

# STRUCTURE AND PATTERNS OF ANIMAL HEALTH CARE SERVICE CONSUMPTION IN THE ADDIS ABABA, ETHIOPIA, MILKSHED.

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Ethiopia is host to the largest animal population in Africa. As a result, the issue of the optimisation of animal health care system efficiency is important (2, 4). The intensification process in dairy farming systems of the Addis Ababa milkshed is also crucial for the agricultural R&D strategy (3,10).

## Materials & Methods

The aims of this study are first to analyse the use of the most representative service providers in the area and to identify some determinants of the frequentation. This paper presents the first results in one working site located south of Addis Ababa in the town of Debre Zeit (1900 m a.s.l). The district of *Adea* Woreda is characterised by the presence of alternative health delivery services out of which the governmental is firstly addressed as the major one. 3581 records were used. This dataset only represents individual treatments. Collective treatments were separated and would be analysed a such. The database has been coded and additional data have been collected to characterise the local context (weather, crop calendar, tariffs..). Statistical analysis has been carried out using SAS©, SPAD©, and Excel© packages.

## Results

Out of 3581 visits by farmers, 420, 1238, 1166, 757 respectively took place in 1996 (Sept. to Dec. 1996), 1997, 1998, 1999 (Jan. to Aug.), which means that visits were evenly spread over time. Average monthly number of visit is almost 100. The governmental clinic in Debre Zeit officially only covers half of the district with a cattle population of 67 520 heads, 50,7% of which are male adults, 39,7% female adults and 9,6% young (census 1994). Nevertheless the current catchment area covers 49 PAs (Peasant association as a sub-district), and a population of 36690 cattle, and 10465 households at risk.

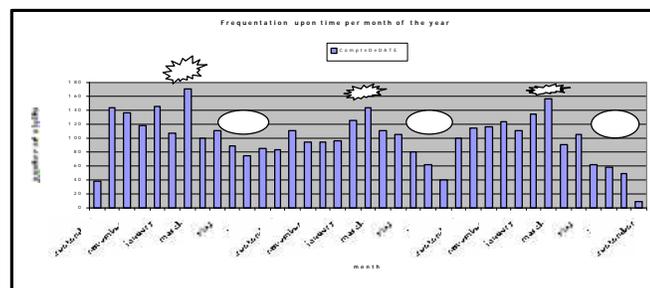


Figure 1: Use of clinic (monthly time series) at Debre Zeit Governmental clinic.

Figure 1 presents visits aggregated per month and shows time series patterns. Apart from cattle, no other animal species were investigated. According to the case book, 72% of animals presented were males, 28% were females and 91% were adults. The data show a low rate of visits specially during long rainy season (circle on graph: June to September, the planting time), whereas higher use is during or before land preparation (stars on graph: March to April i.e. between short dry season and short rainy season when oxen are used). Most of the farmer's animals were from the peri-urban zone and thus considered to be urban (57%) compared to 43% purely rural. Local animals (zebu breed) represented 92% of the visits while crossbred and exotic animals (mainly from Friesian origin) accounted for 8%. The visits took place preferably in the middle of the week (59% from Wed. to Frid.), related to the main cattle market day (17%). Most farmers (86, 2%) visited the clinic once in the 3 years period, while 11,8% of them visited it less than 4 times and 2% from 4 to 13 times. This apparently very low demand should be related to the fact that farmers have other sequential choices whether in the urban area (e.g. direct purchase of drugs to drug shops, use of faculty clinic..), or in the rural area (e.g. visit to traditional healers). Consequently further studies are planned to address other service providers in the area.

The catchment area is limited to a radius of about 35 km around the town. We delineated various areas; first urban v/s rural area; and three circular zones in the catchment i.e. up to 12,5 km around the town (zone 1), from 12,5 to 25 km (2), and from 25 to 37,7 km (3). In addition we used visit rates based on the composition of households at risk per PA which would represent a standard rate to be compared with other sites. The aggregated visit rate over three years varies from 0,2% to 128 %, showing huge differences. Respectively 75%, 17% and 8% of farmers were coming from zone 1, 2 and 3.

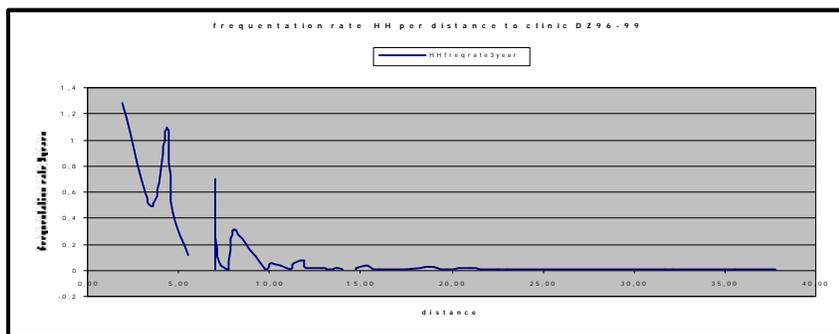


Figure 2: Clinic frequentation rate according to distance (km) to the town.

Figure 2 shows the variation of the visit rate according to the distance to the town (in km). Disruption visible in the area less than 5 km may reflect an urban competition effect. Although not all rural households may own a cattle, it was assumed that the % of Households as cattle owner is constant between Pas.

A multivariate statistical package (7) was used identify Diagnostic Related Groups (DRG) to be used for better planning of drug supply management of government system. Such an approach has been introduced in some public human system (1,9,12,14). It is also possible to assess the quality of practices from such dataset (8). Parasite infections are the most prevalent problems (65%) and microbial infections stood at 19%. Analysis shows a relationship between month and diagnostic types (X

square,  $p < 0,01$ ). The origin of animals (rural v/s urban ) is significantly related ( $p < 0,05$ ) to the pathology type as a reason for visiting the clinic. When reclassified into 5 pathology groups, urban cattle were presented more for metabolic disorders, and general infections, and less for parasite infections and traumas than rural ones. It may reflect a different economic role of dairy cows compared to oxen, but also to a different ecopathology context, as already noted in previous studies (2,5).

## Discussion

The demand for public service is still low and heterogeneous and intensification leads to changes in health profiles and service needs (2). Service frequentation models have been described (6) and would help to assess the role of some factors in the decision process of using a given service. Also such study may help to explain how passive Epidemiosurveillance would be possible in such a context. Since new policies adopted by the government (cost recovery ) will be implemented soon, monitoring consumption changes for the use of health centres would indicate how sensitive farmers. We would like to thank veterinary staff from region Oromo.

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