

How an improved knowledge and information system can support productivity and livelihoods in the smallholder dairy sector

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Abstract

The Smallholder Dairy Project (SDP) carried out a short study into the knowledge and information systems of Kenya's smallholder dairy sector. The rationale was that by understanding and catalyzing reform of this system, SDP would not only enhance the impact of its own research outputs, but would lead to a long-lasting improvement in the impacts of research and other information relevant to the sub-sector. The RAAKS (Rapid Appraisal of Agricultural Knowledge Systems) approach was used, involving a range of participatory approaches through workshops and semi-structured interviews, at national and local level. Key findings included poor co-ordination between the many public, private and NGO actors in the knowledge system, and problems in the regulation of privately provided information that limited farmers' ability to access information to improve productivity. Options to improve the system and the linkages were explored through key informant workshops.

Introduction

Kenyan dairy is a very important sub-sector, with more than 3 million dairy cattle, predominantly kept by some 800,000 smallholder farmers. As well as the farmers' livelihoods,

a large number of jobs depend on milk marketing, and provision of farm inputs and services. The sector is driven by a large demand for milk, mainly consumed in tea, with even poor households buying milk.

The sector is significantly commercialised, with relatively little government involvement in provision of input or output services, and private marketing. Government policy in recent years has also supported a demand-driven extension service provided by public, private and civil society actors for market-oriented sub-sectors such as dairy. This environment is likely to affect the way the various actors access information they require, and the impact of technologies for improved productivity and livelihoods.

If the dairy sub-sector is to operate effectively all actors – whether producers, input/service suppliers, market agents or consumers – require information. However, it is a complex sub-sector, with a huge range of technical, market, policy and other information needed at all levels. At the farm level, there are multiple aspects to the input and output side of dairy farming, all of which have information requirements.

Many of these information requirements are in different disciplinary areas, ranging from fodder management, feeding, breeding, animal health, milk handling, marketing and much more. There are few information providers with expertise in all these different areas, and effective co-ordination between different information suppliers is therefore vital. The perishability and public health aspects of dairy products add another dimension to the information requirements, bringing in issues of control of zoonoses, clean milk production, handling, marketing and processing, and safe storage and consumption of products by consumers (Omore et al., 2002).

Materials and methods

The survey used a ‘Rapid Appraisal of Agricultural Knowledge Systems’ (RAAKS) approach - a participatory action-research methodology that provides means for those involved in complex situations to find answers for themselves. RAAKS takes a systems approach, recognizing that the entity (in this case the dairy sector) consists of many interconnected actors, with differing but interdependent roles. The approach aims to describe and understand the multiple perspectives of actors in the system, and importantly, leads on to action-planning involving all actors in addressing constraints and utilizing opportunities found in the system. Various participatory tools explore the roles, objectives, linkages and impacts of different actors from their own perspectives. The approach is described in Salomon and Engel (1997).

Specific RAAKS tools¹ were used in a combination of workshop settings and during semi-structured interviews with a wide range of actors to answer questions about the smallholder dairy knowledge and information system.² This study was based largely on key informant interviews and participatory tools applied at both national and local level to reflect the diversity and extent of the sub-sector. The participatory process involved a wide variety of actors in identifying constraints within current information systems, and ways in which they might be improved.

District-level fieldwork

Kiambu, Nakuru and Vihiga Districts were selected based on previous characterisation studies by SDP to represent the variety in production and market systems within the sector.. The approach used was developed between the study team and district officers who organized

¹ The RAAKS tools used were: Problem definition exercise, Actor identification, Actor analysis, Task analysis, Info-source-user, Communication Network, Impact Analysis, Linkage matrix, Linkage mechanism

² Who are the actors in the system? What are their characteristics that relate to knowledge & information? (Objectives, activities, strengths, weaknesses etc.) What are the types of information required by the various actors? From where is such information currently obtained? And what are the constraints? What are the gaps and overlaps in the provision of this information? How do suppliers of information attempt to reach users? What are their constraints? How do the various actors in the system link with each other? In what practical ways (in the opinions of the various actors) could the system be sustainably improved, to lead to better flow of information?

initial workshops attended by diverse range of participants. Part of the workshop outputs was identification of other actors for follow-up information. Data and information was collected through a series of semi-structured interviews with a total 129 actors, representing 17 different actor types. Since one actor could be described by different categories, there were a total 182 representatives of different actor type categories in the three districts as shown in Table 1.

Analysis

The data collected was mostly invaluable qualitative information that, however, did not render itself for meaningful quantitative analysis. The key points were picked out and crystallised into the summaries indicated in the next section.

Findings and Discussion

The method described above generated a wealth of predominantly qualitative information on the information system of the Kenyan dairy sub-sector. For this paper, we outline some general findings then focus on some key findings identified as important constraints to the impact of knowledge and information on productivity for the sector.

General findings

While a large number of private, civil society and public actors generate and make available information, the linkages amongst these actors were generally weak. This was consistent with the findings of a previous study into knowledge and information systems for smallholder farmers in Kenya (Rees et al., 2000). Whilst formal linkages between research and extension exist, some of the most effective sharing of information was based on informal linkages, often social, between individuals. The various actors play different roles and have different incentives, strengths and weaknesses within the overall information system. This study showed that many farmers and other actors acted as passive receivers of information, which was

provided typically in a top-down manner. Even in a commercial sector like dairy, many farmers considered that information should be a free commodity and did not acknowledge that it had monetary value. This has implications for the financial viability of information provision through the privatisation process within the sub-sector, at least in the short-term. Nevertheless perceptions of the value of information and how it was accessed varied with location and the degree of market integration.

Relationship between public/private actors in a commercially oriented sub-sector

The reality is that for most smallholder dairy farmers, their interactions are mainly with the private sector actors dealing with input and output goods and services. Private suppliers of feeds and drugs were extremely active in providing 'information' to farmers to improve their productivity, even though farmers typically saw this information as 'biased'. On the other hand, whereas public extension workers were generally perceived as being sources of good quality, unbiased information, contact between individual farmers and extension workers were increasingly limited, and many farmers reported rarely seeing extension workers. Other than through the limited direct interactions of researchers with farmers, through on-farm research projects, these public extension workers also provide the main link between farmers and researchers, both in demand for, and supply of, research and technologies. So the constraints in extension workers linkages with farmers have a direct effect on the impact of research.

From the RAAKS review findings, the existing roles of the different actors in providing information to smallholder dairy farmers can be summarised as:

- Public research and extension system still functioning, but constrained by lack of resources and limited ability to reach significant numbers of farmers.
- Private professional service providers, seemingly not perceived as a source of information.

- Private input suppliers, very active in providing information on their own products, competing with each other, and linking variably with public extension and research system to reach farmers. There is little effective regulation of the quality of this information.
- Variable number of non-state, non-private actors – NGOs – working in service provision, including extension/information services, who fill some of the gaps in information provision, and work to a greater or lesser extent with all other actors.

There seemed little exploitation of the possible synergies between these actors, making use of the knowledge and unbiased nature of public extension workers, the resources and often good products of private sector, and the professionalism of providers of animal health and breeding services. Instead, it seemed often to be a battle between the different actors. Key issues include:

- Information is not perceived by farmers to have any significant monetary value. Even when paying for services is accepted, there remains a feeling that information should be free.
- Information about breeding, management or animal health is still perceived as the domain of public extension workers; the private providers of these services are perceived both by farmers and themselves to be merely providing the practical ‘service’, with information (preventative, management, etc) not associated with the service.
- Service providers themselves are usually very rushed, single-handed practitioners. They seem unable to rely on the support of their fellow professionals, and professional organisations, in being able to start providing a service in which information is valued.
- Linkages between the private input and service providers, public research and extension workers are generally poor, with poor co-ordination and coherence of information.
- Lack of enforcement of (i) advertising standards and (ii) professional codes of ethics, means that farmers consistently face a problem of not knowing whether the information or service they have received is good or bad, and not knowing what recompense they may

have for poor information or services. There is little incentive for less scrupulous private actors to behave professionally.

- Some information services are being provided by private milk processing companies. This is in support of their requirements for consistent supplies of quality milk. Where it does occur, it is poorly linked in with other sources of information or services.

Having identified these issues around the relationships between public, private and NGO actors in information delivery, a key informant workshop is being held, to develop recommendations as to how this system could function more effectively to enable access to information.

Support for group approaches

Farmer groups are the focus of engagement for most agents of information, including extension services, NGOs and KARI itself, through ATIRI. These groups themselves are often active and innovative seekers of information. And of course, well-run dairy co-operative societies can mean members have excellent access not only to services, but also to knowledge and information. A key constraint however, which affects the ability of groups to benefit their members more widely is the lack of basic support for the formation, effective management and effective operation of farmer and trader groups. Provision of information on effective group management is fragmented, difficult to access, and often ends up being supplied by service-delivery organisations that target particular groups.

Role of ‘information centres’: Another issue was the potential role of ‘information centres’ in the exchange of information for all dairy industry actors. The value of some kind of information centre was mentioned frequently by many actors during the review. However, it is clear from experience in Kenya and elsewhere, that there are many critical issues around

information centres that would determine whether they are successful and sustainable, and a follow-up workshop will explore this further to make recommendations.

Potential role of milk market agents: Few sub-sectors exist where there is such regular (usually daily) contact between the producer and market agent. Whether the farmer takes milk to a collection point, or a trader collects the milk, there is usually face-to-face contact. There is good potential for relatively easy transfer of information on production and marketing using these daily linkages. This is occasionally exploited, by some large or medium-scale milk collectors. It has been made more difficult by the ambiguous role and status of ‘informal’ milk market agents. However, with increasing recognition of the value of training and licensing such agents, this potential could be exploited further. The market agents have clear private incentives to access good quality milk for their clients, and therefore to pass on good information to farmers on how to improve quantity and especially quality of milk. Public research and extension systems could consider how to tap into this resource, as a means of disseminating relevant information.

Conclusions

The dairy sub-sector is not unique in having apparent constraints limiting the impact of public research and extension information. But as a commercially oriented sector, it does have a range of resources and actors to draw on what other sectors do not have.

The national extension policy explicitly recognises the importance of these private and NGO actors in providing information in the dairy sector. However, lack of linkages between public, private, professional and civil society actors means that currently there is untapped potential for better flow of crucial information on all aspects of dairy farming, including productivity.

With clearer roles and responsibilities of this diverse range of actors, in particular better linkages between public and private sector actors, farmers will have better access to information that can enhance their productivity and better support dairy-dependent livelihoods. There may be need for a policy related coordination structure between the various sources of information and services.

Further studies that could aim at on collection and analysis of more quantitative data will be useful if the differences between actors, strengths and weaknesses of information links and geographical differences are to be understood.

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Appendix

Table 1

Table 1: Actors and actor types visited in the three districts

Actor type	Kiambu	Vihiga	Nakuru	Grand Total
Number of Actors	39	49	41	182
AI Provider	1	2	4	7
Credit Agent	1	2	3	6
Extension Agent	15	2	7	24
Farmer Co-Op/ Regstd Group	6	6	5	17
Farmer Individual	1	1	2	4
Farmers (Mixed) Group	6	5	10	21
Feed/Drug Manufacturer	3		2	5
Feed/Drug Stockist	6	2	5	13
Milk Consumer	4	1	7	12
Milk Marketer/Trader	4	3	8	15
Ministries Agric Livestock Vet	2	6	3	11
Ministries Other (Govt. Official)	6	5	5	16
NGO/CBO	2	3	3	8
Provincial Administration		1		1
Schools/Training Institute		2	2	4
Veterinary Services	6	4	4	14
Others (KARI Res Assist., farm worker, KDB official, stock trader)	1	3		4
Grand Total	64	48	70	182