



An innovative model for augmenting statistical literacy and training in Africa

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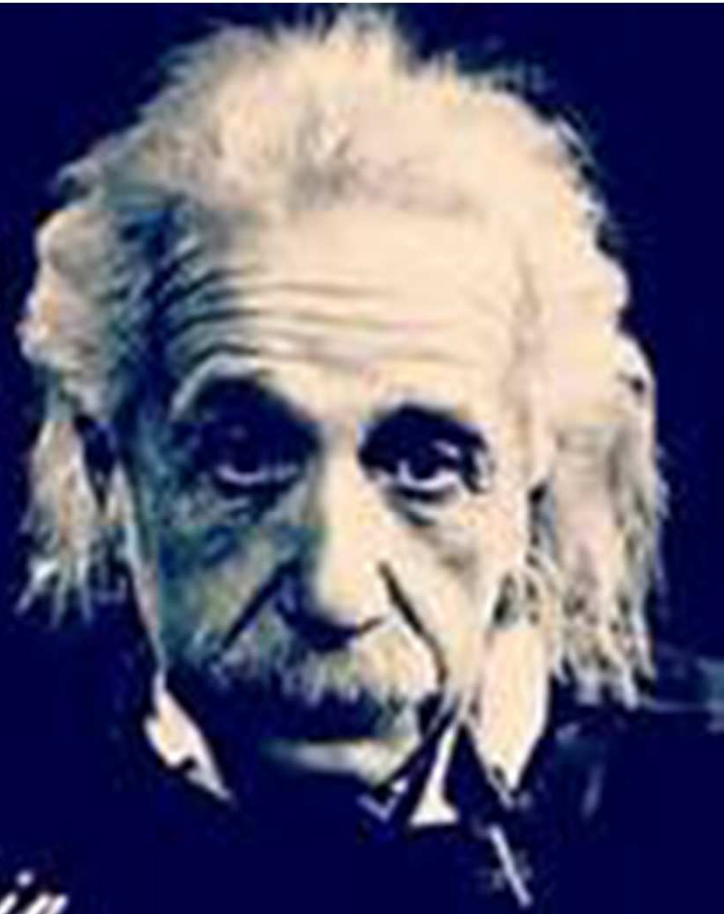
International Conference on Applying Quantitative Analysis to Development Issues: 18-19 February 2018, Bibliotheca Alexandrina, Egypt

Session 3- Quantitative Analysis for Health & the importance of access to Research Methods

Introduction

we cannot solve
our problems with
the same thinking
we used when
we created them

~ Albert Einstein



“ Only a wise
person can
solve a
difficult
problem.

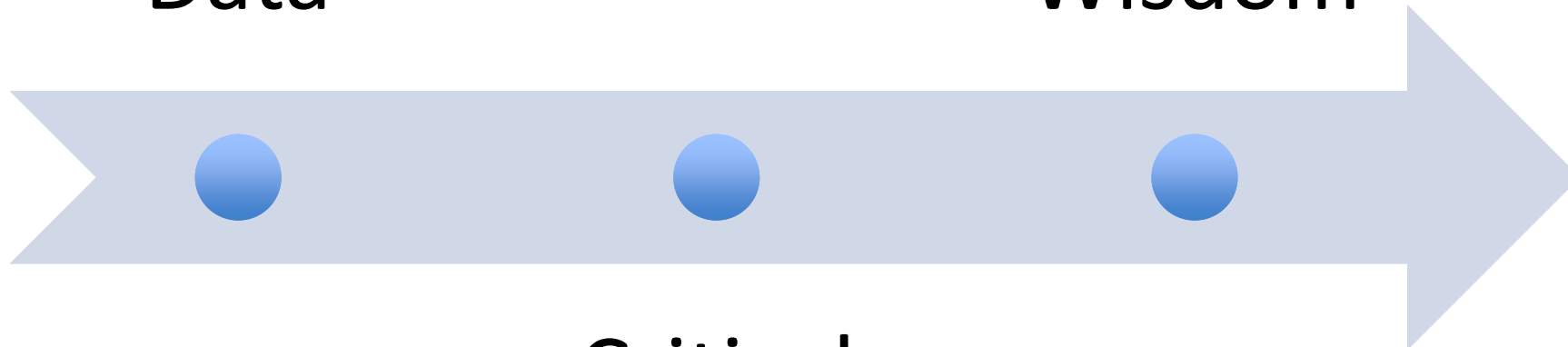
~Akan proverb



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Data

Wisdom



Critical
thinking



CRITICAL REASONING

INFORMATION LITERACY

STATISTICAL LITERACY

DATA LITERACY

Statistical literacy is

- Ability to read and interpret numbers in statements, surveys, tables, and graphs
 - Mass communication, public policy, advertising
- Critical thinking about numbers and statistics used as evidence in arguments
 - Association/Correlation Vs. Causation

36% LIVE ON LESS THAN ONE DOLLAR PER DAY

HEIGHT OF KILIMANJARO **19,340 FEET** 

 **14% WORLD POPULATION** : **53 COUNTRIES**

12 MILLION  **31%** **SECONDARY SCHOOL ENROLLMENT**

6 AVERAGE CHILDREN EACH WOMAN BEARS : **44%** POPULATION IS UNDER FIFTEEN : **ONE THOUSAND+ LANGUAGES**

80% MALARIA DEATHS CHILDREN UNDER 5 

114B. BARRELS IN **2ND** MOST POPULOUS CONTINENT : **6%** OF WORLD'S SURFACE AREA : **900** PEOPLE,000,000

IN OIL RESERVES

26,828 SQUARE MILES IN LAKE VICTORIA

SUCCESSFUL MILITARY : AVERAGE GDP **\$671** PER CAPITA

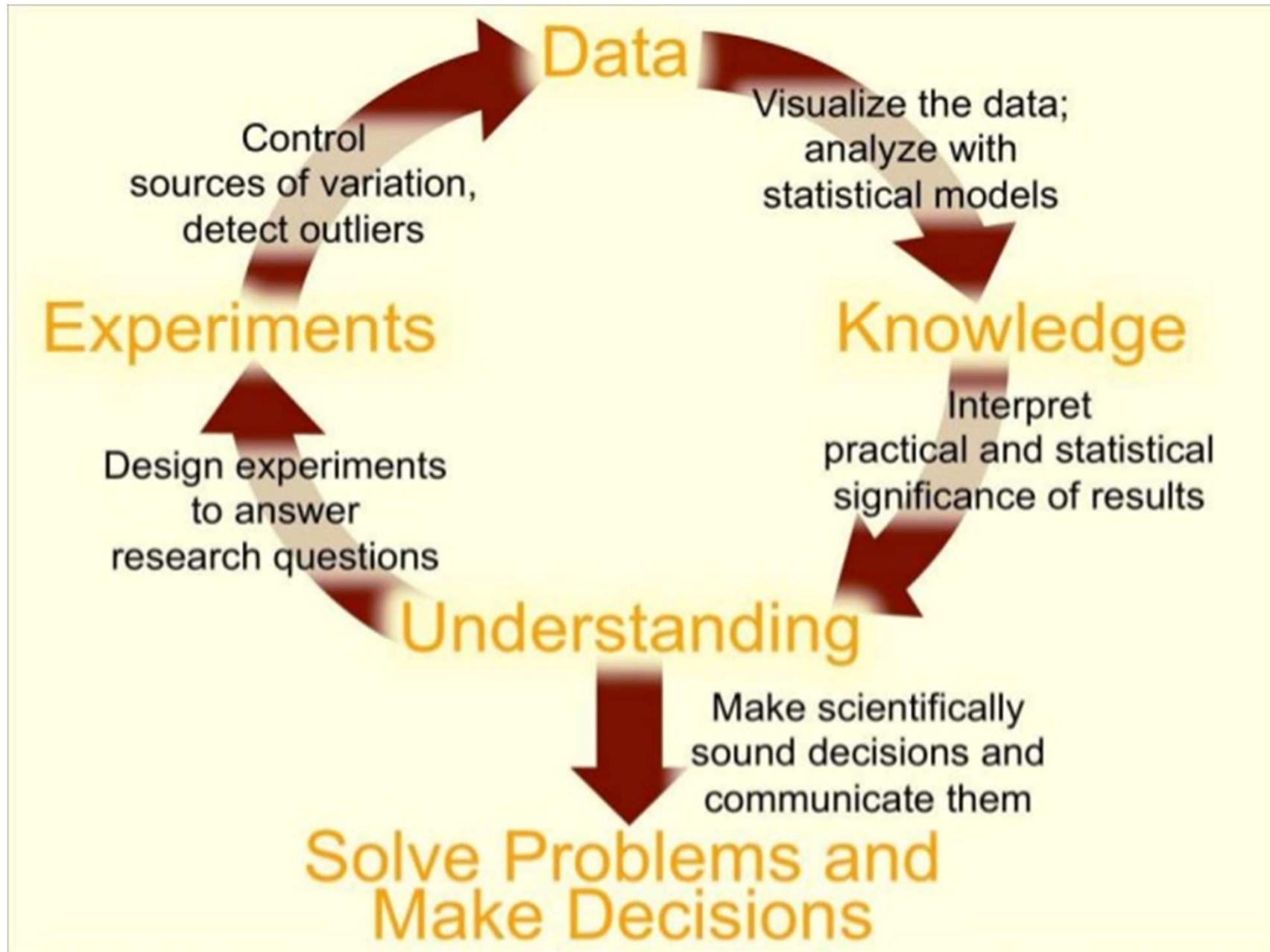
80 COUPS  **53 M CELL PHONE USERS**

\$10 BILLION  ANNUALLY IN CONFLICT DIAMONDS DURING 1990s

44.3 MILLION  INTERNET USERS

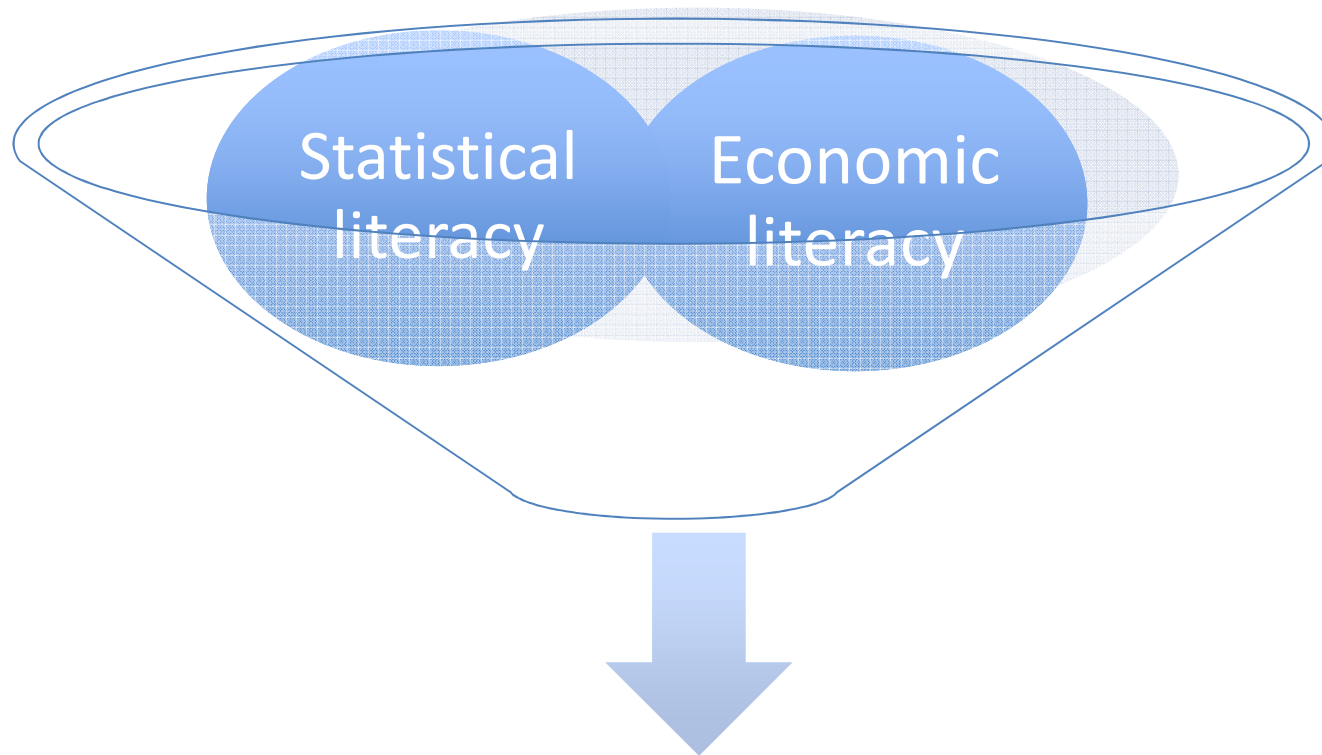
27 YEARS NELSON MANDELA WAS IMPRISONED

16,100 MILES OF COASTLINE





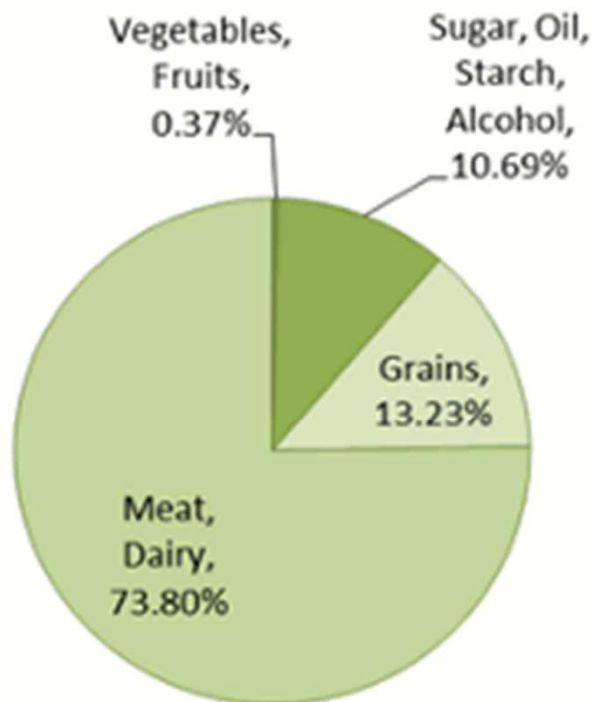
Statistical literacy is considered a pre- requisite for
economic literacy



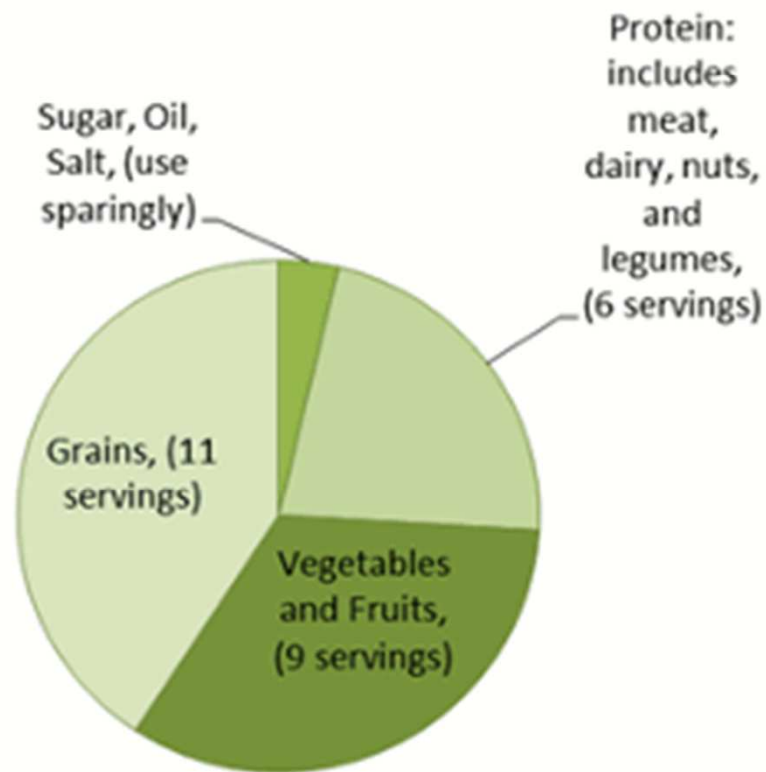
Enable citizens to engage in meaningful discourse,
understand what the government is doing,
participate in decision making and to make
informed choices

Why Does a Salad Cost More Than a Big Mac?

Federal Subsidies for Food Production
1995-2005



Federal Nutrition Recommendations

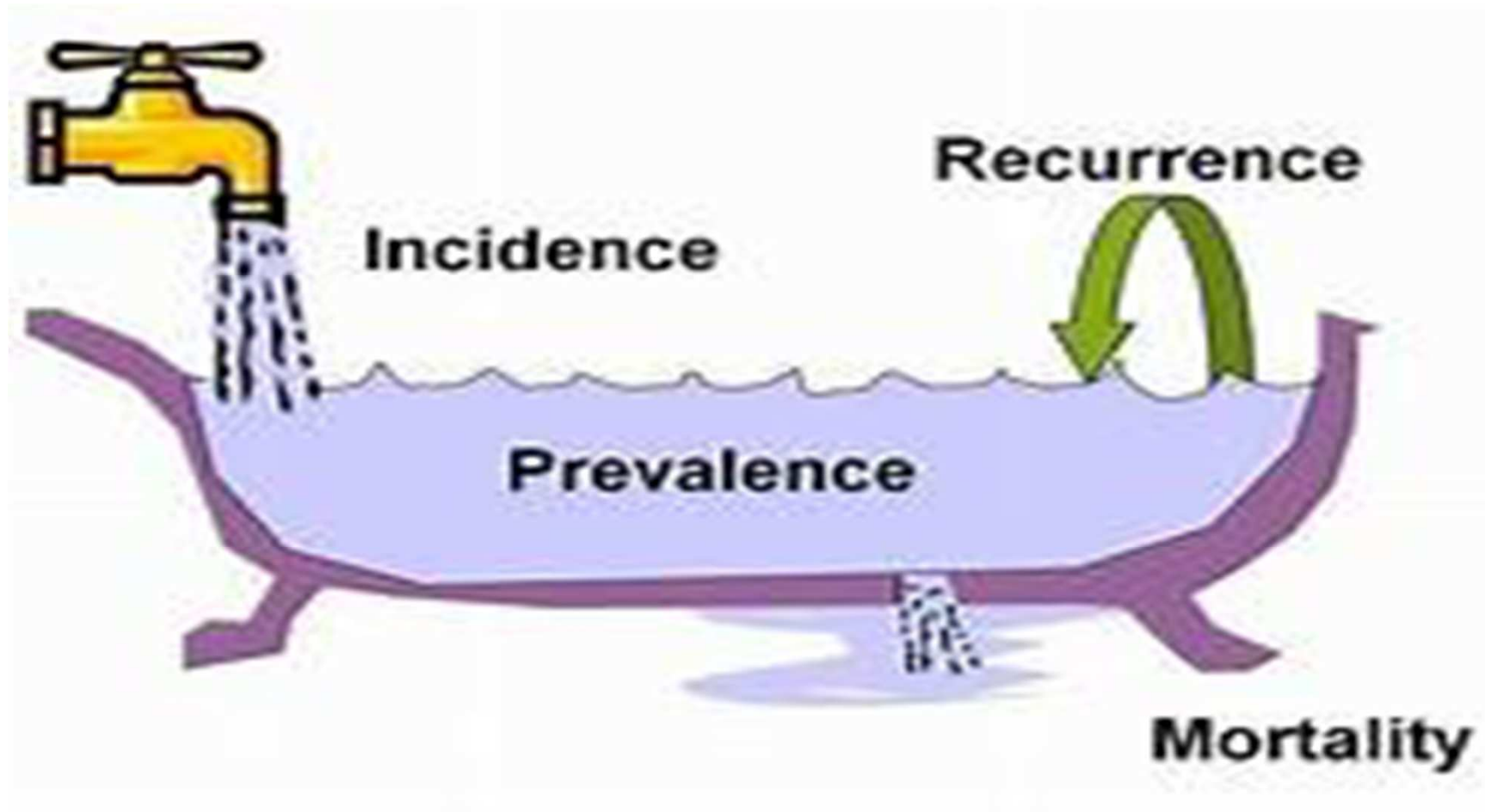


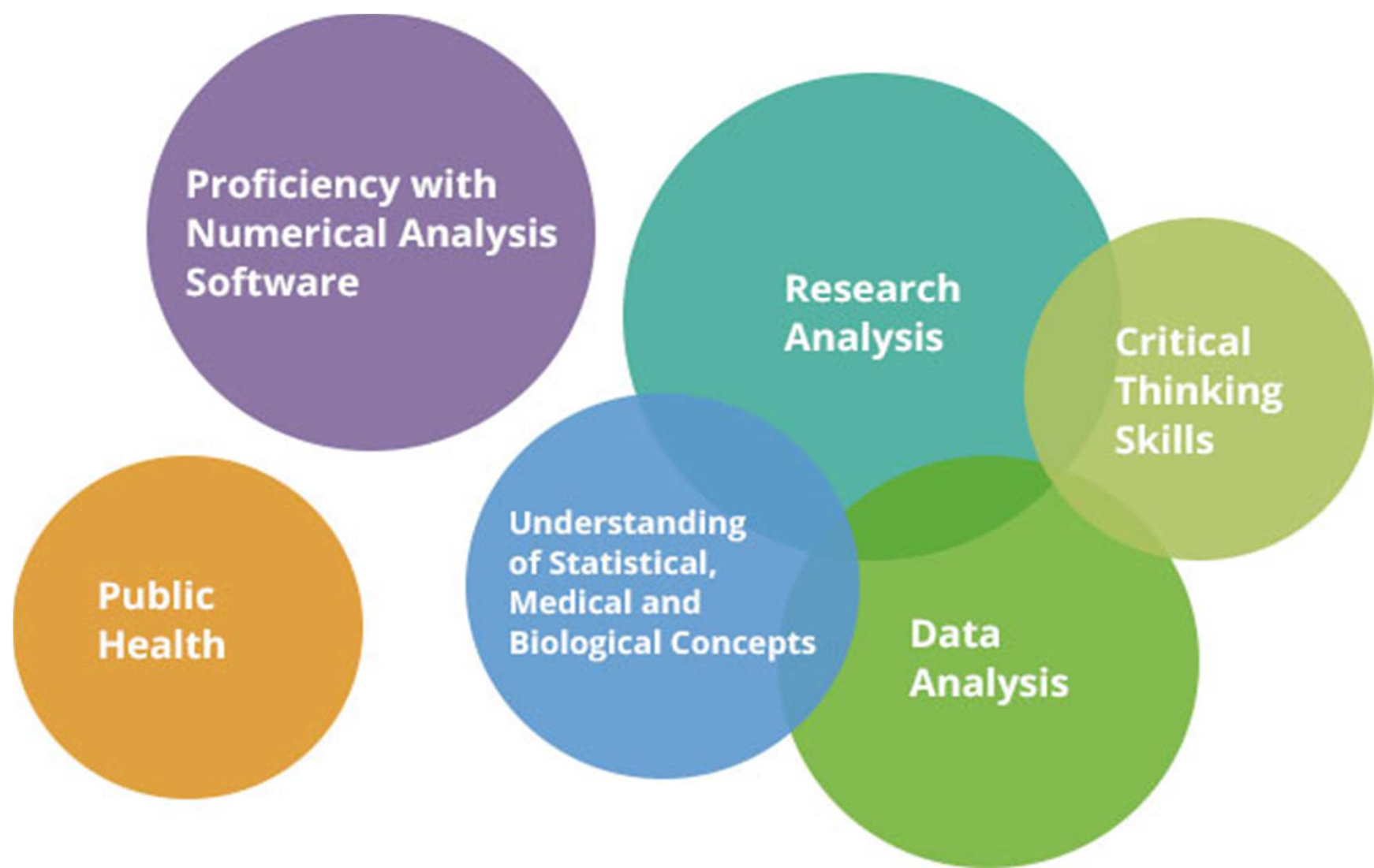
Source: Physicians Committee for Responsible Medicine, Autumn 2007, Volume XV1, Number 4

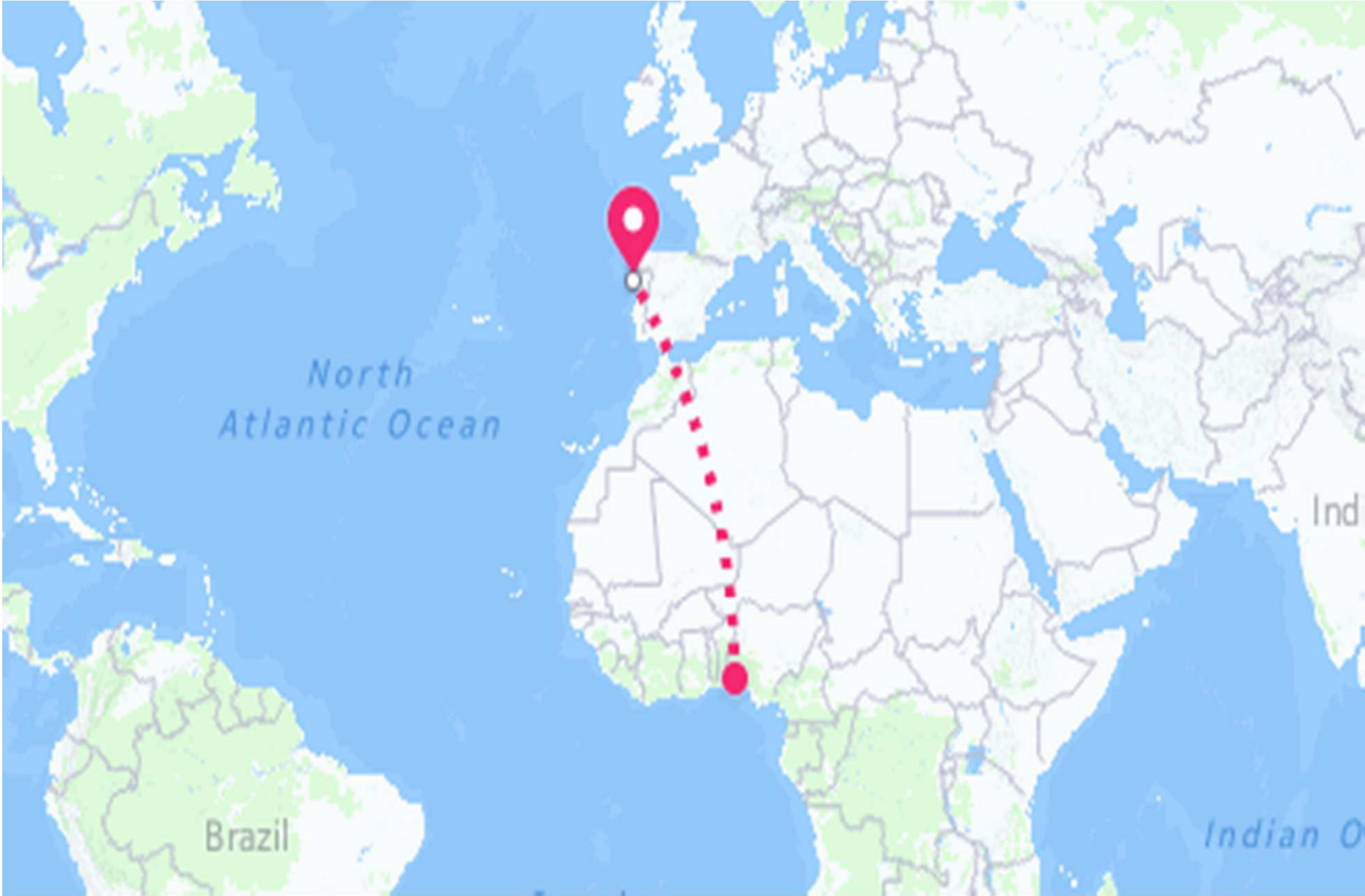
- National development is intricately linked to statistical development
- Boosting Africa's developmental agenda will require acquisition of modern statistical proficiencies and skills by its population

- African countries need better training in statistics to produce the needed quality statistics for evidence-based policy-making and planning
- Main challenge in producing quality statistical information is lack of human resources with up-to-date skills

Measurements in Epidemiology









Instituto de Saúde Pública da Universidade do Porto

Impact of the global financial crisis on low birth weight in Portugal: a time-trend analysis

Musa Abubakar Kana,^{1,2} Sofia Correia,¹ Barbara Peleteiro,¹ Milton Severo,^{1,3}
Henrique Barros^{1,3}

Major finding

The 2007–2008 global financial crisis was associated with a significant increase in LBW, particularly among infants of non-Portuguese mothers.

Evidence of statistical illiteracy and malnutrition in Africa

- In 2002, an international survey on reading graphs and tables of rates and percentages was conducted by the W. M. Keck Statistical Literacy Project
- Respondents included US college students, college teachers worldwide and professional data analysts in the US and in South Africa
- The survey focused on reading informal statistics – rates and percentages in tables and graphs.

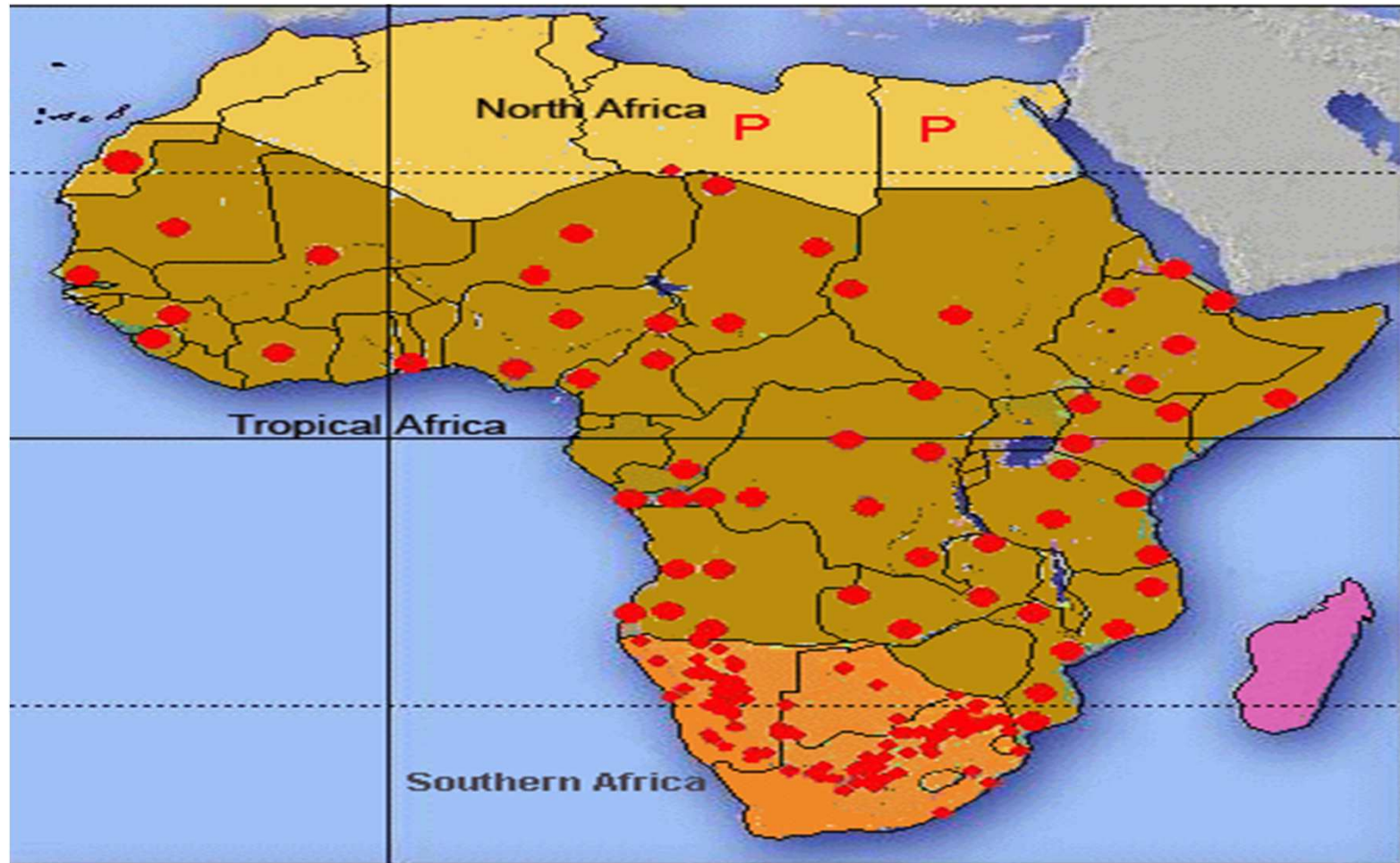
Main findings

- Students and data analysts need help in comparing two ratios using ordinary English
- Over 25% of the students and the data analysts surveyed did not recognize a proper association between two distinct groups
- The students and data analysts surveyed need help in seeing the positive value of random assignment in inferring causal connections from statistical connections

Challenges of statistical training in Africa

- Over the years, there have been different initiatives on statistical training in Africa
- Best-known initiative was the Statistical Training Programme for Africa (STPA), which United Nation Economic Commission for Africa implemented with support from UNDP and other partners from 1978 to 1993

There are a number of institutions in Africa whose role is to provide statistical training services on a regular basis



- The current programmes at training centres have tended to be theoretical
- In addition, they have not significantly been opened up to other domains and subjects such as law, history, political science, etc.

Key problems of the training centres

- Shortages of teaching staff both in terms of numbers and experience
- Limited fellowships that made it difficult to get many trainees from outside the host countries
- Scholastic materials (mainly books and computers)
- Less than adequate budgetary support from host Governments
- Space problems

- The linkages between training centres and the national statistical systems are generally weak and not formalized
- This is unhealthy as it affects the relevance of training programmes to national social and economic challenges.
- It also does not render “live data” readily available for use in practical courses at the training centres

- Fellowships for specialized study abroad have become more and more difficult to obtain
- In most cases fellowship support has come from various donor-funded projects and this has in some cases distorted priorities for human resources development
- Consequently, a continent (home) grown is required to respond these challenges

Training Young Statisticians for the Development of Statistics in Africa

A new approach to training future statisticians for the development of statistics in Africa is needed.

1. Restructure statistics training programs – mostly at the university level (pre-employment) and at the workplace (on-the-job training or learning).

2. Creation of SPAPGA (Statistics Partnership among Academia, Private Sector and Government in Africa) to advance collaboration between the private sector, government, and academia to improve statistical training and capacity building in Africa.

3. Extensive curriculum reform to include mentoring and internships as part of the regular training of young statisticians.



MOVING 
 **FORWARD**

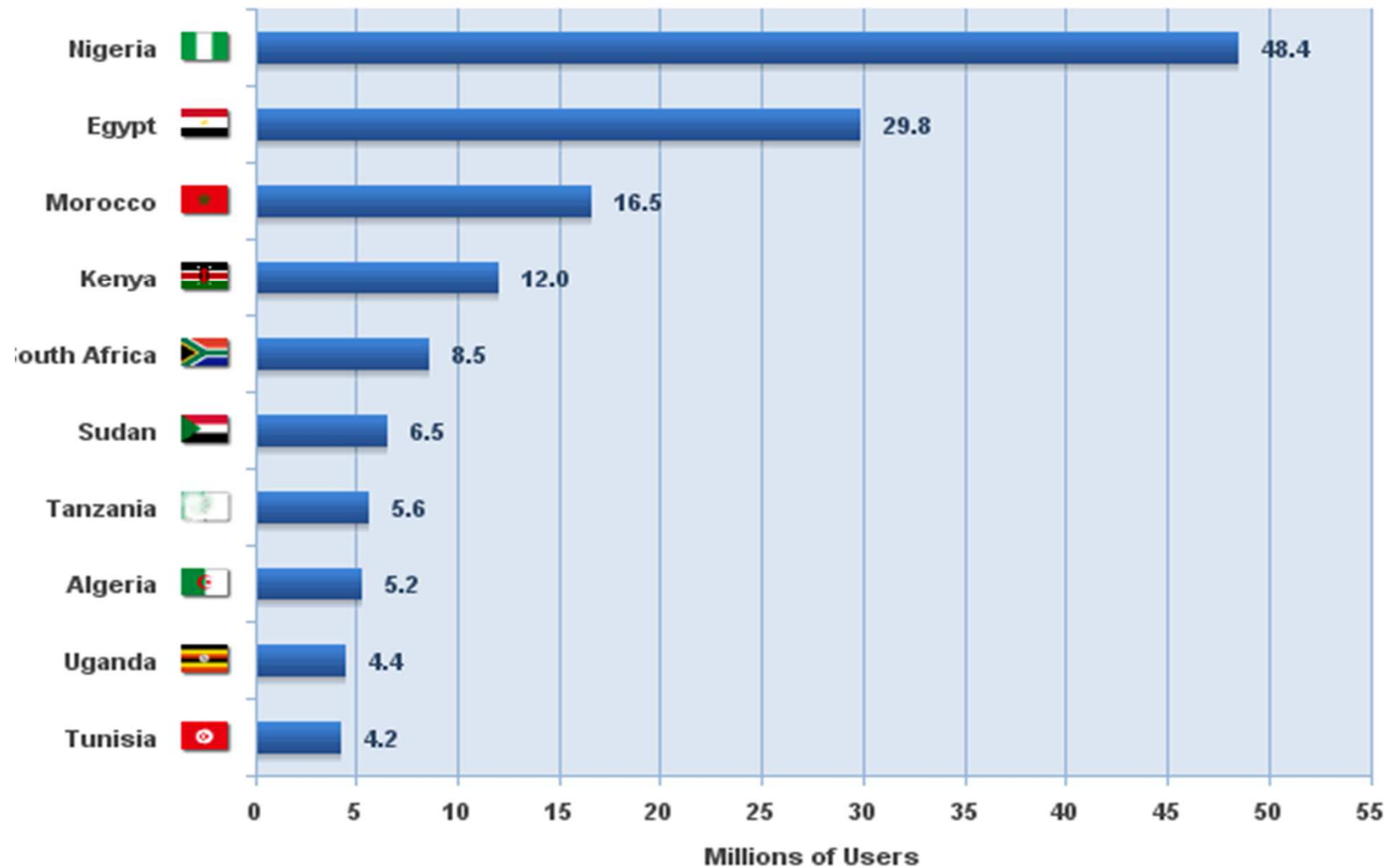
Model for improving statistics malnutrition in Africa

- We propose a model to improve statistics malnutrition by targeting our network of 54,000 African faculty members to transmit statistics knowledge and skills using resources of the Serageldin Research Methods Library and organizing short courses
- Resources include powerpoint lectures that can be used by classroom teachers to teach their students

50-70% cost saving when instructor based training is replaced with E-Learning



E-learning classes are generally 25-60% shorter in duration than traditional classes



167, 133, 676 internet users in Africa - 2012

- Our model will equip young scholars with modern research tools and statistics knowledge via Internet
- It is easily accessible, can have wide coverage on the continent, bridge language barriers, cost effective with a great potential for sustainability

Ebola, viewed through a lens of African epidemiology

Musa Abubakar Kana,^{1,2} Olufunmilayo Y Elegba,³ Jackie Obey,⁴ Faina Linkov,⁵ Eugene Shubnikov⁶

AN EDUCATIONAL INTERVENTION TO
MINIMISE FEAR DURING THE 2014
EBOLA OUTBREAK

were required to strengthen their surveillance systems and enforce exit screening of all individuals at international ports

Nigeria (point F) and the third (highest) spike was when very few people were diagnosed with Ebola in developed countries (point C). These major spikes in interest were accompanied by the spread of fear. Examples of fear laden newspaper headlines reporting on the West African disaster from that period include: Ebola crisis 'on the same scale as AIDS epidemic',¹⁸ 'If Ebola hits Lagos, we're in big trouble',¹⁹ 'Ebola in the air?', 'A nightmare that could happen',²⁰ 'Nurses in

During the 2014 Ebola outbreak in West Africa, our group created a lecture by summarizing scientific facts published by global scientists and public health institutions

- This educational module was prepared in a day, followed by translation of these modules into 13 languages in 2 days
- It was then shared with the world, very rapidly through multiple electronic media channels, including email, websites, and social media sites

- Our experience demonstrated the capacity of Africans to teach Africans about Ebola and epidemiology
- This can be adapted for the efficient and effective teaching of statistics and research methods – That is our vision!



“If people are to become more statistically literate, they need to be taught to use statistics as evidence in the arguments encountered in their daily life as workers, consumers and citizens”



Ismail Serageldin



Ronald LaPorte



Gilbert Omeen



Vinton Cerf



Francois Sauer



Magdy Nagy



Noha Adly



Mohamed El Faham



Fritz



Passant



Amira



Ron



Faina



Eugene



Nicholas



Samar



Eric



Curtis



Salah



Youssef



Abdullatif



Musa



Diana



Hend



Mita



Walter



Mouhammd



Ahmad



Mary



Amos



Jackie



Kawkab



Shalkar



Andrey



Francis



Ali



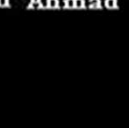
Eman



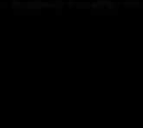
Soni



Mouhammd



Ahmad



Mary



Amos



Jackie



Kawkab



Shalkar



Andrey



Francis



Ali



Eman



Soni



BA AFRICAN NETWORKS

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