

# What do we (need to) know about the development impact of AIDS in Africa?

## HIV/AIDS and Development in Zambia Taking Stock and Rethinking Policies

Lusaka, February 4, 2010

Robert Greener

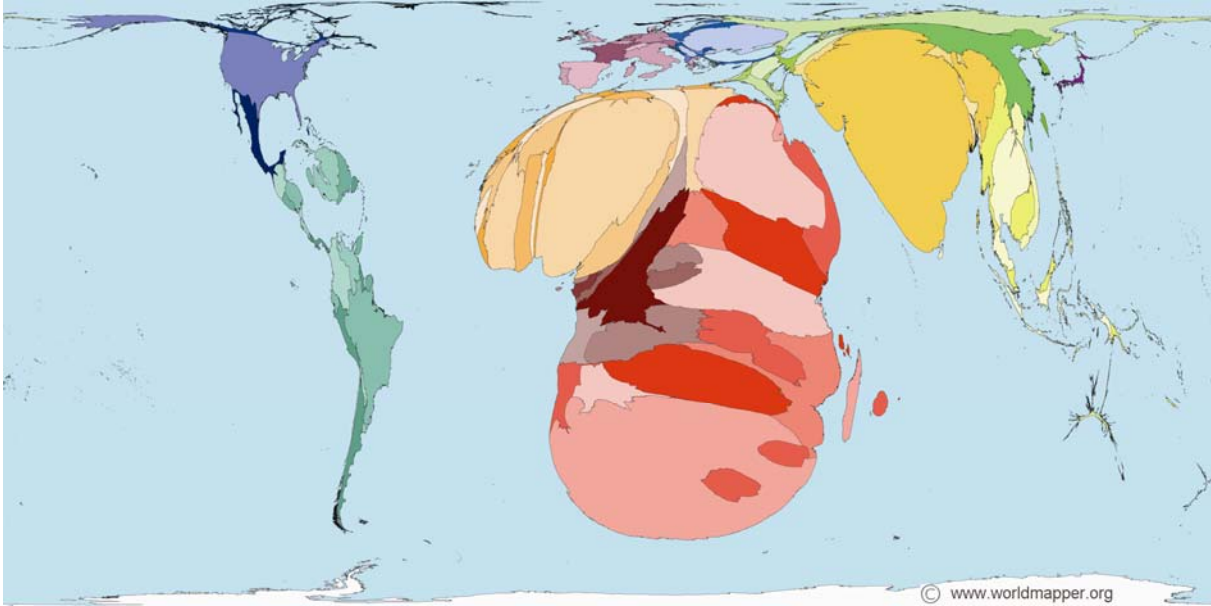


## Magnitude of the Epidemic

- 33 million living with HIV
  - 67% in sub-Saharan Africa
- 2.7 million new infections per annum
- 2 million deaths per annum
  - number infected still growing
- More than 3 million on ARV treatment
- Most infections are in low and middle-income countries



# The World of HIV

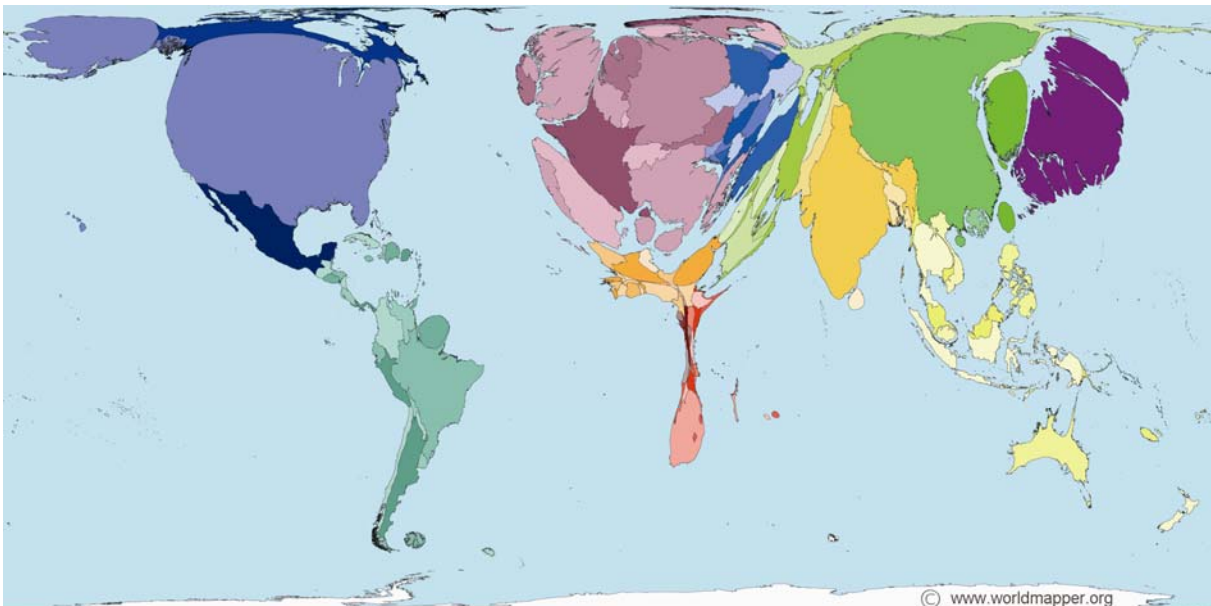


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# The World of Income

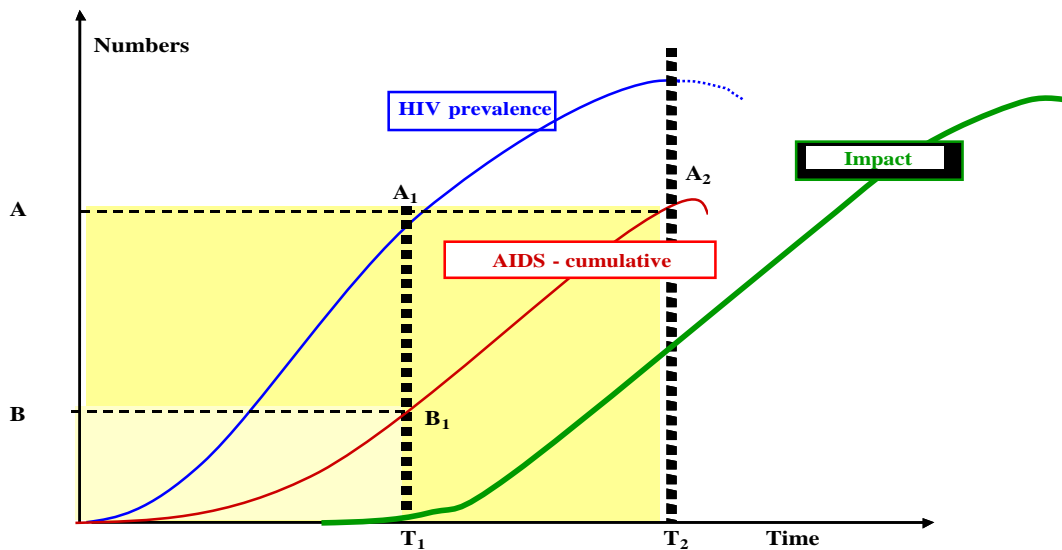


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# Prevalence and Impact – the “long waves”



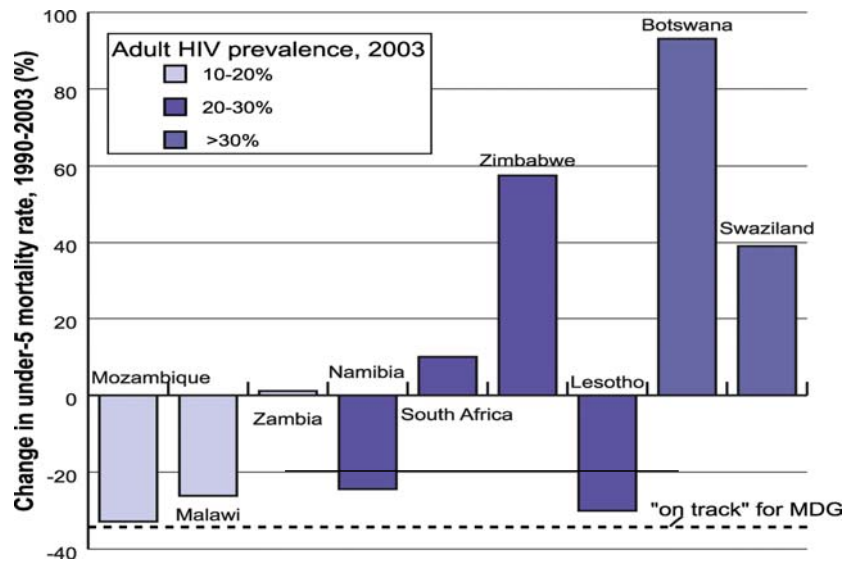
T.Barnett, A.Whiteside



## Top Causes of Death in Africa

1. HIV/AIDS
2. Malaria
3. Lower respiratory infections
4. Diarrhoeal diseases
5. Perinatal conditions
6. Cerebrovascular disease
7. Tuberculosis
8. Ischaemic heart disease
9. Measles
10. Road traffic accidents

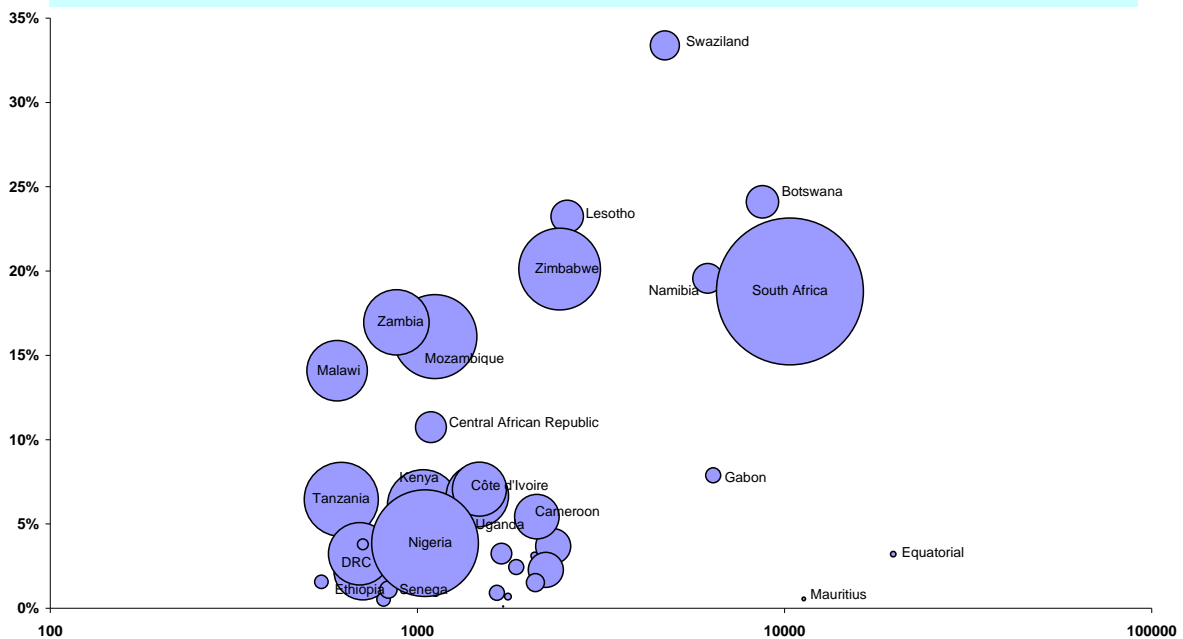
# Change in Under-Five Mortality Rate in Selected Countries with High HIV Prevalence, 1990–2003



R. Hecht et al. Putting It Together: AIDS and the Millennium Development Goals. PLoS Medicine, 2005



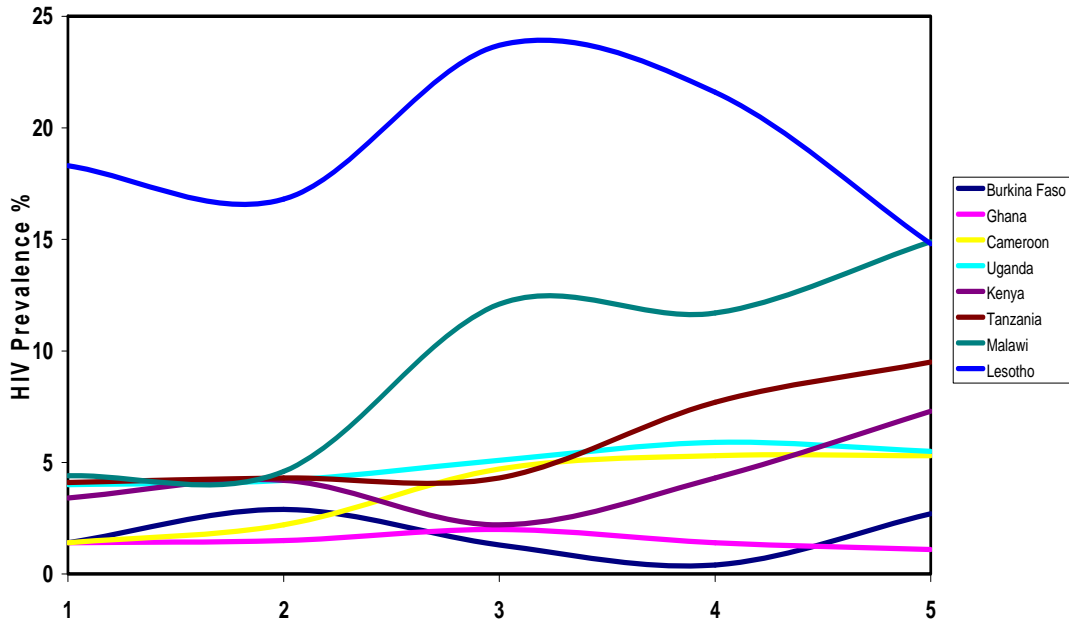
# HIV and GDP per capita - SSA







# HIV prevalence by wealth status: MEN

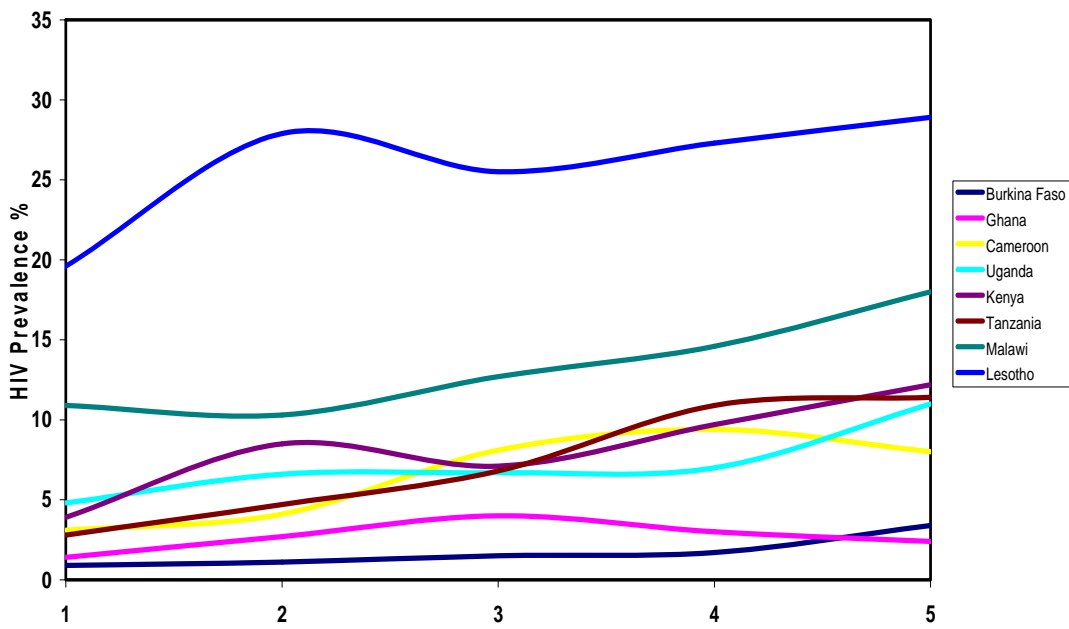


Mishra, Van Assche, Greener, Vaessen, Hong, Ghys, Boerma, Van Assche, Khan, Rutstein, 2007

Income Quintile



# HIV prevalence by wealth status: WOMEN

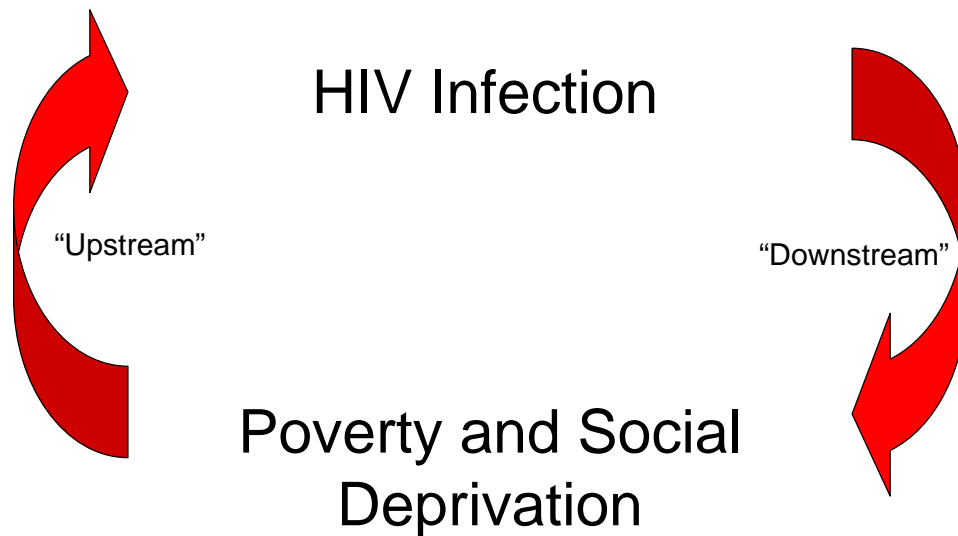


Mishra, Van Assche, Greener, Vaessen, Hong, Ghys, Boerma, Van Assche, Khan, Rutstein, 2007

Income Quintile



# “Upstream” and “Downstream”



## Economic Impacts of AIDS

- The macroeconomy
- Investment and FDI
- Firms and enterprises (workplace)
- The public sector
- Individual and household
- Human capital and long run impact

# Macroeconomic Impact

- Lower aggregate labour productivity
- Lower savings and investment
- Variations on neoclassical growth models project slower macroeconomic growth (as much as 1-2% reduction in growth in the worst affected countries)
- Empirical studies find little evidence for an impact on growth so far (in GDP terms)

# Investment Impacts

- Reduced savings and investment is a major channel for economic impact of AIDS in many countries
  - This is likely to result from household level impacts and from slower population growth
- The potential impact on foreign direct investment due to loss of confidence may be more important than the labour impacts

# Impact on Firms and Enterprises

- Lower productivity from untreated HIV positive workers
- Higher medical expenses, where these are provided
- Replacing and training skilled employees who die
- Erosion of their customer base, as local customers and the local economy suffer.
- Positive publicity from positive action



## Estimates of Firm Level Impact

Sector	Country	Size	Estimated HIV prevalence	Cost per AIDS death or retirement (multiple of annual compensation)	Aggregate annual costs (% of labor costs)
Retail	South Africa	500	10.50%	0.7	0.50%
Agribusiness	South Africa	7,000	23.70%	1.1	0.70%
	Uganda	500	5.60%	1.9	1.20%
	Kenya	22,000	10.00%	1.1	1.00%
	Zambia	1,200	28.50%	0.9	1.30%
Manufacturing	South Africa	1,300	14.00%	1.2	1.10%
	Uganda	300	14.40%	1.2	1.90%
	Ethiopia	1,500	5.30%	0.9	0.60%
	Ethiopia	1,300	6.20%	0.8	0.60%
Media	South Africa	3600	10.20%	1.3	1.30%
Utility	South Africa	>25,000	11.70%	4.7	2.20%
Mining	South Africa	600	23.60%	1.4	2.40%
	Botswana	500	29.00%	4.4	<b>8.40%</b>
Tourism	Zambia	350	36.80%	3.6	<b>10.80%</b>

Source: Jonathon Simon, Sydney Rosen, Rich Feeley, Patrick Connelly, "The Private Sector and HIV/AIDS in Africa: Taking Stock of Six Years of Applied Research"



# Impact on Government

- Increased employment costs and falling productivity, as with the private sector
- Reduced revenue as economic growth slows, but increased expenditure demand as services must be scaled up
- Government's role in providing an "enabling environment" may be compromised

# Individual and Household Impact

- Mortality and orphanhood
- Lower productivity and wage earning
- Loss of income from those who die
- Higher costs of medical care
- Higher costs of funerals



Deepening of poverty and malnutrition  
Barriers to treatment access

# Does AIDS Increase Poverty?

- It is difficult to attribute poverty changes to AIDS – there are many confounding factors
- Salinas and Haacker (2006) found that the impact on poverty in 4 African countries was likely to be greater than the impact on per-capita income
  - This is because HIV may be concentrated among households close to (but just above) the income poverty line



## Long-run human capital effects

- Human capital is reduced directly through mortality and lower life expectancy
- Education outcomes are worse in areas with high HIV
  - Suggestion that investments are reduced because the potential returns are lower
- Education and health outcomes are significantly worse for orphans, who are increasing in number



# Human capital and long-term impact

- Early work (Bell et al) suggested that accumulating human capital losses will cause a much greater macroeconomic impact in the long term
- Other methods (e.g. Solow growth models) incorporating human capital also expect much larger impact than current observation suggests

# The Impact of ART

- Most projections and empirical investigations of impact do not account for the impact of ART
- ART clearly mitigates impact, but by how much and with what other consequences?

# ART in Uganda

- ART offsets part of negative growth impact (1/3–1/2)
- ART provision does not pay for itself in economic terms, but can nonetheless be justified in social terms
- Extent of economic benefits of ART to a country depends on how programmes are funded
  - Domestic financing of ART is not sustainable and will have an adverse economic impact due to tax/borrowing implications
  - Budget impact is relatively small if HIV/AIDS programmes largely donor funded



## Does Poverty increase HIV vulnerability?

### Data

- Cross-sectional cross country analyses (DHS)
- Longitudinal seroconversion studies
- Longitudinal household surveys
- Studies linking other interacting factors (mobility, gender, malnutrition) with HIV risk

### Outcomes

- High risk behaviors
- HIV prevalence (% of population estimated to be HIV +)
- HIV incidence (number of *new infections*/year)
- Prime age adult mortality (15-59 years of age)



# HIV *Incidence* and Wealth Status

- **3 prospective seroconversion studies**
  - Lowest male HIV incidence among wealthiest asset tercile (Lopman et al, Manicaland)
  - Lowest incidence in middle tercile (Barnighausen et al, KZN)
  - No association (Hargreaves et al, Limpopo)
  - Limitation: High attrition rates



## Role of other socioeconomic factors

- Education associated with less risky behaviors and lower HIV incidence
  - Age and economic asymmetries
  - Gender inequality
  - Low social cohesion (e.g. slums)
  - Mobility
- } Positively associated with HIV +ve status
- Women engaged in some form of self-employment less likely to die in prime age  
(MSU and Kadiyala)



# Some Conclusions

- Economic status in itself is *not* a strong predictor of HIV status in Africa....
  - Prevention must cut across **all socioeconomic strata** of society
- No simple explanation
  - Poverty is part of the story, but not the key
  - Pathways and interactions are complex
  - Predisposing factors are different for different groups
- Tailor interventions to the specific drivers of transmission within different groups
  - Education; women's economic independence

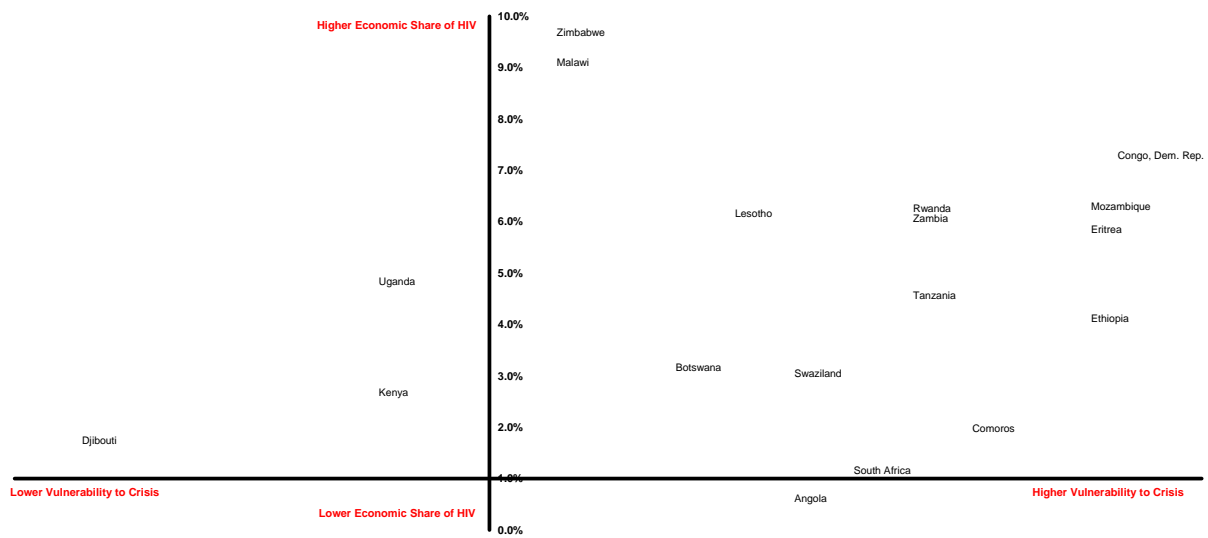


# Development and HIV

- Expanding treatment programmes is vital to maintain economic participation and mitigate economic impacts
- Development plans and projects must factor in the possible interactions with HIV
- AIDS is a long-wave event, and it is vital to sustain the financing for programmes in the long run.



# Vulnerability of Programmes



## AIDS and Development Planning

- Long term AIDS strategic plans need to be prioritised, evidence based and costed
  - Ambitious and feasible
  - Aligned with national development plans and budgeting frameworks (PRSP and MTEF)
  - Coherent - focused on 3 ones principles
  - National level ownership and accountability
  - Meaningful participation of civil society