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“Competition for Resources in a Changing World:
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Comparing Resource Use Efficiency in Typical Dairy Production Systems in South Africa, Morocco, Uganda and Cameroon

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Abstract

Population growth, urbanisation and increased per capita milk consumption are main reasons for increasing milk demand in Africa during the recent years. As opposed to the past when dairying in Africa was mainly for subsistence, market-oriented dairy production units are now evolving. Due to globalisation, it is important to increase the efficiency of resource use in dairy farms order to be competitive and/or promote the local industry. This study aims at analysing input levels and efficiency of farm resource utilisation as well as their impacts on farm returns. Data was collected from typical dairy farms in South Africa, Morocco, Uganda and Cameroon using the panel approach and farm visits. The TIPI-CAL (Technology Impact, Policy Impact Calculations model) was used to analyse and compare data entries from selected dairy farms.

Generally, as farms grew larger in size, family resources (especially land and labour) became insufficient and there was a greater need for their acquisition from external sources. Land efficiency was extremely high in intensive systems as compared to extensive ones. There was a higher return to labour in larger farms than in smaller farms of the same production systems in all the countries except South Africa, showing a positive effect of scale economies on labour efficiency. The capital costs in Moroccan farms were extremely high due to relatively higher input costs, leading to very low capital productivity in Morocco. Meanwhile, South African farms, which were the largest farms in the sample, had the highest capital productivity.

Though extensive dairy farming systems in Uganda and Cameroon had the lowest costs of milk production (>20 US-\$ per 100 kg milk), their input productivities as well as milk yields were lower, leading to very low net cash returns from the dairy enterprise. Large intensive farms in South Africa had relatively low costs (<30 US-\$ per 100 kg milk) and a high Return on Investment (ROI) due to a higher efficiency of input utilisation. It was concluded that, intensification of dairy farming and simultaneously increasing the scale of production will greatly increase productivity of farm inputs, thus recommended for dairy development in African countries.

Keywords: Dairy production systems, resource efficiency