



THE PROGRAMME AGAINST AFRICAN TRYPANOSOMIASIS

ADVISORY GROUP CO-ORDINATORS MEETING REPORT

Harare, Zimbabwe

21- 23 October 1998

**Food and Agriculture Organization of the United Nations
Inter-African Bureau for Animal Resources of the Organization for African Unity
International Atomic Energy Agency of the United Nations
World Health Organization of the United Nations**

FOREWORD

The fourth meeting of the Advisory Group Co-ordinators to the Programme Against African Trypanosomiasis (PAAT) was convened in Harare, Zimbabwe from 12 to 23 October 1998, under the auspices of the joint FAO/OAU-IBAR/IAEA/WHO secretariat. The meeting was arranged to coincide with the annual meeting of the FAO Liaison Officers of Southern and Eastern Africa in order to ensure the interaction of the expertise represented in the two meetings and to bring into PAAT the concerns and ambitions of those tasked with direct alleviation of the problem at the national level.

The meeting was opened by Mr. K. Kangai, Minister for Lands and Agriculture in Zimbabwe, who welcomed participants and stressed the severe impact imposed by tsetse and trypanosomiasis on the poorer rural communities throughout the tsetse infested areas across the continent. He further urged the meeting to consider ways to improve efforts to combat the disease. He noted that in recent years progress in control has declined due to lack of sufficient funding and a significant trend away from area wide and progressive control programmes based on previous insecticide dependent techniques such as aerial and ground spraying. These sentiments were reiterated by Ms. V. Sekitoleko, FAO sub-Regional Representative for Southern and East Africa, who, in her welcoming address urged the participants to ensure that PAAT played an active and decisive role in co-ordinating international efforts and in the delivery of meaningful and significant results to the people of Africa.

The meeting was held with the financial and technical support of the joint secretariat with contributions from DFID, UK, and the Government of Zimbabwe. The Chairman was Professor Peter Holmes with Brian Hursey as meeting secretary.

1. INTRODUCTION

The objective of meetings of the PAAT Advisory Group Co-ordinators is to provide advice and recommendations to the Programme Committee on key policy and technical issues and to deliberate on ways to more effectively co-ordinate the multi-disciplinary inputs required to deliver disease control in the broader context of human welfare and agriculture production.

The meeting Agenda, as adopted, is attached as Annex 1. and a summary of the proceedings, conclusions and recommendations are recorded below.

2. MINUTES OF LAST MEETING

The minutes of the last meeting, Maputo 1997, were adopted without comment.

3. REPORT OF 1997 COMMITTEE; MATTERS ARISING

Considerable discussion was devoted to concern expressed over the need for adequate training facilities at all levels. All previous institutions available to meet these needs, such as the FAO Lusaka Centre and ELAT in West Africa are no longer available whilst the MSc course established by the RTTCP will also soon terminate. The situation was further aggravated by difficulties in retaining trained manpower at the national level, largely due to the non-attractive conditions of service as well as to the current AIDS epidemic. It was recommended that this concern be brought to the attention of the PAAT Committee for further consideration.

Regarding the regionalisation of Research and Development it was stressed that more efforts be made to integrate with National Agriculture Research Stations (NARS) as well as to increase links with other programmes having common elements, such as the one for Malaria. WHO undertook to investigate the latter.

4. STATUS OF PAAT ACTIVITIES

4.1 Information Services and Communications development

The prototype PAAT-IS for animal trypanosomiasis was demonstrated to the meeting . Considerable progress was noted on all three components comprising the GIS, the knowledge base and the resource inventory. The comments raised by this demonstration included;

- the need to ensure compatibility with other systems particularly with reference to work in West Africa;
- the desirability of including data on livestock breeds as well as a rating on trypanosomiasis challenge and risk;
- that it would be useful to include the source from which data is derived;
- the need to include environmental information which would then make the system a useful decision tool for environmental impact assessment;
- the usefulness could be enhanced by incorporation an interactive system linked to the training manuals.

A presentation was made of the information system being developed by WHO for the human disease. The approach adopted was to not only provide information on current activities and situations but to incorporate multi-media functions to facilitate training and to include an historical record of previous work and endeavours. The meeting noted that once available on CD the system would provide a very useful teaching capability although there was a need to ensure that it was adequately and regularly updated. The comment was also made that FAO should consider a similar approach for the animal disease.

4.2. Publications

The glossy brochure announcing the PAAT as requested by the Committee has been published and distributed in both English and French versions.

A quarterly PAAT newsletter will commence publication in December this year under funds provided by DFID. It will be distributed with future issues of TTIQ as well as being made available through the PAAT web-site in FAO.

The proceedings of the ISCTRC meeting, Maputo 1997, have been compiled and edited and should be ready for distribution by OAU/IBAR towards the end of this year

4.3 Position Papers

The Position paper on "Drug management and parasite resistance in bovine trypanosomiasis in Africa" has been subjected to review and comment through the PAAT- Link e-mail network and, following endorsement by the Advisory Co-ordinators has been published as the first volume in the PAAT Technical and Scientific series. Copies will be distributed to all TTIQ subscribers in December 1998.

The Position paper on "Impacts of African trypanosomiasis on migration, livestock and crop production" was presented and discussed. The paper has been revised as indicated by the new title and now places more emphasis on migration as influenced by tsetse control. The impact is influenced by whether the control is carried out prior to settlement or implemented by local demand of those already settled. Discussion focused on the need to draw on more accurate data concerning the number of cattle held at risk and to consider the implications of control on the redistribution of these in terms of not only density but also productivity. It was stressed in conclusion that the original draft gave focus to the Plan of Action and that it was important that any revision should retain this emphasis. The paper is to be reviewed in light of comments received and will be submitted for further discussion on the PAAT-Link prior to publication in 1999.

4.4 Research Priorities and recommendations of liaison officers

Recommendation 1. Research priorities

The list of recommendations produced by the meeting of liaison officers was distributed and discussed. The research priorities identified by this group are listed in Annex 2. The following observations on this list are recorded;

- the items listed are vague and broad, an appendix should be included to more specifically describe the activities involved;
- the list does not cater for the problems being experienced when dealing with small scale tsetse control areas, this could be a priority where reliance is placed on community participation.
- the role of biting flies in mechanical transmission is not clearly confirmed. More intensive entomological surveys are required to clarify this;
- institutes should be identified and tasked with undertaking the various research activities required.

Recommendation 2. Vector and Disease control

QUOTE: " a) The meeting noted the need for objective appraisal of all available technologies to ensure the most appropriate and cost effective methods are utilised".

" b) The meeting noted with concern, proposals to implement large scale SIT programmes on main land Africa without discrete tsetse populations.....It called for independent feasibility studies before undertaking such programmes ".

These recommendations were accepted by the meeting based on consideration of the concern expressed over the proposal for large scale SIT in Ethiopia and on the need to balance localised control against progressive area wide schemes where techniques other than attractive baits may be warranted.

Recommendation 3. Community participation

QUOTE: " The meeting noted the declining financial support from Governments and donors increasingly places the burden of tsetse control on affected rural communities and emphasised that participation of rural communities in control operations be recognised by governments and vigorously pursued in order to make such operations sustainable".

The meeting commented that this was an all embracing recommendation that would seem to apply more particularly to village populations but not pastoralists. It was felt the wording should be amended to be more specific.

Recommendations 4, 5, 6,7,8,9, & 10

All were accepted without comment and are, therefore, not reproduced here but may be found in the report of the liaison officers meeting.

5. SLEEPING SICKNESS SITUATION AND WHO REPORT

WHO has recently undergone structural changes which de-emphasises individual diseases and focuses on functional areas further sub-divided into groups or "clusters". Although specific reference to Sleeping sickness has therefore been lost the activities are retained in the Prevention and Control structure.

Across the Sleeping Sickness belt, which spans the tropical areas from east to west Africa, the intensity of the disease is still increasing and epidemics are recorded in South Sudan, Zaire, Congo and Angola. In the latter over 50% disease prevalence has been recorded in some villages but donor support has now been secured and the situation is expected to improve. The Southern Sudan epidemic is now receding with prevalence down from 28 % to 5%. However, it is suspected that it may also have spread to the Nile valley and further south to Uganda.

The control approach adopted places emphasis on direct disease diagnosis and treatment which in the case of *rhodesiensis* may be combined with vector control but for *congolense* may be more complicated and costly.

WHO intervention places emphasis on co-ordination and networking involving NGOs. Priority activities include epidemiological surveillance, supply of equipment and drugs, provision of technical support and in service training, dissemination of information and the co-ordination of regional efforts and programmes. Finance for surveillance and treatment is a major problem and it is estimated that by the year 2004 approx. \$ 70 to \$ 100 million will be required to cover the 55 million people at risk.

Following discussion the meeting agreed that, where possible, activities to control the human and animal forms of the disease should be combined into multi-disciplinary (medical/veterinary/vector control) units with shared costs.

6. PLAN OF ACTION

6.1 Criteria for identification of priority areas.

Following a general and introductory discussion a working group was tasked with further developing, in succinct form, the criteria for prioritising areas for investments in (area based) control "in order to promote improvements in human welfare through more productive mixed crop/livestock farming systems". It was agreed that these criteria should be applicable at sub-continental, regional and national levels and lead to measurable indicators for prioritising areas and evaluating the success of projects.

In order to prioritise control towards this objective the meeting agreed on three main considerations; i) the potential offered to improve the welfare of low income and vulnerable populations; ii) the potential to minimise negative environmental impacts of more productive mixed crop/livestock systems and iii) the opportunities offered to maximise the economic returns.

Acceptance of component i) would direct attention to areas of poverty and vulnerable sub-populations. Component ii) would give focus to areas where livestock offered potential to contribute to soil quality and where the impact of control would not threaten the local landscape and be of minimal threat to the environmental stability of protected areas. With regard to maximising economic returns priority areas should be those where;

- trypanosomiasis is a major constraint to livestock production (meat, milk, traction and drugs) and through the losses incurred a major constraint on agriculture;
- there is the potential for rural development through integrating livestock with subsistence and/or cash crops;
- significant opportunities for expansion and sufficient people to drive the dynamic changes are available;
- there is a potential or actual demand for the integration of crop/livestock systems;

The meeting noted the need that these criteria be supported by the availability of effective technical options for control and the commitment of governments or other groups involved in the implementation. Also to be considered is the availability of attractive markets for both livestock and crop products.

6.2 *Priority areas - geographical locations*

Two specific areas were proposed as meeting the criteria defined above and were then considered in further detail.

6.2.1 West Africa; Burkina Faso/Mali/Côte d'Ivoire

The area considered offers potential for mixed farming development and more significantly the commercial production of cotton. The respective Governments have recognised the areas as priorities for tsetse control and this has been substantiated by sociological studies undertaken by ILRI supported by a cost : benefit analysis in northern Côte d'Ivoire. The combined area is approx. 60 000km² where despite the potential the introduction of draft power is denied through trypanosomiasis with, as a result, severe pressure on land to the north of the infested area. In the Sikasso region of Mali alone some 250 000 oxen are involved.

6.2.2 East Africa; Ethiopia

Ethiopia has some 150 000 to 250 000km² infested by tsetse. The exact area is not known as the fly continues to encroach into agricultural land at higher altitudes due to climatic warming. Studies of the impact of tsetse and its control in selected river valleys provide the base line data as justification for further investment. Particularly noteworthy are the large increases in areas cultivated and crop production following tsetse control and the subsequent availability of Draft Animal Power. The meeting agreed that trypanosomiasis control in Ethiopia is under-invested in terms of impact and the benefits to be gained and recommended that it be considered as a PAAT priority within the Plan of Action.

Although the meeting recognised both the above as areas of high priority in terms of tsetse control considered at the sub-continental level it was recognised that priorities at the regional and national levels may also exist and stressed that they should not be ignored.

6.3 *Strategies for control*

The meeting recognised two approaches to tsetse and trypanosomiasis management. One being rather small scale and farmer based, the other a more aggressive approach towards area wide control. The areas of separation between these two were identified as follows;

Option 1.

- Farmer based has focus on direct animal health and associated constraint and offers advantages in that it is a "bottom up" people centred, less dependent of external funding and empowered by the community. The disadvantages are that it may provide only partial solutions and does not address the wider issues and conflicts regarding resource availability and use.

In discussing this option there was some disagreement between participants over the success to be achieved through the involvement of rural communities and farmers. Much of this arose from the results obtained by the various control techniques used and the failure to sustain activities in the long term. Overall it was felt that although such approaches had achieved notable local success in some areas they would not contribute

significantly to the broader objective of trypanosomiasis control in the developmental context of land management and agricultural development but that they would suit other immediate objectives such as poverty alleviation. It was appreciated however, that donors also have different needs and objectives and that various alternatives to control may be offered to them for funding based on the two scenarios identified.

There was some opinion expressed by participants that "starting small and expanding operations over time could lead from farmer based to area wide operations". This opinion was not unanimously accepted. It was also noted that such operations were largely based on the use of bait techniques such as traps, targets and the application of insecticide to animals. When discussing the merits of these a consensus agreed that the most practical method would seem to rest with the use of the insecticide treated animals, for reasons of efficiency, social acceptability and economics.

The presentation of a study on the diverse results of two "small scale" operations in Tanzania demonstrated the need to ensure that such operations were planned on a sound knowledge of the local epidemiological situation and the dangers of re-invasion if they were to succeed.

Option 2.

- The area - wide approach on the other hand, has focus more directly on the problem of tsetse in the broader context of land use. It therefore addresses the main overall problem with the objective of producing significant results within a limited time span. The disadvantages are that it is a "top down" approach, is area bound, dependent on sustained commitment by governments and donors and requires significant funding.

There was general agreement that PAAT should pursue the issue of area-wide tsetse control based on the principle that land use is a major component of the tsetse problem throughout Africa. It was not a question of again raising the old issue of control versus eradication and the controversy of killing tsetse for the sake of doing so but of a focussed priority approach on the interface between tsetse and farming. This could be achieved by incorporating into the project cycle an Environmental Impact Assessment which would allow all stakeholders to have their say on how any project would be developed including the land use issues and litigation.

It was noted that the application of area wide control may require a different set of control techniques to those implemented at the farmer level, and in this regard the potential of the Sterile Insect Technique (SIT) and Sequential Aerial Spraying (SAT) were mentioned and recommended for further appraisal and consideration.

7. CO-ORDINATORS REPORTS

7.1. Integrated Disease management

The position paper on this topic is currently restricted to the West Africa situation. It was resolved that it be presented for discussion in the proposed workshop to be convened under the EC Concerted Action Plan and the outcome discussed with the PAAT Secretariat in order that it progress to finalisation. Inputs should be sought from other co-authors and the suggestion was made that the paper also include the integration of direct disease control and not be restricted to only the vector. The outline of a second, companion paper, on epidemiology will be drafted and consideration given as to whether they should be combined or stay as separate documents.

7.2 Trypanotolerance Research

The paper prepared for an OIE Review [17(1), April 1998] of this topic was distributed. Trypanotolerance is currently an option adopted by farmers in 18 countries in West and Central Africa. Present activities include studies into a better understanding of the trait and methods to improve its adoption and exploitation. Further information is being accrued on the importance of the tolerance also exhibited to other important diseases and pathogens in the region.

7.3 Impacts of trypanosomiasis control on land use and the environment

Five years of field and GIS studies are available and could be incorporated into a PAAT Technical and Scientific Series paper. Current research at ILRI is directed to the development of decision support systems to monitor the impacts of control and the environmental consequences. The objectives being to provide decision makers with access to information on integrated disease management and, more specifically, to assess the environmental impacts of the East African Programme (FITCA).

7.4 Control methods other than bait techniques

Considerable progress has been made, at the genetic level, towards the development of transgenic mosquitoes non-vectorial for malaria. A gene has also been identified that can be inserted into tsetse flies. The development of this programme, estimated to take about 20 years, holds considerable promise for practical application.

7.5 Bait techniques in East and Southern Africa

This report, first presented in Maputo 1997, looks at an analysis of the controlled achieved through the use of bait techniques. It concludes that as a result of resorting to these more environmentally benign methods the effective delivery of tsetse control has considerably declined in recent years, possibly not only in consequence of the techniques themselves but also because of the increased reliance placed on community involvement and privatisation.

The subject was recognised as being controversial and that in order to form the basis for an impartial position paper there was a need to include more information on the activities undertaken, and their achievement, across the continent. In this way it may then be possible to draw up a comparative list of advantages and disadvantages, including aspects of socio-economics, fly risk and challenge etc. It was concluded that the Secretariat be tasked with carrying the matter forward.

7.6 Environmental Impact of tsetse control

Over the last ten years some 40 man/years have been spent on the Environmental Impact Assessment of various techniques used for tsetse control in Southern Africa. As a result Sequential Aerial spraying, using endosulphan and deltamethrin, has been found to have negligible environmental impact and is recommended as a viable option. A summary of the overall results of these studies, as presented to the meeting in tabular form, is reproduced as follows;

Technology	Indicators	Physical effects	Politics	Costs
Air Spray	++		+++	+++
Ground Spray	++ (+)	++	++ (++)	++
Targets	+	++	+	++
Pour-ons	+		+	+
Dipping	+	+	+	+
SIT	(SAT)		(SAT)	++++
	(+) = DDT			

+ = negligible effect; ++ = minor effect; +++ = serious effect; ++++ = severe effect.

The meeting queried particularly, the classification of costs commenting on those put forward for cattle treatment and dipping, the latter of which should include the cost for construction and maintenance of dips. With regard to air spray it was also noted that the costs were based on using the technique for eradication and that in a control scenario these may also be reduced and perhaps be competitive with the costs of targets.

7.7 Social and cultural impacts of tsetse control

Several gaps were identified in the three papers prepared under this general heading. Concerning the cultural aspects the information related to a single study and needed to be much broader. Overall all papers concentrated on East and Southern Africa with no information on the West. There was some discussion as to whether the requirement was for one broad ranging paper that addressed the issues in more general terms, or whether there should be a series of specific papers that deliver short sharp messages. It was resolved that these questions be put to the Programme Committee for clarification and that the secretariat be tasked to follow-up.

8. EU CONCERTED ACTION - INTEGRATED CONTROL OF PATHENOGENIC TRYPANOSOMES AND THEIR VECTORS

The Concerted action initiative supported by DG XII, EC, will run for four years and will involve 27 developing country, European and international partners. It will be fully complementary to PAAT and will provide a mechanism whereby many of the PAAT R&D module's recommendations can be implemented. The outputs of

the integrated research conducted under the concerted action will also be made available to the working group of the PAAT Policy, Planning and Implementation module.

The objectives of this concerted action are applicable within three broad areas:

- integration of vector and trypanosomiasis control with sustainable rural development;
- integration of vector and trypanosomiasis control with the control of other livestock diseases in evolving farming systems;
- understanding the nature of tolerance and resistance to trypanosomiasis and its synergistic combination with innovative drugs and vector baits.

The elements will include workshops on specific scientific and technical issues, the publication of a newsletter, the establishing of an informative and interactive web-site and the promotion of scientific exchanges. The Newsletter will be distributed in association with TTIQ and there will be links with the PAAT web-site. The action may therefore be seen as a source of financial support to PAAT and will strengthen the overall infrastructure. The initiative was generally endorsed by the meeting with some caution expressed on the need for close collaboration with PAAT in order to avoid duplication.

9. QUALITY CONTROL OF TSETSE AND TRYPANOSOMIASIS CONTROL PRODUCTS

An increasing number of products are becoming involved in the field of both tsetse and trypanosomiasis control. These include various insecticides in specific formulation for use on various baits, drugs and even components of traps, targets and screens, such as odours, dispensers, cloths, dyes etc. Advice on quality products and their application is sought by farmers, extension workers, private veterinarians and the public sector. There are significant variations in the products available which is further complicated by counterfeit and sub-standard products introduced by unscrupulous traders.

The meeting recognised the need for an international authority that could co-ordinate the independent assessment of the quality of such products and provide unbiased advice to all customers. Such a service would involve the drafting and careful monitoring of protocols for quality control testing, the setting of standards and product standardisation. The concept that these activities be initiated and co-ordinated through PAAT was unanimously endorsed in principle and the secretariat requested to carry the item forward and report back.

10. PAAT STRUCTURAL LINKS AND CO-ORDINATION

Next year the ISCTRC will celebrate its 50th Anniversary when the 25th conference is due to be held in Mombasa. This meeting will form the focal point for the 1999 annual meetings of the PAAT Advisory group Co-ordinators and the FAO Liaison Officers. The organisational arrangements will be discussed and decided through the PAAT Secretariat. Within PAAT co-operation between FAO and OAU/IBAR has considerably strengthened over the last year and has extended to collaboration with regard to the EC funded FITCA Programme. A request to FAO from Sudan for TCP assistance is subject to mutual discussion with a view to, if accepted, forming the basis for preparation of a proposal for Sudan to join Phase II of this programme.

11. ANY OTHER BUSINESS

Dr. R. Connor gave notice of his intention to withdraw as a PAAT Advisory Group Co-ordinator due to the imminent closure of the RTTCP and the termination of his contract. The appreciation of the meeting for all his efforts and considerable support over the difficult formative period of PAAT is recorded.

The Chairman also noted the imminent retirement of Brian Hursey and in recognition of his role in the creation of PAAT and his long service in the control of trypanosomiasis recorded the appreciation of colleagues and friends for his efforts in ensuring the successful establishment of the Programme.

12. CONCLUSIONS AND RECOMMENDATIONS

- i) The secretariat pursue the improvement of e-mail communications links, particularly at the level of national liaison officers

ii) Following the development of the PAAT-IS resource inventory the secretariat should make proposals to the Committee for the greater regionalisation of research and development activities that will also strengthen the involvement of NARS

iii) The secretariat should investigate the justification and needs for training, particularly at middle level, and propose measures to address this issue on a sustainable basis. Attention should be paid to the issue of effective co-ordination. Coupled with this is the need to ensure the retention of developed capacities and skills especially those developed through the RTTCP in Southern Africa.

iv) FAO should ensure that the development of the PAAT-GIS be undertaken in close collaboration with other national and regional institutes involved in similar activities so that they are compatible and complementary.

v) FAO should investigate sources of tools that support decision making in respect of environmental impact and expand the PAAT-IS to incorporate basic environmental information to assist scientists, planners and managers in tsetse and trypanosomiasis control.

vi) The PAAT structures should be used to strengthen the much needed and effective transfer of control technology, especially to farmers.

vii) Regarding the PAAT Plan of Action it is recommended that;

a) The Committee consider and endorse the criteria for identification of priority areas as described in this report;

b) That areas so identified be supported by confirmation of the commitment of governments and others and be confirmed through a priority setting exercise;

c) That criteria for identifying control priorities be considered in a broader perspective so that the needs of all countries are considered;

d) The problems associated with small-scale operations must be taken into account when responding to farmers needs.

viii) When dealing with Sleeping Sickness outbreaks the secretariat should ensure the collaboration of medical, entomological and veterinary expertise as appropriate.

ix) The secretariat should bring together the inputs required to produce a position paper on tsetse control techniques.

x) A concept note on epidemiology of trypanosomiasis should be produced by the appropriate Co-ordinators for presentation and discussion over the PAAT-Link , and eventual consideration of the next meeting.

xi) The secretariat should ensure the production of an overall position paper on the socio-economic and cultural impact of trypanosomiasis and its control.

xii) The secretariat should investigate and initiate action for the standardisation of technologies and their application.

xiii) The meeting recognises the need for two control approaches, one farmer based and the other based on area-wide management. Both should be given the appropriate consideration by the committee and others investing in tsetse control.

xiv) PAAT should offer a service to donors and others investing in vector control in order to ensure an objective appraisal of the technologies and the adoption of those most appropriate to the situation.

xv) The meeting recognises and endorses the complementary role of the EU Concerted Action to the aims of the PAAT Research and Development module.

xvi) The secretariat to follow-up on the proposal to establish mechanisms and protocols for quality control of trypanosomiasis control products and to report back to the next meeting.

xvii) The secretariat will ensure the co-ordination of the 1999 PAAT meetings with the 25th ISCTRC.

13 DATE AND VENUE OF NEXT MEETING

It was agreed that the next meeting of Advisory Group Co-ordinators be convened in conjunction with the ISCTRC to be held in Mombasa, Kenya, 1999. The date to be announced in due course by OAU/IBAR.

PROVISIONAL AGENDA

1. Opening address and introduction
2. Minutes of last meeting
3. Report of 1997 Programme Committee and matters arising
4. Current status of PAAT activities
 - 4.1 Information services and communications development
(demonstration of PAAT- IS by FAO and WHO)
 - 4.2 Publications
 - 4.2.1 Newsletter
 - 4.2.2 TTIQ
 - 4.3 Position Papers
 - 4.3.1 Endorsement of papers on Drug Management and Socio-economic impact
 - 4.3.2 Discussion of papers on Community participation, Socio - cultural aspects and Control Techniques
 - 4.4 Identification of Research priorities
5. Sleeping sickness situation
6. Co-ordinators reports and observations
7. Implementation of Plans of Action
 - 7.1 Sleeping sickness
 - 7.2 Animal Trypanosomiasis
8. EC funded Concerted Action Plan and Regional activities
9. Management and quality of control products
10. Structural links and co-ordination, Liaison Officers, ISCTRC etc.
11. Any other business
12. Date and venue of next meeting
13. Close

LIST OF PARTICIPANTS

R. Allsopp
Technical Adviser
Tsetse Control Division
P.O. Box 14
Maun, Botswana

M.A.R. Abdel Aziz
Ministry of Animal Resources
P.O. Box 293
Khartoum, Sudan

B. Bauer
Vector Control Unit
CIRDES
01 BP 454
Bobo-Dioulasso 01
Burkina Faso

Mr V. Chadenga
Assistant Director of Veterinary Services
Tsetse Control Branch
P.O. Box CY 52
Causeway
Harare
Zimbabwe

R.J. Connor
Regional Coordinator
Regional Tsetse and Trypanosomiasis
Control Programme
P.O. Box A 560
Avondale
Harare, Zimbabwe

O. Diall
Director-General
Laboratoire central vétérinaire
BP 2295
Bamako, Mali

G. d'Ieteren
Animal Scientist
International Livestock Research Institute
P.O. Box 30709
Nairobi, Kenya

M. Eisler
International Livestock Research Institute
P.O. Box 30709
Nairobi
Kenya

I. Grant
Environmental Sciences Department
Natural Resources Institute
University of Greenwich
Chatham ME4 7TB, UK

J. Hargrove
IPMI
c/o Tsetse Control
P.O. Box CY 52
Causeway
Harare, Zimbabwe

P. Holmes (Chairman, PAAT)
Chairman, PAAT Committee
University of Glasgow
Bearsden Road
Glasgow G61 1GH, UK

A. Ilemobade
P.O. Box 1308
Akure
Nigeria

M. Kamuanga
(ILRI) c/o CIRDES
01 BP 454
Bobo-Dioulasso 01
Burkina Faso

I. Maudlin
Tsetse Research Group
Division of Molecular Genetics
Anderson College
University of Glasgow
56 Dumbarton Road
Glasgow G11 6NU, UK

D. Mbulamberi
Director
National Sleeping Sickness Control Programme
Ministry of Health
P.O. Box 8
Entebbe, Uganda

D. Mehlitz
Research Coordinator
International Trypanotolerance Centre
PMB 14
Banjul, The Gambia

Christine Okali
11 York Street
Norwich
NR2 2AN
UK

F.P. Oloo
Chief Zoologist
Department of Veterinary Services
P.O. Kabete
Nairobi
Kenya

R.K. Saini
Senior Research Scientist
International Centre of Insect
Physiology and Ecology
P.O. Box 30772
Nairobi
Kenya

W. Shereni
Ministry of Lands & Agriculture
P.O. Box CY 52
Causeway
Harare, Zimbabwe

B. Swallow
Resource and Development Economist
International Livestock Research Institute
P.O. Box 30709
Nairobi Kenya

G.A. Vale
Regional Research Coordinator
Regional Tsetse and Trypanosomiasis
Control Programme
P.O. Box A 560
Avondale
Harare, Zimbabwe

Secretariat:

P. Cattand
Scientist
Division of Control of Tropical Diseases
WHO
Geneva, Switzerland

G. Chizyuka
RAFR
P.O. Box 1628
Accra
Ghana

J. De Castro
SAFR
P.O. Box 3730
Harare
Zimbabwe

B.S. Hursey
Senior Officer
FAO
Rome, Italy

J. Jannin
WHO
Avenue Allia
1211 Geneva 27
Switzerland

M. Jeggo
IAEA
P.O. Box 100
A-1400
Vienna, Austria

C. Jenner
Visiting Scientist
FAO
Rome, Italy

T.K. Ndegwa
SAFR
P.O. Box 3730
Harare
Zimbabwe

J. Slingenbergh
Animal Health Officer
FAO
Rome, Italy

S. Haile-Mariam
Senior Projects Officer
OAU/IBAR
P.O. Box 30786
Nairobi, Kenya