

Minutes of RATZOOMAN meeting held at the National Institute of Health, Maputo, Mozambique, 11-13 February 2004.

The following people were in attendance:-

Lorraine Arntzen, National Health Laboratory Service, South Africa
Steve Belmain, Natural Resources Institute, UK
Aida Cala, National Veterinary Research Institute, Mozambique
Nan Chalmers, Syngenta, Zimbabwe
Godfrey Chikwenhere, Plant Protection Research Institute, Zimbabwe
Venancio Cluiba, National Veterinary Research Institute, Mozambique
Rudy Hartskeerl, Royal Tropical Institute, the Netherlands
Malcolm Iles, Natural Resources Institute, UK
Monica Janowski, Natural Resources Institute, UK
Herwig Leirs, Danish Pest Infestation Laboratory, Denmark and University of Antwerp, Belgium
Robert Machang'u, Sokoine Pest Management Centre, Tanzania
Anabela Manhica, National Veterinary Research Institute, Mozambique
Adrian Meyer, Natural Resources Institute, UK
Rassul Nala, National Institute of Health, Mozambique
Judith Pender, Natural Resources Institute, UK
Malodi Setshedi, National Health Laboratory Service, South Africa
Manuel Sumila, National Institute of Health, Mozambique
Peter Taylor, Durban Natural Science Museum, South Africa

Meeting opened with welcome by the Director of National Institute of Health. Each consortium partner gave a presentation of the activities which took place over the first year of the project, based on their first year technical report.

SB report on NRI with particular reference to activities in WP 5, 6, 7, 9 and 13. MJ elaborated anthropological survey, but interpretation is difficult without other rodent data that is in the process of being collected.

HL report on DPIL with particular reference to WP4 and preparation of CMR protocol for all primary sites and movements of rodents between habitats using marked bait and telemetry studies in Tanzania. It is important that CMR field selection is for two sites that are in the peri-urban interface as near to the urban area as possible. All sites need to collect weather data, which has not yet been sent to HL. Data must be regularly sent to DPIL on a monthly basis, and this will help to correct problems before they are repeated in the next census.

HL report on RUCA with particular reference to WP2 reporting on preparation of protocol and manual for the studies and the taxonomic identification of rodents collected. Not all data that had been collected had been received. Rodents had been trapped in many places but little site information has been provided to interpret the data. Ecological information required to further analysis.

LA report on NHLS. There was delay in sample analysis due to problems in getting kits and reagents ordered and sent to South Africa, but all consumables are now available and analysis is moving along. Preliminary results of serological analysis of rodent samples has not shown any samples plague positive. From Venda 39 samples were tested, from Durban 232 samples, 10 of which were positive for leptospirosis (10%), and 4 samples were positive for toxoplasmosis. Sera from Port Elizabeth showed 63 samples out of 587 to be lepto positive (20%). Rodent sera were analysed with the DriDot test, and RH raised the issue that this test will be unreliable for animal sera, emphasising that MAT must be done to confirm. Human sera have not yet been sourced and there are problems obtaining ethical clearance. The serovars used for lepto MAT need to be approved by RH.

RM on SPMC activities. Human sera were obtained through assistance from on going projects involving HIV and schistosomiasis and from routine malaria and typhoid diagnosis. Sources of the serum specimens included AghaKhan Hospital, Upendo Medical Laboratory and Mikumi Health Centre, with other sera obtained from two referral hospitals. A total of

1702 samples from 5 different locations. Samples will be screened soon. Captured rodent species, trapping from February to December in human residences, preliminary identifications were done to Genus with further taxonomic identification at RUCA. The total number of rodents and shrews captured was 2065 in Morogoro. First recorded case of Norway rats in Morogoro. Sera and tissues have been collected with opportunistic sampling from Mbeya, Kilimanjaro, Dodoma. Samples have also been collected from domestic animals, i.e. dogs, pigs, cats, sheep and goats in Morogoro. Isolations of leptospirosis from urine and kidneys and samples cultured, isolated 1029 cultures of which 25 were positive for leptospirosis or 2.4% of sample population. RM referred to socio economic data from Lushoto – trouble of funding for social studies, and will have difficulty in funding further socio-economic studies, could probably do studies easily in Morogoro but unlikely to do Masasi.

RH report on KIT. WP1 human sera has not really started except in Tanzania, retrospective analysis, selection of sites has occurred. Culturing is the most important aspect of this work package and must occur. RH raised the question on how do we do this???? WP3 analysis of animals and improved methods for diagnosis of leptospirosis. Isolation can be difficult from kidneys – helps if you centrifuge and concentrate the leptospires with an initial low speed for 5 minutes at 150 g and then a high speed spin for 10 min at 6500 g. RH developed new media of bilayer with a bottom layer of charcoal and then a liquid of rabbit sera on top. Some partners will try to use the new media, but agreed to stick with the traditional protocol to ensure comparability with existing data.

RN report on INS. National veterinary research institute has been subcontracted and they had a meeting in August to identify sites and develop the protocols with a second meeting in November with local authorities. Field work started on 1st December. There was real difficulty in sourcing materials and importing them into Mozambique, both traps and reagents; however everything is now happening. Primary site consists of the Maxaquene A, T3 and Tsalala areas of Maputo. It was proposed that a more flexible protocol would be required to obtain data from secondary sites in Central Mozambique because of the costs and difficulties in reaching the area. RN to set up a visit to Morrumbala that will pull in overseas staff for a longer trapping period to happen around May 2004. For GIS, details of study sites have been collected with agreement on the database structures and GIS requirements identified.

GC report on SZ. Rodent trapping and sample collection going well in Mbari, no human sera yet collected. Some problems with one urban site (Hatcliffe) where high numbers of traps went missing and, therefore, had to change the site. Problem of funding raised, as advance is coming from Syngenta headquarters in Switzerland who will not advance any further funds until the EC reimburses their first year expenses. This is effecting their ability to deliver activities.

Various group discussions and resolutions took place regarding the standardisation of data for input to GIS, data tables for WP2 and habitat descriptions, ph water analysis, changes to the socioeconomic questionnaire.

Agreed Actions & Points of Discussion

1. Data and communication - Steve will provide common access to all data within the Ratzooman website. To be useful and productive it will be essential that all collaborators provide up-to-date data for inclusion in the database. Everyone must make a greater effort to copy SB in on correspondence and keep him informed of activities!!

2. Socioeconomic & Anthropological - It was suggested that it was more appropriate to undertake survey work in Morogoro than other sites in Tanzania to facilitate activities and reduce costs. Firstly there was a great deal more data on rodent populations at Morogoro and secondly much of the work relating to the dynamics of plague at Lushoto had already been undertaken. The importance of undertaking work on the human populations in areas where there were positive indications of disease presence was discussed. The potential to do work on the rodent eating area in Mozambique was discussed and that if appropriate collaborators can be identified the work can occur at the same time as the team visit to

Zambezia. Questionnaires circulated for everyone to comment so that Malcolm and Monica can revise as necessary.

3. **Sample collection** - Herwig stressed the need to send data to DPIL and RUCA as soon as possible once collected. This would facilitate more rapid analysis of data. In addition, this early analysis of initial data would identify errors in the data and data collection and recording at an early stage in time for wider correction. Need to trap in open areas outside towns and outside houses but also in peri urban areas. This sample size was currently rather low. Looking for interface between domestic rodents and rodents around outside of town. In recording trapped rodents it is important that the point at which the rodent was trapped is recorded so that the point can be re-visited at a future date. If a code is used it is important that another data file is set up containing the details relating to the codes. Great care should be taken in recording these data. It is worth setting up a file that will cross check that the data on the record sheet matches to data in the locality file. There is no need to record units in each record, for instance no need to include g when recording in the weight column. It was agreed that further questions be inserted into the record sheets relating to the construction and hygiene standards around the individual houses. Adrian designed these as follows:

DEFINITIONS OF HOUSING CATEGORIES - Proofing

CATEGORY 1 Very poor quality housing - about as bad as it gets! Provides very easy access for rodents.

CATEGORY 2 Poor housing and worse than average. Access for rodents relatively easy.

CATEGORY 3 Better than average. Fairly good housing that provides more limited access for rodents.

CATEGORY 4 Good housing, access for rodents is difficult.

DEFINITIONS OF HOUSING CATEGORIES - Internal Harbourage

CATEGORY 1 Extensive availability of harbourage and cover inside the property. Plenty of places for rodents to hide. Very untidy.

CATEGORY 2 Harbourage and cover available but not in very large quantities. More harbourage than average.

CATEGORY 3 Limited harbourage available. Less harbourage than average.

CATEGORY 4 Almost no places for the rodents to live, a clean and very tidy house.

NB:

1. The presence of an enclosed roof space should be seen as one factor that contributes to the availability of potential harbourage.

2. The presence of a grass roof, because it provides potentially good harbourage, would probably place the house into categories 1 or 2.

DEFINITIONS OF HOUSING CATEGORIES - External Hygiene

NB: All assessments to be taken within 5 meters of the building.

CATEGORY 1 Very extensive availability of harbourage and cover. Generally a very untidy area around the building.

CATEGORY 2 Area is generally untidy and provides cover for rodents and is worse than average, but could be worse.

CATEGORY 3 Some cover but better than average.

CATEGORY 4 Very tidy and clean environment that provides no or almost no cover for rodents.

4. **Leptospirosis Screening** - Rudy confirmed that the DriDot test is not appropriate for animals, but that existing analysis in comparison to MAT may prove useful to show efficacy of DriDot for animal samples.

5. **GIS** - Judith Pender said that partners must do in country searches for large scale digital maps to obtain all roads and streams. Data must be sent to Judith for input as it comes in. Recoding of Longitude and Latitude must be recorded in a standard way.

6. **Sample analysis** – This will be done separately in Zimbabwe, Tanzania and South Africa (with Mozambique samples sent to South Africa for analysis, with the prospect of eventually doing some analysis in Mozambique). Emphasised need to communicate and establish standard analysis protocols.

Next Meetings

Week of 20 September 2004 at DPIL

Week of 11 April 2004 at KIT

Week of 5 September at SZ

Week of 7 November at NHLS