World Health Organization

APPLIED SOCIAL SCIENCES FOR PUBLIC HEALTH (ASSPH)

HIGHER DEGREE TRAINING FOR IMPLEMENTATION RESEARCH ON TROPICAL DISEASES

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SUMMARY

Understanding and monitoring the dynamic nature of a population's health is critical for successful health promotion, disease prevention and disease control. It necessarily involves a multidisciplinary and interdisciplinary endeavour. Many of the research techniques and tools to facilitate this are available across the range of social sciences.

However, as a result of economic and other factors, building and retaining of research capacity in applied social sciences for public health (ASSPH) in resource-poor countries has been a challenge. There is therefore a serious lack of ASSPH researchers and consequently an ongoing dearth in high quality research that involves social, economic and behavioural aspects of tropical disease control despite the clear need for evidence in this area. This need was identified in the TDR review of research capacity strengthening in 1999 (TDR, 2000). However, seven years later, the problem remains critical.

A further need has been identified for applied social science research in the process of implementation of disease control programmes – i.e. for 'implementation research'. Over the last 30 years, TDR and other medical research institutions have invested substantial funds in the development of interventions for the management of tropical diseases. However, in the absence of capacity and understanding in how to engage with communities and ensure their participation, and of the ability to adapt research methods and health technologies to local contexts, the uptake, effectiveness and sustainability of these interventions remains limited. The lack of high quality social science research expertise to combine an understanding of tropical diseases with the ability to work with and understand the local community is chronic. Further expertise is also required to integrate this knowledge with institutional and organizational structures that support the successful and sustained uptake of new technologies.

This present initiative draws on existing capacity in sub-Saharan Africa (SSA) with support from Southern and Northern partners to develop high quality, internationally recognized, higher degree interdisciplinary and multidisciplinary research training that is grounded in theoretical and applied social science and public health disciplines and relevant to local contexts. These programmes will be offered through regional centres of excellence.

As background to the initiative, this report is a compilation of three independent but inter-related documents presenting background information on ASSPH and a strategy for building capacity in sub-Saharan Africa. The specific focus is on training a workforce for implementation research at Master's and potentially PhD level. The report presents:

- A background on the training needs in ASSPH in sub-Saharan Africa and an overview of related courses and programmes available locally and internationally.
- A strategic vision for capacity building in ASSPH based on consultations with stakeholders in the region and in related disciplines.
- A review of current training capacity and proposed training programmes in Ghana and Kenya for Anglophone countries in West and East Africa respectively.

1 Background and Course Review

Substantial human and financial resources continue to be invested in communicable diseases research and control, specifically in investigation of the pathogens and their evolution, their biological and clinical effects on humans and peri-domestic animals, and in pharmaceutical developments. Present, but much less prominent in the investment in research and control, are the social, economic, environmental and behavioural factors that sustain communicable diseases and affect their control.

By definition, communicable diseases in general and tropical diseases in particular are spread and sustained by dynamic interaction of the agent, the host and the environment. Many of the persistent and emerging communicable diseases exist because they can exploit individual human behaviour, and the nature of societies and culture. In resource-poor countries, persistent poverty, poor living conditions and a constantly evolving physical and political environment enhance the success of these diseases. Furthermore social, economic and political inequalities interact in complex ways to affect the health of populations and the treatment and sequelae of disease. Tuberculosis is a prime example of a disease for which political, social, cultural, economic and environmental factors converge to affect issues as diverse as risk of exposure and infection, treatment seeking, multidrug resistance and availability and of access to effective drug therapy.

Understanding and monitoring human factors, and the dynamic interaction of these within a given context, is complex and challenging but critical for successful health promotion, disease prevention and disease control. Many of the research techniques and tools needed to do this are available across the range of social sciences and necessarily involve multidisciplinary and interdisciplinary endeavours.

1.1 What is applied social science in public health?

The Economic and Social Research Council[1] in the UK defines social science, in its broadest sense, as the study of society and the manner in which people behave and impact on the world around them. It covers an extensive body of knowledge compiled through a broad range of approaches and research tools across several academic disciplines.

Each of the social science disciplines is based on a theoretical, philosophical and scientific body of knowledge which provides scholars in the area a unique disciplinary perspective on the study of individuals, society and the environment. The relevance of these disciplines to public health and disease control is in the applied fields – in the applied areas of anthropology, demography, economics, human geography, psychology, politics, history, law, social policy, and sociology.

> **Applied social science for public health (ASSPH) is therefore defined as an interdisciplinary and dynamic field which integrates the knowledge and tools for research and analysis from a range of social science disciplines for the purposes of understanding the various determinants of health in individuals and populations and developing, implementing and evaluating sustainable solutions to public health problems.**

Applied social science for public health emphasizes the use of rigorous standards and scientific methods, including qualitative and quantitative methods in the study of society.

> **Within this context, therefore, public health is defined as the activities underpinning the analysis and response to the health and wellbeing of populations. It is an interdisciplinary applied social science.**

Biological and clinical sciences are integral to public health for the purposes of disease prevention and control. The applied social sciences enable the conceptualization and exploration of the multiple factors that affect health and disease, and the complex ways in which they interact; and support the development and implementation of interventions at the individual, societal, organizational and policy levels. The academic fields included within this scope, and the contribution of each to disease control, is summarized in table 1.[2]

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[1] http://www.esrc.ac.uk

[2] Note that this list is not necessarily comprehensive

Table 1. Summary of application of applied social science disciplines to health and disease control

Discipline	General application in research and disease control
Medical anthropology	This area of applied anthropology draws on social, cultural, biological, and linguistic anthropology to understand the factors which influence health and well-being. Research in this area explores the experience and distribution of illness, the prevention and treatment of sickness, therapy and healing, and the cultural importance and utilization of pluralistic medical systems. Data from this body of evidence are important in understanding how and why diseases persist from a cultural perspective. Anthropology has contributed many of the techniques in qualitative research used in public health.
Biosocial statistics[3]	Biosocial statistics applies statistical techniques to scientific research in public health, complementing theoretical understandings from epidemiology and social inquiry and providing quantitative triangulation of qualitative findings. In the application of the methods to social questions, an appreciation of the complicated realities of data collection and analysis is critical, making biosocial statistics ideal for multi-method studies.
Demography	Demography describes population patterns, migration, birth, death and disease in a community. Demographers have explored the movements of populations and the effects on disease distribution as well as monitoring trends within various subpopulations.
Health Economics	The application of economics principles in the analysis of costs, benefits and management of health and health care is particularly relevant for understanding the implications of resources and financing for the uptake of interventions both at the household and national policy level.[4]
Epidemiology[5]	Epidemiology is traditionally described as the study of the factors that affect the distribution of health and illness in the population, making the social and cultural patterning of disease integral to the discipline. Methodological approaches in epidemiology are shared with several other social science disciplines such as demography and criminology.

[3] The term 'biosocial statistics' is adopted here in recognition of the fact that, notwithstanding an identical theoretical underpinning, the sciences have adopted slightly different approaches to the management and interpretation of statistical data. Health economists and epidemiologists make a good case in point. Given a multivariable regression with a dichotomous outcome, health economists will tend to use a probit link function and epidemiologists will tend to use a logistic link function. The probit allows the health economist to talk about probabilities; the logistic allows the epidemiologist to talk about odds.

[4] The Health Economics Group at the University of Cape Town recently completed a report commissioned by TDR on Health economic capacity in sub-Saharan Africa. The report is available from TDR.

[5] Is epidemiology a social science? In keeping with prominent epidemiologists such as Miton Terris, Mervyn Susser, and Geoffrey Rose, the authors of this document would conclude that it can also be classified as a social science because the focus of interest is populations. Researchers in clinical efficacy use similar methods in clinical epidemiology.

Table 1. Summary of application of applied social science disciplines to health and disease control (continued)

Discipline	General application in research and disease control
Human geography	Human geography is the systematic study of patterns and processes that shape human interaction with the environment. The discipline encompasses human, political, cultural, social, and economic aspects of these interactions and how they affect health and disease. Research in human geography has provided critical insights for geographic information systems and mathematical modelling of the spread of disease.
Health and social policy	Health and social policy explores the statements and procedures within institutions and government that define priorities and parameters for action. Research in this area has investigated the effects of policies across different sectors of government on health and disease control as well as the process by which research can influence policy development. A range of qualitative and quantitative methods is used in policy research and analysis, many from the disciplines described above.
Health psychology	Health psychology uses psychological principles to promote health and to prevent illness by targeting health risk factors and promoting healthy behaviours. This area of research has informed health promotion and social marketing of interventions
Medical sociology	Medical sociology explores individual and group behaviours in response to health and illness. The society rather than the individual forms the unit of analysis using both qualitative and quantitative methods.

Multidisciplinary versus interdisciplinary approaches

The goal of public health is to improve the health of populations, and to this end it is imperative to be flexible and to draw on a variety of skills and disciplines. For the purposes of capacity building, a critical discussion needs to be held on the advantages and disadvantages of multidisciplinary versus interdisciplinary approaches to training. Multidisciplinary approaches combine the unique features of the different disciplines to address public health issues. Multidisciplinary teams work with individuals contributing within their well defined areas of specialization and expertise; there is usually no expectation to develop common conceptual frameworks or to alter primary disciplinary approaches. There are inherent challenges in the approach and courses are available to provide researchers with the skills to work together in multidisciplinary teams.[6] A multidisciplinary approach to ASSPH capacity building would involve the training of specialists in the different disciplines to develop a critical mass of core capacity across the range of social science disciplines.

[6] In a collaboration between the School of Public Health/Ghana Malaria Centre, Ghana /GMP, and London School of Hygiene and Tropical Medicine/Partnership for Social Sciences in Malaria Control (PSSMC), teams from different disciplinary backgrounds related to the health social sciences were brought together to develop and implement research proposals to address issues in malaria control. The teams that participated in the training had 3–4 members each from different public health and social science disciplines and were from Ghana, the Ivory Coast, Benin and Nigeria. Multidisciplinary team skills were a major focus of a workshop funded by the Bill and Melinda Gates Foundation in 2005.

Interdisciplinary approaches on the other hand are based on an underlying conviction that no single discipline provides a broad enough basis for the conceptualization of issues, and therefore promotes the development of new 'hybrid' disciplines that draw on existing disciplines and produce novel ways of thinking about and solving problems. Disciplines such as biomechanical engineering and development studies have emerged as a result of interdisciplinary work. The main criticism of interdisciplinary work is that it is overly ambitious and the body of knowledge produced lacks intellectual and theoretical maturity or depth. However, it has proved valuable for the practical problem-solving required in research and practice in public health, providing skills that are critical for resolving cross-disciplinary conflicts and achieving new coherent views on a subject. Interdisciplinary capacity building would produce a 'generalist' public health researcher rather than a specialist in any particular applied social science discipline.

1.2 Research and capacity building in ASSPH

Research and research training in ASSPH in lower income countries, as with other disciplines, receives some support from local governments as well as from a range of multilateral and bilateral agencies, international non-governmental organizations (NGOs) and other donor agencies. However the training itself is often undertaken in universities in Europe, North America and Australia and other 'Northern' countries. This is particularly apparent for research training at Masters and Doctoral levels funded under bilateral agreements. Higher degree training support for in-country institutions, or for institutions in 'Southern' countries, does occur but is relatively uncommon.

Unfortunately, as a result of economic and other factors, the return and retention of a highly skilled and versatile workforce following training has been a challenge for resource-poor countries. There is therefore a serious lack of ASSPH researchers in lower income countries and consequently an ongoing dearth in quality applications for research that involves multi and interdisciplinary social, economic and behavioural research in tropical diseases control despite the clear need for evidence in this area. This need was identified in the TDR review of research capacity strengthening in 1999 (TDR, 2000). Seven years later, the problem remains critical.

1.3 Implementation research

A more specific need has been identified for research in ASSPH for the implementation of disease control programmes. Through initiatives for community-based management of conditions such as malaria, filariasis and onchocerciasis (Remme, 2004), it has become apparent that the contribution of applied social sciences is critical to the understanding of individual, community, and organizational processes that enhance the uptake, effectiveness and sustainability of control programmes. Implementation begins with the introduction of a new process and ends when the new technology is adopted and has become routine, or alternatively, is abandoned (Linton, 2002). To this end, there is a need to understand:

- the nature and culture of communities and organizations and the social processes required for new technologies to be accepted and adopted
- the factors that influence community and organizational capacity to adopt innovation
- the proximal and distal factors that influence the sustained acceptance or rejection of an innovation
- the processes required to support effective implementation.

Implementation research for disease control is therefore defined as applied research that aims to develop the critical evidence base for the effective and sustained adoption of interventions. It deals with the knowledge gap between efficacy, effectiveness and current practice to produce the greatest gains in disease control. Implementation

research involves the systematic and critical investigation and analysis of the dynamic processes that influence how individuals, populations and health systems adapt in order to adopt new technologies and interventions.

As defined, the focus of implementation research begins conceptually with an intervention which is expected to deliver health gains and systematically describes and analyses the process and outcomes from pre-intervention through to successful adoption or failure of the programme through the development and testing of approaches that support the scale-up of disease control programmes.

The overall goal of implementation research in disease control is to develop improved strategies and policies that ensure universal access to treatment and health-promoting technologies.

Implementation research involves multiple methods: multilevel case studies on cultural and social relations in the community; who is at risk and why; appropriate targeting of limited resources; practice and policy factors; external influences and monitoring of processes and economic drivers. It also involves the analysis of intra-governmental issues around power, responsibility, and organizational psychology as well as the relationships between governmental and non-governmental agencies.

These methods describe what should be a seamless link between research and control programmes, and they are firmly rooted in the social sciences. Well conducted research would provide the evidence base for best practice in community-based disease control.

To date there has been a general tendency, for the purpose of expediency, to provide short-course training in rapid assessment and other social research techniques for health researchers and practitioners. However, these courses have necessarily been limited in background and theoretical content of the various relevant social science disciplines. Similarly, there are limited opportunities for those with strong theoretical social science backgrounds to apply their expertise within a health sector that has its own knowledge base and strong internal culture. In the absence of a longer term strategy for building capacity in ASSPH to provide synergy between these areas and to support implementation, the lack of a systematic evidence base and high quality research cannot be addressed.

Research and training in basic and applied social sciences has been on the agenda for TDR to varying degrees over the last two decades and has progressively increased. A Steering Committee on Social, Economic and Behavioural Research was established in 1999 to support research leading to better understanding of the social, behavioural, political, economic and health system factors in the distribution of disease and control efforts. The relevance of applied social sciences has also been reflected in the activities of the Research Capacity Strengthening (RCS) programme which is responsible, among other things, for research training grants. For the purposes of capacity building for implementation research in particular, the approach of the RCS-plus programme has been to strengthen local institutions so they may develop into centres of excellence for training. Two consortia of public health research institutions, academic institutions and national health services in Ghana and Kenya were formed to deliver intensive short-course training in social sciences for implementation research. The evaluation of these courses supported the development of academic award programmes to scale-up the short courses as a means of addressing capacity strengthening in ASSPH.

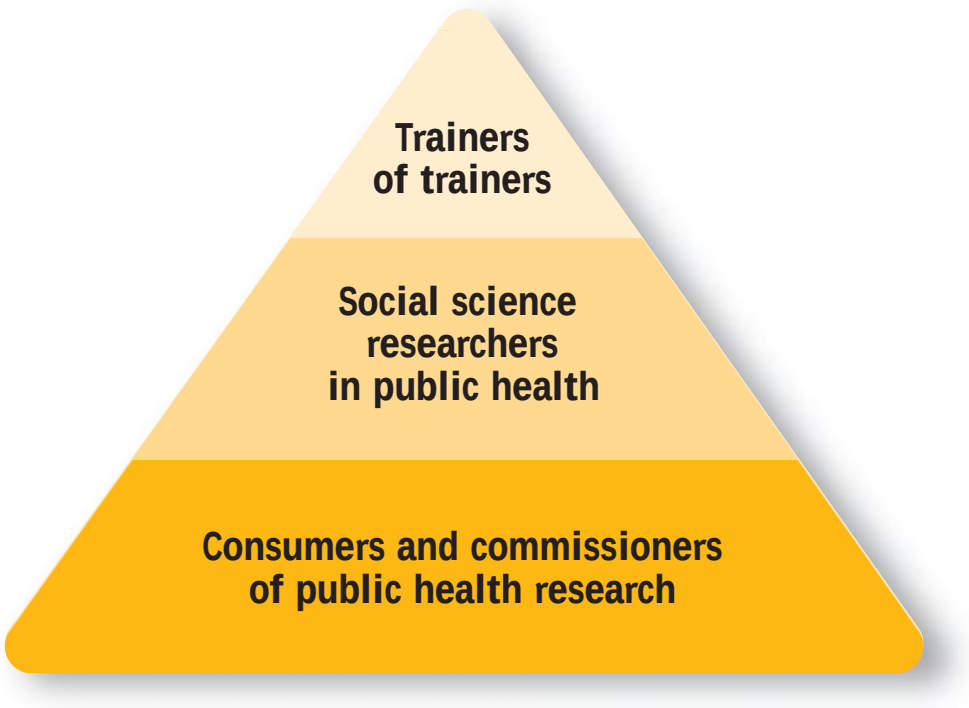
1.4 At what level is ASSPH capacity needed?

The capacity to train in the basic social sciences already exists in higher education institutions in sub-Saharan Africa. However, the potential for application of the social sciences in multidisciplinary and interdisciplinary work, in particular its application to public health and disease control, has not been fully exploited.

In broad terms, there remains limited understanding in the health sector of the contributions that can be made by the applied social sciences (TDR, 2000). The hierarchical structure of personnel within the health sector stems from a colonial legacy which privileges the knowledge and contribution of bio-medically trained personnel above others and fails to appreciate fully the broader need to engage with a range of disciplines in order to enhance the effectiveness of community-based interventions. For instance, there is clear evidence of this in the failure to recognize the high quality contribution that can be made by health services personnel with higher degree research training in applied social sciences. There is a conspicuous absence of a career structure and most non-medically trained health service personnel are placed at levels not commensurate with their level of qualification and are deployed in ways that fail to utilize the specialized skills acquired in their training. For instance, the Ghana Health Service had placed doctoral graduates in health economics and medical anthropology in civil service grades equivalent to community health nurses with undergraduate qualifications. This lack of recognition serves as a disincentive for those with the capacity to return to or remain within the health sector.[7]

There are three general levels at which capacity is required in ASSPH (see figure 1 below):

Figure 1. The pyramid of research capacity needed in applied social sciences research in public health



[7] At the time of compiling this report, the Ghana Health Service was reviewing salary scales based on professional qualifications and work description. Whether this will overcome the kinds of issues raised remains to be seen.

1. At a minimum, capacity is required for educated non-researchers who can be both:
   - intelligent consumers of health social sciences research, and
   - intelligent commissioners of health social sciences research.

This capacity is essential both within government sectors and in NGOs involved in public health. Staff should be able to work with existing data and develop strategies for moving the available research evidence into policy and practice. When commissioning new research, staff need to recognize gaps in the existing evidence, and the importance of monitoring and evaluating the success with which the research/policy/practice nexus is integrated. Improved capacity in this area would also go some way to recognizing the critical contribution of ASSPH and provide the impetus for addressing career development within the health sector for researchers in this area.

2. Applied social science researchers need to be trained who can:
   - respond to research commissions generated by government departments and NGOs, and
   - pursue their own investigator-driven research questions in the area of public health.

The latter is crucial for developing a national research capacity that is capable of driving agendas rather than simply following the agendas of others.

3. At a third level, there needs to be strong, highly qualified capacity to train the first two tiers. Capacity at this level within sub-Saharan Africa is critical to support the development of independent and locally appropriate national agendas. If training were available within a country or within a region, it would also address the major health capacity brain drain.

1.5 Overview of existing programmes

There are a number of existing (degree) programmes, internationally, which provide training for researchers interested in applied social science for public health. Most of these programmes run through new or well-established institutions in high-income countries and require considerable investment in fees and living expenses for international students. In addition, there has been a tendency for the brightest students to be retained in these institutions and in high income countries following graduation (Smith and Henderson-Andrade, 2006; World Health Organization, 2006; Mullan, 2005; Saravia and Miranda, 2004; Black et al., 2004; Diallo et al., 2003; Pang et al., 2002). There is an irrefutably strong economic imperative for graduates to remain in higher income countries following graduation (Vujicic et al., 2004). In addition, the skills acquired are largely (and necessarily) tailored to the workforce needs of countries that provide the training. A number of 'tailor-made' specialist degree programmes in institutions such as the Australian Centre for International and Tropical Health and Nutrition, Liverpool School of Tropical Medicine, Swiss Tropical Institute, London School of Hygiene and Tropical Medicine, etc., provide a broad background for the issues pertinent to lower income countries through global/international health-related subjects. In general, however, the degree programmes offered have a stronger focus on disease and biomedicine than they do on the applied social sciences. In addition, analysis of the social determinants of health and disease is based on conceptualization of the needs, priorities and solutions developed within western cultural and intellectual frameworks.

The skill level and capacity that has been built through these opportunities available in higher income countries have been undeniably valuable. It is not the intention of this report to underestimate the contribution of the 'overseas study' experience to existing capacity. Indeed, most of the current ASSPH researchers in disease endemic countries are exceptional graduates of overseas institutions. Current projections foresee increasing numbers of students from low to middle income economies travelling to higher income countries for the purposes of further education. Reasons for this migration are well articulated in the literature on globalization and skilled migration (Overseas Development Institute, 2005; Willem te Velde and Xenogiani, 2005). To this end, there is active recruitment from education institutions in Australia, the UK, US, Europe and Canada to capture the market in international students,

including those from low-income countries. Interestingly, there is also an increase in the establishment of in-country campuses of Northern institutions within developing countries.[8]

A brief overview of available degree programmes is presented below. The purpose of the review is to compile a list of potential resources that would:

- support the development of short courses and degree programmes in applied social sciences in public health, and
- provide models for delivery of courses.

The list is not intended to be exhaustive, nor is it intended to endorse any named courses or programmes or denounce unnamed courses or programmes by omission. The programmes were selected to give a flavour of what is available and the selection was based on relevance to tropical public health, focus on resource-poor countries, and the integration of social sciences into public health training. Hyperlinks (active at the time of compilation of this report) are provided to the programmes and resources. The review is divided broadly into programmes in applied social sciences and courses on social research methods. Henceforth a reference to 'programmes' is to a course of study leading to a degree, 'modules' refers to discrete components within a programme, and the more generic 'courses' is used to refer to stand-alone short courses. Many institutions allow stand-alone short courses to be treated as modules for the purpose of awarding degrees.

1.6 Applied social sciences

In broad terms, social sciences in public health programmes are offered in two models: multidisciplinary and interdisciplinary.

Multidisciplinary programmes

Independent modules are available in a number of pure and/or applied social science disciplines. The general underlying principle here is that public health problems and solutions can be addressed from a variety of disciplinary perspectives. Students can either obtain an overview from a number of disciplinary perspectives or can specialize in a particular applied social science discipline with a broad focus on public health. Knowledge of the underlying principles and practice of the discipline can then be applied to research approaches and addressing problems in public health within resource-poor countries. Courses include:

- Medical anthropology. The general content covers cross-cultural perspectives in medicine, and health and disease from the perspective of both patient and health system. Students are exposed to theoretical concepts, investigative techniques and analysis. The courses vary in the extent to which they explore health issues of local, national and international communities. Institutions that offer medical anthropology with some focus on tropical diseases include:
  - Brunel University, UK
  - Heidelberg, Germany
  - Oxford University, UK
  - DBL Institute for Health Research and Development, Denmark
  - University of Amsterdam, The Netherlands.

[8] For instance, the campuses of Monash University (Australia) in South Africa (http://www.monash.ac.za/) and Malaysia (http://www.monash.edu.my/)

- Health economics. These programmes have been developed with the aim of training applied social scientists for the development of cost-effective, equitable and appropriate health systems through research. The Health Economics and Financing Programme at the London School of Hygiene and Tropical Medicine, and the Bloomberg School of Public Health at Johns Hopkins University, have trained several higher degree research students from resource-poor settings. Master's level programmes in policy, planning and financing and health services management provide health economics training within a broader policy development and economic evaluation framework. Training with the Health Economics Research Group at Brunel University is mainly in the form of intensive short courses in economic evaluation and in PhD programmes. A programme in Health Policy and Financing at the Royal Tropical Institute explores health policy and health economics in the context of decentralization, public-private mix, sector-wide approaches (SWAps), global funds, trade-related aspects of intellectual property rights (TRIPS), and structural adjustment. The influence of certain actors such as the international donor community, consumer organizations and consumer groups on the health policy agenda is critically explored.

A number of high quality training programmes in middle income countries are gaining prominence. The University of Cape Town in South Africa has a rapidly growing reputation in higher degree training through the Health Economics Unit. The health economics programme at Chulalonghorn University provides modules in health care systems, financing and socioeconomic development, economic evaluation of health care services, social and economic analysis of health care consumption, health economics research methods, and organization management and decision-making in the health sector. Both programmes focus on developing countries and present ideal models for the development of training in an ASSPH discipline to enhance its relevance to local and regional public health needs.[9]

- Demography. Training applies the theories and methods of demography to the understanding of broader public health problems. In addition to quantitative methods in statistics and epidemiology courses in public health, demography explores the health implications of population change. Centres that provide training at higher degree level include the London School of Hygiene and Tropical Medicine, Brown University and, within the sub-Saharan region, the Institut de Formation et de Recherche Demographiques (IFORD) in Cameroon and the Regional Institute for Population Studies (RIPS) in Ghana.
- Health communication/health promotion/health psychology. Courses in these general areas provide an overview of: different theories and approaches; problem analysis of health promotion issues; different strategies in health promotion; models and theories of behaviour change; mass media and communication; community development, counselling, and communication; planning, implementing and monitoring a programme; and evaluating health promotion programmes. Training in this area provides students with the knowledge and skills needed to understand community, individual, and organizational behaviours and to change processes in developing countries and in cross-cultural settings as a foundation for planning culturally appropriate programmes. Institutions offering these courses include:
  - Royal Tropical Institute (Koninklijk Instituut voor de Tropen), The Netherlands
  - London School of Economics, UK
  - Johns Hopkins University, USA

[9] Further details on the evaluation of health economics training through the University of Cape Town are available from TDR: WHO/TDR, 20, Av. Appia, 1211 Geneva 27. Fax: ++41 22 791 4854. E-mail: tdr@who.int

Interdisciplinary programmes

In these programmes, applied social sciences are offered as an integrated part of an interdisciplinary public health programme. The underlying principle here is that the problems presented in public health are too complex to be dealt with adequately by a single discipline and an attempt is made to analyse critically the underlying assumptions of each discipline, and to integrate knowledge from across the disciplines. In its most innovative form, interdisciplinary research and analysis results in the creation of new applied disciplinary areas such as the amalgam disciplines of social and cultural epidemiology.

- Social epidemiology. This is a relatively new area of work that explores the relationship between sociology (social interactions and social structure) and the distribution of health in the population. Its particular relevance to work in resource-poor settings is in the measurement and effects of poverty (relative and absolute) and the effect of social structures on health, although as a discipline its application is still under-exploited. Social epidemiology has championed the use of multilevel modelling in public health research in general and in social determinants of health in particular. Social epidemiology is offered through institutions such as:
  - Harvard School of Public Health, US
  - Johns Hopkins University, US
  - Brunel University, UK
- Cultural epidemiology. This explores the distribution of health problems with reference to local concepts that guide risk-related and outcome-related behaviours. The Swiss Tropical Institute, Switzerland, and the University of Manitoba, Canada, currently offer courses in this area.

A number of institutions provide broad social sciences training that does not specifically distinguish the disciplinary areas covered but focuses on the broad applications to public health. Mahidol University and Chulalongkorn University, Thailand, for instance, provide programmes in theoretical health social sciences which cover: health psychological theories, health belief models, stress-related theory, personality theory, micro and macro economics in health, medical sociological theories, symbolic interactionism, social structure and class, social construction of illness, medicalization, sick-role and social system theory, political–economic theory, health system analysis, medical anthropological theory, cognitive–interpretive anthropology, cultural ecology theory, critical medical anthropology, body and post-modem anthropology, cultural system theory, discourse and discourse analysis, medical pluralism. Their modules on 'social transformations and health' explore a range of topics such as population health; globalization and localization; consumption, society and health; post modernization and health; social suffering; marginalization; impacts on health of social and economic changes and mega-project development. PhD programmes are also available in medical and health social sciences.

General public health and tropical health programmes are available that offer the traditional core public health modules (epidemiology, biostatistics, health promotion, health systems and policy) but also provide a general overview of the social determinants of health, environment and risk behaviours, political economy of tropical health, history of public health, drug distribution and utilization, and social context, etc. Examples of these include the International Health Program at the Johns Hopkins Bloomberg School of Public Health and the University of North Carolina (Chapel Hill), and the School of Public Health at the University of Witwatersrand in Johannesburg with programme areas in social and behavioural interventions, health systems, disease prevention and control, and human nutrition.

At the University of Bergen in Norway, public health related courses run under the Department of Medicine and Health and introduce students to the connections between social, cultural and economic factors in international health.

The programme at the Swiss Tropical Institute is a general tropical health course that prepares participants for work in countries that suffer from extreme poverty. The course provides a background to global and local economic conditions, and to ecological, geographical, social and cultural variations in health and illness.

In the tropical health programme at Queensland University in Australia, students are given a broad overview of health and disease in the tropics, the problems faced by health services in the tropics, and the management of those services. The course involves intensive block-mode teaching in areas ranging from specific disease focused modules to anthropology and traditional public health. Collaborative field research in South-East Asia or the Pacific is a core component of the course and provides practical research and fieldwork experience to consolidate coursework.

The goal of the programme at Duke University is to help students identify the factors that influence global health through examination of the: biological and social underpinnings of global disease spread and reduction; social and community forces that affect individual health outcomes; international organizations that affect health policies and economics; and the ethical responsibilities of communities and health care practitioners in safe-guarding human health.

Other generic and relevant programmes include a unit on history of public health at Oxford University that explores disease, medicine and colonial expansion. In politics and strategies for change in health policy at Harvard University, students learn how to develop political strategies for influencing health care policy, and how political analysis can improve health policy research and its implementation at the national, state and local levels. Topics include political strategy; lobbying and special interest groups; the media and public opinion; campaigns, elections, and health policy; building coalitions; and grass-roots advocacy.

1.7 Social science research methods

Several programmes provide specific training in a broad suite of social research methods in public health. Mahidol University in Thailand offers courses in the main concepts of social research theory including hypothesis building, units of analysis, variables, design; philosophical basis of quantitative and qualitative research methodologies; deductive and inductive theory construction; grounded theory; phenomenological approach; positivism and objectivity; hermeneutic approach; feminist methodology; types of research; proposal development; formulation of research problems; conceptual framework and hypotheses formulation; sampling methods; data collection, data analysis, interpretation and writing research reports, narrative reports, content analysis etc. Similarly, Brunel University, UK, provides a one-year programme in research methods in the social sciences leading to the degree of Masters of Research Methods (MRes). This programme was developed specifically to enhance the research skills of students interested in undertaking PhD research.

Again approaches vary from institutions that provide training within the context of the disciplines in which they were developed and applied, to those that teach the various research methods as a suite of skills for data collection. Some courses are integrated within specialized topics so that it is possible to train in: research methods for working with drug and alcohol abuse; research for ethnic minorities and hard-to-reach populations; child-focused research; and methods for adolescent health research. Several public health programmes teach generic courses in 'quantitative methods' comprising bio(social)statistics, epidemiology and survey design, and 'qualitative methods' comprising exploration of the principles and practice of using qualitative methods in health research, identification of appropriate qualitative designs for health research, assessment of the advantages and disadvantages of a range of designs and data collection methods, and data analysis. Qualitative social research methods/courses include:

- Participatory approaches and qualitative research. This course provides an introduction to participatory action and qualitative research for health – the concepts, process and history.
- Health systems research. This course examines the strengths and weaknesses of the different approaches and methods for assessment of health systems, and highlights when and in what context they can be used.

- Rapid appraisal. Courses introduce participants to the collection of succinct and robust qualitative data on a specified subject over a short period of time. The techniques include interviews, focus group discussions, community and social mapping, and network analyses.
- Health project planning and evaluation. This aims to develop skills and understanding of the principles involved in evaluation in addition to use of practical toolkits for evaluation.
- Data analysis in social research. This includes meta-analysis, content analysis, grounded theory construction, within and cross-case analysis.
- Macro and micro linkage techniques. This course includes projective techniques, qualitative researching with text, pictures and sounds, understanding data, and report-writing techniques.

Institutions with various levels of strength in a number of social science methods training include:

- Mahidol University, Thailand
- Bergen University, Norway.

Other related courses

Courses associated with tropical public health, which also require substantial understanding of applied social sciences, include:

- Family and reproductive health, offered through institutions such as the Johns Hopkins Bloomberg School of Public Health and the Institute for Population and Social Research at Mahidol University, Thailand.
- Women's health and modules on gender and health offered through institutions such as the Liverpool School of Tropical Medicine and Humboldt University, Charité, which emphasize: global and country-specific distribution of health risks and resources, selected major health problems that particularly affect women including the conditioning factors for regional or global increase, different concepts of health and health care in the social and cultural context, basic gender definitions and the associated ways of explaining and interpreting correlations between gender and health.
- Development studies which explore the complexities of development in an interdisciplinary way. This is a good example of a new discipline that has evolved from interdisciplinary work. The courses cover a wide range of issues such as poverty, gender inequality, governance, social policy, rural development, industrialization, the environment, trade and finance. Theory is combined with empirical and policy analysis of past and contemporary issues. Various programmes expose students to the concerns of international agencies such as the United Nations (UN) and the World Bank, governments from both the North and South, and all sections of civil society including non-governmental organizations, local communities and private sector actors. A well-established graduate programme and further resources are available through the University of Sussex, UK.

Further resources

The Massachusetts Institute of Technology (MIT) and Johns Hopkins University provide excellent free on-line educational resources for a range of subjects known as OpenCourseWare, which provides course materials for faculty, students and 'self learners'. While there is no particular focus on public health, the resources in applied anthropology, economics, political science and women's studies provide useful background material.

The range of programmes summarized above demonstrates a robust body of knowledge and training resources in the methods, principles and practice of applied social sciences for public health. However, it is clear that the programmes are necessarily broad in their focus to meet the needs of students from countries in both the North and South and from tropical disease endemic and non-endemic countries.

The development of the TDR award programme for higher degree training in ASSPH offered in endemic countries and available to participants from endemic regions is timely and offers an ideal opportunity to develop courses that respond to the current needs of the relevant countries while building upon and adapting the available resources. The choice of multi or interdisciplinary approaches has to be based on the local context and needs. A need for specialist training in the social science of health economics in sub-Saharan Africa has, for instance, been recognized by TDR. It may be that similar needs will be identified in health geography or medical anthropology. That does not, however, argue against the need for the interdisciplinary health social scientist in public health.

1.8 Models of delivery

Teaching of these courses remains predominantly through contact of students with teaching staff using standard didactic lectures, interactive seminars, and tutorials. The competing demands of work and other personal circumstances as well as a growing body of research and literature on effective pedagogy have resulted in the exploration of other forms of delivery of courses. The Centre for Applied Research in Educational Technologies at Cambridge University, UK, holds an archive of the resources in this area and is developing a database of innovative modes of delivery over a range of disciplinary and interdisciplinary areas.

Intensive block-mode teaching enables the delivery of full course materials over a short period of time instead of spreading it over the duration of an academic semester or year. Pedagogically, block-mode delivery has to be suited to the course content because of the lack of opportunity for sustained reflection on the course content. If the knowledge is not applied, the skills gained are often quickly lost. However, block delivery provides an alternative for students who have other commitments and have constraints on the time they can give to further education. The Tropical Health Programme at the Australian Centre for International and Tropical Health and Nutrition at the University of Queensland has successfully run its higher degree programmes in a series of block modes for many years.

Distance learning also offers an important alternative for programmes awarded through institutions in high-income countries. While this is an increasingly popular mode of delivery by several well-established institutions in the UK to their international markets, the logistics of delivery in the absence of high-speed Internet services and reliable modes of communication have curtailed its success in lower income countries. Modes of delivery here include web-based learning with web cast lectures and communication with staff support using programmes such as Web CT. More traditional forms of distance learning with printed resources, CD Rom and email support are also a possibility. Disadvantages include the extent of self-discipline required in independent study and the lack of direct interaction with peers and academic staff. Public health and ASSPH have not utilized these forms of delivery, possibly because pedagogically the content area lends itself to more direct and interactive modes of teaching and learning. However, the potential of distance learning needs to be further explored, while resources exist to support the development of distance learning resources through institutions such as the Open University.

2. A Strategy for ASSPH Research Capacity Strengthening in Resource-Poor Countries

Current models of capacity building are essentially a high-risk investment, training a limited number of people from resource-poor countries in high-income countries. This model remains short term and is not an economically sustainable strategy for ASSPH research capacity building. Longer term strategies are needed. In-country and regional level training offer obvious cost advantages.

There are a number of other critical advantages to in-country training. Medical developments in tropical diseases control have necessarily occurred in high-income countries in the North and there are historical reasons for this trend (Arnold, 1996). The critical mass of capacity and primary research in the field of biomedicine, even for diseases that are not endemic to Northern countries, is therefore likely to remain in the North. On the other hand, the ongoing production of social science knowledge for the analysis and development of solutions that involve social, cultural, economic and environmental factors within populations has to be grounded in locally determined priorities and this provides a critical justification for efforts to be concentrated on regionally based capacity building.

The identified need for 'implementation research' offers a further potentially exciting opportunity. While there is a body of knowledge in implementation research in organizational management and technology development, its conceptualization and the skills required are relatively new to public health. Nevertheless, some of the gaps in knowledge have been identified (TDR, 2000) and these provide a basis for the development of an interdisciplinary body of knowledge in an area that is currently not well defined. This presents an opportunity for critical reflection on the theoretical and applied skills that are needed, through breaking down disciplinary boundaries and building a body of knowledge that is based on practical identified needs. Courses can therefore evolve from existing theoretical underpinnings of ASSPH knowledge to ensure high quality programmes that are not only delivered where they are most needed but also are relevant to local needs.

The development of capacity through the strengthening of institutions locally and regionally would necessarily involve a diminishing reliance on 'Northern' institutions for training and development of research priorities and tools. A long-term strategy would take advantage of existing in-country capacity, leverage the relationships and partnerships with regional partners, and draw (to an appropriate extent) on the capacity of 'Northern' institutions. The strategy, furthermore, must take account of the social, economic, and professional levers that make it desirable for those who are trained to remain in their post, in the country, or at the very least in the region.

A cursory review of authorship of research publications shows that there is impressive, if limited capacity in ASSPH within many resource-poor countries in sub-Saharan Africa, Asia and South America. Academic and research institutions in Southern Africa for instance have shown notable leadership in areas of ASSPH with a focus on health economics (see *Report on health economics capacity in sub-Saharan Africa, available from TDR**). A strategy that concentrates this capacity in regions, while allowing for disciplinary specializations in particular countries, would support high quality, relevant and sustainable centres of excellence for research and training.

An incipient model, which has been supported by TDR, currently exists in the Health Social Science International Program at Mahidol University, Thailand.[10] The programme provides regional training to Masters level (Master of Arts [MA] by course work) and students from Cambodia, China, Indonesia, Lao PDR, Myanmar, the Philippines, Sri Lanka, Thailand, and Vietnam have been trained. The stated objectives of the programme are:

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[10] http://www.sh.mahidol.ac.th/hssip

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- To produce competent interdisciplinary researchers and scientists in the region.
- To provide basic and applied social science research in reproductive health, health equity and health of people in tropical disease-prone areas.
- To provide a forum for regional collaboration in teaching and learning.
- To create a network of health social scientists, health professionals, health policy-makers, public health personnel, and representatives of international funding agencies.

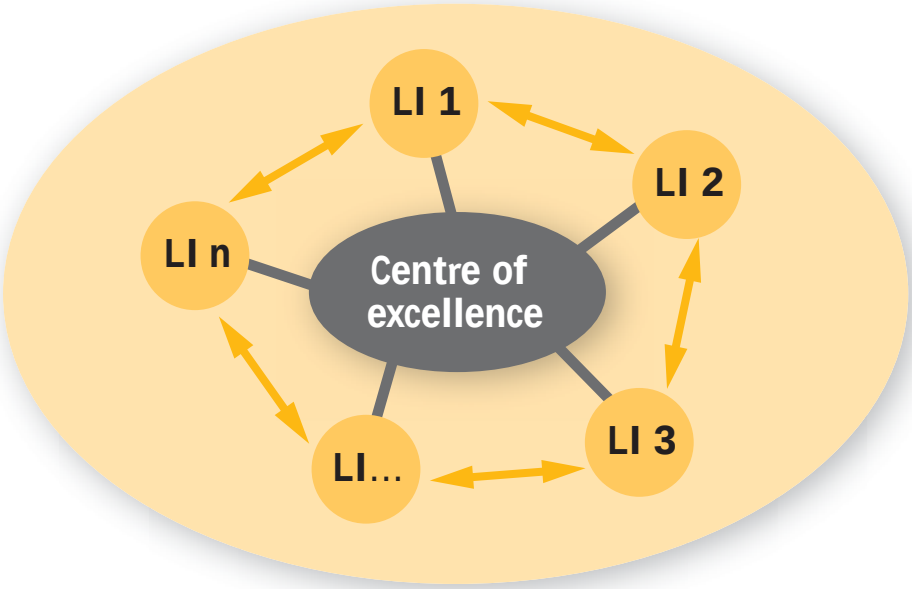
The strengths of the programme lie in its regional and disciplinary foci. The weakness, however, is in the lack of a broader strategic vision about the general development of capacity in institutions within other countries in the region and of links with other programmes in the social sciences relevant to public health.

2.1 Regional centres of excellence

There needs to be a focus on the development of regional centres of excellence in ASSPH for a number of reasons:

1. A focus on regional rather than country level will provide the opportunity to create a critical mass of the currently limited numbers of ASSPH researchers across a number of countries.
2. Countries that already have a critical mass of researchers in particular disciplines would retain that recognized expertise and act as referral points for specialization (see figure 2). This would require explicit links with the faculty of local institutions. The University of Cape Town, with its training in health economics, provides an ideal example of this.
3. Economic investment required for training would be considerably less than in 'Northern' countries. Although there has been a recent hike in fees charged by higher education institutions in sub-Saharan Africa for instance, the fees and costs of living remain much lower than in countries across Europe, the US and Australia. Several researchers can be trained in Kenya, for example, for the cost of training one individual in the UK.
4. The content of training programmes is likely to be more relevant and responsive to the needs of the specific areas in which capacity is required both locally and regionally. For the purposes of applied social sciences, in-country training provides access to field sites and ongoing projects that would provide pedagogically rich experiences for students and demonstrate the complex interactions of the social, cultural and environmental context.
5. Regional centres of excellence would provide opportunities for employment of highly qualified researchers who may otherwise be part of the draining away of health sector human resources from resource-poor countries to middle and high-income countries.
6. High quality higher degree training in ASSPH delivered regionally and locally would enhance the confidence and competence of researchers in disease-endemic countries to explore and develop basic, conceptual, analytical and applied frameworks that address the health of their populations. This would reduce the reliance on theoretical work developed elsewhere which in many instances is not applicable to local context.
7. There are a number of facilities across sub-Saharan Africa which could potentially be extended to provide locally rich, relevant and innovative learning experiences for capacity building in tropical diseases control. Institutions such as the national medical research councils that are largely funded to undertake clinical research can, with the right capacity, provide integrated ASSPH programmes as well.

Figure 2. Centres of excellence at regional level act as the nexus of critical mass for capacity building in countries with linked local institutions



LI = Local Institutions

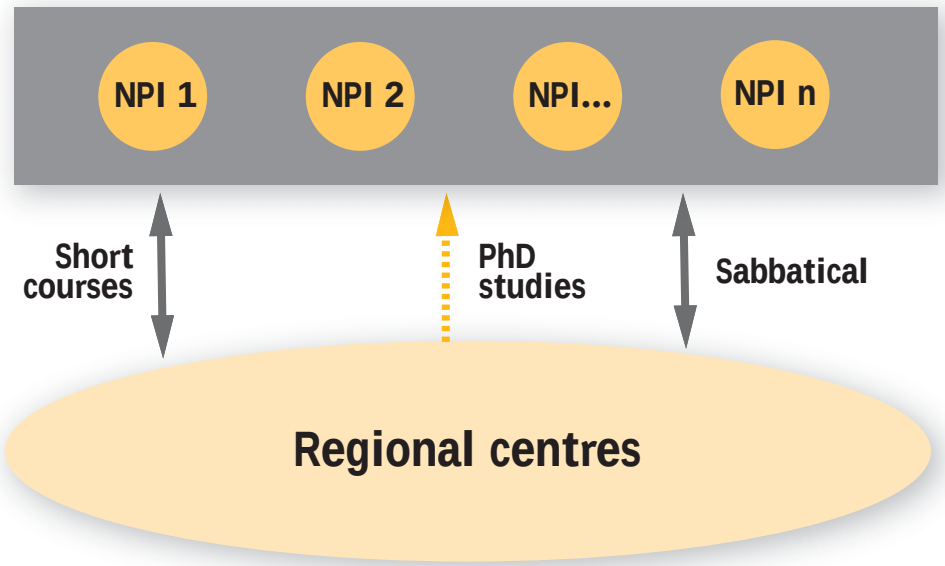
2.2 Process

Regional centres of excellence need to utilize the high-level capacity of 'Northern' institutions to the extent necessary (see figure 3). Any *reliance* on relationships with Northern institutions should however be time limited, while the development of research partnerships should be welcomed. Partnerships both within the region (i.e. between regional centres of excellence and local institutions) and with Northern partners would be reciprocal, allowing for continuing skill development and exchange of knowledge (figure 4).

The training component of the relationship would focus on the development of high-level research training capacity and on the development of training resources. In this way, an approach to the development of capacity in social sciences research within a region can be articulated in an explicitly staged manner.

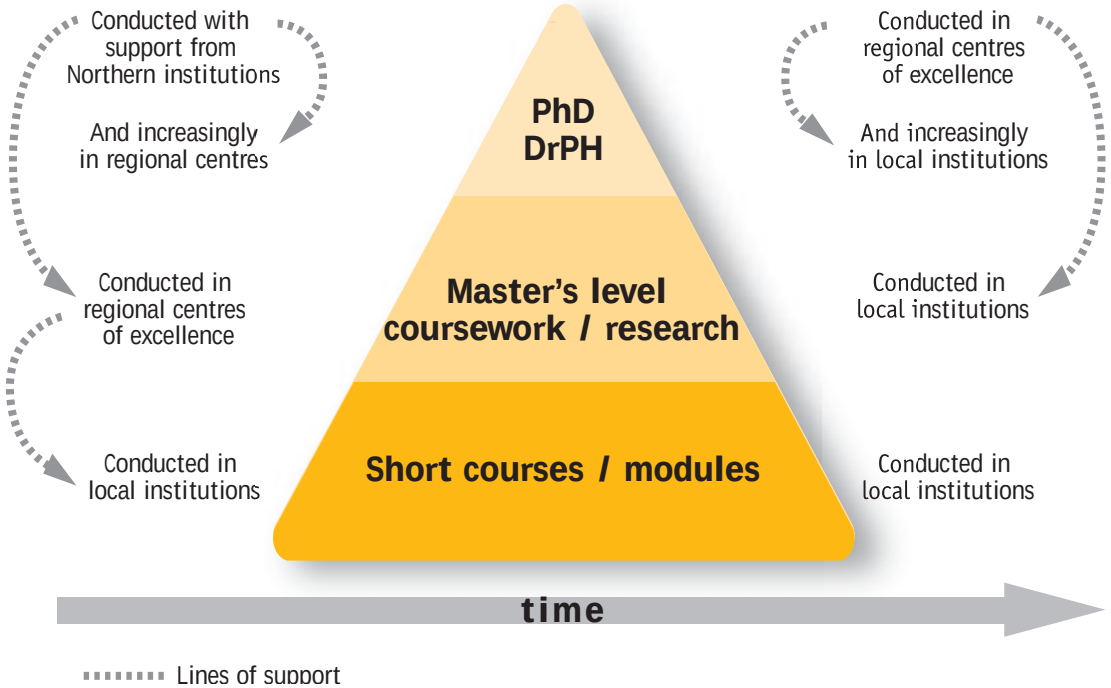
At its most basic level, the local institutions would continue to provide short courses or modules within larger academic (diploma and Masters level) programmes (TDR, 2000). These short courses alone do not produce social science researchers, but provide an ideal pathway to staging the training of higher level researchers, and will begin to fulfil the requirements for training educated consumers and commissioners of research in the ministries and NGOs. Local institutions may need support for delivering these programmes initially, but the capacity to deliver them independently should be encouraged over time and be part of the strategic planning.

Figure 3. Representation of ongoing relationships between regional centres and national and Northern partner institutions



NPI = Nothern partner Institutions

Figure 4. The pyramid of capacity building in social sciences research in public health for resource-poor countries. The transition of capacity from Northern to regional centres to local institutions is shown over time.



At the middle level, the aim is to develop Masters level training. This should be part of a staged approach to the development of research capacity, and should begin to develop confident consumers and commissioners of research in the ministries and NGOs as well as semi-independent researchers working as part of a team. Exceptional graduates at this level, particularly after experience in ASSPH, are often suitable candidates for junior academic appointments and could begin to build the training capacity within institutions. Initially, local institutions may not be able to train to this level, and in specific content areas even regional centres of excellence may require external support from external partners such as experts from within local ministries, other regional centres of excellence or Northern institutions.[11] An appropriate strategy would see regional centres of excellence quickly develop all the necessary internal capacity to conduct training at this level with external support only required on an ad hoc basis or as part of a reciprocal programme. The regional centres would support local institutions to develop their own capacity through training and sharing of materials.

The final stage of formal training is at the level of doctoral training, producing independent research leaders.

2.3 Resources required

This strategy obviously requires funding at least in the initial stages with some degree of sustainability expected through traditional funding sources for higher education institutions. Potential external agencies include TDR in possible partnerships with local and regional government institutions, international agencies that traditionally fund health and education initiatives, and philanthropic organizations. Opportunities for joint funding and cooperation among agencies towards capacity building and capacity strengthening continue to be explored (TDR, 2000).

Other strategies have been proposed and are under evaluation (Diallo et al., 2003; World Health Organization, 2006). The Canadian International Development Research Centre (IDRC) for instance is currently exploring 'virtual participation' using the Internet and distance learning for the purposes of training.[12]

[11] Models of funding support for international exchange of academics are provided through organizations such as the British Academy

[12] http://www.idrc.ca/en/ev-71249-201-1-DO_TOPIC.html

3. Proposed Programme for Research Capacity Strengthening in Implementation Research for Tropical Diseases Control

3.1 Background

The TDR RCS unit issued a call in 2003 to support the development of research and training institutions in health social sciences for implementation research. The overall objective is to ensure the relevance and to optimize the quality, outcomes and impact of implementation research for tropical diseases control through stronger social science partnerships in health policy, planning, and implementation.

The specific objectives are to:

- Strengthen selected nodal social science institutions to establish partnerships among research institutions, field research sites and district health management teams.
- Develop and upgrade social sciences competencies in implementation research.
- Foster closer links between social sciences research, policy-making and programme implementation.
- Develop the capacity to conduct R&D projects to optimize strategy for the early and appropriate management of malaria.
- Develop the capacity to define policies for the management of malaria at community level.

A series of intensive non-award courses were offered, two in Ghana and one in Kenya, that attracted students from across both regions. The first course in Ghana was restricted to Ghanaian students and the second was open to other participants within Anglophone West Africa. One course has been offered in Kenya for Kenyan students and a second, scheduled for early 2007, is open to participants from the East African region. In light of the success and apparent demand for these courses, seed funding was provided to assist in the scaling up of the courses for higher degree research awards through academic institutions.

The primary task in working through module development with teams from both sites was to establish the core competencies required by graduates of the programmes. The core competencies and learning objectives agreed upon are listed below. The processes and disciplines through which these were to be achieved differed across sites and institutions. However, given the multiple disciplines involved and the capacity and existing strengths in the two countries, this is not surprising; the models appear to be appropriate to fulfil the requirements for applied social sciences in public health more broadly, with a particular focus on the knowledge and skills required to undertake implementation research.

3.2 Core competencies

The core competencies that graduates trained in ASSPH would have to demonstrate include an understanding of the:

- Fundamental theories and concepts in the range of applied social science disciplines that relate to public health.
- Principles of and approaches to disease prevention and control.
- Factors that affect access to appropriate health services.

- Phases of implementation of disease control programmes and the factors that affect successful implementation.
- Impact of contextual (social, cultural, political, organizational, ethical, economic) factors on public health policy, research and control programme implementation.

Graduates would also have to demonstrate the:

- Application of research techniques in the applied social sciences within the cross-disciplinary requirements of public health and disease control.
- Skill set to clearly articulate a research question, and to design and undertake a research project in public health and disease control.
- Ability to analyse and interpret public health data produced from a range of related disciplines.
- Ability to analyse critically the challenges inherent in disease control programmes, and to develop, test, evaluate and revise strategies that improve access to health interventions and implementation programmes.
- Ability to work comfortably within a multidisciplinary team.
- Ability to effectively communicate research in applied social sciences in public health through verbal and written media.

The following sections provide background information on the existing capacity and model programmes planned for the two regional centres.

Case 1. Ghana: Review of current and proposed training programmes

The bid to develop a training and research programme in health social science for sub-Saharan Africa was won by a consortium in Ghana comprising the School of Public Health of the University of Ghana, Legon, the Health Research Unit of the Ministry of Health, and the Partnership for Social Sciences in Malaria Control (PSSMC). The background presented below follows a consultation with public health researchers and practitioners in Accra (see appendix 1).

The School of Public Health

The school of public health at Legon was established in 1994 as one of three African programmes participating in the Public Health School Without Walls programme. The Master's of Public Health was supported through Tulane University and the Rockefeller Foundation. It was absorbed into the College of Health Sciences as one of six schools in 1999 and over 200 students have now graduated. The School currently consists of six academic departments covering the areas of:

- Social and behavioural sciences.
- Population, family and reproductive health.
- Health policy, planning and management.
- Epidemiology.
- Biostatistics and research methods.
- Biological, environmental and occupational health sciences.

The seventh department under the school is the Ghana Malaria Centre. The school offers a range of programmes at Master's, M.Phil and PhD levels and also runs a series of responsive short courses. Local collaborations exist with the Ghana Health Service, Noguchi Memorial Institute for Medical Research, and Health Research Unit. International collaborations include the International Network of field sites with continuous Demographic Evaluation of Populations and their Health in developing countries (INDEPTH) network, Harvard School of Public Health, Johns Hopkins Bloomberg School of Public Health, London School of Hygiene and Tropical Medicine, Brunel University, Gates Malaria Partnership, and TDR.

Ghana is in a strong position to take leadership as the West African regional centre for training in this area for a number of reasons:

- A number of TDR scholars have already been trained in a range of social science disciplines in Ghana and, in addition, there is strong existing capacity, trained both locally and overseas, working across a range of government and non-government organizations.
- There are several externally funded projects in disease control, mainly malaria and HIV, and there appears to be reasonable coordination of efforts between these, either through the School of Public Health or the health research modules, so providing a robust research environment for students.
- Ghana currently has three established demographic surveillance systems, in Navrongo, Kintampo and Dodowa, with a strong focus on high quality community-based research. These could serve as excellent sites for training placements for capacity building. The Centres are under the auspices of the Health Research Unit of the Ghana Ministry of Health and are part of the INDEPTH network. Dr Margaret Gyapong, the lead person on the Ghanaian team, is also director of the Dodowa site. The vision for Dodowa is to become a leading centre for public health social science research; there is the potential for this vision to be realized, and it presents a unique opportunity for innovative and groundbreaking research in ASSPH.
- The School of Public Health has the advantage of its co-location with the Noguchi Memorial Institute for Medical Research, the Gates Malaria Program, and the Johns Hopkins Population, Family and Reproductive Health Program, which is a joint activity with Johns Hopkins and is strongly linked to the Health Research Unit which coordinates the demographic surveillance sites. These programmes extend the breadth of exposure for students. In addition, most of the teaching staff on the existing Masters of Public Health programme and from the Social and Behavioural Research Unit are drawn from researchers and practitioners associated with these programmes, giving students access to rich, relevant and practical research training as well as a sound theoretical background across the range of disciplines available to all these programmes.

While these strengths are impressive, there are also a number of challenges to the development of higher level degree programmes in public health social sciences and to scaling up facilities to provide regional level capacity:

- There is a need for leadership to coordinate and support the creation of a critical mass and optimal use of public health capacity.
- There is a serious lack of incentives within the higher education system in Ghana to retain capacity within the universities. Recent figures show that less than 20% of academic staff within the University of Ghana are under the age of 40 years. Almost half are over 50 years old. The gender breakdown of academic staff also gives rise to some concern; women make up just over 21% of all university staff, and less than 20% of senior academic staff. There is currently some negotiation between the unions and government on the pay conditions but there is no current evidence that this has resulted in improvement in staffing.
- The School of Public Health relies heavily on part-time staff seconded from the Ministry of Health and other public health related organizations. While this presents the advantage of exposing

students to real breadth of expertise and experience, in the absence of proper leadership and coordination, there is a risk of lack of coherence and theoretical strength in the modules offered.

- The fees set for programmes by the School of Public Health are not competitive. The current fee for the Masters in Public Health (MPH) for local Ghanaian students is set at the equivalent of around US$ 4000.[13] In addition to this, students are required to raise a further US$ 6000 for programme related expenses. Current enrolments are largely from staff of the Ghana Health Services, which in some cases subsidizes the fees. The fee for international students is approximately USD$ 2000 higher than for local students. If programmes are to be opened up for both local (Ghanaian) and regional students, the fee structure may either need to be reviewed or some bursary or scholarship system set up to assist potential participants.

There are a number of other public health related training activities in other institutions in Ghana such as the Kwame Nkrumah University of Science and Technology in Kumasi. The INDEPTH network also provides opportunities in public health research and leadership capacity building centred on the activities of the three demographic surveillance research sites, and supports higher degree training in epidemiology. The networking between most of the groups within Ghana appears to be good. With this infrastructure, Ghana is therefore in a strong position to continue to explore models of capacity building in this area.

Short courses for implementation research training

Two related courses for implementation research have been run in Ghana. The first, Health Social Sciences in Implementation Research, ran for two consecutive years (2004 and 2005) and trained a number of researchers. Participants came from Ghana, Nigeria, and Cameroon, and from diverse professional backgrounds including research centres, district health management teams, universities and non-government organizations. The minimum required qualification was a diploma, and the course content included sociology, health economics, health policy and planning, ethics, etc. Social science methodology was stressed, being the key priority in implementation research, and emphasis was laid on proposal development, data collection techniques and data analysis. The second course was specifically tailored to malaria interventions and aimed to convey skills on how to influence policy with research and how to undertake advocacy for policy development, as well as to teach people from different disciplinary backgrounds in the health social sciences to work together as a multidisciplinary team in developing and implementing malaria control.

Given the strong links between the current research and training courses and the coordination role played by the School of Public Health, the two courses were well integrated, and proposals developed for the higher degree programmes were built from a mixture of content of the two courses.[14]

Two models have been proposed and will be submitted for academic board approval for applied social science in public health training:

1. Master of Public Health in Applied Social Science for Public Health – MPH (ASSPH)

2. Master of Science in Applied Social Science for Public Health – MSc (ASSPH)

The programme specifications are outlined below.

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[13] Compared, for instance, to a Masters in Business Administration that charges one-tenth of this fee, or to the Masters in Health Promotion offered through the Kwame Nkrumah University of Science and Technology in Kumasi for US$ 2500 [NB: these figures were correct at the time of submission of this report].

[14] Detailed reports of these courses are available through RCS-Plus, TDR

Master in Public Health (health social sciences)

The attraction of this programme is in the opportunities it offers to develop core skills in public health with the option of specializing in research associated with applied social sciences for public health and the implementation of control programmes. The programme runs full time for one year; entry requirements are a good first degree in a relevant discipline and three years of relevant work experience.

The core MPH components are:[15]

- **Biostatistics and research methods**

Descriptive statistics; data presentation; measures of central tendency; measures of dispersion; normal distribution; probability concepts; tests of significance; levels of confidence; sampling and estimation of sample sizes; multivariate analysis; computer data processing and use of statistical packages; concepts of enquiry in public health; descriptive, cross sectional, longitudinal, operational, analytical, case control and cohort experimental studies.

Research design; problem formulation; selection of methods; qualitative and quantitative studies; survey instruments; focus groups; participant observation; literature studies; review of secondary sources (special registers, coroner's register, health institutional data); teamwork; proposal development.

- **Human ecology**

Environment and impact on health and disease; ecological considerations; population growth; urban–rural ecology; human impact on ecosystem; degradation.

- **Biological basis of public health**

Basic physiology; biochemistry; molecular biology; genetics and applications to health of populations; introductions to immunology; immunity and theory of immunization; parasitic, viral and other microbial life of public health significance; diagnostics in public health; nutrients and micronutrients; drugs of public health importance; measurement and effects of environmental hazards.

- **Principles of epidemiology**

Definitions and uses of epidemiology; disease measurement and significance of indices used; mortality measurement; standardization of rates; epidemiological methods – descriptive, analytic, experimental; application of epidemiology to investigation of epidemics and community diagnosis; communicable and non-communicable disease; screening; new concepts e.g. the disability-adjusted life-year (DALY), and high risk groups.

- **Organization and management of health services**

The health system and its organization; history of development of health services; organization of the ministry of health; other health services; health care by religious organizations and NGOs; traditional health systems; public health laws; international health organizations; international health reform.

- **Behavioural science**

The module is based on the premise that most of society's health and disease problems are behaviour/lifestyle induced. Students are exposed to the social, economic, political and cultural contexts within which health and illness occur, and opportunities are given which enable the students to appreciate public health and related problems more holistically and to assess critically the impact of sociocultural dynamics on the health-seeking behaviour and groups in society.

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[15] Detailed reports of these courses are available through RCS-Plus, TDR.
WHO/TDR, 20, Av. Appia, 1211 Geneva 27, fax: +41 22 791 4854, e-mail: tdr@who.int

- **Population studies**

Scope of population studies; factors affecting population size and distribution; geographical, environmental, social economic and demographic factors in health; population density and migration; population composition: sex, age, labour force, race, ethnicity, religion, education and health; fertility patterns; population growth theories; demographic and epidemiologic transition; population policy.

In addition to these, the applied social sciences for public health components of the programme include:

- **Implementation research (new module)**

This aim of this module is to provide an overview of the principles underlying implementation research. Students are expected to:

- develop an understanding of the complex factors that affect sustainable adoption of disease control programmes and interventions
- design and undertake relevant and rigorous research.

Implementation research for disease control is applied research that aims to develop the critical evidence base for the effective and sustained adoption of interventions. It deals with the knowledge gap between efficacy, effectiveness, and current practice to produce the greatest gains in disease control. Implementation research involves the systematic and critical investigation and analysis of the dynamic processes that influence how individuals, populations and health systems adapt in order to adopt new technologies and interventions.

As defined, the focus of implementation research begins conceptually with a proposed intervention which is expected to deliver health gains, and systematically describes and analyses the process and outcomes from pre-intervention through to successful adoption or failure of the programme.

The overall goal of implementation research in disease control is to develop, test and modify strategies and policies that improve access to interventions, facilitate successful uptake, and ensure sustainability.

Students will be introduced to the conceptual basis of implementation research, which addresses the issues associated with:

- Pre-intervention – development and efficacy of the intervention (proof of principle); baseline information on the population (understanding the community, current access); systems and policies that relate to the intervention.
- Intervention – testing new interventions and methods to improve access; community-based trials.
- Monitoring and evaluation – behaviour change and compliance; system transformation.
- Sustainability – best practices.

The course content includes: multilevel case studies on cultural and social relations in the community; who is at risk and why; appropriate targeting of limited resources; practice and policy factors; external influences and monitoring of processes and economic drivers; the design and testing of iterative and participatory and action research techniques appropriate to interventions; analysis of intra-governmental issues around power and responsibility, organizational psychology, and the relationships between governmental and non-governmental agencies.

- **Fundamentals of applied social science for public health (new module)**

The aim of this overview unit is to introduce students to the range of social sciences and their theoretical underpinnings that are applied in public health research and practice. These include anthropology, demography, economics, geography, law, political science, psychology and sociology. Students will explore the challenges of multidisciplinary, interdisciplinary and cross-disciplinary research and practice.

Social science is the study of society and the manner in which people and communities interact with each other and the world around them. Social science includes the disciplines of anthropology, demography, economics, geography, law, political science, psychology and sociology, each of which is grounded in different philosophical assumptions and traditions. The applied social science disciplines developed in response to increasing specialization in the areas employing and adapting the fundamental principles of the disciplines to the study of contemporary societies. Applied social science for public health is an interdisciplinary and dynamic field which integrates the knowledge and tools for research and analysis from a range of these disciplines for the purpose of understanding the various determinants of health and developing solutions to public health problems.

The purpose of the course is to integrate effectively the diverse theoretical health social science knowledge presented throughout the programme. It includes critical review and analysis of the literature, health social science theories, and how to construct appropriate theoretical frameworks and research methodologies.

The unit provides an overview of the theoretical approaches and developments in the applied social science disciplines, and critically evaluates the different ways in which research in these areas contributes to public health policy and practice in general and to disease control in particular.

Students are expected to participate by sharing ideas, exchanging different cultural perspectives, drawing from their various experiences, and offering suggestions for their colleagues' research. Applied exercises and field visits will be included.

By the end of the module students are expected to demonstrate:

- An understanding of the relevant theories and methods across a range of disciplines associated with public health.
- The relationship between the underlying principles and theories in applied social sciences in public health.
- The application of appropriate applied social sciences theories and methods to the analysis of public health problems.
- An understanding of research and analysis of public health related reports produced from different disciplinary perspectives.

- **Behaviour change communication, advocacy, community mobilization, health promotion (information, education and communication [IEC] - new module)**
- **Health policy, programme development and implementation**

Developing and reviewing public health policies (practical issues relating to the use of research findings in policy formulation); evaluating options for policy and programmes; advocacy for policy and programme development/implementation; strategic planning process and stratification.

- **Proposal development and data collection**

Trainees will be taken through the implementation research cycle, by the end of which they will have covered proposal development and data collection:

- Pre-intervention phase
- Intervention phase
- Logical framework
- Budgeting
- Monitoring and evaluation.

- **Field attachment, data analysis and report writing**

The MPH model of field attachment for 16 weeks will be followed. However, students following the health social sciences course will be brought in two weeks earlier from the field to undertake qualitative and quantitative data analysis and report writing in preparation for working on their dissertations.

Master of Science (MSc in applied social science in public health/health social science)

The objective of this programme is to provide students with a broad background in applied social sciences for public health with a focus on the social science theories that underpin the methods of implementation research. Students in this programme will share modules with the MPH (ASSPH) students but will not be required to undertake the core modules in public health. Instead they will undertake the ASSPH modules as described above, and other options on:

- **Social science theories in public health**

Public health is about the prevention of diseases, injuries and disability, as well as the promotion of good health, all of which require change in human behaviour. This module examines, in detail, theoretical frameworks in the social sciences such as the health belief model, social cognitive theory, stage theory, theory of reasoned action. Emphasis will be given to the application of these theories in public health practice, in the design and evaluation of public health interventions, and in research.

- **The political economy of health and health care**

Issues of health, illness, and health care are embedded in the changing social, economic and political structures. This course will examine the social, economic and political determinants of health care systems over the last few decades. Students will have the opportunity to review and debate the theories of health policy and priorities over the years, and to critically examine reforms in the health sector and the factors that have informed such reforms. Other issues include the brain drain, health financing, manpower training, and development.

- **Health and development in the third world**

The relationship between health and development. Students will be given the opportunity to participate in the debate by examining the various social, economic and political changes that have taken place in the developing world, and by analysing the impact such changes have had on the health status of populations.

- **Pluralistic medical systems in the third world**

Indigenous people have developed regimes for addressing their health needs. With the introduction of biomedicine, the pattern of health-seeking behaviour has changed to accommodate these diverse health resources. This course will examine the rationale for the existence of several medical systems in the developing world and look at how these health resources are utilized at the individual and national level.

- **Social science methods and health systems research**

This module examines the wide range of social science theories that draw attention to different aspects of individuals and society and demonstrate how different ways of seeing the world lead to different types of research questions and explanations and to different methods of research. Particular focus will be given to qualitative research methods.

Applicants may also enrol for a Master of Philosophy (M.Phil), which is available as a four-semester programme, or for a PhD.

In addition to these and based on feedback from previous trainees who attended short courses, a number of short courses will be submitted for approval to enable external non-award applicants to attend specific courses, as well as to provide electives for enrolled students. Attendees may receive credit towards future exemptions if they subsequently and formally enrol in an award programme.

Short courses

- Geographic information systems in health.
- Social epidemiology.

- Cultural epidemiology.
- Rapid community assessment.
- Computer assisted data analysis.
- Group dynamics and team building.
- Writing for peer-reviewed journals.
- Social science data collection techniques and tools.

Both programmes and the short courses will first be submitted to the academic board of the School of Public Health and then to the academic board of the University of Ghana for approval. Subject to approval, it is expected that the courses will be offered during the 2007/2008 academic year.

There is ongoing exploration of other methods of delivery including distance learning through the World Wide Web or CD-ROM based resources. These will need to be developed and options for this are being explored through alternative sources of funding.

Case 2. Kenya: Review of current capacity and proposed training programme

The bid for implementation research short-course training was won by the Institute of African Studies (IAS), University of Nairobi, in collaboration with Merlin – a UK-based NGO involved in malaria control activities in Kenya – for field placement of the course participants. Thirteen participants attended the course in the second half of 2005. As a team, the two institutions were able to provide both the infrastructure and human resources required for the training activities. The field station is located in three districts of Kisii in South-western Kenya, where Merlin has been working since 1998 when the area experienced an upsurge in malaria infections.

The IAS has an international reputation for promoting and conducting original research in African studies with a focus on material, social and cultural anthropology, history, musicology and dance. The medical anthropology programme is relatively recent but, with strong leadership, has grown rapidly in reputation, capacity and output. IAS courses in applied areas such as gender and development, and research partnerships with national and international NGOs and multilateral agencies, have supported growth of the institute. Recent and ongoing collaborations in public health are with institutions including the DBL-Institute for Health Research and Development, United Nations Development Programme (UNDP), the Population Council, the World Health Organization (WHO), Kenya Medical Research Institute (KEMRI), and Medical Research Council (MRC) Tanzania.[16] The IAS produces an annual journal, Mila ('culture' in Kiswahili), which publishes papers beyond the focus on culture and in recent years has included more papers on medical anthropology. There are plans to make Mila a biannual journal.

The Institute runs the Nyang'oma Research Training Site (NRTS) which is used to train students on a number of issues relating to field research. Several research projects have been conducted in this area, with the active involvement of the local community. NRTS is open to other researchers besides those from IAS.

The IAS has a faculty of 15 and potential for growth. In addition to these faculty members, the IAS is able to call on expertise from researchers and practitioners in a range of public health related areas both from within the University of Nairobi and from external institutions including the Ministry of Health and Kenyatta University. Some modules are co-taught with the Department of Community Health, which runs an MPH programme, and it is expected that this partnership will continue through the implementation research programme. The fee structure is currently under revision.

[16] For updated details on projects, partners and funding agencies, visit the IAS website at www.uonbi.ac.ke/faculties/ias

There are also several other institutions in Kenya that provide, or have the potential to provide, generic health social science training programmes. Most of these institutions focus on courses that teach research methods without offering a theoretical basis. They include the Postgraduate Diploma in Biomedical Research Methodology within the University of Nairobi Institute for Tropical and Infectious Diseases (UNITID) and the Master of Public Health programme (largely restricted to medically qualified graduates). The Great Lakes University in Kisumu is a recently accredited private institution, formerly the Tropical Institute of Community Health and Development, which conducts a Master's degree programme in Community Health and Development. Various social science capacity building training courses are also offered through KEMRI. A number of other research centres and institutes could also potentially provide fieldwork training experience for students, such as the urban slum demographic surveillance system run through the African Population and Health Research Centre (APHRC). However, strong leadership is required to bring this capacity together. The potential critical mass this could form is impressive, but effort and encouragement will be needed.

Short-course training in implementation research

The IAS short course on implementation research was advertised locally and attracted 137 applications. Fifteen candidates were short-listed on the basis of involvement with disease control programmes, computer literacy and links to district health management teams; 13 attended the course and provided a positive evaluation.

Proposed implementation research training programmes

The specific objective of the implementation research programmes is to provide students with effective research and analytical tools relevant to undertaking applied social sciences research for disease control within the broader framework of anthropology. The IAS proposes two options for applied social sciences in public health: an MA programme in applied social sciences for public health and an MA programme in medical anthropology. These programmes are outlined below.

MA in applied social science for public health

The MA programme in ASSPH is designed to cater for graduates in the social sciences and health-related disciplines interested in applying their knowledge of social sciences. This MA programme has been revised in response to the increasing demand for applied social science training and skills to address current public health problems and challenges in Kenya and globally. There are two modules, for which the regulations and syllabus apply to all candidates.

The specific objectives of the programme are to:

- Provide students with sound theoretical and practical knowledge in applied social science for public health.
- Equip students with effective research tools relevant to applied social sciences for public health.
- Provide a forum for the exchange of current thinking in applied social science and public health knowledge and research.

Entry requirements

Common regulations apply to Masters degrees in all faculties, institutes and schools of the University of Nairobi (UON). The following applicants are eligible for admission:

- Holders of a first degree with second class honours, upper division, from an institution recognized by UON.
- Holders of a first degree with second class honours, lower division, and a postgraduate diploma or certificate from an institution recognized by UON.

- Holders of a first degree at pass level with relevant work experience of three years and a post graduate diploma or certificate from an institution recognized by UON.

Course structure and duration

There are two Masters degree programmes in ASSPH:

- MA in ASSPH by coursework, examination and thesis (academic option and thesis takes one academic year).
- MA in ASSPH by coursework, examination and project (applied option and project takes one semester).

The thesis is equivalent to eight course units and the project to four course units.

A candidate for the MA in ASSPH by coursework, examination and thesis is required to successfully undertake eight taught course units comprising six core units and two elective units. The candidate is also required to conduct research and write a thesis in the field of implementation research.

A candidate for the MA in ASSPH by coursework, examination and project is required to successfully undertake twelve taught course units, comprising six core units and six elective units. In addition, candidates are required to undertake a project in the field of implementation research.

The course duration is a minimum of two academic years (three semesters) and a maximum of five academic years (12 semesters) from the date of registration; the maximum period may be extended only with the prior approval of the UON senate. Candidates are required to take a minimum of two course units and a maximum of six course units per semester. Each course is taught for a total of 60 contact hours.

Transfer of credit(s)

Applicants who have undertaken equivalent Masters courses at other universities recognized by UON may, on recommendation of the IAS and approval of the UON senate, be allowed to transfer the credits up to a maximum of one third of the courses offered in the programme. Students desiring to receive credit for any prior course will be required to make a formal request through the director of the Institute of African Studies to the director of the Board of Postgraduate Studies, and to pay an appropriate fee. The application must be accompanied by officially endorsed supporting documents including the institution's syllabus for relevant courses.

Course outline

Core courses

NAF 601: Social science research methods and statistics

NAS 600: Fundamentals of applied social science for public health

NAS 601: Implementation research for disease control

NAS 602: Epidemiology

NAS 603: Disease control tools and strategies

NAS 604: Health systems and operations research

Electives

NAS 605: Economics of disease control

NAS 606: Applied anthropology for public health

NAS 607: Health promotion

NAS 608: Health policy and development

NAS 609: Culture, health and disease

NAS 610: Ecology, health and disease

NAS 611: Social science of tropical diseases

NAS 612: Principles of health as rights and equity in health

NAS 613: Medical ethics and health care rights

NAS 614: Social transformation and health

NAS 615: Population and health

NAS 616: Environmental psychology

NAS 617: Health psychology

Examination regulations

The standard regulations governing masters degrees of the UON apply:

- Written examinations:

  - An examination for each course unit is held at the end of each semester.

  - Candidates must sit and pass all the examination papers.

  - Each course is examined through a three-hour paper.

  - The pass mark is 50%.

  - Continuous assessment constitutes 40% of the final overall mark and the written examination 60%.

  - A candidate who fails any paper(s) but who scores no less than 40% marks in that paper(s) may be allowed to re-sit the failed paper(s) up to two times on recommendation by the Institute's Board and approval by the UON Senate and during the next ordinary university examination time.

  - A pass obtained in a re-sit examination accounts for only 50%.

  - A candidate will be discontinued if he/she: fails more than one paper or obtains less than a 40% mark in any paper in the ordinary university examination; or fails at the second re-sit attempt in any paper or fails to complete the programme in the prescribed duration of twelve semesters.

  - Coursework is assessed on the basis of seminar papers and tests.

- Research project:

  - The pass mark for the research paper is 50%.

  - The project is equivalent to four taught course units.

  - A candidate who fails the project paper will be allowed to re-submit a revised paper for examina tion up to two times within the prescribed time.

  - A candidate will be discontinued if he/she fails the second re-submitted project paper or fails to complete the project within the prescribed study period.

  - A pass obtained in a re-sit examination or in a re-submitted project paper accounts for only 50%.

- Thesis:

  - Candidates are required to submit a thesis proposal to a panel of no less than two members of staff appointed by the Institute's curriculum and examinations committee within three months of the end of the first year. If the proposal is found to be acceptable, the Institute Board confirms the panel as supervisors and forwards their names and the approved thesis proposal to the UON Senate through the Board of Postgraduate Studies. The thesis will be about 30 000 words in length.

- Where the Institute lacks supervisors with specialized knowledge in a given area, the Institute Board, upon recommendation of its Curriculum and Examinations Committee, may appoint an outsider to sit on the panel of supervisors, subject to confirmation by the UON Senate.

Module descriptions

- ***NAF 601: Social science research methods and statistics***

  The foundations of social research; epistemological issues: positivist and interpretivist paradigms; elements of research; research design; measurement; sampling and sampling strategies; ethnography; qualitative data collection methods; quantitative data collection methods; ethics in social science research; qualitative data analysis techniques; statistical concepts; data presentation; descriptive statistics; probability theory; non-parametric methods; inferential statistics; computer-aided data analysis.

- ***NAS 600: Fundamentals of applied social science for public health***

  The aim of this overview unit is to introduce students to the range of social sciences and their theoretical underpinnings that are applied in public health research and practice. These include anthropology, demography, economics, geography, law, political science, psychology and sociology. Students explore the challenges of multidisciplinary, interdisciplinary and cross-disciplinary research and practice.

  Social science is the study of society and the manner in which people and communities interact with each other and the world around them. Social science includes the disciplines of anthropology, demography, economics, geography, law, political science, psychology and sociology, each of which is grounded in different philosophical assumptions and traditions. The applied social science disciplines developed in response to the increasing number of specialized areas employing and adapting the fundamental principles of the disciplines in the study of contemporary societies. Applied social science for public health is an interdisciplinary and dynamic field which integrates the knowledge and tools for research and analysis from a range of these disciplines for the purpose of understanding the various determinants of health and developing solutions to public health problems.

  The purpose of this course is to integrate effectively the diverse theoretical health social science knowledge presented throughout the programme; to critically review and analyse the literature; and to learn about health social science theories and how to construct appropriate theoretical frameworks and research methodologies.

  The course provides an overview of theoretical approaches and developments in the applied social science disciplines and critical evaluation of the different ways in which research in these areas contributes to public health policy and practice in general and to disease control in particular. Students are expected to participate by sharing ideas, exchanging different cultural perspectives, drawing from their various experiences, and offering suggestions on their colleagues' research. Applied exercises and field visits are included. By the end of the module students are expected to demonstrate:

  - An understanding of relevant theories and methods across a range of disciplines associated with public health.

  - The relationship between the underlying principles and theories in applied social sciences in public health.

  - The application of appropriate applied social sciences theories and methods in the analysis of public health problems.

  - An understanding of research and analysis of public health related reports produced from different disciplinary perspectives.

- ***NAS 601: Implementation research for disease control***

  The aim of this module is to provide an overview of the principles underlying implementation research. Students are expected to:

  - Develop an understanding of the complex factors that affect sustainable adoption of disease control programmes and interventions.

  - Design and undertake relevant and rigorous research.

  Implementation research for disease control is applied research that aims to develop the critical evidence base for the effective and sustained adoption of interventions. It deals with the knowledge gap between efficacy, effectiveness, and current practice to produce the greatest gains in disease control. Implementation research involves systematic and critical investigation and analysis of the dynamic processes that influence how individuals, populations and health systems adapt in order to adopt new technologies and interventions.

  As defined, implementation research begins conceptually with a proposed intervention which is expected to deliver health gains, and systematically describes and analyses the process and outcomes from pre-intervention through to successful adoption or failure of the programme.

  The overall goal of implementation research in disease control is to develop, test and modify strategies and policies to improve access to interventions, facilitate their successful uptake, and ensure their sustainability.

  Students are introduced to the conceptual basis of implementation research which addresses the issues associated with:

  - Pre-intervention, including development and efficacy of the intervention (proof of principle), baseline information on the population (understanding the community, current access), and the systems and policies that relate to the intervention.

  - Intervention, including testing of new interventions and methods to improve access, and community-based trials.

  - Monitoring and evaluation, including behaviour change and compliance, and system transformation.

  - Sustainability factors, including best practices.

  The course content includes multilevel case studies on cultural and social relations in the community; who is at risk and why; appropriate targeting of limited resources; practice and policy factors; external influences and monitoring of processes and economic drivers; the design and testing of iterative and participatory and action research techniques appropriate to interventions. The module also involves analysis of intra-governmental issues around power and responsibility, organizational psychology, and relationships between governmental and nongovernmental agencies.

- ***NAS 602: Epidemiology***

  Epidemiology, the study of factors that affect the distribution of health and disease within populations, provides the evidence base for most public health programmes. This course unit will cover the principles and methods used to describe and evaluate patterns of illness in populations and population subgroups. Topics include the methods and research designs used to investigate the etiology of infectious and non-infectious disease, population structure, incidence, prevalence and age standardization; life tables and measures of risk; descriptive and analytical approaches in epidemiology; diagnostic tests and screening; outbreak investigation; causation and confounding; critical appraisal and systematic reviews.

- ***NAS 603: Disease control tools and strategies***

  Types of communicable disease; contagious and air borne infections; water and food borne infections; vector borne infections; animal reservoirs; sexually transmitted infections; environmental conditions and sanitation; congenital and acquired diseases; occurrence and distribution of major communicable diseases; management of communicable diseases and risk factors; diagnostics and treatment; health and environmental interventions; control tools and strategies; epidemic preparedness and response; behaviour change and communication.

- ***NAS 604: Health systems and operations research***

  Background to the underlying principles and structure of health systems; relationship of national health systems to bilateral, multilateral and public–private partnerships; culture of health systems; multidisciplinary philosophy of health systems research; concepts and methods for health systems research: identifying research problems, research design, current international and national health systems research; research priority-setting: policies, determinants and risk factors; monitoring and evaluation; approaches to disease control: appropriate use of terms (control, elimination, eradication), vertical vs. horizontal approaches, concepts of transmission, infection and morbidity control; project implementation: formulation, identification of research needs, administration, monitoring, budget, funding, dissemination and utilization of results; linking research to action; health systems research and health care policy; policy and advocacy.

- ***NAS 605: Economics of disease control***

  Introduction to economics and health economics: scarcity and choice, opportunity costs, average and marginal costs, supply and demand, consumer and producer surplus, different types of market, market for health vs. market for other goods; introduction to health policy and planning: definition, scope, concepts, development and role of health economics, nature of the market for health care, demand and supply of health care; health management systems and health management information systems; financing of health services: current health spending in developing countries, features of a good health financing system, user fees, private insurance, community financing, health savings accounts, informal payments, official development assistance; health care evaluation: setting priorities in health care, public and private roles in the provision of health services; efficiency in health care: definition of efficiency, measuring efficiency, common causes of inefficiency, strategies for addressing inefficiency; health outcome measurement: methods of measurement, adjustment methods.

- ***NAS 606: Applied anthropology for public health***

  Public health and anthropology; public health and health care research; epidemiology and medical anthropology; anthropological perspectives of international health; human reproductive health; social marketing and applied medical anthropology; case studies in applied medical anthropology: diarrhoeal diseases, malaria, HIV/AIDS; emerging health issues.

- ***NAS 607: Health promotion***

  The philosophy and principles underlying the field of health promotion and education; collective and individual responsibilities for health, both physical and mental; ideological dilemmas and policy assumptions underlying different approaches/strategies/models of health promotion; public health and health promotion – the prevention paradox; health education/learning theories and other methods of influencing personal lifestyles which affect health; appropriate settings for health promotion (e.g. schools, the workplace); the value of models for explaining and predicting health-related behaviour, and models of behaviour change; risk behaviour in health and the influence of interventions on health-related behaviour; the theory and practice of communication with regard to heath education; the role of legislative, fiscal and other social policy measures in the promotion of health; methods for development and implementation of health promotion programmes/ social

marketing; evaluation of health promotion, public health or public policy interventions; international initiatives in health promotion; ethics in health promotion; case studies of health promotion relating to HIV/AIDS, malaria and tuberculosis.

- ***NAS 608: Health policy and development***

  Introduction to policy formulation; defining policy formulation – effective formulation and acceptable formulation; the process of policy formulation; factors influencing policy formulation; policy-makers and other actors in the policy process; the skills of policy analysis; the politics of policy formulation; incremental policy; policy overhaul; the role of national and international health organizations and special interest groups; cases illustrating health policy formulation; impact of development on health; health policy of developing nations; comparative health systems; national resources allocation; policy analysis; political situation and health problems; rights to development and rights to health.

- ***NAS 609: Culture, health and disease***

  Cultural definitions of anatomy and physiology; diet and nutrition; culture and health care systems; culture and illness experience and behaviour; explanatory models; social and cultural aspects of health care pluralism; patients and healers; pain and culture; culture and pharmacology; stress, illness and healing; culture and epidemiology; changing patterns of health and disease.

- ***NAS 610: Ecology, health and disease***

  Concepts of ecology and anthropological approaches; principles of evolution, human origins, climate change, and adaptation; environment, population and implications of continued growth; disease in an ecological perspective; human adaptation to cold, heat, high altitude, strenuous physical activity; biotic stressors, infectious disease, modernization and chronic disease; disease as stress; environment and disease; response to disease: biological, socio-cultural; malaria and human adaptation; diarrhoea and environment; nutritional stress and human adaptation; tropical ecosystems and new directions in environmental anthropology; the science of biotechnology and human/environmental health.

- ***NAS 611: Social science of tropical diseases***

  Social epidemiology and concepts of tropical diseases; cultural aspects of parasitic and infectious diseases (malaria, filariasis, schistosomiasis, TB); environmental factors and risk behaviour; behavioural risk factors related to malaria transmission, severe and complicated malaria, occurrence of drug resistance; community participation in control of tropical diseases; applied health economics in tropical diseases; the political economy of tropical health; psychological aspects of TB; social stigma; illness behaviour and treatment choice of TB patients; drug compliance in TB patients; behavioural aspects of filariasis; behavioural aspects of malaria; drug utilization practices of malaria patients and other illnesses; community participation in malaria control programmes, and the social context of malaria.

- ***NAS 612: Principles of health: rights and equity in health***

  Right to health vs. right to health care; concepts of equality, equity, and fairness; equal distribution of health care services; theory of justice; economic principle of health equity; sociological perspectives of equity; cultural interpretation of rights and equity; individual rights and responsibility; national obligation and social commitment to health; sociological approach to health rights; social construction of equity: social system of justice, mechanism of rights, individual practice and collective conscience, inequality and economic development; national policy; health care consumer; equal distribution; equitable quality of health care services; social and political intervention; situation analysis of health rights violation; power structure of medical practices.

- ***NAS 613: Medical ethics and health care rights***

  Legal code and ethics theories; the law: statutes, regulations, common law and constitutional law; professional oaths and codes; ethics theories: consequential theories including egoism and utilitarianism, utilitarianism in health care/non-consequential theories, Buddhist ethics and health care; ethics and human values in reproductive technologies and family planning; ethical, scientific and legal perspectives; ethical issues in clinical trials.

- ***NAS 614: Social transformation and health***

  Population health, globalization and localization; consumption, society and health; post modernization and health; social suffering; marginalization; impacts on health of social and economic changes and mega-project development; urbanization and health; migration and cross-border migration and health; impacts of the new world order/World Trade Organization on population and health; technology and health.

- ***NAS 615: Population and health***

  Population factors associated with health issues; theories of population studies and research on population; specific issues: demography as compared to population studies, population changes and degradation of resources, mortality and morbidity as health indicators; the relationship between migration and health; urbanization associated with health.

- ***NAS 616: Environmental psychology***

  Interrelationships between human behaviour and environment; issues relevant to the increasing problems of environmental pollution; behavioural and psychological techniques or strategies that may help to preserve and rearrange the environment for healthy living; basic concepts concerning relationships among the physical environment; behaviour, psychological state and illness; environmental cognition and values; environmental behaviour theories; the environment and emotional states; the environment and stress; the environment and coping skills; environmental management and behavioural approach interventions.

- ***NAS 617: Health psychology***

  Psychology related to health and medical aspects; relationships among psychological factors; behaviour and health; psychology principle; concept measurement; mind–body relationship; psycho-physiological disorders; stress and illness, and socio-cultural influences on health behaviour.

MA in anthropology (medical anthropology option)

The specific objective of this programme is to provide students with knowledge of advanced applied medically related anthropology to enable them to utilize anthropological approaches in a wide range of research, applied and professional contexts. There is a major focus on disease control.

The different modules are:

- **Advanced theory in anthropology (core)**

Philosophical foundations of the discipline; science and social enquiry; anthropology as a science; explanation in social sciences; applying anthropological perspectives to explain reality; concept of theory and theory formation; nature of theoretical knowledge; theory–research interface; historical development of theory in anthropology and social science in general; core dualisms in social theory; contributions of different scholars and schools of thought; contemporary theories of society and social life; theorizing the modern and post-modern subject; parts and wholes: the individual and society; intersubjectivity of the anthropological project (existential and phenomenological theory of relationships); analytical concepts in contemporary anthropology: agency, place vs. space, embodiment and experience, actor–network approach; emerging theoretical developments/debates.

- **Social science research methods and statistics (core)**

The foundations of social research; epistemological issues: positivist and interpretivist paradigms; elements of research; research design; measurement; sampling and sampling strategies; ethnography; qualitative data collection methods; quantitative data collection methods; ethics in social science research; qualitative data analysis techniques; statistical concepts; descriptive statistics; probability theory; non-parametric methods; inferential statistics; computer-aided data analysis.

- **Fundamentals of applied social science for public health (core)**

This is the same as described on page 28.

Specific thematic modules that are required for the 'medical anthropology' appellation include:

- **Contemporary theory and method in medical anthropology**

The universe of sickness; theories of sickness and healing; African health belief systems; indigenous contagion theories of disease causation; critical–interpretive approach in medical anthropology; the therapeutic process; culture, emotion and psychiatric disorder; clinically applied medical anthropology; ethnomedical systems; biomedicine as a cultural system; nutrition in medical anthropology; bioethics and anthropology.

- **Social context of health and illness**

Contextualizing health and illness; lay perspectives of health and illness; experiencing health, illness/sickness and healing; disability and stigma; perspectives on women's health; age identity and health identity; health, illness and sickness as social identities; health as a human right; therapy management groups and the social relations of therapy management; alternative therapies.

- **Applied medical anthropology**

Public health and anthropology; public health and health care research; epidemiology and medical anthropology; anthropological perspectives of international health; human reproductive health; social marketing and applied medical anthropology; case studies in applied medical anthropology: diarrhoeal diseases, malaria, HIV/AIDS; emerging health issues.

- **Health systems and operations research**

The multidisciplinary philosophy of health systems research; concepts and methods of health systems research: identifying research problems, research design, current international and national health systems research; research priority-setting: policies, determinants and risk factors; monitoring and evaluation; approaches to disease control: appropriate use of terms (control, elimination, eradication), vertical vs. horizontal approaches, concepts of transmission, infection and morbidity control; project implementation: formulation, identification of research needs, administration, monitoring, budget, funding, dissemination and utilization of results; linking research to action; health systems research and health care policy; policy and advocacy.

- **Ecology, health and disease (elective)**

Concepts of ecology and anthropological approaches; principles of evolution, human origins, climate change, and adaptation; environment, population and implications of continued growth; disease in an ecological perspective; human adaptation to cold, heat, high altitude, strenuous physical activity; biotic stressors, infectious disease, modernization and chronic disease; disease as stress; environment and disease; response to disease: biological and socio-cultural; malaria and human adaptation; diarrhoea and environment; nutritional stress and human adaptation; tropical ecosystems and new directions in environmental anthropology; the science of biotechnology and human/environmental health.

- **Nutritional anthropology (elective)**

The bi-cultural view of human nutrition; cross-cultural perspectives in nutritional anthropology; nutritional status and subsistence systems; nutrition and culture; bi-cultural aspects of obesity, fertility,

lactose intolerance; infant feeding practices; food networks; human evolution and nutritional requirements; culture and food preferences; contemporary issues in subsistence societies.

- **Implementation research for disease control**

This is the same as described on page 28.

- **Ethnomedicine**

Definition and meaning; ethnomedicine and environmental/biological factors; ethnobotany and ethnozoology as bases of ethnomedicine; disease classification; ethnomedicine and modern ideology of health and illness; ethnomedicine and spatial relationship, rural–urban, rank and file; ethnomedicine as indigenous knowledge, cultural heritage and patent rights/globalization; idioms of distress; 'culture bound' syndromes (CBS): susto, latah, chira, artic hysteria; externalistic and emotional causes of illness and misfortune; spirit possession; humoral systems of healing; ethnomedical therapy/therapeutic efficacy; transformation of healing systems; shamanism and modernity; the co-modification and commercialization of 'traditional medicine'; comparative perspectives of ethnomedicine and biomedicine/western medicine; decolonizing ideological beliefs of consumers of ethnomedicine.

- **Anthropology and biomedicine**

Theoretical directions in the study of biomedicine; biomedicine as a cultural system; biomedicine and alternative healing systems; medicalization and social control; medical practice and technology; biomedical ethos; biomedical practitioners; physician–patient interactions; clinical knowledge and reasoning; the interface of biomedicine with indigenous or folk belief systems; international studies of biomedicine; biomedical practice in relation to specific populations such as poor people, women, and ethnic minorities.

- **Health promotion**

The philosophy and principles underlying the field of health promotion and education; collective and individual responsibilities for health, both physical and mental; ideological dilemmas and policy assumptions underlying different approaches/strategies/models to/of health promotion; public health and health promotion – the prevention paradox; health education/learning theories and other methods of influencing personal lifestyle which affect health; appropriate settings for health promotion (e.g. schools, the workplace); the value of models in explaining and predicting health-related behaviour/models of behaviour change; risk behaviour in health and the influence of interventions on health-related behaviour; theory and practice of communication with regard to heath education; the role of legislative, fiscal and other social policy measures in the promotion of health; methods of development and implementation of health promotion programmes/social marketing; evaluation of health promotion, public health or public policy interventions; international initiatives in health promotion; ethics in health promotion; case studies in health promotion relating to HIV/AIDS, malaria and tuberculosis.

- **Anthropology of the body**

Anthropology and the body; mind/body dualism and other body types; cultural construction of the body; inscriptions of power; biomedical definitions and discourses; the body image in health and disease; the body and categories of sex: men and women vs. males and females; the invention and reinvention of bodies/representation shapes reality; marking the body/the body speaks for itself: cosmetics and clothing, tattoos, body piercing; the erotic body; the gendered body/female genital mutilation; the body in pain; body size and body image; race and standards of beauty.

It is anticipated that all programmes will be available from the 2007/08 academic year.

3.3 Summary of training programmes and conclusions

Based on the core competencies and capacity required for social sciences in public health in general and disease control in particular, an important balance is to be struck between strong practical skill in social research methods and theoretical and critical understanding of the social science disciplines applied in this area. A link with formal and informal health systems and other programmes involved in public health and disease control would also greatly enhance the experience of students and the relevance of their work to improving the health of local populations.

The two teams bring varying strengths to the theory–practice continuum: Kenya brings strong theoretical and academic links and Ghana brings strong ties to national research and control programmes. This difference in focus highlights one of the complexities in enhancing the role of the social sciences in public health. Based within a faculty of arts and humanities, the Kenyan programme provides a rich intellectual basis for the applied social sciences; from that perspective, however, the involvement of social scientists in disease control programmes is heavily controlled and restricted by the perceived importance of their contribution to public health by the dominant biomedical paradigm. In Ghana, on the other hand, the Department of Social and Behavioural Sciences is located within the School of Public Health, an important acknowledgement of the relevance of the social sciences. However monitoring of courses under the faculty of Medicine and Health Sciences results in a trade off which favours practical skills or a 'toolkit approach', which is often reductionist and formulaic, over a theoretical, critical and more grounded approach that would be the case within a social science oriented faculty.

In working together, drawing on each others existing strengths and supporting identified weaknesses, there is strong potential not only for training robust cohorts of applied social scientists but also for producing a critical evidence base in social science research to enhance health and improve disease control in many resource-poor settings.

An important need was identified for engagement with non-English speaking countries in sub-Saharan Africa, particularly the Francophone countries. Tropical diseases remain a priority for most sub-Saharan African countries regardless of lingua franca, and the social determinants and other risk factors for poor health are the same. In addition, many of the current discourses in the social sciences were developed from the work of French sociologists and philosophers such as Émile Durkheim, Pierre Bourdieu, and Michel Foucault, and this highlights the importance of the contributions to be made in this area by Francophone social scientists.

There is evidence of growing support for initiatives that produce primary research and build capacity within the 'South', and TDR has demonstrated its leadership and innovation in initiating this programme on applying the social sciences for public health through implementation research.

Appendix 1 In-Country Partners and Other Consultants

Kenya, September 2006

Peter Wanyande	University of Nairobi, College of Humanities and Social Sciences, PO box 30197-00100, Nairobi, Kenya.
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Isaac Nyamongo	University of Nairobi, IAS, PO box 30197-00100, Nairobi, Kenya.
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Mamadou Konate	Center for Research and Training support, CAREF BP 2753, Bamako, Mali.
Yaa Peprah Amekudzi	Hope for African Children Initiative, PMB CT 162 Cantonments, Accra, Ghana.
Margret Gyapong	Dodowa Health Research centre, Ghana Health Service, PO box 1, Dodowa, Ghana.
Iddrisu Mumuni	Partnership for Social Sciences in Malaria Control (PSSMC)/RRC, Accra, c/o, Regional Health Directorate, Ghana Health Service, PO box 184, Accra, Ghana.
Halima Mwenesi Abdullah	Academy for Educational Development, Post Net Box, Private Bag XII Halfway House 1685, South Africa.
Hashim Ghalib	WHO/TDR, 20 Ave Appia, 1211, Geneva 27, Switzerland.
Pascale Allotey	Centre for Public Health Research, Brunel University, West London, UK.

Kenya, August 2006

Prof Isaac Nyamongo	Director IAS, Kenya.
Dr W Onayango-Ouma	Research Fellow, IAS, Kenya.
Dr Wilfred Subbo	Research Fellow, IAS, Kenya.
Prof Geoffrey Kaman	Director, Board of Postgraduate Studies, University of Nairobi, Kenya.
Elizabeth Kimani	Researcher, Africa Population & Health Research Center (APHRC)
William Okedi	London School of Hygiene and Tropical Medicine

Ghana, April–May 2006

Dr Mercy Ackumey	Lecturer, School of Public Health, Ghana.
Dr Irene Agyepong	PSSMC, RCS+ Malaria, Regional Director of Health, part-time faculty, School of Public Health, Ghana.
Dr Said Al-Hussein	Training manager, Ghana Malaria Centre (GMC)/School of Public Health (SPH).
Ms Yaa Peprah Amekudzi	Country coordinator, Hope for African Children Initiative (HACI).
Dr Emmanuel Asampong	Lecturer, School of Public Health, Ghana.
Ms Sheila Dey	Researcher, Dodowa Health Research Centre, Ghana.
Professor John Gyapong	Director, Health Research Unit, part-time faculty, School of Public Health, Ghana.
Dr Margaret Gyapong	Director, Dodowa Health Research Unit, part-time faculty, School of Public Health, Ghana.
Dr Aka Kouamé	United Nations Children's Fund (UNICEF), Cote D'Ivoire.
Mr Iddrisu Mumuni	Project Coordinator, PSSMC.
Professor Ofosu-Armaah	Founding Director, School of Public Health, Ghana.
Dr Matilda Pappoe	Head, Behavioural Sciences, School of Public Health, Ghana.

Meeting in UK, Monday 13 February 2006

Brunel University

Pascale Allotey

Hengjin Dong

Hebe Gouda

Suzette Heald

Cecil Helman

Melissa Parker

Subhash Pokhrel

Daniel Reidpath

Chris Skelly

Meeting in UK, Monday 13 February 2006 (continued)

Partnership for Social Sciences in Malaria Control

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Di McIntyre (University of Cape Town, Dept of Health Economics, South Africa)

Holly Ann Williams (US Centers for Disease Control and Prevention, Atlanta)

Caroline Jones (London School of Hygiene and Tropical Medicine)

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APPENDIX 2 REFERENCES

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