



## Animal Fattening in Northern Mali

Sana Kassogue and Boubacar Dembélé, Institut Polytechnique Rural de Formation et de Recherche Appliqué de Katibougou (IPR/IFRA), Mali; and John McPeak, Syracuse University

Mali Livestock and Pastoralist Initiative

Research Brief IO-O4-MLPI

January 2010

*To ensure that the GL-CRSP Mali Livestock and Pastoralist Initiative (MLPI) market information system is of benefit to livestock producers in northern Mali, MLPI has taken steps to link access to market information with livestock production practices that incorporate this information. One area of current research involves the techniques used in animal fattening in northern Mali, where there is a long history of buying animals, fattening them, and then selling them for a higher price. This research was conducted to discover the current practices in animal fattening, the likely areas for recommended production improvements, and how to use extension of improved fattening techniques to build-in an audience that will use the MLPI market information system currently under development. Research was begun with the suspicion that least cost rations were not being used in village based fattening operations, a suspicion that is being confirmed by our findings. Research results are intended to support the development of an extension message that helps livestock keepers reduce costs by minimizing input use in fattening operations, while increasing revenue by employing the MLPI market information system to identify the best options for selling the fattened animals. This also will build on the technical capacity we have supported with the project at Institut Polytechnique Rural de Formation et de Recherche Appliqué (IPR/IFRA) and l'Institut d'Economie Rural (IER) as they provide the scientific analysis that identifies the nutritional content of different feed combinations as well as the relative cost of these rations. Overall, we are hopeful that this work will improve rural incomes, livestock market efficiency, improve animal feed markets, and enhance the technical capacity of our Malian collaborators.*

### Background

The Mali Livestock and Pastoralist Initiative (MLPI) approach to improving market functioning is based not only on providing producers with information on market conditions but also on enhancing their capacity to act on this information. One way we could ensure that the MLPI market information system is of benefit to livestock producers in northern Mali is to link use of this information to livestock production practices. As an initial step, MLPI has been researching the techniques used in animal fattening in northern Mali, where there is a long history of people buying animals, fattening them, and selling them for a higher price. Improving fattening operations and linking them with the MLPI market information system may afford the opportunity for enhancing rural incomes, especially among women, who are often active in feed markets. MLPI market monitors currently report prices for animals according to categories of thin, average, and fat. Meanwhile, the MLPI website ([www.malibetail.net](http://www.malibetail.net)) provides information on prices for animals in these different conditions. Generally, an animal categorized as 'fat' earns 50% to 100% more than an animal of the same type coded as 'average' condition, and more than double the price of an animal of the same category judged 'thin' (Angerer et al., 2010).

To better understand the potential for linking production practices to livestock marketing, we conducted research

to discover what are the current practices in animal fattening, what are the likely areas where we can suggest production improvements, and how can we use extension of improved fattening techniques to build in an audience that will use the market information system we are developing. We began this research with this suspicion: least cost rations were not being used in village based fattening operations, a suspicion that is now being confirmed by our findings. Through the knowledge generated by this research, we hope to be able to develop an extension message that helps people reduce costs of animal fattening by minimizing input use, while increasing revenue by using the market information system to identify where best to sell the fattened animals.

### Methods

The Institut Polytechnique Rural de Formation et de Recherche Appliqué (IPR/IFRA) de Katibougou developed a survey form in conjunction with input from the MLPI team in December 2008 to collect information on animal fattening practices among 19 individuals and three groups distributed among three sites in northern Mali: Mopti, Sofara, and Koro. From December through January, students from IPR/IFRA (13 students under the supervision of B. Dembélé) conducted the

Table 1. Purchase market of animals for fattening and sales markets for animals after fattening.

Fattening site	Purchase market name	Sales market name
Mopti	<b>Mopti, Fatoma</b> , Konna, Gossi, Somadougou	<b>Mopti, Fatoma</b> , Bamako, Lagos, Abidjan
Sofara	<b>Sofara</b> , Kouakourou, Mourah, Somadougou	<b>Sofara</b> , Bamako
Koro	<b>Koro, Douna</b> , Sana	<b>Koro, Douna</b> , Bamako, Domoni, Cotonou

surveys and collected feed samples for later laboratory analysis. Survey data was then pooled and harmonized, and feed samples were submitted for laboratory analysis.

## Findings

The findings presented here are considered preliminary, and largely consist of descriptive statistics. One set of questions inquired as to where animals that were fattened had been purchased. Respondents were also asked to identify where the fattened animals were sold. The names of sites where they both bought and sold animals are presented in bold in Table 1; non-bold names (also Table 1) illustrate the difference between buying and selling markets for fattened animals. The differences between these tables indicate that there is potential for a market information system to enhance revenue in this area, as animals are

being purchased in local markets and sold in a mix of local and distant markets. If anything, these results would support the development of not just a national, but a regional market information system, as multiple countries are represented in the sale market table. Clearly, knowing information on prices in distant markets has some value to these producers.

There are also differences across the sites on which species of animals are fattened. Table 2 presents the distribution of fattened animals across the three study sites. Findings also reveal that there is significant value added as a result of animal fattening (Table 3). As shown in Table 3, there is an average value added return of 157%, with a minimum of 73% and a maximum of 348%. There is no question that animal fattening offers the potential for revenue gain in local markets. The question then centers on the costs of obtaining this gain (Table 4).

Table 2. Sites and species for fattened animals.

Species Fattened	Mopti	Sofara	Koro	Total
Cattle	58	215	54	327
Sheep	-	4	113	117
Goats	-	9	-	9

Results indicate that while there is variation in practice in the study sites, three main issues have been identified: (1) as suspected, the length of time the animals are being fattened is too long in many cases; (2) least cost rations for fattening operations are not being used, and in particular it



Figure 1. A woman selling animal feed at the Kati feed market in Mali. MLPI research targeting animal fattening operations has the potential to greatly improve rural incomes in Mali, especially for women, who are often active in feed markets. Photo by Jay Angerer.

Figure 2. Sorting animals at Fatoma market, Mali. Research by MLPI suggests that there is potential for a livestock market information system (LMIS) to enhance revenue for livestock producers throughout Mali. The use of a LMIS would allow these producers to obtain better market information in near real-time. Furthermore, results from this study show that there is significant value added as a result of animal fattening, which if combined with improved market information from the LMIS, could offer a means to greatly enhance livelihoods for pastoralists in Mali. Photo by Jay Angerer.



appears that concentrates are being overused; and (3) the concept of tracking input costs in fattening is not very widespread. This provides us with a concrete foundation to move forward in developing an extension message in the field as we enter the coming year. We are working to develop site specific extension messages that will be presented in the three regions of Mopti, Tombouctou, and Gao building on these research findings.

### Practical Implications

The evidence supports our initial hypothesis that improved fattening techniques could offer a means to enhance rural

incomes and build an audience for the market information system. First, we see that there are spatial differences in where animals are sourced and where they are sold. The market information system we are developing in Mali is designed to allow people to use spatial differences in prices in their marketing decisions. Second, our market information and the information in this survey clearly illustrates that there are gains to having animals in good condition.

From a revenue perspective, it is clear that selling price can be much higher when animals are fattened. The question of cost is the final piece of the puzzle, and where we have

Table 3. Revenue gain due to fattening.

Site	Species	Buying price in FCFA* before fattening	Selling price in FCFA* after fattening	(Selling price – buying price)/ buying price
Mopti	Cattle	92,695	212,350	129%
Sofara	Cattle	91,995	166,380	81%
	Sheep	21,750	72,500	233%
	Goat	6,445	28,890	348%
Koro	Cattle	157,670	272,465	73%
	Sheep	47,185	83,320	77%

\*USD 1.00 = approximately 450 FCFA.

Table 4. Fattening cost estimates for cattle in the three sites.

Site	Feeds per day (kg)	Average No. of days	Cost of feed per kg (FCFA*)	Feed cost per day (FCFA*)	Feed cost for fattening	Feed costs as a percentage of value added (selling price - buying price)
Mopti	14	66	81	1,168	77,088 CFA*	64%
Sofara	17	65	57	957	62,205 CFA*	84%
Koro	10	181	58	609	110,229 CFA*	96%

\*USD 1.00 = approximately 450 FCFA.



begun to make progress as a research team. We are in the field identifying least cost rations, identifying how these may vary across sites depending on the resources available, and developing an extension message that can be presented to local producers. As an added component, this work has linked our collaborators at IER and IPR, and has built in a use for the Near Infra-Red Reflectance Spectroscopy work we have begun with both these institutions. This will foster applied scientific research and develop human capacity in

Mali. At the same time, it will provide practical answers to questions of how to increase incomes of rural Malian livestock producers through animal fattening.

Finally, it offers some possible ways to target improving women's income earning opportunities as women are often active in feed markets. As we work to improve fattening, we are also beginning to investigate how we can also improve feed production, storage, and marketing.

## Further Reading

Angerer, J., F. Kieta, and A. Diall. 2010. "Implementation of a Livestock Market Information System for Mali: Price and Volume Results for Five Major Markets." *Research Brief 10-03-MLPI*. Global Livestock Collaborative Research Support Program (GL-CRSP), University of California – Davis, Davis, CA.

Kassogue, S. 2009. "Suivi des operations d'embouche des ruminants à Mopti, Koro et Sofara." Rapport de fin de cycle, IPR/IFRA, Katibougou, Mali.

Nantoume, H., A. Ballo, and A. Kouriba. 2007. "Techniques d'embouche ovine." IER Fiche technique, Bamako, Mali.

*About the Authors:* Mr. Sana Kassogue recently completed his research and coursework at l'Institut Polytechnique Rural de Formation et de Recherche Appliqué de Katibougou (IPR/ IFRA) and received his diploma. Email: sanakassogue@yahoo.fr. Mr. Boubacar Dembélé is an assistant professor at IPR/IFRA. Email: bdembele\_w@yahoo.com. Dr. John McPeak is an Associate Professor in the Department of Public Administration at Syracuse University. Email: jomcpeak@maxwell.syr.edu.

Building on the successes of the GL-CRSP Livestock Early Warning System/Livestock Information Network and Knowledge System (LEWS/LINKS), Improving Pastoral Risk Management on East African Rangelands (PARIMA), and Forage Monitoring Technology to Improve Pastoral Risk Management by Herders in the Gobi Region of Mongolia (GOBI Forage) projects, the Mali Livestock and Pastoralist Initiative (MLPI) was initiated in January 2008, to develop a livestock market information system, and to examine strategies for reducing risk and improving livestock marketing options for the enhancement of pastoral livelihoods in Mali. The project is a collaboration between the Global Livestock CRSP and the USAID Mission to Mali with Texas A&M University, and Syracuse University as the US implementing partners. The project is led by Dr. Jay Angerer, Texas A&M University. Email: jangerer@cnrit.tamu.edu. The MLPI Co-Principal Investigator is John McPeak. Email: jomcpeak@maxwell.syr.edu.



The Global Livestock CRSP is comprised of multidisciplinary, collaborative projects focused on human nutrition, economic growth, environment and policy related to animal agriculture and linked by a global theme of risk in a changing environment. The program is active in East and West Africa, and Central Asia.

*This publication was made possible through support provided by the Office of Agriculture, Bureau of Economic Growth, Agriculture and Trade, under Grant No. PCE-G-00-98-00036-00 to University of California, Davis. The opinions expressed herein are those of the authors and do not necessarily reflect the views of USAID.*

*Edited by David Wolking & Susan L. Johnson*