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Interim PARC-VAC Project Mission Report

28 July to 16 September 1995

Part 1. Monitoring and Training Activities for the Karamoja Community Animal Health Worker Program of PARC-Uganda

Part 2. Update on the Changing Livestock Situation in Rwanda

Part 3. Assessment of Cattle Movements in Uganda with Reference to the Implications for Spread of Animal Disease

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When this mission was first proposed in the autumn of 1994, the situation in Rwanda was extremely unsettled and little precise information was available concerning the movement of animals into Rwanda from neighboring countries, the status of animal health of animals within the country and the state of the nation's veterinary infrastructure. By the time that the present mission was fielded, more information was available, principally through the site visits and field investigations of Dr. Peter Roeder, Animal Health Officer (Infectious Disease Emergencies), Animal Health Service, Animal Production and Health Division, FAO, Rome and Dr. Michael Moran, Chief Technical Adviser, FAO Integrated Tick and Tick-borne Disease Control Project, Entebbe, Uganda , in October 1994, and those of Dr. Jaime Domenech, PARC Adviser, OAU/IBAR/PARC, Nairobi, Kenya, in June 1995. The reports of these two missions and subsequent communication with their authors were invaluable in the preparation of the present mission report.

Abbreviations Used

ANS	Action Nord Sud, a non-governmental organization
CAHW	Community Animal Health Worker
CBPP	Contagious Bovine Pleuropneumonia, a cattle disease
CGR	Central Government Representative
CHIPS	Christian International Peace Services, a non governmental organization
DVO	District Veterinary Officer
EC	European Community
ECF	East Coast Fever, a cattle disease
EDF	European Development Fund
FAO	Food and Agricultural Organization of the United Nations
FMD	Foot and Mouth Disease, a cattle disease
GTZ	German Technical Cooperation
IEMVT	Institute d'Elevage et de Medecine Veterinaire de Pays Tropicaux
IM	Intramuscular, as for injection
LANAVET	Laboratoire National Veterinaire, Garoua, Cameroon
LSD	Lumpy Skin Disease, a cattle disease
MINAGRI	Ministry of Agriculture and Livestock Production, Rwanda
MINIREISO	Ministry of Rehabilitation and Social Reintegration, Rwanda
NGO	Non-governmental organization
NVI	National Veterinary Institute, Debra Zeit, Ethiopia
OAU/IBAR/PARC	Organization of African Unity, Inter-african Bureau for Animal Resources, Pan African Rinderpest Campaign
OXFAM	Oxford Famine Relief, a non governmental organization
PARC	Pan African Rinderpest Campaign
PARC/TRVTT	Pan African Rinderpest Campaign Thermostable Rinderpest Vaccine Transfer of Technology Project
PARC-VAC	Participatory and Community Based Vaccination Project
RC	Resistance Council
RPF	Rwandan Patriotic Front
RP	Rinderpest, a cattle disease
TUSVM	Tufts University School of Veterinary Medicine
UGX	Uganda Shillings
UNHCR	United Nations High Commission for Refugees
UNICEF/OLS	United Nations International Children's Fund/Operation Lifeline Sudan
USAID/OFDA	United States Agency for International Development, Office for Disaster Assistance
VO	Veterinary Officer

Summary

A mission funded by USAID/OFDA was undertaken on behalf of the Pan African Rinderpest Campaign between 28 July and 16 September 1995. Three distinct activities were included in the mission: These were a) monitoring and training activities for the Karamoja community animal health worker program of PARC-Uganda; b) an update on the changing livestock situation in Rwanda; and c) an assessment of cattle movements between Uganda and Rwanda with reference to the implications for spread o animal disease. A summary of these activities and recommendations related to each are presented as follows.

Karamoja Community-Based Vaccination Program. The Karamoja Community-Based Vaccination Program is a network of community animal health workers (CAHWs) who are trained in basic animal health care and vaccination against rinderpest using heat-stable rinderpest vaccine. A major component of the present mission was to monitor and strengthen the CAHW network in Moroto District of Karamoja.

The Karamoja Community-Based Vaccination Program was established as a solution to the long standing endemic rinderpest problem in Karamoja and the constraints which local security and communication concerns presented to conventional vaccination campaigns. At the outset of the program, Karamoja presented a moderate risk in terms of the spread of rinderpest since adjacent areas of Soroti and Lira had been almost entirely de-stocked through cattle raiding and formed a de-facto sanitary cordon for the rest of Uganda. Over the past year, security conditions have improved and the districts adjacent to Karamoja are now in the process of rapidly restocking with cattle that originate in part from markets in Karamoja. In addition, trade cattle originating from Karamoja are prevalent at markets in Soroti and Mbale and reported to reach as far as Tororo and Kampala on motorized transport. Cattle populations in Karamoja now pose a direct and immediate threat for the spread of rinderpest to adjacent areas and Uganda as a whole. The urgency of the situation is underscored by the announcement reported on 5 September 1995 that the Chair of the Presidential Commission for Teso has authorized cattle traders to buy cattle from Karamoja for restocking of Teso. Such purchases should be made conditional on prior proof of rinderpest vaccination.

The CAHW network has directly carried out 78,180 vaccinations with thermostable vaccine to date. This number has only been limited by the amount of heat-stable vaccine available in Uganda. The CAHWs were also highly instrumental in the 98,434 vaccinations carried out with thermolabile vaccine as reported by the DVO's Office in 1994. In fact, a good number of these thermolabile vaccinations were completed by CAHWs where NGO health clinics were able to provide access to cold chain facilities. In addition, the CAHWs made detailed reports of rinderpest in Pian County, Moroto District, to the District Veterinary Office and at the refresher training held in June of 1994. These reports led to a joint rinderpest investigation and confirmation by

representatives of the DVO's Office, the PARC Sero-Monitoring group and the PARC/TRVTT Project. During the present mission, no reports of active outbreaks were received from the Pian area.

Despite these successes, the CAHW network suffered from significant problems in terms of financial sustainability and attrition of personnel. The principles of cost-recovery for treatments and community ownership were not well communicated at the outset and in many ways the communities, DVO's Office and the PARC/TRVTT Project were working at cross purposes.

Upon arrival, the mission found that the majority of CAHWs (60%) were still committed and interested in their work. However the level of activity was not overwhelming. This was the result of a virtual collapse of the monitoring system and a failure of the communities to fully embrace the cost-recovery principle. The mission took immediate corrective action and engaged in a series of community dialogue meetings to establish a community contract to clearly define the responsibilities regarding the support of the CAHWs. The success of these meetings was substantiated by the 1,150,000 UGX in medicines purchased by the communities through the CAHW network over the subsequent two weeks.

The mission then went on to restructure the monitoring system through a series of meetings with the DVO's Office, the PARC National Coordinator and local NGOs (Church of Uganda, Christian International Peace Service and Oxfam). As a result, a new CAHW coordinator was named for Moroto District (Dr. Eyudu, VO for Pian and Chekwi Counties) and the NGOs in Moroto District will take on a supportive role by providing guidance on community development issues and assisting at community dialogue meetings. With this solid foundation established, the mission moved ahead with the training 5 new CAHWs and the refreshing of 8 active CAHWs in a combined training course.

The mission was successful in restructuring and reinvigorating the CAHW program in Moroto District. The stage is now set for a sustainable program driven by market-based incentives. All of the prerequisites for a thorough monitoring and follow-up for the next 6 months are in place.

The continued success of the program requires continued community dialogue, timely re-supply of drugs and an adequate supply of heat-stable vaccine. The first two items rest upon the shoulders of the CAHW Coordinator in Moroto. The purchase of heat-stable vaccine by the Government of Uganda is long overdue.

Update on the Livestock Situation in Rwanda The well publicized civil disturbances, military actions and political changes which occurred in Rwanda during 1994 were accompanied by the return of thousands of Watutsi exiles to their Rwandan homeland. The Watutsi are traditionally cattle owning people and cattle ownership

has persisted and even flourished in exile. As a result, the returnees collectively brought back to Rwanda with them hundreds of thousands of cattle. The majority of these people and their cattle returned from Uganda and became concentrated in the northeastern section of the country, notably Byumba Prefecture, which contains the Mutara Hunting Domain and the northern portion of Akagera National Park.. There are two main reasons for this concentration of cattle in Byumba. The first is simply the proximity of Byumba to Uganda. More importantly however, is that the Mutara region and the adjacent Akagera National Park are essentially the only remaining areas of Rwanda where large expanses of open grasslands exist which are suitable for extensive grazing of large herds of cattle. The rest of the country is mountainous, densely populated and intensively cultivated.

Yet even the grasslands of Mutara were unable to successfully accommodate the massive influx of cattle that reached Rwanda in 1994 and 1995. By the end of 1994, overcrowding, overgrazing, degradation of grasslands, increasing disease outbreaks and increasing mortality of cattle from starvation, lack of water and sickness were being observed and reported. In addition, serious encroachment of the adjacent Akagera National Park had occurred and the integrity of the Park as a protected natural habitat and an economic tourism resource was seriously compromised. The situation became further exacerbated around May of 1995 with the onset of the dry season.

Another important outcome of the events of 1994 with regard to livestock is that the normal ownership pattern and distribution of livestock in the country was disrupted. Cattle and small stock were very much a part of smallholder farming systems throughout the rest of the country. Many farmers owned one to several improved cross bred cows kept for milk production. They also owned considerable small stock such as poultry and goats as part of their mixed farming system. However, most of these animals have been killed or removed from the countryside so that there is a general deficit of livestock throughout the country. Paradoxically, the overall number of cattle in the country may be greater that before the events of 1994. However, these are extensively grazed, largely unimproved, returnees' cattle concentrated in the Mutara region with inadequate resources to support them. It would be reasonable to say that the current situation in Rwanda vis a vis livestock is abnormal, unsustainable and potentially destructive and that corrective measures are urgently needed.

The livestock situation is also of regional concern because the introduction and subsequent mixing of large numbers of cattle from diverse sources and origins has created a cauldron of contagious livestock disease, notably, CBPP and FMD which presents a potential long term risk to Rwanda and its neighbors. The situation is aggravated by the fact that the events of 1994 seriously disabled the Rwandan government veterinary service. There was considerable loss of personnel and infrastructure and the ability to respond appropriately to contain disease outbreaks is seriously compromised. Though a new cadre of veterinarians have entered the

country as returnees, they have not, in general, chosen to join the government veterinary service and their potential to contribute professionally to the nation has not yet been exploited.

In response to the situation in Rwanda as assessed above by this mission, the following recommendations are made:

- Undertake an economic analysis of the implications of converting Akagera National Park from a wildlife refuge to alternative uses and promote dialogue on the economic and social value of wildlife preservation
- Promote the reintroduction of small stock to settled farmers to promote food security
- Carry out a systematic nationwide livestock census and animal disease survey.
- Establish private veterinary practices to effectively utilize veterinary manpower within the country.
- Support border harmonization efforts for animal disease control between Rwanda and its neighbors

These recommendations are discussed in more detail in Part 2 of this report.

Cattle Movements in Uganda: The Southwest The change of government in Rwanda during 1994 precipitated a massive exodus of Watutsi Rwandese back to Rwanda from Uganda along with hundreds of thousands of their cattle. As a result of geography, the vast majority of returnees passed through southwestern Uganda, notably the Districts of Masaka, Mbarara, Ntungamo, Kabale and Kisoro. A large majority of these cattle ended up in the Mutara region of Byumba Prefecture in northeastern Rwanda. These cattle, in general, have not fared well because of inadequate grazing and water resources in the region and because of disease outbreaks, notably CBPP and FMD. The close proximity of these cattle to Uganda and the lack of suitable resources to support them, coupled with the fact that many Rwandese returnees still have family, property, and cattle in adjacent areas of Uganda poses the strong likelihood that there may be considerable pressures and incentives for cattle presently in Rwanda to return to Uganda. This represents a significant regulatory challenge to the Department of Veterinary Services in Uganda. Should renewed hostilities occur in Rwanda, the movement of cattle out of Rwanda into neighboring countries could be even more intense and abrupt, further challenging the veterinary authorities.

The purpose of this phase of the mission was to document the events of 1994 and 1995 with regard to movement of cattle through southwestern Uganda, to evaluate the regulatory veterinary response, to determine what lessons were learned and to assess preparedness to deal with future influxes of cattle into the region such as might occur if a backflow of cattle from Rwanda into Uganda occurred either as a result of renewed hostilities in Rwanda or due to lack of food and water resources in Rwanda to support the cattle which moved there.

As a result of the mission's investigations, which consisted of interviews and site visits in the various districts of southwestern Uganda, the following general recommendations are made:

- Establish an Emergency Preparedness and Coordination Unit within the Department of Veterinary Services at Entebbe.
- Hold southwest regional meetings for district DVOs and their staff to discuss emergency preparedness and contingency planning for the region.
- Work through the local government (RC) system to mobilize communities and promote community education and sensitization to the dangers of unauthorized cattle and animal product movement.
- Identify and establish regular contacts with appropriate local authorities across the borders of Rwanda, Tanzania and Zaire to discuss livestock movement issues of common concern and to coordinate animal disease control activities such as vaccination campaigns.

The following specific recommendations are made with respect to the present situation in Rwanda in consideration of the possible return of animals from Rwanda to Uganda:

- Establish a holding and vaccination center in Konge, Rwemiyaga county in Masaka district, as it is a major passage point for livestock to and from all districts north of Masaka district.
- Locate a secondary vaccination center at Katunku entry point for cattle to and from Mpigi district northeast of Masaka district.
- Strengthen regulatory veterinary activities at the Nakivale refugee settlement camp in south central Mbarara district as this camp occupies a critical location with regard to animals funneling in and out of Rwanda..
- Establish permanent veterinary activity along the Rwanda-Uganda border from Mirama Hills post in Ntungamo district all along to Kamwesi subcounty in Kabale district
- Establish a regulatory veterinary presence at Cyanika (Rwanda-Uganda) and Bunagana (Zaire-Uganda) border posts in Kisoro district
- Promote coordination and efficient execution of vaccination campaigns throughout the southwest of Uganda with an emphasis on creating buffers zones of protected animals by first concentrating vaccination efforts in border areas and along known trade routes. There should also be regular, coordinated follow up surveillance from Veterinary Headquarters in Entebbe to ensure the achievement of a high rate of vaccination efficacy.
- Funding for any of the posts and facilities proposed above should be contingent on an agreement to staff such posts and facilities with private veterinarians under contract to the Department of Veterinary Services in order to promote productivity, responsiveness and accountability for veterinary emergency disease control and regulatory activities.

These recommendations are discussed in more detail in Part 3 of the report.

Cattle movements in Uganda: The Northeast Rinderpest was diagnosed in the Karamoja region of northeast Uganda as recently as July 1994 and the region is still considered to be an endemic rinderpest area. Recent events in Rwanda and within Uganda have increased the likelihood that market demand for cattle from Karamoja will increase and cattle movement out of the region will increase. These events include

- The mass migration of cattle out of Uganda to Rwanda in 1994 which reduced cattle numbers in Uganda and resulted in increased meat prices, providing an incentive for traders to move cattle to market more widely within the country
- A potentially increasing demand for cattle in neighboring Rwanda due to the alteration of cattle numbers and cattle distribution caused by the war.
- The recent announcement that cattle traders would be permitted to sell breeding cattle from Karamoja in Teso as part of the Teso cattle restocking program.

In light of these developments, and in light of how difficult it will be to control cattle movements out of Karamoja, it is imperative that the goal of achieving 90+% vaccination coverage of cattle in Karamoja be realized at the earliest possible moment, In this regard, the following recommendations are made:

- No cattle be permitted to move from Karamoja to Teso unless they bear the official ear marking indicating that they have been vaccinated for rinderpest (and CBPP)
- PARC Uganda must commit itself to the efficient, reliable procurement, distribution, and maintenance of adequate supplies of heat stable rinderpest vaccine for Karamoja.
- The CAHW program in Karamoja must be strengthened and expanded to achieve total vaccination coverage for the region.
- Similar CAHW programs need to be established in the neighboring Turkana region of Kenya, an initiative supported by PARC and the Kenya Livestock Service.

Conclusion The mission believes that the livestock situations in Rwanda, southwest Uganda and northeast Uganda must be considered in a regional context and not as isolated situations. With regard to rinderpest control, Karamoja, and neighboring Turkana, in Kenya, must continue to be considered as foci of the disease with the potential to radiate outward through the region. Political events and associated economic changes have already, and are likely to continue to stimulate new waves of cattle movements across Uganda that are likely to involve cattle that originate in Karamoja. The recommendations proposed in the various sections of this report should be viewed as a total package of recommendations aimed at reducing the risk of continued spread of animal diseases throughout the region, most notably rinderpest and CBPP..

Background to Mission

The United States Agency for International Development has been providing funding to Tufts University School of Veterinary Medicine (TUSVM) since 1990 for the purpose of providing technical assistance to the Pan African Rinderpest Campaign (PARC) through PARC Headquarters in Nairobi, Kenya. TUSVM, in conjunction with the United States Department of Agriculture (USDA) and the Institute d'Elevage et de Medecine Veterinaire de Pays Tropicaux (IEMVT) developed a heat stable vaccine for the control of rinderpest. This vaccine, which does not require cold chain capacity in the field, has allowed vaccination activities to be expanded into difficult areas previously unreachable for vaccination.

TUSVM-related activities carried out in association with PARC have included the transfer of thermostable vaccine production technology to several vaccine production laboratories in Africa and the development of community based animal health care delivery programs particularly in the Horn of Africa where endemic rinderpest exists and government veterinary services have been unable to reliably carry out vaccination campaigns due to logistical constraints, natural disasters, political conflict or civil unrest. Such areas include the southern Sudan, the Afar region of Ethiopia and the Karamoja region of Uganda.

The Community Animal Health Worker (CAHW) Program for Karamoja was established in 1993 to assist PARC-Uganda in extending comprehensive rinderpest vaccination coverage into an area of the country where rinderpest was known to be endemic and where it had been difficult for the Department of Veterinary Services had historically found it difficult to carry out vaccination campaigns. The confirmation of rinderpest in Pian subcounty of Moroto District of Karamoja in July of 1994 underscored the need to further intensify vaccination activities in the area. With this in mind, USAID, through the Office for Disaster Assistance (OFDA) provided additional funding to train additional CAHWs in Pian subcounty of Moroto District and to monitor the work of CAHWs that had previously been trained in Moroto and Kotido Districts. This mission was undertaken, in part, to meet these objectives.

The tragic events that began to unfold in Rwanda during 1994 have also of considerable concern to USAID/OFDA because of their general mandate relative to disaster assistance, but also, in particular, because of their commitment to PARC and the implications that the Rwandan situation has with regard to animal health for Rwanda and its neighbors in the region. When this mission was first discussed in the autumn of 1994, a major influx of cattle was entering Rwanda from all directions, particularly from Uganda, along with repatriated Rwandan returnees. The implications of this migration for Rwanda and the region, particularly with regard to animal disease, were largely unknown. However, by the time this mission was actually undertaken in August of 1995, a considerable amount of information about the livestock situation had already been gathered, most notably by Drs. Roeder and Moran of the FAO in

October 1994, and Dr. J. Domenech of PARC in June of 1995. By August the migration of animals into Rwanda had essentially ended, the situation had been reasonably assessed and some initial steps were already being taken by the Government of Rwanda in cooperation with NGOs and external agencies to begin to address the difficult livestock situation with regard to disease control, provision of water and feed resources and redistribution of livestock within the country.

At the time this mission was fielded, the forced repatriation of Rwandan Hutu refugees from Zaire had begun in earnest, with the potential of destabilizing the fragile peace within the country. In light of this development, the initial terms of reference for the mission with regard to assessing the situation in Rwanda were modified. While the situation within Rwanda was still to be considered, a greater emphasis was placed on considering the implications of a sudden reversal in animal movement from Rwanda back into neighboring countries, notably Uganda. Uganda has been a key focus area for PARC activities related to both control of Contagious Bovine Pleuropneumonia (CBPP) and rinderpest. Therefore, it became a priority of this mission to assess the preparedness of Uganda to deal with a possible sudden backflow of animals from Rwanda and to identify what needs Uganda might have in order to deal effectively with such a contingency. To this end, the mission included visits to Kisoro, Kabale, Ntungamo, Mbarara and Masaka Districts to trace and further define known livestock routes and interview District Veterinary Officers and other relevant parties in order to assess general emergency preparedness, and to make recommendations which would strengthen Uganda's position to deal with such contingencies.

PART 1. Monitoring and Training Activities for the Karamoja Community Animal Health Worker Program of PARC-Uganda

Main Activities:

1. Interviews with all the active CAHWs in Moroto District and the CAHW Coordinators for both Moroto and Kotido Districts.

2. Community meetings with *alomari* leaders (cattle camp leaders) to renew the project contract in all the localities with active CAHWs in Moroto District except Matany.

3. Discussions with the DVO's office and NGO's to restructure the monitoring and coordination system.

4. Selection of 5 new CAHWs from 5 rural *alomars* (cattle camps).

5. Presentation of a combined training course for 8 of the existing CAHWs and the 5 new trainees.

6. Delivery of 60,000 doses of heat-stable vaccine donated by UNICEF/OLS

The first three activities were intended as monitoring and evaluation. The objective was to assess the CAHWs that were still active and to define a strategy for strengthening the sustainability of the monitoring and the program in general. Once the program was restructured, five communities were asked to select trainees and 8 of the existing CAHWs were called for a 6 day training and refresher course in Moroto.

Monitoring and Evaluation:

Out of a total of 20 CAHWs trained in Moroto District in 1993, 12 were active (60%). The monitoring and coordination system was not active. The CAHW Coordinator had given out all his medicines on credit. The active CAHWs were purchasing medicines from private traders and the DVO's staff. In some instances, the CAHWs had traveled to Mbale and even Kampala to purchase medicines.

The Moroto DVO's office reported that the CAHWs had been very instrumental in achieving good vaccination coverage. In most areas CAHWs directly assisted the DVO's vaccination team as casual laborers. In areas with NGO cold chain, heat labile rinderpest and CBPP vaccine were left with the CAHWs and they implemented the vaccination program on their own. From the 12,000 doses of heat-stable vaccine provided in November to Moroto District, 10,743 vaccinations were performed. No reports of active rinderpest disease were received during any of the interviews or community meetings (Matheniko, Bokora, Pian and Chekwi Counties) although rinderpest was still considered a major threat.

The situation in Kotido was distressing. In the previous year, GTZ offered a program of free vaccination and treatment. In some instances, GTZ had even paid the herders to catch their own cows. This greatly upset other development activities in the District and has led to the complete failure of this year's vaccination campaign to date. Of the 8,000 doses of heat-stable vaccine left in November, none had been used. In addition, the DVO's office had not reported a single vaccination to the PARC Uganda office in Entebbe as of August.

The CAHW Coordinator in Kotido now has a motorcycle and reported that 11 CAHWs were active. The details were rather sketchy. As in Moroto, the CAHW Coordinator was not getting out and most of the medicines had either been given out on credit or taken control of by the DVO. As Kotido was not the major emphasis of this mission, the team did not visit the CAHWs. The Coordinator was provided with 50,000 UGX for fuel and asked to visit each of the active CAHWs and provide a summary report within two weeks. By the end of the mission (three weeks), the report was not provided.

On the brighter side in Kotido, OXFAM has initiated its paravet program in Dodoth County. Permanent crushes were built in each sub-county and crush associations were formed. Each association was asked to select paravet candidates. After three years of community dialogue, sixteen paravets were trained in April with each sub-county represented. The trainees included 8 men and 8 women. One of the four PARC CAHWs from Kaabong was re-elected as an OXFAM paravet. OXFAM's long term program calls for expansion into Jie County.

In both districts, several of the original CAHWs had taken jobs as police trainees or as NGO workers. Although no attempt was made to interview defunct CAHWs, it was clear that the major reason for CAHW attrition was alternative salaried employment.

From the interviews and community meetings the following problem list was identified:

1) inadequate community dialogue at the outset of the project and lack of a firm agreement on cost-recovery between CAHWs, CAHW Coordinators, the communities and the project. At the outset of the project, the participants were simply informed about cost-recovery rather than engaged in a dialogue which could lead to an agreement or community contract. The inadequate initial dialogue resulted in:

    - over-qualified CAHW candidates with un-realistic expectations for advancement. Education was over-emphasized in the initial CAHW selections.
    - under-emphasis of the alomari leadership in the cattle camps in favor of the political leadership in towns.
    - confusion regarding ownership of the program. The communities were told that the CAHWs worked for them, however the veterinary service

also informed the CAHWs that 'you are one of us.' This led to a situation where neither the communities nor the veterinary services would take responsibility for supporting the CAHWs although both sides wanted the benefits.

- a weak sense of community ownership and a failure to recognize the CAHWs as community employees.

2. lack of agreement over the role of the veterinary service in the project, particularly the monitoring and coordination. This was characterized by the following:

   - the CAHW Coordinators and DVO's staff were not committed to the project rationale. The follow-up personnel clearly understood the project strategy but did not believe that cost-recovery could work.
   - the CAHW Coordinators were more interested in fixed allowances than in earning incentives from drug sales. They were not committed to the 'privatization concept' and gave drugs on credit rather than engage in firm negotiations with the participants.
   - unwillingness of local veterinary authorities in the past to allocate resources for follow-up monitoring. Although funds were sent by the central authorities in Entebbe for fuel and allowances, these were not disbursed to the monitoring personnel.
   - disruptions in heat-stable vaccine supply. Uganda has yet to purchase heat-stable vaccine to support the program.
   - resistance of veterinary service to adopt participatory techniques.

3. changing drug supply environment as drug importation and distribution was privatized in Uganda during the life of the project.

4. lack of donor funding continuity.

5. insufficient on-site guidance regarding participation and community-based development

Part of the problem was entrenched attitudes in both the veterinary service and the community and a pervasive feeling of mistrust between the different participants in the program. At the outset, both the communities and the veterinarians viewed the government as providers of all solutions. The government, although they did not have the means to support the CAHWs, actively tried to portray the CAHWs as members of the veterinary service. The communities on the other hand took this to mean that everything should be free and that the CAHWs must be receiving 'something' from the government but were hiding it. This situation was further distorted by the DVO's office need to employ the CAHWs as casual laborers during the vaccination campaigns. This relationship was inadequately explained to the CAHWs and the communities and had

the tendency to confirm the communities' suspicion the CAHWs were in the pay of the government.

At the outset of this mission, everyone maintained that the communities were unwilling to pay for drugs and services. The mission decided to test this claim through a series of firm negotiating meetings in two communities: Rupa in Matheniko and Sakale in Pian. In the first meetings both communities were rather resistant to cost recovery. Only one 500 ml bottle of tetracycline was sold. However, the mission stuck to its program and in the second meeting 110,000 UGX worth of drugs were sold at Sakale and 150,000 UGX at Rupa. Over the next two weeks, Rupa purchased an additional 380,000 UGX of drugs through their CAHW. Responses were similar in other communities. The amount of sales per community corresponded directly to the amount of time the mission team was able to spend in discussion with the community.

Restructuring the CAHW Program:

The following corrective program was devised for Moroto District:

1) an intensive program of community meetings to establish a firm agreement with the communities about their support of the program. This agreement covered the following points:

    - community ownership.
    - cost-recovery.
    - no credit in any form.
    - community payment for CAHWs labor during rinderpest vaccination with heat-stable vaccine.
    - initial contribution of 20,000 UGX or a goat donated towards the cost of kits for new trainees.
    - larger items such as bicycles and cattle sprayers provided after payment of 50% of cost.
    - a clear explanation of the casual nature of employment of CAHWs as day laborers by the veterinary service during the thermolabile vaccination campaign.

2) involvement of NGO's (Church of Uganda and Christian International Peace Services (CHIPS)) in terms of guidance and follow-up on the participatory aspects of the program.

    - oversight of drug pharmacy and CAHW coordinators' accounts to assure preservation of capital.
    - provide guidance on principles of community development and participate in community meetings.
    - participate in training exercises.

- expansion of the CAHW network through training of additional CAHWs in collaboration with the DVO's office.
- rinderpest vaccination and disease reporting is not with the scope of these two NGO's activities. The responsibility for the rinderpest aspects of the program remain strictly with the DVO's office.

3) selection of more aggressive and confident CAHW monitors who are more committed to the principals of cost recovery and privatization. A veterinarian (the VO for Pian and Chekwi Counties, Dr. Eyudu) was appointed as CAHW Coordinator in Moroto.

4) clear definition of the role of the CAHWs vis a vis the veterinary service.

- CAHWs do not work for the veterinary service.
- The DVO's office does have a supervisory role and the CAHWs do have a reporting requirement to the DVO's office through the Coordinator.
- CAHWs may work voluntarily as casual laborers on a day to day basis during the vaccination campaigns and are to receive 2,000 UGX/day.
- the CAHWs should not be promised, offered or given any other additional material support from the government.
- the DVO's office can and should support the CAHWs through reinforcement of the community contract.

5) a training course was needed to reinforce the CAHW network.

- consolidate the message about cost recovery and reinforce the community contract.
- train new candidates from communities which strongly embraced the community contract.

For Kotido District, the following changes are recommended:

6) in Dodoth County, the lead has been turned over to OXFAM and the PARC-VAC Project recommends that OXFAM be provided with heat-stable vaccine for rinderpest vaccination by the Government of Uganda. OXFAM should continue to coordinate its efforts with PARC/Uganda and the Kotido DVO's office.

7) in Jie and Labwor Counties, the NGO's (CHIPS and OXFAM) should be encouraged to take on a stronger role. These areas will require the direct attention of future PARC-VAC Project missions.

8) other NGO's may be incorporated into the network as appropriate.

The restructuring was implemented in Moroto District through a series of meetings with the DVO/Moroto, the PARC National Coordinator and the respective NGO's. In these meetings it was agreed that the NGO's were not to supplant or duplicate the activities of the veterinary service. The role of the NGO's is to provide technical backstopping and guidance on the community development aspects of the CAHW program and the small business aspects of the CAHW Coordinator's pharmacy. The monitoring and re-supply of the CAHW network will remain first and foremost the responsibility of the CAHW Coordinator from the DVO's Office.

The Church of Uganda Livestock Development Officer, Mr. Marinus van der Horst, is based in Moroto and has offered to assist the program from that base of operations. CHIPS is based in the Karamojong dry season grazing areas in eastern Soroti District (Kapelebyong) and is well placed to follow the CAHWs when they are far away from the Moroto base. Both the Jie and Bokora use this region. In the future, CHIPS is planning to expand south in the direction of Magoro. This area is used by the Pian.

The Training Course:

A six day training course was held for 8 of the existing CAHWs and 5 new trainees at St. Phillips Training Center in Moroto. The Course Program is presented in Annex 1 and the list of participants in Annex 2. Prior to the course the communities agreed that new trainees would be required to pay 20,000 UGX or one goat as token payment for the CAHW kit. In addition, the existing CAHWs from Namalu, Lolachat, Nabilatuk, Lorengdwat, Kongole, Lopei and Rupa were invited to participate. The active CAHWs coming for refresher training were offered bicycles at half price to increase their ability to travel between the cattle camps and to provide an incentive.

All 5 new trainees arrived with the token payment and by the end of the course 5 of the 8 old CAHWs had paid for their bicycles and could take them home. The remaining 3 needed more time to raise the required 40,000 UGX and will pick up their bicycles from the Coordinator when payment is completed.

The training course emphasized the CAHWs role as community employees and small businessmen. A primary message was the destructiveness of credit. One role playing exercise, 'The Victim of Credit,' focused on this issue. This play had five parts, three herders, a CAHW and the CAHW Coordinator, which were played by the trainees themselves. In the play the first two herders request medicines on credit and after much discussion, the CAHW agrees to their request and gives out all his Veriben. The CAHW then goes to the Coordinator and attempts to refill his drugs on credit. The Coordinator refuses and reminds the CAHW that an agreement was made between the community, the CAHW and the project that credit would not be practiced. The CAHW goes home empty handed to meet the third farmer who has come looking for Veriben and has the cash to pay. The third farmer becomes angry when he finds the CAHW has given out all his Veriben on credit and cannot help him. The class was

then asked to discuss the play and suggest how the CAHW could have avoided the situation. The class was also asked to discuss who was the real victim of credit.

A considerable amount of time was also spent discussing the functions of a CAHW. The functions of the CAHW were divided into four categories:

1. Technical: Treatment and vaccination of livestock
2. Management: Maintaining and preserving the CAHWs kit and capital
3. Communication: Carrying messages between the veterinary services and the elders
4. Extension: Sharing their knowledge with herders

In regard to technical training, the course did not introduce any new topics, however it did go into much greater detail on the causes of disease, the concepts of treatment versus prevention and disease transmission through vectors. A major recurring theme was tick borne disease, the primary animal health problem of cattle in Karamoja. All of the practical activities of drug dosage and administration were repeated in great detail on days 4,5 and 6.

The kits presented to the trainees were simpler than in earlier courses (Annex 3). They did not include cattle sprayers, but did include tick grease. In future refresher trainings, sprayers will be offered to participants on the basis of half payment of cost. As a matter of policy, sprayers will not be offered to new CAHWs during their first training.

Also on the last day the participants were asked to evaluate the course. The participants felt that St. Phillips was a much better training facility than that used in previous trainings. They felt that the training was the best the had to date and that the increased technical depth was very beneficial. They strongly endorsed the approach of combining old and new CAHWs in the same training exercise. That stated that the number of days (6) and the length of the day was acceptable. The trainers felt that 7 days with a slightly lighter load per day would be an improvement.

CAHW Association:

The formation of a CAHW Association was discussed throughout the week of training and provisionally formed on the last day of the training. The CAHWs agreed that only active CAHWs could be members. Membership for other types of paravets was discussed, but the CAHWs felt that membership should be limited to community representatives selected by the elders. The objectives of the CAHW Association are:

- to improve animal health

- to encourage extension activities
- to facilitate the eradication of rinderpest and other diseases
- to facilitate group procurement of drugs and other inputs
- to serve as a forum for setting policies for CAHW activities

Provisional elections were held and the following officers were elected:

- Chairman: Richard Nguli (Lorengdwat)
- Vice-Chairman Loduk Joachim (Nabilatuk)
- Secretary Tom Olaka (Namalu)
- Treasurer Peter Longoli (Kongole)

The following advisors were invited to participate and accepted:

- Patrick Eyudu (DVO's Office)
- Marinus van der Horst (Church of Uganda)
- Jeffrey Mariner (PARC)

The elections were provisional in that not all the eligible CAHWs had a chance to participate. The provisional officials will produce a draft constitution and invite the remaining eligible CAHWs to join. After the membership drive is completed, definitive elections can be held and the draft constitution debated.

Monitoring Program:

A monitoring program was designed in discussion between the participants and the presenters (Dr. Eyudu, Mr. van der Horst and Dr. Mariner) as one of the participatory activities in the course. The objectives and activities which should be undertaken in the monitoring program are the following:

- community meetings and dialogue
- re-supply of medicines and vaccines
- on-the-job training
- collection of statistics on treatment and vaccination

The participants stressed that the community meetings held during the first two-thirds of the mission were a tremendous help in clarifying their role and the communities' responsibility in supporting their activities. The CAHWs expressed strong interest in organizing more meetings to make community contracts throughout their regions. They suggested that 2-3 CAHWs could participate in each meeting however they stressed the need for the presence of Dr. Eyudu or Mr. van der Horst to maintain credibility with the elders. Dr. Eyudu and Mr. van der Horst agreed to provide assistance in this area.

The CAHWs also stressed the importance of advanced notice to organize funds for

the purchase of medicine and to assure good attendance at the meetings. Dr. Eyudu proposed a rough monthly schedule where he would tour Lorengdwat, Nabilatuk, Lolachat and Namalu during the first week of each month. He asked that the CAHWs plan to be near the villages in groups of 2 to 3 during this period and that he would plan to spend one day at each center. For the first follow-up mission in October, he would arrange to have the car so that he could bring the remaining bicycles and adequate supplies of drugs. The CAHWs were reminded that the bicycles would only be issued upon payment of 40,000 UGX cash.

Cost recovery funds totaling 340,000 UGX were left for the monitoring and follow-up. From this 170,000 UGX were left with Dr. Eyudu and a further 170,000 UGX were left with Mr. van der Horst. It was agreed with Dr. Eyudu that a bank account would be opened and that when the 170,000 UGX has been expended after 2-3 months, the second 170,000 UGX would be turned over by Mr. van der Horst.

These funds should be enough to allow a fuel budget of 50,000 UGX per month and the purchase of the two remaining bicycles. This is based on a total expense of 460,000 with 120,000 of the cost of the bicycles being recovered from the beneficiaries (460,000 - 120,000 = 340,000).

The remaining supply of drugs with a cost value of 916,000 UGX was left the Dr. Eyudu together with a small business record keeping system. This is intended as seed money for the establishment of a CAHW pharmacy on a semi-privatized basis. The profits from the sale of these drugs to the CAHWs are Dr. Eyudu's to use as incentives or to reinvest in the CAHW pharmacy. Dr. Eyudu's accountability to the PARC-VAC Project will not exceed 916,000 UGX provided the Project does not make further additions to the pharmacy without recovering the cost.

The CAHW Coordinator will produce a brief monthly report which summarizes the results of the monitoring missions and provides statistics on medicine sales in terms of quantities, vaccine issues and vaccinations completed. The reports should include some discussion of constraints or developments which may require some adjustment to the program and any policy changes. The reports should be made to the DVO with a copy to Mr. van der Horst for forwarding to PARC/Nairobi.

Heat-Stable Vaccine Supply:

As part of this mission, the PARC-VAC Project arranged for the 4th donation of heat-stable vaccine to the Government of Uganda. In this case the donation of 60,000 doses came from UNICEF/OLS. In the past, LANAVET (Cameroon), NVI (Ethiopia), and UNICEF have all made donations. PARC/Uganda has yet to order heat-stable vaccine on its own. This has been a severe impediment to the CAHW program and rinderpest control in Karamoja.

As part of this mission, the team visited the EEC Delegation in Kampala. The Advisor, Mr. Ring, assured the team that funds could be made available through the Stabex 91 program provided a request came from the Ministry through the National Authorizing Officer (NAO). Mr. Ring indicated that the funds could be available within 3 weeks of the receipt of the official request. A response to this offer is urgently required.

While Uganda has rinderpest vaccine in stores which is about to expire, this is not a reason for failing to order heat-stable vaccine. Heat-stable vaccine is a different vaccine intended for specific use in community-based vaccination programs such as the CAHW Program in Karamoja. This program cannot make use of heat-labile vaccine. The procurement of heat-stable vaccine should be initiated and accomplished without delay as a cornerstone to the national animal health plan.

Conclusion:

The CAHW Program has been successful in reaching its primary objective of suppressing rinderpest disease in Karamoja. It was the CAHWs who alerted veterinary authorities to the continued presence of rinderpest in 1994 and it was the CAHWs in partnership with the DVO's office who implemented as much as 50% of the rinderpest vaccination in Moroto District in 1994. Although the mission found no evidence of active rinderpest in Pian, Chekwi, Bokora or Matheniko Counties this was far from an exhaustive search of the Moroto District. Thus, it would be extremely premature to assume that rinderpest has disappeared from Karamoja. The absence of reports from passive reporting systems is not synonymous with eradication.

It should be born in mind that the Karamojong are part of an extensive pastoral system which includes the Pokot and Turkana of Kenya, the Toposa and Jie of Sudan and the Donyiro of Ethiopia. Within this system, considerable commingling and exchange of cattle occurs. At the present time both the Turkana and Toposa are known to be rinderpest infected areas. It would be extremely unwise to talk about rinderpest eradication from one part of this system in isolation. It will take 2 to 3 years of intensive, coordinated vaccination in four countries to achieve eradication from this system. Thus, this is probably a development effort of 4 to 5 years duration.

The mission was successful in restructuring and reinvigorating the CAHW program in Moroto District. The stage is now set for a sustainable program driven by market-based incentives. All of the prerequisites for a thorough monitoring and follow-up for the next 6 months are in place.

The continued success of the program requires continued community dialogue, timely re-supply of drugs and an adequate supply of heat-stable vaccine. The first two items rest upon the shoulders of the CAHW Coordinator in Moroto. The purchase of heat-stable vaccine by the Government of Uganda is long overdue and immediate action by PARC-Uganda is imperative..

PART 2. Update on the Changing Livestock Situation in Rwanda

Background. The civil war which occurred in Rwanda from April through July, 1994 caused a tremendous loss of human life, created large, new internal and external refugee populations and led to the return of a large number of mostly Watutsi Rwandese who had been living outside their country for many years. Parallel with these demographic changes was a dramatic change in the nation's livestock picture. Through war and exodus, the existing population of pigs, chickens, sheep, goats and cattle was decimated. While small stock now continue to remain depleted, a considerable number of cattle have reentered the country with the Watutsi returnees. However the type of cattle returning, their distribution, their ownership and their utilization are considerably different than that which existed before the war.

Prior to the war, the cattle population in Rwanda was estimated to be about 600,000. These cattle were distributed widely throughout the country, largely integrated into small, mixed farming systems with only a few cattle per farm. A considerable amount of cross breeding had been carried out, particularly with exotic dairy breeds to improve milk production. It is estimated that after the war, the original cattle population was reduced to 200,000, including a considerable loss of improved, cross bred cattle.

Beginning around February of 1994 and increasing considerably following the installation of the RPF government in July of 1994, a large contingent of Watutsi exiles returned to the country, particularly from Uganda. Historically, the Watutsi were pastoralists who maintained large herds of cattle. Many of these people prospered in their adopted countries and accrued large number of cattle. Though estimates vary considerably and are difficult to document, perhaps as many as 700,000 cattle entered the country with Watutsi returnees since February of 1994. Though some entered the southern portion of the country from Burundi, the vast majority of these cattle entered from the north via Uganda, (and adjacent areas of Tanzania). These cattle are of the Ankole type, and are extensively managed in large herds.

In contemporary Rwanda, with its dense population and intensive cultivation, the availability of suitable, extensive grazing land for such herds is largely restricted to the northeastern portion of the country, essentially confined to the Mutara Hunting Domain, and the adjacent Akagera National Park, and indeed, it is in Mutara where the majority of returning cattle ended up. Inevitably, with the large numbers of animals present, penetration of livestock into the adjacent Park occurred quickly. Signs of overstocking, inadequate feed and water, and degradation of grasslands in Mutara and Akagera National Park were already evident when the FAO mission visited the area in October of 1994.

In addition to these difficulties, cattle disease outbreaks began to be noted by September 1994, especially CBPP, though thankfully there was no evidence, and

continues to be no evidence that rinderpest (RP) has occurred in Rwanda as a result of cattle movement from Uganda or elsewhere. Other important cattle diseases of the region with the potential to spread among debilitated cattle commingled from different sources include foot and mouth disease (FMD) and, lumpy skin disease (LSD). Surveillance activities to monitor animals for CBPP, RP, LSD and FMD have so far remained limited within Rwanda due to a lack of veterinary manpower and resources persisting since the war in 1994 and the need for baseline information on the distribution and prevalence of these diseases throughout the country is urgently needed..

As a result of the observations of CBPP in September of 1994, a vaccination campaign was carried out in November/December 1994 by the NGO, Action Nord Sud in conjunction with the Government of Rwanda with EC funding secured through PARC. Four prefectures were included in the campaign: Byumba, Kibungo, Kigali, and Ruhengeri in an effort to provide blanket coverage to the eastern half of the country and limit the risk of spread of CBPP to neighboring Burundi and Tanzania. Due to the continued increase in cattle populations that occurred during and following the period of vaccination, the overall vaccination coverage achieved for the four prefectures was only 31.7% as reported by Dr. J. Domenech of PARC in his report of June 1995. In fact, serosurveillance carried out in February and March of 1995 suggested that the vaccination activity carried out in November/December 1994 was largely ineffective in containing CBPP, as infections were subsequently confirmed serologically in Gisenyi, Ruhengiri, and Kigali prefectures.`

The present situation. It was anticipated that the onset of the dry season in May/June of 1995 would exacerbate the stresses on cattle with regard to food and water shortages and that an increase in mortality was likely to occur due to deprivation and disease. It appears that this has happened, though exact data on cattle numbers, morbidity and mortality are difficult to obtain. Interestingly, an FAO survey on cattle in Mutara carried out in June indicated that 3-5% of the mortality was due to CBPP and/or anthrax, but the report does not indicate what is accounting for the other 95-97% of mortality.

Some indicators which support an increasing rate of cattle deaths in Mutara over recent months are as follows:

- Ugandan authorities along the Rwandan border reported an increase in the hides and skins trade from Rwanda into Uganda over the last few months, suggesting an increased salvage of skins from dying animals.
- There are numerous anecdotal reports from NGO personnel and others working in the Mutara region that food and water scarcity increased over the summer and cattle deaths increased as well.
- During this mission, the author interviewed a woman returnee in Kibungo who came from Mbarara, Uganda to Mutara with 10 cows and lost every one of

them to starvation and/or disease.

- It is estimated that due to degradation of grazing land in Mutara the carrying capacity of the area has dropped from 1 cow/2 hectare to 1 cow/4 hectare.
- In July of 1995, FAO personnel estimated a livestock population of 250,000 head in Mutara based on a helicopter aerial survey, whereas UNHCR estimated the total number of cattle entering Mutara region through Kagitumba and Rwempasha between December 1994 and May of 1995 at 580,000 head. Though some increased cattle migration out of the Mutara region to Bugasera and Kibungo has been noted during June and July of 1995, it has not been sufficient enough to account for this degree of reduction.

A continued, additional loss of cattle by Watutsi returnees potentially represents a human catastrophe of considerable magnitude as cattle continue to constitute wealth and livelihood to these pastoralist people and the returnees currently have few alternative means of support. The evolving situation in Mutara bears close watching and potential action by humanitarian groups and relief agencies.

In light of these pressures and the real possibility of further losses, herders will have little choice but to leave Mutara, pushing further eastward into Akagera National Park, further south and west into intensively cultivated regions Rwanda, or northward back into neighboring Uganda or Tanzania.

While there is an intense demand for cattle in the rest of the country, several factors make it unlikely that the cattle now in Mutara will be rationally distributed throughout the country, at least in the short term. First, the Watutsi pastoralists are disinclined to sell off cattle from their herds for economic and cultural reasons. Secondly, the Ankole cattle owned by these pastoralists are not particularly desired by settled farmers in the rest of the country. Cross bred cows with greater milking ability are generally preferred. In addition, there are already reports that some herders moving into settled areas from Mutara with their cattle are causing damage to crops with a resulting increase in tensions. As many of the returnees have family members and some cattle remaining in their countries of origin, these factors may make a return to Uganda or Tanzania a more attractive option than moving deeper into Rwanda or remaining in resource depleted Mutara.

The situation is further complicated by political considerations. Some elements in the new Rwandan government clearly favor permanent settlement of herders in Mutara and adjacent regions of Akagera National Park and, in fact, a settlement and land distribution scheme has already been initiated.. However, other elements in government, and a considerable segment of the donor community are opposed to such a policy, as Akagera Park is perceived as a valuable economic and natural resource in its undisturbed state as a magnet for tourism and a habitat for wildlife. This conflict may be resulting in a delay in donor support for livestock related projects and implementation of animal health control measures to protect livestock resources

within Rwanda and throughout the region.

Current status of the veterinary services. Veterinary services in Rwanda are delivered solely through government, as a function of the Ministry of Agriculture and Livestock Production (MINAGRI). Prior to the war, the government veterinary service employed approximately 60 veterinarians and 150 veterinary technicians posted throughout the country. Currently, the numbers of original employees still in government service are stated to be about 10 veterinarians and 30-50 veterinary technicians. A few employees are know to have died but most are presumed to have fled. Their jobs were not held open for them and they would need to reapply for their positions if they returned. In the meantime, it is known that approximately 20-25 new veterinarians have entered the country as returnees. They are for the most part English speaking and were trained in Uganda and Kenya, and also Zaire and Burundi. Most desire to pursue their professional work as veterinarians, but few have so far sought jobs in the government service, reportedly because of the low pay. It is said that many are hoping for jobs with NGOs, donor agencies or are open to the idea of private practice.

The veterinary service delivery picture is further confused by the creation in government of the Ministry of Rehabilitation and Social Integration (MINIREISO) which happens to be headed by a veterinarian and appears to be taking the lead on some animal health and production related initiatives, particularly with regard to the Mutara situation. Coordination with MINAGRI appears not to consistently occurring. Lines of authority and responsibility will require clearer definition for ensure normalization of veterinary services and an efficient donor response.

Currently, there are approximately 110-120 NGOs working in Rwanda, about 80 registered and 30-40 unregistered. It appears that only a very few are involved directly with livestock projects in general, or animal health care delivery in particular. For example, World Concern has just had a veterinarian arrive in Rwanda to lead a small stock reintroduction program mostly in the south and west of the country. Lutheran World Federation has a plan to redistribute a few thousand cattle in Gitarama prefecture over the next 3 years. The Salvation Army has carried out an animal census in Gitarama. Swiss Aid and Accord have been involved in the distribution of animal medicines. To date, orchestration of NGO activities relative to animal health has been minimal.

The most active and well known NGO focusing on animal health is Action Nord Sud (ANS), mentioned earlier with regard to the CBPP vaccination campaign of late 1994. ANS works closely with government. The Director of the Rubilizi National Veterinary Laboratory, Dr. Sylvain Mbarubukeye, has been seconded to ANS and serves part time as the manager of ANS's veterinary program, coordinating activities with government as well as with external technical assistance agencies, most notably FAO. This situation currently makes ANS an important player in the overall policy and

delivery of animal health care in Rwanda.

At the time of this mission, Dr. Mbarubukeye described two main project activities The first is to refurbish and reequip the National Veterinary Laboratory. Though the buildings are largely intact, the contents were looted during the war. The immediate goal is to be able to perform complement fixation tests for CBPP within Rwanda instead of having to send samples to Europe. It is also desired to have the capacity to test for brucellosis. It is anticipated that the lab will be operational by December, 1995 as funds are presently available to proceed..

The second activity was the establishment of four sanitary control posts around the perimeter of Mutara to monitor and process livestock leaving the area for other parts of Rwanda. The proposed goals and activities of these checkposts are to Inspect all cattle for signs of disease; screen all cattle for CBPP using the Rapid Agglutination Test and pull a blood sample from positive cattle for subsequent confirmation by complement fixation; cull and slaughter all sick and test positive animals; and vaccinate all negative animals for CBPP and Rinderpest, and release them for movement. To date, only one control post is established and operational. It is south of Mutara in Kibungo prefecture at Rinkwavu. The site was visited by the mission. At the time of the visit the post had been open only 10 days. It was staffed by a veterinarian and a veterinary assistant who were present with a cooler containing CBPP and rinderpest vaccine as well as reagent for the Rapid Agglutination Test . Since establishment, about 400 cattle had been tested but none had been positive for CBPP, so the policy of culling and slaughter has not yet been tested. The value of offering additional services such as tick-dipping and deworming as an incentive for herders to pass through the control post was discussed.

As a result of the FAO mission of Drs. Roeder and Moran, in October, 1994, an ambitious technical assistance plan was developed for Rwanda which included the establishment of a Livestock Coordination and Planning Unit to assist the Ministry of Agriculture and Livestock Production to coordinate the activities of international agencies and NGOs, develop strategies for dealing with returnee cattle and rehabilitating the livestock industry, and addressing the environmental issues posed by returnee cattle. Additional proposed activities included the implementation of a nationwide vaccination program for CBPP and rinderpest and the development of strategies and infrastructure for national disease surveillance activity

Regrettably, FAO was unable to obtain funding for project implementation as originally proposed, but a much scaled down version was funded (OSRO/RWA/501/SWE). As a result, an expatriate veterinarian, Dr. Philippe Leperre arrived in Kigali in June of 1995 to serve as FAO's Livestock Management Specialist. However, his appointment is funded for only 4 months and he is scheduled to leave Kigali at the end of September.

During his short tenure he has been able to orchestrate a cattle census and disease

survey in Mutara, assist ANS and MINAGRI in the development of the cattle checkposts around Mutara, and organize a "livestock working group" in Kigali to help coordinate animal health activities between government, NGO's, technical advisers and donor agencies. Dr. Leperre also has developed a set of proposed action plans for future short and long term livestock activities including the following:

- A national livestock census and disease control program
- A rangeland rehabilitation and management program
- An emergency cattle test and slaughter program including the use of mobile abattoirs

These proposals have been submitted to government for approval and action, but at the time of this writing, no action has been taken. Dr. Leperre also proposed to assist some veterinarians to establish private practices in Ruhengeri, Mutara (Nyagatare or Muvumba), Rusungo and Kigali (Ngenda or Nyamata) by providing inputs of medicines and equipment purchased through FAO. At the time of this writing however, it appears that MINAGRI favors putting all of these inputs into Mutara only.
The future status of FAO's involvement in Rwanda vis a vis animal health and production is unknown. No successor to Dr. Leperre has been named and there is some speculation that the FAO office in Kigali may close in December, 1995

Similarly, Dr. J. Domenech of PARC Headquarters in Nairobi has formulated an action plan for Rwanda based on his consulting visits there, most recently in June of 1995 . The intention is that PARC would assist MINAGRI in the coordination of animal health activities through PARC-Rwanda with funds obtained from European Development Fund (EDF). The proposal has been submitted to EDF in Brussels, but at the time of this writing, no action for approval has yet been taken by EDF. The main points of the PARC proposal are as follows:

Short term PARC program for Rwanda

- Intensification of control of cattle movements from Mutara for other portions of Rwanda.
- Vaccination of the total national herd outside Mutara against CBPP and Rinderpest with ear tagging performed on vaccinated cattle..
- Intensification of sanitary surveillance and performance of a cattle census outside of Mutara.
- Reestablish the diagnostic capabilities at the National Veterinary Laboratory
- Follow the evolution of the situation in Mutara and initiate, at the earliest possible time, control of cattle movement through Rwanda particularly with regard to rinderpest.

Medium to long term PARC program for Rwanda

- A restocking program, in particular for the south and west of the country, with attention to replenishing small stock and to bringing in the desired types and appropriate breeds of cattle.
- Support farmers associations with rural credit, strengthening of community infrastructures and the acquisition of livestock materials and inputs, as well as with the training of community based animal health workers, genetic improvement of livestock and management of natural resources.
- Reinforce the government livestock services by strengthening the animal health component and promoting veterinary privatization especially with regard to distribution of medicines and animal production inputs.

Recommendations concerning Rwanda The FAO mission in November 1994 and the PARC mission in June 1995 draw similar pictures of the situation in Rwanda vis a vis animal health and production, and both missions make parallel recommendations concerning short and long term action plans. These recommendations are sound and supportable from a technical point of view with regard to improving disease control, promoting rational distribution of livestock in the country and reducing the threat of environmental degradation by cattle. However, both FAO and PARC, at the time of this writing have found it difficult to secure definite commitments for funding of their programs.

This inability to secure funding may represent caution on the part of donors who are concerned that the situation in Rwanda has not yet completely stabilized. The onset of forced repatriation of Hutu refugees from Zaire, the recent sacking of the Hutu Prime Minister and other high cabinet officials in the Rwandan government and the recent withdrawal of some UN aid workers from the Goma area due to insecurity concerns may all be contributing to a reluctance for donors to move forward on animal health and production programs at this time. In addition, the international community has expressed concern about the degradation of Akagera Park by the invasion of cattle and donors are likely unwilling to contribute funds to support animal health and production if funds are channeled to strengthening the position of livestock in the Park.

In the context of the present mission, the question becomes then, what actions can USAID/OFDA support, in the short term, which will contribute to food security and disaster avoidance in the context of animal health and production while the larger picture is sorted out? In this context, the following short term recommendations are made:

1. Undertake an economic analysis of the implications for converting Akagera National Park from a wildlife refuge to alternative uses and promote dialogue on the economic and social value of wildlife preservation . The invasion of Akagera Park by returning cattle may serve short term political goals, but may also have severe long term economic implications for the country. In order to open a meaningful dialogue with government on the future use of the park it will be necessary to generate economic

arguments substantiated by meaningful data in order to influence government to effect a long term policy that protects the park for tourism and wildlife. Arguments based solely on wildlife preservation are unlikely to be convincing. This need is urgent.

2. Promote the reintroduction of small stock to settled farmers to promote food security The sudden, large increase in cattle numbers which occurred over the past year will not necessarily contribute to long range food security. In fact it may have the opposite effect. The large cattle herds which have entered the northeast are destroying existing grazing grounds and are starting to encroach on tilled cropland, with potential harvest damage. Many of these cattle will die of starvation or disease before they can contribute to the food supply. At the same time, any settled farmers in other sections of the country are livestock deficient, as animals of all types were decimated during the fighting. These farmers need animals to supply manure fertilizer for crops and to provide dietary protein for a diet that is predominately starchy. The introduction of rapidly proliferating small stock such as chickens, rabbits and goats can address these needs in the short term while the cattle situation in the country normalizes.

3. Carry out a systematic nationwide livestock census and animal disease survey. Baseline information on animal populations and disease is urgently needed to rationalize animal health care delivery in the face of limited financial, human and technical resources. Such an epidemiologic survey would assist in the planning of vaccination campaigns and animal movement control and allow for medium and long range monitoring of changes in animal movements and animal disease patterns. Current veterinary interventions are being based on very limited scientific data from the field, calling into question the effectiveness and efficiency of these efforts. In conjunction with a field survey, there is a need to reestablish an appropriate repertoire of diagnostic test capabilities at the Rubilizi National Veterinary Laboratory. Both the FAO and PARC have expressed an intention to assist in this activity, so USAID/OFDA efforts would have to be carefully coordinated with these other initiatives.

4. Establish private veterinary practices The recent return of veterinarians to Rwanda who had no previous employment in government represents an opportunity to promote privatization of veterinary services while at the same time mobilizing trained staff to address the country's animal disease investigation and disease control requirements. Contract vaccination for CBPP, rinderpest and other important diseases could be a major initial activity of privatized vets with the dual purpose of giving them some initial financial security while also addressing the most immediate emergency animal health needs of the country. A privatization program would require close coordination with government and might also include a revision of the national laws relative to veterinary practice.

5. Coordinate animal health and production activities. If FAO ceases to function in Kigali, then some organization should be funded to take responsibility for carrying on

the meetings of the "livestock working group" to coordinate the activities of government, NGO's and donor agencies in livestock health and production. An immediate priority would be to fund and organize a nationwide vaccination campaign against CBPP and rinderpest. A technical coordinator, secretary and small office may need to be supported for this activity.

6. Support border harmonization efforts for animal disease control between Rwanda and its neighbors. As described in this report, there are numerous factors at work that could result in a renewed movement of Rwandan cattle, particularly from the Mutara region. This could involve a backflow of animals into Tanzania and especially Uganda, with serious implications for animal disease control. Some proactive efforts need to be made to ensure that proper communication, surveillance and action plans are in place to deal with such emergencies. This may involve the establishment and outfitting of border patrols, checkpoints and vaccination centers. The issue is discussed in more detail later in the report with regard to the situation in southwestern Uganda.

7. A compensation incentive program to destock the Mutara region. The current situation in Mutara may be untenable with regard to sustainable cattle grazing to provide a livelihood for Watutsi returnees. If no action is taken, two outcomes are likely: cattle will die and families will become insolvent, or families will move their cattle back to neighboring countries or into other parts of Rwanda. A program that gives just compensation to cattle owners presently in Mutara and Akagera Park would allow them the option to sell off cattle for slaughter before those cattle die and become worthless and would reduce the pressure on cattle owners to move their cattle back to neighboring countries or more densely settled areas of Rwanda. It would also reduce the pace of environmental degradation in Mutara and Akagera Park. At the same time it provides working capital to these returnees, which would allow them to integrate into more viable production systems appropriate to the constraints of Rwanda.

Part 3. Assessment of Cattle Movements in Uganda with Reference to the Implications for Spread of Animal Disease

The Situation in Southwestern Uganda

Background Beginning as early as February 1994, southwestern Uganda experienced a massive migration of cattle moving through the region as Rwandese exiles and returnees living in Uganda began to funnel back towards Rwanda with their cattle in response to the changing political situation in their native homeland. This cattle movement occurred more or less in two phases. First, there was a return of Rwandese temporarily living in refugee settlement camps such as Nakivale and Chaka II located in southwestern Uganda itself.. This occurred mostly from February through July of 1994. In August, after the RPF government was installed in Kigali, a second wave of movement occurred. These were Rwandese that had been living in Uganda for many years, sometimes their entire lives. Many traveled from as far north in Uganda as Luwero, Mukono, or even further inland. This wave of movement was most pronounced from July through December of 1994 and then started to diminish to a trickle by April of 1995. Most of these cattle were of the Ankole type.

Estimates of the number of cattle moving from Uganda into Rwanda vary considerably but the number seems certainly to have been of the magnitude of several hundred thousand head. Officials in many district of southwestern Uganda believe that the cattle numbers in their districts have dropped by 25 to 33% over the past 18 months. This change is reflected in increasing livestock and meat prices and has stimulated some changes in the normal channels of livestock movement to markets within the country. The Parliament in Uganda has just called for a nationwide livestock census in response to these recent developments to more accurately quantify the situation in Uganda.

Southwestern Uganda has well established patterns of livestock movement. Each DVO visited on the mission had a map posted in his office showing the cattle routes in his district . Essentially, there is a seasonal cattle movement within the region as pastoralists move their cattle in search for water and pastures during the dry seasons of January to March and again in June through August. Over the years the government has developed a system of water catchments, including valley dams and tanks, which serve to define the established seasonal movement routes. The trade routes are overlaid on the seasonal routes. Similarly, the unexpected migration of cattle to Rwanda essentially followed these established routes, but extended into Rwanda. The major routes of animal movement through southwest Uganda into Rwanda are shown in Annex 4.

The sudden movement of large numbers of animals presented considerable regulatory challenges to the Department of Veterinary Services in Uganda throughout 1994 and

into 1995. By September 1994, livestock movement through Masaka was so intense that it was not feasible to ask for permits for inter- or intra-district movements even though a quarantine related to CBPP had been in effect since 1990 and only movement to slaughter by lorry was officially permitted.

Conferences were held in Mbarara in November and December 1994 to address the issue of uncontrolled cattle movements in which representatives from all southwestern districts were present as well as officials from Rwanda and the Kagera region of Tanzania. At the meeting it was resolved that Rwandan returnees were free to return with their cattle but should first go to Rwanda, report their intended animal movement and obtain a no objection certificate to present to their local Ugandan or Tanzanian authorities. The livestock were then to be vaccinated for CBPP, RP and FMD after which the Commissioner of Veterinary Services would issue a movement permit along a specified route. It was also resolved that trekking animals on specified routes would pass through checkpoints and holding grounds to be constructed by Ugandan authorities to ensure that implementation was occurring. The content of these resolutions was disseminated to the people through the local government RC system.

It is difficult to assess the effectiveness of these resolutions. By January of 1995, the flow of animals to Rwanda had already begun to diminish apparently on its own. Very little compliance with the no objection certificate and travel permit requirements occurred, as evidenced by the small number of such documents on file at the Masaka DVO's office, the overall impact of the resolutions on cattle movement was likely negligible. The number of animals vaccinated specifically as a result of the resolutions is unknown. With regard to the construction of holding grounds and checkpoints, the mission visited one such site at Nakivale refugee settlement camp, where two vaccination crushes had only been recently constructed but not yet utilized.

These crushes were of some interest to the mission members as they contained several important design flaws. The sides were too far apart,did not slant inwards at the bottom, and, as a result, would easily allow cattle to turn around in the crush. The lowest horizontal bars were too high off the ground, likely allowing escape of young cattle, and metal bolts used to hold the horizontal bars to the vertical posts jutted inwards to the crush, likely to tear skin on the flanks of the cattle and injure their hocks during processing. Given these design flaws, it is unlikely that either cattle owners or vaccinators will be particularly motivated to use these crushes and the effectiveness of vaccination activities will therefore be diminished. These crushes should be replaced and an alternative design developed for this and other sites.

The present situation The mission visited District veterinary headquarters and staff in Masaka, Mbarara, Ntungamo, Kabale and Kisoro Districts and reviewed the events of the past 18 months with regard to the movement of cattle to Rwanda and the response of the veterinary staff. In addition, the mission traveled through these districts and visited several abattoirs, the refugee settlement camp at Nakivale and five

separate border crossings, including official crossings and informal crossings. No formal border crossing had a veterinary officer associated with it. No border officials interviewed had engaged in any attempt to formally quantify the number of animals that had passed through their posts to Rwanda over the past 18 months.

All officials reported that large scale movement of cattle from Uganda into Rwanda had ceased. Also there was no evidence at the present time that large numbers of cattle were returning from Rwanda into Uganda. However, at localized areas along the border where natural barriers are not present and where tribal and family connections exist across the national border, cross border movement for grazing is commonly occurring and it was anticipated that cross-border marriages were going to be common after the redistribution of Watutsi from Uganda, so cross border cattle movement related to bride price was almost certain to increase. This was particularly true in Kamwezi subcounty of Kabale district between the crossing at Katungu and moving northeasterly towards the border post at Mirama Hills in Ntungamo.

In addition, there were reports of an increased, unregulated trade in hides and skins coming from Rwanda into adjacent areas of Uganda. This increase in skins probably reflects an increase in mortality of cattle in the Mutara region of Rwanda due to lack of food and water and increased disease as discussed in Part 1 of this mission report.

Emergency preparedness and contingency planning All veterinary staff interviewed at district offices during this mission were well informed, articulate, and willing to speak freely about the cattle exodus to Rwanda that occurred in 1994-1995. They all took their professional responsibilities seriously. Yet, in general, they conceded that events had overwhelmed them with regard to the ability to proactively mount an appropriate response to this mass movement of cattle through their districts, and that the resolutions adopted at Mbarara were largely ineffective in controlling the movement of cattle or checking the likely risk of disease spread. Most DVO's did instigate vaccination activities in their districts in an effort to protect animals remaining behind from animals passing through. Yet again, the general impression was that too little was done too late.

In this regard, two scenarios were proposed to each DVO and they were asked to respond. The first was that the deprivations of disease and lack of food and water for cattle in the Mutara region of Rwanda would lead to a slow, steady rise in the rate of animals returning to Uganda from Rwanda, literally in search of greener pastures.. The second was that a renewal of hostilities in Rwanda could lead to a massive, sudden return of large numbers of cattle into Uganda to escape danger.

Though responses varied among individuals, the general pattern was first to deny that such things would happen. When pressed, they conceded that such scenarios were possible, but that animals would not be permitted to cross back into Uganda. When

pressed again on how the movement would be stopped, they conceded that they had no real plan, but would seek guidance from central authorities. The general impression of the mission was that the DVO's were not particularly familiar or comfortable with the concept of contingency planning despite the evidence that the movement of cattle into Rwanda earlier in the year had caught them by surprise and that the overall organized response was delayed and inadequate.

It is an undeniable fact of geography and history that Uganda sits in a turbulent region and that cross border movements of livestock are likely to occur again in the future, either from Rwanda, from Sudan, or elsewhere. The mission felt strongly that staff in the Department of Veterinary Services should be sensitized to the the concepts of emergancy preparedness and contingency planning and that such activities should be formalized within the Department to deal more effectively with animal emergencies both proactively and reactively..

Recommendations General recommendations to increase emergency preparedness relative to livestock emergencies in Uganda include the following.

- Establish an Emergency Preparedness and Coordination Unit within the Department of Veterinary Services at Entebbe and build appropriate linkages with other government units who are likely to be involved in animal emergencies such as customs, police, army, public health, etc. This unit would serve as a central coordination unit to orchestrate responses and allocate resources for national or regional livestock emergencies. Technical consultants specializing in emergency preparedness could be helpful in setting up this unit.
- Hold southwest regional meetings for district DVOs and their staff to discuss emergency preparedness and contingency planning for the region. Action plans for various emergency scenarios should be generated and assessments made for realistic manpower, equipment and infrastructure needs. Proactive (eg. regional vaccination campaigns) and reactive plans (eg. quarantine, test and slaughter actions) need to be considered and developed and costs assessed.
- Work through the local government (RC) system to mobilize communities and promote community education and sensitization to the dangers of unauthorized cattle and animal product movement. This program can be strengthened by development and wide distribution of posters and flip charts aimed at spreading the message of the dangers of unauthorized movement. Such materials could be developed by PARC-Uganda.
- Identify and establish regular contacts with appropriate local authorities across the borders of Rwanda, Tanzania and Zaire to discuss livestock movement issues of common concern and to coordinate animal disease control activities such as vaccination campaigns. Explore creative ways to share personnel and resources directed towards activities and policies that are mutually beneficial. Keep the lines of communication open even when no emergency exists.

The following recommendations are made with respect to the present situation in Rwanda, in which two possible adverse scenarios should be considered. First that the overstocking and overgrazing which is presently occurring in Mutara region of Rwanda will lead to a slow and steady return of cattle into southwestern Uganda as herders seek food and water resources for their needy cattle. Secondly, that renewed hostilities might occur and a sudden, large backflow of cattle deeper into Uganda could result.

- A holding and vaccination center should be established in Konge, Rwemiyaga county in Masaka district, as it is a major passage point for livestock moving to and from all districts north of Masaka district.
- A secondary vaccination center should be located at Katunku entry point for cattle moving to and from Mpigi district northeast of Masaka district.
- Nakivale refugee settlement camp, located in south central Mbarara district served as a major funnelling point for many of the cattle moving southward towards Rwanda. The 84 square mile camp area also serves as a grazing area for many local cattle from surrounding villages as well. Due to its critical location, the following interventions and regulatory activities should be established and maintained.

  1. A permanent veterinary staff officer should be stationed at the refugee camp headquarters at Kasojwa

  2. One major holding and vaccination center should be reestablished at Kahirimbi in the western portion of the refugee camp.

  3. Two minor vaccination centers to the south and east of Kasojwa should be established within Nakivale

  4. Valley dams should be established at each of the minor vaccination centers.

  5. The size of the camp may be reduced to facilitate livestock management if refugee activity is reduced.

- There is an urgent need to establish permanent veterinary activity along the Rwanda-Uganda border from Mirama Hills post in Ntungamo district all along to Kamwesi subcounty in Kabale district, as follows

  1. The Mirama Hills post should serve as a center for monitoring veterinary activity along the Ntungamo-Rwanda border.

  2.. The Katungu border post should serve as a center for Kamwezi-

Kabale region, for patrolling the border area north of the border post.

- Cyanika (Rwanda-Uganda) and Bunagana (Zaire-Uganda) border posts in Kisoro district need a regulatory veterinary presence to implement vaccination and recording of movement of livestock and livestock products. This is a timely consideration, as Kisoro town is about to receive electricity supply from Rwanda. This will undoubtedly increase Kisoro's importance as a center of commerce in the border region with Zaire and Rwanda with a resulting increase in movement of animals and animal products..
- Coordination and efficient execution of vaccination campaigns throughout the southwest of Uganda with an emphasis on creating buffers zones of protected animals by first concentrating vaccination efforts in border areas and along known trade routes. There should also be regular, coordinated follow up surveillance from Veterinary Headquarters in Entebbe to ensure the achievement of a high rate of vaccination efficacy against CBPP, rinderpest, and FMD in cattle and rabies in dogs and cats. Flexibility of manpower utilization and cooperation between district veterinary offices needs to be encouraged.
- Funding for any of the posts and facilities proposed above should be contingent on an agreement to staff such posts and facilities with private veterinarians under contract to the Department of Veterinary Services in order to promote productivity, responsiveness and accountability for veterinary emergency disease control and regulatory activities.

The Situation in Northeast Uganda

Background Northeastern Uganda is the home of the Karamojong people, a group of Nilo-Hamitic pastoralists related to the Turkana and Pokot of Kenya as well as other pastoralist groups in East Africa. The Karamoja region is a large open grassland punctuated by isolated mountains and extensive permanent and temporary swamps. The principal cultural and economic activities of the Karamojong center around cattle. The main activity is extensive grazing of large cattle herds, mixed with sheep and goats, moving seasonally within the region in search of suitable grazing and water. Another important feature of Karamojong culture is cattle raiding. The various Karamojong clans will steal cattle from each other and from neighboring tribes. Political boundaries have little meaning with regard to this activity and raiding excursions penetrate into neighboring Kenya as well as into other sections of Uganda.

This traditional raiding activity has become more serious and deadly in the modern age of automatic weapons and has given the Karamojong region a reputation for lawlessness and danger that is at least partially deserved. As a result, the region has remained remote and has lagged behind the rest of Uganda in terms of advancing economic development. Services are not as readily available or easily delivered. This is true also for veterinary services, which are especially difficult to deliver

because, as pastoralists and raiders, the Karamojong keep their cattle constantly moving in search of food and water and to improve security. As a result, Karamoja has remained an endemic region where important livestock diseases persist, notably CBPP and rinderpest. This situation is what has led PARC to undertake and promote the training of CAHWs to provide community based animal health care delivery in the region, including vaccination for rinderpest with heat stable vaccine.

In recent history, from 1986-1988, the Karamojong participated in a systematic seizure of cattle belong to the Teso people in areas to the south and west of Karamoja. This action was so thorough that virtually all cattle disappeared from what is now Soroti District. Though traditionally, these cattle would have been kept by the Karamojong themselves, in this instance, many of the cattle were sold and/or disseminated widely throughout Uganda, largely via two main routes. The first was from Soroti and Kumi through Pallisa and Kamuli to Luwero and Mubende, and sometimes onward to Rwanda. The second, more northerly, route was from Soroti to Lira to Apac and then on to Masindi and Kiboga where the more traditional cattle routes in the southwest were joined. These routes are shown in Annex 5.

As a result of this extensive movement of cattle from the northeast, the disease, CBPP, which had been confined to Karamoja for decades, became widespread throughout the country and has become a significant national animal disease problem. Livestock markets have been shut down and quarantines put in place in parts of the country since 1990 as a result of the CBPP problem. The PARC program, originally intended to address the issue of rinderpest, has subsequently included CBPP vaccination in its Uganda activities along with rinderpest vaccination, underscoring the gravity of the CBPP problem.

The present situation. The history of cattle movement from the northeast to the southwest relative to the spread of CBPP is presented in order to demonstrate that such movements, and a related spread of disease, have occurred in the past and can occur again. This mission found no hard evidence to confirm that during the last turbulent 18 months in Rwanda, cattle found their way from Karamoja to Rwanda, but the possibility that this occurred is not unlikely. More importantly, the possibility continues to exist for the following reasons.

1. The sudden transfer of cattle from Uganda to Rwanda in 1994-1995 reduced cattle numbers in Uganda and raised meat prices throughout the country. Cattle traders interviewed during the mission at abattoirs in Moroto and Soroti Districts indicated that the price of meat was high enough in Kampala to justify the transport costs of moving cattle by lorry from Moroto to Kampala or by foot as far as Soroti, Tororo or Mbale. Whereas, cattle are officially permitted to move to slaughter only, some unofficial trade in live cattle at disembarkation sites can and does occur. Once animal reach Kampala or other cities to the southwest, entry into the known southwestern cattle trade routes that funnel towards Rwanda would not be difficult.

2. Official programs to restock the Teso region with cattle have been initiated and are underway. It was announced on 5 September 1995 by the Chair of the Presidential Commission for Teso that henceforth cattle traders were authorized to buy cattle from Karamoja for restocking of Teso. This has several very important implications because it will

- accelerate the introduction of Karamojong cattle into the Teso region
- eliminate the de facto sanitary cordon buffer zone which has existed between Karamoja and the rest of the country as a result of the cattle depopulation of the Teso region in the 1980s
- increase the risk that rinderpest, which still exists in Karamoja and in the neighboring Turkana region of Kenya, might spread from Karamoja to other areas of Uganda, and even neighboring Rwanda.

A PARC mission to Turkana in September of 1995 confirmed the presence of rinderpest in the area and suggested the need to train CAHWs and extend community based vaccination programs into Turkana. Cattle raiding between the Turkana and Karamojong essentially ensure that as long as rinderpest continues to occur in one groups' cattle, the potential exists for it to occur in the other groups' cattle as well.

3. As described in Part 1 of this report, many of the Watutsi cattle which were moved to northern Rwanda from Uganda during the returnee migration of 1994-1995 have died from disease and lack of food and water since their return. As many of these Watutsi returnees continue to have family members and other cattle in Uganda, there could be, in the near future, another wave of cattle moving into Rwanda from Uganda to replace those that have died.

4. Similarly, the original cattle population of Rwanda was decimated during the fighting in 1994 and there is a deficiency of and demand for crossbred cattle in Rwanda. This demand is likely to increase cattle prices in neighboring Uganda and provide significant incentives for increased cattle trade to the south.

Recommendations The mission feels strongly that the livestock situations in Rwanda, southwestern Uganda and northeastern Uganda must be considered in a regional context and not as isolated situations. With regard to rinderpest control, Karamoja, and neighboring Turkana, must continue to be considered as foci of the disease with the potential to radiate outward through the region. Political events and associated economic changes have already, and are likely to continue to stimulate new waves of cattle movements across Uganda and are likely as not to involve cattle that originate in Karamoja.

Therefore it is imperative that the goal of achieving 90+% vaccination coverage of cattle in Karamoja be realized at the earliest possible moment, as controlling cattle movement out of the region will be considerably more difficult than vaccinating animals

while they still remain within the region. In this regard, the following recommendations are made

:

- No cattle be permitted to move from Karamoja to Teso unless they bear the official ear marking indicating that they have been vaccinated for rinderpest (and CBPP)
- PARC Uganda must commit itself to the efficient, reliable procurement, distribution, and maintenance of adequate supplies of heat stable rinderpest vaccine.
- The CAHW program in Karamoja must be strengthened and expanded to achieve total vaccination coverage for the region.
- Similar CAHW programs need to be established in the neighboring Turkana region of Kenya

Annexes

Annex 1

Training Program

Sept 2nd:

Arrival of participants, registration and collection of fees.

Sept 3rd:

8:00 AM	What is a Community Animal Health Worker (CAHW) and what is the CAHW Program
10:00 AM	Tea Break
10:30 AM	Course Objectives
12:00 AM	Normal and Abnormal Clinical Signs
1:00 PM	Lunch
2:00 PM	Post Mortem of a Normal Goat: Anatomy and Physiology
4:30 PM	Discussion: CAHW Association
5:30 PM	Closing

Sept 4th:

8:00 AM	History Taking and Clinical Exam
9:30 AM	Causes of Disease: Microbes and Pathogens
11:00 AM	Disease Transmission and Vectors
12:00 AM	Rinderpest and Other Viral Diseases
2:00 PM	Prevention vs. Treatment
3:30 PM	Introduction to Medicines and Vaccines: Theory, Classes and Reading Labels
4:30 PM	Discussions: Objectives of CAHW Association
5:30 PM	Close

Sept 5th:

7:30 AM	Tick Borne Disease: ECF and Anaplasmosis
9:00 AM	CBPP and Other Bacterial Diseases
11:00 AM	Principles of Cost Recovery:' The Community Contract"
11:30 AM	Role Playing: 'The Victim of Credit'
2:00 PM	Medicines and Vaccines: Practical Applications, Dosage and Cost
4:30 PM	Dinner Break
7:30 PM	Tick Borne Disease: Babesia and Heart Water
8:30 PM	Close

Sept 6th:

7:30 AM	Helminths and Flukes
9:00 AM	Tapeworm Disease and Tick Borne Disease: A Case for Prevention
9:30 AM	Role Playing: 'The Clever Farmer'
10:00 AM	How to Handle Request for Credit: Firm, Fair, Patient and Respectful
11:00 AM	Classroom Practical: Routes of Administration
2:00 PM	Classroom Practical: Preparation and Handling of Vaccines
4:30 PM	Close

Sept 7th:

8:00 AM	Field Practical: Herd Evaluation, Treatment and Vaccination
2:00 PM	Discussion of Field Practical
3:00 PM	Discussion of Monitoring and Follow-Up Needs: Participatory Formulation of Monitoring Program
5:00 PM	Close

Sept 8th:

8:00 AM	Field Practical: Field Vaccination
2:00 PM	Preparations for Closing
3:00 PM	Formation of CAHW Association: Election of Officers and Advisors
4:00 PM	Discussion of Kit Contents
5:00 PM	Closing: Presentation of Kits and Bicycles
6:00 PM	Closing Supper

Sept 9th:

Transportation of participants to Nabilatuk.

Annex 2

Course Participants

Name	Home	County	Status
Mathew Longoli	Lopei	Bokora	new
Martin Losiko	Rupa	Matheniko	new
Maxon Achia	Lolachat	Pian	new
John Korobe	Losimit	Pian	new
Mark Lokut	Nabilatuk	Pian	new
Daniel Merimoe	Rupa	Matheniko	old (bike)
Peter Longoli	Kongoli	Bokora	old (bike)
Joachim Loduk	Nabilatuk	Pian	old (bike)
Zerubabal Korobe	Namalu	Chekwi	old
Tom Olaka	Namalu	Chekwi	old
Samuel Abura	Nabilatuk	Pian	old (bike)
Micheal Onyang	Nabilatuk	Pian	old
Richard Nguli	Lorengdwat	Pian	old (bike)

Of the three CAHWs who did not receive bicycles, the sixth bicycle is reserved for Tom Olaka. The cost recovery funds from the purchase of the bicycles will be used to purchase the two remaining bicycles prior to the first monitoring mission by Dr. Eyudu in October.

Annex 3

Contents of the CAHW Kits

1 Canvas Back Pack
1 Europlex Plexiglass Vaccination Syringe (50ml)
1 Bottle Silicon Oil
1 Europlex Dosing Syringe (20ml)
1 Europlex Drenching Tip
1 Dozen 14 x O.5 Vaccination Needles
1 Dozen 18 x 1.5 IM Needles
1 Kruuze Cloverleaf Ear Marker
1 Vaccine Mixing Bottle
1 Sample Bottle

1 500ml Adamycin 10% (oxytetracycline)
1 1kg Py-Grease
2 180 ml Valbazen
10 Sachets Veriben
3 Tubes Tetracycline Eye Ointment
1 Liter Distilled Water
1 Sachet of 9 gms NaCl

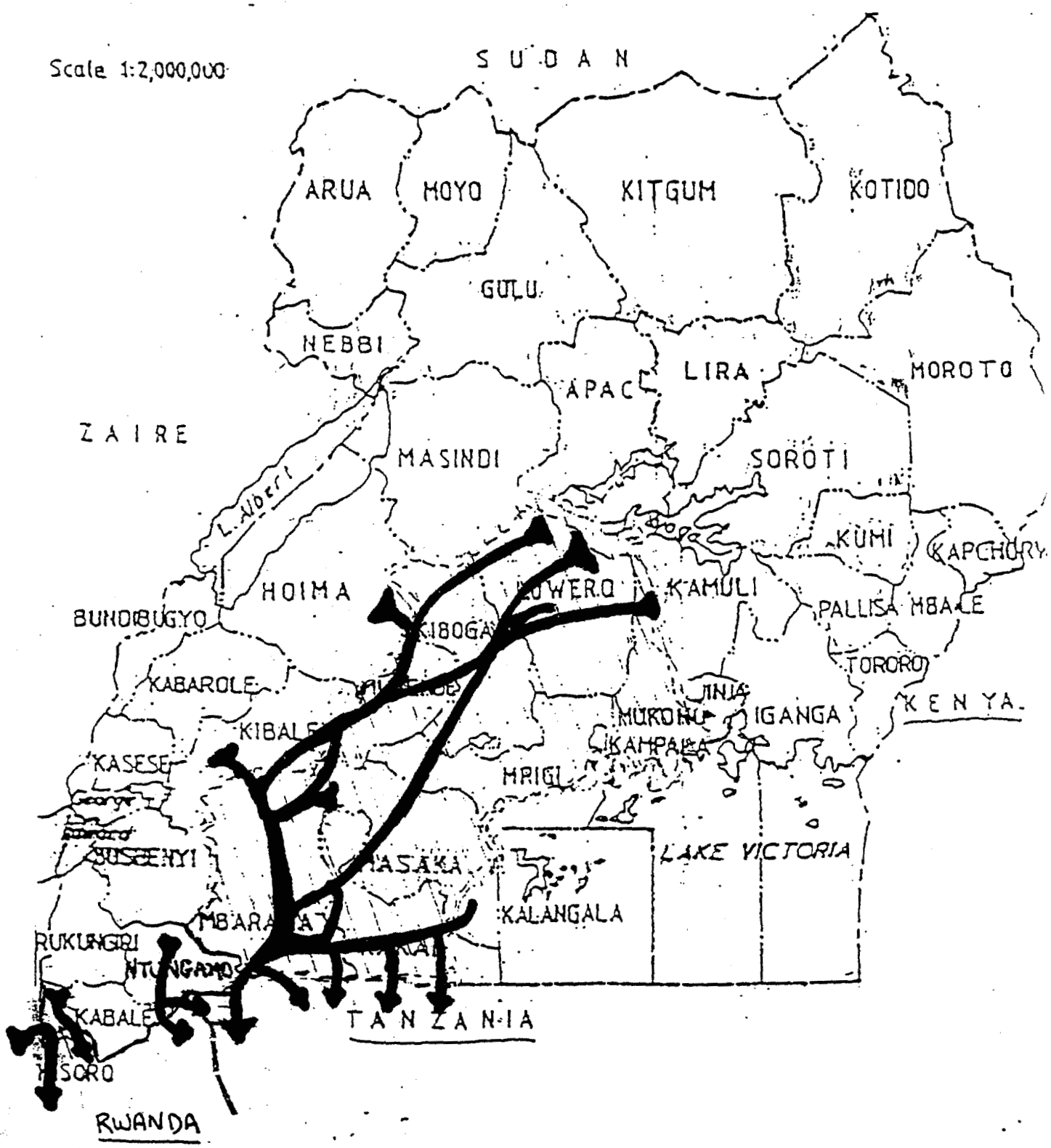
Replacement Prices (10% of Cost)

Item:	UGX
Vaccination Syringe	3000
Dosing Syringe	1500
Drenching Tip	1000
Ear Marker	3000
Needles (dozen)	100

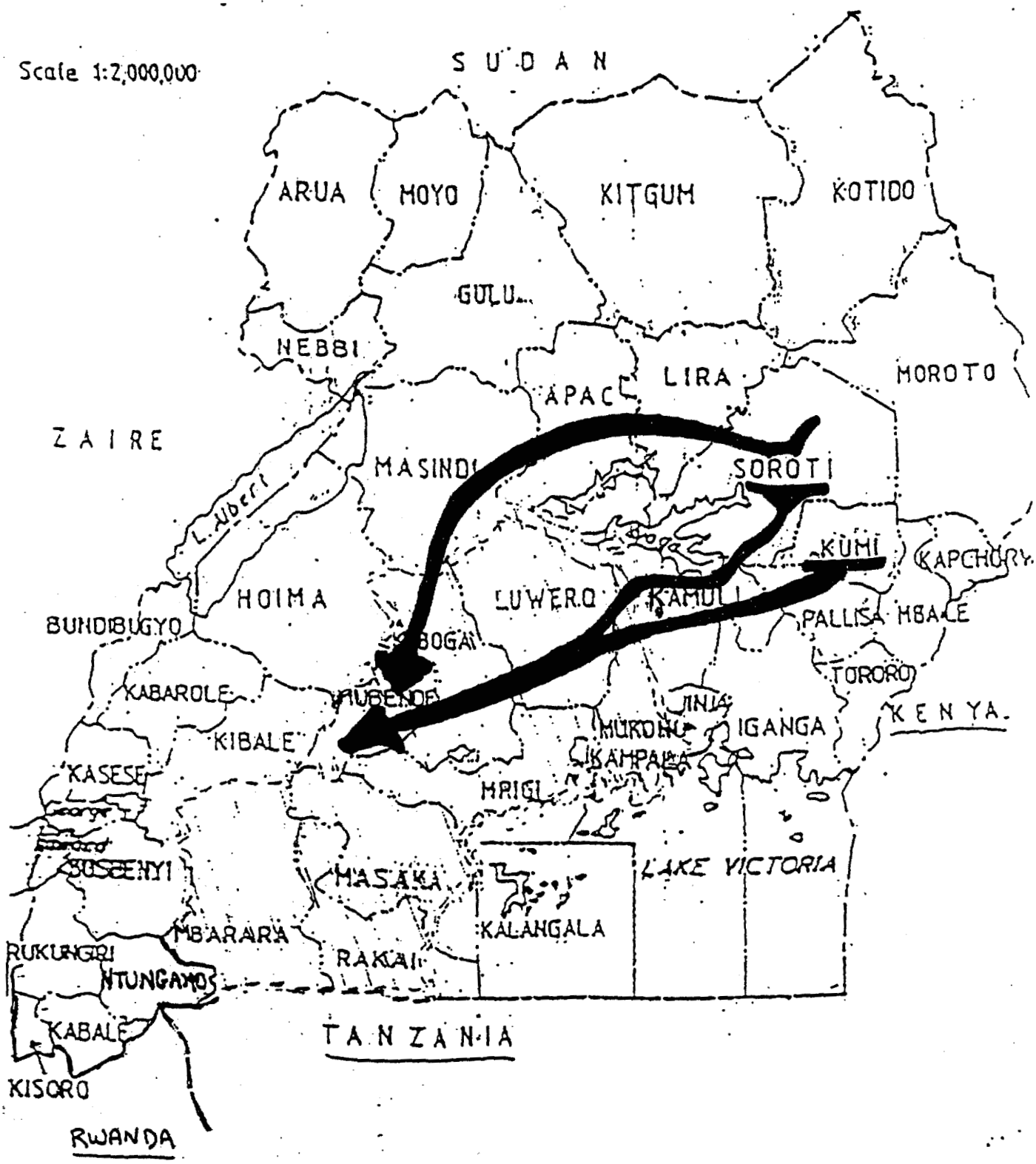
Limit of 1 per CAHW for equipment other than needles

Richard purchased both syringes
Peter purchased both syringes
Tom purchased a dosing syringe
Zerubabal purchased a dosing syringe

Annex 4. Map of Known Major Routes of Cattle Movement Through Southwestern Uganda for Cattle Returning to Rwanda 1994-1995



Annex 5. Map of Known Major Routes of Cattle Movement Across Uganda Associated with the Teso Cattle Depopulation, 1986-1988.



Annex 6. Combined Itinerary and Timetable for Dr. David M. Sherman and Dr. Jeffrey C. Mariner

July 28-August 24, 1995

28 July	Air travel Boston to Amsterdam.
29 July	Meet Mr. Rob de Rag, President, RDP Livestock Services at Amsterdam Airport. Air travel Amsterdam to Nairobi. Arrive Nairobi
30 July	Nairobi. Plan and discuss overall project itinerary with co-consultant, Dr. Jeff Mariner
31 July	Nairobi. Meet Dr. Ludo Pinkers, Veterinaires sans Frontieres, Belgium to discuss animal health care delivery collaborations in Turkana District of Kenya.. Meet with Dr. Tim Leyland, TUSVM/UNICEF/OLS to discuss southern Sudan operation.
1 August	Nairobi. Meet Dr. Walter Masiga, Director, PARC, for overall briefing and logistical planning for consultancy
2 August	Nairobi. Second Meeting with Tim Leyland. Arrange transport for road trip to Karamojong.
3 August	Nairobi. Meet with Larry Meserve and David Songer of USAID/REDSO. Meet with Paulette Nichols, UNICEF/OLS
4 August	Nairobi. Second meeting with Ludo Pinkers to discuss Turkana collaboration. Meet with Dr. Florence Morin, Veterianaire sans Frontieres, Switzerland, to discuss Rwanda livestock situation.
5 August	Nairobi. Trip preparation and purchase of supplies
6 August	Nairobi. Trip preparation
7 August	Nairobi. Meet with Dr. Jimmy Thompson, PARC Headquarters

8 August	Nairobi. Final purchase of supplies and trip preparation. Joined in Nairobi by Manassas Maura, driver/logistician for Karamoja trip.
9 August	Leave Nairobi. Travel by road to Kampala crossing at Malaba.. Arrive evening. Night in Kampala.
10 August	Leave Kampala. Travel by road to Entebbe. Meet Dr. Ociba, Commissioner of Veterinary Services, MAAIF, GOU, and other officials of the Veterinary Department to brief on the mission. Night in Entebbe.
11 August	Entebbe. Additional meetings with Veterinary Services staff including a second meeting with the Commissioner. Also, briefing with Mr. John Mugwera, Communications Officer, PARC Uganda who was to accompany us on the trip to Karamoja. Return to Kampala. Meet with Mr. James Dunn, Agricultural Development Officer, USAID Mission-Uganda. Night in Kampala
12 August	Leave Kampala. Travel by road to Mbale. Meeting with Ms Hedwig Bruggeman, Consultant, RDP Livestock Services about cattle restocking efforts in Soroti District. Continue by road to Soroti. Interview Soroti District Veterinary Office staff about restocking activities and purchases of cattle from Karamoja. Night in Soroti.
13 August	Leave Soroti. Continue by road to Moroto. Meet Mr. Timothy Osire, Moroto District CAHW Program Coordinator. Night in Moroto.
14 August	Start in Moroto. Continue discussion with Mr. Timothy Osire. Meeting with DVO Moroto, Dr. Okwe. Travel to Kotido. Meeting with Terrance Okoth, Kotido District CAHW Program Coordinator. Travel to Kaabong, meeting with Oxfam UK Paravet Project Managers, Dr. Sam Gonda and Mr. Anthony Burdon. Return to Kotido. Night in Kotido

15 August	Kotido. Continue discussions with Mr. Terrance Okoth. Meeting with Mr. Michael Ouma, the D/DES Kotido. Return by road to Moroto. Meeting with Mr. Rinus van der Horst, Church of Uganda Project Officer, Karamoja. Discuss NGO involvement in CAHW Program. Night in Moroto.
16 August	Moroto. Held community meeting for Rupa area of Moroto to discuss community.support of their CAHW. Met with Mr. Eric Read and Mr. Roy Calvocoressi of the NGO, Christian International Peace Service (CHIPS) to discuss NGO involvement in the CAHW Program. Met with the RC5 for Moroto, Mr. Michael Lokawa Lote. Night in Moroto
17 August	Travel by road to Niablatuk accompanied by Dr. Patrick Eyudu, VO for Pian County. Meet with subcounty Chief, RC5 and other officials to seek information about cattle camp leaders. Meeting with one of Pian county CAHWs, Loduk to discuss his work and problems. Night in Niablatuk.
18 August	Niablatuk. Meet with second Pian CAHW, Abura to discuss his work. Met principal leader, Lopusko, of Sakale cattle camps (alomar). Discussed issues of community support and requested a larger meeting. Night in Niablatuk
19 August	Niablatuk. Travel 12 km out of Niablatuk to cattle camp to meet young herders (ikarachuna age set) of Sakale camp. Then travel to Napak Nabwal to meet young herders of that alomar. Night in Niablatuk
20 August	Niablatuk. Hold larger community meeting for Sakale elders to reach agreement on CAHW support. Travel to Namalu. Night in Namalu.
21 August	Namalu. Lookied for Namalu CAHW, Tom who was not available. Interviewed his father, Mr. Filipo Ichumar, a wealthy farmer and former RC leader. Toured the SVI animal draught project facility. Returned to Moroto with a brief stop in Niablatuk.

	Night in Moroto.
22 August	Moroto. Met again with expanded group of Rupa elders and reached agreement on terms of community support for their CAHW, Daniel. Meeting with Moroto DVO, Dr. Okwe to report on progress with communities on CAHW support and to request appointment of Dr. Eyudu as CAHW Coordinator for Moroto District. Meet again with Rinus van der Horst to discuss Church of Uganda involvement in CAHW project. Night in Moroto.
23 August	Leave Moroto. Stop in Kangole to interview local authorities about livestock movements in and out of weekly market held there. Stop at Apetolim and Kapelebyong to view CHIPS operations and discuss their involvement in the CAHW project. Travel onward to Soroti. Night in Soroti
24 August	Visit Soroti abattoir to find out about cattle movements. Travel to Mbale. Visit Mbale abattoir to find out about cattle movements. Travel to Kampala. Night in Kampala
25 August	Day trip to Entebbe to report to Commissioner of Veterinary Services on the findings in Karamoja and to plan remainder of mission. Return to Kampala. Buy additional equipment and supplies for CAHW training. Night in Kampala.
26 August	Kampala. Meeting with Dr. Opuda Asibo, Makerere University to discuss animal movement and disease situation in Uganda. Preparation of a project proposal for CHIPS involvement in CAHW program.
27 August	Kampala. Correspondence and report writing. Dr. Mariner returns to Karamoja for additional CAHW training activities.

Separate Itinerary and Timetable for Dr. David M. Sherman

August 28 to September 19, 1995

28 August	Return to Entebbe with Dr. Opuda Asibo to finalize plans for later road trip from Kampala to Rwanda border to assess cattle movement and disease risk situation. Night in Kampala
29 August	Travel to Entebbe. Meet with Dr. Katawera of Veterinary Department for briefing on road trip to Rwanda border. Fly to Kigali, Rwanda. Night in Kigali
30 August	Kigali. Meeting with Mr. John Cosgrove, Country Director, Lutheran World Federation. Meeting with Dr. Sylvan Mbarubukeye, Director of National Veterinary Laboratory and Veterinary Project Coordinator for Action Nord Sud, an NGO active in animal health. Meeting with Mr. Bud Shanks of USAID/OFDA and Dr. Philippe Leperre, FAO. Night in Kigali
31 August	Kigali. Travel by road to Rinkwavu, Kibungo Prefecture to view cattle control post established by FAO and Action Nord Sud. Return to Kigali. Second meeting with Dr. Phillipe Leperre followed by a second meeting with Bud Shanks. Night in Kigali
1 Sept	Leave Kigali. Fly back to Entebbe. Meet Dr. Michael Moran, Chief Technical Advisor, FAO Integrated Tick and Tick-borne Disease Control Project, Entebbe. Travel by road to Kampala. Meeting with Mr. Gregory Farino, USAID Mission - Uganda to discuss CHIPS proposal. Night in Kampala
2 Sept	Kampala. Report preparation.
3 Sept	Kampala. Preparation for road trip through southwest Uganda to Rwanda border with Dr.

	Stephen Ngobi-Katawera, Assistant Commissioner, Division of Public Health and Marketing, Department of Veterinary Services, Ministry of Agriculture, Animal Industry and Fisheries, Government of Uganda, and Dr. John Opuda-Asibo, Head, Department of Veterinary Public Health and Preventive Medicine, Makerere University, Kampala, Uganda.
4 Sept	Leave Kampala for Masaka. Meet with DVO, Masaka, Dr. Paul Kanonye . Travel onward to Mbarara, Meet Acting DVO, Dr. Gasasira. Night in Mbarara.
5 Sept	Mbarara Joined in morning by DVO, Ntungamo District, Dr. Bernard Niwagaba. Travel to Nakivale refugee camp and livestock holding ground in Mbarara District . Visit Kikagati (Tanzania-Uganda) border post in Mbarara District. Leave Mbarara District for Ntungamo District. Visit Mirama Hills (Rwanda-Uganda) border post in Ntungamo District on Mavumba River. Discussion with Customs Officer, Mr. Asiimwe. Night in Ntungamo.
6 Sept	Ntungamo. Discussions with DVO, Ntungamo. Meeting with Central Government Representative (CGR). Leave for Kabale District. Meet Animal Health Officer for Kamwezi subcounty, Mr. Shad Kwarekaunde. Visit several sites along Rwanda-Uganda border in Kamwezi subcounty including the border post at Katungu. Also visit border post at Katuna. Night in Kabale.
7 Sept	Leave Kabale for Kisoro. Meet Deputy DVO, Mr. Busanga, in Kisoro town. Visit Cyanika (Rwanda-Uganda) border post. Leave Kabale for return to Mbarara. Night in Mbarara.
8 Sept	Mbarara. Meet to review findings of mission. Leave for Kampala with brief stop in Masaka to revisit the Masaka DVO. Arrive Kampala.
9 Sept	Kampala. Follow up discussions with Dr. Opuda

	Asibo. Leave Kampala for Nairobi by air. Arrive Nairobi.
10 Sept	Nairobi. Meeting with Dr. J. Domenech, PARC. Nairobi, about Rwanda situation. Dr. Jeff Mariner returns to Nairobi in evening
11 Sept	Nairobi. Discussions and follow up on Karamoja training activities with Dr. Mariner.
12 Sept	Nairobi. Report preparation and bookkeeping activities
13 Sept	Nairobi. Report preparation.
14 Sept	Nairobi. Report preparation
15 Sept	Nairobi. Final report duplication and distribution.
16 Sept	Nairobi. Personal day
17 Sept	Nairobi. Personal day
18 Sept	Nairobi. Debriefing of PARC Coordination Unit staff about mission
19 Sept	Nairobi. Debriefing of USAID/OFDA staff about mission

Separate Itinerary and Timetable for Dr. Jeffrey C. Mariner

August 27 to September 16, 1995

27 August	Travel Kampala - Moroto with rendezvous in Mbale to pick up vaccine.
28 August	Off load bicycles and vaccine. Discovered CBPP vaccine sent in error. Morning spent establishing radio communication with Lokiochokio. Reported to DVO. Afternoon interview with three CAHWs at Matany. Training course agenda prepared.
29 August	Meeting with DVO, Rinus van der Horst (Church of Uganda), and Dr. Eyudu to discuss training program. Meeting with Martin CAHW candidate from Rupa. Community meeting at Lopei grazing area. Visit to Matany to sell medicines to CAHWs. Afternoon meeting with Peter, CAHW at Kongole.
30 August	Community meeting at Lorengdwat. Travel to Nabilatuk. Visit to Lopeduru to meet CAHW candidates. Mark Lokut selected
31 August	Community meeting at Lokutot dam south of Sakale. Maxion Achia proposed. Meeting with Maxion and elders of his settlement. Travel to Namalu. Meeting with Tom Olaka and Zerubabal Korobe, CAHWs.
1 Sept	Community meeting at Loreng with elders and CAHWs. Return to Lopeduru. John Korobe proposed by Losimit parish. Candidate interviewed. Return to Moroto.
2 Sept	Moroto. Day spent preparing course notes. Afternoon meeting with DVO. Evening participants arrive.
3-8 Sept	Moroto. Presentation of training course.
9 Sept	Moroto. Discussions with CAHWs individually and in small groups. Final meeting and handing over of CAHW pharmacy, accounting system and fuel allowances with Mr. van der Horst and Dr. Eyudu. Travel to Soroti.
10 Sept	Travel Soroti - Nairobi.
11-16 Sept	Nairobi. Report preparation