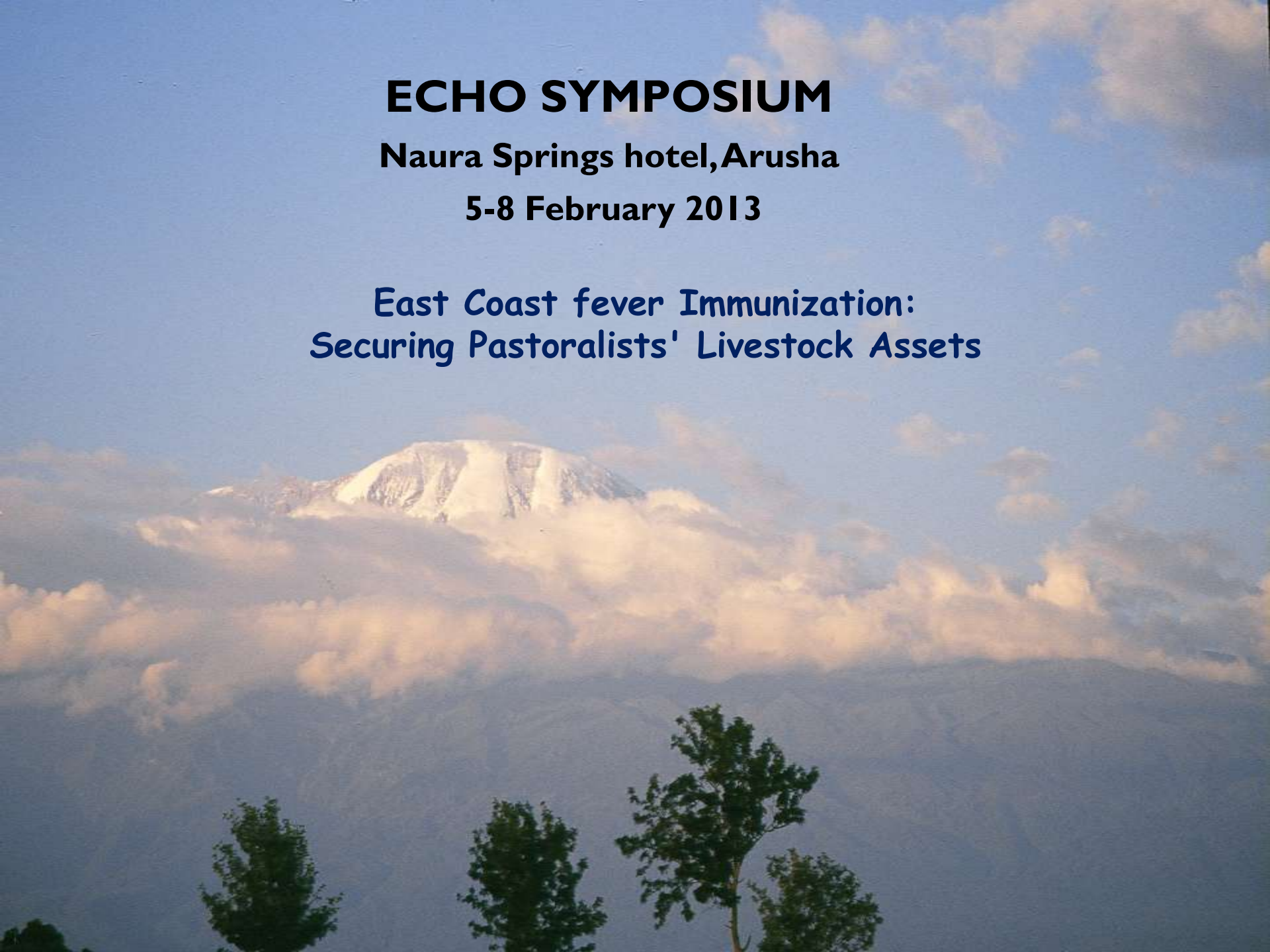


ECHO SYMPOSIUM

Naura Springs hotel, Arusha

5-8 February 2013

**East Coast fever Immunization:
Securing Pastoralists' Livestock Assets**



ECF Vaccination

Hope for a better future

2003 2004 2005 2006 2007 2008 2009 **2010**



-2013

*“Sharing Knowledge”
“Safeguarding Livestock”
“Improving Livelihoods”*

Vet Agro
Tanzania Ltd

**For quality drugs, vaccines, equipment
&
professional veterinary services**

P. O. Box 13188, Arusha - Tanzania
Tel: +255 27 254 8189, Fax: +255 27 254 8185
E mail: vetagrotz@habari.co.tz
Mobile: 0754 667052 / 0784 522260

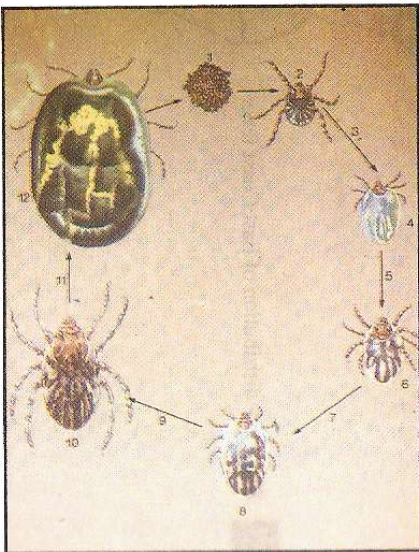
**Lieve Lynen/Beppe Di Giulio
Vetagro Tanzania Ltd**

East Coast fever

Brown ear ticks on an animal

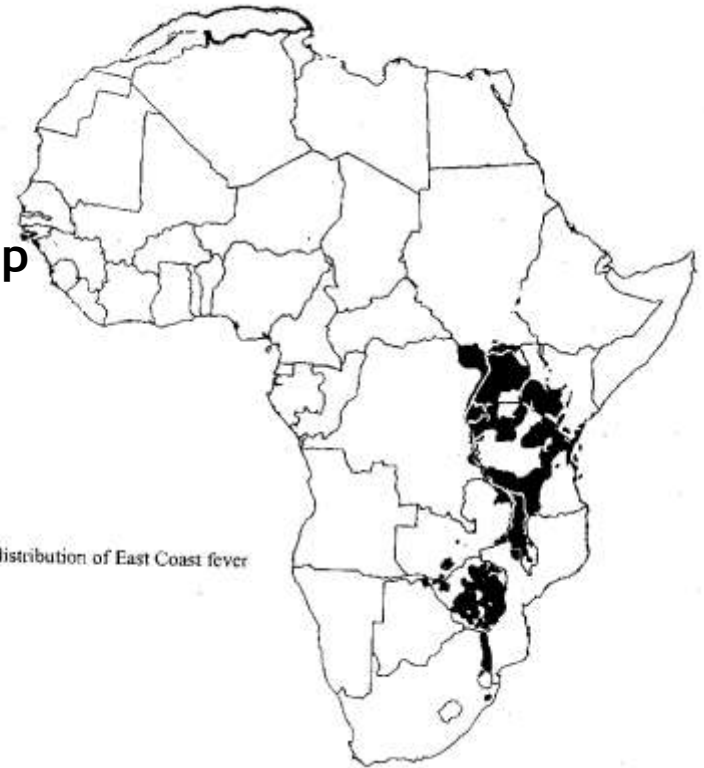


Life cycle of the brown ear tick



ECF mortality can reach up to 100% in susceptible (improved) breeds and averages 40-60% in the newborn indigenous calf crop.

Reported distribution of East Coast fever



Economics



Amongst TBDs, ECF has by far the greatest economic impact.

For Tanzania, the annual cost of control of ECF was estimated to be 43 million USD, of which 35.1 million were direct losses due to mortalities and 6 million loss of milk production.

Control options

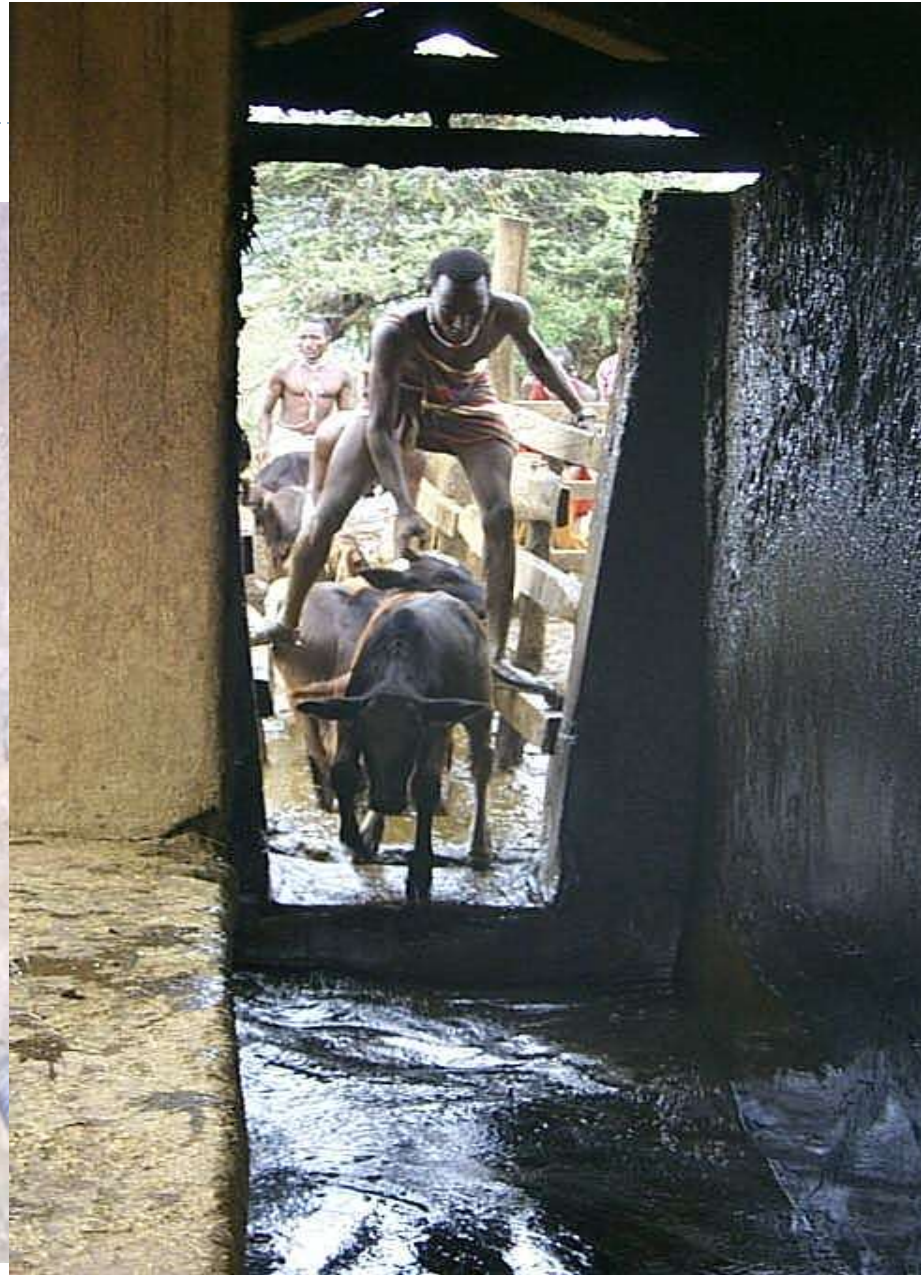
- Acaricide cost/ dairy animal/ year; 10 - 25 US\$
- TBD treatment costs/animal range from 3-75 US\$, ECF treatments being the most expensive, i.e. between 40 -74 US\$
- ECF vaccination: 6-12 US\$ (1 x life)





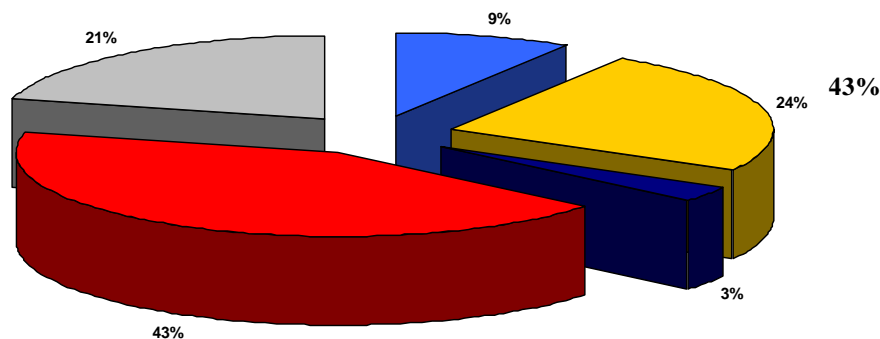
Efficiency of Vector control ??

Environmental and human Safety



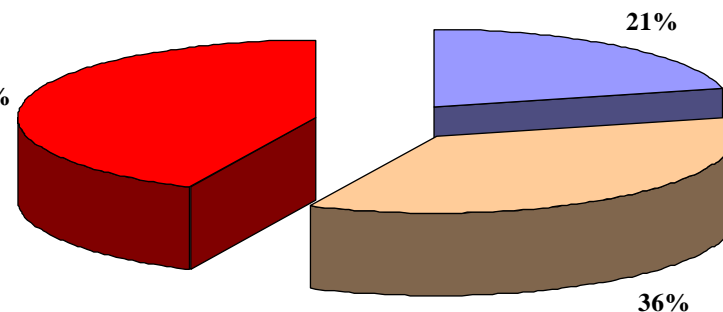
Application of acaricides

Correct Low dose High dose unknown None



Acaricide resistance levels

Susceptible Tolerant Resistant



Livestock Management Practice	Tick Susceptibility/resistance (%) to commonly used acaricides		
	S	T	R
Small holders zero grazing	70	30	0
Small holders free range	20.82	34.94	44.24
Pastoralists	22.73	37.12	40.15
Government/Private farm	18.18	40.90	40.91

EAST COAST FEVER VACCINE

The Infection and Treatment Method (ITM) comprises the inoculation of live *Theileria parva* sporozoites and simultaneous administration of long-acting (LA) oxytetracyclines (OTC)

The Muguga cocktail (MC) is an effective and widely used vaccine derived from 3 *T.parva* strains: Muguga, Serengeti-transformed and Kiambu 5.

In Tanzania the MC offers > 98% protection and has major impact on food security and pastoral livelihoods



KIAMBU 5



SERENGETI-TRANSFORMED



MUGUGA



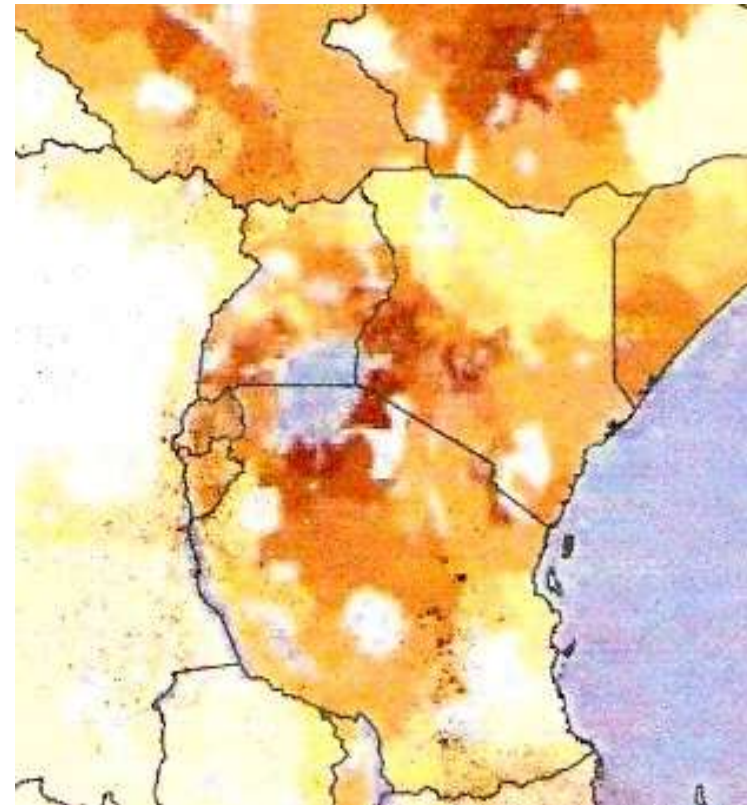
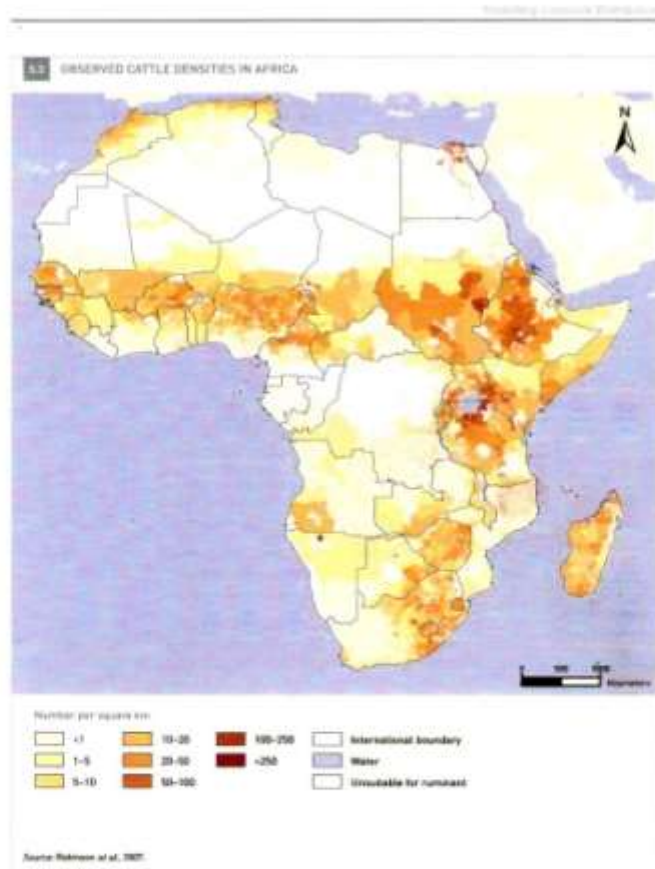
Determine infection
rates in ticks and
pool ticks in
appropriate
numbers



Prepare
Vaccine
Stabilate

Stabilate infection of cattle for trivalent MC vaccine production

Cattle density in SSA - EA



Cattle numbers by country and livestock production system

Country	LGA	LGH	LGT	MRA	MRH	MRT	Other	Urban	TOTAL (million)
Tanzania	2,879,260	405,400	245,900	9,919,300	3,240,575	778,060	1,129,720	1,785	18.6
Kenya	2,932,925		512,775	2,044,045	1,006,430	4,030,505	1,459,850	13,470	12
Uganda	262,500	208,570	10,560	1,536,415	2,791,160	856,155	434,640	0	6.2
Burundi				5,210	72,000	234,845	12,915		0.32
Rwanda				275,750	109,370	590,180	28,800		1
Malawi	33,095	8,900	9,580	584,120	19,800	16,105	77,380	1,020	0.75
Zambia	1,602,420	3,420	12,740	728,030	170	670	246,110	6,440	2.6
Mozambique, DRC, SouthSudan, Zimbabwe: no specific data available regarding ECF									

FAOSTAT 2005, MLWD 2007

Cattle numbers by country and livestock production system

Livestock sectors in Tanzania, Uganda and Kenya are different in terms of dominant production systems in each country:

- a higher proportion of smallholder and commercial dairy sector in Kenya as well commercial beef,
 - a predominantly agro-pastoralist system in Uganda and
 - a primarily pastoralist and agro-pastoralist production system in Tanzania (reflected in SSudan)
-
- In Tanzania: **65-70% of national herd lives in ECF risk zones**; with 18.6 million cattle, the estimated number of calves born in ECF risk areas is almost **one million annually**.



Regional approach possible?

- ▶ Different country policies on which ECF vaccine to be used
- ▶ Different country policies on who can deliver the service
- ▶ Different country policies on import duty, VAT, Pharmacy Board fees, regulations
- ▶ Different country approaches: subsidies, partial cost-recovery, commercial,
- ▶ Different pricing structures for the vaccine or the vaccine package

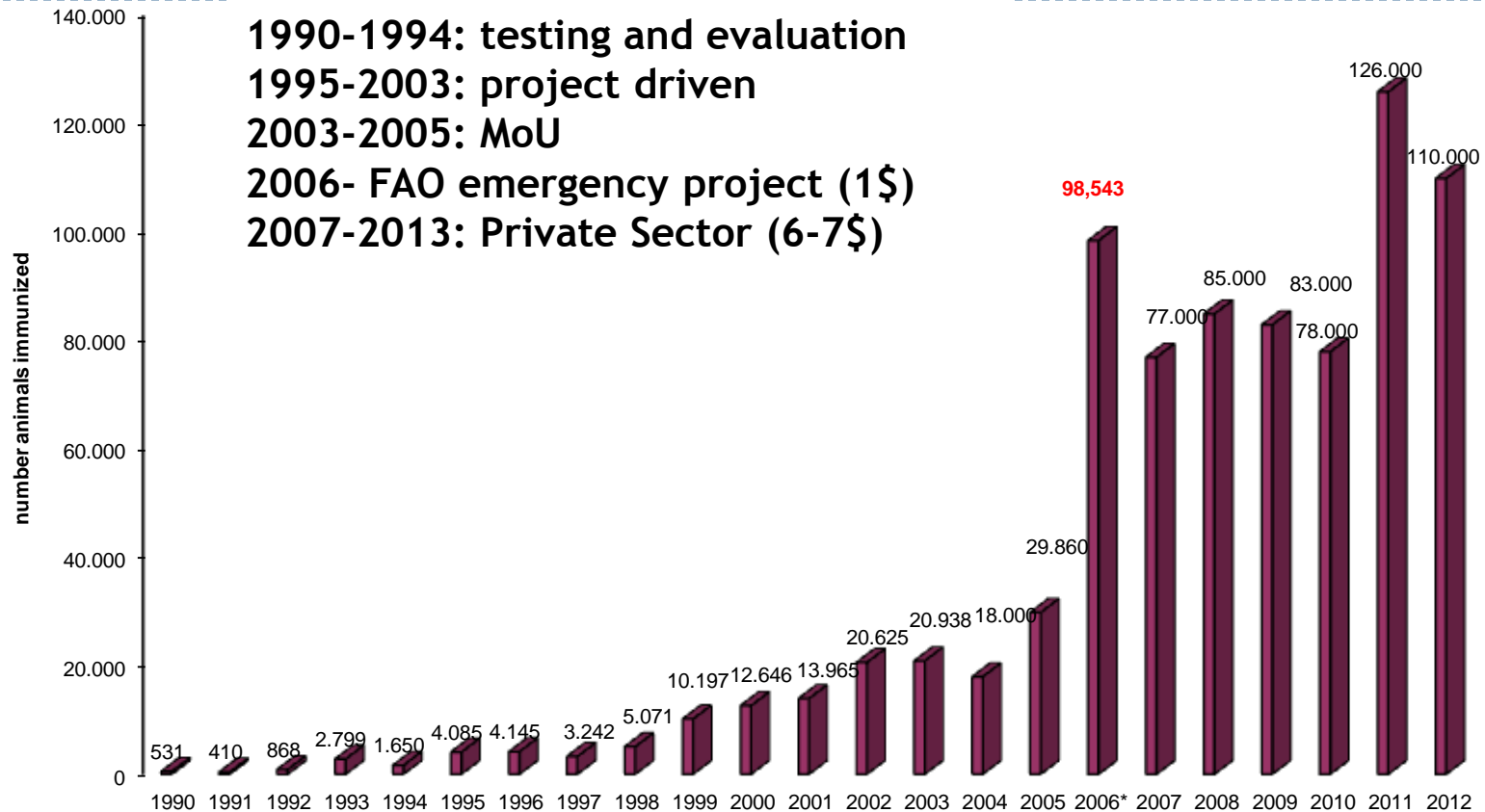


USE of ITM in the region

Country	Vaccine tested	Vaccine currently in use	Field application	Numbers vaccinated
Kenya	MC (Ind + D) Local strain (Dairy)	MC	Since 2008 (Ind) 1993-2007	>30,000 > 15,000
Tanzania	MC	MC	Since 1995	>800,000
Uganda	MC	MC	Since 1995	> 20,000
Rwanda	Exp:local strains	none	none	unknown
Burundi	Exp. Local strains	none	none	unknown
Malawi	MC	MC	Since 2008	> 8,000
Zambia	MC Local strains	Local strains	1985-1993 Since 1986	>10,000 >200,000
Zimbabwe	Local strain	none	1987-1990	<10,000



ECF - ITM ADOPTION IN TZ



1998: finalised testing of 30% OTC

2006: post- drought emergency FAO-project

2009/2010: severe drought; 80% mortality in northern pastoral areas

2011: bumper calf crop

Challenges

- ▶ Maintaining quality of product delivery
 - ▶ Sensitization of endusers
 - ▶ Delivery agents- ethics of conduct
 - ▶ Government/Donor changing policy
 - ▶ Public/Private partnership and/or conflict
 - ▶ Reducing impact of natural disasters affecting livestock is a public good - **ITM moves from private to a public good**
 - ▶ Aid Agencies/Governments should concentrate efforts in the most difficult environments, taking higher risks
 - ▶ Distributor: Financial constraints due to bad debts
 - ▶ Strong Research interest at national/regional levels
-



In Pursuit of broadening ITM access

year	average vaccine package price indigenous calves	USD exchange rate	\$ price/ dose
2003	Tsh4,500	982	\$4.6
MOU			
2006	Tsh5,000	1215	\$4.1
2007	Tsh5,500	1250	\$4.4
2008	Tsh6,000	1300	\$4.6
2009	Tsh6,000	1360	\$4.4
2010	Tsh6,500	1450	\$4.5
2011	Tsh6,750	1600	\$4.2
2012	Tsh7,000	1625	\$4.3
Jan-2013	Tsh7,500	1620	\$4.6

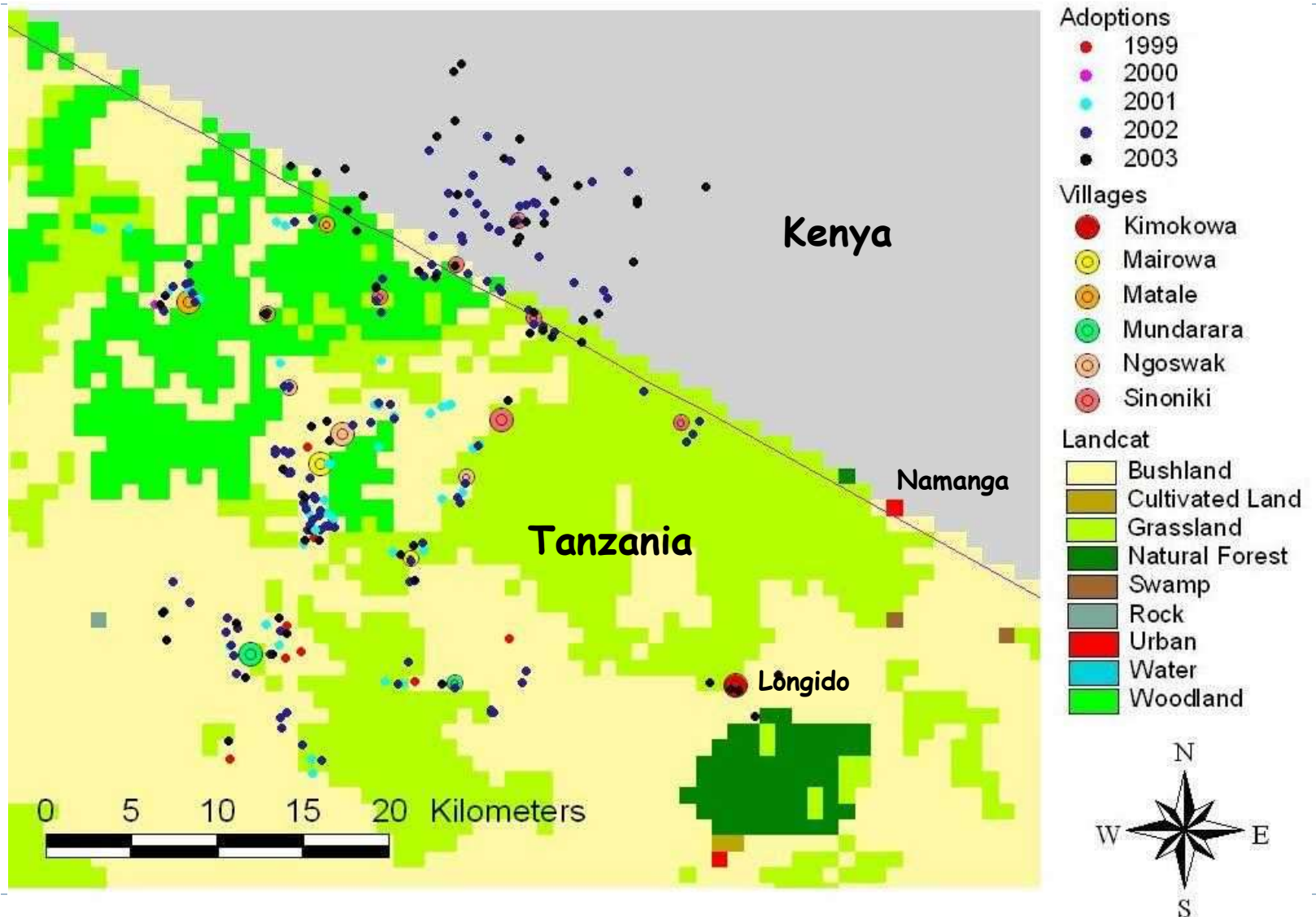
Not taking in account price increases for LN2, OTC etc

ITM Farm gate - delivery price

	Indigenous calves	Dairy
Tanzania:	\$ 5.5 - 7	\$ 8 - 12
Kenya:	\$ 8 - 12	\$ 15-25
Uganda:	n/a	\$ 10 (subsidized?)



Cross-border adoption



Pastoralists' Assessment

- No ECF cases,
 - calves surviving, plenty milk
- better growth-rate in calves
- good price for immunised calves
- steers sooner ready for the market
- earlier pregnancies in immunised females
- Possibility to use better breeds-bulls
- more oxen used for cultivation
- moving cattle into ECF areas for grazing
- more animals available for sale: school fees; medical care,



ECF



VACCINATION



FOR
IMPROVED
LIVELIHOODS

ECF



VACCINATION



FOR
BETTER-QUALITY
BREEDING

-
- ▶ **Any policy maker should keep in mind the positive impact that a wider use of ITM has on food security, poverty reduction and sustainable livelihoods and promoting the country's economic growth.**



Millennium Development Goals (MDGs)

8 international development goals (2015/2030):

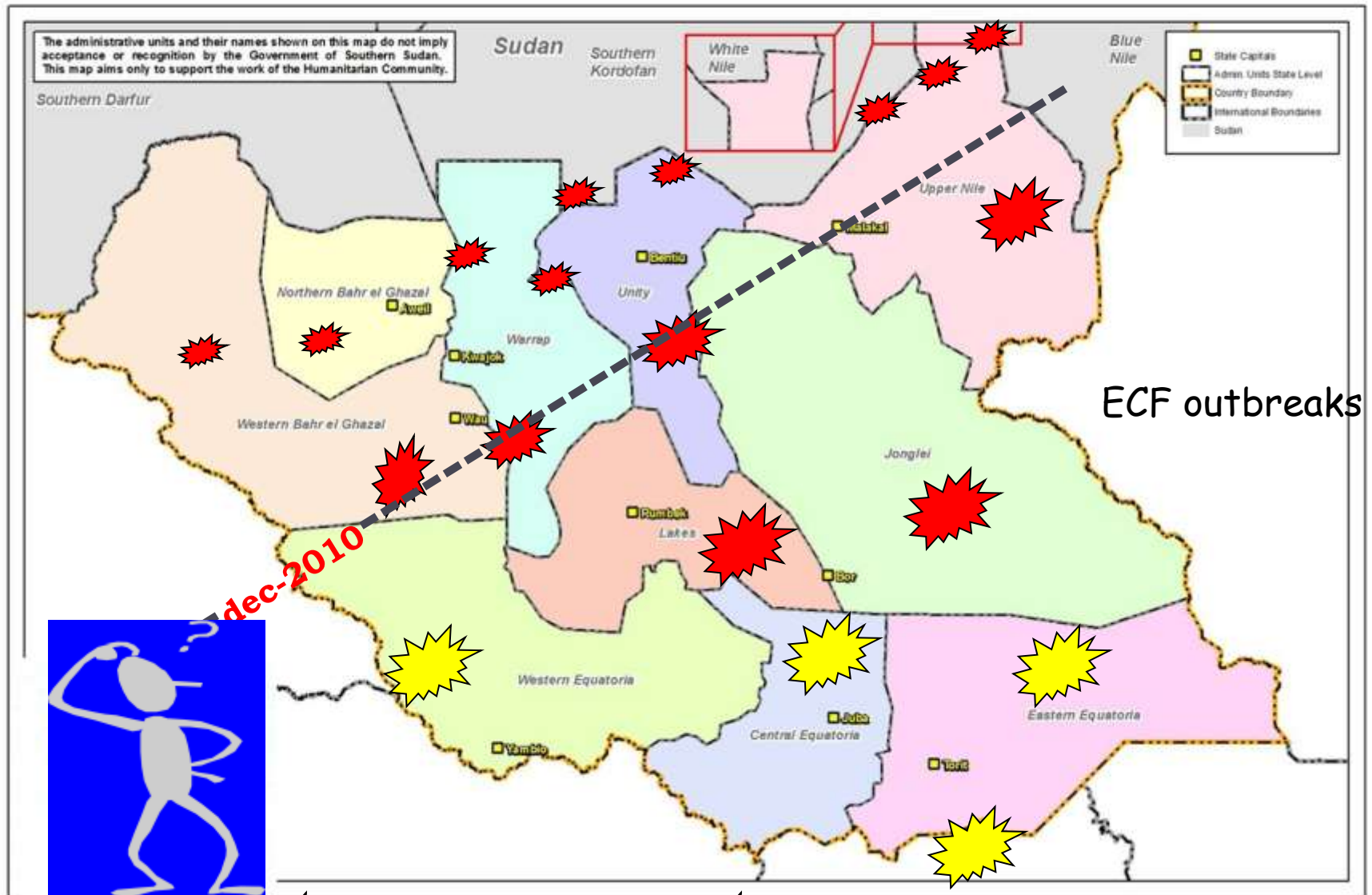
1. Eradicating extreme poverty and hunger
2. Achieving universal primary education,
3. Promoting gender equality and empowering women,
4. Reducing child mortality rates,
5. Improving maternal health,
6. Combating HIV/AIDS, malaria, and other diseases,
7. Ensuring environmental sustainability, and
8. Developing a global partnership for development.



-
- ▶ The aim of the MDGs is to encourage development by improving social and economic conditions in the world's poorest countries
 - ▶ We have a technology available to address and enable us to reach the MDG
 - ▶ Where are the donors????
 - ▶ Failure of the international community to take initiative



Southern Sudan: the ECF situation and the projections



Known endemic status



Epidemic outbreaks since 2006



**Food security =
Protecting livestock,**

Thank you for your attention

Enjoy the movie and the views of
the end-users.

