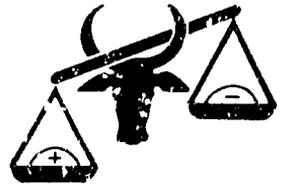


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AFRICAN LIVESTOCK POLICY ANALYSIS NETWORK

SUPPLEMENT TO NEWSLETTER NO 4
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ILCA LIVESTOCK ECONOMICS UNIT

Summary of Research Findings
List of Staff Publications



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I. SUMMARY OF RESEARCH FINDINGS

AFRICAN DAIRY IMPORTS

1. PAPERS

- (i) Valentin H. von Massow. 1984. Dairy imports into sub-Saharan Africa: Development and policies". LPU Working Paper No. 4. ILCA, Addis Ababa.
- (ii) Valentin H. von Massow. 1984. Policy issues related to dairy imports in Africa. Paper presented at ILCA Livestock Policy Conference, Addis Ababa.
- (iii) Valentin H. von Massow. 1985. Dairy imports into sub-Saharan Africa and their policy implications. ILCA Bulletin 21. ILCA, Addis Ababa.
- (iv) Valentin H. von Massow. 1985. Dairy imports and import policy in Mali and their implications for the dairy sector in the Bamako Area. LPU Working Paper No. 8. ILCA, Addis Ababa.
- (v) S.G. Nwoko. 1986. The development of dairy imports in Nigeria. LPU Working Paper No. 19. ILCA, Addis Ababa.

2. FINDINGS

(a) Dairy Imports in sub-Saharan Africa

- (i) An overview of existing dairy trade in sub-Saharan Africa reveals that the sub-continent imports about 30% of its total milk consumption. West and central Africa import 45% and 57% of their needs respectively, while East Africa imports 13%.
- (ii) Analyses of the factors influencing the scale of dairy imports into sub-Saharan Africa indicate that individual national policies have had more stimulating effects on commercial imports than exogenous factors such as growth in human populations, per caput incomes or domestic dairy production.

(b) Mali Case Study

- (i) The Malian case shows that one third of the dairy imports comes from food aid, and accounts for about 20% of total milk consumption in Mali. About 65% of these imports are consumed in Bamako, Mali's capital. The Malian government's import policy is aimed at providing cheaper dairy products for the urban consumers while stimulating domestic production by investing the revenues from sales of dairy food aid in dairy development.
- (ii) The Malian government's import policy has not only failed to improve consumer welfare, but has also not stimulated domestic milk production. Retail prices for dairy products in Bamako have been distorted to the extent that dry milk consumption is favoured over fresh liquid milk. Results of the research have so far been discussed with the Malian authorities.

POST-DROUGHT REHABILITATION OF THE LIVESTOCK SECTOR

1. PAPER

Camilla Toulmin, 1985. Livestock losses and post-drought rehabilitation in sub-Saharan Africa. LPU Working Paper No. 9. ILCA, Addis Ababa.

2. FINDINGS

(a) Effects of Drought

- (i) Drought losses affect both pastoral livestock capital (up to 80 and 90% depending on species) and crop production (up to 30-60% fall in area cultivated).
- (ii) Pastoral livestock losses also result in increased demand for and price of grain which constitutes 30-60% of total calorie requirements by pastoral communities.
- (iii) Government revenue falls and foreign exchange resources are put under increased pressure.

(b) Policy Measures and Their Impact

- (i) Government measures for post-drought recovery (credit for herd/work oxen reconstitution, export/slaughter bans, price subsidies etc.) have a short-term negative impact on the government budget and external trade.
- (ii) A policy of inaction entails high economic, financial and social costs reflected in lower livestock/crop output reduced tax revenue, lower export earnings and increased dependence on outside support.

(c) Past Experience:

- (i) In the long-term, herd reconstitution programmes are comparatively more costly than providing food relief but much less costly than developing irrigated agriculture as a non-pastoral source of income.
- (ii) Draft power reconstitution schemes compare favourably with the cost of providing continued relief grain.
- (iii) Post-drought supplementary feeding has its highest value in the supplementation of work oxen compared to supplementation of either breeding females or calves.

RESEARCH RESOURCE ALLOCATION

1. PAPERS

John McIntire. 1985. "Research resource allocation in ILCA." Manuscript. ILCA, Addis Ababa.

John McIntire. 1985. Allocation of livestock research resources in sub-Saharan Africa. ILCA Bulletin No. 22. ILCA, Addis Ababa.

2. FINDINGS

(a) Allocations by zone

- (i) ILCA's current (1985) allocations are congruent with the distribution of ruminant livestock by ecological zone in sub-Saharan Africa.
- (ii) An allocation based on income, animal protein consumption, human population, and numbers of ruminant livestock would shift toward the sub-humid and humid zones and away from the arid and semi-arid.
- (iii) An allocation based on expected returns to research would shift toward the humid and sub-humid zones and away from the arid and semi-arid.

(b) Allocations by disciplines

- (i) ILCA's allocations to the social sciences are too large within the Center.
- (ii) ILCA's allocations to the social sciences are too large, compared to the analogous allocations of ICRISAT and IITA.

(c) Allocations by species

- (i) A greater allocation should be made to small ruminants research.

(d) Relations to national research programs

- (i) ILCA's share of livestock research (about 33%) in sub-Saharan Africa is relatively high, implying that increases in ILCA's total allocation should be matched by increases in the total funding of national programs to livestock research.
- (ii) Animal health has been emphasized in the national programs at the expense of nutrition, physiology, and forage agronomy, implying that ILCA should concentrate on the latter fields.
- (iii) National programs have concentrated on higher potential areas and on cattle, implying that ILCA should have sustained efforts on the lower potential areas and on small ruminants.

PRICING POLICY IN THE LIVESTOCK SECTOR

A. Zimbabwe Beef Price Study

1. Papers

- (i) Gil Rodriguez Jr. 1985. The economic implications of the beef pricing policy in Zimbabwe. ILC Bulletin No. 22, I.L.C.A, Addis Ababa.
- (ii) Gil Rodriguez Jr. 1984. "The usefulness of the ridge regression approach to supply function estimates". Manuscript. I.L.C.A, Addis Ababa.
- (iii) Gil Rodriguez Jr. 1985. The short- vs long-run beef price elasticities: The case of Zimbabwe. Manuscript. I.L.C.A, Addis Ababa.

2. EMPIRICAL FINDINGS

- (i) The nominal protection coefficient (ratio of domestic producer price to the border price) had been rising for the period 1965-82.
- (ii) Domestic beef consumers were confronted with declining subsidies on their consumption from 1966 to 1975 and were subsequently taxed from 1976 to 1981.
- (iii) The absolute magnitude of the supply price elasticity parameter for commercial beef producers is 44% to 79% higher than that obtained for communal farmers.
- (iv) The domestic demand for beef is price inelastic (with a value of -0.48 to -.51).

3. POLICY IMPLICATIONS

- (i) The continued subsidy to domestic beef producers (mostly commercial) and suppression of domestic beef demand by taxing the beef consumption of domestic consumers can result in a beef surplus for exports. This implies that international contracts for beef exports must be firmed up to minimize fluctuations in export earnings.
- (ii) Marketable surplus for beef will be generated mostly by commercial producers unless technological innovations are pursued in the communal areas.
- (iii) A slight change in per caput consumption of beef will exert pressure on the Government to permit a more than proportionate change in the retail price.

B. Zimbabwe Milk Price Study

1. PAPER

Gil Rodriguez Jr. 1986. The impacts of the milk pricing policy in Zimbabwe.
ILCA Bulletin (Forthcoming).

2. EMPIRICAL FINDINGS

- (i) A 10% rise in the milk producer price will result in an incremental output increase of 6.3% for the commercial farms.
- (ii) The short-run response of commercial milk output to price increase will be mainly in the form of yield increases.
- (iii) Domestic demand for wholemilk is responsive to retail price changes (i.e. a 10% reduction in the real retail price of wholemilk induces a 6.58% rise in per caput consumption). Since the Government grants a substantial subsidy on wholemilk retail price, this will greatly enhance domestic consumption.
- (iv) Production of milk in non-commercial areas will generate very little marketable surplus due to marketing, nutritional and other dairy technological constraints.

3. POLICY IMPLICATIONS

- (i) Government will have to continually rely on the commercial sector to meet the demand for dairy products by the urban sector of the economy.
- (ii) If subsidy is continually pursued for wholemilk consumption, this will result in future milk imports in the absence of a large technological change which will increase domestic milk supply.
- (iii) Additional dairy demand pressure can come from the non-urban areas due to their rapid population growth coupled with a static dairy technology.

FINANCING LIVESTOCK SERVICES IN SUB-SAHARAN AFRICA

1. PAPERS

Addis Anteneh. 1984. Financing livestock services. Paper presented at Conference on Livestock Policy Issues in Africa. ILCA, Addis Ababa.

Addis Anteneh. 1985. Financing animal health services in some African countries. In John Howell(ed.) Recurrent Costs and Agricultural Development. ODI, London.

Addis Anteneh. 1985. Financing livestock services in some countries of East and southern Africa. LPU Working Paper No. 6. ILCA, Addis Ababa.

2. FINDINGS

(a) Overall Expenditure Patterns

- (i) Many African governments tend to neglect their livestock sectors - in 18 countries the average share of government expenditure on livestock services in expenditure on all agricultural services (15%) is much lower than the average share of net livestock output in total agricultural GDP (28%).
- (ii) During the 1970s, although real expenditure per livestock unit increased, the proportion of the total livestock services budget spent to meet staff costs rose significantly (more than 25%) in most countries.
- (iii) Richer countries (>US\$ 400 GNP/caput) spent more (about 2.5 times) on their livestock services than poorer countries in terms of absolute expenditure per livestock unit.

(b) Regional Expenditure Patterns (1970s)

- (i) Government real expenditure on livestock services increased at a faster rate in East and southern African (ESA) than in West and central African (WCA) countries.
- (ii) ESA countries maintained or increased the share of expenditure on livestock services in expenditure on all agricultural services while this share declined in WCA countries.
- (iii) A relatively high proportion of the recurrent livestock budget is spent to meet non-staff costs in ESA countries.

3. POLICY IMPLICATIONS

Government funds are increasingly becoming inadequate to meet the non-staff costs of livestock services. The implications for future government policy in most countries point to at least two major considerations:

- (a) A fresh examination of cost recovery and privatisation policies in order to be able to shift some of the financing burden to direct beneficiaries.
- (b) A re-examination of longer term policy related to the training and employment of animal health personnel in order to ensure their effective deployment and utilization in both government and private services.

DAIRY MARKETING IN AFRICA

1. PAPERS

- Stephen G. Mbogoh. 1984. Dairy development and internal dairy marketing in sub-Saharan Africa: Performance, policies and options. LPU Working Paper No. 5. ILCA, Addis Ababa.
- Stephen G. Mbogoh and Negussie Tilahun. 1986. Dairy marketing in Ethiopia: Policy implications of purchases by households in Addis Ababa. (Forthcoming as ILCA Research Report).

2. FINDINGS

(a) Dairy Marketing in sub-Saharan Africa

Detailed studies of dairy marketing in sub-Saharan Africa are few. A cross-country review of dairy marketing policy objectives indicates that governments aim at providing higher incomes to producers, assuring reliable supplies to consumers at lower prices and maintaining product quality. Policy instruments used include the establishment of large-scale monopolistic marketing agencies, licensing and inspection of traders.

(b) Addis Ababa Case study -- Consumers' Survey

A survey of households in Addis Ababa reveals that:

- (i) only 22% of those whose monthly income is less than 250 Birr (approximately US\$121) purchase dairy products while 57% of those earning 250 Birr and above purchase dairy products.
- (ii) consumers of dairy products in Addis Ababa have a wide range of marketing channels from which to buy.
- (iii) the choice of a particular channel over for low income consumers depends on convenience when collecting milk, regularity of supply and hygiene and cleanliness. Low price of milk is not ranked as an important factor in determining choice.
- (iv) the direct producer-consumer marketing channel handles 71% of total volume, while the government channel represented by the Dairy Development Enterprise (DDE) outlets handle only 15%.
- (v) price and income elasticities of demand for liquid milk in Addis Ababa are -0.59 and 0.20, respectively.

(b) Addis Ababa Case Study -- Producers' Survey

Preliminary results of a survey of those producers whose cattle are kept in Addis Ababa indicate that:

- (i) 78% of the producers produce milk both for home consumption and for sale.

- (ii) producers in Addis Ababa have a wide range of sale outlets.
- (iii) milk price is highest when sold to individual consumers (84 cents/litre), and lowest when sold to DDE (50 cents/litres).
- (iv) the choice of sale outlets depends primarily on the reliability of the buyer and short delivery distance for those who deliver milk to customers' houses or to other classes of purchasers. Price is not ranked high as an important factor.
- (v) 76% of the producers sell directly to consumers, and 14% sell to Bunabets (small coffee shops in addis Ababa).

3. POLICY IMPLICATIONS

- (i) Producers within the city play a significant role in serving the needs of the urban dairy consumers, and policies should take account of this.
- (ii) A major objective of the government marketing policy is to provide wholesome milk at low prices to consumers. However, the results of the consumers' survey suggest this is only partially met. The official channel (DDE outlets) which provides the cheapest source of milk is not as frequently used as the direct producer-consumer channel. Consumers believe other factors are more important than price in deciding from whom to buy their milk products. Therefore, these factors should be considered when formulating policies.

ECONOMETRIC REVIEW OF SUPPLY RESPONSE

1. PAPER

Edjigayehu Seyoum and John McIntire. 1986. A review of econometric supply response estimates for livestock products. Working document. ILCA, Addis Ababa.

2. FINDINGS

- (i) This review of the literature revealed that economic factors -- prices in particular -- were the most important determinants of livestock supply identified.
- (ii) Price elasticities of supply differed between countries, regions within the same country, price conditions, periods of time, and sexes of the animals.
 - Short-run elasticities in developing countries, though having negative signs, were higher in magnitude than those in developed economies.
 - The suggestion of a long-run negative supply response elasticity for Swaziland, however, was unique.
 - The explanation for the sign of the elasticities differed between countries.
- (iii) Lack of data and appropriate measurement techniques had limited both the use and explanatory power of technology as an independent variable. However, where such a variable was used, whether through a time-trend dummy -- as was done in most cases -- or through what was thought to be an appropriate measure -- eg. introduction of crossbreds in the case of milk production -- its impact on livestock supply was found to be significant.
 - Other variables, in addition to economic and technological ones, e.g. rainfall, were also found to affect livestock supply though to a lesser extent.

3. POLICY IMPLICATIONS

The results implied that similar policies would have differential effects even within regions of a country, and that a better understanding of the motives for undertaking the different types of livestock activities is required before introducing/implementing livestock related policies.

ALLEY FARMING WITH SMALL RUMINANTS

1. PAPERS

J.E. Sumberg, John McIntire, C. Okali and A. Atta-Krah. An economic analysis of alley farming with small ruminants. Submitted to Tropical Agriculture in November, 1985.

2. OTHER PRODUCTS

A spreadsheet model of alley farming with and without animals was developed. The model can be used to analyse variations on the basic alley farming system with different crops, animals, supplementation rates, tree densities, and prices.

3. FINDINGS

- (i) Alley cropping is economically superior to fallow in the humid zone of Nigeria.
- (ii) Alley farming with goats having undergone PPR control is economically equal to alley cropping if the goats achieve a 23% increase in net productivity resulting from Leucaena supplementation.
- (iii) Alley farming with goats not having undergone PPR control is economically equal to alley cropping if the goats achieve a 37% increase in net productivity resulting from Leucaena supplementation.
- (iv) Alley farming with sheep is economically equal to alley cropping if the sheep achieve a 23% increase in net productivity resulting from Leucaena supplementation.

ECONOMICS OF CATTLE FATTENING

1. PAPERS

John McIntire, K. Agyemang, M.H. Butterworth and L. Nkhonjera. 1985. Economic analysis of Malawi cattle fattening data. Manuscript. ILCA, Addis Ababa.

2. FINDINGS

- (i) Regression analysis of cattle fattening data from more than 5,000 animals in Malawi showed significant effects of season, year, and days at stall.
- (ii) Improved breeds were not particularly important in weight gains, implying that they were not necessary for the success of a fattening scheme.
- (iii) Regression analysis of weight gains showed low R-squareds, implying that relatively little is known about how gains are achieved.
- (iv) Partitioning of net benefits into price, weight, and price* weight interactions showed price to be 60% of the total in two sites.
- (v) Weight gains were 20% and price*weight interactions were 20% of the total, respectively.
- (vi) The implications of the previous findings are that prices could be lowered to consumers and profits maintained to producers if weight gains could be improved.

CONSTRAINTS TO FERTILIZER USE IN SUB-SAHARAN AFRICA

1. PAPERS

John McIntire. 1985. Constraints to fertilizer use in sub-Saharan Africa. Accepted for publication in Fertiliser Research.

2. FINDINGS

- (i) The principal crops of the seed-fertilizer revolution -- rice and wheat -- are rare in sub-Saharan Africa compared to maize, millet, and sorghum.
- (ii) Irrigation stimulates fertilizer use and is relatively rare in sub-Saharan Africa.
- (iii) A literature review of fertilizer responses showed that maize, sorghum, and millet have lower physical responses to N and to P than does rice.
- (iv) The first three findings imply very strongly that fertilizer use will be lower per hectare in sub-Saharan Africa than in irrigated areas where wheat and rice are grown.
- (v) Review of economic analyses of fertilizer use in rainfed cereals, principally millet and sorghum, done on and off-station shows that they can be fertilized profitably in many circumstances, even in marginal rainfed areas.
- (vi) The previous finding implies the question: why are not more fertilizers used? A market model of fertilizer demand and regression analysis of demand for imported N and P imply that fertilizers are rationed -- i.e., that there is a supply constraint imposed by government import restrictions.
- (vii) The policy implication of the above is that the most rapid means to increase N and P use in sub-Saharan Africa is to lift import restrictions.

INCOME STABILITY

i. PAPER

Gil Rodriguez Jr. and F. Anderson. 1986. Farm risks: A case study of a mixed farming system in highland Ethiopia. (Submitted for publication).

2. FINDINGS

- (i) Within the traditional farming system, increasing the sheep herd sizes reduces the variation of net farm income.
- (ii) Adoption of the improved single-ox draught system lowers the variation of net farm income.
- (iii) Inclusion of the crossbred cow as an option in the dairy technological set of the farmers reduces income variation relative to the traditional farming systems.
- (iv) Another impact of the crossbred cow technology adoption is to stimulate crop specialization due to the high labor costs and milk yields.

PHOSPHATE RESPONSE IN FORAGE CROPS AND SOURCE OF P

1. PAPERS

Edjigayehu Seyoum and John McIntire 1986. "Literature review and economic analysis of forage crop response to phosphate rock in East Africa." Manuscript. ILCA, Addis Ababa.

2. FINDINGS

- (i) Fewer than 10 detailed references were found on the subject for East Africa.
- (ii) Most work was done in Kenya, using Ugandan rock phosphate.
- (iii) The direct response to rock P205 was usually less than that to chemical P205.
- (iv) The residual response to rock sources was usually insufficient to make rock sources agronomically competitive with chemical sources.
- (v) Economic analysis of the trials showed that chemical sources were generally superior to rock sources.
- (vi) Inclusion of residual effects did not change the previous finding.
- (vii) Economic analysis of trials conducted by ILCA in Ethiopia showed that Egyptian rock phosphates were only economically superior to chemical sources on t. steudneri, and not on lucerne or on t. quartinium.
- (viii) Rock sources gave best economic results at applications of 30 kg/ha P205 or less.
- (ix) Economic analysis of the same trials showed that Togolese rock sources gave similar results to Egyptian and were inferior to chemical sources on lucerne and t. quartinium.

TRADEOFF BETWEEN GRAIN AND STRAW YIELD IN SORGHUM CULTIVARS

1. PAPERS

John McIntire, Jess D. Reed, Abate Tedla, and Samuel Jutzi. 1985. "Evaluating sorghum cultivars for grain yield and for feed". Manuscript. ILCA, Addis Ababa.

2. FINDINGS

- (i) Regression analysis of sorghum trials with 24 cultivars at Debre Zeit showed no significant negative effect of grain yield or of grain color on total straw yield.
- (ii) Regression analysis of the same data set showed a significant ($P < 0.05$) negative effect of grain yield, but no significant effect of grain color, on digestible straw yield; the elasticity of digestible straw yield with respect to grain yield was about -0.3.
- (iii) Ranking cultivars on grain yield, straw yield, and digestible straw yield showed a high consistency among ranks.
- (iv) Only the rank-order correlation between total straw yield and digestible straw yield was significantly negative at the 10% level.
- (v) Economic analysis showed that selecting cultivars only for grain yield might have significant costs in forgone value of digestible straw and that straw yield should be considered in cultivar evaluation.

PATH ANALYSIS OF ANIMAL PRODUCTIVITY

1. PAPERS

John McIntire and R.T. Wilson. 1986. "A path analytic model of animal productivity". Manuscript. ILCA, Addis Ababa.

2. METHODS

- (i) A path model of sheep and goat production was constructed with data from semi-arid Mali.
- (ii) Only animals having survived to 150 days were selected -- i.e., young stock mortality was excluded from the analysis.
- (iii) Paths were estimated using ordinary least-squares.
- (iv) The model was used to separate direct flock effects from indirect ones.

3. FINDINGS

- (i) Results for both species showed inflexion points after weight at 10 days - i.e., after that point, path coefficients were large, suggesting that 10-day weight is a dominant point in the productivity sequence.
- (ii) R-squared values for both species with 10-day weight were low, suggesting that the data can explain little variance in 10-day weights and that we know little about productivity to that point in the animal's life.
- (iii) Paths via dam weight were more important in sheep than in goats.
- (iv) The previous finding suggests that a dam supplementation strategy is better for sheep.
- (v) Paths via 10-day weight were more important for goats than for sheep.
- (vi) The previous finding suggests that a kid supplementation strategy is better for goats.
- (vii) Indirect flock effects were generally large as percentage of direct effects; this suggests that the direct effects underestimate productivity effects associated with flock management.
- (viii) These findings must be interpreted carefully because young stock mortality was excluded; a further analysis will include that variable.

II. STAFF PUBLICATIONS AND OTHER DOCUMENTS - 1982-1986

A: PUBLISHED PAPERS

1. Anteneh A. 1982. Production objectives and market forces. In Gatenby R M and Trail J C M (eds). Small Ruminants Breed Productivity in Africa. ILCA, Addis Ababa.
2. Anteneh A. 1984. Trends in sub-Saharan Africa's livestock industries. In Hawksworth, D.L. (ed). Advancing Agricultural Production in Africa. Common Wealth Agricultural Bureaux, Slough, UK.
3. Anteneh A. 1985. Financing animal health services in some African countries. In Howell, J. (ed). Recurrent Costs and Agricultural Development. ODI, London.
4. Mbogoh S G. 1984. Dairy development and dairy marketing in sub-Saharan Africa: Some preliminary indicators of policy impacts. ILCA Bulletin 10: 8-16.
5. McClintock J. 1984. Factors affecting output levels from African livestock sectors: An analysis of available data. ILCA Bulletin 17: 10-18.
6. Binswanger H P and *McIntire J. 1984. Behavioral and material determinants of production relations in land abundant tropical agriculture. World Bank Agricultural Research Unit Paper No. 17. This paper has been accepted for publication in Economic Development and Cultural Change.
7. Rosenzweig M R, Binswanger H P and *McIntire J. 1984. From land abundance to land scarcity: The effects of population growth on production relations in agrarian economies. World Bank Agricultural Research Unit Paper No. 28.
8. McIntire J. 1985. Allocation of livestock research resources in sub-Saharan Africa. ILCA Bulletin 22: 2-8.
9. *McIntire J and Delgado C L. 1985. Statistical significance of indicators of efficiency and incentives: Examples from West African agriculture. American Journal of Agricultural Economics 67 (4): 733-738.
10. Rodriguez G. 1985. Economic implications of the beef pricing policy in Zimbabwe. ILCA Bulletin 22: 15-20.
11. Sandford S. 1983. Management of pastoral development in the Third World. John Wiley and Sons in association with the Overseas Development Institute, Chichester.
12. Sandford S. 1983. Organisation and management of water supplies in tropical Africa. ILCA Research Report 8, Addis Ababa.
13. Sandford S. 1983. The development experience. In Proceedings of the Pastoral Systems Research Workshop. ILCA, Addis Ababa.
14. *Sandford S, Anderson F and *Anteneh A. 1983. The scope for improvement. In Proceedings of the Pastoral Systems Research Workshop. ILCA, Addis Ababa.

15. von Massow V.H. 1983. EG-Agrarpolitik and Ernährungssicherung in der Dritten Welt - der Dialog findet (noch) nicht statt (EC Agricultural Policy and food security for Third World countries - the dialogue is not (yet) under way). Entwicklung und ländlicher Raum 6.
16. von Massow V H 1983. On the impacts of EEC beef preferences for Kenya and Botswana. Quart. Journ. Int. Agric. 22 (3): 216234.
17. von Massow V H. 1984. Einfuhrbegünstigungen and Ausfuhrpolitik der EG bei Rindfleisch (Preferential imports and export policy for beef in the EEC - An analysis of impacts with a discussion of development aspects referring to the ACP quota). Kieler Wissenschaftsverlag Vauk, Kiel.

N.B: In case of multi-authors *preceding name indicates that person is staff member of ILCA's Livestock Economics Unit.

B : OTHER DOCUMENTS

1. ANON. 1984. ILCA Livestock Policy Unit. Programme Review and Reports (mimeo). ILCA, Addis Ababa.
2. ANON. 1984. Livestock Policy Unit Internal Review of 1984 programme. 1985 protocols for ongoing projects (mimeo). ILCA, Addis Ababa.
3. ANON. 1985. Record of the ILCA Social Scientists Meeting held in Addis Ababa 11-15 February 1985 (mimeo). ILCA, Addis Ababa.
4. ANON. 1985. Livestock Policy Unit mid-year programme report 1985. ILCA, Addis Ababa
5. Anteneh A. 1983. Financing animal health services in some African countries. LPU Working Paper 1. ILCA, Addis Ababa.
6. Anteneh A. 1984. Financing livestock services. Paper presented at the ILCA Livestock Policy Conference, Addis Ababa.
7. Anteneh A. 1985. Financing livestock services in some countries of East and southern Africa. LPU Working Paper 6. ILCA, Addis Ababa.
8. Anteneh A. 1985. Financing livestock services: Do Directors of Veterinary Services have a distinct role in policymaking? ALPAN Network Paper 6. ILCA, Addis Ababa.
9. Jarvis L and Erickson P. 1986. Livestock herds, overgrazing and range degradation in Zimbabwe. How and why do the herds keep growing? ALPAN Network Paper No. 9. ILCA, Addis Ababa (Originally presented at All - University of California Conference in Economic History, November 1985).
10. Kone Y S and *von Massow V H. 1986. The economics of supplying fresh milk to Bamako (Mali). Joint ILCA LPU/INRZFH (Mali) Working Paper. ILCA, Addis Ababa.
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14. Konandreas P and *McIntire J. 1984. Alternative pricing policies to increase milk production: The case of Botswana. Paper presented at ILCA Livestock Policy Conference, Addis Ababa.
15. McIntire J. 1984. Policy environments for mechanized agriculture in sub-Saharan Africa, with special reference to animal traction. Paper presented at ILCA Livestock Policy Conference, Addis Ababa.

16. McIntire J. 1985. Constraints to fertilizer use in sub-Saharan Africa. Paper presented at IFDC Conference on N and P Management in sub-Saharan Africa. Accepted for publication in Fertilizer Research.
17. McIntire J. 1985. On the alleged difficulties of on-farm research with livestock. Paper presented at ILCA/University of Florida Farming Systems Support Project Workshop on Livestock in Mixed Farming Systems: Research methodologies and priorities. ILCA, Addis Ababa.
18. *McIntire J and Fussel I. K. 1985. Millet grain yield variability and its research implications. Paper presented at IFPRI/DSE Workshop on Yield Variability in CG Center Mandate Cereals. Feldafing, Germany, November 1985.
19. McIntire J and Debrah S. 1986. Forage research in smallholder and pastoral production systems. Paper presented at the ARNAB Workshop on the Utilization of Crop Residues and Agro-Industrial By products. Blantyre, Malawi.
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22. Nwoko S G. 1986. Dairy imports in Nigeria: Development and policies. ALPAN Network Paper No.7. ILCA, Addis Ababa.
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