

## 7. CONCLUSIONS AND RECOMMENDATIONS

The combined use of entomological, parasitological and serological methods to assess the trypanosomosis risk in the 3 study zones (buffer zone, plateau and valley) of the Adamaoua region has clearly shown that there is significantly lower risk of infection on the plateau than in the buffer zone and the valley. This indicates that the accrued results of the tsetse eradication campaigns carried out in the early 1990 are still relevant.

Entomological surveys have demonstrated the presence of *Glossina m. submorsitans* and *G. tachinoides* in the buffer zone and in the valley. Although the incidence of bovine trypanosomosis in the plateau varied from 0 to 2.1%, nevertheless the tsetse flies could not be captured in the plateau. In the valley, the index of apparent abundance of tsetse flies was substantially higher in the areas close to the game reserves than in the transhumance area;

In the transhumance area of the valley, the abundance of tsetse seemed to be associated with the presence of cattle with the highest index of apparent abundance recorded during the dry season when cattle were present and the lowest during the rainy season when cattle had moved into the plateau.

For the first time the presence of trypanosomes resistant to isometamidium and diminazene has been shown in Cameroon. This has been done using two different techniques: a field test, (Isometamidium-block treatment) and the standard mouse test.

A survey to assess the prevalence of drug resistant trypanosome populations in cattle of the Faro and Deo Division showed that 76.4% of the examined *T. congolense* and *T. brucei* isolates were resistant to diminazene. The prevalence of isometamidium resistant *T. congolense* and *T. brucei* was 84.2%. Resistance to both trypanocidal drugs is thus widespread in the study area.

These field studies undertaken in Faro and Deo Division of the Adamaoua Plateau have provided valuable baseline information on the trypanosomosis risk, tsetse distribution and the widespread presence of trypanocidal drug resistance. This information has important implications for managing tsetse and trypanosomosis risk in the area. The following recommendations can therefore be made:

- A regular insecticide treatment of all cattle herds in the buffer zone should be continued because this action is contributing to prevent reinvasion of the plateau.

- The compulsory insecticide treatment scheme at the moment of transhumance (which was initiated by the Government already long time ago) should be continued.
- Educational sensitisation campaigns should be organised to stimulate livestock keepers to improve their tsetse control activities, to minimize trypanocidal drug use and to apply correct dosages of trypanocides or seek appropriate professional veterinary services.
- Usage of trypanocidal drugs in the plateau and in the buffer zone should be reduced as much as possible by avoiding mass treatments during departures and returns of transhumance and by limiting treatments to animals which really need it (PCV<20).
- The quality of generic trypanocides available in the Adamaoua should be controlled by the government. It is well known that sub-standard drugs which contain too low concentrations of active principles contribute substantially to the development of drug resistance.

Further research should be carried out on the following topics:

- Examine whether multiple drug resistance is present at the level of the cloned individual trypanosome.
- Study the mechanisms of drugs resistance *T. congolense* isolates.
- A list of the potential hosts of tsetse in the Adamaoua is not available. Hence, the actual distribution of game animals is not clear and should be established because, during the rainy season host free area seems to constitute a barrier to massive invasion of the plateau.