



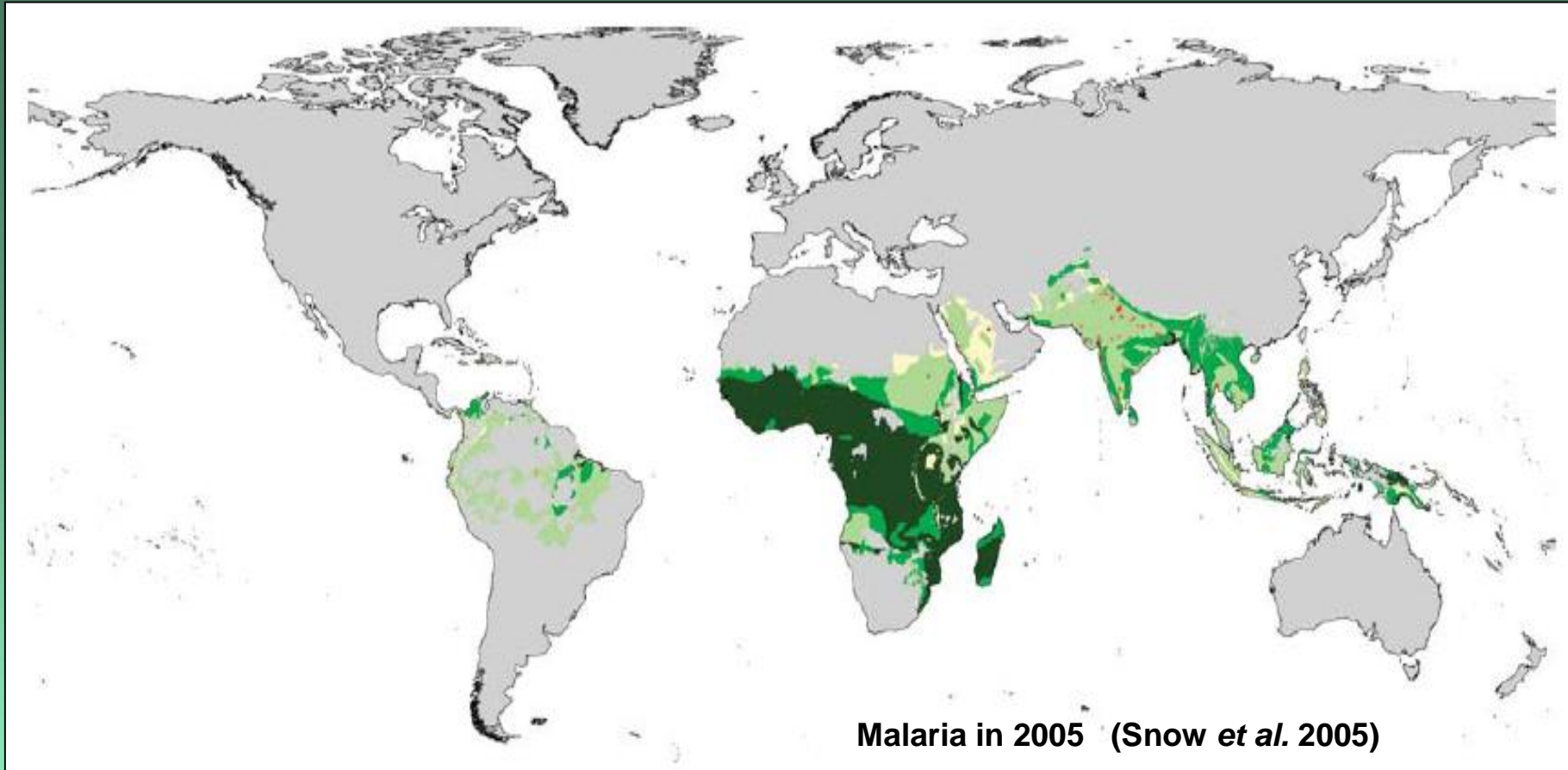
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# Malaria control for the poorest through marketing of mosquito nets



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**Ø 2000 million people at risk**

**Ø 300 - 500 million cases**

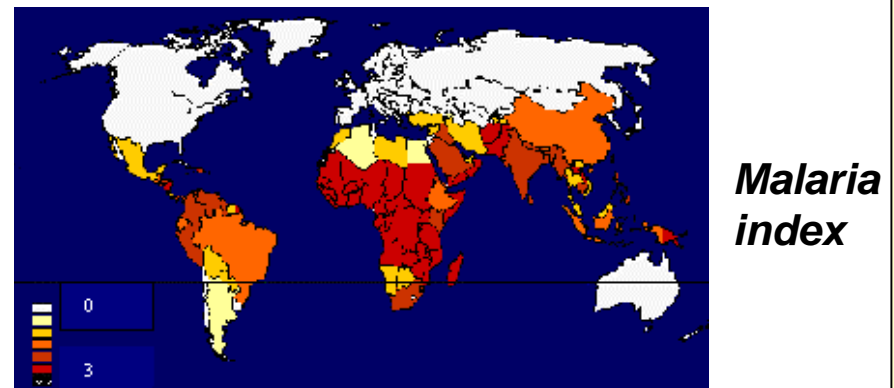
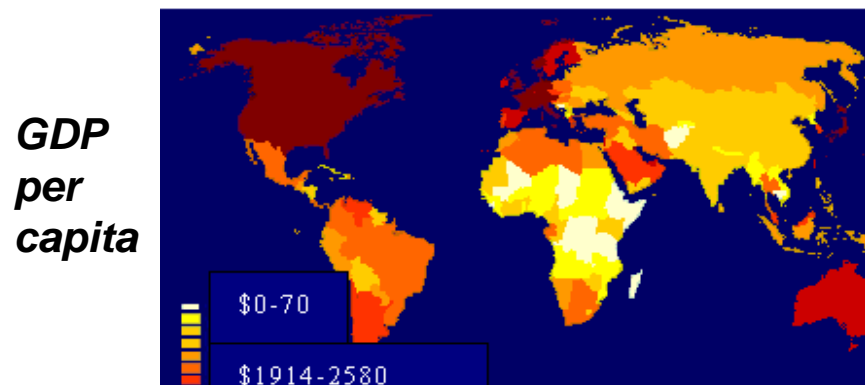
**Ø 1 million deaths, mainly African children**

# Malaria as a cause of poverty (1):

## Macro level

Ø Malaria reduces annual GNP per capita growth by 1.3 percent in endemic countries (Harvard and LSHTM/LSE 2001).

Ø Sub-Saharan GNP would be 32% higher if malaria had been eliminated 35 years ago: this amounts to \$100 billion, more than all development assistance for the years 1996-2000.



**The economic cost of malaria is substantially larger than previously estimated**

## Malaria as a cause of poverty (2):

### Micro (household) level

- Ø Mean household (5 persons) expenditures for malaria amount to \$ 20-100 per year, plus lost productivity and time for caring
- Ø Household expenditures for mosquito control amounts to \$ 10-100 per year
- Ø Malaria affects mental and physical development in children
- Ø Important loss in agricultural productivity (direct or through time spent caring for the sick)
- Ø With the exception of the richest 5%, all households experience a similar risk of getting malaria – but better-off HH can better cope with consequences of an episodes.

## Malaria as a cause of poverty (3): Government level

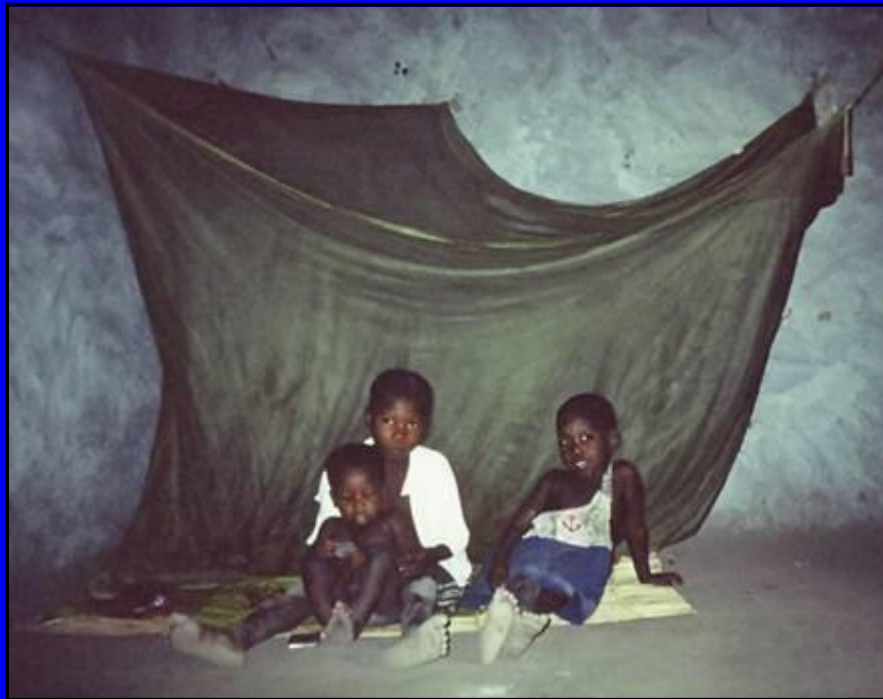
Ø Malaria is the first cause for attending health services in Sub-Saharan Africa: 20-40% of all outpatients, 20-30% of all in-patients

Ø Cost of a mild episode: USD 2-10

Ø Cost of a severe illness episode: USD 20-100



# A solution



**A mosquito net...**



**treated with  
insecticide**

## What is special about the insecticide treatment of mosquito nets ?

- Ø Insecticide treatment more than doubles the protective effectiveness of mosquito nets for only 20% more cost
- Ø Insecticide kills massively mosquitoes and the overall malaria transmission decreases; unprotected individuals (*often the poorest*) benefit as well.
- Ø Mosquito nets with holes still work
- Ø Touching the sides of the net is not a problem (on average >2 persons sleep under a net)



## Summary of impact of ITNs



Ø Overall, ITNs reduce child mortality (1-59 months) in Africa by **18%**.

Ø This is equivalent to **5.5 deaths averted per year** and per 1000 protected children

**With 80 mio. children under 5 at risk in Africa  
480,000 deaths could be saved**

Ø ITNs have a substantial impact on mild disease episodes (around 50% reduction).

*Source: Lengeler 2004*

## ITNs: Current main implementation models

Public sector

1. Free distribution of ITNs through health facilities (Eritrea)
  2. Free distribution of ITNs in the frame of vaccination campaigns (Ghana, Togo, Zambia, Niger, Mozambique, Rwanda)
- 

Commercial / mixed

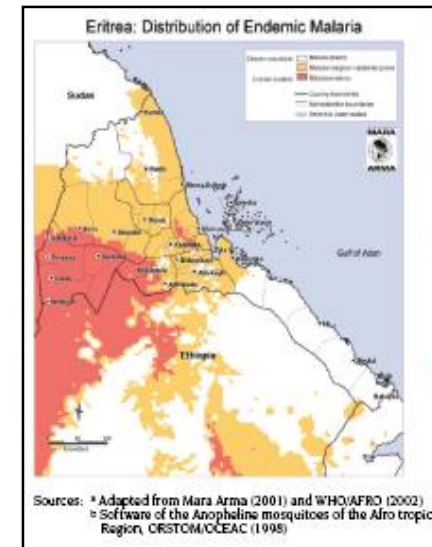
3. A comprehensive market approach (NETMARK project in Senegal, Mali, Ghana Nigeria, Mozambique, Uganda, Zambia, Ethiopia) – with and without subsidies.
4. Social marketing (Malawi, Kenya) – with and without subsidies, with and without product distribution.
5. Integrated approaches (NATNETS Tanzania).

# (1) Free nets through health services

**Example: Erythrea**

**Population 4 mio (700,000 under five)**

**Also Vietnam, India, South America in limited areas**



Ø **875,000 nets distributed during the last 4 years. (Nyarango et al. 2006).**

Ø **Over 50% of children protected.**

Ø **Efficient (lowest cost per ITN distributed) and equitable.**

Ø **Requires a well functioning health system, motivated MoH and important donor support (92%).**

Ø **Easier in small countries or countries or limited population at risk.**

## (2) Free distribution of ITNs in frame of vaccination campaigns

Example: Togo in 2004

Population 5 mio (800,000 under five)

- Ø Roughly 700,000 ITNs given together with measles and polio vaccine within few days.
- Ø Over 60% of children protected.
- Ø Efficient (low cost per ITN distributed) and equitable.
- Ø Requires major national mobilization, but this can be shared with a number of interventions (vaccination, Vitamin A, deworming, ITNs).
- Ø Almost entirely dependent on donors.
- Ø Biggest problem is that it does not offer an ITN to children born after a campaign (**temporal inequity**).



### **(3) Comprehensive market approach**

**Example: Senegal, Mali, Ghana Nigeria, Mozambique, Uganda, Zambia, Ethiopia (NETMARK programme). Increasingly also social marketing programmes in Tanzania, Malawi and Kenya (Population Services International).**

- Ø Work closely with both the commercial and the public sectors to identify and overcome the barriers to the creation of viable commercial ITN markets.**
- Ø Limited government resources can be targeted at those unable to pay and/or at highest risk.**
- Ø A commercial market approach is attractive because it essentially solves the problem of procurement and distribution. The public sector is not faced with procuring, storing and distributing a bulky and valuable commodity, and it can avoid to handle cash.**

## Comprehensive market approach (2)



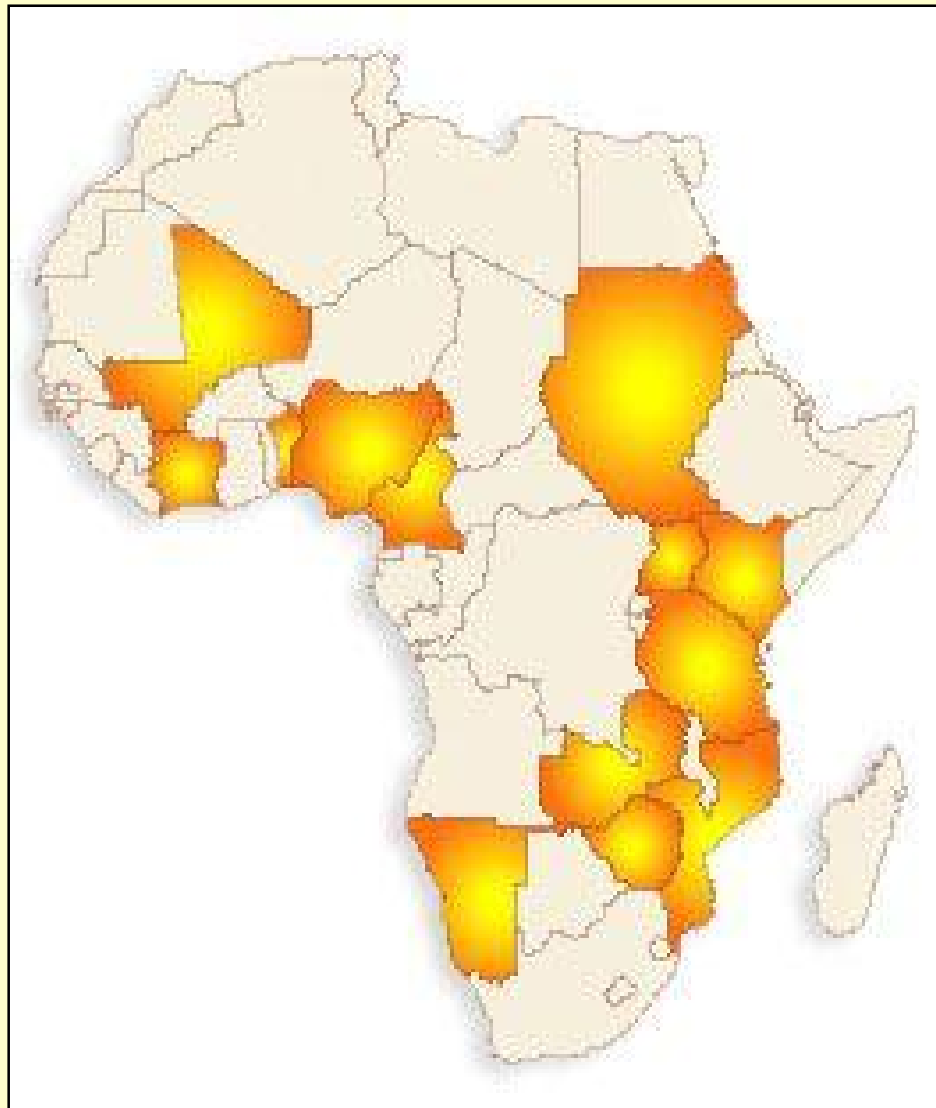
- Ø A stable market is a constant source of supply for the population, with a choice of products.
- Ø BUT: affordability is consistently cited as the main reason for not using an ITN, and the lowest possible market price is currently USD 3-4. This is a high price, especially for large families. There is a high level of inequity and urban-rural differential.

So there is very clearly a need for subsidies, at least for high-risk groups.

- Ø Without subsidies national coverage will remain low (i.e. Senegal with less than 10% use in children)



## Reduction or waiving of Taxes and Tariffs



**Abuja April 2000:**

**All malaria-endemic countries (n=48) committed to remove taxes and tariffs on ITNs, insecticide and on production inputs (on top of protecting 60% of population at risk by 2005)**

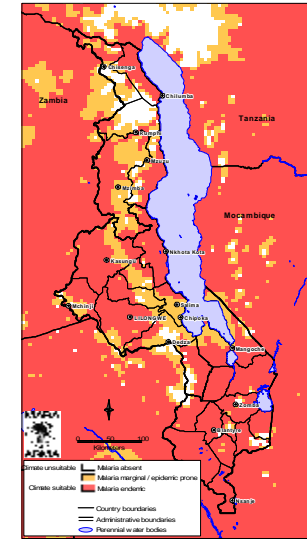
**2005: Half the countries have failed to effect legislative change...**

## (4) Social marketing

Example: Malawi

Population 15 mio (2.2 mio under five)

Also Kenya, Rwanda.



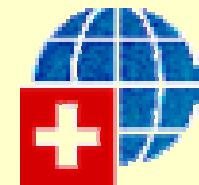
- Ø Social marketing brand distributed by an NGO (PSI) through commercial system. Limited subsidy.
- Ø Limited government control.
- Ø Additional mechanism of highly subsidized ITNs through antenatal clinics.
- Ø Relatively high cost per ITN distributed and high dependency on donors.
- Ø Specific social marketing brand is clearly an impediment to market entry for truly commercial actors.
- Ø Over 40% of children protected.
- Ø Not equitable for general population, much more so for pregnant women at ANC clinic.



# KINET (Kilombero Net Project) 1996-2000

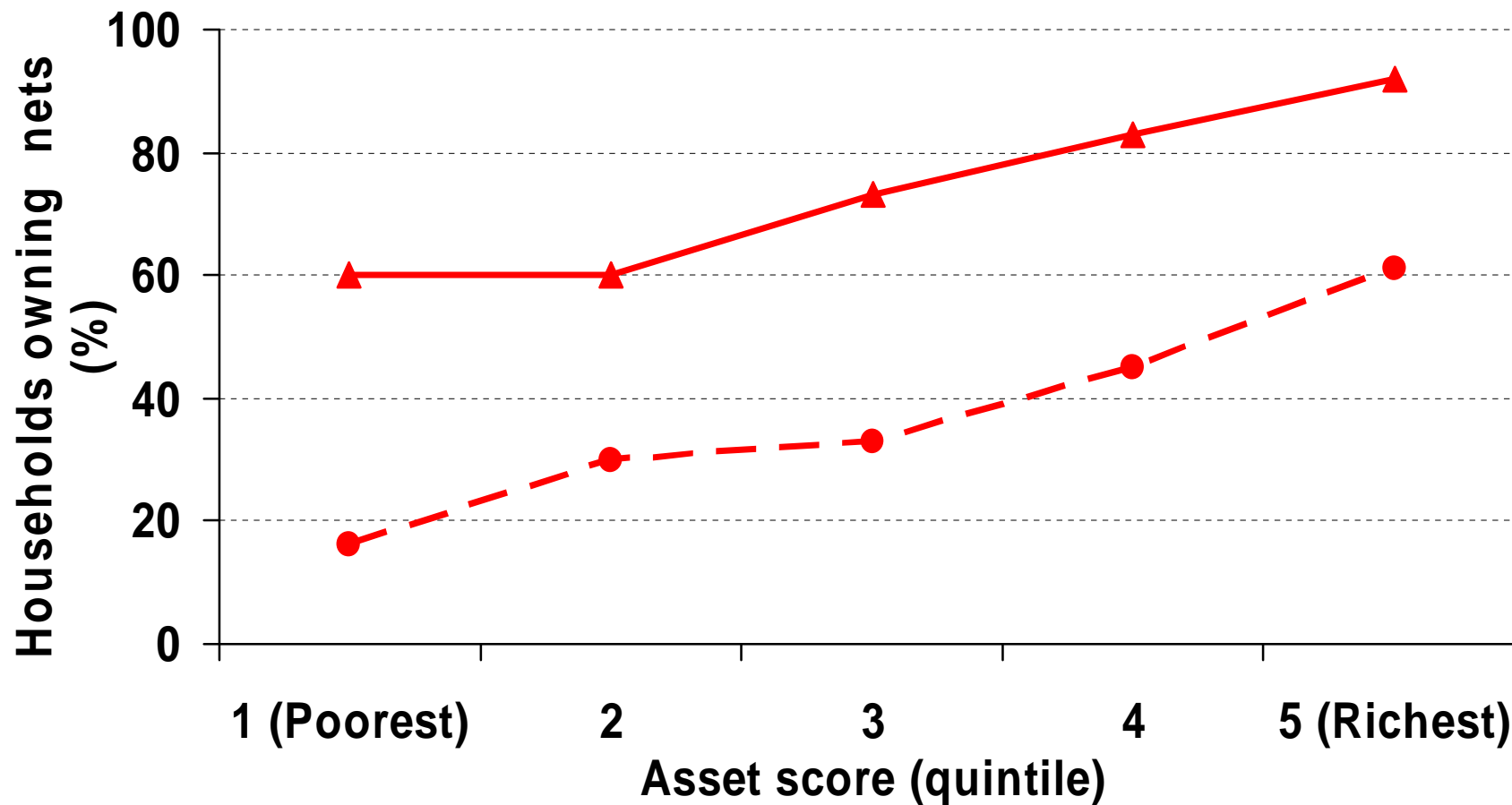
**Goal:** *To work with the community and the district health management teams to **identify, implement** and **evaluate** a feasible and sustainable social marketing distribution system for getting nets and insecticide to a rural population of 450,000 people living in the Kilombero Valley*

- Ø *Largely based on social marketing model*
- Ø *High impact demonstrated (27% reduction in child mortality)*



**Supported by the Swiss Agency for Development and Cooperation**

## Household net ownership before social marketing & 3 years later (KINET)

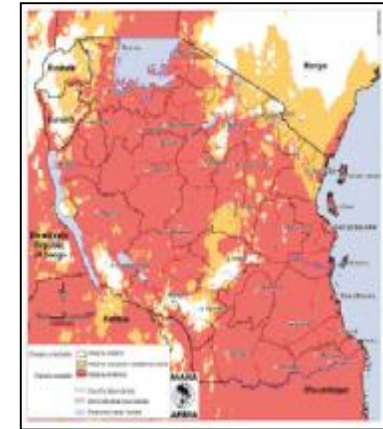


**Equity: Poor/rich coverage ratio:  
0.30 at baseline vs 0.70 after 3 years**

## **(5) Integrated approaches**

**Example: Tanzania**

**Population 35 mio (5,300,000 under five)**



- In 1999, regular ITN use was only 10%; a national ITN stakeholder partnership was created
- A National strategic plan was produced and approved in 2000. The national ITN initiative (NATNETS) was hence created with the aim to protect 60% of the risk group by 2007. It consists of three main components:
  1. An **ITN coordination cell** within the NMCP (SDC / Swiss Tropical Institute)
  2. A national **strategic social marketing programme** to support the commercial sector to develop the ITN market - SMARTNET (DfID/RNE, implemented by PSI); nets for sale in the commercial sector for \$ 3-5
  3. A **national subsidy scheme targeting pregnant women and infants with vouchers (GFATM)** – price reduction of \$ 2.5

# A public-private partnership

## PUBLIC SECTOR

### **ENABLING ENVIRONMENT**

- Regulatory aspects
- Standards and consumer protection
- Taxes and tariffs

### **DEMAND CREATION**

- Generic promotion

## NON-GOVERNMENTAL ORGAN.

### **TARGETED SUBSIDY**

Vouchers distributed through MCH clinics to every pregnant woman (1.4 mio per year) and every infant; \$ 2.7 discount on an ITN in any shop (start Oct 2004)

## PRIVATE SECTOR

### **SUPPLY**

- Production of nets
  - New products
  - Wholesaling
  - Retailing
  - Branded advertisement
- ] **Distribution**

Supported by SMARTNET:

- **Advertisement**
- **Transport subsidies**
- **Risk mitigation**
- **Technology transfer**
- **Lobbying with government**

## Strategic social marketing –SMARTNET

- Ø A programme supported by DfID and RNE and implemented by Population Services International for period 2002-2007
- Ø National level generic and multi-brand advertisement
- Ø National campaign *Malaria Haikubaliki* – malaria is not acceptable
- Ø Highly subsidized IRK to 3 net manufacturers => only ITN are sold in TZ
- Ø Support to net manufacturers to develop wholesaling and retailing network, especially in remote places
- Ø Transport subsidies to wholesalers
- Ø Insurance of first consignment
- Ø Lobbying and general support to NATNETS
- Ø Close collaboration with TNVS



# Pregnant women and infants are attractive groups for targeted subsidies because:

- Pregnant women are easy to identify and reach (MCH clinics)
- Infants easy to reach during routine (measles) vaccination at 9 mo.
- Pregnant women and infants are at highest risk of death from malaria

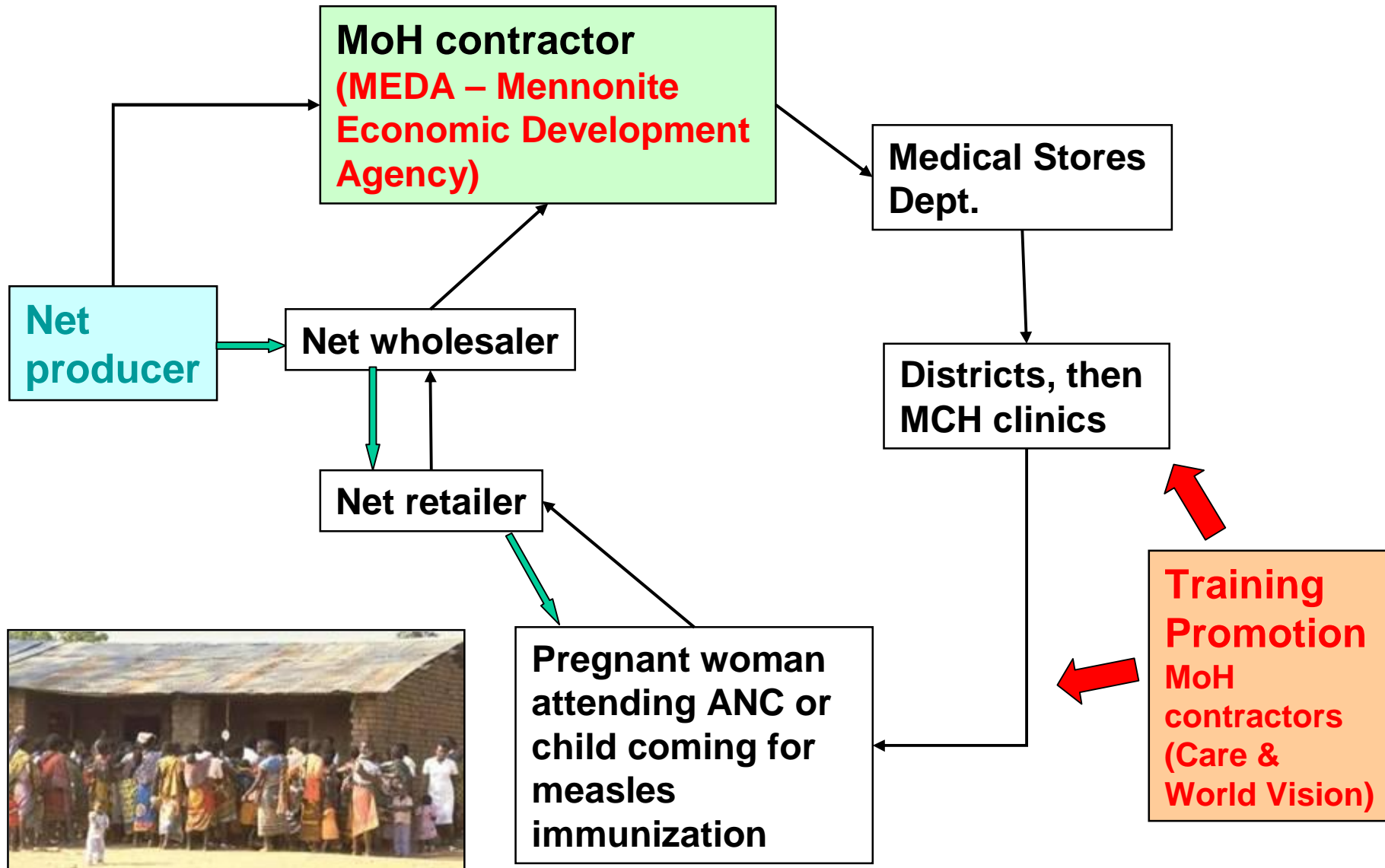
*Tanzania National Voucher Scheme (TNVS) was developed on the basis of the pilot of the KINET project (Mushi et al. 2003).*

**Voucher value:  
TShs 3250 or  
USD 2.50**



**Vouchers help build up the commercial system rather than competing with it!**

# Tanzania National Voucher Scheme (TNVS)



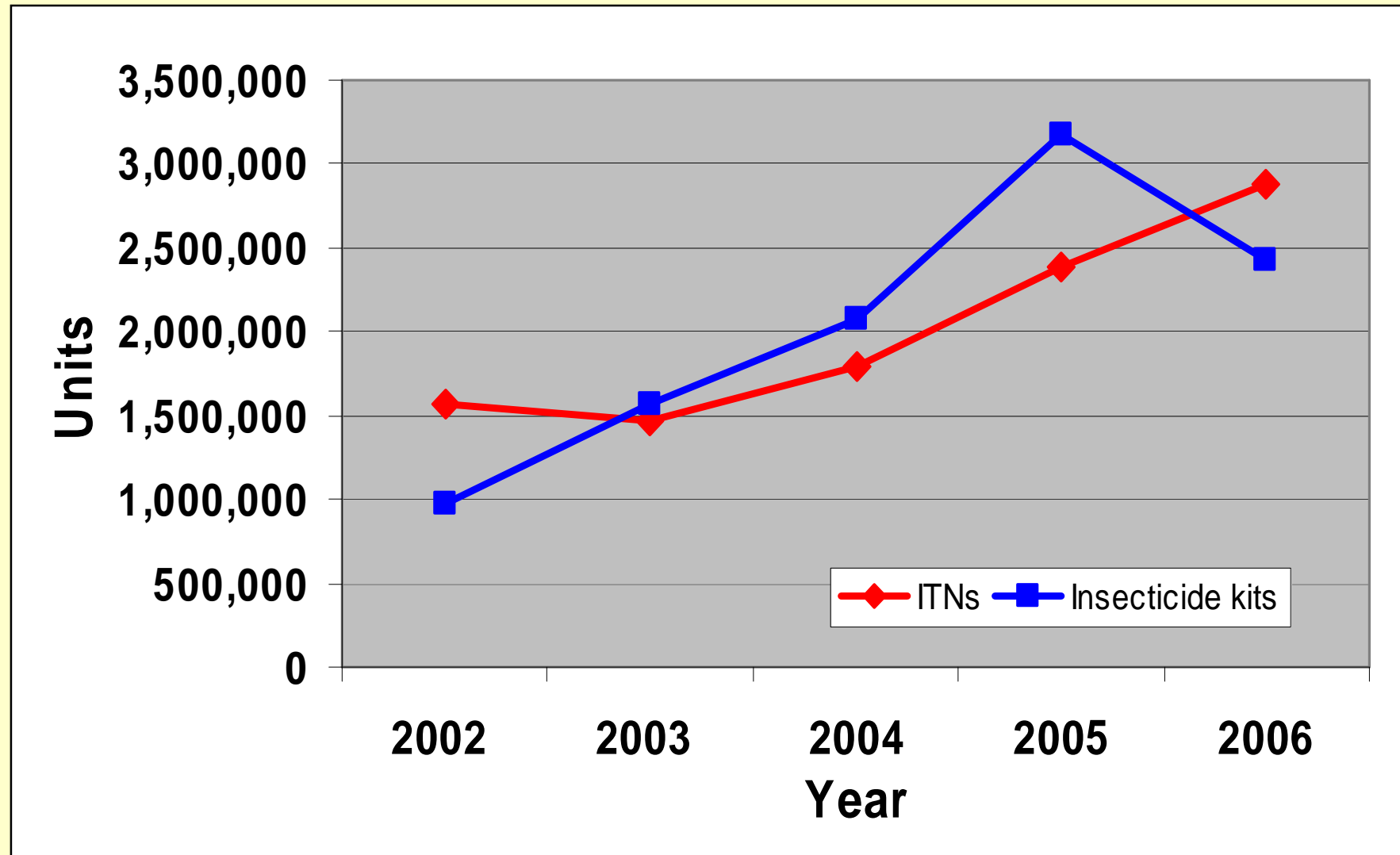
## **A multiple-level private-public partnership (PPP)**

- Ø Commercial sector distribution can not reach effectively without “pull effect” of voucher scheme – for a long time to come.
- Ø Voucher scheme requires well developed commercial sector, in both extent and competitiveness (to keep prices low).

### **Both systems interact well on the ground**

- Ø NATNETS requires full government support
  - + Relevant policies are in place
  - + Tax relief is in place and largely working
  - + Global Fund grant to government is used for voucher scheme implemented by NGOs
  - + Development partners fully behind strategy
  - Reluctance of government to outsource “core” health activities
  - Strong pressure to revert to free net distribution (precedent created by “Sharon Stone nets” ...)
  - Aversion to deal with private sector, less with NGOs
  - Little efficiency thinking, incredibly complicated procedures

## NATNETS: ITN and insecticide kit sales 2002-2006





## **Reaching the poor...**

- Ø **Nearly all households experience a similar risk of getting malaria – but better-off HH can better cope with consequences.**
- Ø **Currently voucher system allows 80% of pregnant women and infants to get a net.**
- Ø **For remaining 20% there are plans to introduce an “equity voucher” covering the top-up in cash.**
- Ø **Inequity of both access to ITNs and affordability has been reduced massively.**

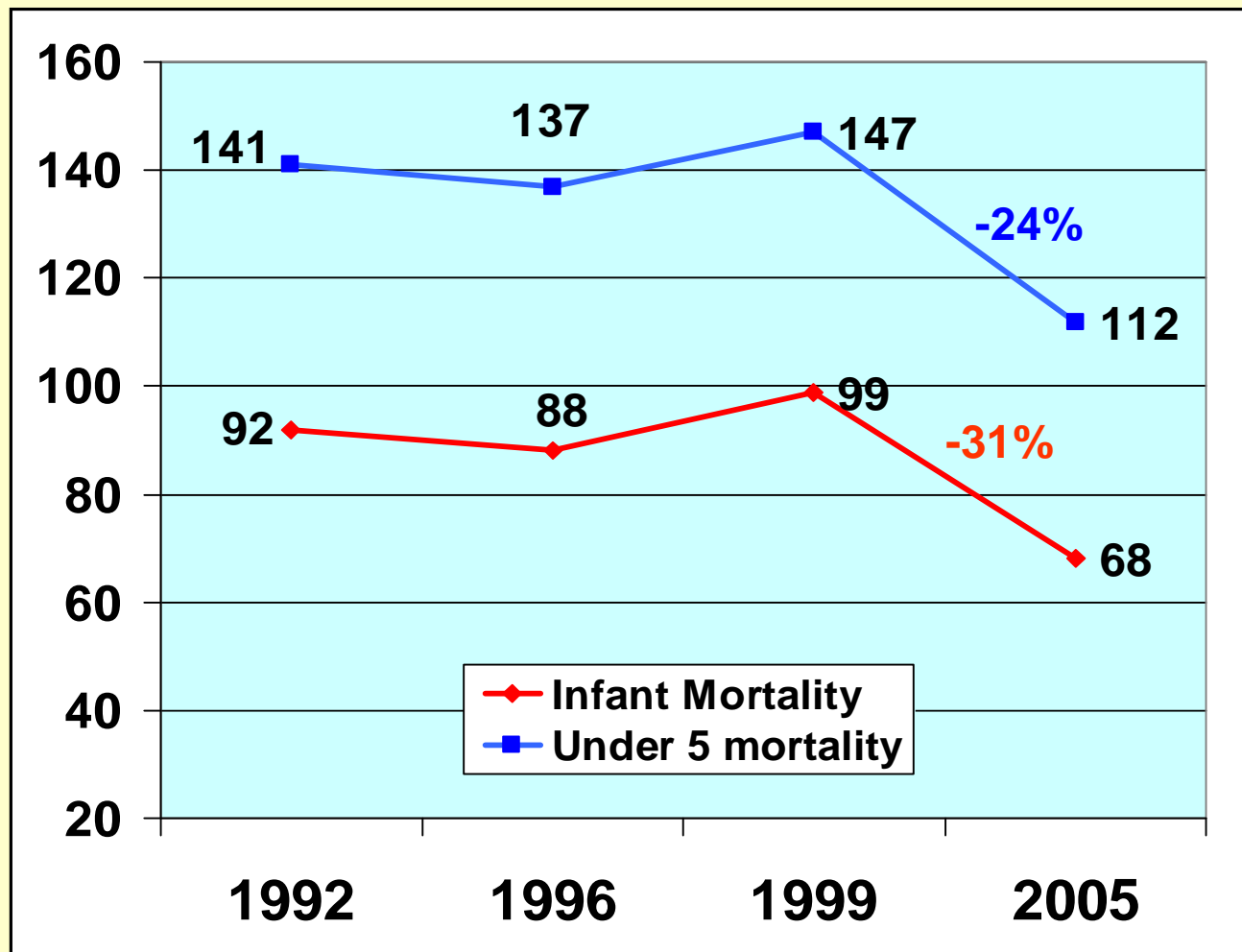
## **Sustainability**

- Ø **The commercial sector ensures ongoing availability of nets and to a lesser degree of insecticide; operational sustainability high.**
- Ø **Currently over 4000 retailers and over 200 wholesalers**
- Ø **Without subsidies (either in form of voucher or other) the market is strong in urban and peri-urban settings and weak elsewhere and there is clear inequity.**
- Ø **Subsidies require external support (currently around USD 16 million per year from Global Fund to Fight AIDS/TB/Malaria and US Presidential Malaria Initiative).**
- Ø **SMARTNET requires an additional USD 4 million per year.**
- Ø **Hard to imagine weaning off these external inputs, which account for 20% of national health budget; no exit strategy planned at this stage.**

## **Creating a new industry**

- Ø In 1999 there was only one net manufacturer in Tanzania, making around 400,000 pieces a year. Prices were high (USD 6-10 at retailer level) and there was no choice (white round nets in 3 sizes).
- Ø In 2007 there are 4 net manufacturers with an estimated total production of over 10 million nets. Prices are much lower (USD 3-4 at retailer level) and choice is excellent. Since the market for nets has expanded vastly this remains a profitable business despite much lower prices.
- Ø Much of this development comes from old textile mills that were converted from making garment to making mosquito nets.
- Ø Tanzanian manufacturers are well present in the export market: at least 7 million pieces exported in 2006, with a market value of over USD 20 million, creating over 3000 jobs.
- Ø One retailer introduced production of long-lasting insecticidal nets and is very present in the international market.

## Impact on child mortality



Source:  
Tanzania  
DHS surveys  
Macro Int.

An improvement of 24% in under 5 mortality represents  
**39,200 deaths less each year**

## **Future challenges**

- Ø **Maintain overall partnership around single national strategy.**
- Ø **Maintain overall funding for all three components.**
- Ø **Transition to long-lasting insecticide treatment technology (done for one manufacturer but needs to be effected for the 3 others).**
- Ø **Keep government committed to agreed strategy.**
- Ø **Petrol prices critical for cost of nets.**
- Ø **Hope there is no development of insecticide resistance because there are no other insecticide options.**
- Ø **Eventually... wean the system off the donor contributions... but how?**

## **Conclusions**

- Ø Malaria control through insecticide-treated mosquito nets is feasible and effective; it is an excellent public investment.**
- Ø In the long-term the commercial sector is the most efficient and reliable distribution channel. It provides a reliable alternative to public sector distribution.**
- Ø Expansion and maintenance of the commercial sector requires a reasonable level of government support to function optimally.**
- Ø Ongoing subsidies are required for this market to thrive and best provided through a voucher system that supports rather than inhibits the commercial sector**
- Ø Long-term financing needs to be found for the subsidies, since there is no obvious exit strategy**