

Opportunities for Smallholder Dairy Development in Uganda

Smallholder dairy production offers opportunities for rural income generation for poor households, improved nutrition through consumption of milk and other dairy products, and improved natural resource management through cattle-mediated nutrient cycling. Yet, constraints to development have caused underachievement of the sub sector. Recent massive investments in milk market infrastructure by donors and organizations in improving market access, in addition to deregulation of the milk market in the 1990s, paved way for private sector competition, contributing to increased milk production from 355 million mt in 1985 to about 476 million mt in 1998 (FAO estimates). Dairy policies too have evolved, with perceived need to introduce new structures to regulate and develop the market, particularly in the context of the demise of parastatal roles, and the strength of the informal market. But, there is continuing debate on appropriate strategies and priority regions for development of the sub sector.

This brief, based on the work by Staal and Kaguongo (2003), presents some of the main issues with a view to guiding new efforts to better target dairy research and development interventions.

Production systems and cattle breeds

Cattle and dairy production systems in Uganda are mainly dependent on the agro-ecological, market, and socio-economic setting, and especially rainfall patterns leading to seasonality in production, supply, and prices. The production systems form a continuum with semi-nomadic pastoralism (mainly in the northern and eastern regions and in the dryer parts of the southwest) to stall-feeding only or zero-grazing systems (more common in the western and central regions). Investment in dairying seems to be higher in areas near major urban or consumption centers associated with higher milk prices and stable demand for dairy products.

Exotic and cross breeds form about 5% of the total cattle population, with the highest proportions being found in parts of the lake zone and the west and southwest. The relatively low percentage of improved breeds in some parts of the country with good agro-climatic conditions suggest that there may be potential for increasing milk production through upgrading the cattle population, where market conditions are appropriate. However, observation of higher proportions of improved cattle than previously reported in key milk producing areas suggests it may be occurring spontaneously in respond to farmer demands.

Access to breeding and health services

Access to artificial insemination (AI) is reportedly low, as only about 2-15% of farmers used them. Access to AI is highest in the lake zone, but even there, not more than

30% of farmers report use of it. The low use of AI is attributed to low availability, high cost, uncertain reliability, and the widespread misconception that AI produces disproportionately more male than female calves.

Attempts to expand AI services need to assess the level of demand for improved animals and for AI as a source of improved animals. Areas for targeting may be, for example, where AI service is low, yet there are relatively high proportions of improved dairy cattle, such as areas in the central-west and southwest (Figure 1). In these areas, less than 3% of communities report access to AI, yet surveys show that more than 30% of cattle may be improved breeds. Access to animal health services is also important. In Uganda, tick-borne diseases, especially ECF, present the biggest health problems for dairy cattle. Provision of animal health services has been re-organized

and continues to receive government and donor funds. Although farmers commonly vaccinate their animals as required, major difficulties remain, including inadequate drug supplies, breakdown of essential support infrastructure, rising costs and budgetary constraints.

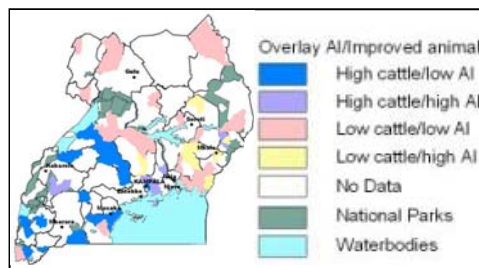


Figure 1. Comparison of access to artificial insemination (AI) services versus improved cattle (source: Staal and Kaguongo, 2003).

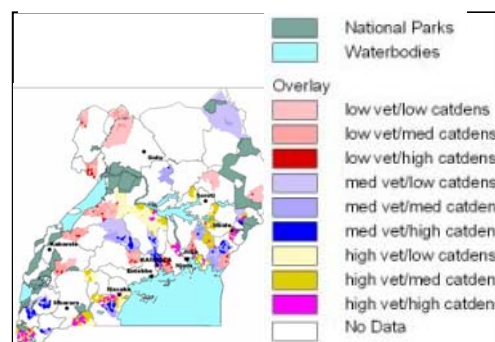


Figure 2. Comparison of access to veterinary services versus cattle density (source: Staal and Kaguongo, 2003).

Similar to targeting for AI, areas for targeting may be where there are high cattle densities, yet low reported access to veterinary services (Figure 2). Curiously, some of these areas include those close to Kampala, where veterinary services would be expected to be relatively available. Other areas are in the west and north.

Milk production and supply

Milk yield figures vary considerably, ranging from 240 to 990 liters per cow per year, with associated total production in the range 550-750 million mt in 2000, up from

350-4000 mt in 1990. About 55-60% is marketed. Closely linked to the substantial increase in overall production and milk supply, real farm gate prices have declined, potentially limiting the incentive for expansion and intensification. But projections to 2010 under several scenarios of growth in milk production and incomes suggest that demand could still outstrip production, and provide new opportunities for smallholder farmers. Strategies addressing productivity constraints will thus be important for smallholders to exploit the potential. Feed, credit, and training in pasture management will be important, especially in the main milk producing regions.

Demand for and consumption of milk

In addition to raw milk, dairy products (yogurt and indigenous fermented milks, ghee, butter, cheese of different types, ice cream, and sweet and sour cream) are consumed. Per capita consumption is about 28kg/year, which is quite low even comparing with neighboring Kenya and Tanzania. Consumption is highest in the Western region, moderate in the Central region, and declining to the Eastern and Northern regions.

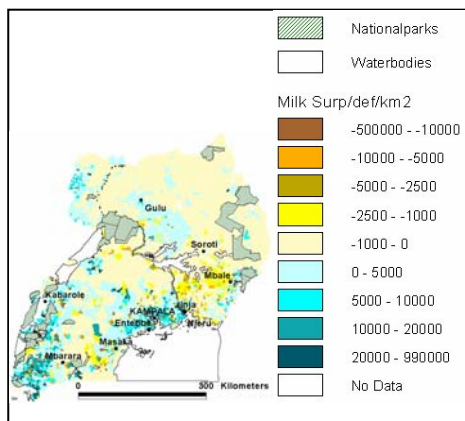


Figure 3. Estimated milk surplus or deficit (kg of milk/year/sq. km) (source: Staal and Kaguongo, 2003)

observed in the east, low deficits in the north and central-west, while surpluses are found in the lake zone and in the west and southwest. In many cases, improved milk markets can bridge the surplus-deficit gap. More generally, milk deficit areas may benefit from investment in measures to increase production, while surplus areas may need attention to market infrastructure and institutions to help collect and distribute milk more efficiently.

Infrastructure and marketing

The formal milk sector has a total installed capacity of about 343,000 liters/day (of which only 30% is utilized), with a market share of about 10%. The remaining 90% is supplied in the form of fresh raw milk and traditional products, using traditional handling and processing

practices, and operates largely outside of any formal milk market regulation.

Several points of overlap between the two types of milk market present opportunities where the development of regulated markets can build on existing market agents involved in the unregulated market. Thus, regulated market development need not necessarily have large negative consequences for the employment generation that occurs in the unregulated market.

Areas for intervention are reducing post harvest losses (up to 37% due to spillage and spoilage), improving competitiveness, quality and safety, and promoting exports. High labor and transport costs, poor cost management, and low throughput are major problems. It is envisaged that consumer willingness to pay higher price for better quality will increase the market share for the regulated market and, thus, reduce the inefficiencies caused by underutilization of capacity.

Uganda lacks an efficient regulatory mechanism despite existing laws such as the Dairy Industry Act of 1998, which provides for processing and marketing standards. Development of standards is crucial; and research to understand the key points in the market channels that affect quality will be important in developing standards.

Conclusions

Dairy development efforts will have to work within the context of a number of constraints, perhaps most importantly seasonal milk surpluses and relatively low consumption levels of milk. But, low demand per capita also offers an opportunity for generic promotion of milk consumption. Building on traditional consumption habits and indigenous markets will be important. Low productivity and access to services also offer opportunities for positive interventions, given that areas with demand for those interventions are specifically targeted. Indeed, this sort of targeting may be critical for successful interventions, as there is considerable variation in dairy production systems, constraints and opportunities across the country. Since the dairy industry in the neighboring countries of Rwanda, Burundi and the Democratic Republic of Congo are not well developed, there seem to be a considerable market potential for dairy exports to these countries, especially given the recent large increases in milk production and supply and declining domestic prices.

Brief is based on

Staal, S.J. and W.N. Kaguongo. 2003. *The Ugandan dairy sub-sector: targeting development opportunities*. A SCRIP Report. Washington, DC: IFPRI.