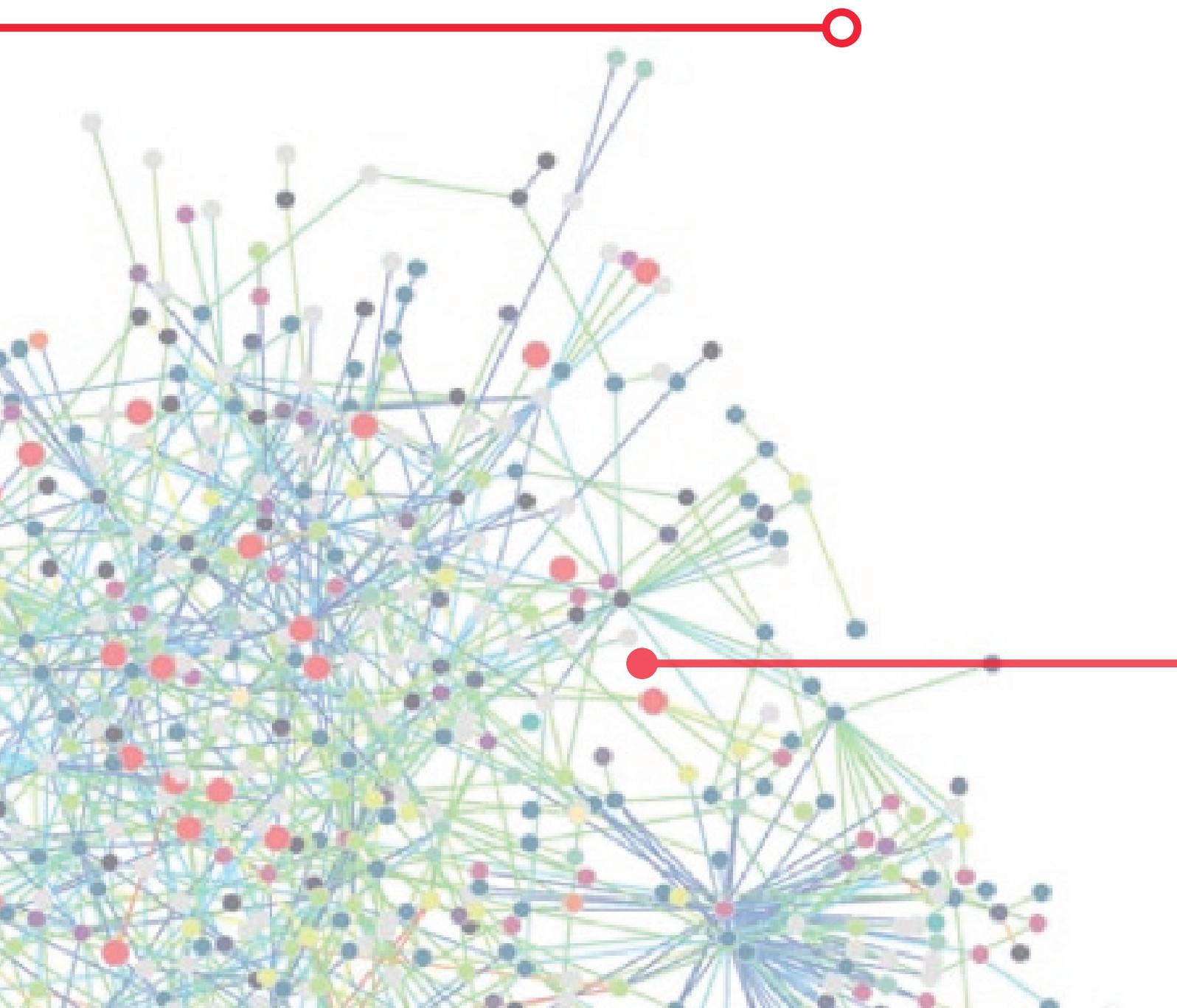


The **INDEPTH Network**: Creating Excellence, Efficiency and Impact



INDEPTH Network
Better Health Information for Better Health Policy

Excellence, Efficiency and Impact - A summary

The INDEPTH Network, through its Resource & Training Centre in Accra (formerly Secretariat) and its various organs, creates value for all its stakeholders globally. With Member Centres, Working Groups, Funders and Partner Scientists, the Secretariat ensures that **excellence, efficiency and impact are all privileged in its approaches and outputs.**

The Network boosts **member centres** and increases their potential for policy impact by **strengthening their research capacity**, ensuring excellent **data management**, increasing the **global visibility** of major health and demographic surveillance system (HDSS) analyses, and helping to secure **funding for multi-centre studies.**

The Network's Resource & Training Centre works closely with **Working Groups** to ensure excellence and continuous improvement in scientific research, as well as helping to identify funding and streamlining the process of setting up multi-centre studies.

For **Funding Partners**, the Network ensures that studies are conducted effectively and efficiently and ensures excellent data harmonisation and management.

The INDEPTH Resource & Training Centre creates opportunities for **Researchers** to access top scientists in low and middle-income countries (LMICs), the best longitudinal data, and the best available health research and demographic platforms to showcase their research.

Policy Makers have access to cutting edge research that can provide them with evidenced options from which they can develop sound policies that hold promise to transform the lives of people living in countries with limited resources. The Secretariat has also helped to raise **more than \$60 million for multi-centre research.**

INDEPTH strengthens research capacity at member centres by organising training programmes, workshops, and regular Scientific Conferences, as well as sponsoring MSc and PhD students and research fellows. Training programmes seek to build excellence in data collection, data analysis, proposal and report writing, and general administration and management. In the last five years, at least **250 scientists have participated in INDEPTH training.**

Since its inception, the Resource & Training Centre has invested US \$1.6 million in strengthening research capacity. This effort has provided the necessary training at a fraction of the cost incurred by

centres providing it independently. At least 500 researchers have participated in workshops, and at least forty have been funded to pursue graduate studies. INDEPTH has funded sixteen research fellows to work at member centres. All these initiatives have improved the technical skills of scientists across the countries with HDSSs.

The INDEPTH Scientific Conference, held every two years, assembles at least 200 scientists from the member centres, funders, peer review publication editors, Scientific Advisors and other stakeholders, to discuss study findings and plan future activities.

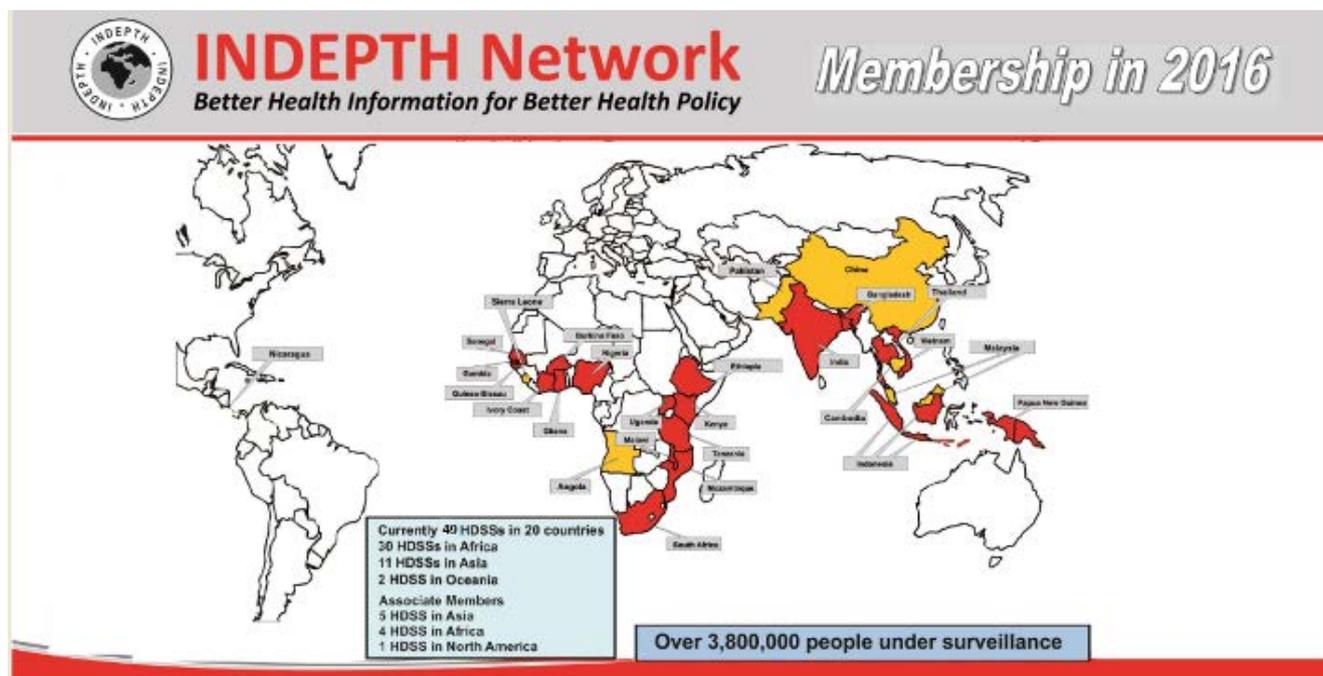


Background

The INDEPTH Network was founded in 1998 in Dar es Salaam, Tanzania. Since its founding, the INDEPTH Network has made an immense contribution to understanding emerging and persisting health problems in LMICs. The Network has achieved this by building the capacity of researchers at member research centres to conduct excellent research that feeds into making policies and transforms development practice. From 17 health and demographic surveillance system (HDSSs) in 1998, the Network now consists of 42 independent research centres, running 48 across 18 LMICs in Africa, Asia and the Pacific.

Supporting research centres to carry out censuses is a significant component of the INDEPTH Network's work. By paying regular visits to the households, research centres can longitudinally track births, deaths, in- and out-migration as well as collect data for various studies. These censuses are sustainable sources of longitudinal data that provides knowledge and policy-relevant evidence for health care and development.

Figure 1: Map of Africa, Asia & Oceania, showing locations of the 48 HDSSs that are members of the INDEPTH Network



Building Research Capacity, Producing Excellent Research

Strengthening the capacity of researchers to carry out excellent research is at the core of INDEPTH's value. Research centres are enabled to generate key demographic indicators measured by HDSS sites: fertility and pregnancy outcomes, all-cause and cause-specific mortality, migration and morbidity.

The overall longitudinal data answer questions about the nature of health and demographic transitions and their implications for health, health systems and wellbeing at all ages.

Longitudinal data measure how indicators change in specific individuals and households over time, while cross-sectional data only shows how indicators change across large swaths of populations.

Thus longitudinal, unlike cross-sectional data, can help point to cause and effect and provide one of the most efficient measures of the impact of policies and programmes on mortality, morbidity, fertility, migration, poverty and other intervention targets. While most countries conduct censuses, the data they generate are usually insufficient to make sound decisions. The INDEPTH Network provides the best tool for assessing cause and effect in countries that lack the capacity to generate vital statistics about their populations.

INDEPTH's analytic tools allow researchers to study what happens to individuals over time, and the impact of various changes across populations. Priority research areas include not only neonatal, maternal and adult mortality – which clearly require longitudinal tracking – but also such emerging fields as migration, urbanisation and climate change. Many health and demographic interventions used routinely across the world were initially trialled on HDSS research platforms.



Participants of a past OpenHDS workshop that took place in Dubai.

The Resource & Training Centre strengthens research capacity at centres by organising training programmes and workshops.



The Essential Role of the Network's Resource & Training Centre: its different structures and how they work

The Network's Resource & Training Centre is at the heart of this Network of HDSS centres. It works to strengthen the capacity of the centres, develops standardised research tools for all centres, quality controls the research Working Group to make sure it is of excellent quality and provides financial transparency and oversight for all multi-centre studies.

The Resource & Training Centre includes both full-time professionals based in Accra, Ghana and part-time personnel seconded from member centres and partner academic institutions as required. The following staff are currently working from the Secretariat:

- Three full-time DSc/PhDs – the Executive Director, Managers of Scientific Research & Co-ordination and Capacity Strengthening & Training;
- Three part-time PhDs, located at their home centres, the Network's Principal Scientist, and two scientists focused on harmonising data across HDSS sites;
- A full-time professional in Policy Engagement & Communications who executes the strategy for policy impact and communications;
- Four full-time staff, led by a General Projects & IT Manager, focused on ensuring standardised IT and research tools across the sites;
- Four full-time qualified accountants in Accra, led by a Senior Finance Manager, a Chartered Public Accountant, focused on ensuring auditable financial transparency for the Network and multi-centre studies;
- Two full-time staff, led by a Grants Manager, focused on grants administration and;
- A support team of five, focused on running the operations of the Network, assisting the Secretariat in running capacity strengthening and research workshops for all centres, and organising Annual General Meetings and biannual INDEPTH Scientific Conferences.

In addition to the team in Accra, the INDEPTH Network seconded team members from its centres on a part-time basis. At the moment, the following teams are seconded:

- Teams in Pune (Vadu HDSS), India and Somkhele (Africa Centre), South Africa, focused on the iShare2 initiative;
- The Principal Scientist of the Network, and the Leader of the Migration, Urbanisation and Health Working Group, seconded from the University of Wits School of Public Health /Agincourt HDSS;
- A team in Nairobi, focused on Malaria Interventions Trials;
- A team at Makerere University, Uganda focused on Maternal, Newborn and Child Health.

Who finances the Network's Resource & Training Centre?

The Secretariat depends on three sources of funds for its activities:

- The William and Flora Hewlett Foundation, the Research Cooperation initiative of the Swedish International Development Agency (Sida), and The Wellcome Trust, currently cover the bulk of its general operating expenses.
- It receives compensation for its services to projects and for providing leadership for consultancies, including the large projects such as INESS, Optimunise, ABACUS and iHOPE.
- To ensure long-term sustainability, INDEPTH has established an Endowment Fund.

The Board of Trustees and Scientific Advisory Committee

The Network works with an international Board of Trustees and Scientific Advisory Committee to ensure Excellence, Efficiency and Impact.

- To ensure **Excellence**, the Resource & Training Centre works continuously to strengthen capacity, and improve the work of member scientists and organised Working and Strategic Groups.
- To ensure **Efficiency**, the Resource & Training Centre works to standardise data collection tools, thus ensuring harmonisation of data collected by members, and streamlining the process of setting up multi-centre studies.
- To ensure **Impact**, the Resource & Training Centre works to promote the Network and its longitudinal multi-location data as a vital resource for identifying health and demographic trends in LMICs and for studying and developing new policies and approaches to practice.



Working Groups: Ensuring Excellence in Research

In addition to the scientists at the 42 member centres, the Network brings together scientists from other research partner institutions to form “Working Groups” focused on specific research areas. Working Groups are pivotal to INDEPTH’s work as generators and incubators of multi-site research and developmental projects. Strategic Groups are also formed to purposefully pursue the three strategic objectives of the Network.

A: WORKING GROUPS

Working groups are central to INDEPTH Network’s research initiatives. They define the high priority demographic and health research needs of LMICs. In the case of health research, priority areas are based on a combination of the burden of disease and the longitudinal data necessary for analysing cause and effect. In the case of demographic research, the Board of Trustees and Resource & Training Centre, consulting with the Scientific Advisory Committee, determine priority based on changes in demographic indicators uncovered from findings from INDEPTH centres.

The groups are largely focused on Scientific and Practice issues. They investigate such questions as Ageing, Maternal and Newborn Health, and the INESS Phase 4 Clinical Trials platform; as well as demographic questions, including Migration/Urbanisation and Fertility, and policy questions— such as the impact of Universal Health Coverage schemes.

All Working Groups are focused on issues, or the aspects of issues, that require complete longitudinal data to provide a proper analysis of cause, effect and the potential impact of a specific intervention.

Current Working Group Areas

• Vaccinations and child survival;	• Mental Health;	• Genetics/genomics;	• Health equity and poverty;
• Non-communicable diseases;	• Fertility;	• Cause of death determination;	• Household dynamics;
• Adult health and ageing;	• Maternal and newborn health;	• Data analysis (transitions);	• Health systems (UHC, OOP, CRVS);
• Sexual and reproductive health;	• Migration, urbanisation and health;	• Sickle Cell Disease;	• Antimicrobial resistance;
• Family planning;	• Environment and health;	• Health intervention trials (malaria, TB, HIV/AIDS);	• Social sciences.

As well as being published in reputable scientific journals, outputs from the Working Groups are presented and discussed at INDEPTH's biennial International Scientific Conference (ISC) — a global gathering of demographers, epidemiologists, biostatisticians, research data managers, public health specialists, social scientists, policy analysts, and other scientific researchers globally.

With the launch of each Working Group, the Resource & Training Centre assists with the development of an overall strategy, by working with one or more advisors from the Scientific Advisory Committee or a partner academic institution. Each Working Group's strategy aims to build understanding of the importance of hard data in establishing cause and effect. Also, wherever appropriate, Working Groups identify and design comparative studies and demonstrate the potential of interventions to address health and demographic issues. Strategies must include the following elements:

- Ensuring that INDEPTH member centres collect complete longitudinal data focused on the issue;
- Describing what the data show, e.g. the burden of disease, or the actual demographic trend;
- Measuring changes over time;
- Identifying root causes of the issue;
- Developing interventions to address the root cause;
- Demonstrating the cost-effectiveness of the interventions in real life settings.

Once the Working Group has established its long-term strategy, the Resource & Training Centre supports efforts to identify funders most likely to support the proposed work.

In addition to supporting the activities of Working Groups, the Resource & Training Centre sets up consultancies and partnerships with major academic and research institutions, connecting scientists with current work across the globe.

B: STRATEGIC GROUPS

- Capacity Strengthening and Training
- Data Analysis
- Policy Engagement and Communication



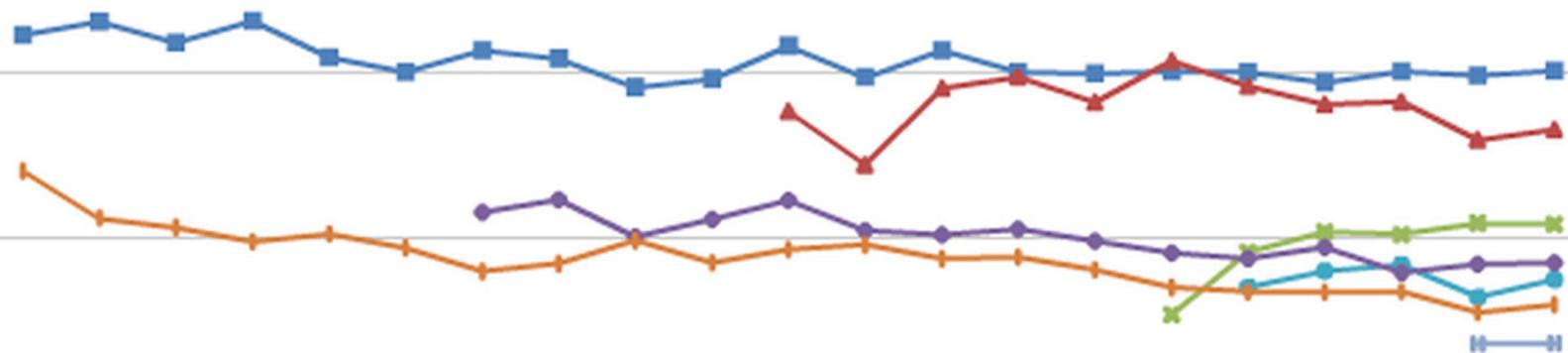
Ensuring Efficiency Across the Network

INDEPTH pursues economic value across the Network by ensuring that data collection at individual centres is more cost effective and that multi-centre studies are rapidly set up, analysed and written up. This would not be possible if researchers worked alone.

The Resource & Training Centre ensures **efficient, data collection and management** at every centre by defining the core information each site collects, developing standardised tools for data collection, and enabling the harmonisation of data across all sites.

- INDEPTH's new OpenHDS platform will enable each site to collect data with greater efficiency, by enabling direct-to-digital data collection (responses instantly go into a mobile tablet rather than being entered by hand and re-edited by data entry clerks).
- The process of harmonising data onto the core INDEPTH data platform (Repository and INDEPTHStats) further improves the accuracy of data, increasing the value of each centre's dataset as well as enabling its researchers to conduct cross-site analysis.
- It is estimated that OpenHDS will reduce the cost of data collection at each centre.

The Network **streamlines the process of setting up multi-centre studies** by linking Centres, Working Groups, external advisors and funders, and by ensuring high capacity and harmonised data among all the sites. Rather than seeking to identify individual partners on a one-shot basis, INDEPTH uses Network partners and scientists who have a track record of good collaboration and producing excellent quality data.



Taken from a data visualisation on INDEPTHStats.

Analysis of INDEPTH multi-centre studies shows that the Network's Resource & Training Centre considerably reduced the cost of developing proposals and executing studies. Leveraging the Network to launch a study ensures:

Faster set-up: multi-centre proposals arise from strategies and plans already developed by Working Groups co-ordinating with the Resource & Training Centre, they are faster to conceive teams that work together regularly. With a Working Group strategy in place, development of a successful proposal takes roughly half the time and half the cost of one developed from scratch.

Faster analysis: the standardised tools and database platforms implemented by the Network make it easier to merge and analyse data. They eliminate the costly process of data cleaning and harmonisation, enabling researchers to begin analysis almost immediately following data collection and entry.

Improved transparency: the INDEPTH Resource & Training Centre's accounting team is always prepared to support multi-centre studies, reducing administrative costs and ensuring appropriate use of project funds. The Secretariat's accounting processes have been audited by the Network's institutional auditors (PWC, KPMG) and vetted by funders over the years, increasing their confidence in INDEPTH.

Improved economy: INDEPTH studies bring together existing teams of researchers, Working Groups and independent centres, and therefore cost considerably less than if the scientists had to do the preparation independently. This cost saving increases funds available for actual research.



Ensuring Impact: Visibility of Studies and Improvement in Policy and Practice

The INDEPTH Resource & Training Centre **publicises the work of the Network member centres** among policy makers, global researchers and funders in order to gain recognition for the Network as a unique asset for increasing knowledge about health and demography and to transform policy and practice in LMICs.

The Network has also improved the **global visibility of the scientific work** of specific centres, as well as the value of longitudinal studies in answering core questions about health and demographic trends in LMICs. The Resource & Training Centre has communicated the message of INDEPTH's excellence through dialogue with global research partners, meetings with funders and publishing. The Resource & Training Centre has made presentations on INDEPTH at many scientific conferences, and, as a result, receives in Accra, on average, six funders and partners annually. Numerous articles and editorials have been published in The Lancet, The Lancet Global Health, Nature, Science, Plos One, Plos Med, Global Health Action, International Journal of Epidemiology, Malaria Journal, BMC central, and many others.

Awareness of the importance of the data and research on the Network's platform continues to grow globally, and, with the Resource & Training Centre's relationship with key scientific researchers, INDEPTH has been able to launch multi-centre studies and projects representing more than US\$40 million in funding (Table 1).

Table 1: INDEPTH Network multi centre studies and projects co ordinated by the Resource & Training Centre	Number of
Study the last five years	HDSSs
Health and Ageing in Africa: Longitudinal Studies in INDEPTH Centres (HAALSI)	3
Cause of Death Determination	22
The Climate Change, Migration and Mortality (CLIMIMO)	14
Study of the Epidemiology of Epilepsy in Demographic Sites (SEEDS)	5
Vaccinations and Child Survival (Optimunise Project)	8
INDEPTH Effectiveness and Safety Studies of Antimalarials in Africa (INESS)	7
Universal Health Coverage (IUHC) study	2
iHOPE: INDEPTH Household Out-of-Pocket Expenditure Study	3
MCTA: Malaria Clinical Trials Alliance	6
INDEPTH Health Equity Study	8
INDEPTH-SAGE Study	6
INDEPTH NCD Risk Factor Monitoring in Asia	6
iSHARE 2 - INDEPTH Data Management Programme (IDMP)	22
AWI-Gen: Wits/INDEPTH Genomic Studies	6
INTREC: The Social Determinants of Health	8
EVIDENCE: Improving Family Planning Across LMICs	3
IHTAS: INDEPTH Healthy Transitions into Adulthood Study	2

From Research to policy and practice

Beyond the importance of the various Network studies, the Resource & Training Centre works to increase **INDEPTH's impact on policy and practice** in the host countries of member Centres, both regionally and across the LMICs.

The Network's Resource & Training Centre ensures impact on policy and practice by working directly with global policy makers, publicising the policy implications of the Network's cross-site studies, setting up forums for policy makers to interact with INDEPTH member centres and researchers, simplifying the process for testing specific interventions and providing hard evidence to global and national policy makers about the true burden of disease and demographic shifts.

In working with policy makers, INDEPTH seeks to design programmes and assess the impact of policy changes.

INDEPTH is working with centres and policy makers to set up forums for their interaction with scientists to ensure research on the most urgent policy questions. With the Research to Policy Strategic Group, the Secretariat is working toward providing training for scientists across the Network on how best to communicate with policy makers. Each centre seeks deeper collaboration with policy makers in its specific country; dialogue will allow each centre to identify areas of policy makers' concern, enabling it, and the Network, to develop additional studies to address them. Globally, the Secretariat will set up regular meetings with representatives of the relevant stakeholders to identify research areas of mutual interest.

Finally, the Network provides global and national players with data that measure the true burden of disease and the implications of demographic shifts. Given the lack of data across almost all LMICs, INDEPTH's longitudinal data provide the best measure of actual trends. These data provide policy makers with the means of setting priorities, and improving the outcomes for LMICs.



In-Country Research to Policy meeting Ghana.



Research to Policy meeting Dar es Salaam, Tanzania.



Research to Policy meeting India



Appendix 1

What the Centres say about INDEPTH Network and its Resource & Training Centre in Accra, Ghana

“Our collaboration with the Resource & Training Centre and participation in working groups has helped us implement new data cleaning procedures, ensured the adoption of InterVA (algorithmic diagnostic tool) and our decision to join INDEPTHStats.”

Dr. Abdramane Soura, Ouagadougou HDSS, Burkina Faso



“Due to our work with the Resource & Training Centre, we’ve been able to fund one of our scientists to receive a master’s degree and ensure improved data cleaning and analytical capacity. With the advent of INESS, we’ve been able to move to electronic data collection using PDAs and tablets, from the expensive paper based system. In addition, we’ve introduced Verbal Autopsies and InterVA – using algorithms for the attribution of diagnoses.”

Dr. Eusebio Macete, Manhica HDSS, Mozambique



“INDEPTH helps us in capacity building extensively and provided us many opportunities to present our work in international forums. Moreover, working with the Resource & Training Centre, we’ve been able to take corrective measures in our data base and improve our data collection system.”

Dr. Yohannes Adama, Kikite-Awlaelo HDSS, Ethiopia



“Working with other centres in the Network and the Resource & Training Centre, we’ve been able to adopt standardised tools and procedures, ensuring ever increasing quality of our data and science.”

Dr. Nega Assefa, Kersa HDSS, Ethiopia



“Our work with the Secretariat has enabled our scientists to collaborate on several multisite analyses and ensured our participation in the iShare initiative.”

Dr. Amelia Crampin, Karonga HDSS, Malawi

“The Resource & Training Centre has enabled us to get seed grants for scientific research. Our membership in the INDEPTH Network has increased both the volume of our scientific output and the visibility of the work of our HDSS.”

Dr. Alex Ezeh, Nairobi HDSS, Kenya



“Working with the Resource & Training Centre, we’ve been able to further develop our centre Infrastructure and ensure collaboration with other sites across the Network.”

Dr. Seth Owusu-Agyei, Kintampo HDSS, Ghana



“As a new centre, we received capacity building support from the Resource & Training Centre to help us set up our HDSS as well as improve our ongoing performance. In addition, the experiences of other sites has helped us adjust our system and improve effectiveness.”

Fasil Tessema, Gilgel Gibe HDSS, Ethiopia





“Our involvement with the Network convinced us to share and harmonize data through iSHARE2, as well as enabled many opportunities for cross-site research and capacity strengthening.”

Prof. Bui Thi Thu Ha, Chililab HDSS, Vietnam



“INDEPTH membership has given our centre, an international exposure to the international scientific community focused on HDSS and health as well as our capacity for conducting longitudinal studies.

Our association with INDEPTH has also given us opportunity to venture into novel areas and work with other centres to make them successful for INDEPTH, including the iSHARE2 and INDEPTHStats initiatives, co-ordinated by the Secretariat.”

Dr. Sanjay Juvekar, Vadu HDSS, India



“Our membership has a number of positive impacts for our site, especially standardization of data to be usable by others across the Network and striving towards improving our high standards.”

Dr. Mitike Molla, Butajira HDSS, Ethiopia





**BETTER HEALTH INFORMATION
FOR BETTER HEALTH POLICY**

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Accra, Ghana www.indepth-network.org**