5
• Nurse		682	1579	4929	3575	460.7***
• Specialized nurse		-	259	2407	3761	
Sanitarian	295		317		389	46.5
Health assistant	NA	4612**	6953	20453	10045	
Community health agent		-	4500	36000	10000	
Traditional birth attendant		-	3000	36000	10000	
Hospital	85		86		89	4.7
Beds	8415		10993		12106	43.9
Health center	93		130		160	72.0
Clinic/Health Station	650		1850		2292	253.0
Estimated population (million)	28.7		42.6	-	51.7	80.1

Source: 5,7,17,38, 39,40, 41 *44 ** Mostly post-revolution upgraded dressers *** 1976-1990

In 1991, when the Ethiopian Peoples Revolutionary Democratic Front (EPRDF) took power from the *Derg*, the number of health workers had increased markedly in all categories except HO even though short of the targets of the plan for some categories (Table 3.1).

Community Health Agent (CHA) & Trained Traditional Birth Attendants (TBA) Program

The introduction of nationwide training of community – based health workers in Ethiopia was viewed as a breakthrough during the period. CHA were selected by and from the kebeles in the rural areas. One community health agent, supported by a trained traditional birth attendant, was to serve about 1000 population. Community health agents were trained for 3 – 4 months. The training focused on health promotion and diseases

prevention including health education, environmental sanitation, simple treatment, maternal and child health with almost equal time allocated for the theoretical and practical trainings (Table 3.2). Training was offered in health centers, rural hospitals and later at the Agarfa Multi – Purpose Peasants Training School which had capacity to train about 400 CHAs per intake.

The system was not linked to the conventional health system, except for technical support, but to the kebeles' administration and communities which were entirely responsible for administration and resource generation including provision of remunerations, physical facilities. Technical support was provided by health stations and health centers.

Table 3.2: CHA training course – hours of training

Subject	Theory	Practice	% of Total
Maternal and child health	30	36	14
Transmission & prevention of communicable diseases	8	6	3
Environmental sanitation	40	60	21
Nutrition and balanced diet	16	12	6
Health education	8	39	10
Examination and treatment	60	70	28
Precautions in handling & using drugs & medical equipment	6	6	3
Collection of health information	8	6	3
Traditional medicine	8	3	2
Orientation and evaluation	20	-	4
Political education	30	-	6
Total	234 (49.6%)	238 (50.4%)	100%

Source: Adapted from 17

Trained traditional birth attendants

Trained traditional birth attendants were selected for training by kebeles from among experienced TBAs and trained for one to 1.5 months. The training focused on aseptic techniques. Administrative support was provided by the kebele administration and communities provided

remunerations while technical support including equipping them with delivery kits was provided through HCs. Each trained TBA was assigned to the HP to team up with CHA.

From Dressers to Health Assistant Training Program

In 1974 there were some 650 clinics (Table 3.1). The standard staffing scheme was two dressers each but some had none and most only one. These clinics provided almost exclusively curative services. Even though the majority of dressers were destined to serve in the rural areas in clinics/health stations and health centers, their training was heavily biased towards clinical work. At the beginning of the period, the training program of dressers was revised to enable them practice clinical, preventive and promotive services. The revised training manual, which was also designed to serve the trainees as textbook as well as a reference document while working in the rural areas, included public health, an introduction to maternal and child health, nutrition and control of communicable diseases. The name was also changed from dresser to “health assistant” to align the title with the new role. This exercise coincided with the launching of the “Development through Cooperation Campaign” that, along with the construction and establishment of large number of health stations in the rural areas, launched the training program in association with MOH. By 1978 there were 1080 health stations in Ethiopia including 501 established by the Development through Cooperation Campaign from 1975 to 1977.

Until 1976 there were 18 dressers/health assistant schools, all linked to hospitals. Of these, seven belonged to faith based organizations and most of them had classes with an average of 10 students. A year later all the mission health assistant schools were either taken over by the government or closed bringing the number of schools to only eight with average classes of 40 students. Subsequently, the Ministry of Health established two enrolment scenarios designed to produce 520 health assistants every second year for twelve years for a total of about 3400 new health assistants by the end of the plan period.

The 1978 health assistants training program introduced two salient changes. The 1st one was modifying the capacity of the schools so that, in case of pressing need, they were able to produce two classes in three years

instead of four years, which would markedly increase the number of graduates. The 2nd important change was redesigning the curriculum from a basically curative and hospital based focus to a better balanced and adequate skills and knowledge in medical care, nursing and public health services.

The Ministry of Health developed a standard for health stations including a staffing pattern of two health assistants per health station designed to provide clinical as well as vaccinations, MCH, school health, communicable diseases control, and sanitation and health education services on regular basis. Later, the staffing pattern was improved to three health assistants to enable one of them to support community health workers (community health agent and traditional birth attendant). By the end of the period, the number of HA had more than doubled (Table 3.1).

From Health Officers (HO) to Comprehensive Nurses

The training of HO at the Gondar Public Health College established in 1954 had undergone several changes since becoming part of Haile Selassie 1st University (15). These included for example components of basic and social sciences, humanities, Ethiopian geography and history which were added leading to reduction of the hours for professional public health courses and the 12 months internship period to six (Table 3.3). The team based internship was also disrupted. After the 1974 Revolution, the number of years for medical education was reduced bringing it close to the HO training. This led to a number of debates on the place of HO in the HRD in Ethiopia and the program was discontinued in 1977 with the commencement of MD training in the college (5).

After the closure of the health officers’ training program, nurses started to be trained to manage the clinical services of health centers as a stop-gap measure until enough physicians were graduated and assigned to work in the health centers. The training program for nurses was accordingly redesigned to include essential clinical and management courses.

Table 3.3: Distribution of health officers training course selected years

Subject	1958/59		1962/63		1966/67		1973/74		2005	
	Hours	%	Hours	%	Hours	%	Hours	%	Hours	%
Basic Sciences	72	3	384	18	576	24	544	24	0	-
Social Sciences	72	3	96	4	160	7	176	8	64	6
Humanities	-	-	96	4	176	7	176	8	80	4
Clinical	1,128	48	998	46	1,056	43	960	42	1,328	73
Public Health	1,059	45	590	27	464	19	448	20	272	15
Others	-	-	-	-	-	-	-	-	80	4
Total	2,331	100	2,164	100	2,432	100	2,304	100	1,824	100

Source: Adapted from 19 and 42

Starting Training in Speciality Programs

The high shortage of health workers was glaring with “...the majority of Ethiopians still dying without seeing a doctor in their life”. At the beginning of the period, there were only about 300 Ethiopian doctors and a handful of

specialists (Table 3.1). Most foreign doctors left the country immediately after the revolution creating a serious gap and heralding the requirement to train large number of health workers. Cognizant of the pressing need of an adequate number of HRH in general and of

specialists in various fields in particular, the government vigorously promoted speciality training programs in country and abroad.

Launching post – graduate training programs was viewed as one of the priorities in the development of human resources for health starting with physicians and covering areas of specialization such as surgery, internal medicine, pediatrics, obstetrics and gynecology, public health After thorough assessment and identification of the necessary resources for the different training programs, post-graduate programs were started in 1979 [Table 3.4] (7). The **objectives** of speciality training included:

- Producing adequate number of doctors & other HRH

- Producing specialists (teachers) to train doctors in large numbers...
- Improving the level of medical practice & research in hospitals...
- Filling vacant posts and replacing expatriates
- Meeting the basic expectations of physicians for professional advancement/ avoid “brain drain”.

In addition to strengthening available schools and establishing new ones for the training of mid and grassroots level health workers and the establishment of additional medical schools, the government identified and developed the required curriculum for new training areas such as physiotherapy, anesthesiology and psychiatry.

Table 3.4: Postgraduate programs, Faculty of Medicine AAU, 1981

Department	Type of Program*	Started on	Duration (Years)
Internal Medicine	SC	April 1979	3
Anatomy	MS	May 1979	1 (for MD), 2 (others)
Pediatrics & Child Health	SC	Oct 1979	3
Pathology	D	July 1979	3
Surgery	SC	Oct 1980	3-4
Obstetric & Gyn	SC	Oct 1980	3
Ophthalmology	SC	Oct 1980	3
Public Health	MS	June 1981	2

Source: 4 *SC=Specialty Certificate, MS=Master of Science, D=Diploma

Meanwhile, the Government also realized that local effort alone would be inadequate to meet the short and long term HRH needs of Ethiopia. This led to a concerted effort to seek grants for scholarships from different international organizations and friendly, mostly socialist, countries for medical education. Measures were taken to systematize the use of external resources for training programs abroad and to develop lists of specialization areas for external assistance in the form of scholarship. The list was presented to international organizations and friendly countries in order to solicit assistance and enhance selection by partners according to their areas of strength and preference. Once the assistance was secured candidates were invited to compete for each field of training. The scholarship process was facilitated in the Ministry of Health by a scholarship committee, which was directly accountable to the Minister of Health and liaised with the Commission for Higher Education which managed scholarships (17). The combination of increased training internally and abroad led to a substantial increase after 1984 in the number of physicians, specialists in particular (Table 3.1, Fig 3.1).

3.3. Conclusions

Ethiopia was signatory to the Alma Ata Declaration and subsequently adopted the Primary Health Care Strategy. In order to enhance the implementation of PHC, Ethiopia developed, through its ten-year perspective plan, a six-tier health service delivery system, incorporating “community - based health service” to link the

community and the conventional health system. The objective was to create improved access to health services and open opportunity to mobilize community resources for health facilities and community level health service.

Significant measures, promoted by acute awareness of the lag in health delivery and the need to increase the workforce, were taken. One major action aimed at task shifting, with the introduction of community – based health services provided by CHAs and trained traditional birth attendants. Similarly, nurse practitioners temporarily replaced HO leading to the merging of the bedside nurse and community nurse categories into one that provided comprehensive-nursing and health care services at all levels of the health service delivery.

In order to reach the number of health workers required, the length of the training period of medical doctors, nurses, junior laboratory technicians and health assistants was shortened while the curriculum of each category was revised with intake and graduates increased (Table 3.1). All these, culminated in raising the level of the potential health coverage from the estimated 15% in the early 1970s to 47% in the early 1990s but with increasing concern about quality of training and services.

Even though efforts were made to improve the number of HRH through various approaches, serious challenges plagued the sector including:

- Reluctance from medical faculty staff to meet the requirements of the new changes
- Shortage of experienced teaching & research staff
- Inadequate training facilities (low technology)
- Relative shortage of trainees (draining from meagre service providers)
- Community health services which proved unsustainable

Communities throughout the country were organized into farmers' and urban dwellers' associations in order to address collectively development programs in their respective areas. These associations were expected to enhance community participation in PHC programs. However, the support by kebeles (remuneration, logistics etc.) did not live up to expectations contributing to a high attrition rate of community health agents. Similarly, supportive supervision from health stations or health centers proved inadequate in most cases due to lack of guidelines and resources.

In spite of increasing numbers, deployment of health workers especially to rural areas proved problematic. Experience showed the need to adequately prepare potential health workers, while in school, not only in subject matters, but also to readily accept to work in rural areas. Improving working conditions including availability of guidelines and standards related to assignment and performance of health workers at all levels received little attention during the period. Underlying all this was the fact that peace and security, determinant factors for HRD proved illusive during the period and whatever measures were attempted were thwarted by continuous internal and external conflicts, which drained resources that could have been used for development.

Table 4.1: **Health and health facilities, Ethiopia, 1993 and 2007**

	Health Post	Health Center	Hospital	OPD per capita	Infant mortality
1993	0*	152	72	0.25	>100
2007	9914	690	143	0.3	77
%**	-	354	99	17	-23

Source: 5 *Replaced health stations, 2292 in 1990 ** Rate of change 1993-2007

The major objective of the human resource development during the period as could be gleaned from the Health Policy (54) and the various HSDP documents (55) was to train and supply relevant and qualified health workers of different categories governed by professional ethics. The specific objectives were to i) supply skilled manpower in adequate numbers to new health facilities ii) improve the capacity of the existing health manpower working at various levels iii) initiate and strengthen continuing education and in-service training iv) review and improve the curricula of some categories of health workers and v) rationalize the categories of personnel. Major targets were set including:

- Increase the health extension workers (HEW) / population ratio to 1:2,500

IV. Sector Wide Approach (SWAp) Period: 1991-2010

4.1. Introduction

The main international factors impacting on HRD during the period included recurring economic crises, associated Structural Adjustment Program, Health Sector Reform and the Sector Wide Approach [SWAp] (44, 45). The HRH crisis continued unabated with global shortage estimated at about 4 million (1, 2) and estimated to continue well into the quarter of the century with a deficit of 200,000 physicians in USA alone by 2020 (46).

In Ethiopia main factors included the advent of the Ethiopian Peoples Revolutionary Democratic Front (EPRDF) regime (1991); the introduction of pluralism in politics and decentralization; relative stability but continuation of internal (Oromia, Ogaden, Gambella...) and external (Eritrea, Somalia) conflicts; complex disasters (drought/famine, floods...); a still underdeveloped economy in spite of recent continuous high growth. (47-50), There has been dramatic increase in primary enrollment reaching over 90%, including for girls, in most of the big regions. In higher education, public universities grew from 2 in 2000 (31,000 students) to 25 (130,000 students) by 2008. While the importance of these moves in building a 'knowledge economy' was recognized, there were major concerns about quality and over dependence on donor funds (5, 51, 52).

In health, there were major increases in facilities and infant mortality has decreased (Table 4.1) even though distribution remained highly iniquitous – the number of hospital beds per million, for example ranged from 3,497 in Harari, 1107 in Addis Ababa to 83 in Amhara, 86 in Afar with Tigray the highest for the big regions with 319 and national average of 177 (53) - and the utilization rate has hardly changed (5).

- Increase the ratio of midwives to women of reproductive age group from 1:13,388 to 1:6,759
- Staff all health facilities according to the standard and Regional health Bureaus (RHB) and Woreda Health Offices (WoHO) as per their respective organizational structure
- Establish implementation of transparent and accountable human resource management at all levels

4.2. Findings

In spite of repeated calls (56, 57) no HRH dedicated policy has been developed. The Health Policy (54) had few paragraphs on HRH but, not only it did not address the various aspects of HRH adequately but it was by mid

2000, in general, already dated (5, 55). Work on HRH strategy has been going on for a number of years and a draft circulated but later replaced by what was labeled draft framework (56). Thus up to 2008, there was no formally approved policy or strategy for HRH development and planning seemed to be guided by major ad hoc initiatives. Major steps have been taken to increase HRH (Table 4.2) including a large private sector even though health workforce density remained low (Fig 4.1). Thus, for example, the Health Extension Program/Health Extension Worker (HEP/HEW) initiative, with far reaching potential impact on health and health services was launched on the morrow of the

formal approval of HSDP II, completely transforming the plan, which had been prepared in a relatively elaborate and participatory process (5, 55).

In this context, major steps were taken to increase HRH (direct health providers) to meet the staffing requirements of the rapidly increasing health services (Table 4.1). Number and output of training facilities increased dramatically, over 2.5 times, from about 4,700 in 1998 to 11,700 by 2007 (Table 4.4). This meant a high and variable increase by region in health workforce even though population to health worker ratios remained high (Table 4.2).

Fig 4.1: Selected population health workforce ratio, Ethiopia 2001/2-2008/9
(Source 57)

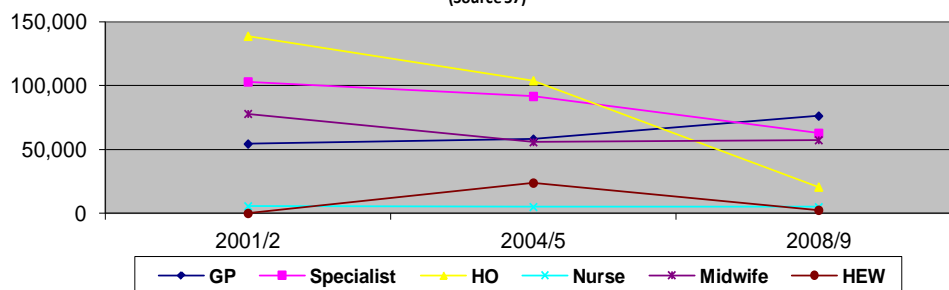


Table 4.2: Total number of available human resource for health by region, 2009

Region	Physician (GP & specialist)		Health Officer		All Nurses		Mid-wives		HEW	
	No t)	Population Ratio	No	Population Ratio	No	Population Ratio	No	Population Ratio	No	Population Ratio
Tigray	101	1:44,880	188	1:24,111	2,332	1:1,944	185	1:24,502	1,433	1:3,163
Afar	15	1:98,258	29	1:50,823	185	1:7,967	-	-	572	1:2,577
Amhara	304	1:58,567	434	1:41,024	3,790	1:4,698	212	1:83,983	7,471	1:2,383
Oromia	378	1:76,075	448	1:64,189	5,040	1:5,706	287	1:100,197	13,856	1:2,075
Somali	71	1:65,817	12	1:389,415	314	1:14,882	45	1:103,844	1,427	1:3,275
Ben-Gumuz	12	1:59,309	42	1:16,945	452	1:1,575	37	1:19,235	499	1:1,426
SNNPR	242	1:65,817	220	1:72,398	3,980	1:4,002	316	1:50,404	7,915	1:2,012
Gambella	13	1:25,585	13	1:25,585	91	1:3,655	4	1:83,150	457	1:728
Harari	29	1:6,655	31	1:6,226	276	1:699	29	1:6,655	47	1:4,106
Addis Ababa	934	1:3,056	170	1:16,791	3,377	1:845	244	1:11,699	NA	-
Dire Dawa	53	1:6,796	19	1:18,957	272	1:1,324	20	1:18,009	142	1:2,537
National	2,152	1:36,158	1,606	1:48,451	20,109	1:3,870	1,379	1:56,427	33,819	1:2,301

Source: 57

There was a high flux in staffing pattern and categories of HRH required leading to phasing out of health assistants (HA) replaced initially by front-line health workers (FLHW) and later by health extension workers (HEW); reintroduction of health officers (HO); various changes in nurse/midwife categories on the background of very low capacity in planning and managing HRH.

Phasing out of HA

In the mid-1970s, HA were introduced to replace dressers -considered too clinically oriented - to staff health stations (previously known as clinics and renamed, later, as health posts [HP]) and to provide almost exclusively health promotion and disease prevention services (See Section III). The Health Policy (54) framed a gradual phasing out of these cadres to be replaced by frontline health workers. Training of HA was discontinued and a

plan developed to upgrade them to nurses or retire them. However, regions found it difficult to implement stand alone HP in remote areas as these could not meet curative demands of the communities (55) in spite of growing numbers of NGO clinics to fill the void (58). So, even though the number of HA decreased from about 10,000 in 1991 to 7,000 in 2003 quite a number still persisted – 1,246 in 2009 (57).

Frontline Health Workers (FLHW)

These were new cadres designed to replace HA at the HP. FHW consisted of a health agent, leader, one primary clinical nurse and one primary public health nurse; all three trained for about nine months in their specific field. They were specialized to carry out limited promotion, prevention, control and treatment activities. There was immediate discontent with the arrangement as the public health nurse could not substitute for the

clinical and vice versa; their training was considered inadequate to meet community demands for curative care in particular... Most regions started replacing them by junior public health nurses but even this proved inadequate (55). The process was eventually overtaken by the health extension program (HEP).

Health Extension Workers (HEW)

Frontline Health Workers were replaced by HEW (all female, selected from kebeles, 10th grade completed and trained for one year) and over 31,000 trained by 2009 (Table 4.3); more than 10,000 in 2004 & 2005 alone. This was an innovative measure that drastically changed the HRH and health system picture in the country (59, 60) even though there were problems in recruitment & quality of training (61), continuing education and supervision (62).

Table 4.3: **Training and deployment of HEW by region, 2008/9**

Region	Number trained and Deployed			Available 2008/9
	Up to 2007/8	New 2008/9	All up to 2008/9	
Tigray	1,235	134	1,369	1,259
Afar	228	148	376	375
Amhara	6,630	382	7,012	6,415
Oromia	8,437	4,526	12,963	12,875
Somali	555	545	1,100	1,100
Ben.-Gumz	206	315	521	499
SNNPR	7,115	800	7,915	7,492
Gambella	47	410	457	457
Harari	39	0	39	32
Addis Ababa	0	0	0	0
Dire Dawa	79	0	79	74
National	24,571	7,260	31,831	30,578

Source: Adapted from 63

They were all government salaried and, at over Birr 600 per month, relatively well remunerated by Ethiopian rural standards. Their salaries amounted to a large proportion of the regional health budget leading to a dramatic shift in resource allocation to rural areas. However, they had almost no operational budget assumed to be covered through community contribution (62).

There was also ambivalence in supportive supervision by the WoHO and the closest HC. Even though a large number of supervisors were trained (2,566 by 2009) there were reports of challenges because of inadequate budgeting, lack of transport and high turnover of trained supervisors (24).

Reintroduction of Health Officers (HO)

A major policy and strategic decision of EPRDF was, in line with the strategy to increase middle-level health workers, to reintroduce the HO category discontinued in 1976 (see Section III). HO were expected “To effectively

and efficiently tackle the health and health-related problems of individuals, families and communities” at HC (woreda) levels and assess community needs and plan, implement and evaluate activities and resources of the primary health care unit; provide comprehensive outpatient and inpatient services, perform minor operative procedures; mobilize individuals, families and communities for health action; promote and be engaged in inter-sectoral activities; undertake essential and operational health research; and lead and provide continuing education on-the-job-training to the staff of the primary health care unit and community health workers (64).

The relatively modest plans for increase established for HSDP I&II were later accelerated drastically [Table 4.4] (57, 65). Thus, the number of HO grew exponentially from 84 in 1991 to 631 in 2002 (end of HSDP II) and 1606 in 2009 with plans to reach 5,000 by 2010 (57).

Table 4.4: **Planned number of health officers 1999-2009**

	1999/0	2003/4	2008	2009
Available	201	201	1700	3700
New/Additional	-	482	2000	2000
Total	201	683	3700	5700

Source: 65

Changes in the Nurse Profession

The previous period had toyed with the training nurse-practitioners (practicing both public health and clinical nursing) as a stop gap measure until enough doctors were trained to man HC (see section III). This was abandoned with the reintroduction of HO training and the new policy and strategy introduced various categories (clinical, public health and midwife) with multiple levels (primary, junior: post secondary + one year and senior: post-secondary + two years) for each, compounding the service delivery and management problems (55). Over specialization led to non-substitutability leading to frequent interruption of services in the absence of the specified professional. All, the primary and junior levels in particular, were poorly trained leading to deterioration of the quality of services.

These were gradually rectified: specialization was phased out and replaced by clinical nursing (preference of students) with some training in public health; junior

categories were also abandoned with those already trained upgraded to senior. By 2009, the number of nurses, all categories, had reached over 20,000 (Table 4.2).

Changes in Midwifery

In spite of the high priority given to achieving MGDs, one major aspect of reducing the high maternal mortality ratio (673/100,000 live births in 2005), midwifery appeared to be neglected. Policy and strategic vision seemed to be blurred by the large number of categories (in particular nurses) that were expected to attend deliveries (66) including HEW even though most were not adequately prepared (61). Even though growing in absolute numbers – over 1,000 by 2009 (Table 4.2), the shortage of midwives remained high with all major regions at less than 2 midwives per 100,000 populations (Fig 4.2). This was exacerbated by the fact that a large number of midwives were male (55).

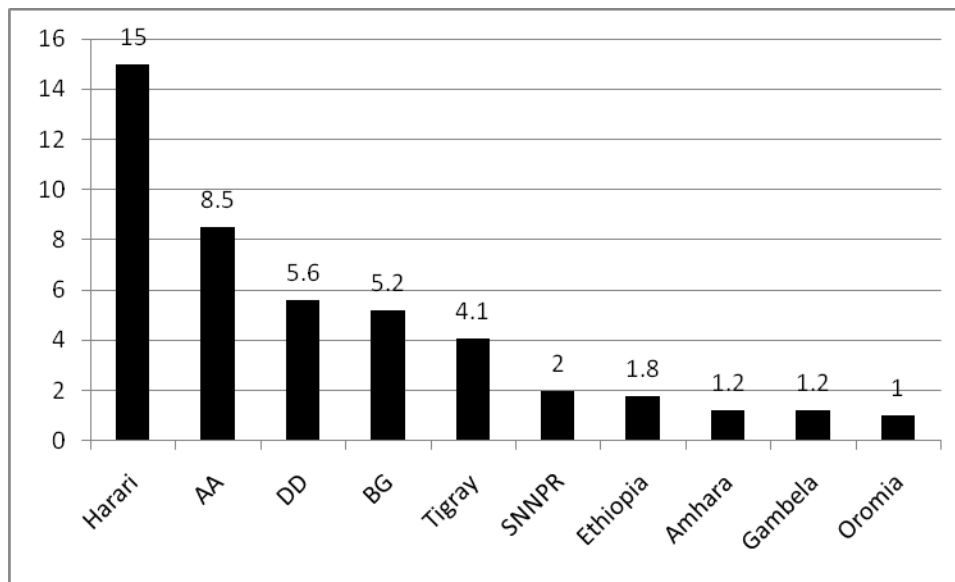


Figure 4.2: **Number of midwives per 100,000, Ethiopia 2009 (Source: 57)**

Medical Doctors

The medical doctors to population ratio which had always been very low fell even lower because of the relative neglect due to focus on mid-level health workforce and also higher attrition/brain-drain (43, 58). The number of general practitioners in fact decreased in absolute terms due also to the upgrading of large numbers as specialists (43).

Training had accelerated with 5 medical schools enrolling close to 1700 students in general medical education by 2005/6 and new intakes planned to grow to 1000 in 2008 and 1,500 in 2009 (67). Three of the schools had started specialty programs with over 1000 enrolled.

Retention in the public sector and in rural areas in particular has proved highly challenging in spite of various attempts to introduce incentives at national and regional levels (68). Thus, in spite of the increased training, the population/physician ratio (35000) has not decreased during the period and had in fact increased for GP (54,000 in 2002 and 76,000 in 2009). On the other hand the situation has improved for specialists – 103,000 in 2002 to 63,000 in 2009 (Table 4.2).

Training

In the early phase of HSDP, a Health Sector Human Resource Development Plan was developed with projections of the required human resource by category and strategies of improving the quality of training and

human resource management. A number of training institutions both within and outside the health sector evolved during the period. The numbers trained in various categories increased substantially and rapidly. New training programs and schools under RHBs were started in Arbaminch, Gambella, Jijiga, Borena and Benishangul Gumuz. The intake in already existing institutions also increased at a very accelerated pace. A scheme was designed to include most health services delivery units at different levels of health institutions (the health centers, district hospitals, zonal hospitals and specialized hospitals) in the practical training of these increased number and categories of health workers. The period witnessed substantial growth in the number of graduating human resources for health (Table 4.5).

Table 4.5: **Output of graduates from various training institutions, Ethiopia 1998-2007**

Categories of Graduates	1998/9-2001/2		2003/4-2006/7		% increase 1998/9-2006/7	
	BS	F	BS	F	BS	F
Medical Doctors	517	51	939	108	81	110
Health Officers	511	89	1584	279	200	210
Nurses	2848	1770	8863*	3441*	212	94
Midwives	815	462	334*	206*	-59	-55

Source: 57 *Training of junior categories discontinued. BS=Both sex, F=Females

However, distribution of students (all categories) from the different regions was highly skewed as could be deduced from distribution of intakes in AAU in 2002/3; ranging from 25% from Addis Ababa (population 3.7%). High intakes and accelerated training were in all probability attained at the expense of quality since, in particular, the number of qualified staff could not meet

the pace of increase in the student body and the workload (Table 4.6). There was also the lack of practical exposure due to the high number of students of all categories in the limited number of health facilities even after commandeering almost all hospitals and HC not initially designed for such tasks.

Table 4.6: **Staff workload selected years, Ethiopia**

University	Staff Teaching Workload 2009*		Student per Staff 2006**	
	Expected	Highest	Qualified	Total
Addis Ababa	3-12	27.8	7.3	7.1
Gondar	-	-	13.4	4.8
Jimma	3-12	18	8	7.3
Mekele	3-12	24	30.1	4.4
Arbaminch	3-12	21	-	-
Hawassa	3-12	26	4.5	2.7

Source: Compiled by authors from various sources*Hours per week university level ** Medical School

4.3. Conclusion

The period between 1991-2010 saw a relative respite in internal (in spite of problems in some parts of Oromia, the Ogaden and Gambella) and external (in spite of the Ethio-Eritrean War, the continuing problems on the Somalia front...) conflicts; progress in pluralism and democracy in politics (in spite of the hiccup of the 2005 elections and its aftermaths); unprecedented, continuous high economic growth (even though poverty has yet to be dented); and rapid expansion in health services and notable improvement in most health indicators (5).

In HRH, as in most activities, better and wider consultations were held with a wide spectrum of stakeholders but, in spite of repeated appeals in HSDP reviews (55), no specific HRH policy was developed and the HRH strategy remained a draft over a very long

period (4). As the Health Policy issued in 1993 (54) was clearly overtaken by events, major innovative measures with long term import for the country seemed to be taken on spur of the moment decisions. Thus daring measures - considered as break-throughs and with the potential to completely change and impact in the long term on the HRH landscape - such as the training of thousands of HEW and the acceleration of the training of most categories of health workers were taken without the backing of a formally articulated and recognized policy and strategy.

This should not distract from the high level of political commitment shown by the Government to rapidly scale up the health status of the population as demonstrated by major increases in health facilities (Table 4.1); in HRH (direct health providers, Table 4.2) with particular

attention to HEWs (Table 4.3); in number and output of training facilities (Table 4.5). However, the absence of an HRH policy and long-term (20, 30 years) perspective have led to fits and starts in HRH development (starting and ending of various categories - clinical, public health... - of nurses at various - primary, junior, senior - levels; front line workers replaced by HEW... for example).

Admittedly, the process of developing and endorsing policy and strategy in the Ethiopian context is an arduous task and MOH has gone a long way in developing and quite extensively discussing the building-blocs for such policy. However, the laudable commitment to meet the challenges head on and make up for times lost seem to have weighed more heavily rather than the evidence-base and learning from past experiences. Thus challenges observed in the past related to issues of quality, inequitous distribution, career structure, motivation and retention... continue to recur.

V. General Conclusions

“What’s past is prologue” (*Shakespeare*) which, as Jacque Attali says, is indispensable to understand the future (8). But learning from the past is difficult not only because of the limitations and unreliability of data/information but also because “What we choose to

remember is critical, since the narratives that play in our heads shape everything” (*Jon Meacham*). Thus, even though we have tried to be as comprehensive as possible as recommended for such an assessment (6) the conclusions we are drawing should only be seen as tentative and made in the hope of initiating discussions and a hard look into the past to draw lessons for the future.

All periods have tried to squarely address the HRH issues head on and, in spite of not meeting their own or international overly ambitious goals, have achieved laudable successes. In all periods, we observe recurring problems of overall shortage and misdistribution of HRH. The responses were typically to substitute cadres/ task-shifting and accelerate the training of the main categories of HRH mostly as ad hoc, stop-gap measures not based on long term policy and strategy.

5.1. Low Workforce Density

Health workforce density (HWD) measurement could be controversial (70) but, however measured, Ethiopia had, in all periods, one of the lowest HWD in the world even though it has increased from 0.12 per 1000 population in 1990 to 0.32 (or 0.74 including HEW) in 2010 (Figure 5.1).

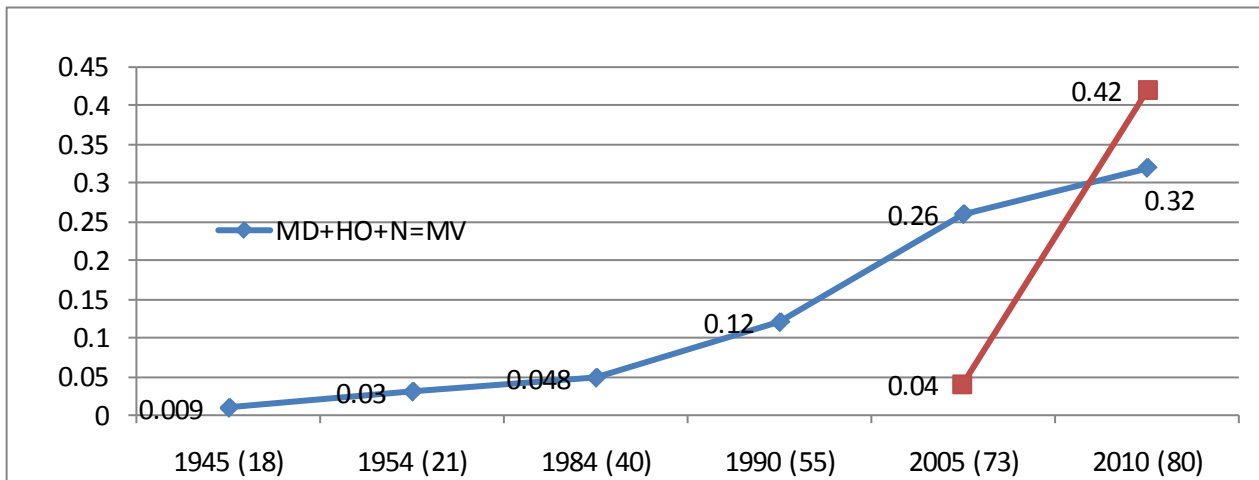


Figure 5.1: Evolution of workforce density, Ethiopia 1945-2010 (Population in millions, Source: Compiled by authors from various sources)

It was well below the 2.3 level recommended for achieving MDGs (WHO 2006). Thus, even though it has increased substantially by 65% between 1975 and 2000-2009 compared to only 25% for Africa on average and a decrease (of 11%) in Kenya or a whopping 118% in Norway (12,71), Ethiopia’s medical density, at 6.2 and 25 per 100,000 population in 1975 and 2000-2009 respectively, remained far below Kenya’s (146.8 & 130),

the average for Africa (101.2 & 130) and of course Norway’s (925.6 & 2020). In fact, the available data indicates that there has been a continuous decline in the medical density for doctors in particular from over 3 per 100,000 population in the early 1990s to less than 1 in the mid 2000s and while there is some recovery since then, the 1991 level is yet to be attained (Figure 5.2).

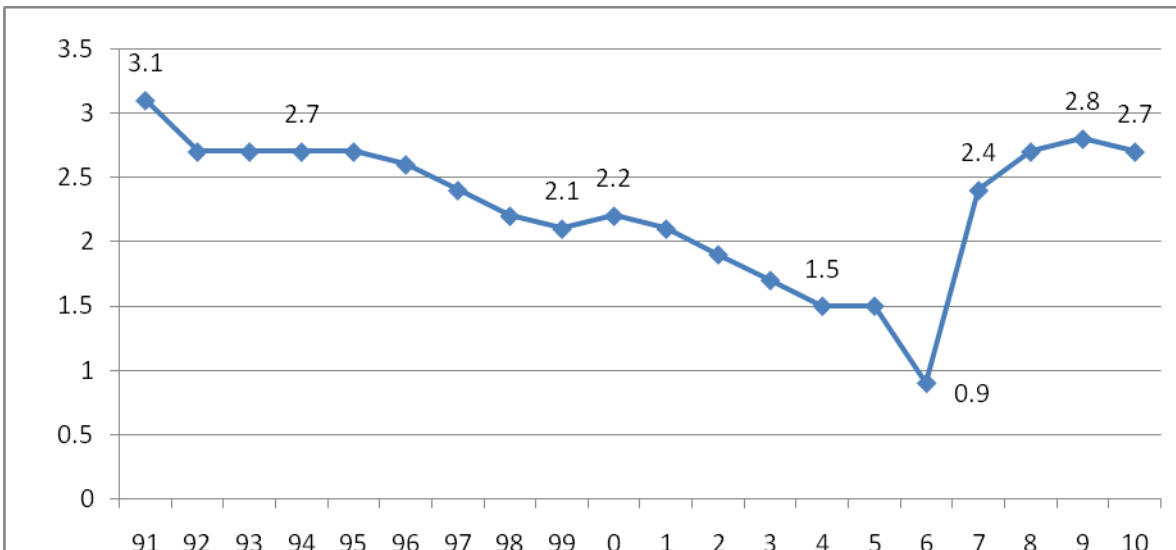


Figure 5.2: MD per 100,000 population, Ethiopia 1991-2010 (Source: Adapted from 57 & 67)

The major underlying factor for this low density is underdevelopment as Ethiopia in all the periods remained a large (over 1 million km²) country with one of the lowest GDP per capita in the world. The population grew inexorably from about 18 million in 1945 to 80 million in 2010 (Fig 5.1) and complex socio-economic and political challenges, “constants of Ethiopian history”, continued

unabated (5). Consequently, the seemingly Herculean efforts in HRD proved drops in the ocean. Not only sufficient numbers were not produced, but even the few were decimated for one reason or another. Thus over 30% of the medical doctors trained in the country’s medical schools were working abroad and another 27% out of the public sector (Fig 5.3).

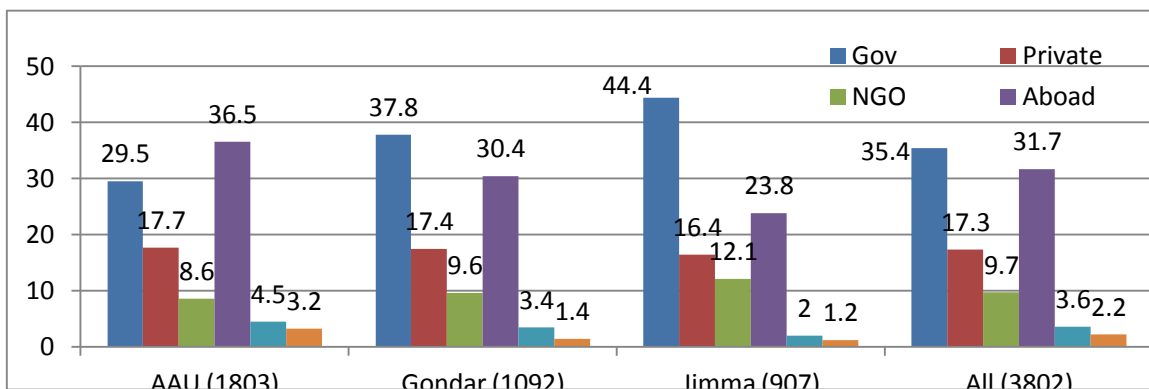


Figure 5.3: Current place of work of graduates from Ethiopian medical schools, 1968-2007 (Source: Adapted from 72)

5.2. Highly Skewed Distribution

Distribution of the meager HWF has always been highly skewed in favor of urban areas. All periods stressed the need to address the health needs of the mostly rural population and even substitute categories, intended for

rural services, tended to congregate in urban areas catering for about 10% of the population. Thus, in 1990, 45% of HA were in urban areas with much higher percentages for other categories (Table 5.1 & Fig 5.4).

Table 5.1. Selected categories of health workers by urban (U)* distribution and total number (T), Ethiopia 1990-2010

	Medical Doctor		Health Officer		Nurse		Health Assistant/ HEW**	
	U %	T	U %	T	U %	T	U%	T
1990	72		89		58		45	
2000	42	1336	15	296	18	7723	9	11765
2010	36	1421	8	3096	13	26423	10	34396

Table 5.1. Continued

	Lab Tech		X-Ray Tech		Pharm Tech		Sanitarian/ Environmental HW	
	U %	U %	U%	T	U%	T	U%	T
1990	79		66		60		57	
2000	15	1050	32	190	15	513	9	920
2010	12	3672	35	241	8	2954	5	1582

Source: Adapted by authors from various sources.

*Urban and semi-urban for 1990 (about 10% of population); Addis Ababa, Harari, and Dire Dawa for 2000 and 2010 (about 4% of population).

**HA in 1990, HA=FLHW in 2000 and HEW in 2010.

Evidently, the higher category cadres such as MD and pharmacists tend to congregate more intensively in the more urban centers. Thus, for example, even though the categorizations by urban and rural varied, over 70% of MD and pharmacists in 1990 and over 40% in 2000 were in areas covering less than 10% of the population.

Even when major urban centers are taken out, there could be major disparities among regions. Evolutions over the various periods are difficult to compare as regional boundaries have changed conspicuously but in general some regions for example Shoa in previous periods and Tigray, more recently, fared better while others, the pastoralist regions in particular tended to lag (Fig 5.4, for details see Table 4.2).

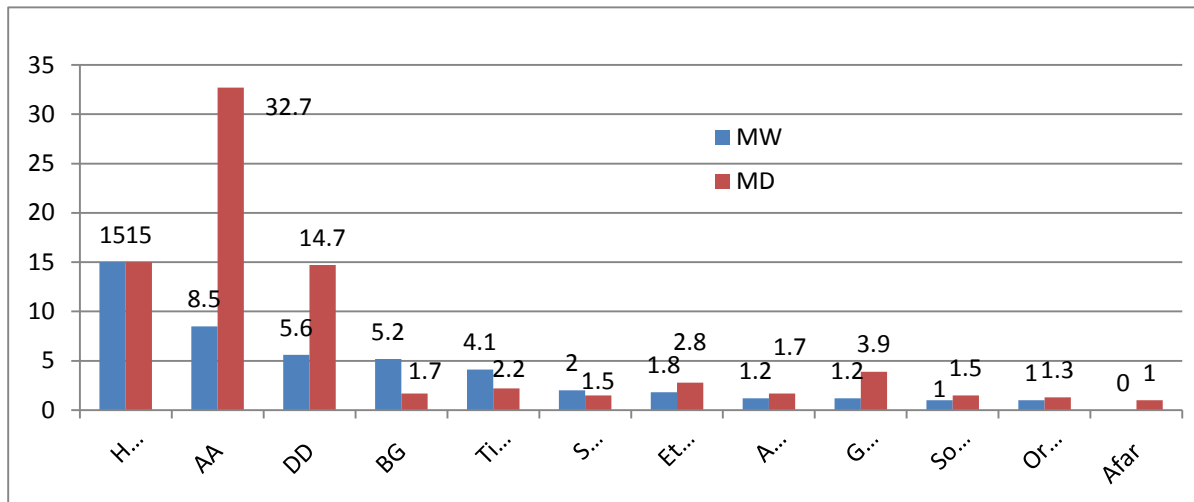


Figure 5.4: Number of midwives (MW) and doctors (MD) per 100,000, Ethiopia 2009 (Source: 57)

While this holds for most health workers, it is markedly so for midwives and doctors (Fig 5.4). In spite of a very high maternal mortality ratio, midwives have been in short supply in all periods; a situation confounded by the fact that a number of midwives were male in a society where exposure of body parts to the opposite sex is taboo (70). Overall, women continue to be in the minority in almost all categories in spite of several years of seemingly gender sensitive strategies and plans (Table 4.5).

There is also disparity between public and non government sector with the later attracting more and more professionals (Figure 5.5). While the NGO sector remains limited compared to other African countries, the private sector has grown substantially in recent years and has tended to draw on (internal migration) the meager HRH (5).

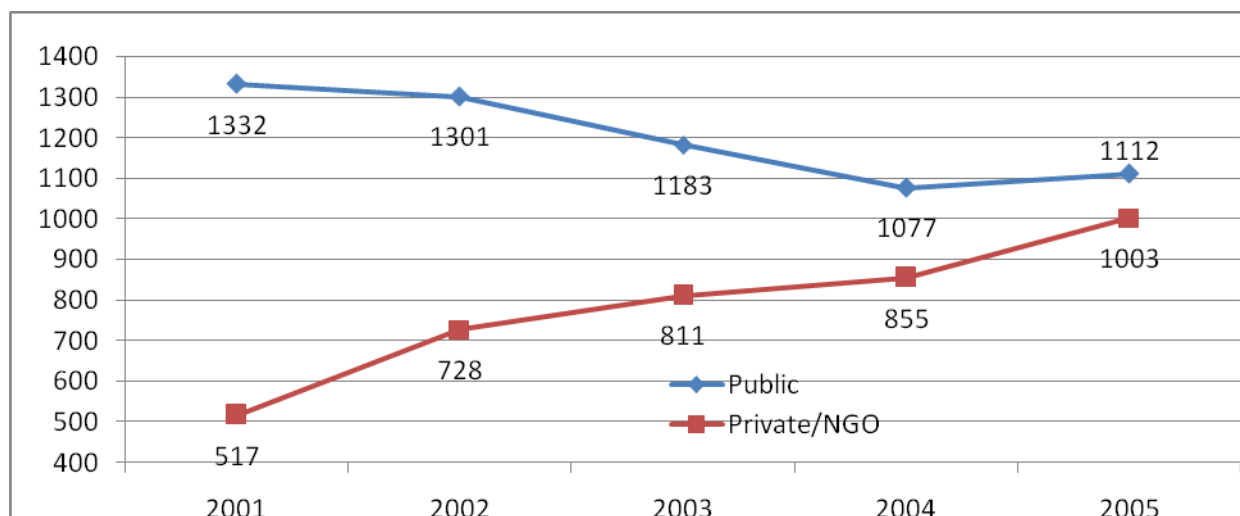


Figure 5.5: **Distribution of MD in Ethiopia 2001-2005 (compiled by authors from MOH sources)**

5.3. Task Shifting and Accelerated Training

Ethiopian authorities have recognized from early on that they will not be able to meet the HRH requirements of the population through conventional approaches (see Sections II & III). Though clear articulation of the issues and options had to await the debate on the launching of medical education in the early 1960s, training of orderlies/dressers and more significantly the Gondar team started earlier, in the early 1950s for the latter.

In an effort to increase access as rapidly as possible

within the economic capacity of the country, a number of alternative skill-mix/substitute categories were introduced in the different periods (Table 5. 2). Most were short-lived, rarely outliving the groups that initiated them. Thus the dressers of the Haile Selassie period were replaced by health assistants during the *Derge* to be in turn replaced by frontline workers and then by HEW by EPRDF (Figure 5.6). These, often abrupt changes, seem to be due not only to the inherent complexity of HRH planning but also because decisions were often made in haste and with very limited consultations (4, 5).

Table 5.2: **Skill mix in different periods**

Care/Period	BHS	PHC	SWAp
1. Frontline/Community Based	[Traditional Practitioners ^[1] {Village Health Workers} ^[2] Outreaches-HC (Clinics?) ^[3]	[Traditional Practitioners ^[1] CHA & TBA Outreaches-HC (HS) ^[3]	[Traditional Practitioners] ^[1] FLHW/HEW-CBHW Outreaches-PHCU ^[3]
2. Outpatient/ambulatory care	- Clinic: Dresser & N - HC: HO & CN - Hospital GP & N	- HS: HA - HC: GP & N - Hospital GP & N	- HC: HO & N - Hospital GP & N
3. MCH	CN	N	N
3.1. ANC	CN	N ^[5]	N ^[5]
3.2. Delivery	CN	N, MW in hospitals	N, MW in hospitals
3.3. PNC	CN	N ^[5]	N ^[5]
3.4. Immunization	CN	N	N
3.5. FP	CN	N	N
3.6. Child Nutrition	CN	N	N
4. Mental Health	[Traditional Practitioners] 1 or 2 Psychiatrists	[Traditional Practitioners] Psychiatric Nurses Few Psychiatrists	[Traditional Practitioners] Psychiatric Nurses Few Psychiatrists
5. Inpatient Nursing Care	- Orderlies - Dressers - Nurses	- HA - Nurses	- Nurses
6. Inpatient Medical Care	- HC: HO - Hospitals: Doctors	- HC: GP/N - Hospitals: Doctors	- HC: HO - Hospitals: Doctors
7. Surgery	Doctors (limited hospitals)	Doctors (growing number of surgeons)	- Surgeons in hospitals - HO in selected HC ^[6]

^[1] Variety of practitioners (wogesha, TBA, herbalist, faith healers...) used by the people; more or less recognized by the government but not 'integrated' in the formal health system (for details see 5). ^[2] Pilot project in Gondar, not implemented country wide.

^[3] Most HC had outreaches in their immediate vicinity run by community nurses BHS period (nurses later periods) and sanitarians; very few clinics (HS IN PHC period) had outreaches run by nurses or dressers (HA later). ^[4] In HC and nurses in hospitals

^[5] Midwives in some hospitals

^[6] With additional training in emergency obstetric and other surgery (Source: Compiled by authors from various sources)

Understandably, there was a lot of debate on the kind of health worker required, the length and content of their training; their degree of autonomy; the type of

supervision and support they will be provided... (see Sections II & III). However these consultations were mostly limited to a small number of officials and

professionals. Thus even such a major decision as launching the Gondar team in 1954 was decided by a small group within the Ministry and partner organizations. The subsequent decision to discontinue HO training in 1977 was apparently an administrative

decision instigated by a small vanguard group in the heydays of the revolution. Even the decision to restart HO training in 1993 was limited to the limited circles of the transition period (5).

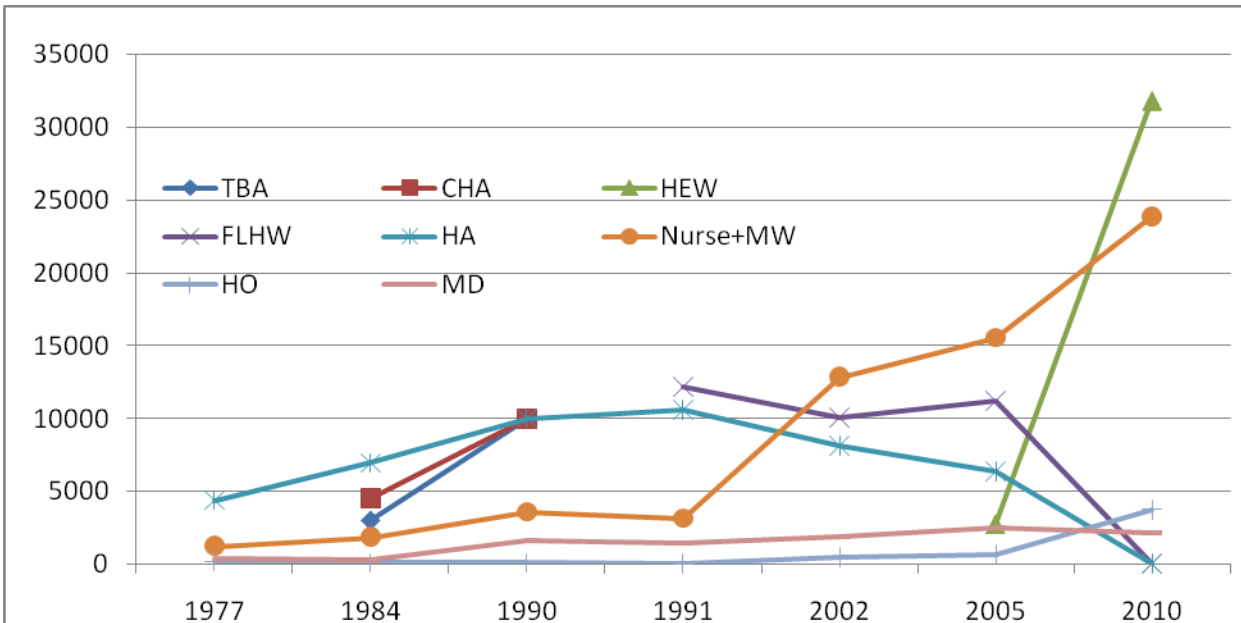


Figure 5.6: Evolution of skill mix: Ethiopia, selected years (Source: Compiled by authors from various sources)

Starting with the short-lived attempt of the experimental Peripheral Health Workers scheme in the 1960s, major efforts were also made since the mid-1970s to broaden the community base of health services. The ambitious Community Health Services (CHS) of the *Derge* period foundered because of lack of community support and adequate supervision and the thousands of community health agents and trained traditional birth attendants in most regions dissolved into the community at the advent of EPRDF in 1991. The Health Extension Program launched in 2002 promises better as all Health Extension Workers are government employees but the lessons of

the CHS period do not seem to have been drawn in articulating a more concerted involvement of communities and clear support and supervision mechanisms (62).

In spite of these shortcomings, remarkable increases in HWF were registered in all periods with an average annual growth of 20% or above (Figure 5.7); no mean feat in the face of the daunting challenges (5). These successes had their weaknesses in that most seem to have been achieved at the expense of quality in training and generated several management challenges.

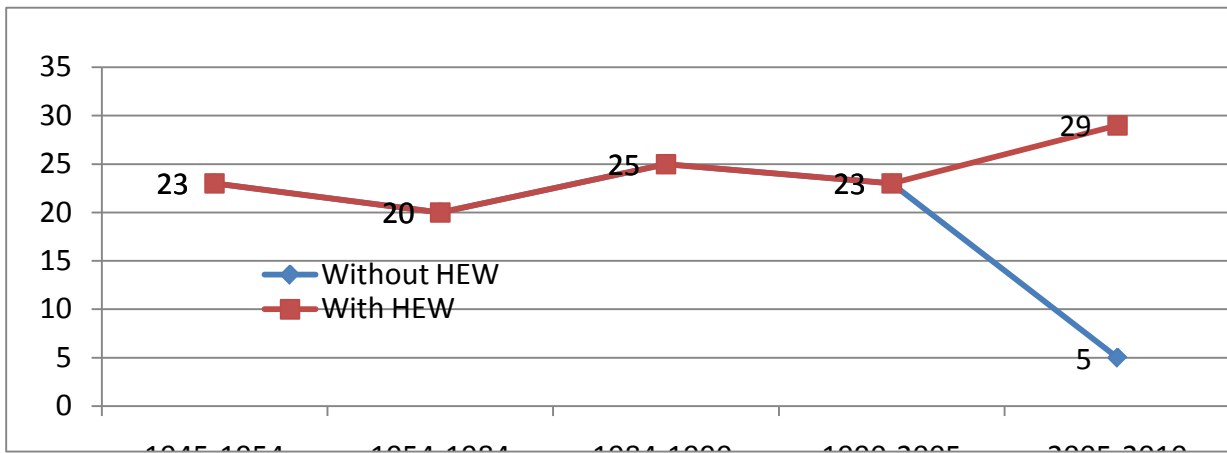


Figure 5.7: Ethiopia: Average growth (%) of health workforce per annum (source: Compiled by authors from various sources)

5.4. Challenges of Quality, Retention/Motivation and HRH Management

The priority given to increasing enrollment in higher education in all the periods was laudable but there were major concerns about the quality of training. Overall, the human resource base for higher education was highly constrained and was exacerbated by the major accelerations. There were very few (low proportion) with high skill and experience for example at PhD or equivalent level. Many departments even in the older universities had no professors. A recent review of Addis Ababa University College of Health Sciences, for

example, showed that there were only 11 Professors (most, recently promoted); with 14 of the 21 departments without a professor and 4 with not even one associate professor (Table 5.3). Some of the new universities were without a single person with professor rank. Most university staff members often had a much higher load of teaching than the norm (4.6). Reportedly, most were also engaged in supplementary activities to make ends meet. These problems are pervasive in that they affect all levels of training including those of HEW which have been the subject of repeated scrutiny (61, 73).

Table 5.3: Departments by number of professors and associate professor, School of Medicine, AAU, 2009

		Professor		
		None	One	Three
Associate Professor	None	Anaesthesia Anaesthesiology Dentistry ENT	Pharmacology	
	One	Biochemistry Dermatology Orthopaedics	GynObs	
	Two	Anatomy Neurology		
	Three	Ophthalmology Pathology Psychiatry Radiology	Microbiology	Physiology
	Four			Public Health
	Six	Paediatrics		
	Seven		Surgery	
	Eight			Internal medicine

There was also the increasingly high loss of experienced/senior staff to the non-public sector and abroad. Some attrition was related to internal factors such as partner agencies engaging in 'implementation' and siphoning off the best staff with better remuneration. The same was true with the growing number of NGO and private-for-profit both in service delivery and training. A large number, not only from higher education but the health services in general, also left for other countries – external brain drain. It was clear that even though the pull factors in the developed countries were high, a lot should be done in reducing the push factors in country including decent remuneration and incentives.

5.5. Policy and Strategy

As all the challenges above demonstrated, "Policies and methods used to manage human resource are at the core of any sustainable solution to health care system performance" (46) and can only be left in abeyance at major costs as illustrated by the various short-lived initiatives (e.g. CHA, FLHW, multiple, specialized and junior categories of nurses...). Accelerated training in all categories was launched in the absence of long term policy leading to major concerns about quality and retention and the paradox of unemployment of certain categories in the middle of shortage (4, 68). Over all, in

spite of laudable efforts to improve the skill-mix and increase HRH, HWF density remained low by any standard and major shortages, in midwifery in particular, subsisted and motivation & retention in the public sector for doctors in particular was low. Quality of training seemed compromised by large intakes (43, 60, 68).

All these point to the need to develop a policy and strategy for HRH. However arduous the process of policy development, major future decisions with long term impact should not be taken without the backing of fully articulated policy and strategies. These should, among others, focus on quality of pre-service and needs-based, coordinated in-service training; thinking-through the career structure & future prospect (2030 horizon?) of new/'substitute' (HEW, HO...) categories; and strengthening retention/motivation mechanisms.

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