8. SUMMARY

Trypanosomosis is among the most devastating diseases in sub-Saharan Africa and according to FAO it is at the root of poverty, while the tsetse fly is considered to be one of the most serious pest problems in the world today. African Animal Trypanosomosis (AAT) has a severe impact on African agriculture. To control AAT multiple strategies are available including keeping naturally resistant cattle and vector control, but the most commonly used strategy is no doubt the use of trypanocidal drugs. However, resistance to trypanocidal drugs is rapidly emerging and has been reported in many countries in Africa.

A study was carried out on the Adamaoua Plateau Cameroon: firstly, to assess the trypanosomosis risk using the combination of entomological, parasitological and serological methods; secondly to determine the tsetse distribution using traps and fly rounds; thirdly, to assess the prevalence of trypanocidal drug resistance in the study area.

To assess the trypanosomosis risk a longitudinal survey of trypanosomosis in 9 sentinel herds was carried out in the 3 study zones, i.e. the plateau, the buffer zone and the valley. A sero-conversion study was also carried out in cattle during transhumance in the valley.
To determine the tsetse distribution an entomological survey was organised over a period of one year along 4 transects traversing the 3 zones of the study area using tsetse traps as well as a longitudinal survey using fly rounds along two transects in the tsetse infested valley.
To assess trypanocidal drug resistance a questionnaire survey was carried out on knowledge, attitude and practice of trypanosomosis management in the study area. Furthermore, a field test was done in two cattle herds to assess the presence of drug resistant trypanosomes and a study of the prevalence of drug resistance in trypanosome isolates of the Adamaoua using the standard test in mice.
We found that the trypanosomosis risk on the plateau was significantly lower than in the buffer zone and the valley. This may be explained by the regular insecticide treatment of the cattle herds in the buffer zone which is probably contributing to prevent reinvasion of the plateau by tsetse flies.
Entomological surveys have demonstrated the presence of *G .m. submorsitans* and *G. tachinoides* in the buffer zone and in the valley whereas no tsetse flies could be captured on the plateau. The distribution of tsetse in the valley undergoes substantial seasonal changes depending on the presence or absence of cattle. In the presence of cattle (dry season) large

areas are reinvaded. In the absence of cattle, tsetse distribution is confined to areas where game is present.

We have shown for the first time the presence of trypanosomes resistant to isometamidium and diminazene in Cameroon using various techniques (field trial, mouse test). An alarmingly high prevalence of trypanocidal drug resistance was found in the study area.

The data collected during this study allowed to formulate recommendations for the sustainable control of African Animal Trypanosomiasis in the Adamaoua region.