

SDP Research and Development Report 1

# Costs of milk production in Kenya

Estimates from Kiambu,  
Nakuru and Nyandarua Districts

Smallholder Dairy (R&D) Project  
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Ministry of Livestock and Fisheries Development (MoLFD)

Kenya Agricultural Research Institute (KARI)

International Livestock Research Institute (ILRI)

Department for International Development-UK (DFID)



**SMALLHOLDER  
DAIRY PROJECT**

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Costs of milk production in Kenya:  
estimates from Kiambu, Nakuru and Nyandarua Districts

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# List of acronyms

CRC	Capital Recovery Cost
DFID	Department for International Development
GDP	Gross Domestic Product
GIS	Geographical Information System
ILRI	International Livestock Research Institute
KARI	Kenya Agricultural Research Institute
MoLFD	Ministry of Livestock and Fisheries Development
NDDP	National Dairy Development Project
SDP	Smallholder Dairy Project

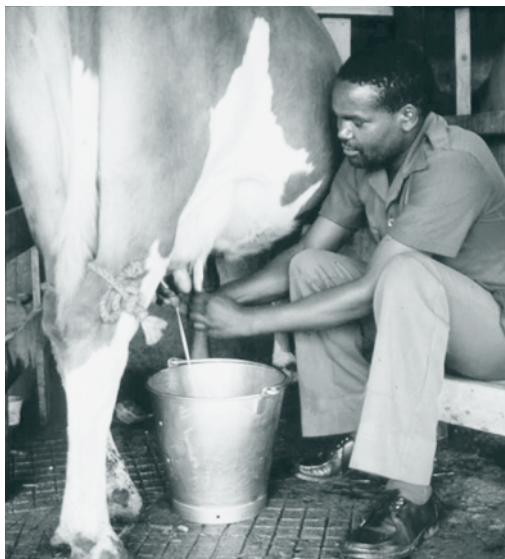


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# Executive Summary



The studies reported here were carried out by the Smallholder Dairy (R&D) Project (SDP) in response to the needs of Kenya dairy industry stakeholders for more reliable estimates of the costs of milk production in the country. These estimates are important for policy makers, development planners and donors when making decisions related to investment in dairy development compared to other enterprises, and for the design of policies to support smallholder dairy development. Moreover, significant falls in producer milk prices observed in early 2002 led to complaints from dairy farmers and wide media coverage, which further justified an investigation into the costs of milk production.

Data for the cost estimates were obtained during detailed in-depth studies of selected representative dairy farms in Kiambu, Nakuru and Nyandarua Districts between October 1997 and March 2000. Each farm was visited twice weekly over some 14 months to obtain daily records of inputs, outputs, purchases and sales. Kiambu District represents the most intensive dairy production system of the three, with good market access because of its proximity to Nairobi and good agroclimatic potential. The Nakuru site is second in production intensity level and is characterised by medium market access and medium agroclimatic potential. Nyandarua



represents the least intensive production system with good agroclimatic potential but poor market access due to distance from urban centres and poor road infrastructure. A total of 21 farm households were surveyed in Kiambu and 11 each for Nakuru and Nyandarua. In order to assess the cost and profitability circumstances under the conditions of low producer milk prices that occurred in early 2002, current input and output prices were obtained in April 2002. While requiring some simplifying assumptions, these updated estimates allow for some understanding of the level of change in profitability during adverse seasons.

Budget analysis was used to estimate cost of production, which incorporated all purchased inputs, equipment and services, the cost of family labour and land, and the revenues from the sale or consumption of milk and the sale of culled animals. The results show that at the time of the initial surveys, the cost of production was highest in Kiambu, at KSh 17.20 per litre, and lowest in Nyandarua, at KSh 11.90, with Nakuru in between at KSh 13.38. Milk prices received differed in the same manner, averaging KSh 17.60, KSh 15.20 and KSh 14.20 for Kiambu, Nakuru and Nyandarua, respectively. The results show that in all three cases there was a significant profit to the dairy enterprise, even after accounting for the costs of family labour. Unit profits were marginally highest in Nyandarua at KSh 4.75 per litre, followed by Kiambu with KSh 4.09 and Nakuru with KSh 3.60 per litre. These are above-normal profits since they occur even after family labour has been paid, and suggest a solid basis for profitable dairy production by smallholders in Kenya even

under differing levels of intensification. The results underline the important role of smallholder dairy production in sustaining rural livelihoods, demonstrated here to in essence pay wages higher than those otherwise locally available.

Using price data for April 2002, a period that was characterised by apparently significant milk surpluses due to favourable rains, and assuming no change in input/output ratios, the results show unit losses of up to KSh 1.20 per litre in Kiambu, where cost of production was highest. These results point to the underlying risks inherent in smallholder milk production where output and input prices are purely market set, and where seasonal changes in rainfall and demand can dramatically alter farmers' fortunes, albeit mostly in the short term. Nevertheless, the more detailed data available from 1997 to 2000 demonstrate clearly the strong underlying competitiveness of smallholder dairying even in the central parts of Kenya where milk prices are often some of the lowest. The analysis does not attempt to incorporate non-marketed benefits to dairy farmers, such as the value of cattle as assets and the value of cattle manure applied to crops, which would even further raise the returns and level of competitiveness of smallholder dairy farmers.

