

ASSESSMENT OF LIVESTOCK CONSTRAINTS IN THE SMALLHOLDER MIXED FARMING SYSTEMS IN THE WESTERN KENYA HIGHLANDS

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L'identification des contraintes de l'élevage a été réalisée par une estimation participative rapide (EPR) et une méthode d'enquête structurée (enquête transversale). L'étude portait sur les zones péri-urbaines et rurales. D'après l'EPR, les contraintes en zones péri-urbaines sont: les maladies, la sécurité (vol de bétail), le coût élevé des services, l'absence de services d'insémination artificielle, la faiblesse des services, le manque de remplacement des stocks, les contraintes financières et le manque de disponibilité alimentaire. Les résultats de l'étude transversale sont: les maladies, l'absence de services d'insémination artificielle, la commercialisation, l'eau, le travail, l'alimentation, les contraintes financières et des services vétérinaires faibles. Les contraintes majeures pour les régions de moyenne montagne dans les zones rurales d'après l'étude EPR sont: la faiblesse des services de vulgarisation vétérinaire, la commercialisation, les maladies, l'approvisionnement en eau, l'absence de services d'insémination artificielle et l'insuffisance alimentaire. Les résultats de l'enquête transversale sont: les maladies, le manque d'eau, l'absence de services d'insémination artificielle, l'insuffisance alimentaire, la commercialisation, le manque de travail et la faiblesse des Services Vétérinaires. Les contraintes identifiées utilisant les deux méthodes sont donc similaires. Ceci indique que les méthodes qualitatives rarement utilisées en santé animale peuvent représenter des outils efficaces dans les enquêtes préliminaires à un prix plus faible comparé aux méthodes quantitatives traditionnelles. Les EPR initient et facilitent également l'entrée dans les communautés humaines pour des études ultérieures. Les fortes mortalités de 32,8% et 21,4% détectées respectivement dans les zones rurales et peri-urbaines au cours de l'enquête transversale n'avaient pas été clairement définies par la méthode qualitative. Les différences et les similitudes entre les résultats sont discutées. Il peut être conclu que les 2 méthodes sont complémentaires.

INTRODUCTION

The agricultural sector is Kenya's economic mainstay. About 80% of the country is arid or semi-arid, but the remaining 20% has a favourable tropical climate where mixed smallholder farms predominate. Smallholder livestock farming contributes significantly to the economy of Kenya (Stotz, 1983). The primary objective of the study was to identify constraints against and opportunities for improving livestock health and productivity, through a participatory rural appraisal (PRA) and a structured questionnaire study.

MATERIAL AND METHODS

Study area

The study was conducted in Uasin Gishu district which is one of the seventeen districts in the Rift Valley Province of Kenya. The district can be broadly classified into three clusters of agro ecological zones (AEZ) i.e. Upper Midlands (UM), Upper Highlands (UH) and the Lower Highlands (LH) (Jaetzold and Schimdt, 1983).

Study design

Participatory rural appraisal (PRA) studies were carried out in each of the three AEZ and one peri-urban (PU) area. The PRA tools used were: secondary data collection, seasonal calendars, matrix scoring, semi-structured interviews, ranking, transect walks and direct observation. These techniques were adapted from those described by Chambers, (1992).

The PRA studies were followed by a cross-sectional study (CS). CSs were carried out in both the rural and PU areas. The CS was done to identify factors that constrain livestock production and the differences amongst the three AEZs. The following general information from the farmers was collected: current production, management practices, farm size and type, livestock species kept and other enterprises, housing, diseases and their control measures, nutrition, delivery of animal health services and marketing of produce.

Sampling strategy

The CS involved a two stage stratified random sampling procedure. The first stage involved random selection of three sub locations from each AEZ. If a sub location fell within two AEZs, it was listed twice before the sampling was made. The second stage was a random selection of village or Land Registration Units (LRUs) from each of the selected sub locations. 10 farms were then selected from each village or LRU. This gave a total of 90 farms for the three AEZs.

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A list of farms in the PU area was obtained with the help of the district veterinary and animal production offices. 90 farms were then randomly selected for the CS.

RESULTS AND DISCUSSION

PRA findings

The secondary data collected for the past ten years was found to be scanty and irregular. There was no particular data collection format. PRA field studies results are indicated in tables I and II.

Table I
Ranking of livestock production constraints perceived by farmers (PRA study)

Constraint	Area			
	UH	LH	UM	PU
Lack of tick control	1	1	4	1
Poor roads-market access	4	4	5	4
Delayed milk payment	5	3	3	
Lack of extension services	6	5	1	
Water shortage	2	6	6	7
Diseases of ruminant livestock		2	8	7
Diseases of poultry	3			
Lack of/poor AI services	7	7		5
Lack of credit	8		7	9
Feed shortage	9	8	9	
Poor veterinary services			2	6
Cattle theft				2
Expensive vet. services				3
Expensive replacement stock				8

Table II
Five most frequent cattle diseases as reported by farmers (PRA study)

Disease	Area			
	UH	LH	UM	PU
East Coast Fever(ECF)	1	1	1	1
Helminthosis	4	2	5	2
Anaplasmosis	3		2	3
Foot and Mouth disease	5	4		
Pneumonia		5		5
Blackquarter	2			
Eye infections		3		
Babesiosis			3	
Heartwater			4	
Mastitis				4

Cross-sectional study findings

The three main constraints from the structured questionnaire survey were: diseases, lack of artificial insemination(AI) services and water shortage. Others include., marketing difficulties, feed shortage and labour shortage (table III).

Table III
Ranking of livestock constraints perceived by the farmers (cross-sectional study)

Constraint	Area			
	UH	LH	UM	PU
Diseases	2	2	1	1
Lack of AI	1	1	3	2
Shortage of water	5	3	2	3
Marketing difficulties	4	5	5	4
Shortage of feed	3	4	4	6
Shortage of labour				5

Table IV
Ranking of cattle diseases perceived by the farmers (cross-sectional study)

Disease	Area			
	UH	LH	UM	PU
ECF	1	1	1	1
Anaplasmosis	3	3	2	2
Mastitis	5		5	3
Helminthosis			4	4
Foot and mouth disease		5	3	
Lumpy skin disease	2	2		5
Blackquarter	4	4		

The breakdown of tick control and the resulting high incidence of ECF in cattle were considered as one of the most important constraints to cattle production by farmers in both the rural and urban area. In small ruminants and poultry farmers did not consider diseases to be of great importance despite admitting high mortality in poultry, kids and lambs when probed further.

Poor roads making access to markets difficult, delayed milk payment by the Kenya Co-operative Creameries and a general lack of livestock services (AI, extension services, veterinary services, credit facilities) were also generally perceived as important constraints while, surprisingly, feed shortage was not ranked as a major constraint, though it was clearly evident.

CONCLUSIONS

There are some differences in the ranking of constraints and diseases obtained by the PRAs and structured questionnaire interviews (CS). For example, lack of AI, feed shortage and water shortage were ranked as more serious constraints in the cross-sectional survey than in the PRA. PRA provides a useful tool for the identification of smallholder problems and opportunities in livestock development (Young, 1992) and can be used to collect useful information on health problems in livestock (Catley, 1996). Furthermore, it initiates and facilitates easy entry into a community for further sustainable work as found out in this study. The two techniques complement each other very well (Sonaiya, 1992). Further studies i.e. longitudinal are required to evaluate the strengths and weaknesses of different methodologies employed to prioritise livestock diseases

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