

NEOH STSM visit to STPH to discuss and develop case studies and matrices for NEOH handbook.

REFERENCE: Short Term Scientific Mission, COST TD1404 NEOH

Beneficiary

Full name of grantee: Walter Otieno Okello
Current position: PhD student
Affiliation: University of Edinburgh
Country: United Kingdom

Host

Name of Host: Prof. Dr. Jakob Zinsstag
Current position: Head of Human and Animal Health Unit
Affiliation: Swiss Tropical and Public Health Institute
Country: Switzerland

Period: from 19-10-2015 to 15-11-2015

Reference code: COST-STSM-ECOST-STSM-TD1404-101015-060556

1. Purpose of the visit

The overall aim of the visit was to learn and contribute to the framework for evaluating integrated public health interventions. The objectives of the visit were to first learn infectious disease modelling and the dynamics of transmission within the first two weeks of the visit; secondly to apply disease modelling to case studies in Lao PDR within the last two weeks of my visit; and thirdly to make contributions towards the development of NEOH hand particularly chapters 2, 3 and 4.

2. Description of the work carried out

My work at the Swiss Tropical and Public Health Institute entailed carrying out research in the current methodologies of assessing One Health as developed by the institute. This was done through face to face discussions with Prof. Jakob Zinsstag and other departmental staff as well as self-study. Subsequently, I carried out transmission and economic modelling using data obtained from my PhD study in Lao PDR; the *Taenia solium* case study. Apart from modelling One Health interventions, I attended several lectures, meetings and seminars at the institute.

3. Description of the main results obtained

Together with Prof. Jakob Zinsstag, we developed a matrix model and cross sector analysis for assessing *Taenia solium* cysticercosis intervention; which we envisage will be applicable to chapters 2, 3 and 4 of the NEOH handbook. I am currently extending the same methodology to assess the cost-

effectiveness of controlling human African trypanosomiasis (sleeping sickness) which can be added to chapters 2, 3 and 4 of the NEOH handbook. Also, we are planning to launch a network group of early career One Health scientists composed of students from Swiss Tropical and Public Health Institute, University of Edinburgh and other Institutes.

4. Future collaboration with host institution (if applicable)

We are planning to have more collaborative research between Swiss Tropical and Public Health and University of Edinburgh.

5. Projected publications resulting or anticipated to result from the STSM

We anticipate publishing the matrix modelling and cross sector analysis of *Taenia solium* cysticercosis and human African trypanosomiasis work subject to availability of funding.

6. Confirmation by the host of the successful execution of the mission

Walter was introduced to transmission dynamics using coupled differential equations and to matrix models for population dynamics. We specifically discussed the case of *Taenia solium* and implication on pig population dynamics. Walter is a quick learner and took up the modelling suggestions for his PhD work. He further contributed to class work at the Universities of Basel and Zurich (Veterinary faculty), sharing his research experience for his PhD.

Expenses	Total expenses in EUR	% covered by NEOH grant (EUR)
Travel	447 EUR	74% (318 EUR)
Accommodation	1 338 EUR	78% (1 038 EUR)
Consumables (meals)	1 544 EUR	70% (1 144 EUR)
Total	3 329 EUR	75% (2 500)

8. Other comments (if any)

Signatures

Date: 10/12/2015

Grantee:



Host

Jakob Zinsstag