

1. INTRODUCTION

About 80 % of the population in Cameroon is rural and depends on agriculture and livestock. The national herd is composed of 5.9 million cattle, 2.6 million sheep, 2.9 million goats and 0.6 million pigs (FAOSTAT, 2004). African Animal Trypanosomosis (AAT) is one of the major constraints for the development of the cattle sector in Cameroon, because 2/3 of the territory and 90 % of the cattle herd is at risk of infection with trypanosomes (Hamadama, 2001). Particularly the Adamaoua province (central part of Cameroon), which is the most important cattle rearing region of the country, is threatened by tsetse and trypanosomosis. Trypanosome infection in susceptible breeds of cattle reduces the calving rate by 11 to 20 % and the milk off-take up to 40 %, increases calf mortality by 10 to 20 %, reduces the off-take at herd level by about 30 % and reduces the work capacity of draught oxen up to 33 % (Swallow, 2000). The economic losses due to animal trypanosomosis in sub-Saharan Africa in total are estimated at 4.75 billion USD per year (DFID, 2002).

Livestock is very important for the rural economy of the Adamaoua. Most livestock belong to small and medium-size farmers and sometimes even to landless rural people. Livestock is particularly important for small farmers because often the greater part of their income is derived from the sale of animal products rather than from crops.

At present 1/3 of the cattle population of Cameroon is kept on the Adamaoua plateau (FAOSTAT, 2004). The environment is very suitable for intensive cattle rearing and the region supplies meat not only to Cameroon but also to the neighboring countries such as the Federal Republic of Nigeria, Republic of Gabon, Republic of Congo and Democratic Republic of Congo. Tsetse flies (*Glossina morsitans submorsitans*, *G. fuscipes fuscipes* and *G. tachinoides*) and therefore consequently trypanosomosis appeared on the Adamaoua plateau in the 1950s (Banser, 1979; Hurault, 1993). Between 1960 and 1975 the Cameroonian Government organised large-scale trypanocidal treatment campaigns. Later tsetse control activities were started. Firstly, ground spraying campaigns using DDT were organised and in the early 1990s several aerial spraying campaigns were carried out (Cuisance and Boutrais, 1995). To prevent reinvasion of tsetse flies from the Plain of Koutine (north of the Adamaoua plateau) a barrier consisting of targets and traps was put in place. However, bush fires destroyed most of the targets and traps soon after deployment in 1994. Thereafter the barrier was replaced by a program of insecticide-treatments of cattle. At the

end of the tsetse eradication campaigns in 1994 the territory was divided in the following three zones situated from south to north: 1. the plateau, from which most of the tsetse flies (*G. m. submorsitans*), with the exception of some small pockets, were cleared in 1994; 2. the buffer zone, which serves as a barrier to tsetse invasion from the valley and where all stationary herds should be treated regularly with insecticides (pyrethroids); and 3. the tsetse infested valley (plain of Koutine) (Boutrais and Cuisance, 1995).

The use of trypanocides in the Adamaoua region is often under inadequate veterinary supervision and trypanocidal drug-resistance is suspected to have evolved. Since 1994 no information is available on the tsetse and bovine trypanosomosis situation in the Adamaoua. In 2003 a VLIR/UDs (Flemish Interuniversity Council and University of Dschang) project was started with the aim of assessing the situation and formulating appropriate trypanosomosis control strategies. The work presented in this thesis was carried out within the framework of the above mentioned project.