HIV/AIDS NUTRITION AND FOOD SECURITY

Looking to future challenges

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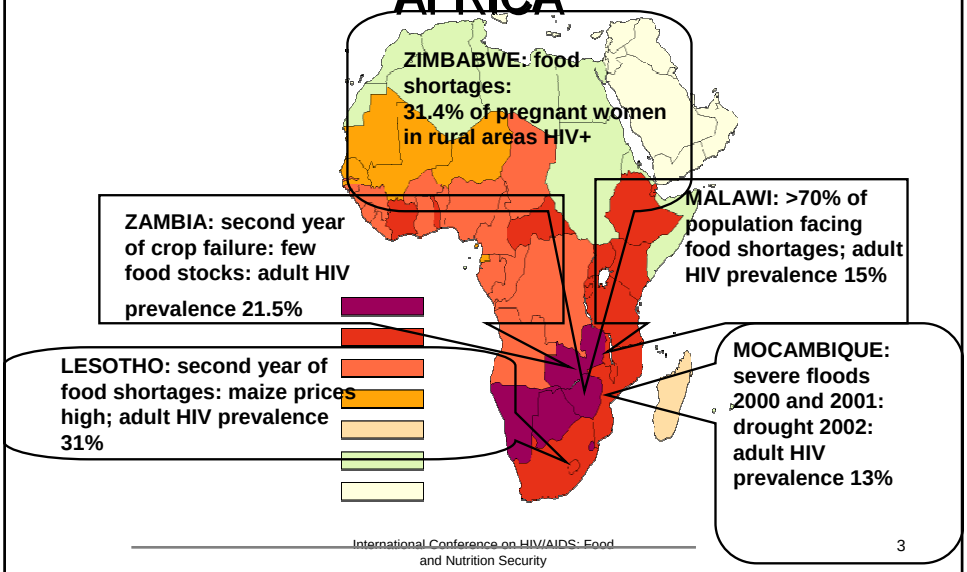
WHAT WE THINK WE KNOW

2002 FOOD CRISES IN SOUTHERN AFRICA

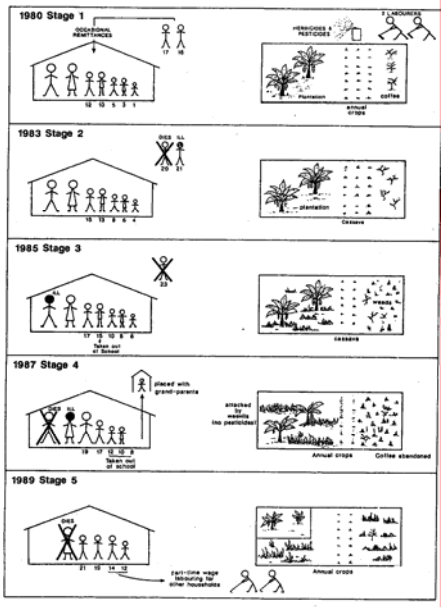


STORIES

LIFE IS THE STORIES WE TELL

STORIES ARE THE LIFE WE LIVE

AN ESTABLISHED NARRATIVE ABOUT HIV/AIDS, RURAL LIVELIHOODS AND FOOD?



The impact of HIV/AIDS on a Ugandan rural household 1980-89

T. Barnett and P. Blaikie, **AIDS in Africa: its present and future impact**, Wiley, London and Guilford Press, NY, 1992.

- PROGRESSIVE DECLINE
- REDUCTION OF CULTIVATED AREA
- REDUCTION OF CROP PORTFOLIO
- DECAY OF INFRASTRUCTURE
- REDUCED PRODUCTION AND PRODUCTIVITY
- POSSIBLE “FAMINE”

NUMEROUS STUDIES

- SOME ARE RECYCLED ANECDOTES
- NO LONG TERM STUDIES AT ALL
- WE DO NOT REALLY KNOW WHAT IS HAPPENING IN A WIDE RANGE OF FARMING SYSTEMS
- KNOW VERY LITTLE ABOUT PASTORALISTS OR FISHING COMMUNITIES
- EVIDENCE AND ADVOCACY

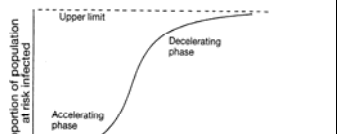
IS THE ESTABLISHED NARRATIVE GENERALISABLE?

META-STUDIES

- IFPRI – GILLESPIE AND KADIYALA 2004
- NOW LITTLE DOUBT THAT HIV/AIDS AFFECTS RURAL LIVELIHOODS
- NATURE AND DIRECTION OF EFFECTS SEEMS CLEAR
- DOES NOT INDICATE IMPENDING “FAMINE” - INDICATES DIVERSITY OF EFFECT
- INCREASING INDICATION OF INEQUALITY EFFECT
- HARD TO GENERALISE FOR “AFRICA” OR EVEN “SOUTHERN AFRICA”
- MORE EVIDENCE MAY BE AVAILABLE AT THIS MEETING
- HARD TO UNPICK CAUSAL INFLUENCE OF HIV/AIDS FROM OTHER BACKGROUND INFLUENCES *AT GENERAL LEVEL*

AGRICULTURAL AND RURAL LIVELIHOOD CHANGE WILL BE IN DYNAMIC RELATIONSHIP WITH THE EPIDEMIC AND WITH UNDERLYING ENVIRONMENTAL AND POLICY CONDITIONS

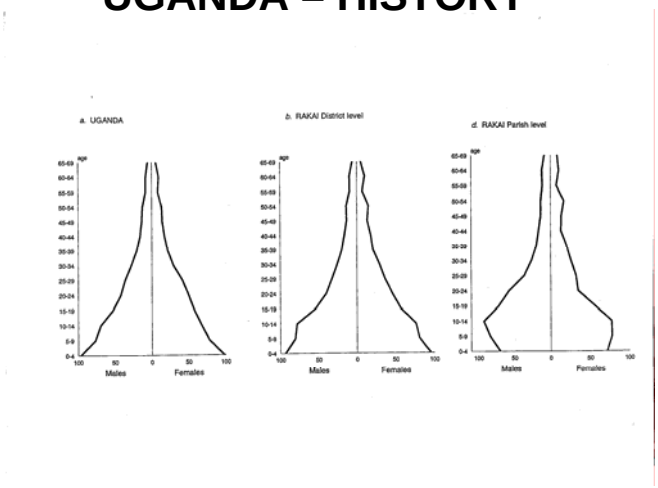
THE EPIDEMIC MAY BE A TIPPING POINT FACTOR



A typical S-shaped or logistic curve describing the course of an epidemic over time. An initial period of acceleration is followed by a period of slowing down as the population at risk dies off, or recovers with immunity to future attacks.

ANOTHER STORY

UGANDA – HISTORY



Low-Beer, D., Stoneburner, R.L. and Mukulu, A (May 1997), Empirical Evidence for the severe but localised impact of AIDS on population structure, **Nature Medicine**, Vol. 3 No. 5

RAKAI UGANDA, KYEBE VILLAGE

- FIRST SAMPLE SURVEY 1989
- SECOND COHORT STUDY 1993
- THIRD (INITIAL) SMALL STUDY 2004
- FINDINGS
  - 1993 COHORT INTACT – HIV PREV ’93 8%?
  - FARMING SYSTEM INTACT – WEEVIL INFESTATION IN MATOOKE
  - COMMUNITY RESPONSE FROM ORPHANED GENERATION – CHAIRMAN
  - 90% OF VILLAGE SCHOOLCHILDREN ORPHANS

POSSIBLE REASONS

- THIS WAS ALWAYS A ROBUST SYSTEM – HIGH BIMODAL RAINFALL, GOOD SOILS, PORTFOLIO DIVERSITY
- REPORTS OF ACTIVE EXTENSION SERVICES
- WE NEED TO LOOK AT WHAT HAS HAPPENED IN OTHER SYSTEMS IN UGANDA

AGRICULTURAL SYSTEM CHANGES UGANDA 1989

Experience in Uganda, Kenya, Tanzania and Zambia indicates that there is often sufficient information scattered around to enable initial mapping of farming systems.

In principle these can be overlaid onto sentinel surveillance data to provide some initial guide to relative vulnerability of farming systems to labour loss.

Uganda: farming system vulnerability

AIDS IN AFRICA, BARNETT & BLAIKIE, 1992

A CHALLENGE

- RECOGNISING DIVERSITY OF HIV/AIDS IMPACT
- NEED FOR LARGE SCALE RESPONSES THAT CAN COPE WITH DIVERSITY
- PAY ATTENTION TO THE PATHOGEN

THE MICRO

The epidemic curve is a macro expression of micro processes – *we must always keep these in the forefront of our thinking*

KNOW YOUR PATHOGEN

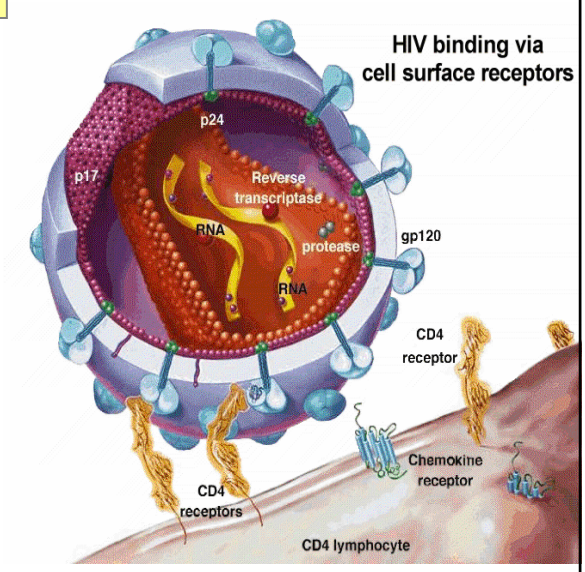
Viral replication cycle

STEP 1: BINDING

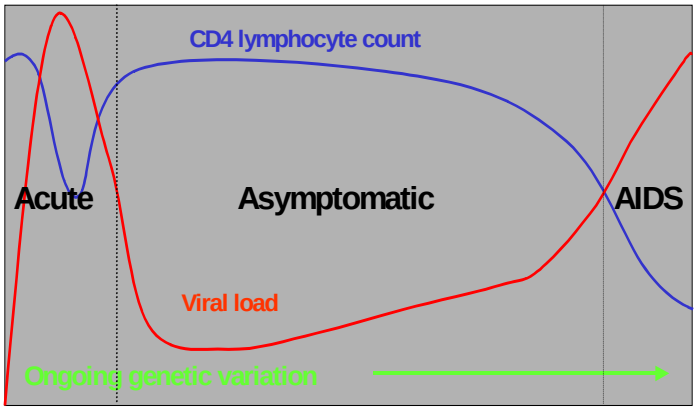
gp120 binds to:
CD4 primary receptor, then the CCR5 or CXCR4 chemokine coreceptor

R5 tropic – macrophages, DC and T cells
X4 tropic – T cells only

Tropism linked to disease pathogenesis

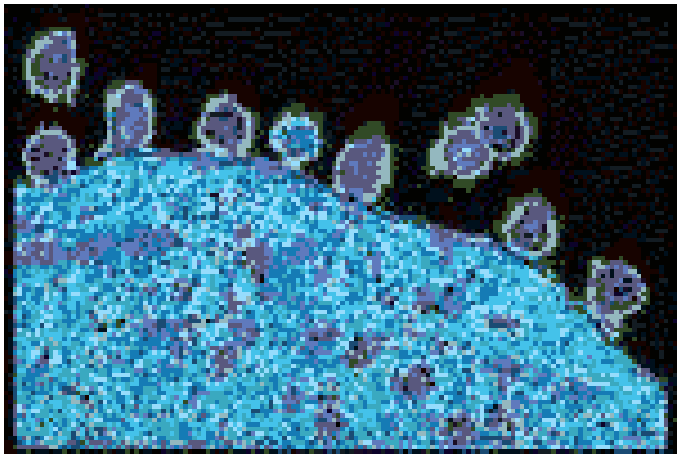


Typical course of HIV infection and progression to AIDS



10^8 –10^9 virions are produced and cleared every day
2x 10^9 CD4+ T cells are produced and destroyed every day

VIRUS PARTICLES BUDDING FROM HUMAN CD4 CELL



VIRAL MUTATION

LENTIVIRUS

AGENDA FOR THINKING

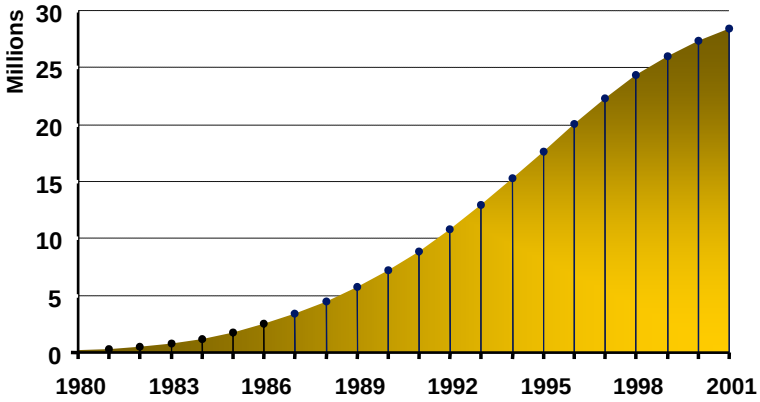
THE PROBLEM

•Speed – the epidemic/*endemic* (?) has shown itself to be both too slow and too fast for us to respond

• Demographics – change of assumptions about the local social and economic circumstance in which policies and programmes operate

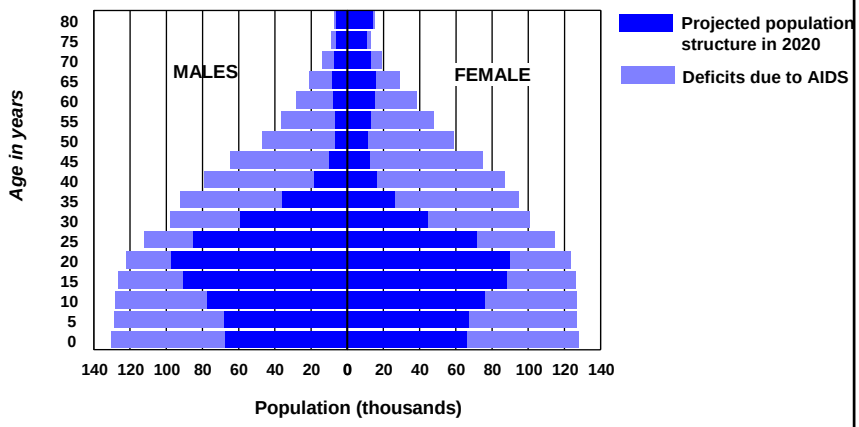
• Changes what we can assume about appropriateness of technologies – labour, capital, knowledge

Number of people living with HIV/AIDS in sub-Saharan Africa, 1980-2001



Source: UNAIDS, 2002

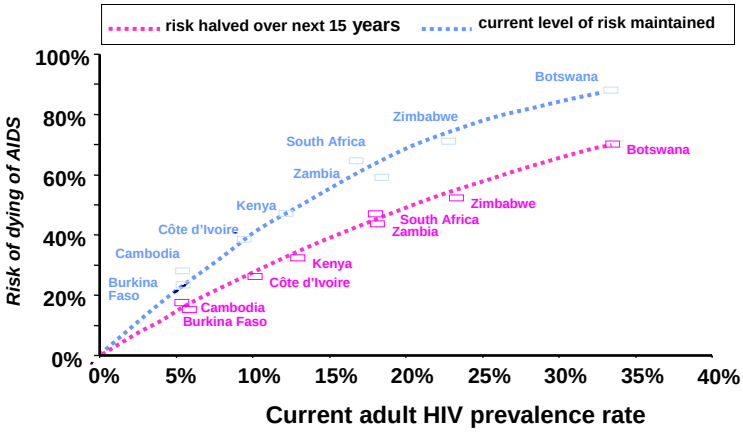
Projected population structure with and without the AIDS epidemic, Botswana, 2020



Source: *US Census Bureau, World Population Profile 2000*

TRANSMISSION RISK

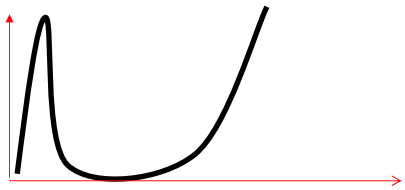
Lifetime risk of AIDS death for 15-year-old boys, assuming unchanged or halved risk of becoming infected with HIV, selected countries



Source: Zaba B, 2000 (unpublished data)

RATE OF DISEASE PROGRESSION

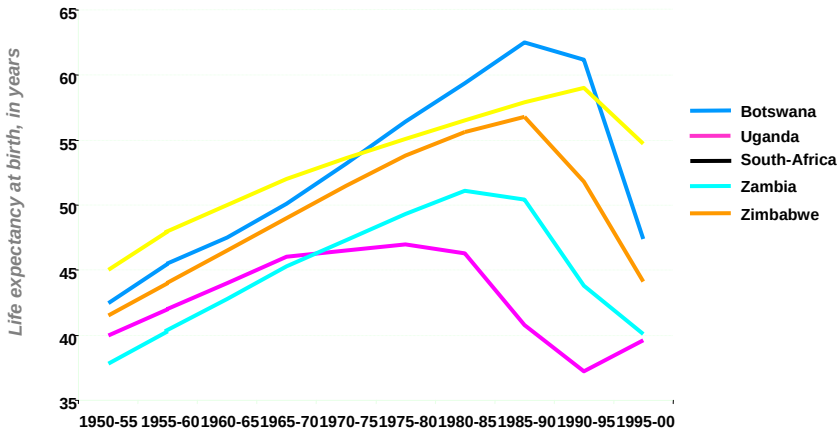
THE VIRAL LIFE CYCLE



8-9 YEARS MEAN PROGRESSION

INDIVIDUAL PLANNING HORIZONS

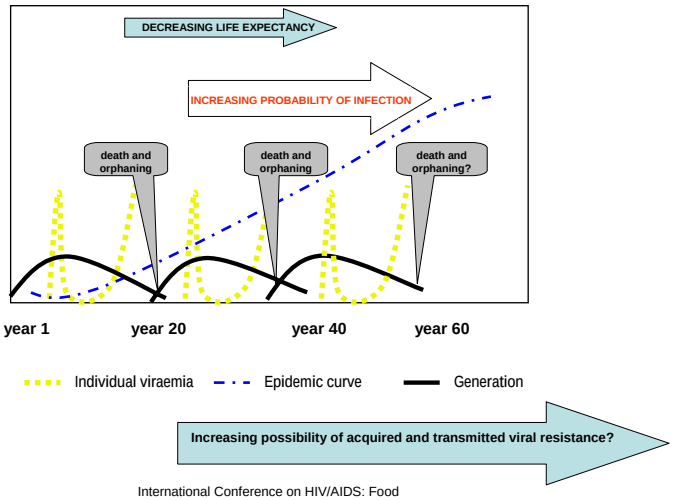
Changes in life expectancy in selected African countries with high HIV prevalence, 1950 to 2000



Source: ***United Nations Population Division, 1998***

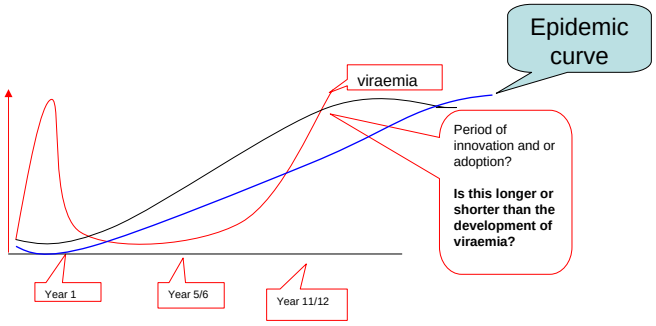
A WORST CASE SCENARIO

HIV/AIDS: SUNDERING THE BONDS OF HUMAN SOCIETY?



NEW CIRCUMSTANCES FOR INNOVATION AND ADOPTION

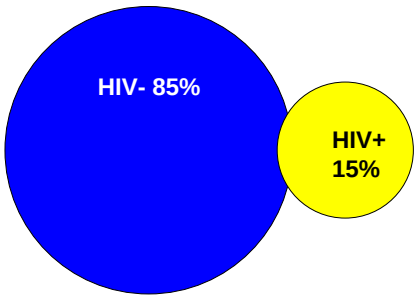
Viraemia, Epidemic Curve and Adoption



ARE THERE APPROPRIATE, AVAILABLE, ADOPTABLE AND PROVEN TECHNOLOGICAL INTERVENTIONS?

BUT NEVER FORGET

PROPORTION OF COMMUNITY AFFECTED?



ARVs AND THE FUTURE

Are ARVs the answer?

- Yes … and …. No
- The upside is that they provide a window of opportunity for some
- The downside is that:
  - This window must be fully exploited within a short time period – 5-10 years?
  - We do not know what to do – these are novel situations and responses must be rapid
  - There is a threat of viral resistance
  - Pharma will not respond rapidly to African needs

EFFECTS OF VIRAL RESISTANCE?

- A 5-10 YEAR WINDOW
- URGENT NEED FOR *INNOVATIVE THINKING*
- *RESPONSES MAY INCLUDE:*
  - SOME TECHNOLOGY – BUT WHAT DO WE HAVE?
  - SOCIAL SUPPORT SYSTEMS
  - INNOVATION, INNOVATION, INNOVATION

ARVS – TREATMENT, PREVENTION AND RESISTANCE

- main use is treatment
- May also have prevention effect
- Risk of resistance
  - acquired
  - *transmitted*
- Raises following questions:
  - **How will ARV roll out affect resistance?**
  - ***What are the implications for future impact scenarios?***

Drug resistance in US and UK

- High-level of acquired drug resistance (around 20%) is common in the US and UK - largely reflects historical use of sequential monotherapy
  - Unclear relevance in modern triple therapy era
  - *Resistance should be uncommon if effective regimens are administered to motivated individuals who have continuous access to treatment*

Source: Steven G. Deeks, MD
University of California, San Francisco, A US Clinical Perspective on the Implications of Antiretroviral Drug Resistance for Resource-Constrained Settings, 2004, *Institute of Medicine Workshop on Antiretroviral Drug Use in Resource-Constrained Settings*

THE PROBLEM IS TRANSMITTED RESISTANCE

NEW YORK FEBRUARY 2005

The man, in his mid-40s, had not previously been treated for HIV. He was diagnosed last December and his infection appeared to be recent, health officials said.

The man's HIV strain proved to be resistant to three of the four available types of antiviral drugs used to keep HIV in check.

While patients being treated for HIV do develop drug resistance, finding such resistance in someone who has never taken HIV drugs is "extremely rare," according to the city health department.

"CONTINUOUS ACCESS TO TREATMENT"

- < THAN 95% COMPLIANCE SELECTS FOR RESISTANT VIRAL STRAINS
- RURAL ACCESS IS PROBLEMATIC – TREATMENT CENTRES MAY BE EFFECTIVELY INACCESSIBLE
- SMALL COMMUNITIES, LOW PRIVACY, STIGMA
- HOW LONG BEFORE WE SEE NEW EPIDEMIC OF RESISTANT HIV?

DANGERS AHEAD!

•Danger of looking to yesterday's solutions for today and tomorrow's problems

• Slow pace of response – bureaucratic inertia

• Pressure to spend funds without novel thinking

• Repeating the errors of the last twenty years

• Adoption of what?

Long Waves and Emergencies - the response

- HIV/AIDS is not like other problems in food and nutrition – it is a long wave event
- We have to recognise that the entire balance between relief, rehabilitation and development work may have changed
- The long wave of the epidemic means that policy, operations and thinking must switch into a new paradigm - we are no longer talking about an emergency-non emergency paradigm

Strategic Tasks in the light of HIV/AIDS

- Review the relevance of current paradigms of *development* and *relief*
  - have ability to switch rapidly between activities
- Redefine and prioritise working with vulnerable beneficiary groups
  - the new destitute, the very young and adolescents
- Agricultural policy and programming
  - new demographics and morbidities
- Institutional response
  - shorter institutional memories
- Institutional audit?
  - How will the epidemic affect organization and employment terms?

THE CHALLENGES FOR THIS CONSULTATION

1. TO UNDERSTAND THE SITUATION – UNPRECEDENTED AND UNKNOWN
2. TO ENGAGE CRITICALLY WITH ESTABLISHED NARRATIVES
3. TO CONSIDER THE APPROPRIATENESS OF KNOWN TECHNOLOGIES AND APPROACHES
4. TO THINK NEW AND INNOVATIVE RESPONSES TO A NOVEL AND CHANGING SITUATION

AN EXAMPLE OF FIGHTING TODAY'S BATTLES WITH YESTERDAY'S WEAPONS

- THE PAST IS NOT NECESSARILY A GUIDE TO FUTURE
- WE HAVE TO INNOVATE – HISTORY OF PREVENTION SHOWS US THE MISTAKES WE HAVE MADE
- "INSTALLED CAPACITY" – CONDOMS AND VACCINES
- MICROBICIDES

MESSAGE

IN THIS ENDEMIC IT IS NOT BUSINESS AS USUAL!

LSE LSEAIDS