Economic valuation of the preferred traits of indigenous Horro cattle in Ethiopia

Project on Improving the Livelihoods of Poor Livestock-keepers in Africa through Community-Based Management of Indigenous Farm Animal Genetic Resources

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Outline

- Objective of the study (recap)
- Status report
- Economic Valuation of Phenotypic Traits: An Impetus for Market Orientation of Livestock Production Systems? (briefing)
- Preferences of Phenotypic Traits in Central Ethiopia: What are the Implications for Cattle Production and Marketing Decisions of Farmers? (briefing)
- The move towards project outputs
- Conclusion
Objective

General

- Estimate the economic values of the preferred phenotypic traits.

Specific

- Study the methods by which economic values are attached to the phenotypic traits and the breed Horo.
- Estimate economic values of the important phenotypic traits and the ‘breed‘.
- Characterize the cattle market in central Ethiopia.
- Present information and suggest procedures for CBM of the Horo Cattle.
Status report

1. **Preliminary Survey**
   - **Objective:** to see the human and geographical boundaries of the study site (to set the scene).
   - **Status:** completed (including report).

2. **Reconnaissance survey**
   - **Objective:** to get acquainted with the biophysical and socioeconomic circumstances of the farming system in the project district.
   - **Status:** completed (including report).

3. **Final qualitative survey:**
   - **Objective:** to identify the most preferred cattle traits and to generate the cattle price distribution.
   - **Status:** completed (including report)
4. **Formal survey**
   - **Objective:** collecting data on selected variables related to the production and marketing of livestock (cattle).
   - **Status:**
     - Data collected satisfactorily (199 cases and 361 variables)
     - Data fully computerized.
     - Data cleaned and ready for analysis.

5. **Choice experiment**
   - **Objective:** to elicit cattle trait preferences of livestock keepers and consumers.
   - **Status:**
     - Data collected satisfactorily.
     - Data coding and computerizing going on.
6. **Rapid market appraisal**
   - Objective: to put the observations made at the project site in the wider context.
   - Status: Data satisfactorily collected.

7. **Hedonic pricing data collection**
   - Objective: to compare the stated preferences at a time with the revealed preferences over four seasons.
   - Status: 75% of the data (300 cases) are collected.

8. **Information and Knowledge sharing**
   - Technical reports for activities 1-3 shared with all supervisors.
   - Administrative reports for all activities shared with all supervisors.
   - Two articles presented on the 14th annual conference of ESAP.
   - A poster (with 4 page write up) to be presented at Tropentag 2006.
Key issues

- Market orientation of the LPS is not an alternative any more rather an obligatory option.
- EV of the traits of the indigenous cattle population is one of the inputs to increase the dynamism and efficiency of the LPS.
- EV would strongly reinforce the argument for rational resource allocation in the development, utilization and conservation of the valuable AnGR.
Key issues

- A number of issues can be raised related to
  - the importance, precision, timeliness, replicability, and conclusiveness of EV of phenotypic traits vis-à-vis transformation of the LPS.
  - Given the scientific argument that the genetic variations would not be exclusively caught in the phenotypic traits, the extent to which EV would contribute towards genetic improvement programs could be strongly questioned.
Key issues

- The preferences for cattle traits do vary also based on the reasons of buying/selling and the places where the sellers/buyers and animals came from.
- Variability among and within the different systems - replicability of the results generated from economic valuation efforts.
- The scenario which could happen about our livestock population with a different breeding strategy.
Key issues

- Cultural and religious costs and benefits related to livestock wealth are hardly captured in EV of traits - inconclusive.

- Research - focus on
  - strengthening the complementarities between EV and genetic improvement,
  - on improving the relevance, conclusiveness, dynamism and precision of EV for a well informed designing of the animal breeding polices and strategies of the country.
2. Preferences of Phenotypic Traits in Central Ethiopia: What are the Implications for Cattle Production and Marketing Decisions of Farmers? (briefing)

Girma T., Clemens W., Awudu A., Adam D., and Workneh A.

Paper presented on the 14th Annual Conference of ESAP, September 5-7, 2006 – Addis Ababa
Key Issues

- Basic Implications of observed preferences
  - Trait preferences have shown that farmers (both as keepers and marketers) are keenly interested in those related to the products and services.
    - The dual purpose of oxen is clearly seen here as farmers highly rank traits related to draft power and calf strength.
    - Cattle choice doesn’t imply simply picking the big or the milky one rather shows how farmers intricately tradeoff among the various characteristics.
  - Research:
    - Elicit preferences of livestock keepers.
    - Synergize farmers’ perceptions and scientific experience.
Key Issues

- Sustainable management of the valuable FAnGR of Ethiopia entails comprehensive understanding of the trait preferences of livestock keepers and consumers and the implications thereof.

- Lessons learned
  - Farmers have clear and consistent preferences for the different phenotypic characteristics
  - Farmers have unwavering interest in the traits inherently related to the basic products and services they expect from their livestock resources.
Key Issues

- Interventions shall have a holistic approach to appreciate what the community is doing to strike a balance between maximizing the consumable output and conserving the resource.

- Research has a lot to contribute in the area of understanding and modelling the preferences for the different traits.

- Research would have to estimate the opportunity cost of the misguided cross breeding and artificial insemination going on in the country.
The move towards project outputs

The project outputs (1-3, 6)

1. A framework CBM of AnGR developed, its operational components tested and at least one program established and functional in each project country (Benin, Ethiopia and Kenya) by the end of the project period;

2. Producer/consumer preferences, market opportunities and policy options used to improve understanding of constraints to/opportunities for livestock-keepers to derive increased benefits from indigenous livestock;

3. National capacities for the conservation and sustainable use of indigenous AnGR strengthened;

4. Models, guidelines and manuals for collaborative design, implementation and evaluation of CBM frameworks elaborated.
CBM of AnGR

- Working definitions
  - AnGR – by Rege and Gibson, 2003 (Ecol. Econ. # 45)
  - CBM of AnGR - by Kohler-Rollefson, 2001, and Rege, 2001 (Swaziland workshop proceeding).

- Data generated
  - Community
    - Resource ownership and use
    - Preferences of traits and breeds
    - Indigenous knowledge and specific perceptions
      - Contributions of livestock/cattle
      - Traditional farm animal breeding
    - Priority
Community (cont.)
- Challenges
- Opportunities
- Trends
- To be worked out soon
  - Future directions
  - Assumptions
  - Risks

AnGR (Data generated)
- Population description
  - Phenotypic
  - Functional (livelihood contribution)
  - Marketing
Output 1

- AnGR (Data generated)
  - Trends
    - Population size
    - Feed availability
    - Disease incidence etc.
  - Livestock/Cattle and the environment.

- Marketing (Data generated)
  - Temporal distribution of cattle demand and supply
  - The pricing pattern
  - Trait preferences
  - Market preferences.
  - The type and role of the marketers in cattle markets.
Output 1

- Institutions and undertakings (Data generated)
  - Internal
    - Herd management, mating control, etc.
  - External
    - Introduction of new genetic materials by research and extension organizations.

- Additional requirement
  - Analysis of the policies and strategies related to management of AnGR
Tasks ahead in this line

- Technical boundary setting for the community (?) and for the AnGR it is to manage.
- Developing economic justifications for the tradeoff between (current) consumption and conservation of AnGR.
- Developing the mechanism by which the markets and the pricing calendar are used for faster commercialization of LPS in the district.
- Framing and discussing the structure for CBM of AnGR in the project site.
P/C preferences, market opportunities and policy options for livestock-keepers to derive increased benefits from indigenous livestock

- Data generated on key variables related to
  - Animal (trait and breed) preferences
  - Market preferences (sellers and buyers)
  - Price calendar
  - Stated choices based on profiles of hypothetical cattle.
  - Observed price data with characteristics of animals exchanged, features of buyers and reasons of selling.
  - Information asymmetry within and among the markets
  - Interventions for higher benefit out of marketing of livestock/cattle.

- Gap – no livestock marketing policy analysis has been done.
Tasks ahead in this line

- Working out the economic values of the preferred traits – stated preference + revealed preference data,
- Calculating producer and consumer surplus
- Developing an ‘ideal’ annual marketing plan (in which market to sell and/or buy and when) for Dano farmers.
National capacities for the conservation and sustainable use of indigenous AnGR strengthened

Farmers have definitely enormous capacity in terms of knowledge and determination for conservation and "sustainable" use of IFAnGR.

- Interventions will be made to deliver the economic justifications of keeping animals with the preferred traits.
- The research community would be provided with a series of research reports aimed at changing the long held belief that milk and meat are the most demanded traits and the animals should be kept for this purpose.
Models, guidelines and manuals for collaborative design, implementation and evaluation of CBM frameworks elaborated.

Logically follows from outputs 1-4.
Conclusion

- We are working well ahead of schedule – thanks to the project management team, all respondents and staff of Bako Agricultural Research Centre.
- This research will strive to be up to what is expected by the project team.
- Much more can be achieved if the policy analysis is done in time.
- Again, as we are in a learning process much is to be improved as we go along.
Thanks a lot!