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“Filling gaps and removing traps
for sustainable resource management”

Biophysical and Socio-Economic Mapping and Prioritisation of Areas for Sustainable Dairy Development in Ethiopia

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Abstract

Milk demand in Ethiopia is currently rising due to the growing population and high urbanisation rate (4.63%), and people from urban Ethiopia consume two times more milk than the national average. Meanwhile, the Ethiopian dairy sector is dominated by low yielding local cows, with more than 98% of its milk being informal. The sector highly depends on natural pastures and by-products from rain-fed agriculture, and due to current climate change effects, it has become more challenging to maintain a sustainable dairy chain.

The aim of this study is to contribute to bringing more milk to the Ethiopian formal market by identifying geographical areas (clusters) with high potential to sustainably increase milk production. It combines biophysical data, agricultural data and expert opinion, through: (i) Biophysical mapping of current and potential milk production areas by combining several layers of GIS images representing conditions for dairy development: vegetative cover, temperature, humidity, altitude, pest prevalence, current cattle population, etc. (ii) Identifying and weighting of indicators for dairy development, and ranking current and potential dairy clusters based on these criteria using panels of regional and national experts. The key indicator themes covered are: current production situation, environmental conditions for cows, feed and fodder production and availability, market access, expansion in milk volume and access to inputs and services. (iii) Elaborating on strengths and weaknesses of each identified cluster and identifying the most limiting factors for dairy development in each cluster.

The combination of these factors led to a selection of 14 dairy clusters with high potential to increase milk production located in Amhara, Oromia, Tigray and SNNP regions. The top three clusters with highest potential were North Shewa, Adama and South and West Shewa due to their proximity to Addis Ababa, with relatively attractive geographical conditions for cows, high demand for milk, well developed infrastructure and a dense input supply network. Two clusters (Weldiya and Hararghe) had low scores, but were seen to be promising for future milk expansion of dairying due to a high cattle density, high proportion of cropland and high biomass yield seen as potential forage for cows.

Keywords: Ethiopia, milk production, sustainable dairy development

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