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## Management of Trypanocide Resistance in the Cotton Belt of West Africa: Lessons Learnt During the 10 Years of the BMZ Funded Regional Coordinated Project

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### Abstract

Animal trypanosomosis still remains a major constraint to livestock production across sub-Saharan Africa. Drug use is the principal method to control trypanosomosis. Unfortunately, the development and spread of chemoresistance against trypanocidal drugs severely threatens the sustainability of this approach in the high trypanosomosis risk areas of West and East Africa. For about 10 years, a regional collaborative project funded by BMZ involving research institutions in West Africa, the International Livestock Research Institute (ILRI) and German universities identified and mapped trypanocide resistance hot spots using field and laboratory methods in Mali, Burkina Faso, Guinea, Ghana and Benin. Resistance is found frequently in pockets in the central area of southeastern Mali and western Burkina Faso, but less frequently and at levels more difficult to detect to the west into Guinea where trypanotolerant cattle breeds are reared and to the east across the zone from northern Ghana to northern Benin where a weak river network is making the riverine species, the only ones present scarce. Among the lessons learnt was that trypanotolerant (TT) cattle breeds are, to some extent, capable in tolerating the disease but the majority of farmers in the region are preferring the larger trypanosusceptible zebu cattle. Increasing intromission of zebu genotype into the TT breeds threatens the survival of these indigenous genetic resources. There is need to sustain TT cattle as a fall-back option in case resistance worsens in southwest Mali and Guinea where they are still common. Tsetse control at village level was effective in trypanosomosis management but the still high transaction costs required in setting up and maintaining control structures makes its sustainability difficult without external support. Rational Drug Use (RDU) was another effective method of managing trypanosomosis. Promotion of RDU resulted in improved knowledge, practices and animal health outcomes. RDU has potential for adoption as a resistance prevention strategy although the limited understanding and appreciation of resistance, weak extension delivery systems and perceptions that it is inconsistent with veterinary professionalism make its promotion difficult.

**Keywords:** Chemoresistance, rational drug use, trypanosomosis, vector control, West Africa