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Farmers’ and academia’s views”

Typology and characteristics of peri-urban dairy cattle farms in the coastal areas of Benin

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Abstract

In sub-Saharan Africa, rapid population growth, urbanisation, and increasing incomes are the main drivers of the rising demand for livestock products, especially fresh milk and its derivatives. To meet this demand, there is an increasing number of dairy cattle farms in the densely populated coastal zone of Benin, where the country’s largest city and commercial capital Cotonou is located. This study aimed to identify and characterise the peri-urban dairy production systems, and to understand how they operate and adapt to the ongoing urbanisation with its challenges. A total of 190 cattle farms were randomly selected and surveyed in four municipalities neighbouring Cotonou. Information on their socio-economic characteristics, cattle herd sizes, and herd management practices were collected through questionnaire-based face-to-face interviews. Factor analysis of mixed data followed by hierarchical clustering on principal components, implemented in R Statistical Software, were applied to classify the surveyed farms into homogeneous groups. Results revealed six types of peri-urban dairy cattle farms differing mainly in their cows’ breeds, herd sizes, and daily amount of milk produced. Most (88 %) of the herds were owned by urban dwellers, mainly functionaries and traders, who entrusted cattle management to hired professional herders. Irrespective of farm type, cows were of local taurine (63 %) or Sahelian Zebu (37 %) breeds and were exclusively fed on communal natural pasture. Mineral supplementation was provided to the animals in 42 % of farms, with significant variations across farm types. About 45 % of the farms integrated cattle production with other agricultural activities, including coconut plantations (22 %), where cow manure was used as fertiliser. With significant ($p \leq 0.028$) variations across farm types, produced milk was either transformed into traditional cheese (32 % of farms) or sold raw. Milk and cheese sales represented 84 % of the total farm income for 3 out of the 6 farm types ($p \leq 0.019$). In the current context of rapid urbanisation, communal grazing lands alone cannot provide pasture to support increase in milk production. Farms that mainly use local taurine breeds could be targeted for agroecological transitions, as these breeds are more adapted to local environmental conditions and require relatively lower feed, labour, and healthcare than Sahelian zebus.

Keywords: Cow milk production, herd size, smallholder livestock keepers, typology, urbanisation, West Africa

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