

# Willingness to Pay for Breeding and Production Services: Application of a Contingent Valuation to Dairy Goat Breeding Programmes in Kenya.

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## INTRODUCTION

- Profound changes in the dairy goat sector in Kenya is attributable to past efforts by the government and donor agencies to implement dairy goat breeding (DGB) projects in the smallholder farms
- there are efforts to improve feeding and flock management, and the technical and infrastructural services such as extension, veterinary, marketing, monitoring and evaluation, and animal performance recording.
- the smallholder dairy goat production systems are located in an environment characterized by a number of market failures for some of its products (dairy products which are highly perishable) and factors (e.g., breeding and production services).
- Contingent valuation method (CVM) is a technique for valuing goods that uses survey questions to elicit WTP/WTA and can be used to evaluate provision of useful developmental services .
- The objective was to evaluate the provision of breeding and production services and determine the effectiveness of applying the services in dairy goat production systems in Kenya.



## MATERIALS AND METHODS

- Purposive sampling was applied to identify farmers participating in the various dairy goat projects in the selected areas.
- Sample size was determined using information from the project reports and assisted by a sample estimation technique.
- Approximately 311 smallholder farmers were for this study .

Two step heckman selection model was used to analyse the service. Six service provisions were identified and evaluated. These were:

- Veterinary services (VS)
- Extension services (ES)
- Marketing services (MS)
- Performance recording (PR)
- Monitoring and evaluation
- Provision of water (WT)

of dairy goat breeding activities (ME) .

These service provisions were the dependent variables of the six models analysed.

Probit analysis was used in the first step to estimate WTP selection equation. The dichotomous WTP decision function for the  $i^{th}$  farmer was formulated as:

$$WTP_i = \alpha + \beta_1 Z_i + \dots + \beta_n Z_n + \varepsilon_i \text{ and } i=1, \dots, n.$$

The second stage equation took the following form.

$$\ln P_i = \alpha + \beta_1 Z_i + \dots + \beta_n Z_n + \eta MR + \varepsilon_i \text{ and } i=1, \dots, n$$

## RESULTS

Table 1. Results of the Heckman two-step regression (2nd step OLS)

MODEL	Ordinary Least Squares (OLS)					
	VS	ES	MS	PR	ME	WT
Constant	4.9780***	4.2262**	-8.1397***	4.8309***	-6.5916***	-4.1556***
Age	-	-	-	-	-	-0.3478*
Hh	-	-	-	-	-	-
Gender	-0.1677	-0.4175	-	-	-	-
Hsize	-	-	-	-	-	-
Educ	-0.3066	-0.1364	-	0.1887*	0.1712	-
Project	1.4952	0.3115	1.8960	-1.1609	-0.5748	-8.1108
Location	-	-	-	-	-	-
Land	-	-	-	-	0.0043	-0.0632
Goats	0.2036	0.5821**	0.1134**	0.0088	0.1228	0.4591**
Satisfd	0.1965	0.4118	0.5132*	0.0684*	0.0617	-
Systmprd	0.2823***	0.4422***	0.4529**	0.3835**	0.5862*	0.2992
Socialbe	-0.1556	-0.1125	0.0360	-0.0784	0.1365	-
Vet_ext	0.8771	-	-	-	-	-
Joinl	-0.2423**	-0.5551*	-	0.1889	-0.0758	-
Vet	-0.3721*	-	-	-	-	-
Ext	-	-0.4217	-	-	-	-
Exten	-	0.1129	-	-	-	-
Typehsng	-	0.1415	-	-	-	-
S_Advice	-	-	-	-	-	-
Markt	-	-	0.0467	-	-	-
Info_Mrk	-	-	-0.2472**	-	-	-
Mkt_Lin	-	-	0.2235	-	-	-
Perfrd	-	-	-	-0.0434*	-	-
Records	-	-	-	-0.0696	-	-
Resource	-	-	-	0.5379**	-	-
Mon_Eva	-	-	-	-	-0.3356	-
Agency	-	-	-	-	0.0398	-
Meet_Pr	-	-	-	-	-0.4381	-
Prov_Wt	-	-	-	-	-	-0.4638
Labour	-	-	-	-	-	0.6403**
Waterdnc	-	-	-	-	-	0.0489
Lambda	-3.6182	1.6643	2.2518	2.6129	3.9536	6.7134

(\*\*\*) significance at 1% level. (\*\*) significance at 5% level and (\*) significance at 10% level

## CONCLUSIONS

- Farmers showed much willingness to pay for the provision of services since the goats were an important livelihood resource to them.
- Individuals or group of farmers should be linked to agents that provide these services.
- The needy groups require support in a cost sharing manner to avoid the services being restricted to only those who can afford