



Lessons learned from WTP studies on livestock traits and livestock services – the way forward

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Content



Prelude



What has been done so far in Ethiopia?



Why are stated choice studies on livestock and livestock services important?



The lessons we learned from what has been done so far?



The way forward – suggestion!



Prelude

What is choice?

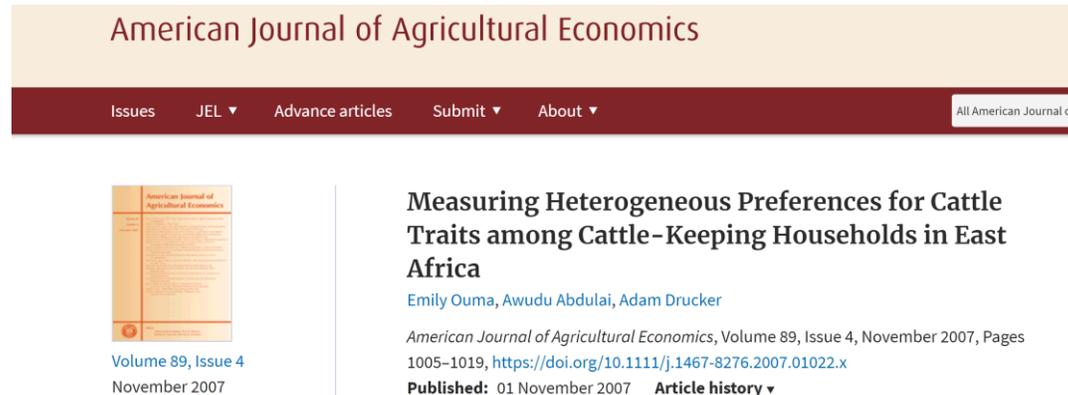
- Choice refers to the ability of a consumer or producer to decide which good, service or resource to purchase or provide from a range of possible options.
- It is an outcome of a sequential decision-making process.

Why do we need to understand choice behavior?

- Consumption of technologies depends on the interest consumers have in the different characteristics of the technologies.
- Understanding the preferences and WTP hence sheds light on the relevance of what we are supplying.

What has been done so far?

WTP studies using stated preference methods



American Journal of Agricultural Economics

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 American Journal of Agricultural Economics

Volume 89, Issue 4
November 2007

Measuring Heterogeneous Preferences for Cattle Traits among Cattle-Keeping Households in East Africa
Emily Ouma, Awudu Abdulai, Adam Drucker

American Journal of Agricultural Economics, Volume 89, Issue 4, November 2007, Pages 1005–1019, <https://doi.org/10.1111/j.1467-8276.2007.01022.x>
Published: 01 November 2007 [Article history ▾](#)

- Very young field of research.
- The first journal article on WTP for livestock traits in Ethiopia was published in 2007 by Ouma, Abdulai, and Drucker.
- We have **only 11** published articles in peer reviewed international journals..

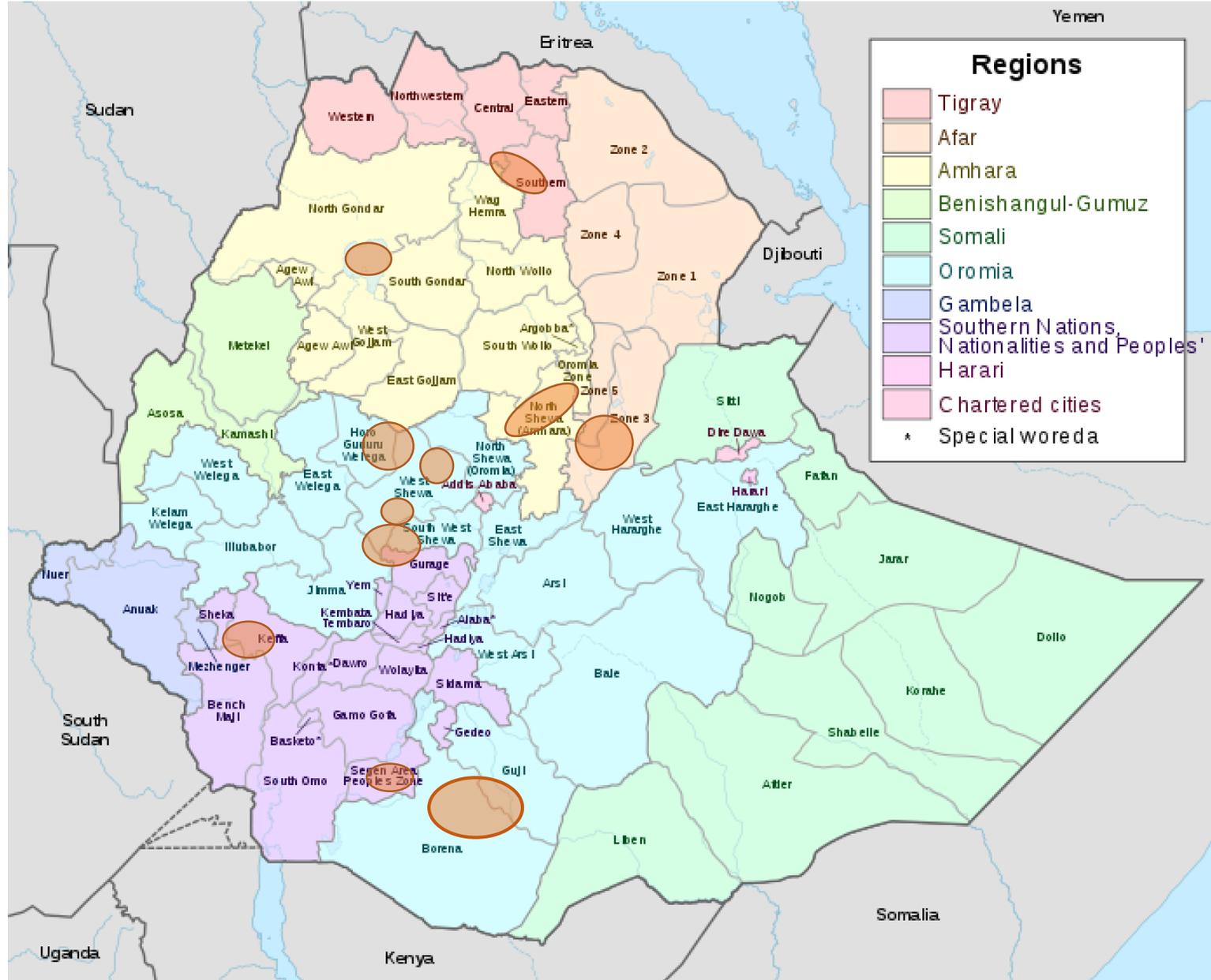
What has been done so far?

Author, Year	Location	Animal/Service	Sample size
Ouma et al., 2007	Lower and upper Ghibe Valley.	Cattle	204
Zander & Drucker, 2008	Borena (Yabello, Bule Hora, Arero)	Cattle	246
Kassie et al., 2009	Dano and Cheliya, West Shewa	Cows	200
Zander et al., 2009	Borena (Yabello, Bule Hora, Arero)	Cattle	246
Kassie et al., 2010	Dano and Cheliya, West Shewa	Bulls	200
Duguma et al., 2011	Afar, Bonga, Horro and Menz	Sheep	480

What has been done...?

AUTHOR, YEAR	LOCATION	ANIMAL/SERVICE	SAMPLE SIZE
Agimas and Mekonnen 2011	Lake Tana	Fishery	166
Terfa et al., 2015.	Horro and Jarso, Horro Gudru Zone	village poultry vaccine programmes	400
Woldu et al., 2016	Meta Robi (WSh), Abergelle (WH) and Konso (K)	Goats (breeding bucks and breeding does)	360
Terfa et al., 2018.	Horro	ND Vaccination	450
Terfa et al., 2019.	Horro	Chicken	450

Locations of the studies



Importance of SP studies on livestock



Livestock have various set of functions in rural Ethiopia.

They serve as store of value.

Measure of prestige

Food

Source of cash

Etc.



The different functions entail prioritizing different attributes of the animals.

It is not therefore convincing to always to assume that the direct consumable products are the priorities of the livestock keepers.



Their decision to adopt any breed or to replace theirs with another one is therefore more complicated than comparing egg or milk production per day.

Importance of SP studies on livestock

- Such studies among others show
 - Priorities of livestock keepers for better targeting of research and development
 - WTP and WTA values that can be used to develop compensation frameworks for genetic resource conservation.
 - They can be useful to justify genetic resource conservation investments.
 - The results of studies on WTP for services are useful inputs for designing livestock services.



Importance of such studies – Examples:



2009

Ouma et al (2007) Zander and Drucker (2008)
Kassie et al

- The values of the attributes considered are relevant, as they can be used in determining breeding programme goals and in selecting appropriate animals for breeding programmes.



2010

Kassie et al

- Comprehensive and informed approach will contribute towards reducing the erosion of the genetic diversity of the indigenous animal genetic resources.

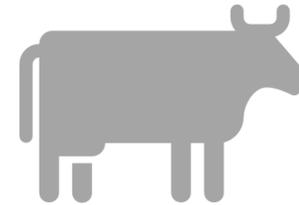
Importance of such studies - example



2011

Duguma et al

- **Served as a basis for designing alternative community-based sheep breeding program for the four indigenous sheep breeds in their production environments.**



2016

Woldu et al

- Suggested alternative breeding options, which are in line with farmers' trait preferences and market demands.

Lessons learned - Key findings

Ouma et al (2007)

- Good traction potential, fertility, and trypanotolerance were the most preferred traits of bulls.
- Trypanotolerance and reproductive performance were the two most preferred traits of cows.
- *Beef and milk yield were less preferred to other traits such as traction, fertility, and resistance to trypanosomosis.*

Zander and Drucker (2008)

- Traction suitability, tick tolerance, fertility, and drought tolerance are the 4 most preferred traits of bulls.
- Fertility, tick tolerance, and drought tolerance are the 3 most preferred traits of cows.
 - Milk was not even of interest to the respondents.

Lessons learned - Key findings

Kassie et al (2009)

- Cow traits - fertility, disease resistance and vigor of calves are at least as important as milk yield .

Zander, Drucker and Holm-Muller (2009)

- When asked their WTA for keeping EB instead of another breed, only 22% of the 226 livestock-keepers in Ethiopia stated that they would require any compensation at all, while this number was much higher in Kenya (70% of 119 livestock keepers).
- Conserving EB in Ethiopia is much cheaper even compared to doing so in Kenya.

Lessons learned - Key findings:

Kassie et al (2010)

- For bulls - good traction potential, big body size, disease resistance, calf vigor, and for places of origin are the most important traits.

Duguma et al (2011)

- Body size in rams and mothering ability in ewes were the most important traits of sheep.
 - Coat color was important in pastoral areas.
 - Ram libido was an important trait for farmers in Bonga, Horro and Menz areas.
 - Milk yield was important in Afar and twinning in Horro.

One fits all strategy will not work.

Lessons learned - Key findings

Agimas and Mekonnen (2011)

- In view of abating decline in population size of the unique Barbus fish in Lake Tana
 - Fishermen are willing to pay about 15 birr per month for an increase in the level of fishing control from the status quo.
 - The fishermen are willing to pay about 50 cents per month for an increase in the level of lake side plantation from the status quo level.
 - Fishermen claimed that the farmers are responsible for the lake side degradation.

Terfa et al (2015)

- A considerable proportion of interviewed farmers were willing to pay for the proposed poultry vaccine programmes.
- Farmers who perceived the vaccine service would effectively protect their chickens from diseases were more likely to respond that they would pay for vaccine service.
- Farmers were not making a simple decision for the sake of grateful testimony.

Lessons learned - Key findings:

Woldu et al (2016)

- Highland mixed crop livestock
 - twinning and mothering ability were the two most valued trait for does and libido was the most valued trait for breeding bucks.
- Arid agro-pastoral
 - The highest valued traits were large body size for breeding bucks and disease resistance for breeding does.
- Semi-arid agro-pastoral
 - brown coat color and twinning ability were highly valued for bucks and does respectively.

Terfa et al (2018)

- The preferred NCD vaccine programme had greater bird-level protection (i.e. greater capacity to reduce mortality should NCD occur in a flock), was delivered by animal health development agents, and could be administered via drinking water.

Farmers have clear choices.

In sum – we learned that



Understanding choice and the choice making process is essential.



Understanding of the mechanics of choice helps in designing effective interventions.



The implicit prices target communities attach to attributes of livestock and livestock services would be useful to justify the investment on research and development.



The preference elicitation and WTP value estimation techniques employed are state of the art and ensure that we are generating high quality scientific evidence.

both the generators and users of the information being made available need to take the initiative to embed the empirical evidence in the prioritization phase of development planning.

Way forward



Traditional economic analyses on livestock and cattle breeding programs often focus on raising milk and meat productivity, with little emphasis on the non direct income traits such as traction and disease resistance.



To what extent are we combining genetic diversity measures with economic valuation approaches to help determine cost-effective diversity maximising conservation strategies.



Because it is a very powerful and relatively affordable approach to elicit preferences for attributes of quality differentiated goods and services, we are going to continue applying the SP method in related but different studies.



Contribute towards the international effort in adapting the methodology to the different contexts it is being used particularly in developing countries.

Way forward



Develop a framework to embed the methodology in breeding value calculations done by livestock breeders.



We will continue building national capacity on this methodology for wider application and improvement of quality of research in valuation on non-traded goods and services.



We expect the relevant ministries to make use of scientific evidence of this sort in designing livestock breeding and livestock services development interventions.



THANK YOU!