



# **INDEPTH Adult Health & Ageing**

**2013/14 →**

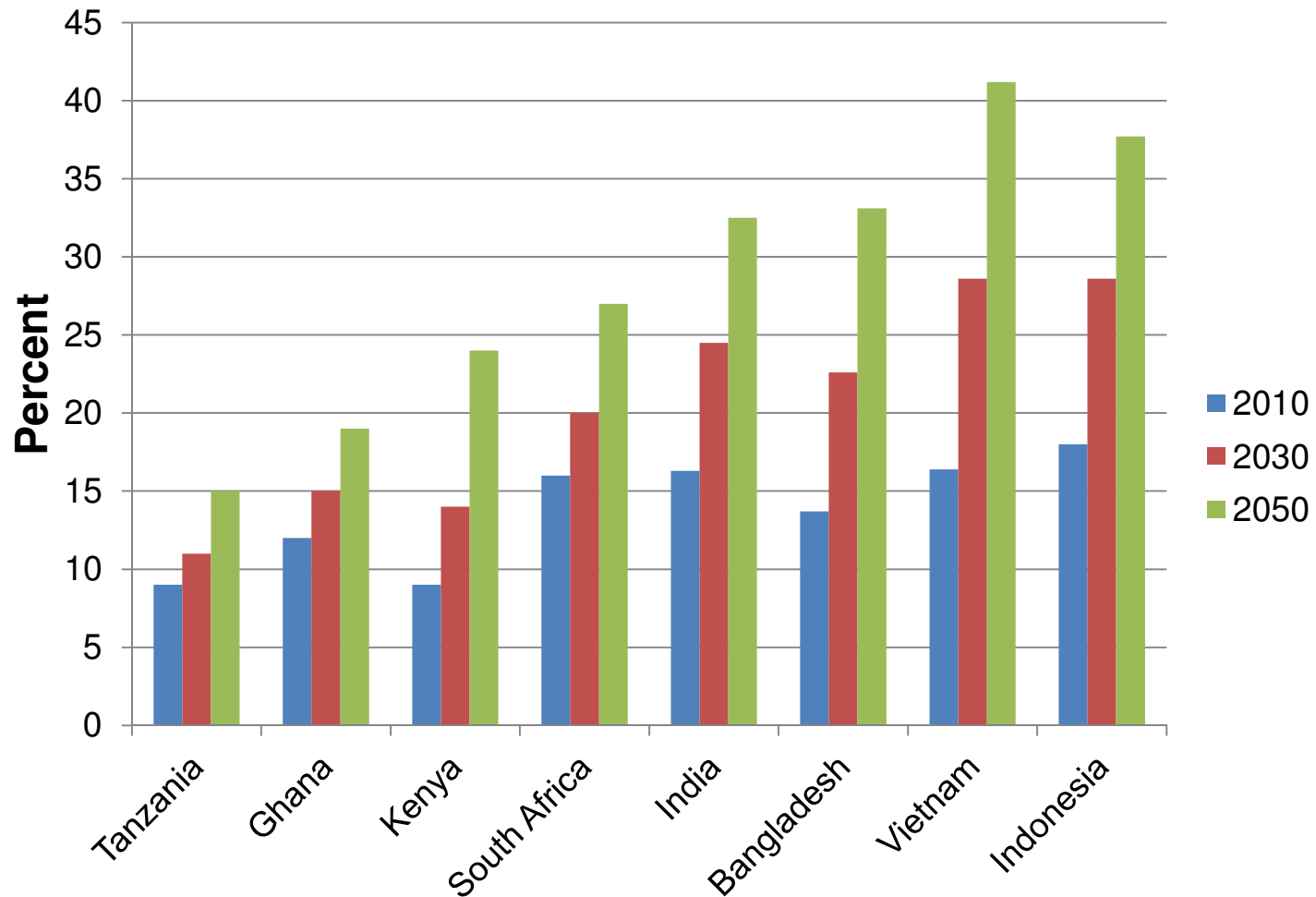


**INDEPTH Network**



2003 Johannesburg workshop

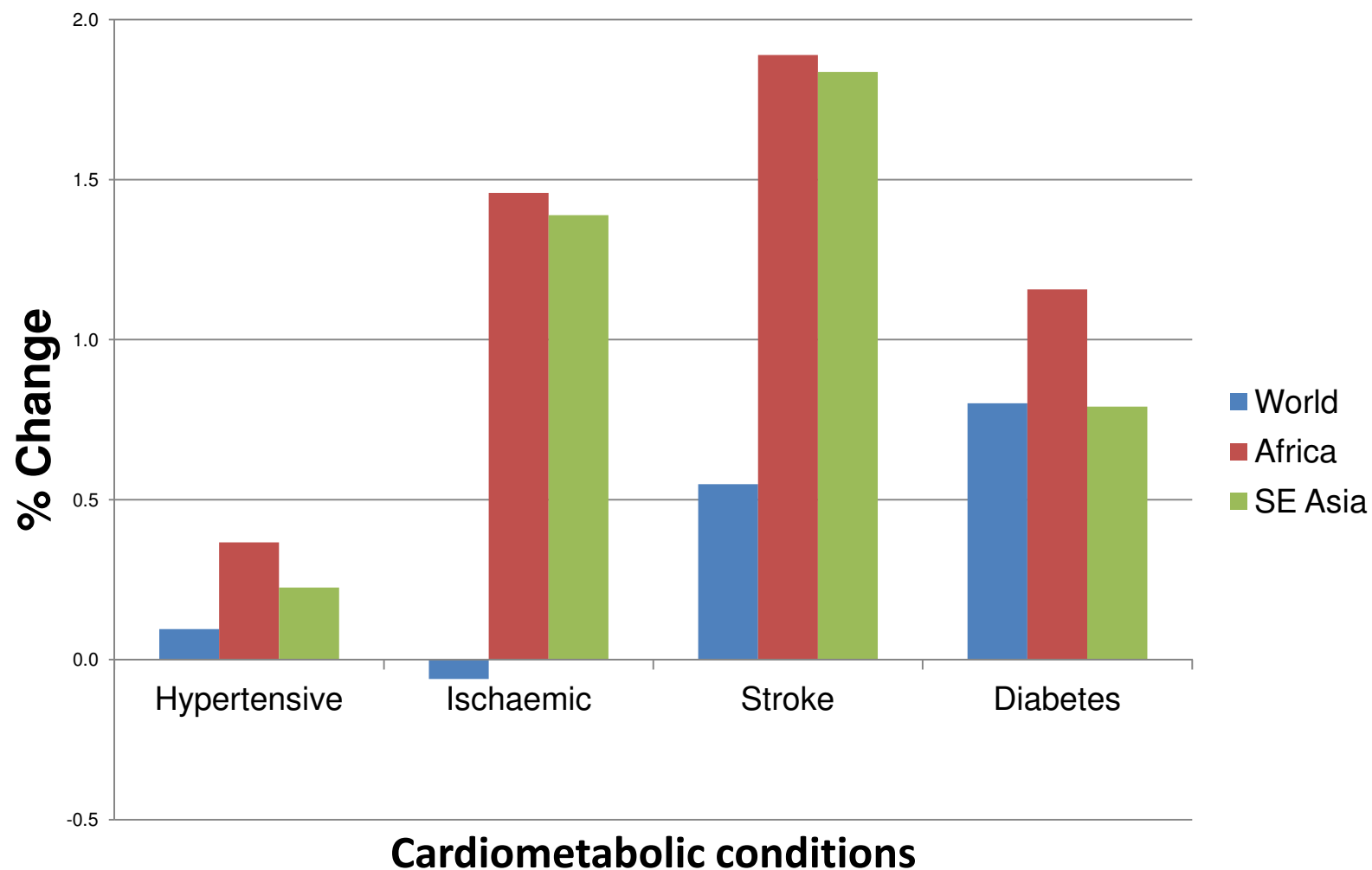
## Population of older adults will increase dramatically over next 15-30 years



US Census Bureau, 2013



## Increasing burden of cardiometabolic conditions in Africa and SE Asia, 2015 - 2030



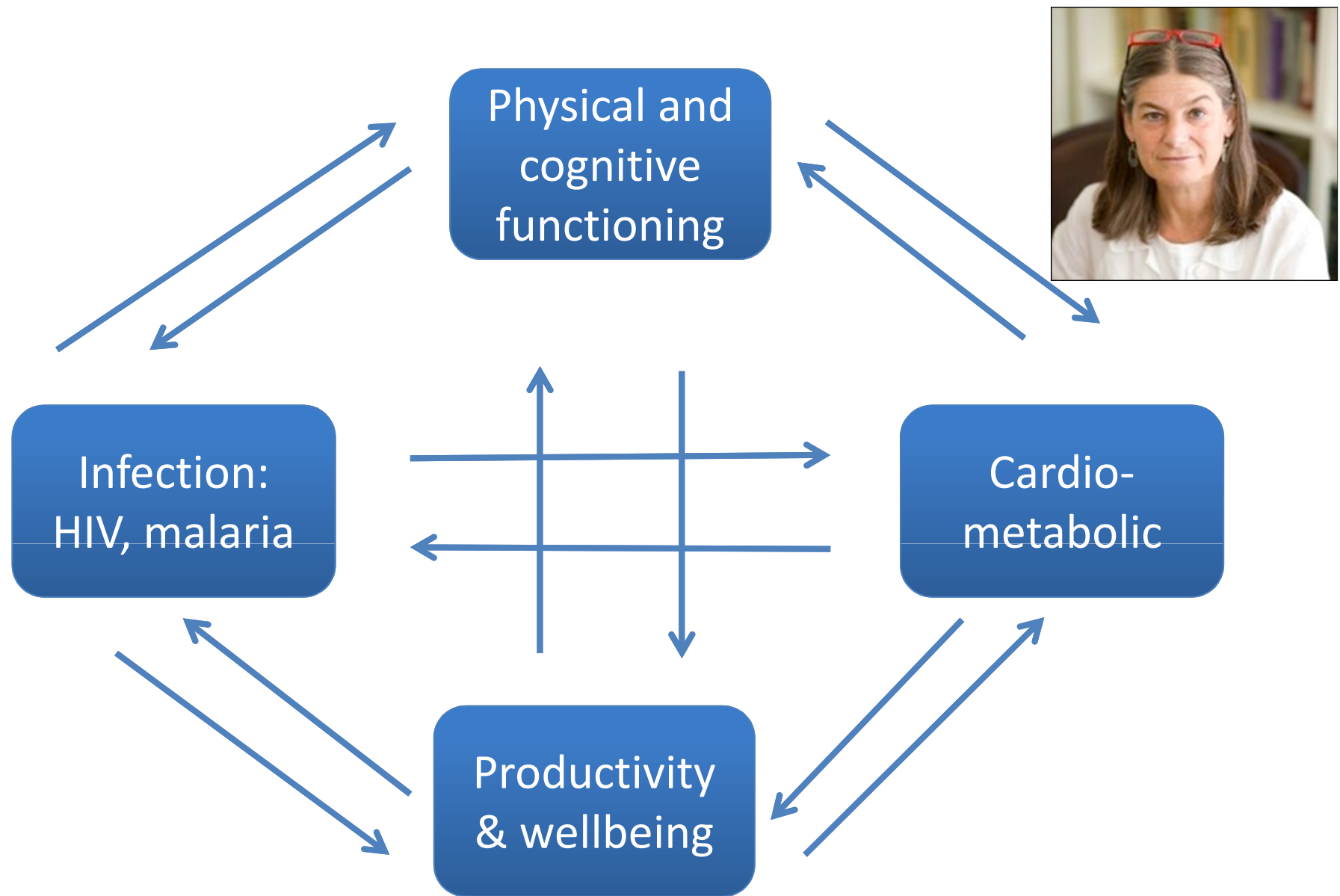
WHO Mortality Projections: [www.who.int/healthinfo/global\\_burden\\_disease/projections](http://www.who.int/healthinfo/global_burden_disease/projections)

# Aims

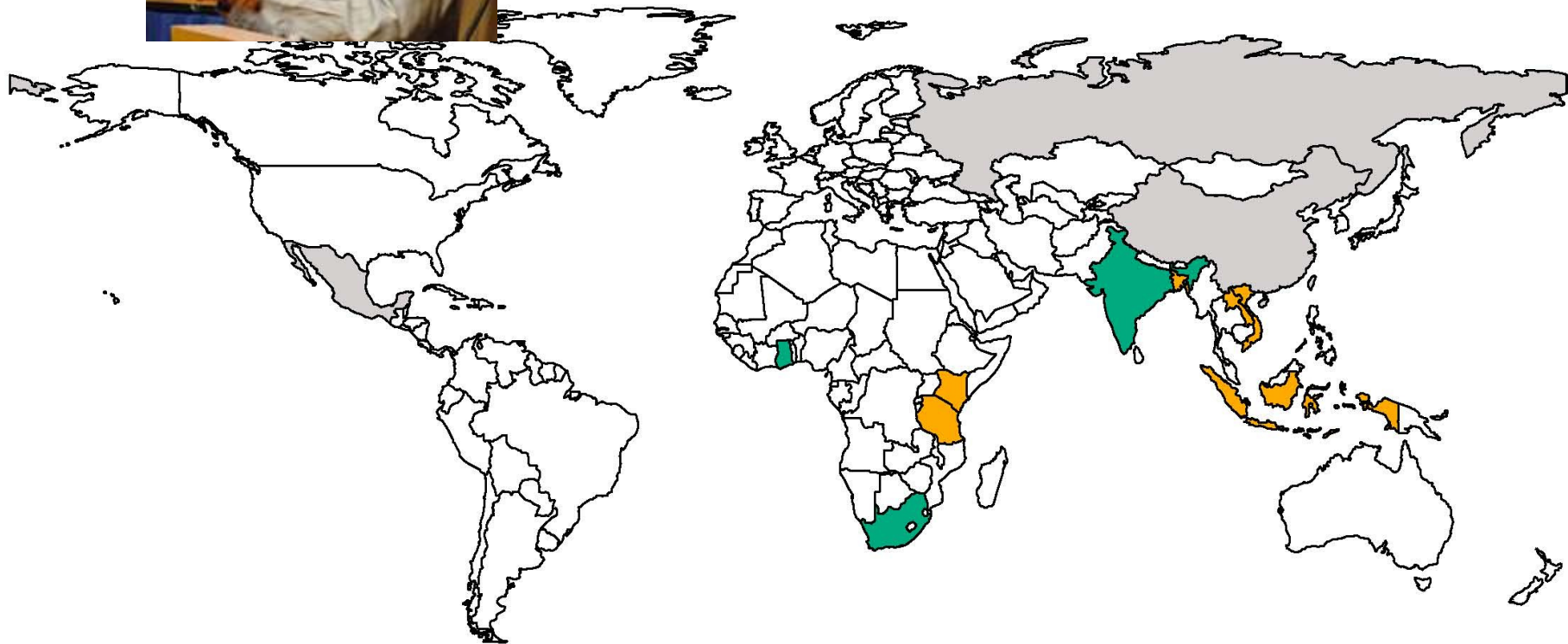
- Establish cohorts of older adults at differing stages of epi – demographic transition:
  - Social, economic, behavioural and biologic *predictors* of mortality
  - *Levels and trajectories* of disease and risk (cardiometabolic and chronic infection/HIV)
  - Changes in physical and cognitive *function*
  - Effects on social / economic wellbeing and *productivity*



**INDEPTH Network**



**INDEPTH Network**



#### Legend

Full Sage

Full SAGE+ at INDEPTH sites

Short version only at INDEPTH sites

**India, Ghana, South Africa**

**Bangladesh, Indonesia, Vietnam, Kenya, Tanzania**

# WHO-SAGE survey adapted to INDEPTH centres

Centre	SAGE 'short' – includes physical, cognitive assessment			Full SAGE
	Wave 1 baseline – self-report	Wave 2 <i>bio-measures</i>	Wave 3 <i>bio-measure</i>	
<b>Sub-Saharan Africa</b>				
Agincourt, South Africa	2006	2010	2014	X
Ifakara, Tanzania	2007	2014		
Nairobi, Kenya	2007	2008/9	2014	
Navrongo, Ghana	2007	2014		X
<b>Asia</b>				
Filabavi, Vietnam	2006/7	2014		
Matlab, Bangladesh	2007	2014		
Purworejo, Indonesia	2007	2014		
Vadu, India	2007	2014		X



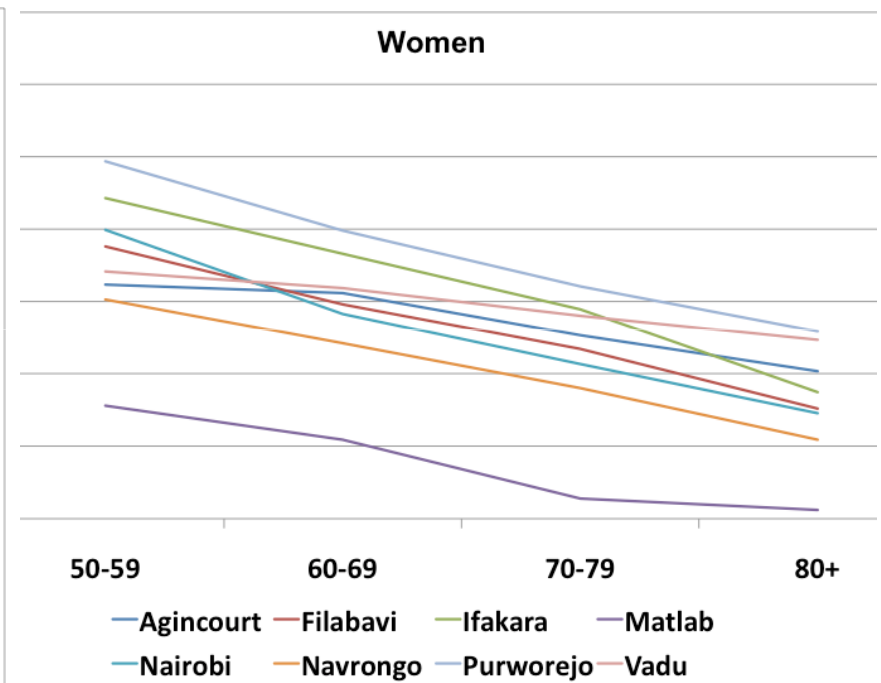
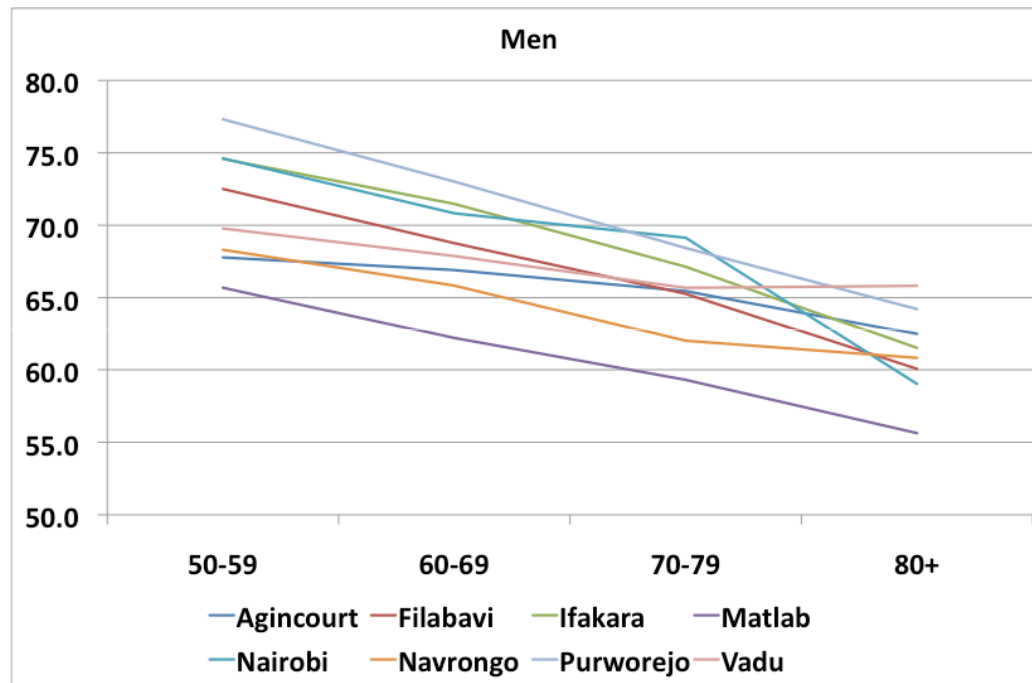
# INDEPTH-SAGE wave-2014

- Self-reports
  - physical / cognitive function (repeat)
  - cardiometabolic disease
    - stroke, ischaemic, hypertension, heart failure, diabetes
- Physical measures
  - height, weight, waist circumference and blood pressure
- Performance-based physical / cognitive function + work and productivity
- Dried blood spots
  - lipid profile, HbA1c, glucose, c-reactive protein
  - HIV and viral load



**INDEPTH Network**

## Older men consistently report... better health than older women



# Self-reported health (SRH) & mortality, 2007-2010

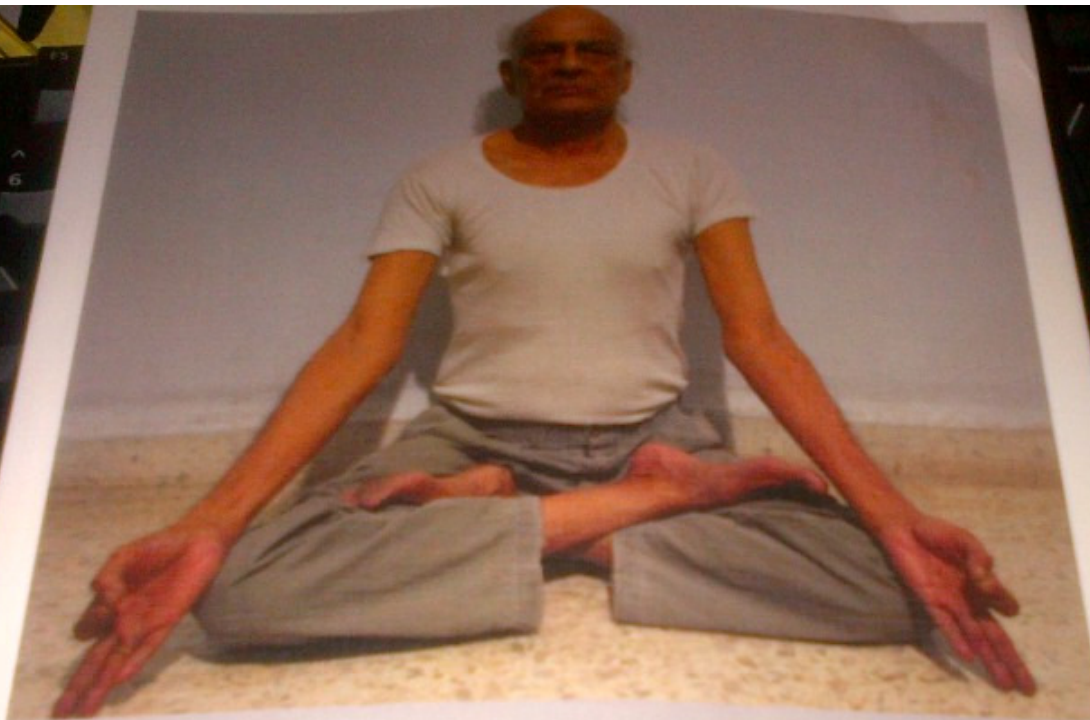
Predictors of death	Agincourt S Africa	Filabavi Vietnam	Ifakara Tanzania	Matlab Bangladesh	Nairobi Kenya	Purworejo Indonesia	Vadu India
<b>Poor SRH</b>	1.8 (1.39-2.33)	1.18 (0.89-1.56)	3.64 (2.77-4.79)	3.58 (2.9-5.6)	1.51 (0.93-2.44)	4.8 (3.47-6.63)	4.54 (3.19-6.47)
<b>Moderate SRH</b>	1.44 (1.15-1.8)	1.03 (0.8-1.32)	1.81 (1.42-2.31)	1.51 (0.93-2.44)	1.1 (0.7-1.73)	1.92 (1.55-2.38)	1.34 (1.04-1.73)
<b>Good SRH</b>	1	1	1	1	1	1	1

Outcome: death (M and F)

Independent variable: self-rated health

Analysis: univariate Poisson regression

Numbers represent relative risk (95% CI)



**“In general,  
how do you feel today?”**

Self-rated health in the context of aging in India

Siddhivinayak Hirve



Department of Public Health and Clinical Medicine  
Epidemiology and Global Health  
Umeå 2013



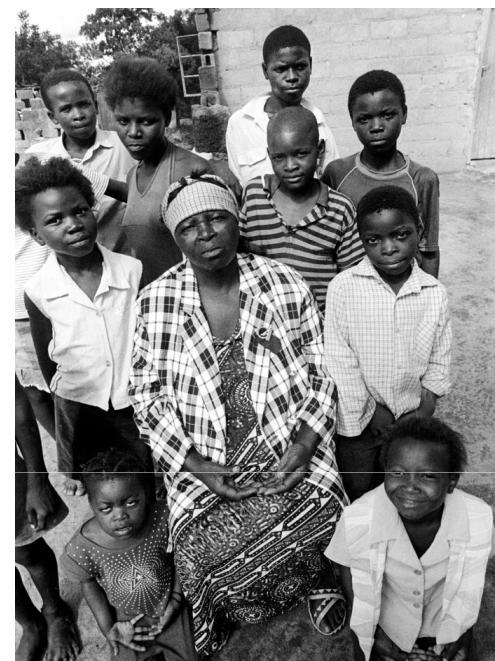
Vadu	Matlab	Filabavi	Purworejo
-2.78	-1.84	-2.36	-3.71
Vision	Mobility	Mobility	Pain/discomfort
-2.5	-1.69	-2.33	-3.19
Pain/discomfort	Pain/discomfort	Sleep/energy	Cognition
-2.37	-1.69	-2.24	-2.9
Mobility	Affect	Pain/discomfort	Vision
-2.33	-1.51	-1.99	-2.5
Interpersonal	Sleep/energy	Cognition	Sleep/energy
-2.28	-1.45	-1.68	-2.26
Affect	Vision	Affect	Affect
-2.08	-1.39	-1.57	-2.23
Cognition	Cognition	Vision	Mobility
-1.45	-1.31	-1.17	-1.16
Self-care	Interpersonal	Interpersonal	Interpersonal
-1.44	-1.11	-0.27	0.8
Sleep/energy	Self-care	Self-care	Self-care

Health score was used as outcome variables, and the regression analyses were adjusted to sex, age, education level, socio-economic quintiles, and marital status in each site.



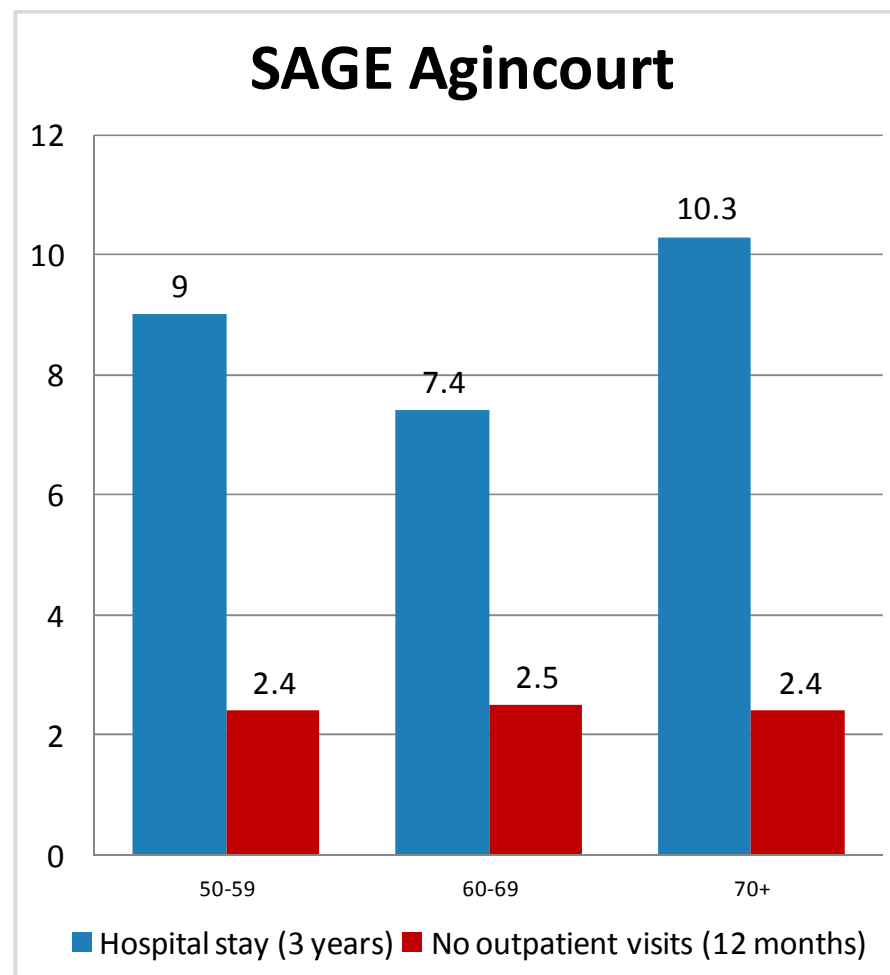
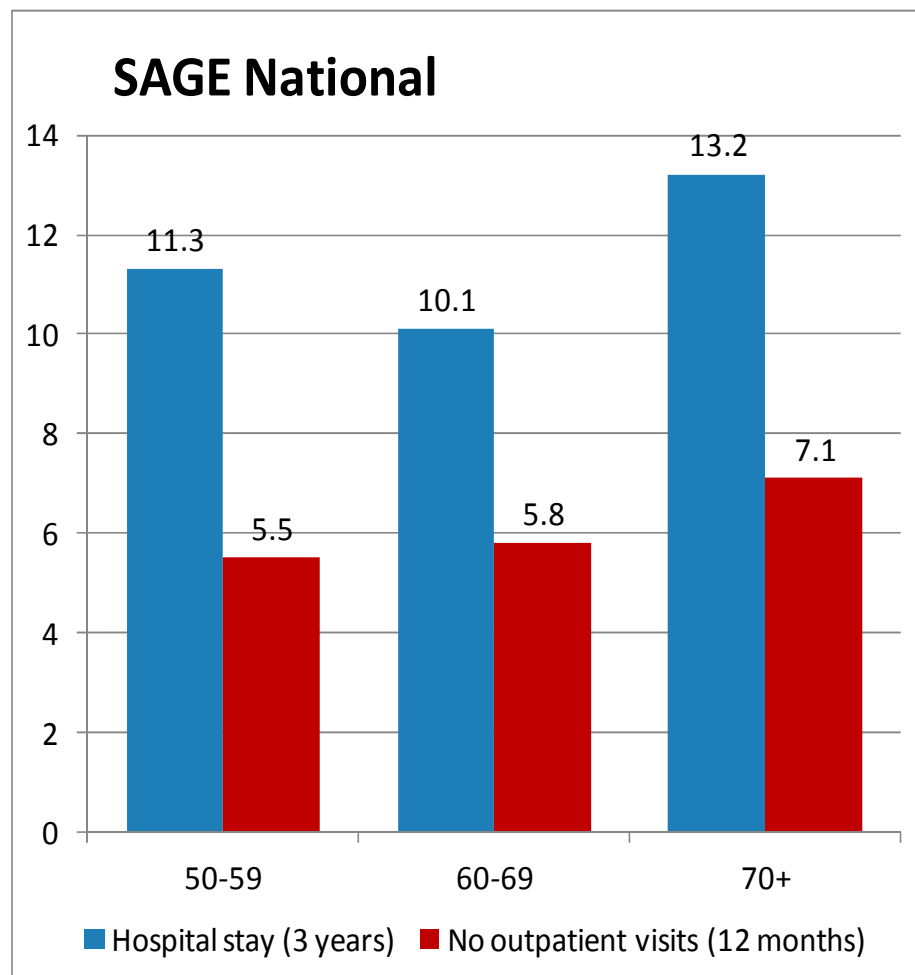
# OLDER ADULTS: Wellbeing and mortality

Influencing survival	Relative Risk
Single	1.52
Lower quality of life	1.59
Poorest households	1.85
<b>Impaired function</b>	<b>2.40</b>
Female	0.34



- Individual wellbeing ‘improves’ at pension age
- Households with pension-age woman cope better

## Health care utilisation among older adults in South Africa

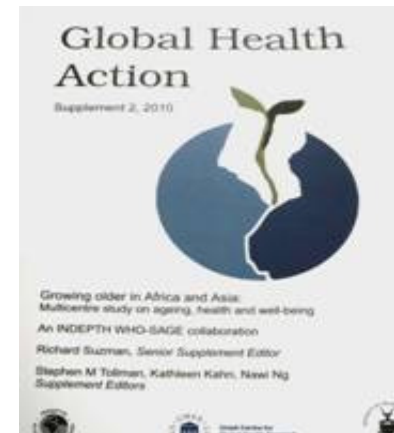


## Key Outputs

- Graduate students
  - PhD
    - 2 graduated
    - 3 enrolled
  - Masters
    - 10 graduated
    - 1 enrolled
- Public access dataset
  - ~ 35 requests
- Peer-review journals
  - Centre-specific: 24
  - Multi-centre: 4
  - Centre-specific under review: 5
  - Special issue *Global Health Action* 2010



**INDEPTH Network**



# Support and partnership

- **N-I on Aging – WHO; Sweden, Harvard**

- ~ \$750,000 – 2006-10
- Analysis workshops: Umeå, Harvard, Wits
- ~ \$250,000 + in 2013 for wave-2014-



- **Health and Aging in Africa: longitudinal studies in INDEPTH communities (HAALSI)**

*Supported as NIA-PO1, 2013 -16 → (Berkman, Tollman et al)*

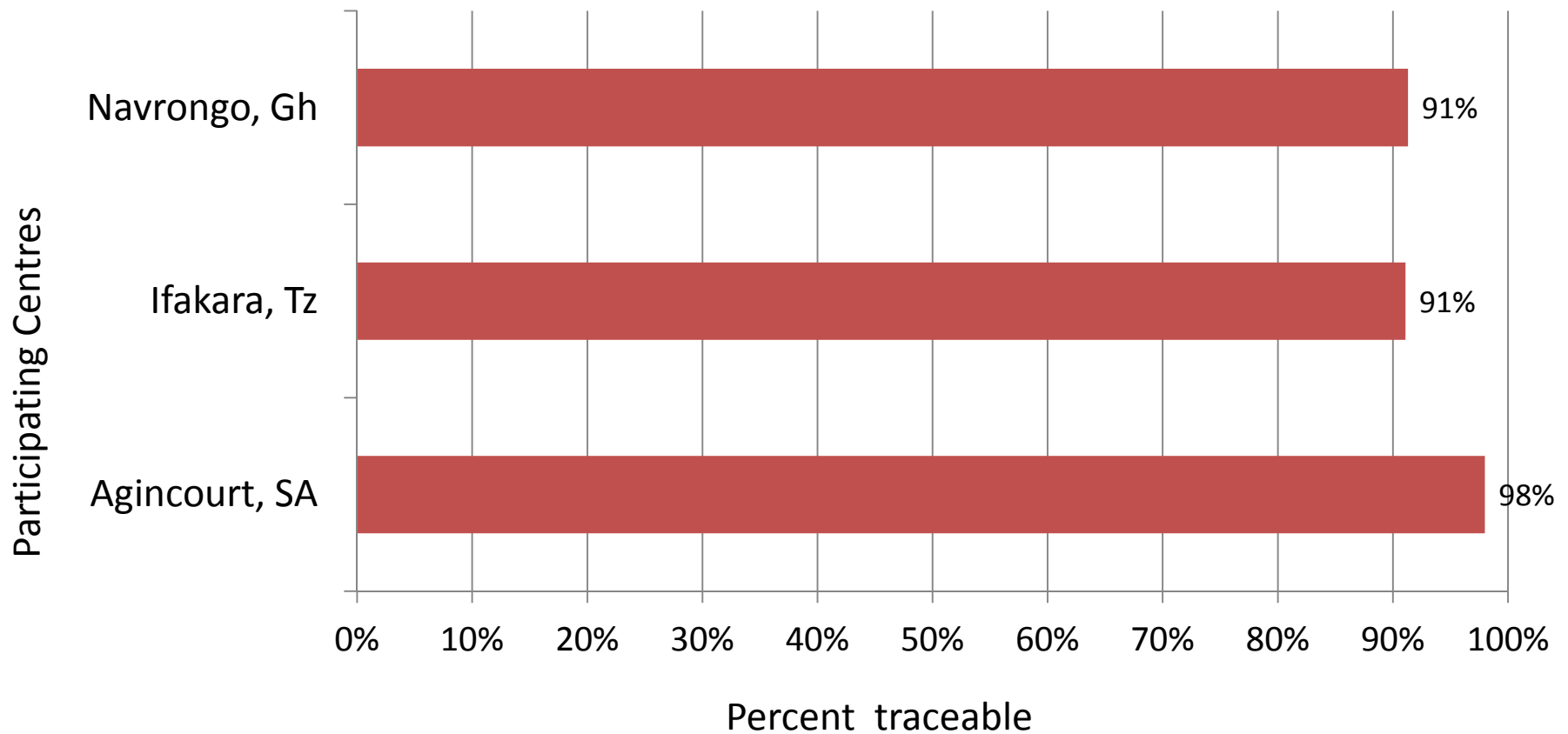
- **H3A: Human Heredity and Health in Africa**

- Wits/INDEPTH Collaborating Centre (*Ramsay, Sankoh et al*)  
Body composition, obesity and cardiometabolic disease  
*funded 2012-17*



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# Following up older adult migrants, 2012





# Future

- *Establish a leading African - Asian R&D platform:*
  - **Research / Research resource**
    - Chronic infection (HIV) and cardiometabolic disease
    - Causes - and consequences - for older adult functioning and productivity
  - **Intervention – evaluations / trials**
    - Health sector and intersectoral
  - **Diffusion through INDEPTH  
Harmonising – North and South**



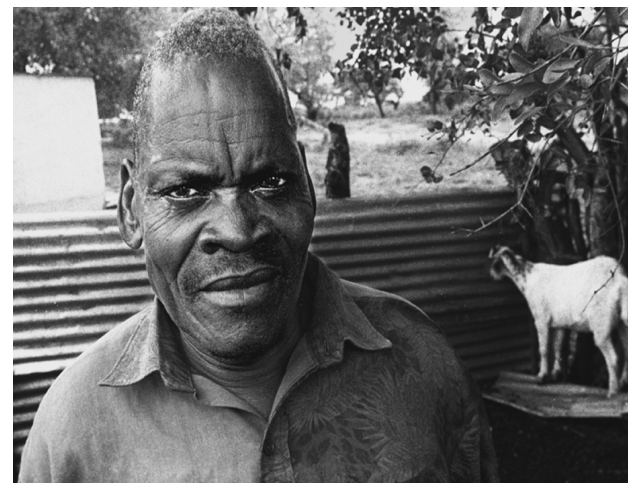
**INDEPTH Network**

# Acknowledgments

- Participating INDEPTH centres and their funding partners
- Umeå, Wits Universities
- Centre for Population & Development, Harvard U
- World Health Organization, Geneva
- National Institute on Aging, Richard Suzman
- Sweden FAS



**INDEPTH Network**





## SRH-mortality

*what Siddhi found ....*

- Poor SRH is a **strong predictor** of mortality in men
- Lack of spousal support associated with higher mortality
- Disability attenuates the predictive role of SRH on mortality in men and women
- Education and SES do not modify the relation between SRH and mortality

# Outputs: Centre detail

	Agincourt S Africa	Ifakara Tanzania	Nairobi Kenya	Navrongo Ghana	Filabavi Vietnam	Matlab Bangladesh	Purworjo Indonesia	Vadu India
<b>PEER REVIEW ARTICLES</b>								
# centre-specific	3	1	7	1	3	1	3	2
# under review	2	0	0	0	0	0	0	3
<b>GRADUATE STUDENTS</b>								
-- <i>PhD</i>								
Graduated	0	-	1	0	-	0	0	0
Enrolled	3	-	0	0	-	0	0	1
-- <i>Masters</i>								
Graduated	0	-	0	2	-	1	7	0
Enrolled	0	-	0	1	-	0	0	0



Agincourt, SA	Ifakara Tanzania	Nairobi Kenya	Navrongo Ghana
-2.48 Sleep/Energy	-3.51 Pain	-3.88 Vision	-2.66 Sleep/Energy
	-3.19 Mobility	-3.57 Sleep/Energy	-2.20 Affect
-2.24 Affect	-2.60 Vision	-3.53 Pain	-2.15 Mobility
-2.23 Pain	-2.42 Sleep/Energy	-3.38 Affect	-2.04 Pain
-1.80 Vision	-2.30 Cognition	-2.56 Mobility	-2.00 Cognition
-1.70 Mobility	-1.89 Affect	-2.38 Cognition	-1.54 Interpersonal
-1.50 Interpersonal	-0.56 Interpersonal	-1.87 Interpersonal	-1.51 Vision
-0.50 Selfcare	-0.46 Selfcare	0.16 Selfcare	-0.19 Selfcare

Health score was used as outcome variable, and the regression analyses were adjusted to sex, age, education level, socio-economic quintiles, and marital status in each site

Navrongo	Ifakara	Nairobi	Agincourt
-2.18	-3.28	-3.28	-2.35
Sleep/energy	Pain/discomfort	Vision	Sleep/energy
-1.96	-3.1	-3.09	-2.23
Mobility	Mobility	Pain/discomfort	Pain/discomfort
-1.91	-2.36	-2.82	-2.13
Affect	Vision	Sleep/energy	Cognition
-1.84	-2.25	-2.62	-2.05
Pain/discomfort	Sleep/energy	Affect	Affect
-1.81	-2.21	-2.5	-1.6
Cognition	Cognition	Mobility	Vision
-1.51	-1.91	-2.37	-1.6
Interpersonal	Affect	Cognition	Mobility
-1.39	-0.59	-1.91	-1.34
Vision	Interpersonal	Interpersonal	Interpersonal
-0.6	-0.24	-0.18	-0.72
Self-care	Self-care	Self-care	Self-care

Health score was used as outcome variables, and the regression analyses were adjusted to sex, age, education level, socio-economic quintiles, and marital status in each site.

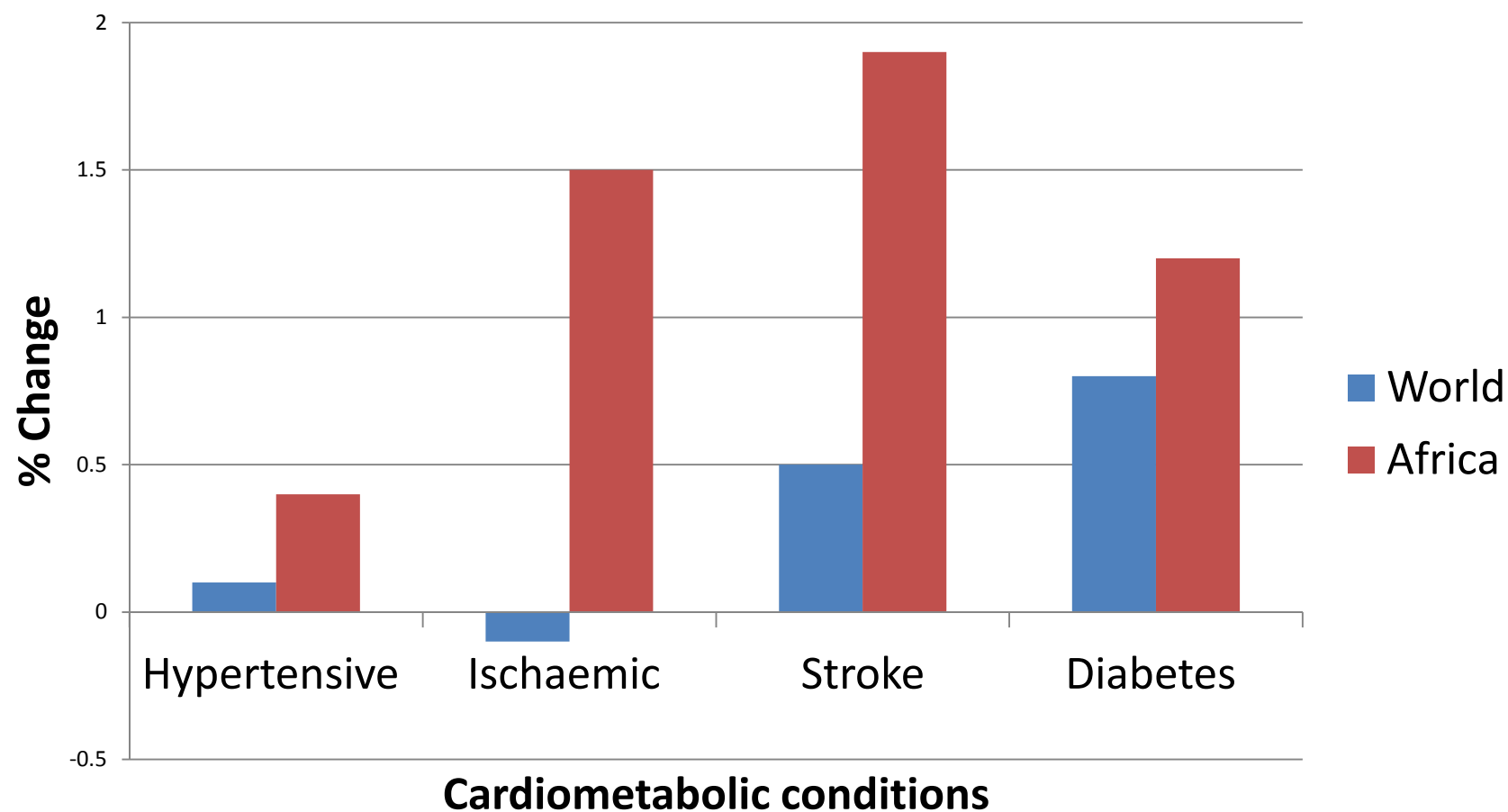
# Participating Centres

Centre	Study population	
	Site pop	Pop 50+
<b>Sub-Saharan Africa</b>		
Agincourt, South Africa	70 000	8 429
Ifakara, Tanzania	60 000	6 600
Nairobi, Kenya	68 746	2 771
Navrongo, Ghana	144 187	22 952
<b>Asia</b>		
Filabavi, Vietnam	50 000	8 500
Matlab, Bangladesh	212 328	33 797
Purworejo, Indonesia	52 500	14 200
Vadu, India	68 354	8 754

**Iganga/Mayuge**, Uganda: pilot August 2012; larger survey April



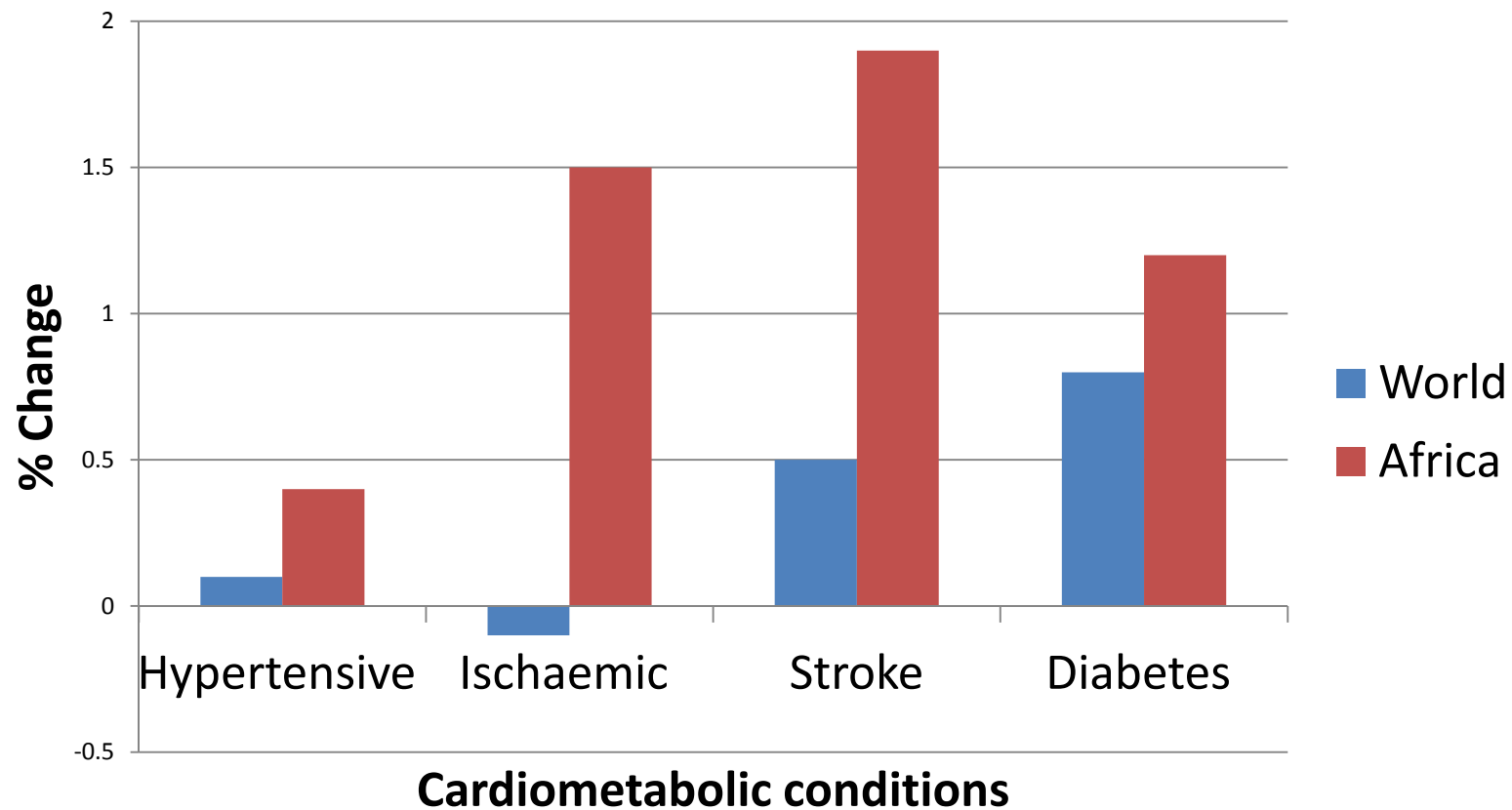
## Increasing burden of cardiometabolic conditions in Africa, 2015 - 2030



WHO Mortality Projections: [www.who.int/healthinfo/global\\_burden\\_disease/projections](http://www.who.int/healthinfo/global_burden_disease/projections)

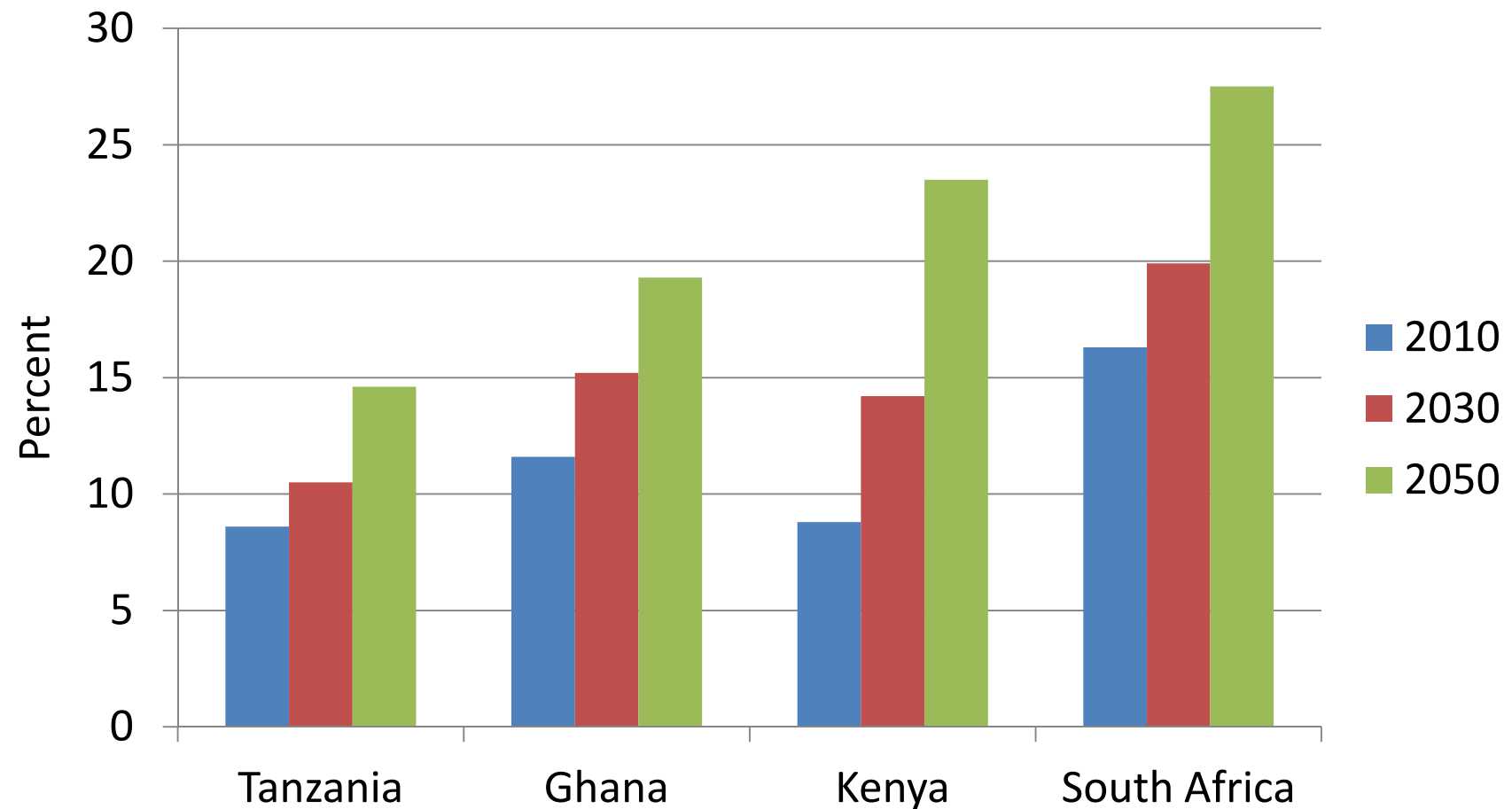


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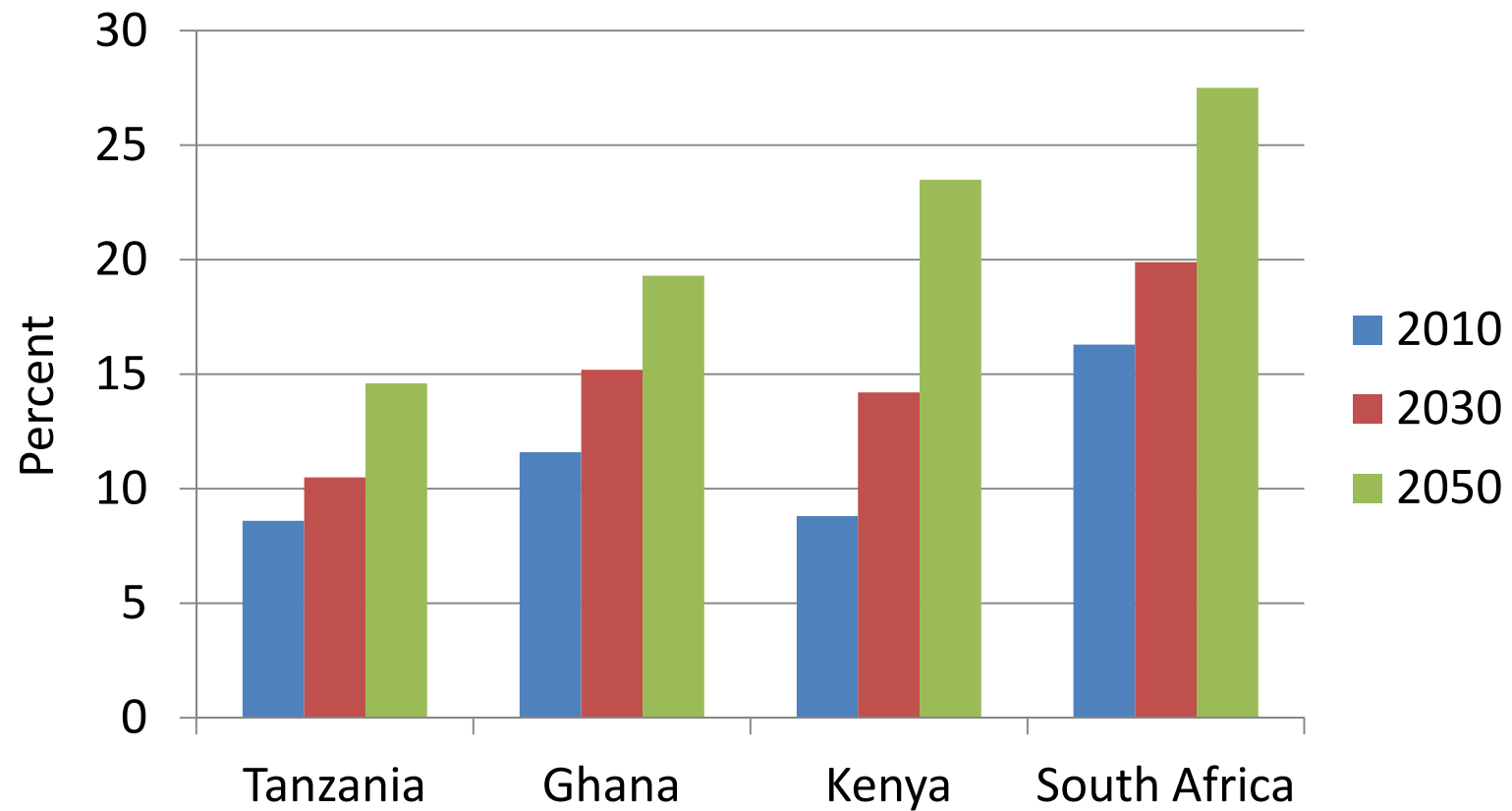
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## Populations of adults 50+ will increase dramatically over next 15-30 years



US Census Bureau, 2013

## Populations of adults 50+ will increase dramatically over next 15-30 years



US Census Bureau, 2013



# Our Vision Statement

Osman Sankoh  
Executive Director

ISC 2013  
Johannesburg, South Africa



International  
Network for the  
Demographic  
Evaluation of  
Populations and  
Their  
Health  
in low- and middle-income countries

*Established in 1998*

# Strategic Plan 2013-2016

## Our Vision is...

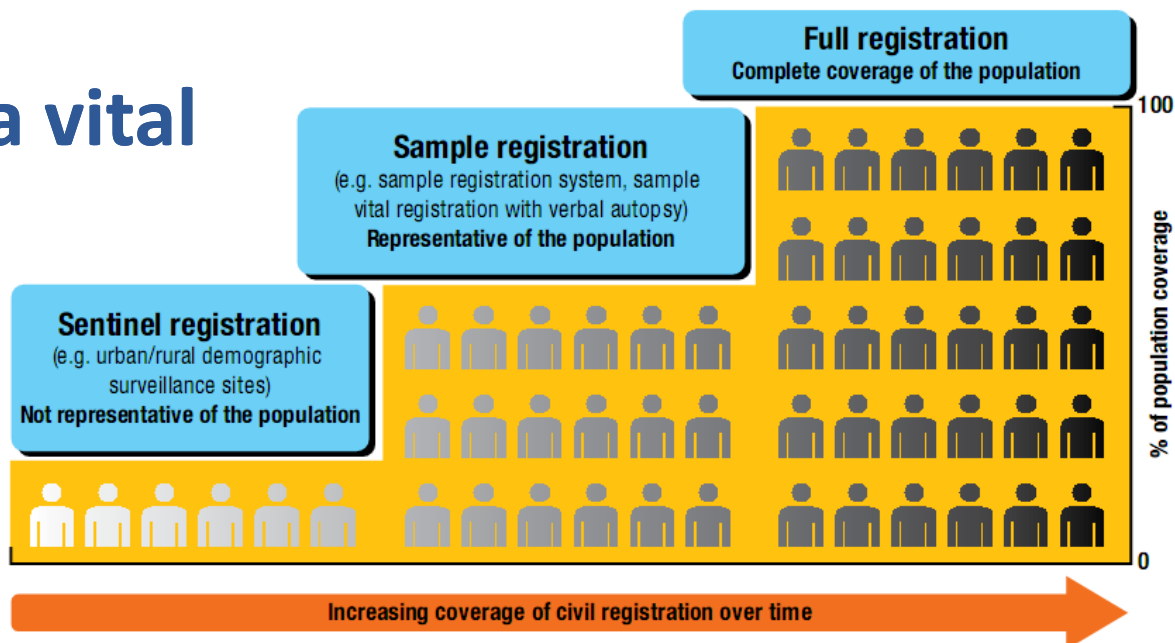
INDEPTH will be an (1) international network of demographic research institutions that (2) provides health and demographic data to enable (3) developing countries set health priorities and policies based on the (4) best available evidence and to (5) guide the cost-effective use of tools, interventions and systems to (6) ensure and monitor progress towards national goals.

# Why we are here this week:



*The contribution of INDEPTH's HDSS sites to strengthening national health and information systems*

## Stepping stones to a vital statistics system



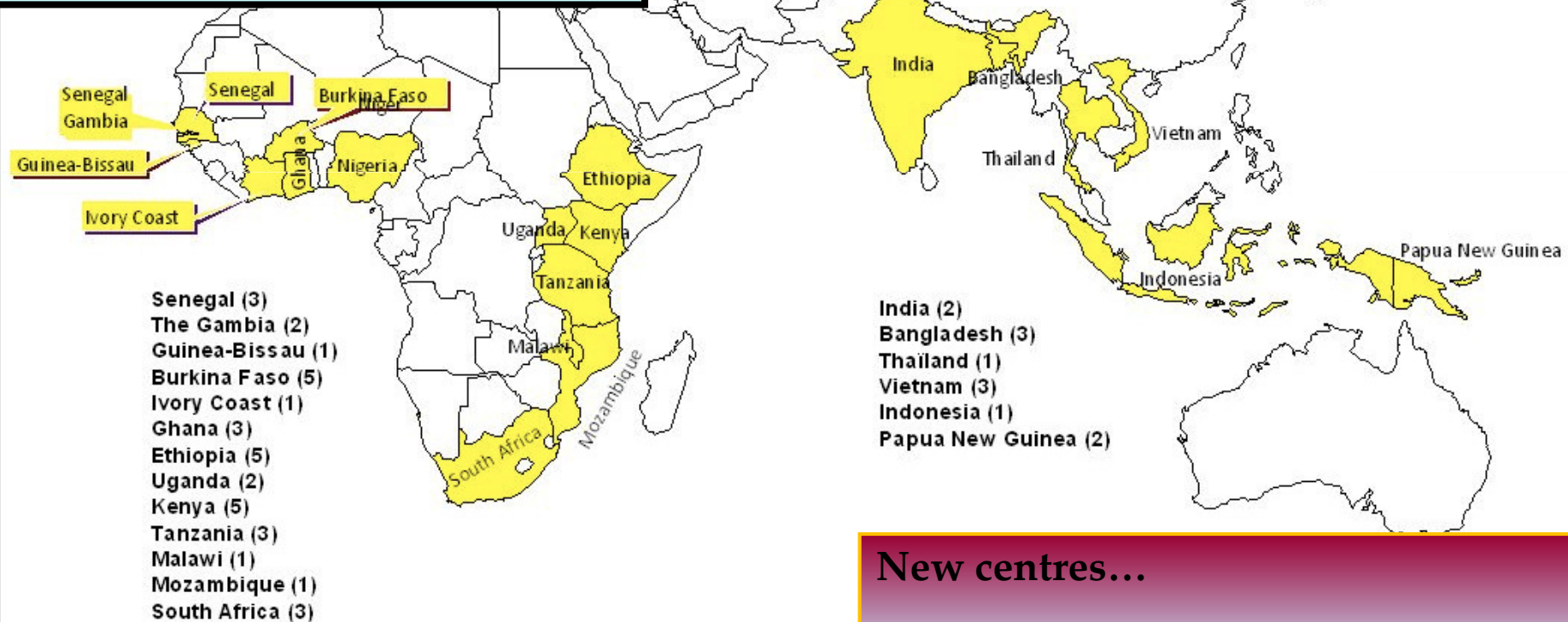
# Prior to INDEPTH

- HDSS centres operated as disparate research entities in small localities within countries.
- Many of their findings remained unknown in the international health arena.
- INDEPTH Network constituted in 1998
  - a critical mass of HDSS centres is necessary
  - with the ability to conduct research of international importance using comparative and standardised tools.



**With INDEPTH today**

Currently 48 HDSSs in 20 countries  
36 HDSSs in Africa  
10 HDSSs in Asia  
2 HDSS in Oceania



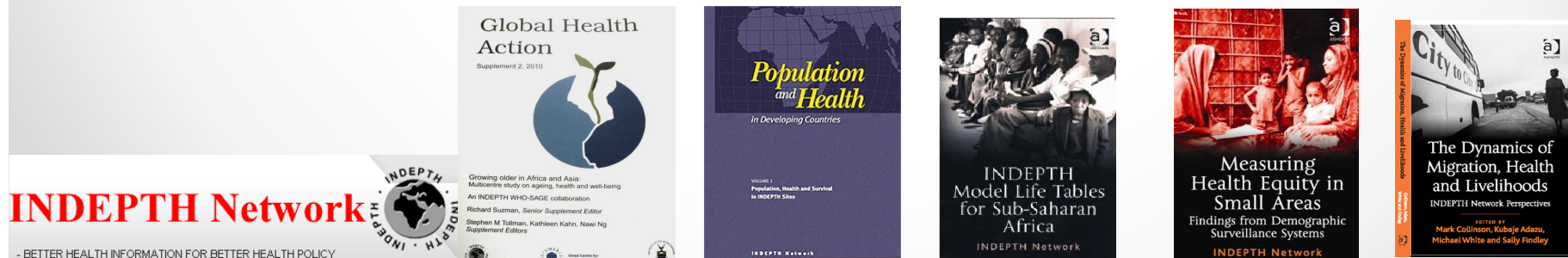
**Over 3,300,000 people under surveillance**

**New centres...**

**China, Malaysia, DRC, Zambia, Angola, Madagascar, Gabon, Mali, Sierra Leone, Rwanda.**

# A Decade of INDEPTH development

- Numerous gaps addressed by INDEPTH research:
  - from unrecorded trends in mortality and cause of death to life-course research
- Standardised survey instruments developed
- Multi-site analyses increasingly use harmonised variables and integrated datasets.



# Some Landmark Studies 1/3

- The INDEPTH Effectiveness and Safety Studies of Antimalarials in Africa (INESS) - 7 HDSS centres
  - The first time that this kind of Phase IV study for anti-malarials is taking place in Africa under the direction of African researchers.
- Optimising the impact and cost-effectiveness of child health intervention programmes of vaccines and micronutrients in low-income countries (OPTIMUNISE)
  - HDSSs in Asia and Africa

## Some Landmark Studies 2/3

- Epilepsy study, 5 countries

### Parasites and poor antenatal care are the main causes of epilepsy in sub-Saharan Africa, study reveals

31 January 2013



The largest study of epilepsy in Africa to date reveals that programmes to control parasitic diseases and access to better antenatal care could substantially reduce the prevalence of the disease in this region.

- The INDEPTH **Malaria Clinical Trials Alliance (MCTA)** trained personnel and improved facilities and infrastructure for clinical malaria vaccine and therapeutic trials in 10 countries across Africa.

# Some Landmark Studies 3/3

- Work on Adult Health and Aging at 8 INDEPTH centres in Asia and Africa led by **Agincourt HDSS** in South Africa.
  - Field-tested the WHO Global Survey on Adult Health and Global Aging (SAGE).
  - Strengthen empirical understanding of aging and older persons to assess follow-up strategies or test new survey methods.

# Centre-specific studies

- Diverse and exciting research portfolios by the individual member centres
- The multi-centre INDEPTH studies succeed only due to strong commitment and increased quality of the member centres
- INDEPTH website provides profiles of these centres ([www.indepth-network.org](http://www.indepth-network.org))

# INDEPTH's Scientific Vision

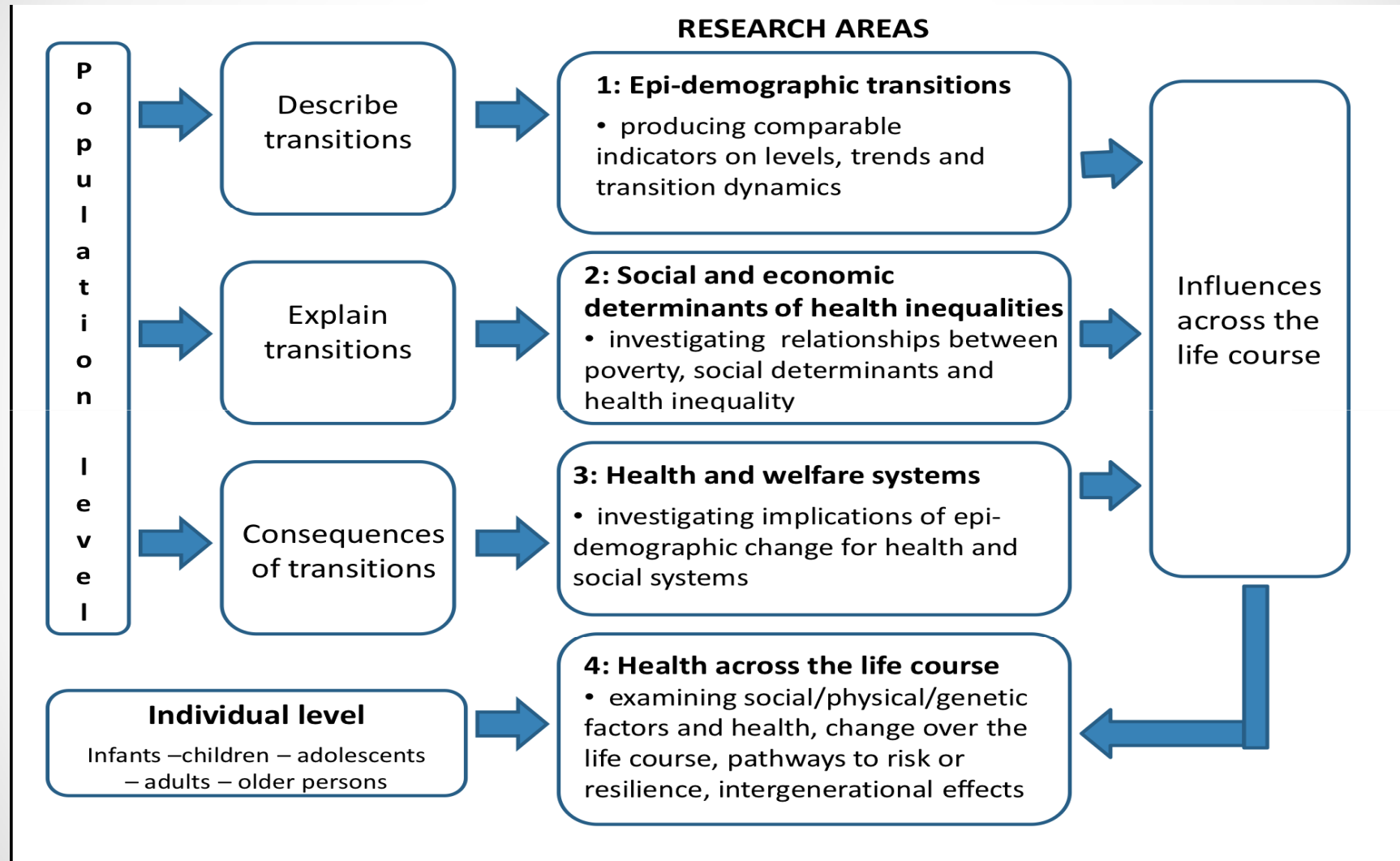
- **Our vision** is to harness the world's HDSSs and bring empirical understanding to bear on critical persisting and emerging health problems.
- The overall aim of INDEPTH's research is to generate **robust scientific knowledge** that can guide evidence-based health and social policy interventions at local, national and international levels.



# Our Research Strategy

- INDEPTH conducts research studies and strengthens global capacity to conduct studies that use the key demographic outcomes measured by HDSS centres:
  - fertility, all-cause and cause-specific mortality, morbidity and mobility.
- **Priority is given to:**
  - Outcomes that are **measured poorly** by other data collection systems
  - Answering questions that require research in more than one HDSS.

# Research Framework



# Structuring the Science

- Observational work: denominators, vital events and contextual variables inherent in HDSSs
- Development of cohorts (e.g. adult, adolescent or household cohorts)
- Intervention-research: including community based trials, and systems and policy evaluations
- Health and social policy and programmes: Apply findings to health and development with support to scaling-up
- Methodological innovation: verbal autopsy, the linking of population-based and health service data, etc.

# Capacity Strengthening and training

- Help **individual centres** to publicise their research and results for greater policy influence.
- At a **multi-centre level**, our workshops train data managers and analysts and help develop the next generation of HDSS professionals.
- And at a **broader network level**, we assist centres in developing regional groups and teams.

# Data sharing efforts...

- In July 2013 we launched the **world's first online data repository specialising in longitudinal individual exposure**
- **INDEPTHStats**, a website
  - freely available
  - allows users to explore basic demographic indicators from our member centres



# INDEPTH Data Repository

[Home](#)[What is this?](#)[How to use it?](#)[History](#)[Data](#)[Citations](#)[News](#)[INDEPTHStats](#)[Contact Us](#)

## Africa Centre HDSS, South Africa

The service facility survey catalog provides access to data along with accompanying survey documents from facility level surveys conducted by the World Bank. Service delivery surveys are tools to measure the effectiveness of basic services such as education, health, and water and sanitation...The Africa Centre Demographic Information System (ACDIS) started data collection in January 2000. [Read More »](#)

As of October 27,  
2013 the Library  
contains

**7 surveys**

**3,160 citations**

**539 variables**



## INDEPTHStats

Displaying longitudinal health and demographic indicators from INDEPTH member centres in Africa, Asia and Oceania

[Home](#)[HDSS Population Data](#)[HDSS Fertility Data](#)[HDSS Migration Data](#)[HDSS Mortality Data](#)[HDSS Cause Of Death Data](#)

2010

2009

2008

2007

2006

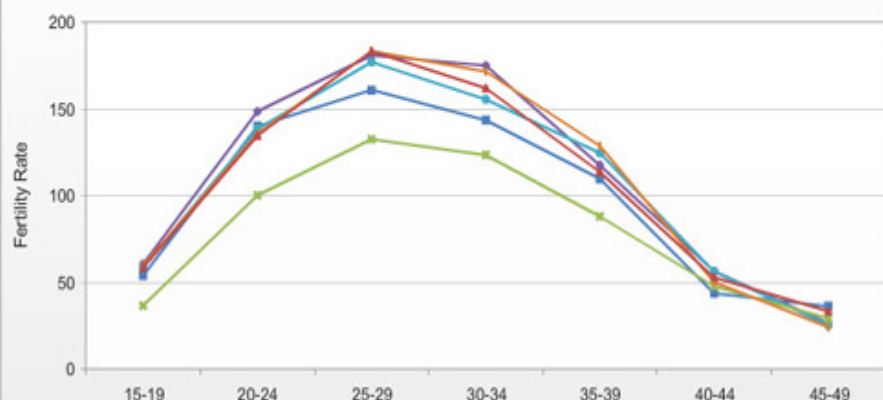
2005

2004



Fertility - Age Specific Fertility Rate - 2010

Ghana - Kintampo HDSS



✓ x ✓



All HDSS

- Bangladesh - Chakaria HDSS
- Bangladesh - Matlab HDSS
- Burkina Faso - Ouagadougou H..
- Gambia - Farafenni HDSS
- Ghana - Dodowa HDSS
- Ghana - Kintampo HDSS**
- Ghana - Navrongo HDSS
- India - Vadu HDSS
- Kenya - Kilifi HDSS
- Kenya - Kisumu HDSS
- Kenya - Nairobi HDSS
- Mozambique - Manhica HDSS

**INDE**

- BETTER HEALTH

# THE LANCET Global Health

INDEPTH launches a data repository and INDEPTHStats

# THE LANCET Global Health

The good, the bad, and the neglected



Public Health Association of South Africa

Represents the interests and promotes greater equity of the public health in South Africa.

INDEPTH Data Repository & INDEPTHStats

## THE TIMES OF INDIA

Health data from global field sites online

[www.peacefmonline.com](http://www.peacefmonline.com)

PEACE FM  
Online



INDEPTH Network Makes Critical Health And Demographic Data Available

- BET



International Union for the Scientific Study of Population

INDEPTH Data Repository

The International Network for the Demographic Evaluation of Populations and Their Health (INDEPTH)



Ghana News Agency

Speed, Accuracy and Objectivity

f Like

6.4k

INDEPTH Network launches INDEPTH Stats

Thursday 4th July, 2013



Jul 02, 2013 at 7:32pm

INDEPTH Network makes critical health and demographic data available

wellcome trust  
International network makes critical health and demographic data available  
5 July 2013



# In Conclusion....

Through our global network, **INDEPTH** is developing the **requisite information base**,

providing **high quality longitudinal data** about

the lives of people AND how development policies and programmes impact on those lives



