



THE UNIVERSITY *of* EDINBURGH  
The Royal (Dick) School  
of Veterinary Studies



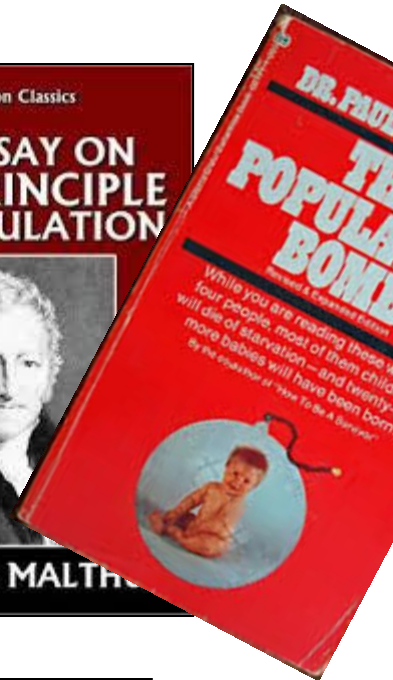
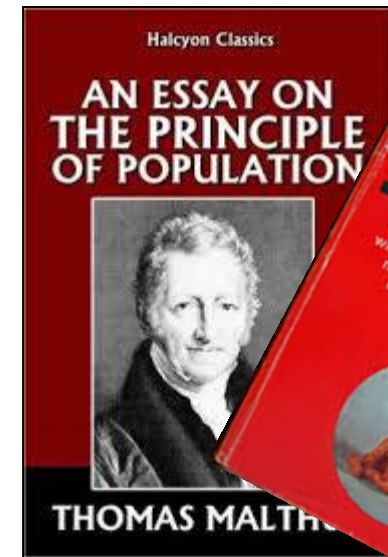
# An international perspective on research funding

**A R Peters**

**Professor of Tropical Veterinary Medicine,  
Director, Supporting Evidence Based Interventions (SEBI)**

# The context: Resurgence of interest in Agriculture and Food security

- The Grand challenges of providing global food security with the backdrop of:
  - Increasing population
  - The economic status of the low income countries
  - Need to protect the environment
  - Climate change (spread of disease)



A Peters



EAAP 2016



# June 19<sup>th</sup> 2103

## The context\*

- Grand challenges
  - Feeding the growing global population (food security, food safety, 'One Health')
  - Decreasing environmental impact of food production
  - In the face of climatic change
- Relevance / opportunity for SRUC
  - This is SRUC core business!
  - Synergistic with current SRUC mission and activities, domestically and internationally
  - Ideally positioned for collaborations
  - Massive scope for growth

\*Building on the basis of the SRUC Outline Business Plan 2011



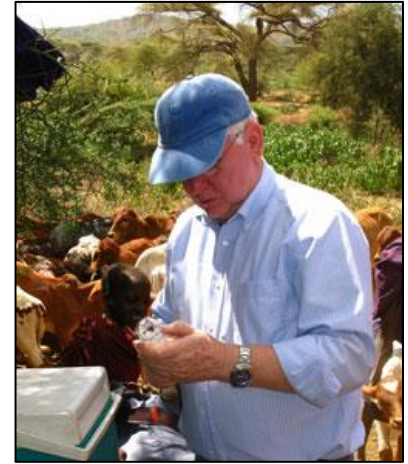
# Resurgence of interest in Agriculture and food security



- Many institutions in agri-veterinary space well-placed to respond to these challenges or:
- Busily developing the capability to respond to these challenges.
- International donors e.g. USAID, World Bank, Bill and Melinda Gates Foundation, DFID have significant budgets on food security for LMICs
- Several initiatives in Edinburgh to leverage these opportunities

# Developing countries / Emerging economies

- Rapid growth in emerging economies e.g. India is now largest dairy producer globally
- Growth in animal production needed to meet demand will be 8 times that of the developed world over the next decade
- Therefore livestock productivity in LMICs will become more important
- Significant components of this are breeding and genetics, nutrition and health /disease
- However not just transboundary disease but also production (enzootic) diseases e.g. respiratory, enteric, reproductive etc.





Protecting Livestock – Improving Human Lives

## The Global Alliance for Livestock Veterinary Medicines

- A public – private partnership
- For the alleviation of poverty in livestock farmers
- Funded by BMGF and DFID (UK)
- To develop and make available AH products to poor livestock keepers
- Born from frustration of lack of delivery of new products for developing countries



- **Cattle**

- East Coast Fever
- Contagious Bovine Pleuropneumonia
- Hemorrhagic septicaemia
- Trypanosomiasis

- **Sheep and goats**

- Peste des petits ruminants
- Contagious caprine pleuropneumonia
- (Sheep & goat pox)

- **Pigs**

- Porcine cysticercosis
- African swine fever
- Classical swine fever

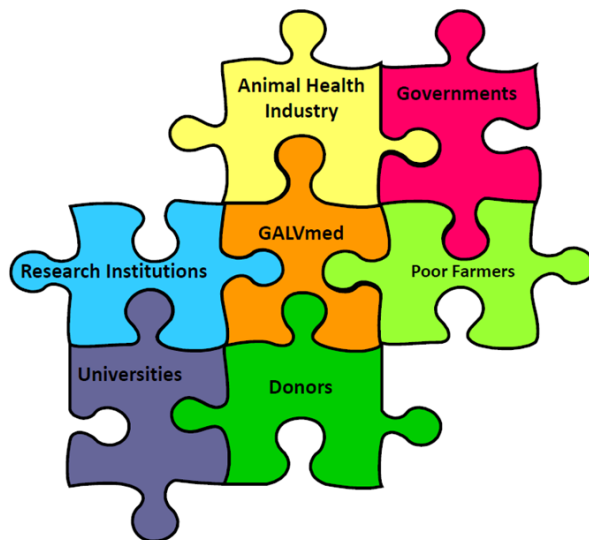
- **Poultry**

- Newcastle disease
- Highly pathogenic Avian Influenza

- **Multi-species**

- Rift Valley fever

# Protecting livestock – improving human lives



Prof. Andy Peters, GALVmed's Interim CEO and H.E. Mrs. Rhoda P. Tumusiime, Commissioner for Rural Economy & Agriculture – AUC signing the MOU between GALVmed and African Union Commission



# GALVmed funding history

<b>Dates</b>	<b>Activity</b>	<b>Funder</b>	<b>\$\$\$</b>
March 2005	Incorporation	DFID	-
2006-2008	Set up	DFID	300,000
Sept 2008 to Dec 2012	PLSHL1	BMGF, DFID (80:20)	28 million
Feb 2010 to Dec 2011	VACNADA	EC	9 million
March 2010 to Aug 2012	Trypanosomiasis	DFID	12 million
April 2012 to June 2017	PLSHL2	BMGF, DFID (80:20)	52 million

# East Coast Fever (*T. parva*) ITM – a case study



Form II (r. 6)

THE PHARMACY AND POISONS ACT (Cap. 244)  
THE PHARMACY AND POISONS (REGISTRATION OF DRUGS) RULES

**REGISTRATION OF DRUGS CERTIFICATE**

Number: V2005/20456/028

It is hereby certified that the following product is registered under the conditions specified in the Schedule to the Act.

**TANZANIA FOOD AND DRUGS AUTHORITY**

1. Trade name: ...  
2. Approved: ...  
3. Form of presentation: ...  
4. Active ingredients: ...

5. Conditions of sale: ...

6. Name of the manufacturer: ...

7. Registered: ...

8. Date of registration: ...

9. Expiry: ...

Date: 23RD OCT 2008

REF. NO.-CB.84/101/01/18 Tuesday, 29 December 2008

Department of Livestock Development  
Ministry of Water and Livestock Development, Livestock Department, Kilimo 2,  
P.O.Box 9152  
Dar-es-salaam,  
TANZANIA

**RE. NOTICE OF DRUG APPROVED FOR REGISTRATION**

Reference is made to the application for registration of your product in Tanzania.

We are pleased to inform you that the Tanzania Food and Drugs Authority has considered and granted registration of your medicinal product listed hereunder.

The respective registration certificate is being prepared and when it is ready it will be sent to you. In the meantime, you may use this letter as a proof of registration.

(a) A ...  
(b) T ...  
(c) A ...

With effect from the date of completion of the registration process, the name of the product shall be as follows:

The product is registered under the name of:

M. Ndege  
DIRECTOR

RECEIVED  
7 5 JAN 2008  
OPEN REGISTRY  
REG. SEC. SECTION

## Problems with ITM

- Production in cattle / ticks / rabbits
- Live virulent vaccine
- Needs antibiotic
- Not sterile
- Liquid nitrogen storage
- Very expensive
- But it works and there is nothing else!

**EAST COAST FEVER**  
*(Theileria parva)*  
**Muguga Cocktail**

**Registration dossier and Technology transfer document**

**Volume 2**  
**Parts 3 and 4**  
**Safety and Efficacy**

Prepared by  
**The Global Alliance for Veterinary Medicines (GALVmed)**  
and  
**The International Livestock Research Institute (ILRI)**

January 2008

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**GALVmed**  
Protecting Livestock - Improving Human Lives

**Safe & effective East Coast Fever Vaccine available in Uganda NOW**

**One injection protects your calf or cow against East Coast Fever (ECF) for life**

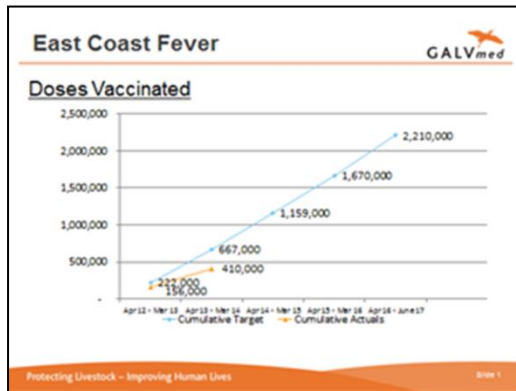
**How to protect your cattle & increasing your productivity & income:**


- East Coast Fever Vaccination will prevent your cow or calf getting sick from ECF or dying from this disease
- ECF Vaccination protects, which means no treatment is needed for ECF
- One vaccination shot protects your animal against ECF for life
- Reduces death and ensures the survival of your calves against ECF
- Results in improved production and higher household income

# East Coast Fever ITM – a case study (2)

Also:

- Transfer of manufacture
- Distribution activities



**Supply** 

- April '12 to March '13: 156 000 doses
- April '13 to March '14: 254 000 doses
  - An increase of 60% on previous year
- Doses sold out of ILRI over '13: 536 000 doses
  - No remaining stock at ILRI
- CTTBD
  - Vaccine release November 2014 (Batch 1)
    - 270 000 – 300 000 doses
  - Vaccine available in September 2015 (Batch 2)
    - 1 000 000 doses

Protecting Livestock – Improving Human Lives Slide 9

Trop Anim Health Prod  
DOI 10.1007/s11250-011-9936-8

ORIGINAL RESEARCH

**East Coast fever immunisation field trial in crossbred dairy cattle in Hanang and Handeni districts in northern Tanzania**

Godelieve Lynen · Alma E. Yrjö-Koskinen · Christine Bakunane · Giuseppe Di Giulio · Nevil Mlinga · Isaac Khama · James Hanks · Nick M. Taylor · Andrew D. James · Declan McKeever · Andy R. Peters · Jonathan Rushton

Accepted: 15 July 2011

Preventive Veterinary Medicine 97 (2010) 175–182

Contents lists available at ScienceDirect

**Preventive Veterinary Medicine**

journal homepage: [www.elsevier.com/locate/prevetmed](http://www.elsevier.com/locate/prevetmed)

**Assessing the impact of East Coast Fever immunisation by the infection and treatment method in Tanzanian pastoralist systems**

S. Babo Martins<sup>a,\*</sup>, G. Di Giulio<sup>b</sup>, G. Lynen<sup>b</sup>, A. Peters<sup>c</sup>, J. Rushton<sup>d</sup>

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<sup>b</sup> Vetsiro Tanzania Ltd, PO Box 23386, Arusha, Tanzania  
<sup>c</sup> Global Alliance for Livestock Veterinary Medicines (GALVmed), Pentlands Science Park, Bush Loan, Edinburgh EH26 0RZ, UK

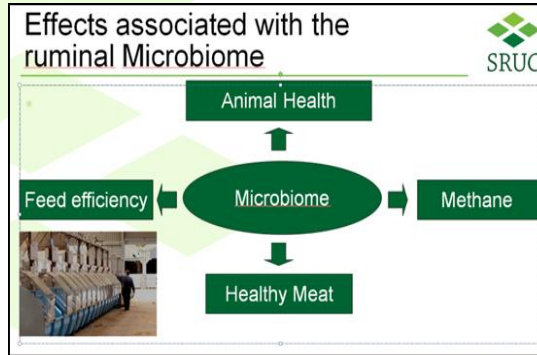


# Studies in livestock productivity

- SRUC research for development:
  - dairy cow breeding and husbandry in Malawi
  - mitigation of greenhouse gas emissions
  - and related studies of the rumen microbiome



'Green cow'



**Dairy farming in Malawi and Scotland**



www.sruc.ac.uk

**Different systems - similar issues**

2 to 3 cows: milk yields 5 - 15 litres/day

520 cows: milk yields 20 - 50 litres/day

**Breeding and genetics**  
**Feeding and forage production**  
**Milk quality**  
**Milk marketing**

**Education**

**Development of Dairy Diploma**

Request from Malawi Farmers Association

- Including practical assessment (Links with SRUC Bannockburn Campus)
- Production, processing and marketing in syllabus
- Monitoring quality of delivery

**Consultancy and training**

**Optimising Smallholder Dairying**

- Trainer of trainers courses
- Knowledge transfer clinics
- Identifying lead-farmers for farmer-to-farmer peer knowledge transfer
- 76% of farmers indicated that they had accessed animal breeding services
- Reduction of 69% and 34% in milk lost due to mastitis and adulteration

Chapman M, G. G., Marshall D.P., Simeke F.N., Wood B. and Roberts D. J. (2013) An extension approach to improved training for smallholder dairying. *Journal of Agricultural Training and Extension* 20(4): 413-426

**Research**

**Scotland to Malawi**

SRUC data used to identify factors that influence fertility which were also monitored in Malawi. Data collection in Malawi had numerous challenges, however the study was able to successfully monitor the traits and demonstrated similar results to the UK

**Malawi to Scotland**

In Malawi, smallholder farms were categorised according to management systems in order to assess and develop appropriate interventions for the farms. This approach could be used in the UK farm assurance schemes to categorise dairy farms into low, medium and high risk farms.

**Capacity Building**

28 lead farmers and 43 extension workers have been trained in forage production, feeding, animal breeding and recording.

8 postgraduate students and one postdoctoral scientist have been associated with this programme.

**Mentoring**

- Technicians, Lecturers, Heads of Departments, Examiners

Fig. 1. Body condition score (score of 1=poor to 5=excellent) of smallholder dairy farmers in Tazara (red), Tazara (green) and Tazara (blue) management categories in Malawi.



# July 29<sup>th</sup> 2014



- SRUC research for development:
  - dairy cow breeding and husbandry in Malawi
  - mitigation of greenhouse gas emissions
  - and related studies of rumen microbiomics / metagenomics



# November 10th 2014 House of Lords



“We have Edinburgh as a world capital for livestock health and genetics”.

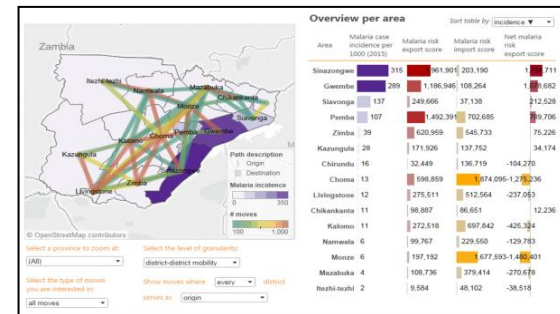
# Series of programs with BMGF

	<b>Program</b>	<b>Income to SRUC</b>
1.	Nelson Mandela Institute (NMAIST)	£300,000
2.	Centre for Tropical Livestock Genetics and Health	£1.8million
3.	Supporting Evidence Based Interventions (SEBI; livestock health and productivity)	£2.75million
4.	African Dairy Genetic Gains (ILRI)	£200,000
5.	Dairy cow productivity in Rwanda (ILRI)	£50,000

Several in partnership with ILRI

# SEBI: 3 programs

1. Evidence based interventions to reduce mortality in cattle (including reproductive disease)
2. “Community of practice” for harmonised livestock data collection, modelling and archiving
3. Rapid assessment of new livestock technologies and interventions





# Conclusion

- The funding base has been moving with an international emphasis and in particular towards LMICs
- Like others Edinburgh playing to its strengths
  - Animal health
  - Breeding and genetics
  - Basic, strategic, applied (ability to deliver critical)
  - Shift of focus towards Research for development,
  - Partnerships increasingly important including PPPs