Health Research in Ethiopia - a country overview

1. Background

Ethiopia is one of the 15 African countries selected for the Africa Consultative Process in preparation for the International Conference on Health Research for Development. This report refelcts a culmination of that process to which seven key national research and teaching institutions have contributed under the guidance of the Ethiopian Science and Technology Commission (ESTC) led by the National Focal Point for the exercise.

2. National Characteristics

Covering an area of approximately 1.14 million square kilometres (444,000 square miles), Ethiopia is bordered by the Sudan on the west, Somalia and Djibouti on the east, Eritrea on the north and Kenya on the south. The diverse topography of the country generally features rugged mountains, flat top plateaux, deep river canyons, rolling plains and low lands. The central highlands generally enjoy a temperate and pleasant climate, while the lowlands have typically sub-tropical and tropical climates.

Currently with a population of more than 61 million, Ethiopia represents a melting pot of ancient Middle Eastern and African cultures, evident in the religious, ethnic language composition of its Semitic, Cushitic, Omotic and Nilotic peoples. The Ethiopian people comprise about 78 nationalities of which Amhara and Oromo constitute the majority, with about 60% of the total population.

Ethiopia belongs to the group of least developed countries. Approximately 85% of the population live in rural areas. The annual population growth rate is about 3%. The age group between 14 and 60 makes up about 50% of the population. Life expectancy at birth is estimated at 53 years, due to a very high premature mortality. Despite this, the population is expected to double in the next two decades, creating considerable pressure on social services, including health. Mortality rates among children under five and infants are among the highest in the world. Similarly, maternal mortality is estimated to be 500-700/10 raised to 5 live births.

3. Research Development in Ethiopia

3.1 Pre-Italian invasion health research development

The antiquity of Ethiopian traditional medicine could not be established with any certainty due to the lack of adequate historical sources. The early report of Ethiopian traditional medicine was that of Francisco Alvarese in the early 16th century. The earliest known medicinal texts are the Geez "Meshafa Faws" of mid-17th century and "Mashafa Medhanit" of the early 18th century. These medical texts contain several references to plants, animal products and minerals, as well as magic and superstition.

The introduction of modern health care services in Ethiopia can be traced back to the reign of Emperor Libne Dingel (1508-1540), when the Portuguese mission to his court brought in a physician named Bermudes. Over four centuries ago, modern health care was brought to Ethiopia from many different countries by other European travellers, missionaries and members of the diplomatic community. In the reign of Emperor Menilik II (1889-1913), a modern health care system was organized in the country.

3.2 During and after Italian invasion health research development

During the Italian invasion and immediately after it, Italian physicians carried out most of the health care and health research. Most of their work concentrated on infectious and parasitic diseases. The researchers were mainly located in what was formerly northern Ethiopia (Eritrea).

The expansion of health facilities continued through the era of Emperor Haile Selassie and during the subsequent governments that took charge of the country. The opening of the following institutions accelerated research activity in the country:

- Pasteur Institute of Ethiopia (Now ENHR)
  1951
- Ethiopian Nutrition Institute (ENI now ENHR)
  1950
- Armor Hanson Research Institute (AHRI)
  1969
- Faculty of Medicine-Addis Ababa University (FM-AAU)
  1964
- Gonad College of Medical Science (GCMS)
  1954
- Jim Institute of Health Science (JIHS)
  1983

- Institute of Path-Biology (IPB)
  1966
- Ethiopia Science and Technology Commission (ESTC)
  1975

With the increasing number of training and research institutes, the effort in health research increased, both in volume and in the variety of fields. Available records indicate that no less than 5,000 health and health related publications and documents are issued in Ethiopia.

Despite the above developments, shortage of highly qualified researchers and the absence of a strong and functional health research system are the major problems that require immediate attention.

4 Health research and the Ethiopian Science and Technology Commission (ESTC): Health Department

As indicated above, the Ethiopian Science and Technology Commission was established by decree in 1975. Initially health research activities were supported and encouraged mainly by the use of external funds. However, as of 1993, the present Government issued a policy and strategy allocating up to 1.5% of GDP. Accordingly, activities got underway and there are well over 200 locally supported health research projects in progress. Efforts are under way to address the above-mentioned problems. A policy and strategy for health science and technology is being formulated.

4.1 The policy objectives are

- to utilize health S&T to help to improve the health status of the population at large and under-served Ethiopians in particular, in order to enhance productivity and raise the quality of life;

- to guide, coordinate, support and promote health S&T in order to build up and strengthen sustainable capacity in health S&T in the country;

- to promote the Essential National Health Research (ENHR) strategy in order to ensure equity, a cross-sectoral and interdisciplinary approach to accelerate national health development.

4.2 National coordination mechanism

The following functional organizations have been established for the coordination, promotion, and development of health S&T:

- National Health S&T Council
- National Health S&T Institutes and Centres
- Regional Health S&T Institutes and Centres.

The National Health Science and Technology Council is the highest body that advises the Government on health S&T matters. The Council prepares detailed health S&T policies and guidelines, sets priorities and R&D plans for government decision and undertakes follow-up action for their implementation, once approved. It also reviews and approves national health research projects and programmes. Among other duties, it seeks to facilitate the dissemination of useful research results, even though it requires further strengthening through financial, technical and institutional support.

The policy implementation rate is noteworthy. It has been very gradual and sometimes very difficult, due to the lack of competence, at both technical and managerial levels, on which capacity building is highly commendable.

5 Policy Framework for Research

As can be seen above, Ethiopia has a clearly articulated policy framework for science and technology, including a national health science and technology policy published in 1994. There is a Health S&T Council and a number of committees. Therefore, slow developments in health research may result from other constraints than an absence of policy, such as the interpretation and implementation of the policy.

6 Capacity for Health Research

The country's research capacity suffers in its efforts to implement policy from a shortage of human and institutional resources. Available data also points to the fact that research leadership and management in institutions is weak and available skills are badly spread or just not used rationally. The problem is compounded by the brain drain, in terms of movement towards the centre from the regions; from public to private sector; as well as professionals leaving the country. A number of possible remedies are under consideration, such as training better managers to create better working environments; developing better incentives and reward systems for researchers; and creating a research culture.

7. Funding for research

This is another area where documentation is deficient, and where definitions are required to make realistic comparisons between institutions. Although inflows of funds from different sources (internal and external) are well regulated by ESTC, accurate records of these flows are not available. Analysis of resource flows into the country, within the country and within institutions was an area for capacity development with major implications for the management of research. There are wide disparities in research funding between institutions which needs further study, and a mechanism to review research budgets against output is necessary in order to judge the effectiveness of research funding. The levels of funding leave the impression that Ethiopia does not attract a sufficient number of donors, a shortcoming that needs to be addressed.

8. Priorities

The broad categories of national priorities have been defined through a process that involved consultations with experts and consideration of disease burdens in local communities. However, the process did not involve all stakeholders, particularly the communities. In addition sub-regional and institutional priorities need to be developed and the universities must be brought closer to the priority process, since individual researcher interests often tend to override national priorities.

9. Linkages to policy and action

There is a general feeling that health research as a whole is not effective and that its results have not had a significant impact. In part this may be due to the fact that the target for health research findings has been peer consumption and not policy makers and other end-users (the community). There is poor stakeholder involvement in research from the beginning and most of the research has, therefore, been for academic purposes. Linkages with users of research findings must be strengthened through joint planning, participatory research and joint discussion of recommendations.

10. Networking

Although some collaboration in research and training takes place between institutions, networking at the national level is considered very poor. There is felt to be a need for the establishment of a mechanism to enhance the process. Regional networking is virtually non-existent, as is South-South collaboration. Networking at the global level is also poor, and needs to be addressed in the global architecture of the future.

11. Leadership and management

These interlinked issues are problematic for health research development in the country. At the national level the Government supports research. ESTC was established to guide policy and development. However, at the institutional level research is poorly managed in terms of documentation, priority setting, funding, creation of an enabling environment etc. Leadership development and management training, as well as the actual establishment of management systems are needed.

12. Equity in health

This key issue of research for greater equity in health anf health care systems is at the heart of health research for development. However, it is poorly understood in the country, where only lip service priority is paid to it. In the present setting, inequities are addressed through the provision of services: no research to support action is being undertaken and an Equity Watch has yet to be set up.

13. The Butajira Rural Health Programme (BRHP) in Ethiopia: a field population laboratory

13.1 Epidemiological surveillance system

The overall objectives of the Butajira "field laboratory" were to develop and evaluate a system for continuous registration of births and deaths, to generate valid data on fertility and mortality, and to provide a population study-base for essential health research and intervention in the area. The ultimate aim of the project was therefore to provide a current epidemiological surveillance system at the district level that would assess fertility and mortality trends, analyze public health, as well as the assessment of coverage and utilization of health services in the area.

13.2 Study-base

The study site is located in the densely populated District of Meskan and Mareko, 130 km south of Addis Ababa. The District is administratively located in Gurage zone, the Southern Nations, Nationalities and Peoples Regional State (SNNPRG). The study has been conducted in a set of nine randomly selected rural, and one urban, kebeles (a kebele is the smallest administrative unit in Ethiopia). In line with its objectives, the initial tasks for the BRHP were to perform a census of the population in the selected villages to obtain the baseline population, and to establish a system of demographic surveillance with continuous registration of vital and migratory events at a household level. Events registered by the BRHP are birth, death, marriage, new household, emigration, immigration and internal

movement (transmigration within the BRHP surveillance villages). Data are collected monthly by visiting each household.

The BRHP is primarily a collaborative research, undertaking between the Department of Community Health, Faculty of Medicine, Addis Ababa University in Ethiopia, and the Division of Epidemiology, Department of Public Health and Clinical Medicine, University of Umea, Sweden. Collaboration is expanding in scope to involve more departments and institutes in the collaborating countries and others. This increasing cooperation will facilitate the maximum use of the study-base and improve the quality of the research output.

13.3 BRHP benefits

(i) Local treatment

Though not yet extensively delivered, some medical benefits have accrued to the populations in the study villages. Many of the surveys conducted within the study-base have offered treatment for locally endemic diseases at the time of interview.

(ii) Capacity building

BRHP has contributed to human resource development and the building of research capacity at the Faculty of Medicine, Addis Ababa University The Department of Community Health has been running a Master's programme in Public Health since 1984. The training consists of course work, residency attachment programmes and research work. The Butajira study-base has provided a continuous forum for research and residency work for these MPH students The programme components are described in Figure 1.

(iii) Investment in BRHP

The BRHP study-base has required a tremendous investment. The generous and continuous financial support from SIDA/SAREC has been crucial throughout its long life. However, the strong professional commitment of collaborating researchers on both sides has been the major driving force. The Ethiopian Science and Technology Commission and Addis Ababa University, particularly the Faculty of Medicine, have nurtured the collaboration over the entire period of the study-base's existence.

The major challenge in sustaining this study-base would be to acquire continuous funding for its activities. Plans for sustainability include developing a cost-sharing scheme (in which projects served by the study-base contribute a certain proportion of their own budget), diversifying funding from external sources, and soliciting local funding.

(iv) Conclusions

In conclusion, the BRHP is a national asset that can provide scientifically sound information for use in public health planning and evaluation. It also provides a fertile platform for training in Epidemiology and public health for the country.

Figure 1. Components of the Butajira Rural Health Programme, Butajira, Ethiopia