

Research Application Summary

Financial viability and acceptability of specific packages of dairy production and marketing innovations in Wedza, Zimbabwe

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Abstract

Low viability indicators and high operating ratios indicated poor viability in the smallholder sector, with the exception of rich farmers. Variations in gross margins were associated with heterogeneity of farmers in resource endowments, allocation of resources and management. It was also shown by positive the relationship between returns per cow with the number of milking cows owned by farmers. Improved technologies also had positive effects on gross margins. Family labour and feed costs were the major expenses; hence the use of cost feeding strategies could potentially improve viability.

Key words: Adoption, dairy technologies, intensive dairy farming, operating ratio, smallholder dairy system

Résumé

Les indicateurs de faible viabilité et des ratios d'exploitation élevés indiquent une faible viabilité dans le secteur des petits exploitants, à l'exception des riches fermiers. Les variations dans les marges brutes ont été associées à l'hétérogénéité des agriculteurs dans les dotations en ressources, l'allocation des ressources et la gestion. Il a également été montré par la positive relation entre les rendements par vache avec le nombre de vaches laitières détenues par des agriculteurs. L'amélioration des technologies a également eu des effets positifs sur les marges brutes. La main-d'œuvre familiale et les coûts des aliments ont été les dépenses importantes, d'où l'utilisation de stratégies d'alimentation des coûts pourraient améliorer la viabilité.

Mots clés: Adoption, les technologies laitières, la production laitière intensive, le ratio d'exploitation, système de petite production laitière

Background

There is poor viability of smallholder dairy enterprises in developing countries, including Zimbabwe. The viability of smallholder dairy enterprises in developing countries remains

largely unknown. A few studies that have been done, have addressed questions of profitability, efficiency and comparative advantages. Smallholders are believed to have a comparative advantage in intensive dairy farming, but constraints such as high input costs, increased enterprise risk and high marketing affect their profitability (Baltenweck and Staal, 2000). The competitiveness of smallholder dairy schemes just like any other system depends on efficient use of limited resources and the ability to keep costs low. Research recommendations and technological packages should be developed such that they lower production costs (Fonteh *et al.*, 2005).

However, adoption of technologies by smallholder dairy farmers is driven by increased milk production, in addition to socio-economic, and environmental factors (Thangata and Alavalapati, 2003). This study was therefore carried out to determine the viability of small holder dairy enterprises and also to determine factors influencing acceptability of dairy technologies in Zimbabwe.

Study Description

A semi-structured questionnaire was administered to 52 households selected at random. The questionnaire collected information on socio-economic characteristics, production constraints, costs, revenues, and marketing costs to cover one production season (2007/08). The questionnaire was pre-tested and adapted before use in the research area. In addition to the survey, focus group discussions were held with farmers and the Dairy committee separately. Gross margin analysis was carried within wealth status and location of farmers from the milk collection area. Other measures of technical and economic efficiency were derived from the analyses.

Research Application

Smallholder dairy was slightly viable for all farmers (on average US\$919.69), with the rich farmers being most favoured (Table 1). The gross margins by wealth status of the farmers were greater than for location, with a difference of US\$1615. Returns were both positive and negative for the households, but 52% were negative (Fig. 1).

There was a positive correlation ($r=0.767$) between returns and number of milking cows. TVC/cow and per litre of milk were higher than average selling price (US\$0.96) for the poor, MCC, SCC except for rich farmers. Operating ratios computed (>1) indicated that majority of the farmers were not able to cover variable costs using incomes from dairy. Sensitivity of results

Table 1. Summary of viability indicators for Wedza dairy enterprise.

Financial indicators	Wealth status		Location	
	Poor	Rich	MCC	Sub Centre
GM/Total costs	-0.41	0.64	-0.30	-0.09
GI/Total costs	0.59	1.64	0.70	0.91
Gross margin/Feed costs	-0.61	2.03	-0.54	-0.17
Gross margin/Cow	-217.79	102.29	-170.26	-29.79
Gross margin/Litre	-0.80	0.47	-0.69	-0.14
Total variable cost/Cow	533.15	159.95	571.81	319.09
Total variable cost/Litre	1.95	0.73	2.31	1.52

Poor/resource-poor farmers- those with income <US\$500 and Rich/highly resourced farmers – those with income > US\$500. MCC – farmers staying closer to the collection centre and Sub Centre – farmers staying further from the collection centre (>23 km).

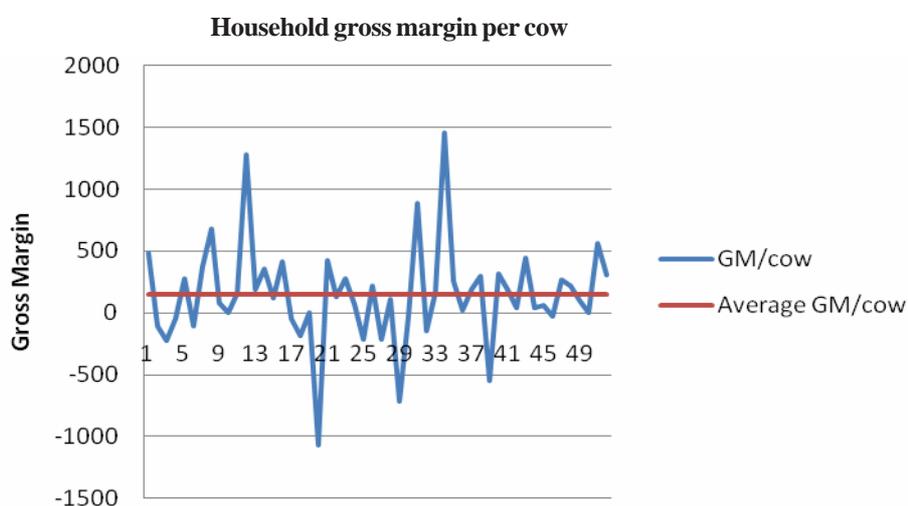


Figure 1. Gross margin per cow for smallholder dairy production in Wedza.

Recommendation

was tested and gross margins were reduced greatly (data not shown). Use of improved technologies (data not shown) showed further increase in gross margins. Acceptability of technologies is determined by economic gains and socio-economic factors.

The smallholder dairy was found to be only slightly viable. It cannot meet expected livelihood gains required by farmers. The scale of production is low and hence there is scope for improved profitability through increased herd size and use of cost-reducing feeding technologies.

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