

DEVELOPMENT OF A RELATIONAL DATABASE TO MANAGE AND ANALYSE DATA ON SMALL RUMINANT HEALTH AND PRODUCTIVITY IN SÉNÉGAL : THE BAOBAB PROJECT

Lancelot R.¹, Pérochon L.², Dussère O.³, Faye A.¹, Faugère B.³, Faugère O.³,
Moulin C-H.³, Ndiaye M.¹, Sahut C.³, Tillard E.¹, Tourrand J.F.³

Les auteurs présentent une base de données relationnelles sur l'élevage des petits ruminants au Sénégal : BAOBAB. Elle a été conçue à l'aide de la méthode MERISE et rassemble les informations recueillies depuis 1983 en systèmes sédentaires dans les principales zones agro-écologiques du Sénégal. Le recueil s'est déroulé selon une méthodologie développée au Sénégal : le système PANURGE, consistant en un suivi animal individuel de la démographie, de la reproduction et de la croissance. Des enquêtes complémentaires ont porté sur les pratiques d'élevage, la pathologie clinique et des examens de laboratoire. BAOBAB a été développée sur micro-ordinateur et peut être exploitée par des requêtes SQL ou des programmes spécifiques, permettant le calcul d'indicateurs standardisés (mortalité, reproduction, croissance) ou de tableau de données nécessaires à la modélisation (modèles statistiques prédictifs, modèles de dynamique de population)

INTRODUCTION

Livestock production is an essential activity in Sénégal. There is great interest in determining baseline and target measures of livestock health, production and economic performance. Such measures would allow the livestock services to better prioritize their activities and for farmers' groups to obtain information to assist in their decision making. Since 1983, considerable data on small ruminant health and production were collected in 3 agro-ecological zones of Sénégal (Faugère and Faugère, 1986). Individual animal data on demography, growth, reproduction, and clinical and laboratory health indicators were collected in a standardized manner during fortnightly farm visits by field teams. Data on husbandry practices at the herd level and climate at the area level were collected. Originally, these data were managed in the PANURGE database system (Faugère and Faugère, 1993). However, the system was not relational and did not allow data to be assembled across sites or for different species at the same site. A relational database, BAOBAB, was developed to meet these needs.

MATERIAL AND METHODS

BAOBAB was developed using the MERISE method (Tardieu *et al.*, 1983) which has 3 steps: 1) assess the information needs; 2) create a conceptual model using diagrams to describe the relationships between different types of data at different levels and 3) translate the conceptual model into a relational database structure. The units of interest were animals, herds (either located in a single concession or sharing a pasture), village and agro-ecological area. Temporal scales of interest were stage of production, season and calendar year. These hierarchical and temporal units were combined to form the data conceptual model (DCM).

RESULTS AND DISCUSSION

To translate the DCM into a relational structure required the construction of 40 tables to capture the complexity of the data. Data can be summarized for specific production systems or for general analyses. Extensive documentation is available to assist researchers to retrieve specific data. Checking programs were written to assure the quality of the data transfer from PANURGE to BAOBAB. Presently, BAOBAB has been established in Sénégal on microcomputers. Specific programs were written to compute standard productivity indices of small ruminant health and production for different regions and species.

REFERENCES

- Faugère O., Faugère B., 1986. Suivi de troupeaux et contrôle de performances individuelles des petits ruminants en milieu traditionnel africain. *Revue Elev. Méd. vét. Pays trop.*, 39 (1) : 249-259.
- Faugère O. Faugère B., 1993. PANURGE : suivi individuel dans les systèmes d'élevage traditionnel. Maisons-Alfort, CIRAD-EMVT / ISRA-LNERV, 339 pp.
- Tardieu H., Rocfeld A., Coletti R., 1983. La méthodologie MERISE. Tome I, Principes et outils. Paris, Les éditions d'organisation, 285 p.

¹ Institut Sénégalais de Recherches Agricoles, Unité de Recherche Productions Animales BP 2057 Dakar-Hann, Sénégal

² Institut National de la Recherche Agronomique (INRA), laboratoire d'écopathologie, 63122 St-Genès Champanelle, France

³ Institut d'Élevage et de Médecine Vétérinaire des Pays Tropicaux (CIRAD-EMVT), BP 5035 34032 Montpellier Cedex 1, France