

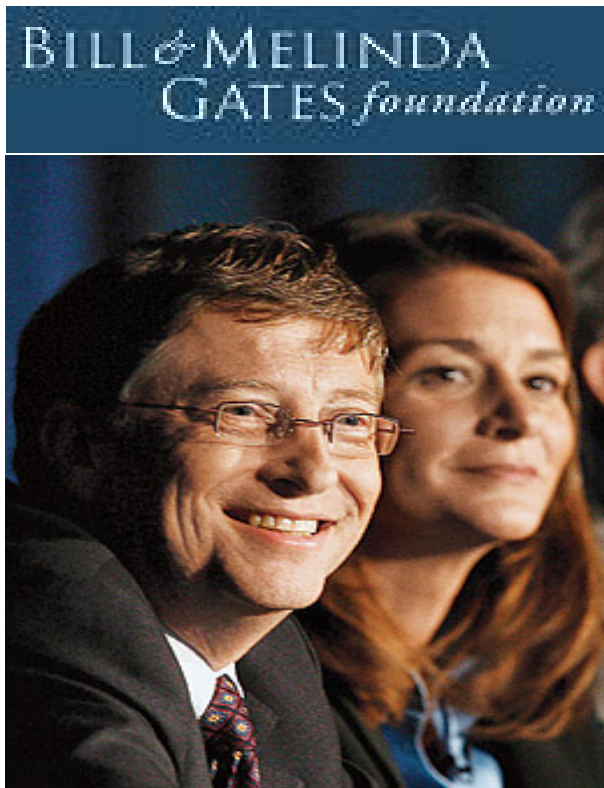


Integrated Control of Taeniosis/Cysticercosis in sub Saharan Africa

Wendy Harrison BVetMed MPH PHD MRCVS
Schistosomiasis Control Initiative

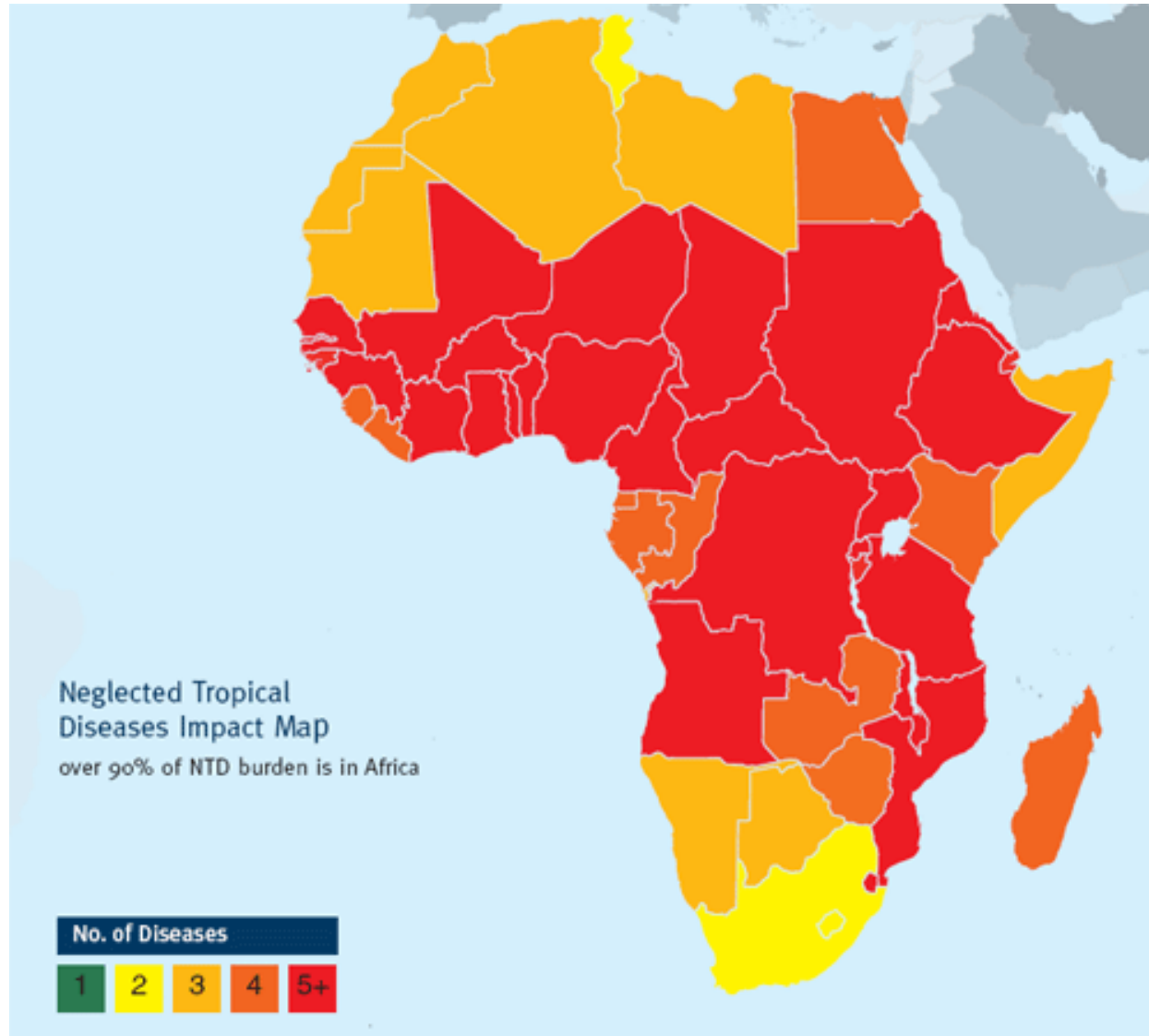
on behalf of Technical University Munich, University of
Copenhagen, Institute of Tropical Medicine, Antwerp

The Schistosomiasis Control Initiative







- BMGF Global Health Program in 2002
- Test the 'proof-of-principle' of implementation and evaluation of national scale, Ministry of Health-led schistosomiasis control programmes
- Six countries were selected Burkina Faso, Mali, Niger, Uganda, Tanzania and Zambia

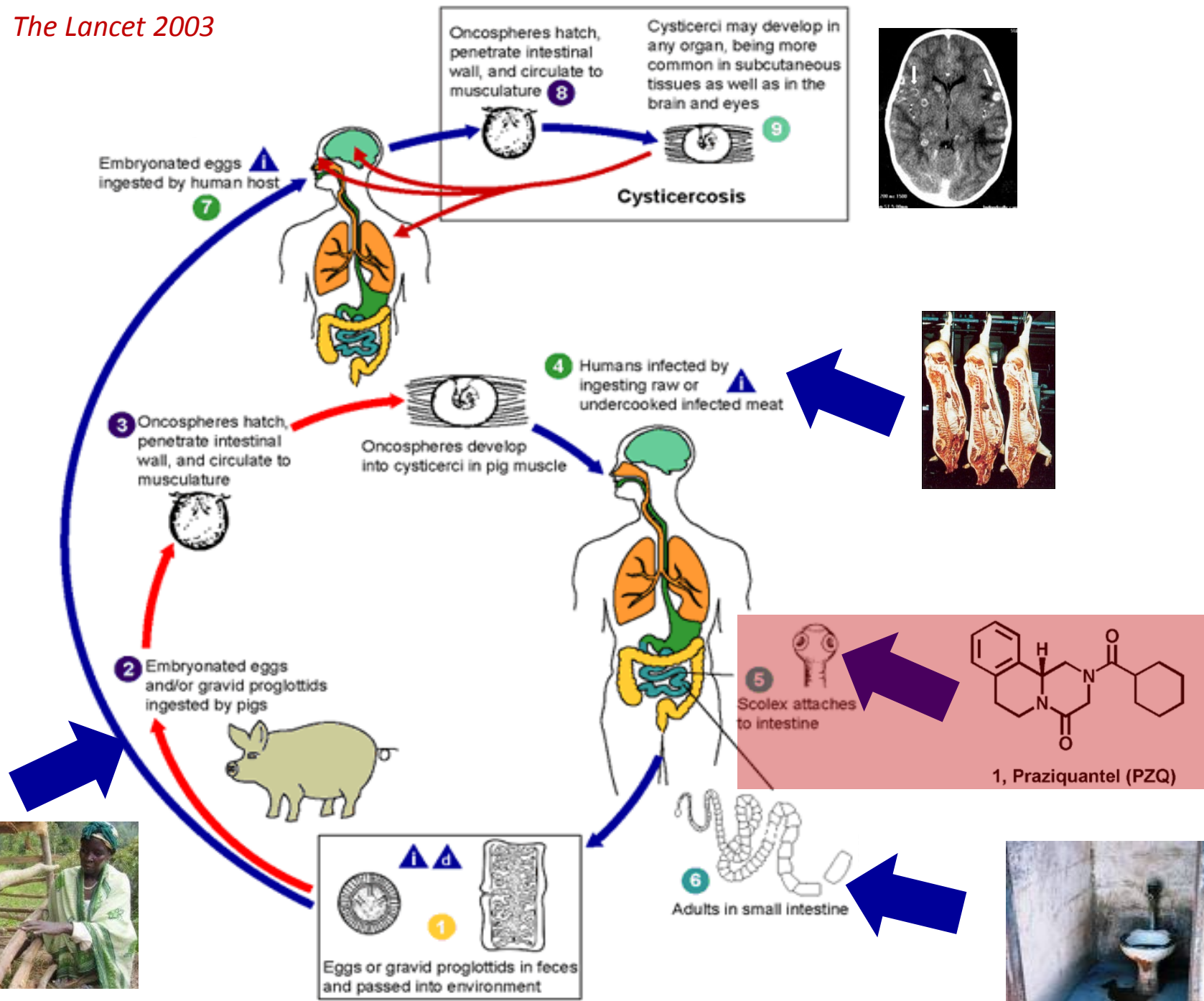
Recognition of co-endemicity of a number of NTDs



7 NTDs are amenable to Mass Drug Administration

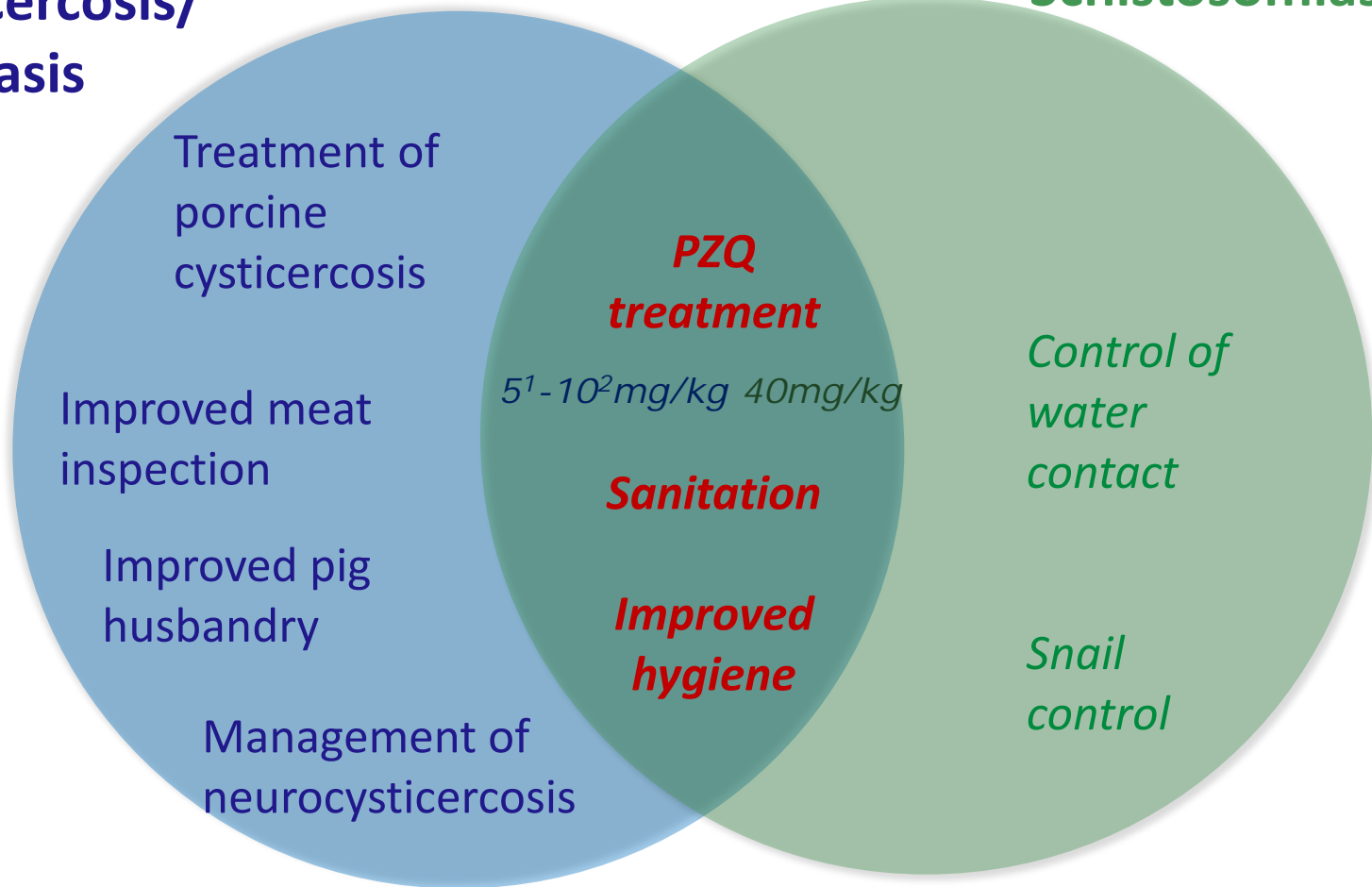
Integrated Rapid Impact Package of Drugs

Drugs	Ivermectin	Albendazole	Azythromycin	Praziquantel
Diseases	Onchocerciasis	Soil- Transmitted Helminths	Trachoma	Schistosomiasis
	Lymphatic filariasis			
Donation				



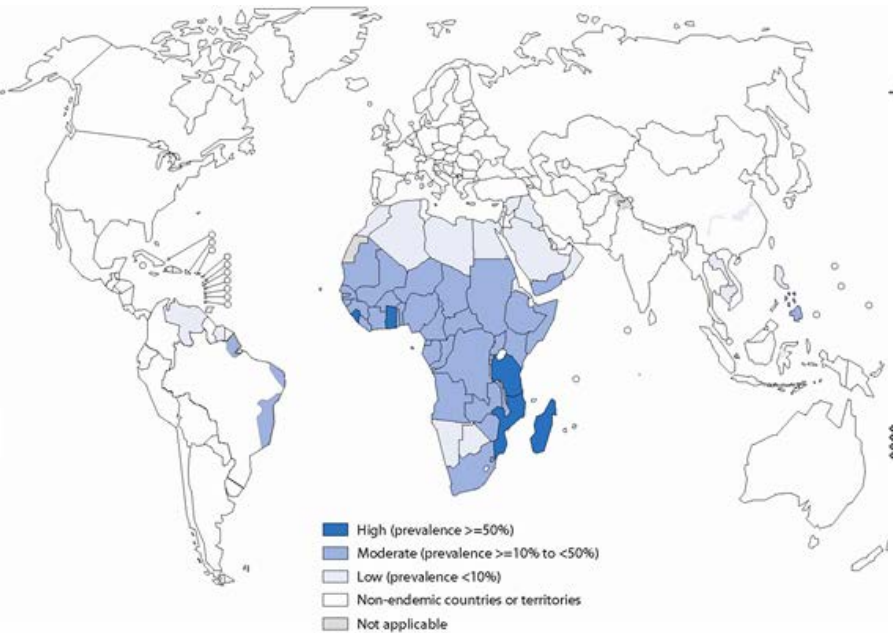
Cysticercosis/ Taeniasis

Schistosomiasis

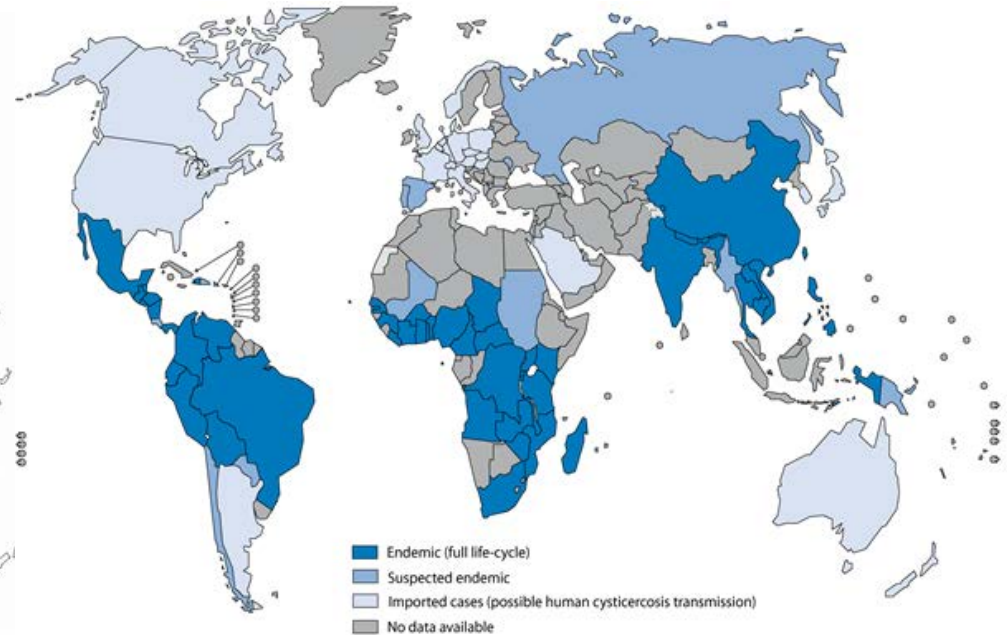


1 Cruz et al 1989, 2 Sarti et al 2000

Overlapping risk factors



Schistosomiasis prevalence 2010



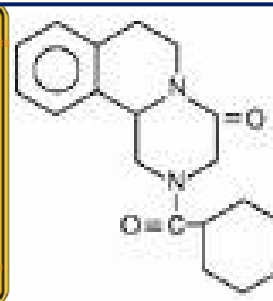
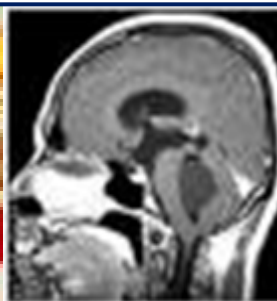
Cysticercosis endemicity 2009

Safety Concerns

Cysticidal therapy with PZQ at 40mg/kg in asymptomatic neurocysticercosis patients with latent cysts may lead to

- increased risk of acute cerebral inflammation with ensuing oedema
- new onset seizures or increase in seizure frequency
- worsening long term prognosis of seizures

Johnson et al 1986, Torres et al 1989, Flisser et al 1993

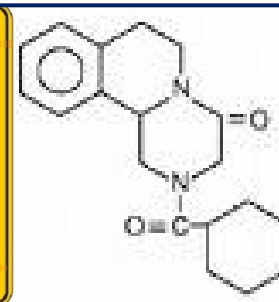
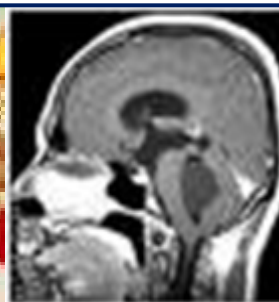
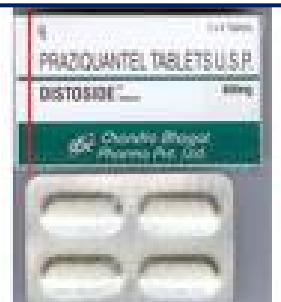


Safety Concerns

This potential risk is reflected in the WHO guidelines:

“as a general rule MDA [with PZQ] should not be administered in large-scale interventions to individuals reporting a history of epilepsy and/or other signs of potential nervous system involvement”

WHO: Preventive Chemotherapy in Human Helminthiasis 2006



Grant Proposal

Project Goal

To development of effective approaches to the control of taeniosis/cysticercosis as an integrated element of existing NTD MDA control programs

Objective 1: To assess the effect of single and multiple annual MDA of 40mg/kg PZQ on the prevalence of taeniosis and porcine cysticercosis

Objective 2: To determine the risk of MDA of 40mg/kg PZQ precipitating neurological side effects associated with NCC

Objective 3: Quantify and maximize the impact of NTD control platforms in communities co-endemic for cysticercosis and schistosomiasis.

Partnerships



Technische Universität München



UNIVERSITY OF
COPENHAGEN



*Zone de Sante de
Kimpese Democratic
Republic of Congo*

Collaborations with other projects

BMGF Integrated control of Taeniosis/ cysticercosis

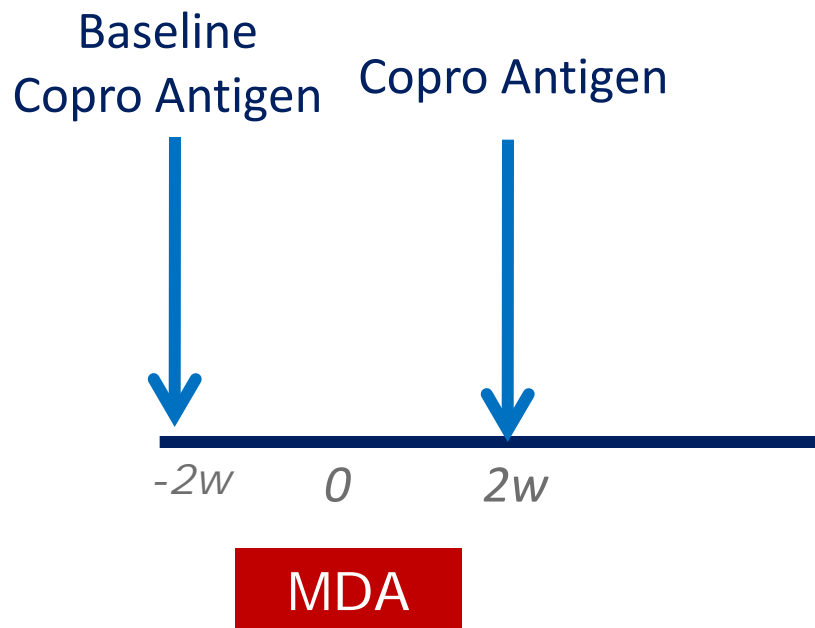
German Research Foundation: Neurocysticercosis in sub-Saharan Africa: an African/German co-operation project

WHO/TDR 'Epidemiology and control of schistosomiasis in Democratic Republic of Congo of today'

Belgian Government Directorate-General for Development Cooperation : Framework Agreement III (FA3) 'Cysticercosis and Schistosomiasis'

Danish International Development Agency : Sustainable Livelihoods by Improving Pig Production

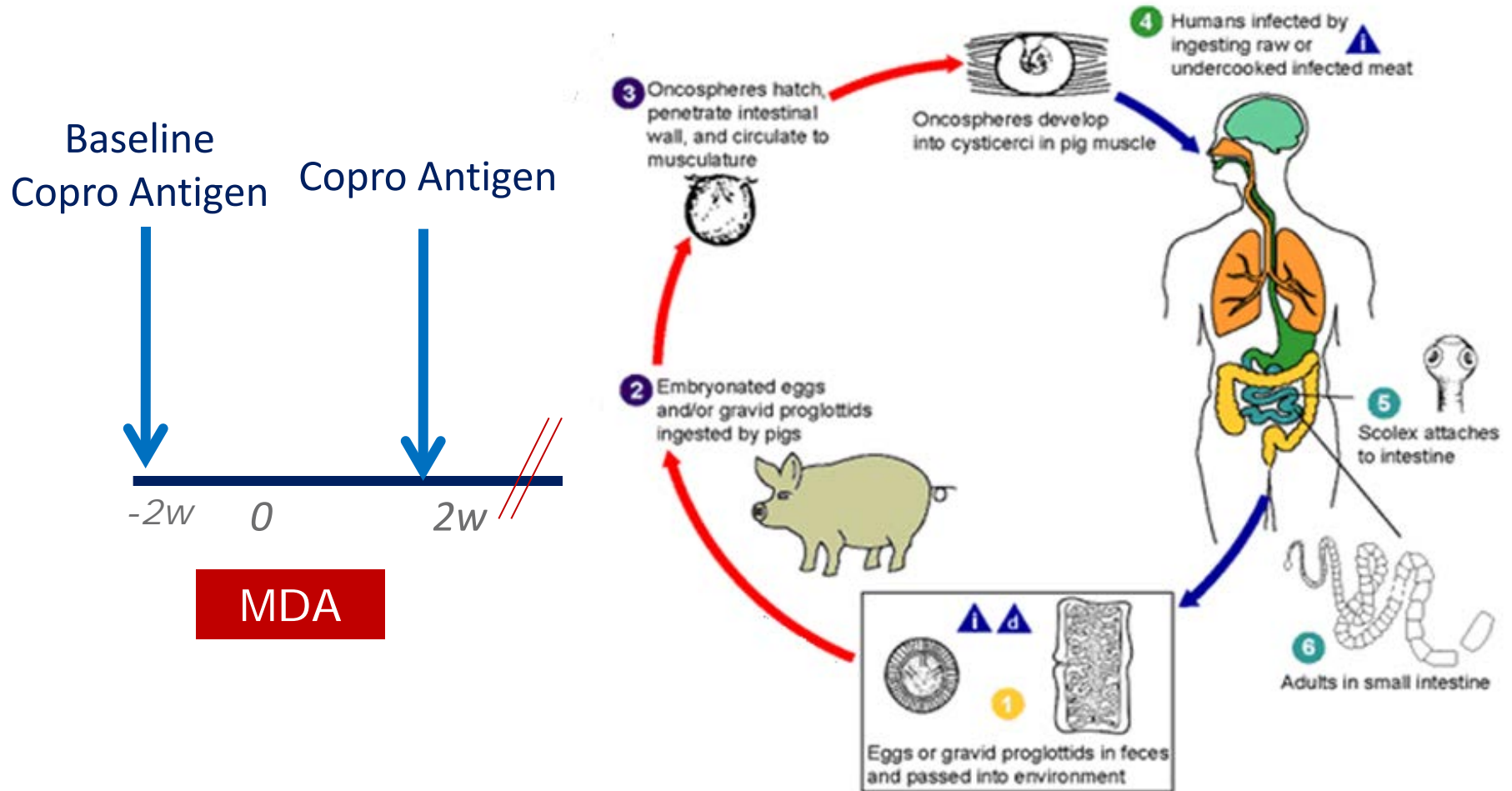
1. Impact of single round of MDA targeting Schistosomiasis on taeniosis and porcine cysticercosis



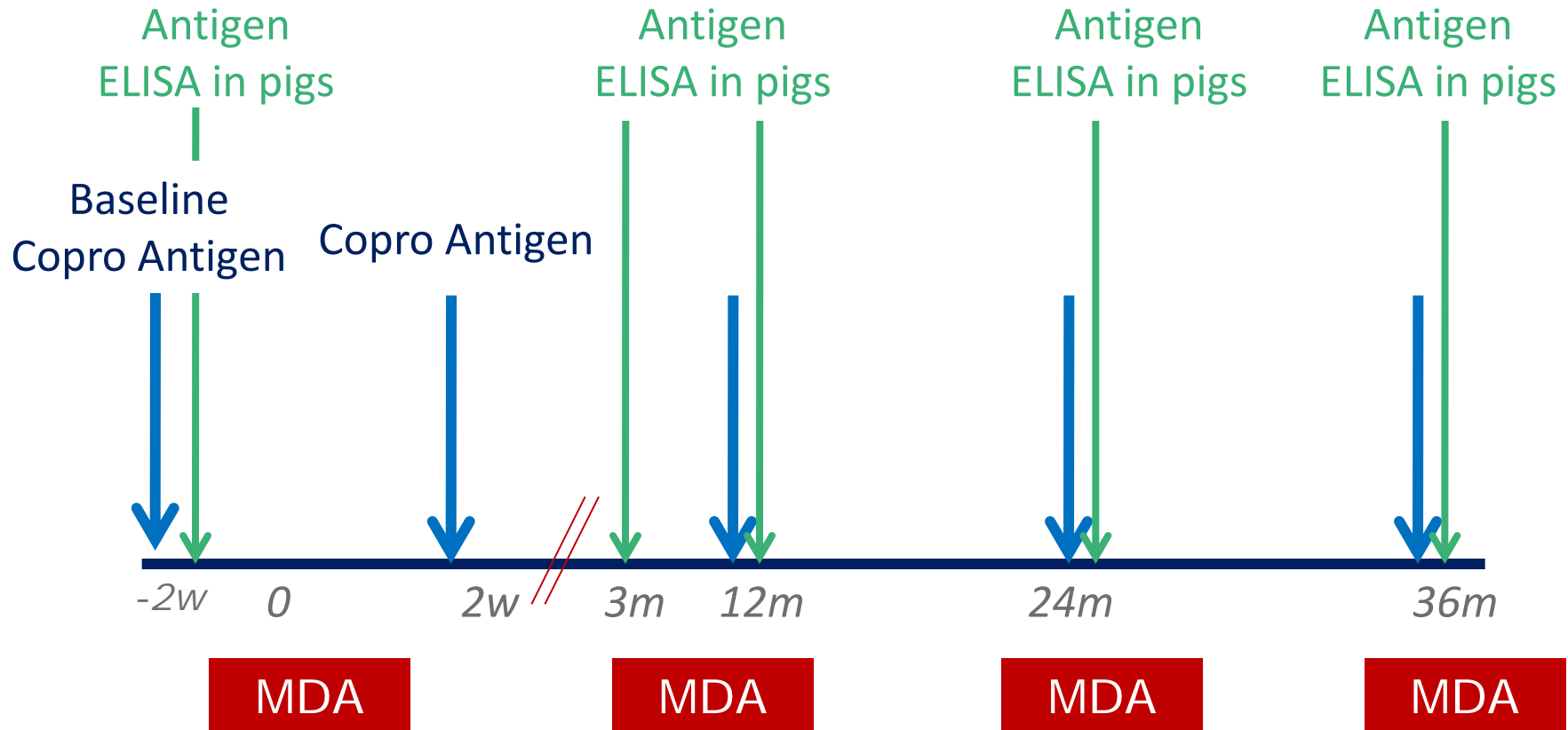
Selection criteria :

- Schistosomiasis prevalence $> 10\%$
- PZQ MDA programme in place or planned
- Evidence of taeniosis /cysticercosis
- Evidence of porcine cysticercosis
- Information of pig density and husbandry
- Potential for cost sharing with other programmes

1. Impact multiple doses of MDA targeting Schistosomiasis on taeniosis and porcine cysticercosis



1. Impact multiple doses of MDA targeting schistosomiasis on taeniosis and porcine cysticercosis



Distribution mechanism of MDA



Mbozi
District,
Tanzania



Kimpese
Health
District,
Democratic
Republic of
Congo

Progress to date



Mbozi
District,
Tanzania

Baseline pre-MDA samples collected from

- Approx. 800 pigs for Antigen ELISA
- Approx. 3000 for copra Antigen

Analysis of samples carried out in Lusaka, Zambia

MDA of school children carried out in next 8 weeks

Progress to date



Kimpese
Health
District,
Democratic
Republic of
Congo

Baseline pre-MDA samples collected

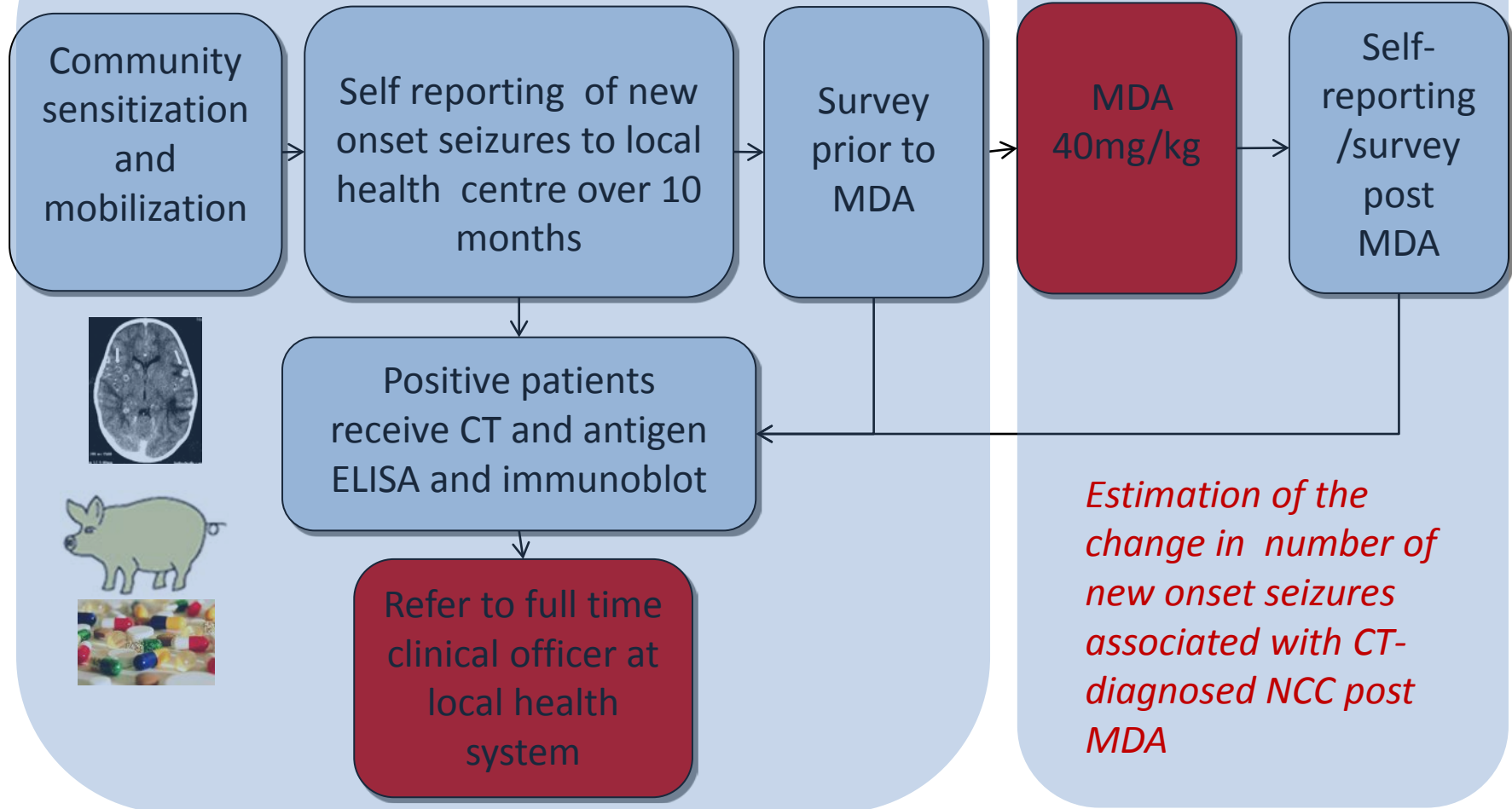
- from pigs in December 2011
- human samples due to be collected in May-June 2012

Analysis of samples carried out in Lusaka, Zambia

MDA of community carried out June/July 2012

2. To determine the risk of MDA targeting Schistosomiasis precipitating neurological side effects associated with NCC

Indication of baseline rate of incident seizures associated with CT-diagnosed NCC

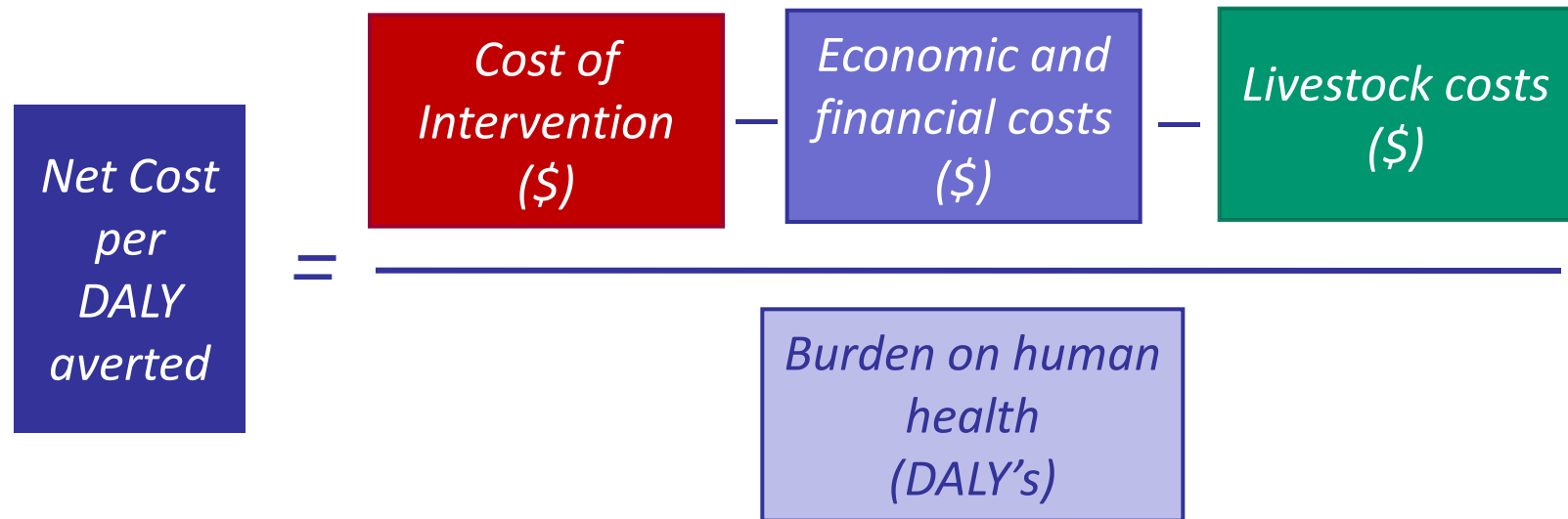


Estimation of the change in number of new onset seizures associated with CT-diagnosed NCC post MDA

3. Quantifying and maximising the impact of existing platforms in communities co-endemic for cysticercosis



3. Quantifying and maximising the impact of existing platforms in communities co-endemic for cysticercosis



Costs collected by PZQ MDA programmes

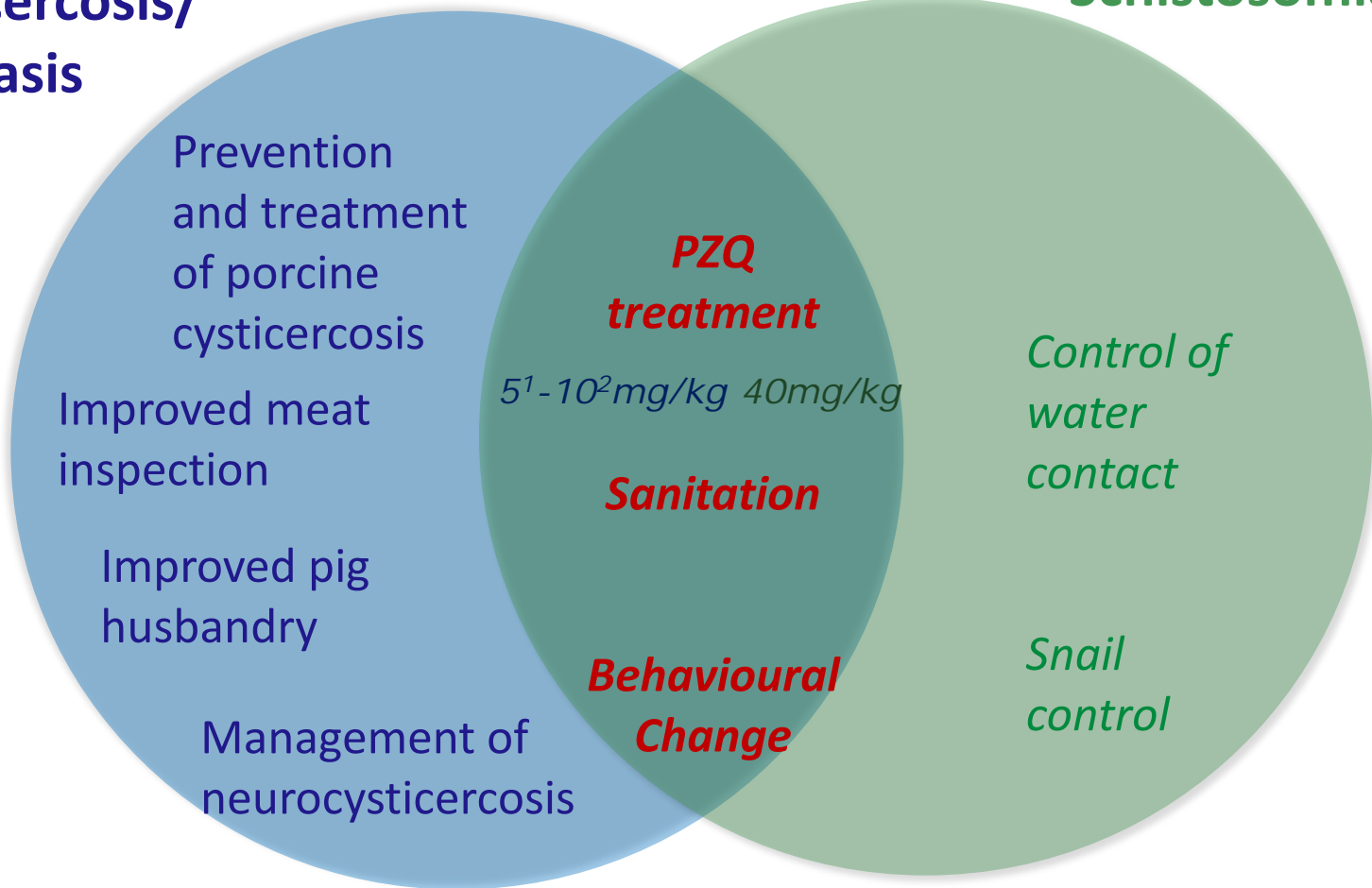
Economic and financial costs in conjunction with DFG

Livestock cost collect in conjunction with DANIDA

Burden using initial models developed by ITMA

Cysticercosis/ Taeniasis

Schistosomiasis



1 Cruz et al 1989, 2 Sarti et al 2000

3. Quantifying and maximising the impact of existing platforms in communities co-endemic for cysticercosis

- Development of health education and behaviour change approaches for co-endemic areas tailored to at risk groups
 - Risk scoping study based on existing data and expert opinion
 - Further focused additional qualitative studies
 - Development of targeted messages to be incorporated into existing schistosomiasis health education platform.

Acknowledgements



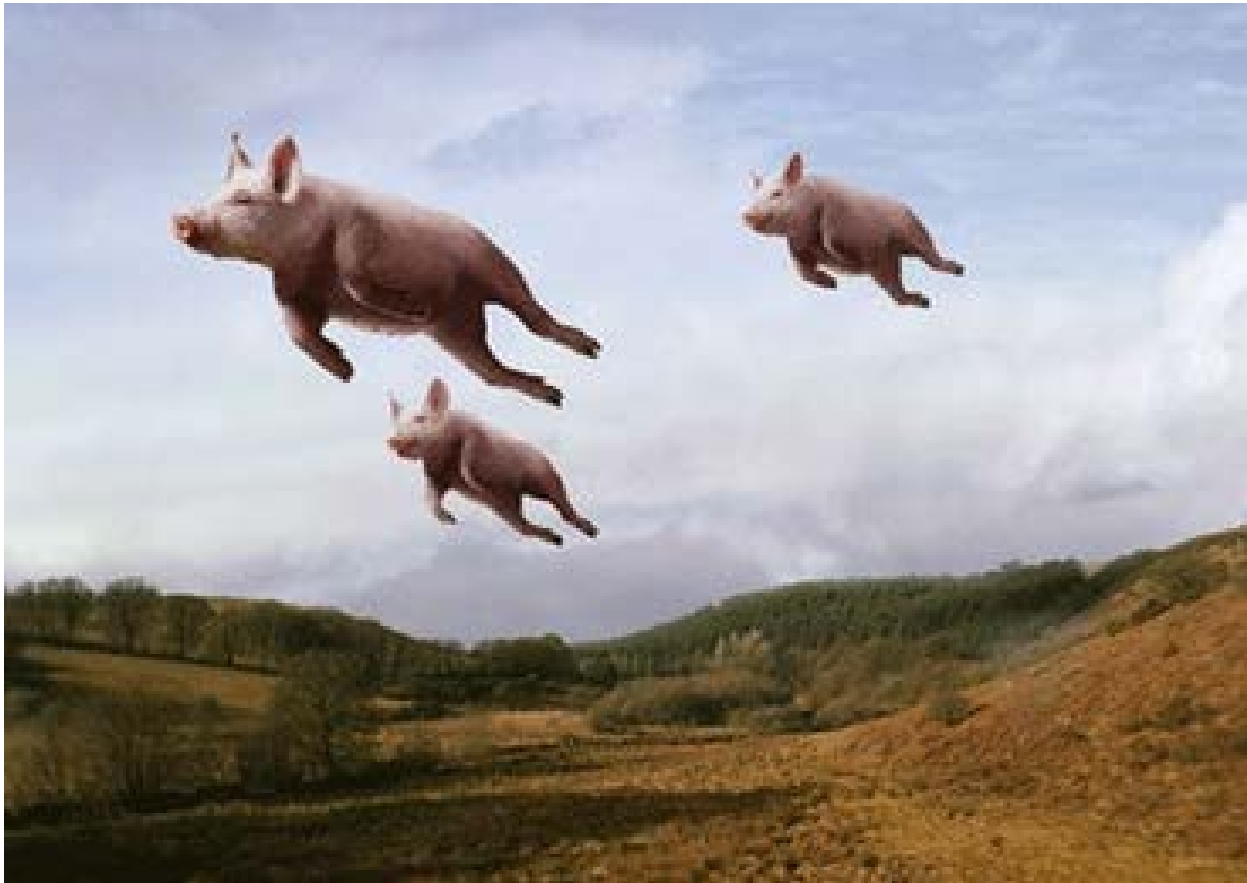
Technische Universität München



UNIVERSITY OF
COPENHAGEN



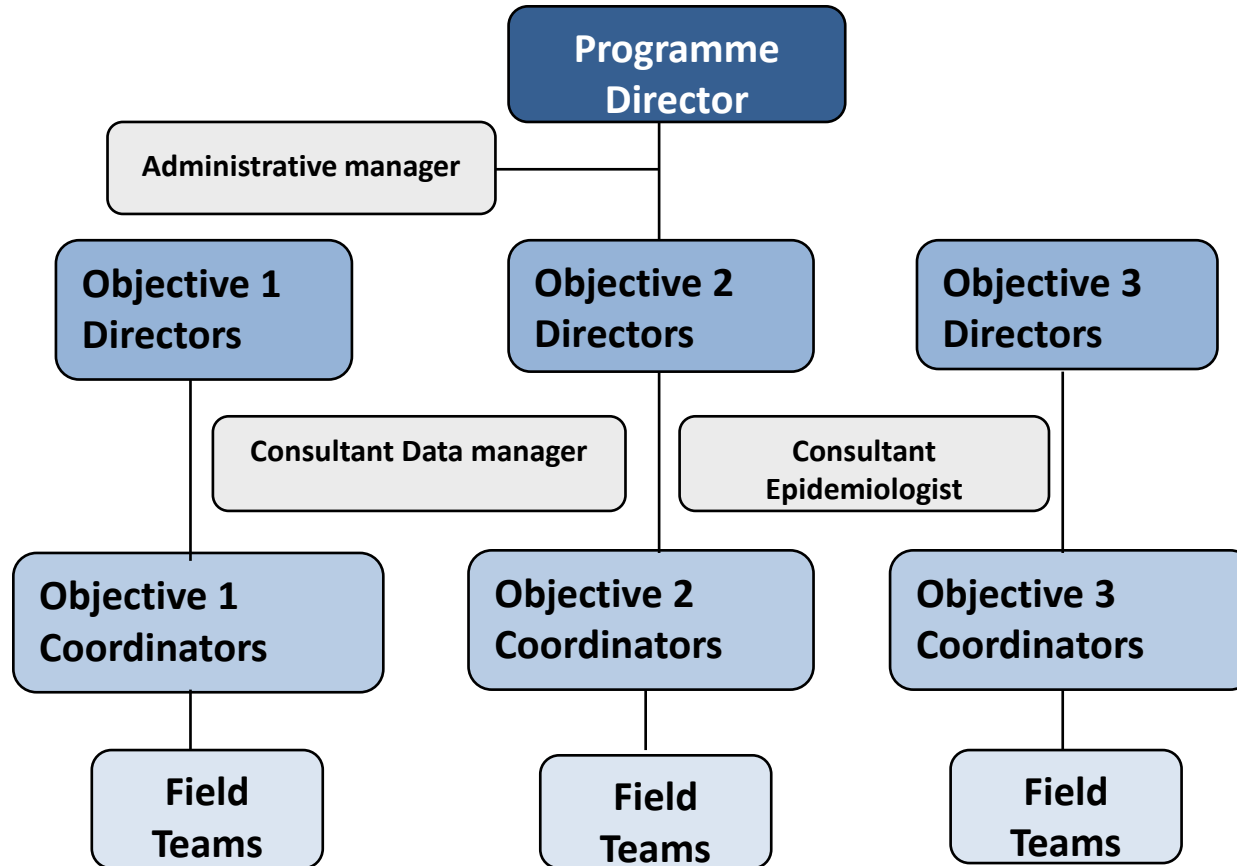
*Zone de Sante de
Kimpese Democratic
Republic of Congo*



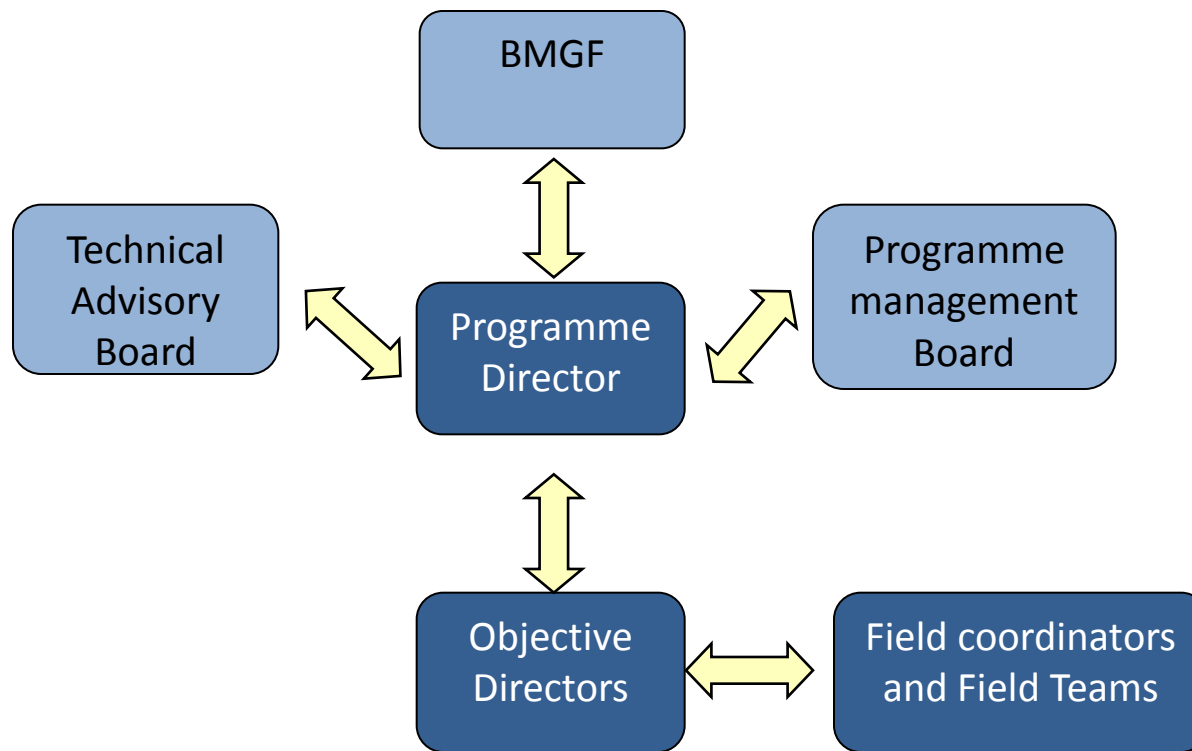
Thank you for your attention



Project Management Team



Technical Advisory Board



Technical Advisory Board to ICTC

Will comprise independent experts with broad experience in;

- disease specific knowledge - human and veterinary sectors
- epidemiology
- biostatistics
- social science
- health economics

Representative from WHO and TDR will also be invited

Tasks of the Technical Advisory Board

Members of the TAB will be asked to provide

- oversight of the technical approach and progress of the project
- act as a technical resource for the project staff
- give advice on the strategic development of the project

It is anticipated that the TAB will be asked to

- review the project report every 12 months prior to submission to Gates
- provide ad hoc advice for a maximum of 1-2 days per year

Initial Tasks of TAB

1. Agree on final protocols recognizing that there are a number of challenges with the diagnostic methodology and ethical considerations.
2. Take statistical advice from the TAB on the development of a detailed data analysis plan
3. Identifying key decision points that may lead to modification of the protocol.

Proposed approach for initial tasks

Circulate objective specific questions to relevant TAB members for comment

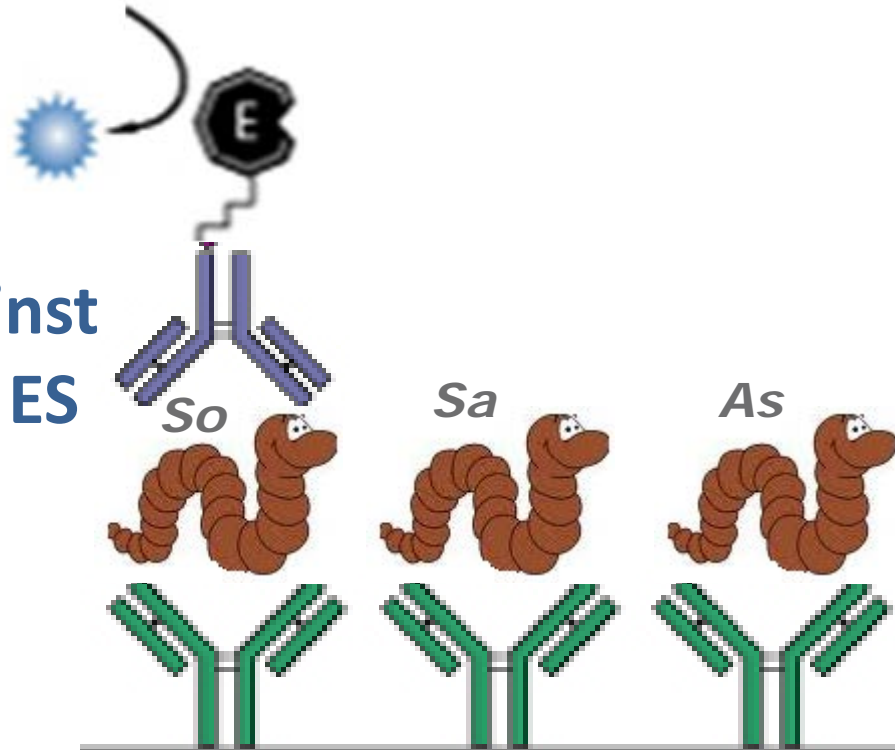
Collation of comments

Arrange teleconference if necessary for resolution of any issues

Questions ?

Species-Specific Coproantigen ELISA for Human *Taenia solium* Taeniasis¹

Rabbit IgG against
T. solium adult ES



Capture antibodies
Rabbit IgG against WWE

