EVALUATION OF NETWORKS IN AFRICA:

THE CASE OF ILCA'S COLLABORATIVE ACTIVITIES

ADDIS, ABABA, SEPTEMBER, 1994

Dr. Hugo Li Pun
Dr. Elke Böhnert
Dr. Ian Robinson
Dr. Harvey Blackburn
Dr. Sayed Jamal

Rev. 1
Aug 29/96

Evaluation of Networks in Africa: The Case of ILCA's Collaborative Activities

Executive Summary

Networks have been suggested as the desirable mechanism to promote collaboration among researchers, avoid duplications and ensure more efficient use of resources. The International Livestock Center for Africa (ILCA), adopted this mechanism in its Medium-term Plan in 1987. Three networks were established in the following years: The Small Ruminant Network (SRNET), the Cattle Research Network (CARNET), and the African Feed Resources Network (AFRNET). At a time of drastic institutional changes, ILCA's management considered it necessary to assess those networks to evaluate their achievements and constraints and derive lessons for the role that networks could play in the new International Livestock Research Institute (ILRI). ILCA requested the collaboration of several donors, including IDRC of Canada, GTZ, ODA and USAID in order to conduct the evaluation. Representatives of those agencies conducted the evaluation in close collaboration with ILCA staff, and network members, between September 5-22, 1994.

Documents produced by the network were analyzed. A semistructured questionnaire was used to interview scientists and research managers in Ethiopia, Kenya, Zimbabwe, Niger and Ghana. Field visits were also conducted in those countries. Main findings included: networks fulfill a key role in breaking the sense of isolation of African scientists and provide access to information, and exchange of experiences. They have the potential to contribute to the strengthening of agricultural research and the finding of technological alternatives for the improvement of livestock productivity in selected ecosystems. However, they are constrained by lack of financial resources, and the utilization of mechanisms that allow more efficient and inclusive communications. Recommendations to overcome these constraints, include:

- better planning
- more open participation
- improved communication systems
- stronger linkages with ecoregional initiatives as well as with similar networks in Asia and Latin America.

Acknowledgments

The evaluation team wishes to acknowledge the collaboration and open attitude of members of the network and interviewed research managers, researchers and farmers who provided their insights, and facilitated the conduction of the present study. Thanks to ILCA staff, and specially to Dr. Hank Fitzhugh, Dr. Ebenezer Olaloku, Dr. John Ndikumana, and Dr. S. Lebbie for their support and valuable information. Special thanks also to IDRC-Canada, GTZ-Germany, ODA-Great Britain, and USAID for supporting this evaluation with technical and financial resources.

Contents

A. Introduction

The interaction between man and livestock in Sub-Saharan Africa present a spectrum of relationships as broad and as long as the continent itself. The understanding of the economic and social complexities involved in African livestock systems is now recognized as the probable key to unlocking the development potential of the livestock sector and promoting sustainable rural development in the region.

At present, livestock contributes approximately 35% of the agricultural Gross Domestic Product in the Region (Winrock, 1992). Additionally, it has important nutritional contributions, especially for the young population. Its social importance is also indicated by the fact that animal production is often an activity of women, children and the elderly, which often lack other job opportunities. Livestock serve as a buffer against economic and climatic instability, and generate cash income. Ruminant production is based on grasslands, agricultural residues and other inputs of low opportunity cost. However, increased demands for animal products cannot be met, as production and productivity are constrained by economic, policy, biological and environmental factors.

Given the above, most governments of the region have organized animal production research and development activities. These government efforts have generated valuable knowledge on the problems and potential for the development of the livestock industry. However, their work has often been limited by lack of finances, access to information and human resource development.

After several years of experiences with collaborative research, in ILCA's First Medium Term Plan (1987) the networking concept was suggested as a means of increasing collaboration between NARS. In addition it was seen as the best way of creating a critical mass of scientists working on common problems, and finding the appropriate solutions. The networks were designed to fit the Thrust structure of ILCA to facilitate the planning of activities and the information flow. They were established in the late 80's, and early 90's, although some of their activities were carried over from previous networks established in the early 80's. Three networks were organized to address critical topics in the region:

- African Feed Resources Network (AFRNET)
- Small Ruminants Network (SRNET)
- Cattle Research Network (CARNET)

Recent developments relating to initiatives of SPAAR, other donors and IARCs, related to strengthening agricultural research in Africa, are prompting the consideration of networks as a mechanism for promoting collaborative research. In addition and of specific significance is the agreement for the merger of ILCA and ILRAD to constitute the new International Livestock Research Institute (ILRI), which will have a global mandate. These events will have profound effects on funding arrangements which in turn will affect all aspects of collaborative research activities.

Given these trends, ILCA's management approached several donors for the purpose of conducting an external evaluation of the three above mentioned networks in order to identify lessons that could be used for future collaborative activities of ILRI. The evaluation was conducted between September 5-22, 1994. The present report indicates the methodology followed, the main results and recommendations.

B. Terms of Reference

The broad terms of reference of the evaluation are:

- to evaluate the achievements of the networks based on the objectives they were set for;
- to propose the role networks will play in the new CG global animal production and ecoregional strategies

and more specifically the following:

I) evaluate the relevance and scope of network programmes and activities (research, training and information exchange);

ii) assess the achievements, constraints, strengths and weaknesses;

iii) assess the impact and potential impact in relation to their original objectives;

iv) evaluate the pattern of funding of the networks (i.e. sources, level, acquisition, mechanisms, accountability, etc.);

v) examine the structural framework and governance of the networks;

vi) review their relationship with other livestock networks in SSA;

vii) review their current and future relevance to meeting the CG's and IARCs' objective of strengthening NARS capacity; and

viii) to propose the role of the networks in the new International Livestock Research Institute (ILRI).

What to Review:

The evaluation panel will be expected to undertake its independent appraisal of the networks and their activities covering the following areas:

I) Philosophy of Networking: The appropriateness in relation to the mission and goals of ILCA and those of the NARS.

ii) Objectives: Are they focused, relevant and realistic?

iii) Structural Framework and Guidance: The adequacy of the organizational structures of the network, mechanisms in place to manage and coordinate their research programmes and related activities; transparency; overall effectiveness of the coordination units and the Steering Committees in guiding and running the networks; the mechanisms in place to ensure the excellence of programmes and cost-effective use of resources.

I iv) Priorities and Programmes: Their relevance in terms of the networks' objectives and the needs of the major stakeholders; their coherence with ILCA's; mechanisms for establishing priorities and developing programmes and their related activities; the quality of past and current programmes and activities; the mechanisms used for evaluating, monitoring and reviewing.

v) Resources and Facilities: Financial resources available to networks in relation to their programmes and related activities; level and criteria for funding research and related activities; mechanisms used to ensure accountability (consider the systems and processes used for financial management at ILCA HQ and in the NARS); mechanisms and their effectiveness for securing funds for their activities; the facilities and services available for supporting the coordination activities; the size of human resources in the coordination unit related to the level and scope of network programmes and related activities.

vi) Relationships: The relationship between networks and ILCA; the networks' relationship with participating NARS and NARS scientists; collaboration with other networks and related institutions.

vii) Achievements and Impacts: Achievements related to activities of networks; their contribution to the achievement of the mission and goals of ILCA and NARS; overall impact of networks and the potential impact of their current and planned activities; the methods used for assessing achievements and impact.

C. Methodology adopted

From the beginning, it was agreed that the study would be highly participatory. Therefore, strong interactions took place between ILCA's staff, the network member and the evaluators. The evaluation team pursued the following methodology:

1. Review of TORs

The terms of references submitted by ILCA were reviewed and accepted by the different donor agencies. ILCA was requested to gather a series of documents (see Bibliography) to brief the evaluation team before undertaking the mission.

2. Briefing by ILCA's management.

At the start of the mission, various meetings took place between ILCA's management and network coordinators and the evaluation team, to discuss the background on networks and ILCA, the possible issues, and perspectives both in the region, as well as for the new ILRI.

3. Identification of issues and preparation of semistructured questionnaire.

Based on a preliminary review of the terms of reference and documents the team leader and the GTZ group prepared two documents with a series of issues, and possible ways to address them in the evaluation. Both documents were merged and synthesized, and served as the basis for the preparation of a semistructured questionnaire (Annex II). The questionnaire was tested by interviewing the network coordinators and some ILCA staff, and was found to be appropriate.

4. Field visits and interviews.

Field visits were pre-arranged by network coordinators. It was decided to widen the coverage of the survey by including other researchers, extensionists, research managers and some farmers, to get a more unbiased perspective. Given unexpected circumstances, the original itinerary was changed. Therefore, two members of the team went to East Africa (Kenya and Zimbabwe), and two to West Africa (Niger and Ghana). One member remained at ILCA's headquarters to gather information on finances and training related to the network, and do a field visit in Ethiopia. The final itinerary and the list of interviewees are provided in Annex I.

5. Review and analysis of reports and publications.

Given the large number of publications, the team decided to concentrate on the review of proceedings of Conferences and workshops, technical reports and main networks documents. It was decided to classify publications by country, themes, and species. Furthermore, it was decided to assess the quality, based on three main criteria: creativity, relevance to prevailing production systems, and design. A scale of 1 to 3 was established to assess quality (1 = poor-average, 2 = fair-good, 3 = very good-excellent).

6. Preparation of reports and debriefing.

The team assembled back at ILCA's headquarters to prepare the report. A debriefing session was organized and the first draft was submitted to ILCA's management for its consideration. Feedback from ILCA's management was analyzed and incorporated in the final report.

D. Results

Results of the study are presented according to the topics that were agreed to be reviewed. They are based on the review of network publications, and the interview of 54 stakeholders in 40 separate interviews conducted in Niger, Ghana, Ethiopia, Kenya and Zimbabwe.

For the various components of the questionnaire key phrases were developed based upon the questions and the prominent answers which were obtained in the interview process. For each of these key phrases the response from the interview has been categorized as "yes", "no", and "not applicable" (N/A). The response N/A has several meanings depending upon the interviewer. N/A can mean the question was not asked because it was not relevant to the respondent, the respondent did not know the answer to the question being asked, or the respondent did not wish to answer the question. The response within West Africa (WA) and East and Southern Africa (ESA) were summed and percentage response for each category were calculated.

The review team appreciates the fact that these percentages are only samples of total network membership. However, the sample comes from a diverse set of individuals and institutions. The manner in which the percentages were calculated can also lead to some interpretation issues particularly concerning the incorporation of the N/A category. For example, excluding the N/A category in the calculation of percentages can alter the magnitude of the positive or negative response. Therefore, the review team has attempted to avoid this bias by recalculating the percentages for specific questions where we believed it necessary. The N/A category does have value in interpreting members response. For example, it is an indicator of how well the respondents understand particular aspects of the network or where issues may have been too delicate to discuss.

1. Philosophy of networking.

The philosophy of networking is congruent with NARs and ILCA's principles of working together for solving the most pressing problems of livestock production in sub-Saharan Africa. Given the seriousness of the problems to be solved, the financial, institutional and environmental constraints, the challenges are real and immediate. No single institution working in isolation could be expected to make a significant contribution to solving these problems. Networking of some sort is essential to bring together stakeholders in the research and development process, and pull together resources (both expertise and financial) for the common understanding of critical constraints, the search for solutions and their applications. This should be done through a highly participatory approach, as is often promoted in other networks.

2. Objectives.

Of those interviewed, 76% in WA and 96% in ESA knew that each network had objectives and could quote the general aims. However, only 47% in WA and 61% in ESA could give more details as to the specific objectives of the networks with which they were most closely involved.

Seventy percent in WA and 53% in ESA identified the Steering Committees with ILCA and the Coordinator as co-authors of such objectives. Only one person out of 54 interviewed throughout both samples thought that the objectives had been reviewed.

Although the majority in WA felt that the objectives were realistic (64%) and met NARS (94%) and ILCA's (82%) priorities, only 29% felt that they were being achieved, probably because of a lack of funds (47%). In ESA fewer interviewees thought the objectives were realistic (48%), however, some (43%) thought they were being met despite a recognized shortage of funds (52%). Similarly, high proportions felt that the objectives matched NARS and ILCA priorities.

3. Structural framework and guidance.

In both samples, 77% said that they had joined the Network to meet fellow scientists. Other motives included to get research funds (58% WA: 69% ESA) and to receive the newsletter (68% WA: 9% ESA).

Although 76% in WA and 78% in ESA were able to give accurate accounts of the roles of the Coordinators, the role of the Steering Committee was less well-understood, except that in both samples 70% agreed that it assessed research proposals.

In WA, those interviewed unanimously felt that the role of the participants was to conduct research to the best of their ability, and to give opinions (41%) on Network activities when present at the biennial meetings. In ESA, the sample was less clear with 57% preferring not to comment although 43% agreed with both the WA opinions, thus seemingly leaving management and initiatives in the hands of what they saw as the administration of the Networks.

The dominant bodies within the structure in order of importance in the opinion of the interviewees were, ILCA (53% WA:74% ESA), the Steering Committees (58% WA:39% ESA), the Coordinators (47% WA:35% ESA) and the Donors (35% in both regions) with many people identifying all four groups.

In both samples, 90% or more of the interviewees felt that the main users of the Networks were researchers but that both extension workers (76% WA: 57% ESA) and farmers (64% WA:74% ESA) should also benefit from the Networks' activities. Perceptions with regard to the relationship of such activities with ILCA's activities varied from "supporting" (88% WA:17% ESA) to "part of" (30% WA: 48% ESA). More than half the sample (53% WA: 65% ESA) felt that the existing managerial structure needed revision particularly with regard to horizontal (inter-participant) connections.

4. Priorities and Programmes.

Similar percentages from both samples stated that they had seen NARS plans (76%) but only 35% in both cases, felt they had, at some time seen plans or programmes relating specifically to the Networks.

Yet 53% in WA and 44% in ESA credited the Steering Committees and Coordinators with making such plans and moreover, 64% (WA) and 22% (ESA) respectively, thought that such plans were realistic.

5. Resources and Facilities.

In WA 24% of the interviewees did not know the source of Network funds, the remaining 76% identifying donors and ILCA (64%). By contrast 96% of the ESA sample identified both donors and ILCA as the funding sources.

Perceptions of fund distribution and management were not clear cut, with decision making responsibility being identified as the province:

of ILCA (47% WA; 47% ESA);
of the Steering Committee (47% WA; 44% ESA);
of the Coordinator (41% WA; 30% ESA);

of the Donors (47% WA; 9% ESA); and
of the NARS (24% WA; 22% ESA).

Although most interviewees were aware that ILCA, the Coordinator and the Country Representative were involved in the administration of the funds quite large numbers in ESA in particular were uncertain of the roles played. Similar numbers (58% WA: 57% ESA) said that the NARS were responsible for auditing.

The mechanisms for obtaining small grants were not well understood in WA, only 53% claimed to know the stages compared to 70% in the ESA sample, even though the procedures and criteria for selection of protocols are discussed at meeting and even published in newsletter. Procedures would appear to differ between the two groups as 76% WA said there were no general calls for proposals against 4% in ESA. Most researchers either presented proposals on their own initiatives or were notified to prepare proposals from their institutions.

In addition to the interviewees' comments, the team found that in keeping with its operational goals, ILCA has founded the networks and provides the administrative framework in which they can operate. This involves the provision of staff and services as shown in Annex VI.

Such services are essentially a coordinator plus secretary with basic office equipment plus access to administrative services for each network.

SRNET and AFRNET are provided these resources through ILCA's programme support office in Nairobi and ILCA HQ. CARNET is supported from ILCA HQ.

The resources/facilities have been available since 1989 for SRNET and AFRNET and since 1990 for CARNET reflecting the formation of active networks. They are presently used to service networks with the following numbers of members (Table 1).

Table 1. Network Members

	Active	Passive
AFRNET	480	580
SRNET	798	664
CARNET	762	660

No specific translating services are available to any network. Documents for translation are handled by the ILCA pool, which according to staff/NARS causes some delays in production.

Financial Aspects

There are two main sources of funding for the networks: The first is In-trust funds provided by donors for NARS collaborative research, with usually some provision for coordination costs. The second source is ILCA core funds to support coordination cost, generally where donor funds are not available for coordination, as shown in Annex VI tables.

The financial patterns observed are discussed below:

(a) AFRNET figures show a dramatic decline in the proportion expended on personnel over the 5-year period from 1989-93 (55%-21%) with a concomitant increase in the operating cost proportion (44%-70%). In-trust fund allocation also increased from 16% to 35% in the last 3 years. The actual operating costs in 1993 were for reasons not explained, more than twice the approved budget. A similar phenomenon occurred in 1991.

(b) CARNET personnel costs have fluctuated from a low in 1992 of 42% to a high of 60% in 1993 with concomitant changes in the proportion spent on operations. It is important to note that for each operating year, actual expenditures have been lower than the approved budget by 10-26%.

(c) SRNET figures show a fluctuating proportion of actual expenditure spent on personnel ranging from a low of 25% (1990) to a high of 66% (1992-93) with concomitant changes in the proportion spent on operations. In-trust funds show a similarly wide range being equivalent to 119% of the actual expenditure in 1992 but as low as 11% in 1993. Except in 1989, actual expenditure has been below the approved budget, and in 1991 and 1992 the budgets were under spent by 38 and 43%, respectively. This reflects the cut in donor support when, due to policy changes, expected funds were not available.

A summary of the percentage allocations to the components of the annual operating budgets for each network is in Table 2. The figures show a wide range of percentages in most components due to the variability of activities from year to year. A combination of coordinator and steering committee travel costs often come close to 40% of the operating costs. Conferences, workshops in the years of their occurrence may account for up to 69% of the operating costs. Given the extreme variability, it would seem that advance planning is necessary to source funds in line with the perceived needs which suggests that 3 to 5 year plans for each network are required.

Table 2. Summary of Operationg Budgets %

	Travel Coordinator	SC	Office Communi.	Consult.'s	Visiting Scientists Consultants	Training*	NARS	Other
AFRNET								
Mean	18.5	19.2	23.8	9.06	13.3	3.1	0.38	3.95
Range	(13.3-24.3)	(12-26)	(10.4-40.2)	(0.-30)	(0-36)	(0-19)	(0-1.5)	(0-9.9)
CARNET								
Mean	15.66	11.08	9.54	38.7	--	--	17.34	7.7
Range	(10.9-19.5)	(0-40.3)	(3.9-13.8)	(0-59.3)			(0-42.7)	(4.2-13.4)
SRNET								
Mean	16.1	13.4	23.9	32.1	2.8	1.8	1.58	2.3
Range	(8.45-24.7)	(0-27.4)	(3.2-75.1)	(0-69.4)	(0-17.3)	(0-7.5)	(0-6.8)	(0-6.6)

Training* - mostly include in ILCA training budgets.

From the tables in the text it seems that the number of external donors is limited. ILCA core funds upon which the networks were funded come from the full range of donors supporting ILCA. Specific network funds would seem to be restricted to IDRC, EEC and OPEC only. External (i.e., non-core) contributions to personnel and 100% (SRNET) over the comparatively short time that the networks have been in operation. This inconsistency militates against effective planning and should be corrected.

6. Relationships.

The actual research activities themselves were very well institutionalized. Eighty eight percent in WA and 91% in ESA felt that they matched NARS priorities. In the WA sample, 70% said that the experiments were not only included in the National Agricultural Research Plan but that they also appeared in the National budgets (76% - Annex 6) (SRNET on-going projects). In the ESA sample 52% stated that the experiments appeared in the budget but did know if they appeared in the plan, although they did appear in the annual reports.

Such incorporation was said to mean that the Network funded equipment/materials has been incorporated in NARS inventories (88% WA: 61% ESA) and that NARS were supporting Network activities though the provision of

- human resources (82% WA: 82% ESA)
- offices & services (70% WA: 74% ESA)
- animals (35% WA: 52% ESA)
- experimental buildings (64% WA: 65% ESA)
- equipment (62% WA: 65% ESA)
- materials (76% WA: 61% ESA)
- air fares (18% WA: 9% ESA)

In some instances it appeared to the team that only Network supported activities were being undertaken due to lack of other sources of funds. This emphasizes the importance of the networks to sustain research activities.

In WA Network activities were considered important in assisting staff promotion. However the response to this question in ESA was mixed, and dependent upon institutional strength and finances.

Both regions indicated that a large portion of Network activities were linked to other ILCA programs. Only 12% of those surveyed believed there was not a linkage. A slight majority in WA (53%) thought the activities were linked to other projects within their own institutions. In ESA over 80% of respondents said there was a link between Networks & other donor projects.

Repetition of network activities both ILCA and non-ILCA was identified by more than 50% of those persons responding to the question as a cause for concern, yet most interviewees felt that the NARS should resolve the problem not ILCA or the donors.

As a result of network duplication if faced with diminishing financial resources, 75% of ESA respondents believed the ILCA networks could be merged together. Many respondents believed this was possible due to overlapping membership in the networks. Although ESA members saw some benefits in networks being formed on a continent basis, many were in favor of a sub-regional approach. The WA, 88% of the respondents were not in favor of merging any of three networks at technical or administrative levels. Furthermore, there were only 29% of respondents in favor of any structural alteration. Seventy six percent of WA respondents were undecided if there should be networks at the sub-regional level. Across respondents the Networks are appreciated as a mechanism to link researchers, share ideas, problems and experiences. However, the vast majority of those questioned believed the membership should also include development workers, extension staff and farmers. It is unclear if the rational for increasing membership is one of building more comprehensive communication and information exchange networks or because it is thought that by diversifying the membership more funds from donors will be made available.

7. Achievements and impact.

a. Outputs

- Fifty-three per cent (WA) and 61% (ESA) knew of monitoring and evaluation procedures with similar percentages quoting coordinators' visits, annual reports and biennial conferences as the mechanisms involved. Smaller groups of 47% and 45% in each case also included Steering Committee members' reports in their considerations.

- However, 35% (WA) and 13% (ESA) felt that no monitoring and evaluation had been undertaken by anyone, reflecting a gap of knowledge between those not actually receiving grants and grant holders.

- Conversely, 94% (WA) and 70+% (ESA) were able to quote the names of the recipients of the small grants.

- Similar percentages, 94% (WA) and 78% (ESA) identified the researcher as the designer of the experiments citing in 47% (WA) and 17% (ESA) assistance by ILCA.

- Grant holders, both current and past, and their immediate colleagues confirmed the practice of reviewing literature as part of the proposal preparation process (64% WA:52%ESA).

- Further, 35% WA and 52% ESA stated that present work had been based of prior trials. It was also pointed out that literature reviews were difficult to accomplish in most cases due to very limited access to data-bases and poorly-stocked libraries.

- On-station and on-farm research was identified by 88% and 47% of the interviewees in WA compared to 61% and 70% in ESA as being the current activities supported by the Networks. Interviewees were asked to rank the quality of research on a scale of 1 to 5 (1 = poor; 5 = outstanding). The value of such experiments was rated at scores from 2-5 (average = 3.8) in WA and from 2-4 (average = 3) in ESA. Also in the WA sample 8 out of 13 ranked the experiments with which they were most familiar at 4 or 5.

- The vast majority in both samples (94% WA; 78% ESA) felt that the Networks were utilized by Institute and University researchers. Others users identified in WA were students (59%), extension workers (53%) and farmers (53%) were slightly different from ESA: students (48%) extension workers (61%) and farmers (35%).

- Impact from Network research to date in WA was considered to be difficult to assess as it was too early to judge (91%). By contrast, 52% in ESA felt it was not too early to judge yet only 26% thought that institutional administration and farmers had already benefitted in any way from the Networks, the remainder of the sample being non-committal.

- The WA samples position vis-à-vis research not withstanding, 35% felt that the institutions had already benefitted from Network membership because of the increased research activities and that some farmers had received some benefit from just knowing that the research was underway (64%).

- In WA, interviewees perspectives on the dissemination of findings reflect a bias towards the academic with 80% identifying local and international journals and conferences as the main mechanisms to employ with only 59% identifying open days.

- By contrast, the ESA interviewees felt that field days (open days) 74% and conferences 65% were the most acceptable avenues with only 43% citing published papers. In both cases farmers visits were comparatively low down on both lists (59% WA:35% ESA).

- The assessment of diffusion of results to date also differed between samples with only 30 - 41% of the interviewees in WA feeling that dialogue had already been established with other workers as against 70 - 73% in the ESA sample.

b. Training

- Ninety-four per cent WA and 74% ESA knew of ILCA training programmes, but far fewer interviewees (35% WA:26% ESA) were able to distinguish between courses engendered by the Networks and ILCA core courses. Similarly, high percentages (88% WA and 74% ESA) stated that their own departments/institutions had participated in training courses 53% (WA) and 30% ESA had themselves participated.

- The vast majority in both samples felt that ILCA had prepared all the courses in some instances with help from outside experts.

- Despite the high proportion of course participants interviewed, knowledge of any form of course assessment was quite inconsistent. On and immediate post course assessment was identified by 30 - 64% of the interviewees in WA as against only 26 - 8% in the ESA sample. Further, only 24% WA and no interviewee ESA recalled any form of ILCA follow-up and in no case could anyone recall locally organized follow-up or traces studies of any description.

c. Main benefits identified.

Despite the relative youth of the Networks very high proportions of interviewees (over 80% for WA & ESA) felt there were tangible benefits occurring from the Networks in human resource development and developing connections between researchers. However, in ESA some respondents were expecting more benefits to come from the network (principally research funding).

Nevertheless both regions felt that the Networks had so far justified their expenditure. This feeling, was tempered by some comments that monies could be more efficiently utilized by the NARS than by ILCA Networks.

Few respondents in either region believed the Networks had resulted in material benefits (e.g. equipment). In addition few felt that farmers had received tangible benefits from the network. But here again given the youth of the networks it is too early to truly evaluate this aspect of technology transfer. Still, in some of the field visits, progress was perceived.

d. Constraints

For both ESA (95.6%) and WA (88%) the greatest network constraint is a shortage of financial resources. Additionally the late arrival of the funds that are available was cited a universal problem in the Networks. Communications between Network Participants, Steering Committee and Coordinators are also seen as significant Network problems by 83% of ESA and 88% of WA respondents. Particularly critical, is Network information arriving too late for the membership to take advantage of it (53% WA and 90% ESA).

Fifty three percent in WA stated that vested interests at the decision making (SC) level were not affecting the flow of information. The vested interest issue in ESA was perceived as a constraint to effective Network operations. Of the 13 people responding to this question 10 believed Steering Committee (SC) vested interests were a problem.

Access to information was also viewed as a constraint with regard to data-bases and journals (36% WA, 75% ESA). For ESA, NARS human resources were identified as a constraint by more than 50% of the respondents. In WA 36% of the respondents believed that the Network could assist in this problem through supporting the movement of key scientist to institutions needing their services.

e. Future

The respondents comments on future perspectives for the Networks were conditioned by their local situation. West Africans interviewed had a perception that formation of ILRI will diminish their Network resources. They were not in favor of a global network (70%) or any form of global interference (64%) in Network management or control. Therefore they in some ways want to maintain Network status quo. As a mechanism to preserve their position in the Network they are willing to consider sub-regional network formulation (over 60% of total respondents favorably considered this option).

East and Southern African respondents seemed to be interested in promoting network change through combining Networks and the formation of sub-regional networks (70%). This drive for restructuring is conditioned by what they perceive as local needs and the belief that they can help ILRI accomplish its mandate by providing strong sub regional networks with which to link.

A large proportion of WA and ESA respondents did articulate a desire for research funds to come directly to the NARS. A desire had been expressed to keep the financial flow to researchers as quick and with as few overheads taken out as possible.

In both regions respondents believed future Networks structure and activities should help improve contacts within country, improve all aspects of network communication (speed of communication, communication between coordinator, steering committee and participants) and extend network membership to NGOs and farmers.

f. Analysis of Conference Proceedings.

As part of the methodology adopted by the team it was decided to conduct a rapid appraisal of papers given at conferences supported or organized by the NETWORKS or their members.

Given the number of conferences and papers presented to date (See Bibliography) it was not possible to cover all the proceedings that had been prepared. Therefore a sample from each NETWORK was divided between team members who were asked to analyze the papers by topic, species and country of origin and to score the contributions with regard to creativity, relevance of approach and design. The sample chosen of 7 edited proceedings out of a possible 11 was considered by the team to represent the type of papers accepted, delivered and reported up to 1991. It should be made clear that later conferences for AFRNET and SRNET conducted in 1992 and 1993 have not been included for logistical reasons.

The analysis applied was based on a review of title, abstract and conclusions, supported where necessary by a review of the text in cases where the team were unclear or uncertain of the content.

The results from four reviewers were combined in a series of tables that are presented below.

- Analysis by country in Table 3 indicates that in AFRNET (and its precursors) representatives from 7 countries out of 39 countries participating in 4 conferences have presented 75% of the papers.

- Representatives from the same 7 countries have also presented 53% at the SRNET conferences reviewed. Of the 7 countries cited, 5 are in East Africa and 2 are in West Africa, reflecting in the case of AFRNET the provenance of its two precursors and possibly in the case of SRNET a greater local awareness of events.

Table 3. Papers Proceeding Produced by Countries

COUNTRY	AFRNET					CARNET	SRNET			TOTAL
	1987 (1)	1987 (2)	1988 (3)	1991	Sub-Total	1990	1989	1990	Sub-Total	
Benin								1	1	1
Botswana	1	1	1	2	5					5
Burundi								2	2	2
Burkina Faso	1		1		2			1	1	3
Cameroon	7		2	4	13		6	3	9	22
Congo			1		1		1	1	2	3
Egypt	1		1		2					2
Ethiopia	2	7	6	3	18	4	5	6	11	33
Ghana	2		1	1	4			1	1	5
Gambia			1		1					1
Ivory Cost				2	2		1	1	2	4
Kenya	1	16	10	7	34	1	1	6	7	42
Lesotho						1	1	1	2	3
Madagascar				1	1	1				2
Malawi	2	2	4	2	10	1	1	3	4	15
Mali	1			2	3	1	3	2	5	9
Morocco							3	2	5	5
Mauritius		1			1					1
Mozambique		1			1					1
Niger				1	1		2		2	3
Nigeria	6	2	3	6	17	2	4	6	10	29
Rwanda							1		1	1
Senegal	1		1	1	3		1	3	4	7
Somalia							1	1	2	2
Sudan			2	2	4		2		2	6
Swaziland							1		1	1
Tanzania	3	6	6	4	19	3		4	4	26
Tchad							1		1	1
Togo							1	1	2	2
Tunisia							1	1	2	2
Uganda		2	2	1	5			1	1	6
Zambia		1		1	2		1		1	3
Zanzibar			1		1					1
Zimbabwe	3	1	5	6	15	1	2	5	7	23
SSA			2		2	3	2		2	7
Belgium							1		1	1
Colombia							1		1	1
France							1		1	1
Germany				1	1					1
Malaysia							1		1	2

(1) ARNAB (African Research Network for Agriculture By-Products)
(2) PANESA (Pasture Network of Eastern and Southern Africa)
(3) ARNAB and PANESA

Table 4. Proceeding Papers Analysis by Topics and Species

Topics	Cattle	Sheep	Goat	SR	Forage	Rum
Agricultural By-Products	18	14	6	4	2	13
Agr. By-Products/Socio-Economics/Production Systems	1	1		1		
Agr. By-Products/Socio Economics	5				1	
Agr. By-Products/Prod. Systems	2					
Pasture	12	3	1	1	3	7
Pasture/Prod. Systems	3				1	1
Pasture/Agr. By-Products	1		1			3
Pasture/Agr. By-Products/Socio-Economics	2					1
Pasture/Agr. By-Products/Production Systems	4					
Socio-Economics	1	2	1	2		1
Production Systems		1	1		1	2
Socio-Economics/ Production Systems	2			1		
Product Processing/Socio-Economics	15	1	1			
Product Processing/Socio-economics/Production Systems	2					
Genetics		1		3	17	
Genetics/Management		8	5	1		
Genetics/Management/Prod. Systems		2				
Genetics/Health/ Management				1		
Genetics/Productions Systems	1	1			2	
Management		2	5	4		
Management/Prod. Systems		1	2	1		
Management/Socio-Economics			1			
Management/Socio-Economics/Production Systems				2		
Management/Agr. By-Products		2	1	3		
Management/Pasture		3	2			
Management/Pasture/Socio-Economics						1
Management/Pasture/Socio-Economics/Prod. Systems						1
Management/By-Products/Processing		1				
Health		6	5	5		
Health/Management				2		
Health/Production Systems		1	1			

Rum. = Ruminants

When all the topics combinations were analyzed by species it became evident that the most studies were of the traditional single disciplinary type. From Table 4. it may be seen for instance in the case of Small Ruminant and forage oriented studies, only 8% and 4% of production related papers respectively included socio-economic data.

The papers relating to cattle reviewed open a broader perspective with 41% including socio-economic aspects if not analyses, within the texts.

Analysis of a subsample of papers by type in Table 5. revealed that on-farm studies have increased quite dramatically over four years, if on-farm surveys are added to on-farm experiments. By contrast the latest work supported under AFRNET has a strong on-station orientation.

TABLE 5.
Table : Type of Studies*

Network	Year	Experiments		Survey/ Review**	
		On Station	On Farm	Survey	Review
ARNAB	1987	87.5%	12.5%	0%	14%
ARNAB/ PANESA	1988	42%	58%	0%	44%
SRNET	1989	71%	29%	19%	19%
CARNET	1990	0%	0%	44%	56%

* Subsamples of all papers reviewed.

Analysis of quality was necessarily subjective and it is accepted that the breakdown according to creativity, relevance and design could easily have been different. Our working definitions of these categories is as follows:

"Creativity" is an attempt to score the originality of the work as opposed to duplication or repetition of universally understood phenomena or processes.

"Relevance" attempts to score the appropriate nature of the study given NARS/ILCA priorities livestock production problems and limited financial resources.

"Design" encompasses both experimental design and the ability to use the results, or at least indications as to what the next logical step is likely to be.

The scores obtained are summarized by NETWORK in Table 6. They are not high but indicate a general improvement over time.

Table 6.
Table: Quality of Proceeding

Network	Year	Creativity	Relevance	Design
ARNAB	1987	1,7	1,6	1,6
PANESA	1987	1,5	2,0	1,8
ARNAB/PANESA	1988	1,9	1,5	1,6
SRNET	1989	1,2	1,4	1,2
SRNET	1990	1,5	1,9	1,9
CARNET	1990	2,0	1,8	1,4
AFRNET	1991	1,9	2,3	1,7

3=excellent-very good, 2=good-average, 1=fair-poor

General Comments on Publications

Regarding the conference proceedings the team felt that the consideration of papers from NETWORK conferences had produced documents that were proving to be most useful in universities, as teaching aids; in identifying scientists working in similar fields; and in staff promotion assessments.

- Conference proceedings including an analysis of the discussion following each presentation proved easier to assess and therefore by inference more valuable.

- Delays in the preparation of conference materials reduced their effectiveness.

- Oversubscription of papers from a few countries may be problematic in pursuing the aims of the NETWORKS to promote research in all countries. However, NETWORKS should not exclude papers of merit from oversubscribed countries. This may also represent relative institutional strengths in those countries.

- Subsidized travel to conferences should be evaluated to see if conference attendance by those NARS that need most assistance is inhibited.

- Topics under study were undoubtedly influenced by a variety of forces (e.g., National Research priorities), it is perhaps true that many presentations were associated with the training of staff. Such papers perhaps should be presented in separate sessions.

- The lack of socio-economic data/aspects within papers on production aspects is a cause for concern.

- The papers reflect a degree of repetition which might well be avoided if standard works and databases (such as nutrient value of feeding stuffs - treated and untreated) were made available to researchers through the NETWORK in sufficient quantity to enable researchers to prepare socially and economically acceptable local ration guides for farmers rather than spending time on local nutrition trials.

- Conferences have proved to be a very effective tool in ending the isolation of African scientists. The proceedings are the physical manifestation of such interaction and should be valued accordingly.

E. Main Findings

The main findings of the review are presented in a form which follows the issues to be investigated, as specified in the terms of reference. The conclusions reached within the Main Findings are based upon the results of the surveys, literature review and analysis of financial results.

1. Evaluate the relevance and scope of networks programmes and activities.

- Clearly the networks have served as a mechanism to end African scientist isolation. They provide an avenue for evaluating what others in the continent are doing and discussion of common problems. From this perspective, most members feel that being involved in the networks is positive.

a. Research.

- Most of the work reported is useful for the research and academic community. Very few technologies have been identified, which are being tested on farms and that show potential to improve livestock production and productivity. Potential impact needs to be followed-up through technology adoption and impact studies. The youth of the networks contributes to the lack of technology transfer and in addition, technology transfer is beyond the existing network mandate.

- No attempt has been made to analyze results across experiments and to evaluate what is already known, what kind of applications are possible under different production systems and what are the knowledge gaps to be addressed in research.

b. Training.

- The need for training is a high NARS priority. This was quite evident in the results of the questionnaires. Networks have had limited resources for those activities, therefore, they have relied mostly on existing ILCA's program, as well as the ones organized by other networks or institutions. A general observation is that future activities should include a training program that suits the requirements of network members, and that monitoring and evaluation is built on it, as to provide feedback on the achievement of goals. One area that has been mentioned as a priority is on-farm research methodology. The potential for linkages with the Asian and Latin American experiences for organizing training activities are high. In the case of Asia, the experiences of the IRRI-coordinated Asian Rice-based Farming systems network are important. In Latin America, the IICA-coordinated Latin American Animal Production Systems Network (RISPAL) has had over 13 years of experience in systems research and has developed methodologies for on-farm research, including systems diagnosis, design and evaluation. This could be one of the areas to be addressed by the new ILRI.

c. Information Exchange.

- Main mechanisms for information exchange have been through the newsletter, specific requests, workshops, meetings, conferences and monitoring visits. There is a feeling that relatively few members have benefited from them and that more timely information should be provided, therefore other mechanisms should be explored.

- There was a general tendency to believe that meetings involving East and West Africa were not productive due to: problem differences, language barriers, and different stages of development. It was a common view that networks should be operated on a subregional basis (East Southern, West). It was suggested that the networks could be merged into one livestock network. This is due to the fact (or perception) that many people are members of more than one network, but subregional units would need to be maintained.

2. Assess the achievements, constraints, strengths and weaknesses.

- The main achievements have been in the area of information exchange, capacity building through support to research, training especially in the research for MSc and PhD thesis supported by the networks, and providing a forum for African scientists to exchange experiences.

- Constraints have included: financial limitations, limited coverage, limited vertical and horizontal communications among members, and a belief that network management could be more transparent.

- Main strengths include: ending scientists isolation, providing small grants for weaker programs, and the existence of a mechanism to link ILCA's core programs with NARS. The latter should be seen as a two-way mechanism.

- Main weaknesses have been the lack of long-term planning, and the relatively limited participation of NARS in programming, financing and monitoring, and evaluating activities. An absence of circulating relevant proven livestock information (such as nutrient value of feedstuffs and least cost rations) has fostered the repetition of trials completed decades ago.

3. Assess the impact and potential impact in relation to the original objectives.

- There is confusion between plans, programs and objectives. Networks lack well defined plans, built in a participatory manner. Actual impact from the networks is relatively too early to judge in the case of SRNET and CARNET. In the case of AFRNET, which is a continuation of the previous ARNAB and PANESA initiatives, actual impact has not been achieved. Most of the interviewees thought that objectives were not being met, partially because of shortage of funds, and partially because of being overambitious. The fact that

these activities lacked an original plan with concrete goals and outputs to be obtained over time make it more difficult to judge. The relatively limited participation of development agents in the network, and the fact that most activities have a limited scope, and are conducted on research stations limit the possibility of achieving impact with the target population. The potential impact, however is there, especially in the case of utilization of forages in intensive milk production systems under zero grazing in Eastern Africa. However, technology adoption studies are required to show actual impact under field conditions.

4. Evaluate the pattern of funding of the networks (ie., sources, level, acquisition mechanisms, accountability, etc).

- It was a common concern that the network operations were not transparent enough. This concern revolved around the review of proposals, selection of steering committee members, and the selection and funding of proposals.

- Funds should be source and pledged by donors for a minimum of 3 years to give security and continuity to activities.

- Disbursement of small grants seem to have been done to ensure wider coverage, rather than focussing on key research areas and to link research institutions.

- There is no evidence that small grants are part of major initiatives, i.e., projects undertaken by NARS and that therefore, their impact potential is limited. They did make a difference in terms of enabling researchers to keep active, as many national programs had the research facilities but lacked operational funds.

5. Examine the structural framework and governance of the networks.

The majority of interviewees thought that the network structure needed revision to promote more horizontal collaboration. However, this is more a problem of function than of structure. The more formal ways of interaction are not conducive to openness and wider participation.

The following summarizes structural and governance issues:

- Collaborative research occurred in the sesbania trials, the multi-locational trials on Napier hybrids, the periurban dairy and the genetic resources characterization of small ruminants. However, many other activities are carried out in isolation.

- Networks provide a high degree of interaction between NARS scientists and ILCA. It was suggested that the NARS be more proactive in obtaining funds for network activities which would instil more ownership in the networks.

- Network projects should be more rigorously monitored and evaluated.

- The insecurity in funding affects the continuity of on-going experiments. Slow communications and procedures further affect the time required for the establishment of experiments according to seasonal conditions.

- NARS and NGOs should be included in networks.

- There is not enough network activity, to keep membership involved requires more frequent communication.

- There is a perception that ILCA is the primary owner of the network. In spite of the strong representation in the steering committees and general assemblies, NARS should be exerting their influence to a greater degree than what has previously occurred. Increasing NARS participation should increase their stake in the networks.

- Lack of transparency in the review of proposals is a problem. In addition the review process is too slow. The grants are too small to apply for. The workshop reports are very useful to NGOs. The coordinator selection is too closed and political.

- Proceeding publications are too slow. Conference proceedings need proper analysis between papers and overall conclusions should be drawn by the editors. The Steering Committee does not have any power over network due to no control over purse strings. The networks could be organized into one network. The one network could then be regionalized and divided along lines of meat and milk production instead of species.

- There should probably be only one livestock/forages network due to overlapping membership and limited funds. However, within that one network there should be sub-regional components.

6. Review the relationship with other livestock networks in SSA.

- Relationships with other networks in SSA are not formal and infrequent. The ILCA networks do link to national networks which are formed in country. However, the team had limited exposure in seeing these linkages. It is clear that for the ILCA networks to be fully effective there has to be a national network for them to link exchange information and provide technical services. In one interview the respondent believes national networks should be formulated before a country should join the international network.

- Clearly an issue at hand is one of duplication. With scarce resources, however, which all networks seem to be operating under, the issue of duplication does not appear to be of over-riding concern to participants. This is worrisome and it should be addressed openly in future network meeting.

7. Review their current and future relevance to meeting the CG's and IARC's objective of strengthening NARS capacity.

- A major issue facing the CG system is developing the upstream technologies which will enable developing nations to feed an exponentially expanding human population. However, once technologies are developed they need to be refined and production packages developed which are effective in meeting the CG goals on a local level. The CG system has made the conscious decision that the IARC's should mostly be involved in upstream research. The issue then is how will these technologies be transferred and put into application. It is in this context that the Networks have a critical role to play.

- Ideally, the NARS should be in a position to take the results of upstream research and determine its role in their national research programs, thus tailoring the intervention to meet their specific need. From then the NARS being linked to extension staff, NGOs and in some cases farmers would be able to pass along their specific recommendations. However, as this is not the case under real situations in most developing countries, an approach has to be followed to ensure strong connections between strategic, applied and adaptive type of research. The implementation of this continuum should be the responsibility of both IARCs and NARS, as the danger of false assumptions about different roles, could be that tangible outputs would not be identified in the short and medium term. This would seriously undermine the credibility of livestock research and development activities.

- By the use of already establishing the Networks at ILRI, the new center should be able to continue building new activities onto the Networks and thereby speeding the transference of technology as it comes on line. However, for this system to effectively function Networks will have to be better financed, and their management will need to be improved.

- As ILRI takes on its new global mandate, the Networks have a particularly important role to play in transferring technology and more important providing ILRI with a group of partners which can interact with the institute on problem identification, feasibility of proposed upstream research efforts, and as a multiplier/disseminatorof new technologies.

- Our survey indicates expansion of the Networks on a global scale is a very important issue for some NARS within SSA. In principal, it was believed that this expansion would result in fewer network resources being available. Although this is a legitimate concern, the team believes that the benefits of global linkages between sub-regional livestock networks, centered at ILRI, could result in greater impact livestock development. For example, in an active global network it would be possible to link NARS scientists in Asia and Africa for the resolution of common problems or the use of similar approaches/methodologies.

8. To propose the role of networks in ILRI.

As stated above there is an important role for networks in ILRI. In essence networks provide ILRI a means of applying new technologies for a global livestock system. Thereby they provide ILRI with a mechanism to show impact to the CG system. Furthermore, in an era of restricted budgets by all partners networking provides a mechanism for leveraging funding and human resources, and avoid duplications.

Networks should also serve to provide feedback on priorities of NARS to be addressed by ILRI`s core programs. But this requires some very basic understandings for all network partners. First and foremost, there must be benefits for all persons and institutions involved in the network. Over expectations must be avoided. NARS, ILRI and donors have to shoulder the financial responsibility of the networks and thereby all become stakeholders in the success or failure of the network system. Thus, shared ownership is highly desirable.

- Although the networks should not be exclude any relevant group, it is conceivable that the networks could come together and form powerful consortia for leveraging human, financial and physical resources. This would help extend the impact of limited ILRI staff to regional centers of excellence within the NARS themselves. It could also give NARS scientists the opportunity of competing as cooperating units/individuals for internationally tendered development studies in their sub-regions, which may in time offer a self-financing capability for the network.

- Structuring global linkages would require restructuring of the current network system at ILCA. It is open for debate how such a system would be structured. The team has taken a first step in proposing a structure based upon sub-regional units. This was done in response to restructuring questions asked in the interview and our own thoughts and biases.

- The sub-regional or regional network could be connected in a global network to address mainly the common problems occurring in several of them. The new network would be for livestock sector issues. Contained within the one network would be all the relevant subdisciplines. Membership would be able to participate in any or all subdisciplines. Linking the subregional and global network would be accomplished via an e-mail mechanism, mail and meetings.

- Such a network would be organized along sub-regional lines. This would assure that network participants would be interacting with membership which were familiar problems and situations of a sub-region.

F. Recommendations.

1. <u>Planning, management and financing.</u>

a) Better planning in networks is required. Plans should clearly indicate: objectives, indicators, means of verification, outputs (short, medium, long term), resources

(contributions and requirements), tasks, and responsibilities. They should be designed and agreed in a participatory manner involving representative stakeholders, including policy makers. Methods such as the ZOPP should be used to reach consensus.

b) Possibilities of having stronger inputs from national programs in network conception, management and finances should be considered. What seems to be practical is that NARs finance their own research, that they share results and information on issues of common interest and that external resources are sought for coordination, and facilitation of regional exchanges (information, germplasm), training, meetings, etc. In this way ownership of networks could be shared between ILRI, NARs and donors. Donors would need to be willing to fund the cooperating NARs individually to achieve this aim. It is also recommended that NARS collaborate with each other in the design and implementation of research programs which are to the mutual benefit to all network partners.

c) Informal national networking has also being pointed out as one desirable feature to ensure that benefits of the network are spread out as well as to promote better coordination and collaboration on site. This could be also be one way of ensuring that potential nodes of an electronic network, fulfill the objective of wider coverage within a country.

d) The small grants fund is an important mechanism to catalyze research and promote collaborative endeavours. However, several criteria will need to be applied in order to ensure effective use, transparency and accountability. These include: timely call for proposals, clear procedures, avoidance of conflict of interests in the case of reviewers and members of the Steering Committees, complementarity with major NAR initiatives (as counterpart funds are essential to ensure commitment and generate impact), relevance to major problems of specific ecosytems, possibilities for extrapolation to other localities, etc.

e) Small holders have been selected as the target population by most paticipants. However, most activities conducted under networks are targeted towards researchers. The networks could promote research that is of more relevance to the target population as well as to promote the linkage of research with development agents and beneficiaries. For that a clear understanding of specific situations in participating countries should occur. Systems research methods, including modeling and simulation, should be used to analyze ex ante potential impact and prioritize research.

f) Data obtained from network activities should be analyzed across locations and synthesized. This information should then be used for assessing the solution of prevailing problems under specific conditions or to plan other research activities if needed.

g) There is a general feeling that networks are useful, however, they need to be rationalized to nake then more effective. Different mechanisms have been suggested, including merger of existing networks, better coordination among networks (if finances continue to be available), linkages with the proposed Framework for Action and organization on a regional base, and reduction of activities, among others.

2. Communications and exchange of information.

a) Communications figure high in the benefits of networks and in the perspectives expressed by various participants. Present means of communications have been letters, newsletters, meetings and conferences, and monitoring visits. The problems are that they have been costly, time consuming and not as frequent as desirable. Also most interviewed have requested more openness in participation, as well as access to relevant information.

b) One possibility to ensure more open participation is to utilize mechanisms that allow frequent communication, more informal information, and perhaps more relevant information. This could be achieved through a combination of mechanisms which include electronic means (faxes, e-mail, radio-packet transmissions), as well as ensuring appropriate use of them (electronic conferences, bulletin boards, electronic journals, question/answer services), etc. Their implementation, however should be based on a feasibility study, appropriate consultation with users, availability of finances, training of users and backup services.

3. Utilization of research results.

a) Utilization of research results has received limited attention, especially from the perspective of researchers. In general managers were more aware of that need. Stronger efforts need to be put in this area to show relevance of research.

b) Potential for utilizing information obtained from the networks exist. This is more evident in more intensive systems such as milk production under zero grazing conditions such as in Tanzania, Kenya and Uganda. Stronger efforts are needed to link the participation of development projects with network activities to promote utilization, as well as to get feedback on the performance of technologies in the field.

c) Networks should disseminate proven/appropriate information to research and development workers to reduce the need for repetitive trials which only confirm the obvious.

4. ILRI's global mandate.

a) On the issue of ILRI's new global mandate, most participants expressed the feeling that as a result of spreading resources globally, sub-Sahara African research would suffer. Few interviewed realized as the potential benefits that could be achieved through global collaboration such as access to global information, methodologies, technologies, germplasm, training and consultation, among others. Therefore, ILRI's management could explore the linkages of components of existing networks to promote those exchanges, but will need to change the opinion of most stakeholders in SSA about potential benefits.

b) Of particular importance for ILRI will be to play a leading role in addressing livestock-related issues in the FFA initiatives, as well as in participating in consortia established for the implementation of ecoregional initiatives in Africa, Asia and Latin America. These could result in the generation of quicker impact through better planned research and the conjunction of efforts from several strong institutions operating in those regions.

c) Regarding on-farm research experiences, ILRI could benefit from the experiences of RISPAL in Latin America and the Asian Rice-based Farming Systems Research Network. A global network for the purpose of informal exchange of information could be established, along the lines mentioned under 2b).

d) In addition to tighter focus, given restricted resources, ILRI could concentrate activities in fewer locations representative of major ecosystems, and major production systems. Consortia or networks could be used to coordinate efforts and share responsibilities and costs. In this way participants could benefit from this concentrated effort as not everybody would have to do the same. This could be one of the main benefits to be obtained from networking.

e) For the organization of interinstitutional collaboration in different ecoregions, the work of CIP in the Andean region should be examined. Specifically, the approaches and methodologies utilized by the Consortium for Sustainable Andean Development (CONDESAN). They could be relevant to ILRI's ecoregional and global initiatives.

f) Training should appear high in the priorities for ILRI if it is to achieve the goal of strengthening research capabilities in livestock research in developing countries. Its planning should be based on a carful assessment of the needs of partner institutions, and follow-up activities should be implemented to receive feedback. This could include tracer studies and assessments of effectiveness. Age limits should be placed on trainees to ensure an adequate return on investments in training.

g) As a result of the merger, ILRI could now add to network components animal health issues. This serves two purposes. First, it more fully integrates ILRAD staff into the mandate and function of the new Centre and it can provide a mechanism for much needed collaboration with NARS on health issues.

G. Bibliography

African Research Network for by-products (ARNAB). 1991. "Final Report". ILCA, Addis Ababa, Ethiopia. November 1991. 38 pp.

African Research Network (AFRNET). 1992. "Progress Report, March 1991 to March 1992". ILCA, Addis Ababa, Ethiopia. March 1992. 29 pp.

African Feed Resources Network (AFRNET) 1993. "Progress Report, April 1992 to March 1993". ILCA Addis Ababa, Ethiopia. June 1993. 157 pp.

African Feed Resources Network (AFRNET). 1994. "Project Proposal - Sustainable Feed Resources Development and Utilization in highly populated zones of East Africa". ILCA, Addis Ababa, Ethiopia. February 1994, 35 pp.

African Feed Resources Network (AFRNET). 1994. "Development and Utilization of Feed Supplies for Sustained Crops and Livestock Production, Natural Resource Management and Environmental Protection". ILCA, Addis Ababa, Ethiopia. February 1994, 35 pp.

ARNAB. Toward Optional Feeding of Agricultural by-products to livestock in Africa. Alexandurie, Egypt, 1985. T.R. Preston and M.Y. Nuwanyakpa, in 1986

ARNAB. Utilization of Agricultural by-products as livestock feeds in Africa.Blantyre, Malaur, September 1986. D.A. Little and A.M. Said, in 1987

ARNAB.Plant Breeding and the nutritive value of crop residues. Addis Ababa, Ethiopia, 7-10 December 1987. Jess D. Reed, Brian S. Capper and Paul Neate in June 1988.

African Small Ruminant Research Network (SRNET). 1994. "Progress Report". ILCA, Addis Ababa, Ethiopia. July 1994.

African Feeds Research Network. "Newsletter". Issues 11, 12, 13, ILCA. Addis Ababa, Ethiopia, 1993.

The African Feed Resources Network. "Newsletter". Volumes, 1,2,3,4. ILCA, Addis Ababa, Ethiopia, 1993.

The African Feed Resources Network. "Newsletter". Volume . ILCA, Addis Ababa, Ethiopia. 1994.

African Research Network for Agricultural By-products (ARNAB). 1989. Overcoming constraints to the efficient utilization of Agricultural By-products as animal feed. Proceedings of the Fourth Annual Workshop held at the Institute of Animal Research Monkon Station, Bamenda, Cameroon. 20-27 October, 1987. ARNAB, Addis Ababa.

Brokken, R.F. and Senait Seyoum (eds). 1992. Dairy Marketing in Sub-Saharan Africa. Proceedings of a symposium held at ILCA, Addis Ababa, Ethiopia. 26-30 November, 1990. ILCA, Addis Ababa, Ethiopia.

Cattle Research Network. 1990. "Report on the Establishment of the Network in East, Southern, West, and Central Africa". ILCA, Addis Ababa, Ethiopia.

Cattle Research Network. 1991. "Final Report and Manual of the Workshop held in Nairobi, Kenya". ILCA, Addis Ababa, Ethiopia, August 1991. 145 pp.

Cattle Research Network (CARNET). 1993. "Milk Recording Scheme for Smallholder Producers in East and Southern Africa". ILCA, Addis Ababa, Ethiopia. March 1993.

Coordination of Cattle Research Network (CARNET).1994. "Summary Report of Programme Activities". ILCA, Addis Ababa, Ethiopia. June 1994. 24 pp.

The Cattle Research Network (CARNET). 1994. "External Evaluation of NARS-ILCA". ILCA, Addis Ababa, Ethiopia, August 1994. 23 pp.

Executive Summary of on-going SRNET Collaborative Research Projects. 1994. "Progress Report". ILCA, Addis Ababa, Ethiopia, March 1994. 44 pp.

Improvement of Research-Extension-User Linkage. 1994. "Pre-implementation Planning Workshop, University of Zimbabwe, Harare". ILCA, Addis Ababa, Ethiopia. 1994. 19 pp.

Kategile, J. A. and Adoutan, S. B. (eds). 1993. Collaborative Research on Sesbania in East and Southern Africa. Proceedings of an AFRNET Workshop held in Nairobi, kenya. 9-14 September, 1991. ILCA, Nairobi, Kenya.

Lebbie, S.H.B., Rey B. and Reynolds L. (eds). 1992. Small Ruminant Research and Development in Africa. Proceedings of the First Biennial Conference of the African Small Ruminant Research Network, ILRAD. Nairobi, Kenya, 10-14 December, 1990. pp 568 of 54 papers.

Lebbie, S.H.B. and Rey, B. (eds). Small Ruminant Research and Development. Proceedings of the 2nd Biennial Conference of the African Small Ruminant Research Network, Arusha, Tanzania, 7-11 December, 1992. (In Press) with 47 full papers and 10 poster abstracts.

Little, D.A. and Said, A.N. and Kategile J. A. (eds). 1987. Utilization of Agricultural By-products as Livestock Feeds in Africa. Proceedings of a Workshop held at Ryall's Hotel, Blantyre, Malawi. September 1986. ARNAB, Addis Ababa, Ethiopia.

PANESA/ARNAB (Pastures Network for Eastern and Southern Africa/African Research Network for Agricultural By-products). 1990. Utilization of research results on forage and agricultural by-product material as animal feed resources in Africa. Proceedings of the first joint workshop held in Lilongwe, Malawi, 5-9 December, 1988. PANESA/ARNAB, Addis Ababa, Ethiopia. 833 pp.

Pasture Network for Eastern and Southern Africa (PANESA). 1988. African forage-plant genetic resources, evaluation of forage germplasm and extensive livestock production systems. Proceedings of the Third Workshop held at the International Conference Centre, Arusha, Tanzania. 27-30 April, 1987. ILCA, Addis Ababa, Ethiopia.

Pastures Network for Eastern and Southern Africa (PANESA) 1991. "Final Report". ILCA, Addis Ababa, Ethiopia, April 1991, 24 pp.

Stares, Jess, Said, A.N. and Kategile J.A. (eds). 1992. The complementarily of feed resources for animal production in Africa. Proceedings of the joint feed resources networks workshops held in Gaborone, Botswana. 4 - 8 March 1991. African Feeds Research Network. ILCA, Addis Ababa, Ethiopia. 430 pp.

Wilson, R.T. and Melaku, A. (eds) 1989. African Small Ruminant Research Network. Proceedings of a conference on African Small Ruminant Research and Development, Bamenda, Cameroon, 18-25 January, 1989, pp. 578 of 42 papers.

H. Annexes.

I Itinerary

II Semi-structured Questionnaire

III Field Visits

IV Briefing Notes on the Three Networks Under Evaluation

V Objectives of ILRI, ILCA and ILCA Networks

VI Financial Analysis

VII Training

VIII Acronyms

IX Donor Priorities

X Appendix

ANNEX I

Itinerary

Itinerary

Date	Country	Person	Institution
6/09/94	Ethiopia	Initial Gathering of Team	
7/09/94	Ethiopia	Dr. Hank Fitzhugh, Director General	ILCA
		Dr. Eb. Olaloku, Co-ordinator	CARNET
		Dr. S. Lebbie, Co-ordinator	SRNET
		Dr. Jean Ndikumana, Co-ordinator	AFRNET
8/09/94	Ethiopia	Team discussions	ILCA
		Testing semi-structured questionnaire	ILCA
		Dr. Eb Olaloku, Co-ordinator	CARNET
		Dr. S. Lebbie, Co-ordinator	SRNET
		Dr. Jean Ndikumana, Co-ordinator	AFRNET
		Mr. Gerald O'Donoghue, Financial Controller	ILCA
9/09/94	Ethiopia	Briefing to staff members	ILCA
		Review tasks, outline report	
		Dr. Tadesse Gabre, Director General	IAR
		Dr. Getinet Gebeyehu, General Manager	IAR
		Dr. A. Gebre Wolde, Dir., Anim. Prod.	IAR
		Dr. M. Smalley, Director of Training	ILCA
		Dr. A. Lahlou-Kassi, Head, Animal Science	ILCA
10/09/94	Niger	Team Dr. Böhnert/Dr. Robinson, travel	
	Kenya	Team Dr. Blackburn/Dr. Li Pun, travel	
	Ethiopia	Dr. Eb Olaloku, Co-ordinator	
		Dr. Sayed Jamal	CARNET
11/09/94	Niger	Dr. S. Fernández, Team Leader	ILCA
		Dr. P. Hiernaux, Range Ecologist	ILCA
		Dr. M. Turner, Sociologist	ILCA
		Dr. O. Williams, Economist	ILCA
12/09/94	Niger	Dr. Daouda Toukoua, Dirctor General	IRAN
		Dr. Mamadou Maga, Research Director	IRAN
		Dr. Amadou Douma, Animal Scientist	IRAN
		Dr. Marechatou Hamani, lecturer	Niamey Univ.
		Prof. Abdoulaye Gouru, Director, Faculty of Agronomy	Niamey Univ.
		Prof. Alhassan Yenikoye, Rector	Niamey Univ.

	Kenya	Prof. D.M. Mukunya, Principal College of Agriculture & Veterinary Science	Nairobi Univ.
		Dr. R. Mosi, Senior Lecturer, Dept. of Animal Science	Nairobi Unive.
		Dr. A.M. Kilewe, Centre Director of Muguga	KARI
		Dr. A. Abate, Deputy Director	KARI
		Dr. R. Contant, Senior Officer	ISNAR
	Ethiopia	Dr. Eb Olaloku, Co-ordinator	CARNET
		Mr. A. Tall, Project Support Manager	ILCA
13/09/94	Ivory Coast	Stop-over team Dr. Böhnert/Dr. Robinson	
	Kenya	Travel to Mombassa, Dr. Li Pun	
		Dr. G.M. Kaman, Deputy Centre Director	KARI, Mtwapa
		Mr. M.N. Njunie, Research Officer	KARI, Mtwapa
		Visit to four farms	
		Prof. E.R. Mutiga, Assoc. Prof.	Nairobi Univ.
	Ethioia	Dr. Eb. Olaloku, Co-ordinator	CARNET
14/09/94	Ghana	Travel by road from Abidjan to Accra	
		Team Dr. Böhnert/Dr. Robinson	
	Kenya	Return to Nairobi, Dr. Li Pun	
		Dr. Luis Navarro, Sr. Program Officer	IDRC
		Dr. Sahib Sy, Program Officer	IDRC
	Ethiopia	Dr. M. Jabbar, Researcher in Economics	ILCA
		Mr. A. Tefri, Training & Extension Officer	ILCA
	Zimbabwe	Travel by air from Nairobi to Harare	
		Dr. H. Blackburn	
		Mr. R. Fenner, Director, Dept. of Research and Special Services (DRSS)	DRSS
		Mr. P. Nyathi, Deputy Director (Livestock & Pastures)	DRSS

15/09/94	Ghana	Prof. W. Alhassan, Director General	CSIR
		Dr. S.A. Okantah, Director	ARI
		F. Yeboah Obese, Research Assistant	ARI
		A. Addo Kwafo, Research Assistant	ARI
		E.O.K. Oddoye, Research Assistant	ARI
		Prof. Assouku, Director, Animal Science	Legon Univ.
		Prof. P. Gyawu, Head, Dept., Animal Science	UST-Kumasi
		Prof. A.K. Tuah, Dean of Agriculture	UST-Kumasi
	Kenya	Dr. M. Wankyoike, Reader, Dept. of Animal Science	Nairobi Univ.
		Dr. A.B. Orodho, Director, Regional Agricultural Research Centre	KARI
		Dr. C. Ndiritu, Director General	KARI
	Ethiopia	Dr. Gebre Wolde, Director, Animal Production	IAR
		Mr. Elias, Extension Officer	IAR
		Holeta staff animal traction	ILCA
		Farmers	
	Zimbabwe	Dr. L.R. Ndlovu, Dean, Faculty of Agriculture	Zimbabwe Univ.
		Dr. Sibanda, Chairman, Animal Science	
		Mr. G.D. Mudimu, Chairman, Dept. of Agricultural Economics, Project Leader: Research-Extension User Linkages	
		Dr. L. Sibanda, Sr. Consultant, Macpherson Consulting Group	
		Mr. F. Chinembiri, Principal Extension Officer Animal Production Branch	
		Mr. D.M.J. Dube, Project Officer	
16/09/94	Ghana	Dr. Stephen A. Osei, Senior Lecturer	UST-Kumasi
		Dr. Daniel B. Okai, Senior Lecturer	UST-Kumasi
		Dr. Buadu, Lecturer	UST-Kumasi
		Dr. Ossafu, Lecturer	UST-Kumasi
		Mr. Adolf Nessel, Lecturer	UST-Kumasi
		all from the Dept. of Animal Science	UST-Kumasi
		Dr. A.S. Nicholas, Veterinary Services Dept.	Kumasi
		Dr. S.A. Okanta, Director	ARI
	Kenya	Dr. D. Wachira, Deputy Director General	KARI
		Dr. Kwesi Atta-Krah, Co-ordinator	AFRENA/ICRAF
		Mr. Bruce Scott, Deputy Director General	ICRAF
		Dr. E.N. Sabiiti, Head of Crop Science	Uganda Univ.
		Dr. J. Ndikumana, Co-ordinator	AFRNET

	Ethiopia	Mr. G.O.P. Donoghue, Finance Manager	ILCA
	Zimbabwe	Mr. T. Smith, Head, Matopos Research Station	DRSS
		Mr. R. Sibanda, Prin. Res. Officer, Matopos	DRSS
		Mr. M. Beffa, Prin. Res. Officer, Matopos	DRSS
		Mr. O. Matika, Res. Officer, Matopos	DRSS
		Mr. J. Sikosana, Sr. Res. Officer, Matopos	DRSS
		Mr. S. Moyo, Prin. Res. Officer, Matopos	DRSS
17/09/94	Ghana	Return of team Dr. Böhnert/Dr. Robinson	
	Kenya	Return of Dr. Li Pun	
	Ethiopia	Prof. Umunna, Director, Debre Zeit Farm	ILCA
		Dr. C. O'Connors, Researcher	ILCA
		Dr. P. Osuji, Thrust Co-ordinator	ILCA
18/09/94	Ethiopia	Arrival of team Dr. Böhnert/Dr. Robinson/ Dr. Blackburn	
19/09/94	Ethiopia	Evaluation Team Meeting: Initial trip reports, Analysis of data, Preparation of report	
		Dr. Hank Fitzhugh, Director General	ILCA
		Dr. Eb Olaloku, Co-ordinator	CARNET
		Dr. S. Lebbie, Co-ordinator	SRNET
		Dr. Jean Ndikumana, Co-ordinator	AFRNET
20/09/94	Ethiopia	Evaluation Team Meeting: Preparation of report	
21/09/94	Ethiopia	Preparation of report: Return of Dr. S. Jamal and Dr. I. Robinson	
22/09/94	Ethiopia	Completion of draft report	
		Presentation of draft report	ILCA
		Return of Dr. H. Blackburn, Dr. E. Böhnert and Dr. H. Li Pun	

ANNEX II

Semi-Structured Questionnaire

Semi-Structured Questionnaire

1.	**Objectives:**	**To whom**
1.1	What are they?	Steering Committee (S.C.)
1.2	Who defined and where?	Co-ordinators
1.3	When reviewed?	<u>Country level</u>:
1.4	Are they met?	Research Managers
1.5	Were they realistic?	Researchers
1.6	Do they match mission and goals of ILCA and NARS	Extension Agents Farmers
2.	**Plans**	
2.1	Do you have a documented plan?	S.C.
2.2	Who made the plan?	Research Co-ordinators
2.3	What period is covered by the plan (1-5 years)?	Research Managers Researchers
2.4	What are the components?	
2.5	Who has the copy of the plan?	
2.6	Has the plan been realistic?	
3.0	**Outputs: Quantity and Quality**	
3.1	M&E does it exist, what, when, by whom?	S.C., Research Coordinators Research Managers, Researchers Others
3.2	<u>Research</u>: Experiments	Records
	<u>Date</u>: completed and ongoing according to	Records Research Managers
	a) Topic	Researchers
	b) Site on station or on farm (farmer or research managed)	
	c) Design mechanisms Identification procedures Did they include prior information? Did they get assistance, who and how?	Researchers Managers Researchers
	d) Value of results ranked 1 to 5	Extension Agents, Farmers

3.3	Utilization: by whom (universities, extension agents or others) when, where and how?	Research Co-ordinators Research Managers Researchers (secondary information)
3.4	What impact effects have been observed? How were indicators identified for short/medium or long-term, when, where, by whom?	Research Co-ordinators Research Managers Researchers (secondary information)
3.5	Diffusion - local (open dates, demonstration plots) - national - international mechanisms, frequency quality of publication	Research Co-ordinators Research Managers Researchers (secondary information)
3.6	Was any dialogue established? If so, with whom, how, mechanisms, frequency?	Research Co-ordinators Research Managers Researchers (secondary information)

4. Training Activities

4.1	Do they know of training programme?	Researcher Co-ordinators Research Managers Researchers Extention Agents
4.2	Has department or institute participated?	
4.3	Who participated? In what topic? Where/Duration? Other courses: ILCA and others	
4.4	Who prepared training programme?	
4.5	What has been assessment for the follow-up since training?	
4.6	What alterations to courses/training offered took place after follow-up?	

4.7 What has happened to returning participants? (tracer studies)

5. Network Management

5.1	Why are you in the network?	Research Co-ordinators S.C.
5.2	Who else is in the network?	Research Managers
5.3	Who controls the network?	Researchers
5.4	Who uses the network? Who are users direct or indirect, clients and beneficiaries?	
5.5	What is the role of a) Co-ordinator? b) Steering Committee? c) Participants?	
5.6	What facilities, services and personnel are used by the network in your institution?	
5.7	How do you perceive network activities vis-à-vis other ILCA activities?	
5.8	What is your perception of effectiveness of the network structure (co-ordination units, steering committee and participants)?	

6. Financial Management

6.1	Where do you get the resources and money from for network activities?	Research Managers Co-ordinators Research Managers Financial Controllers
6.2	What is the distribution of funds? (overheads, etc.)	

6.3 Who decides how it should be divided?

6.4 How is it administered (i.e., separate account)?

6.5 How are expenditures audited?

6.6 Small Grants

6.6.1 What are the stages?

6.6.2 Open/closed call for proposals?

6.6.3 Local vetting/evaluation?

6.6.4 Forwarding to Steering Committee

6.6.5 Steering Committee criteria for allocation of funds?

a) relevance to production systems in country concerned

b) analysis of distribution of previous grants by institutions, researchers, subject themes, geographical areas (records and reports)

7. Institutionalization

7.1 Do network priorities match National Programme? Research Co-ordinators

7.2 Are actual activities part of National Programme? Research Managers

7.3 Do activities appear in:
National budget?
Annual reports?
Staff promotion considerations?

7.4 Does inventory of assets exist?

8. Linkages

8.1 Are activities linked with other ILCA activities?, If so, how? Research Co-ordinators

8.2	Are activities linked with other sponsored activities? If so, how? With other international projects. If so, how?	Research Managers
8.3	Is there any repetition or duplication?	Researchers
8.4	Any suggestions for improvement? Merging of networks like AFRNET and WECAFNET? What happens when resources are limited?	
8.5	What other agencies or organisations could be incorporated as collaborators into the programme?	

9. Benefits

9.1	What tangible benefits are derived by:	Research Co-ordinators
	a) Institution	Research Managers
	b) Researcher	Researchers
	c) Extension Agents	Extension Agents
	d) Farming population	Farmers
9.2	Do benefits justify the expenditure?	
9.3	What potential benefits can ben identified at this state? (not included in 9.1)	
9.4	Do benefits, actual or envisaged, match expectations?	

10. Constraints

10.1	Identifying constraints (international, national and local) to successful implementation of network activities at following levels:	Research Co-ordinator
	a) Institution	Research managers
	b) Researcher	Researchers
	c) Extension agent	Extension Agents
	d) Farming population	Farmers

11. Future directions and perspectives

11.1 In this climate of change of ILCA structure and donor attitudes and national programmes:

a) What is the idea for the future of the network:

- objectives and priorities
- network activities
- managerial procedures
- financing
- institutional linkages including other participants (NGOs)

Research
Research Managers
Researchers
Extension Agents
Donors

ANNEX III

Field Visits

Field Visits

Location	General Activities	Network Activities	Comments
Niger IRAN Small Ruminant Station Kolo	Performance characterization and evaluation of different types of sheep: Peulh white, Bicolor, Tangui and Marcina Production of rams for distribution	Utilization of crushed sorghum straw with cowpea haulms, ensiled sorghum straw mixed with and without urea (in oil drums) feeding small ruminants during the dry season	- The improved crusher is very efficient but still handling is quite dangerous. - the two best rations should be used in on-farm experiments to prove the acceptance of the method developed.
Niger University of Niamey Laboratory of Nutrition and Reproduction/Research station	Feed analysis Hormonal analysis Feeding trials Reproduction trials	Seasonal effects on ram semen quality and quantity	- Deserted poultry building. - activities terminated due to sale of sheep in absence of researcher. - experiment to be restarted shortly.
Ghana Research Station of UST-Kumasi		Napier/Pennisetum multiplication trials (started 2 years ago) Nutritional studies on crop residues: Ficus leaves and cassava peels with or without urea conducted by post-graduate student Mr. Annan	- Review of local material before importing new varieties. - socio-economic aspects should be included in the feeding trials.
Ethiopia ILCA Research Station Debre Zeit	Strategic Research - Feed Resources - Genetic Resources - Animal Production	Support to Networks	- Good facilities for research. - interesting possibilities for value added as a result of simple milk processing technologies. Should be follow-up at village level.

Field Visits

Location	General Activities	Network Activities	Comments
Ethiopia Holeta IAR Substation	Research and Extension	- Animal traction to introduce improved breed cows to farmers - Development of milk recording schemes for smallholder producers in East and Southern Africa	- IAR Director of Extension and Training knew about CARNET activities, but not others. - farmers not trained to look after the animals in order to sustain the characteristics of the breed.
Kenya KARI Research Station at Muguga	Adaptation of forage grasses and legumes for the Tropical Highlands.	AFRNET trials	- Good performance of several legumes: *D. uncinatum* *Mucuna pruriens* *D. intortum*
Kenya Farmers in Mtwapa, Mombassa area	Utilization of legumes and napier under zero grazing for dairy production.	AFRNET NDDR, others	- Potential for impact. - Technology adoption study needed. - Problems with *Leucaena* (Psilids) - Need to evaluate some of the associations developed at the stations under farm conditions.
Kenya KARI Research Station of Mtwapa	Evaluation of legumes in association with grasses, maize and alley farming.	AFRNET	- Impressive performance of several including Napier/Clitoria. - Apparently over 300 farmers are using Leucaena, 160 Clitoria.
Zimbabwe University of Zimbabwe	Development of smallholder dairy cattle.	Smallholder dairy project. Collection of milk, integration of dairy enterprise into smallholder farms, includes advice on breed type, forage management and milk handling.	Principal example of integrated on farm research: clearly identifying the need for better forages, animal genotype, animal management, labour requirement and economic viability.

ANNEX IV

Briefing Notes on the Three Networks Under Evaluation

CATTLE RESEARCH NETWORK (CARNET)

Background

Sub-Saharan Africa's estimated 179 million cattle have the potential to produce adequate supplies of milk and meat to meet the needs of the region's ever-growing human population.

It is however common knowledge that the productivity levels of the existing cattle population are generally low and have remained well below their potential.

A number of important constraints to improved productivity have been identified and these include biotechnical factors such as inadequate feed supplies and poor nutrition, reproductive wastage, high morbidity and mortality, unimproved genotype, as well as whole range of socio-economic and institutional factors such as unfavourable agricultural policies, land tenure systems and poor infrastructure.

In order to remedy the identified constraints, research is required that is targeted toward the development and transfer of improved producer-implementable technology packages for sustainable increases in milk and meat production.

More specifically, research is required in the following key areas:

- improved feeding and management
- reproductive wastage, disease and health care
- milk preservation, processing and marketing
- characterization and conservation of cattle breeds
- economics of production

ILCA's Role

Give the similarities in the constraints to sustainable cattle production in most parts of Sub-Saharan Africa (SSA), ILCA, in its Medium Term Plan programme implementation (1989-1993), encouraged NARS scientist to establish a mechanism for increased collaboration between NARS, in order to create the critical mass to conduct the research for the development and transfer of producer-implementable technology packages.

ILCA's efforts in this direction resulted in the establishment of the Cattle Research Network (CARNET) in West and Central Africa and East and Southern Africa in 1989/1990.

The Cattle Research Network (CARNET) is one of the 3 NARS-ILCA collaborative research networks.

Justification for a Cattle Research Network

- identified constraints to sustainable cattle production are common to most countries in SSA
- The shortage of trained manpower in cattle research is most SSA countries requires the establishme nt of a critical mass of NARS scientists to conduct the required research for solutions to the constraints
- most countries are affected by poor research infrastructure and inadequate financial resources and are unable to conduct the needed research alone on their own.

Establishment of the Network

In 1988 and 1989, ILCA, through its Cattle Milk and Meat Thrust, organized two major consultative workshops to bring together scientists from NARSs in West and Central Africa and East and Southern Africa, respectively. Each of the consultative workshop had been preceded by in-country visits to the different NARS in each sub-region by scientists from ILCA's Cattle Milk and Meat Thrust. The visits were aimed at assessing the state of cattle milk and meat research and development in the NARS, and the major constraints to sustainable production.

Participants at each workshop reviewed the current cattle research and development situation in their NARS and identified the constraints to sustainable increases in cattle milk and meat production, particularly those requiring regional co-operation in research. They resolved to establish the **Cattle Research Network** in each sub-region.

Network Objectives

The overall objective of the network is to assist the national agricultural research systems (NARS) in Sub-Saharan Africa in developing and implementing research programmes aimed at increasing sustainable milk and meat production, particularly by smallholder cattle producers.

The specific objectives are to:

- encourage and stimulate cattle milk and meat research by assisting NARS in developing the required institutional infrastructure
- help NARS develop their research programmes withing and between national institutions, between NARS and regionally
- facilitate information exchange through workshops, visits by scientist to collaborating institutions, newsletters, journals, proceeding of national societies and publication of farmers' newsletter
- develop research-extension-user linkages
- assist NARS in data collection, analysis, interpretation and reporting
- maintain a regular and up-to-date directory of NARS scientist and their programmes in cattle milk and meat research
- help NARS obtain donor funds for programme implementation.

CATTLE RESEARCH NETWORK (CARNET)

STEERING COMMITTEE MEMBERS

The Steering Committee Members (1990-1993)

Names

Prof. M. Mgheni (Chairman)	ESA*	Tanzania, Sokoine University of Agriculture
Dr. Alemu G. Wolde	ESA	Ethiopia, Institute of Agricultural Research
Dr. L.A. Kamwanja	ESA	Malawi, Bunda College of Agriculture
Mrs. J. Macala	ESA	Bostwana, Animal Production Research Unit
Prof. E.R. Mutiga	ESA	Kenya, University of Nairobi
Dr. S. Sibanda	ESA	Zimbabwe, University of Zimbabwe
Dr. M. Mbaye (Chairman)	WCA**	Senegal, Institut Sénégalais Recherche Agricole
Dr. P. Gyawu	WCA	Ghana, University of Science & Technology
Mr. B.J. Kouao	WCA	Cote d'Ivoire, Institut Des Savannes (IDESSA)
Dr. D.A. Mbah	WCA	Cameroon, Institut Recherche Zootechnique
Prof. E.O. Oyedipe	WCA	Nigeria, National Animal Production Research Institute
Dr. M Togola	WCA	Mali, Institut d'Économie Rurale

The Steering Committee Members (1993 - to date)

Dr. S. Sibanda (Chairman)	ESA	Zimbabwe, University of Zimbabwe
Dr. Alemu G. Wolde	ESA	Ethiopia, Institute of Agricultural Research
Mrs. J. Macala	ESA	Bostwana, Animal Production Research Unit
Prof. E.R. Mutiga	ESA	Kenya, University of Nairobi
Mr. D.B. Mpiri	ESA	Tanzania, Ministry of Agriculture, Research and Training Division
Mr. M.L. Beffa	ESA	Zimbabwe, Dept. of Research and Specialist Services
Prof. E.O. Oyedipe (Chairman)	WCA	Nigeria, National Animal Production Research Institute
Dr. D.A. Mbah	WCA	Cameroon, Institut Recherche Zootechnique
Mr. B.J. Kouao	WCA	Cote d'Ivoire Institut Des Savannes
Dr. B.K. Ahunu	WCA	Ghana, University of Ghana, Legon
Dr. B. Ouologuem	WCA	Mali, Institut d'Économie Rurale
Dr. M. Mbaye	WCA	Sénégal, Institut Sénégalais Recherche Agricole

* East and Southern Africa

** West and Central Africa

1. Outputs

2. Available Resources for Network Co-ordination

3. Cattle Research Network
   - 3.1. Background
   - 3.2. Steering Committee Members from 1990-1993, 1993-to date
   - 3.3. Membership Distribution
   - 3.4 IDRC/CARNET Project on Peri-Urban dairy production in West Africa, Pre-survey Planning Seminar; Bamako, Mali 1993
   - 3.5 - Monitoring Tours
     - Consultancies
     - Training Course on "Amélioration de la Production laitière en Africa", 1992

4. Small Ruminant Network
   - 4.1 Background
   - 4.2 Steering Committee Members
   - 4.3 Membership Distribution
   - 4.4. - Monitoring Tours
     - Consultancies
   - 4.5 Refereed Papers

5. African Feed Resources Network
   - 5.1 Background
   - 5.2 Steering Committee Members
   - 5.3 Membership Distribution
   - 5.4 List of Consultants
   - 5.5 Some Publications and Scientific Papers by AFRNET

OUTPUTS
(By No. Only)

Activity	CARNET	SRNET	AFRNET[1]
Research Protocols	9	14	65
Newsletters	13	15	8
Workshops/Conferences	6	8[2]	4
Study tours	-	-	-
Exchange visits	-	1	-
Steering Committee Meetings	10	11	6
Consultancies	4	22	6
Network Special Training Courses	4	2	1
Monitoring Tours	3	12	6

[1] Only for AFRNET (since 1991). Activities by ARNAB and PANESA are not mentioned.

[2] These include biennial conferences and protocol planning and development at regional level.

AVAILABLE RESOURCES FOR NETWORK CO-ORDINATION

RESOURCES		NETWORK		
		SRNET	AFRNET	CARNET
1.	**Human: ***			
	Coordinator	1	1	1
	Secretary	1	1	1
2.	**Equipment**			
	Computer	1	2	1
	Printer	1	2	-
	Filing Cabinets	2	1	1
	Steel Cupboard	-	-	1
3.	**Others: ****			
	Office	Common	Pool	Sharing
	Photocopies	"	"	"
	Vehicles	"	"	"
	Drivers	"	"	"
	Finance & Accounts	"	"	"
	Communications (Fax, telex, etc.)	"	"	"
	Messengers	"	"	"

* It has been agreed in principle that each co-ordinator office should have a visiting Scientist each year from the NARS to assist the co-ordinator, but financial limitations have made the implementation impossible.

* SRNET and AFRNET are provided these resources through the programme support office in Nairobi and ILCA HQ while CARNET is supported mainly from ILCA-HQ.

Note: ILCA provides subject matter specialist on as needed basis to assist the network co-ordinator and Steering Committee in the review of proposals, evaluation of research progress and training.

CATTLE RESEARCH NETWORK (CARNET)
MEMBERSHIP DISTRIBUTION

Category	Number of Participants	
	Active *	Passive **
Universities	210	175
National Research Institutions	250	150
Development Project	30	30
Extension Services	40	20
Non-Governmental Organisations	10	15
International Organisations	20	80
Libraries	5	40
Private Farmers	193	150
Donors	4	-
TOTAL	**762**	**660**

* Active participation are:
- those actually involved in the implementation of Network projects;
- those involved in workshops, conferences and other network-related activities.

** Passive participants are mainly those who receive the Newsletter and other Network information.

IDRC/CARNET PROJECT ON PERI-URBAN DAIRY PRODUCTION IN WEST AFRICA

Pre-Survey Planning Seminar; Bamako, Mali
27 -30 September, 1993

LIST OF PARTICIPANTS

NAME	ADDRESS
GHANA	
1. Gyawu, P.	University of Science & Technology P.O. Box 446 University Post Office Kumasi, GHANA TLX. 2555 UST GHANA
2. Okantah, S.A.	Animal Research Institute P.O. Box 20 Achimota, GHANA TLX: 3033 BTH GH TEL: 233-21-777-631 FAX: 233-21-777-1753
3. Ouologuem, B. (IER)	Institut d'Économie Rurale Station de Recherche Zootechnique de Sotuba B.P. 262, Bamako, MALI TLX: 2459 ILCA MJ FAX: (223) 224-279
4. Soumare, B. (IER)	Institut d'Économic Rurale Station de Recherche Zootechnique de Sotuba B.P. 262, Bamako, MALI TLX: 2459 ILCA MJ FAX: (223) 224-279
NIGERIA	
5. Barje, P. (NAPRI)	National Animal Production Research Institute P.M.B. 1096 Shika, Zaria, NIGERIA

		TLX: 71384 ILCAKD NG Fax: (234-62) 230-526
6.	Ehoche, W.	National Animal Production Research Institute (NAPRI) P.M.B. 1096 Shika, Zaria, NIGERIA TLX: 71384 ILCAKD NG FAX: (234-62) 230-526

SENEGAL

7.	Ba Diao, M.	Institut Sénégalais de Recherche Agricole (ISRA/LNERV) B.P. 2057 Dakar-Hann, SENEGAL TLX: 61117 ISRA SG FAX: 221-324-146 TEL: 221-320-524

CARNET STEERING COMMITTEE

9.	Oyedipe, E. (Chairman)	National Animal Production Research P.M.B. 1096, Shika, Zaria, NIGERIA TLX: 71384 ILCAKD NG FAX: (234-62) 230-526

RESOURCE PERSONS

10.	Debrah, S.	ICRISAT-WASIP-Mali B.P. 320 Bamako, MALI
11.	Diedhiou, M.	ILCA B.P. 60 Bamako, MALI TLX: 2459 ILCA MJ FAX: (223) 224-279
12.	Nokoe, S.	ILCA P.O. Box 5689 Addis Ababa, ETHIOPIA TLX: 2107 ILCA ET FAX: (251-1) 611-892

INTERPRETERS

14.	Khan, Ebou	P.O. Box 357 S/K Banjul, The GAMBIA TLX: 2290 G.V s/c O. Ceesay FAX: (220) 928-66 s/c O. Ceesay
15.	Niang, Daouda	ILCA P.O. Box 5689 Addis Ababa, ETHIOPIA TLX: 2107 ET FAX: (251-1) 611-892

MONITORING TOURS

(i) The CARNET Co-ordinator has carried out one monitoring tour to each of the collaborative research project sites on the "Development of feeding and management systems for improved reproduction and milk production in Smallholder Herds in East & Southern Africa", most of which started in late 1992.

(ii) Two ILCA scientist - Dr. Bernard Rey and Mamadou Diedhiou have undertaken back-stopping tours for the application of the survey questionnaires and the installation of data management equipment for the peri-urban dairy project in Ghana, Mali, Nigeria and Senegal.

(iii) Monitoring and Evaluation tours are provided for during the second stage (collaborative research implementation) of the peri-urban dairy project in West Africa during 1995.

CONSULTANCIES

(a) NARS scientist have undertaken consultancies as resource persons in the annual ILCA/Network training courses. These are charged to the Training Department Cost Centre.

Participants in this type of consultancies are:

(i) ILCA/DR & SS Training Course on "Improving Milk Production in Africa", Harare, Zimbabwe, 22 July - 9 August, 1991.

1. Borland, P. (Mrs.)	Dept of Research & Specialist Services (DR & SS) P.O. Box 8108, Causeway, Harare
2. Henson, B.	Director, Dairy Development Programme (DDP) P.O. Box 8439, Causeway, Harare
3. Mudimu, G.D.	Dept. of Agricultural Economics & Extension, Univ. Of Zimbabwe P.O. Box MP 167, Mount Pleasant, Harare
4. Mupunga, E.G.	Asst. Director Operation, DDP P.O. Box 8439, Causeway, Harare
5. Matizha, w.	DR & SS P.O. Box 8108, Causeway, Harare

(b) NARS scientists have also undertaken consultancies as resource persons in two Network Methodology Workshops:

(i) On-Farm Cattle Research Methodology Workshop, Bamako, Mali, 27 June - 8 July, 1994.

1. Ouologuem, B.	Institut d'Économie Rurale (IER) B.P. 262 Sotuba, Bamako, MALI TLX & FAX - C/O ILCA MALI
2. Togola, M.	Institut d'Économie Rurale (IER) B.P. 262 Sotuba, Bamako, MALI TLX & FAX - C/O ILCA MALI
3. Debrah, S.	ICRISAT/WASIP, MALI B.P. 320 Bamako, MALI

SMALL RUMINANT RESEARCH NETWORK (SRNET)

Background

The main mandate of ILCA is to assist National Agricultural Research Systems (NARS) efforts to change the production and marketing systems in tropical Africa so as to increase the sustained yield or output of livestock products and so improve the quality of life of the people of this region.

Given its limited resources via-à-vis the numerous and diverse problems related to livestock production and the micro-environments of the vast African continent, ILCA chose to fulfil its mandate in partnership with NARS. This thinking was the basis of the formation of the ILCA Small ruminant and Camel Group (SRCG) in 1985. SRCG was primarily an information exchange and training network. It helped assist NAS to analyse their small ruminant data for publication. In 1987, in its First Medium-Term Plan, ILCA proposed the Collaborative Research support Networking (CRN) concept as one of the methods to achieve and improve a sustained and effective partnership with NARS. This was based on the conviction that CRNs will provide the opportunity for creating a critical mass of NARS scientists who together with ILCA could define and tackle problems that constrained sustainable livestock production on the continent. Through this process, ILCA hoped to strengthen NARS capacity to carry out independent research on their livestock related-problems in the future. ILCA was also convinced that through networking there will be increased regional collaboration in the co-ordination and execution of research programmes.

The SRCG was thus transformed into the African Small Ruminant Research Network in 1987 but was only inaugurated in January, 1989 at a scientific meeting of NARS scientists in Bamenda, in the Republic of Cameroon. As originally envisioned, ILCA was to take a visible role in the network, providing research facilities and overseeing ILCA planned and managed research in collaboration with selected NARS. However, as the collaborative relationship developed and needs and priorities identified, the philosophy of networking changes. NARS scientist assumed the direct responsibility for planning developing and executing programmes in the context of their felt-needs and priorities, with scientific, logistic and financial backstopping from ILCA. Thus, the ownership of SRNET passed on to the NARS with the Steering Committee (SC) as the executive body.

SMALL RUMINANT RESEARCH NETWORK (SRNET)
STEERING COMMITTEES (1989-1994)

The Interim Steering Committee (January 1989 - December 1990)

Names	Region	Country/Institution
Prof. S.H.B. Lebbie (Chairman) Swaziland	Southern Africa	Sierra Leone, University of
Mr. R. Sibanda	Southern Africa	Zimbabwe, Matopos Research Station
Dr. R. Shavulimo	East Africa	Kenya, SR-CRSP Kenya Programme
Prof. B. Chichaibelu	East Africa	Ethiopia, Alemaya University
Dr. G. Sibomana	Central Africa	Rwanda, Songa Research Station (ISAR)
Dr. R.M. Njwe	Central Africa	Cameroon, Dchang University
Dr. Y.I. Pessinaba	West Africa	Togo, Programme National de Petit Ruminant
Prof. M.O. Akusu	West Africa	Nigeria, University of Ibadan
Prof. A. Lahlou-Kassi	North Africa	Morocco, Hassan II University
Prof. A. Yenikoye	North Africa	Niger, University of Niamey
Dr. R.T. Wilson (Secretary-Co-ordinator)	ILCA	Britain, ILCA

The Steering Committee (January 1991 - December 1992)

Prof. D. Chichaibelu (Chairman)	East Africa	Ethiopia, Alemaya University
Dr. R. Shavulimo	East Africa	Kenya, SR-CRSP Kenya Programme
Dr. Y.I. Pessinaba	West Africa	Togo, Programme National de Petit Ruminant
Prof. I.F. Adu	West Africa	Nigeria, University of Abeokuta
Dr. G. Sibomana	Central Africa	Rwanda, Songa Research Station (ISAR)
Dr. R.M. Njwe	Central Africa	Cameroon, Dchang University
Dr. L. Ndlovu	Southern Africa	Zimbabwe, University of Zimbabwe
Dr. S.M. Das	Southern Africa	Tanzania, Livestock Prod. Res. Inst.
Prof. A. Lahlou-Kassi	North Africa	Morocco, Hassan II University
Prof. A. Yenikoye	North Africa	Niger, University of Niamey
Prof. S.H.B. Lebbie (Co-ordinator/Secretary)	ILCA, Nairobi	Sierra Leone, ILCA

The Steering Committee (January 1992 - December 1994)

Prof. A. Yenikoye (Chairman)	North Africa	Niger, University of Niamey
Dr. L. Derqaoui	North Africa	Moroco, Hassan II University
Prof. I.F. Adu	West Africa	Nigeria, University of Abeokuta
Dr. Y.I. Passinaba	West Africa	Yogo, Programme National de Petit Ruminant
Dr. G. Sibormana	Central Africa	Rwanda, Songa Research Station (ISAR)
Dr. R.M. Njwe	Central Africa	Cameroon, Dchang University
Dr. S.M. Das	Southern Africa	Tanzania, Livestock Prod. Res. Inst.
Dr. B.H. Ogwang	Southern Africa	Uganda, University of Swaziland
Dr. P.P. Semenye	East Africa	Kenya, Kenya Agric. Res. Institute
Dr. J.T. Musiime	East Africa	Uganda, OAU/IBAR
Prof. S.H.B. Lebbi	ILCA, Nairobi	Sierra Leone, ILCA

SMALL RUMINANT RESEARCH NETWORK (SRNET)

MEMBERSHIP (1989-1994)

Category	Number of Participants	
	Active *	Passive **
Universities	210	180
National Research Institutions	250	250
Development Project	30	10
Extension Services	30	6
Non-Governmental Organisations	20	6
International Organisation	10	100
Libraries	6	12
Private Farmers	30	100
Donors	2	-
TOTAL	**798**	**664**

* Active members consist of those actually involved in executing network funded projects (142 participants) and National SRNET members who are by extension regional SRNET members, those who participate regularly in network activities such as Conferences/Workshops, those who communicate regularly with the network co-ordinator for network information, training consultants and Steering Committee members.

** Passive members include those who receive network publications only and participate in researcher-managed projects.

SMALL RUMINANT RESEARCH NETWORK (SRNET)

PUBLICATIONS (1989-1994)
REFERRED PAPERS

Rocha, A. Mekinnon and Wilson, R.T. 1990. Comparative performance of Landim and Blackhead Persian sheep in Mozambique. *Small Ruminant Reseach, 3(6):* 527-538.

Wilson, R.T. and Lebbie, S.H.B. 1990. Collaborative research network as a means of increasing the productivity of African goats and sheep. *Rural Development in Practice, 2(1):* 33-35.

Wilson, R.T. 1989. Reproductive performanc of African indigenous small ruminants under various management systems. *Animal Production, 20(4):* 265-286.

Wilson, R.T. Murayi, T and Rocha, A. 1989. Indigenous African small ruminant strains with potentially high reproductive performance. *Small Ruminant Research, 2(2):* 107-117.

Wilson, R.T. and Maki, M.O. 1989. Goat and sheep population changes in a Masaai group ranch in south-western Kenya, 1978-1986. *Agricultural Systems, 29(4):* 325-337.

AFRICAN FEED RESOURCES NETWORK (AFRNET)

Background and Justification

A number of on-farm surveys by national and international research institutions have indicated tat the most important constraint for livestock productivity in Sub-Saharan Africa is inadequate feed suppiy.

Aware of that, ILCA initiated in the 1980's two networks; the Pasture Network for Eastern and Southern Africa (PANESA) and the African Research Network for agricultural by-products (ARNAB) PANESA and ARNAB objectives were to strengthen research in pasture and fodder agronomy and in the utilisation of agricultural by-products in Sub-Saharan African through institutional partnerships with National Agricultural Research Institutions (NARS) within Sub-Saharan Africa, Regional institutions and other International Agricultural Research Centres (IARCs). Networking was considered and adopted by ILCA as an essential mechanism to address regional needs for livestock research with a sufficient critical mass of scientists and other partners.

The African Feed Resources Network (AFRNET) which was launched in 1991 resulted from a merger of PANESA and ARNAB in order to rationalise research programmes on all aspects of animal feeding, thus avoiding overlaps and other unnecessary duplications.

AFRNET's overall objective remained to strengthen the capabilities of NARS and their partners to conduct research on forages, crop residues and agro-industrial by-products as the basis for the development of sustainable animal productions systems by:

- Catalysing applied feed research initiatives for the improvement of relevant crop-livestock integrated systems;

PASTURES NETWORK FOR EASTERN AND SOUTHERN AFRICA (PANESA)

STEERING COMMITTEE MEMBERS (1988-1991)

Names	Region	Country/Institution
A.P. Orodho (Chairman)	E. & S. Africa	Kenya, Agricultural Research Institute
M.L. Kusekwa	E. & s. Africa	Tanzania, Department of Research and Training Ministry of Agric. And Livestock Development
P. Nyathi	E & S. Africa	Zimbabwe, Department of Research and Specialist Services
J. Rasambainarivo	E & S. Africa	Madagascar, FOFIFA
E.N. Sabiiti	E & S. Africa	Uganda, Makerere University

Ex-Officio Members

J. Tothill	ILCA
D. Thomas	ILCA
S. Jutzi	ILCA
B.H. Dzowela	ILCA
J.A. Kategile	IDRC-ILCA
B. Kiflewahid	IDRC

AFRICAN RESEARCH NETWORK FOR AGRICULTURAL BY-PRODUCTS (ARNAB)

STEERING COMMITTEE MEMBERS (1988-1991)

Names	Region	Country/Institutions
A.N. Urio (Chairman)	ESA*	Tanzania, Soine, University of Agriculture
Safietou Fall	WCA**	Senegal, Institut Sénégalais de la Recherche Agronomique (ISRA), Dakar
L.R. Lindela	ESA	Zimbabwe, University of Zimbabwe
T.A. Mohamed	North Africa	Suda, University of Khartoum
R.M. Njwe	ECA	Cameroon, Dschang University

Ex-Officio Members

J.C. Tothill	ILCA
B.H. Dzowela	ILCA
A.N. Said (Secretary)	ILCA
J.A. Kategile	IDRC

* East and Southern Africa

** West and Central Africa

AFRICAN RESEARCH NETWORK (AFRNET)
STEERING COMMITTEE MEMBERS (1991-1994)

Names	Region	Country/Institution
A.N. Urio (Chairman)	ESA*	Tanzania, Sokoine University of Agriculture
E. Agishi	WCA**	Nigeria, NAPRI, Zaria
L. Ndlovu (to Dec.93)	ESA	Zimbabwe, University of Zimbabwe
A.K. Tuah	WCA	Ghana, UST-Kumasi
R. Njwe	WCA	Cameroon, Dschang University
E.N. Sabiiti	ESA	Uganda, Makerere University
T. Mohammed	North Africa	Sudan, University of Khartoum
Bodgi Ng'uesan	WCA	Cote d'Ivoire, IDESSA, Bouake
A. Orodho	ESA	Kenya, KARI-Kakamega
L.M. Sibanda (Mrs.) (from Dec 93)	ESA	Zimbabwe, University of Zimbabwe

Ex-Officio Members

J. Ndikumana (from March 1992)	ILCA
J.A. Kategile (to March 1992)	ILCA
Jean Hanson	ILCA
Bob Griffits	ILCA
B. Peyre de Fabregues	CIRAD - EMVT
B. Kiflewahid (to June 1993)	IDRC
Ola Smith	IDRC

* East and Southern Africa

** West and Central Africa

AFRICAN FEED RESOURCE NETWORK (AFRNET)

I. ACTIVE MEMBERS

Category	Number of Participants
Research	123
Universities	65
Extension Services (Ministries)	18
IARCs	16
Regional Institutions	2
Other International Organisations (CIRAD, FAO, NRI, SIDA)	11
Development Projects	4
Farmers	6*
Donors	1
TOTAL	**246**

* Many farmers have adopted our forage material and technologies. Here are recorded only the ones who participated in the second AFRNET biennial Workshop.

II. PASSIVE MEMBERS

Since its inception in 1991, the AFRNET mailing list was comprised of 1,060 people who were receiving workshop proceedings and newsletters. In 1993, the co-ordination unit requested all the recipients to confirm, by writing, their interest in receiving the AFRNET newsletter. Four hundred and eighty (480) recipients responded. They are the ones who, from the end of 1993, are currently receiving the AFRNET newsletter. However, the number is constantly increasing due to new requests.

LIST OF CONSULTANTS TO THE "ON FARM FEED RESOURCES RESEARCH METHODOLOGIES COURSE"

(Bamako-Mali, April 5-16, 1992)

1. Dr. Maimouna Dicko
   B.P. 239
   Bamako, Mali

2. Dr. Mémé TTogola
   I.E.R., B.P. 258
   Bamako, Mali

3. Dr. Bara Ouologuem
   I.E.R. Soutuba
   B.P. 258
   Bamako, Mali

4. Keffing Sissoko
   B.P. 239
   Bamako, Mali

5. Mamadou d. Coulibaly
   S.R.Z. Sotuba
   B.P. 262
   Bamako, Mali

6. Mohamed S.M. Touré
   Projet PSS/Niono/IER
   B.P. 22
   Bamako, Mali

AFRICAN RESEARCH NETWORK FOR AGRICULTURAL BY-PRODUCTS (ARNAB)

PUBLICATIONS AND SCIENTIFIC PAPERS

THESES

Ahoud, A.A.O. 1991 Strategies for utilization of sorghum stover as feed for cattle, sheep and goats. Thesis for Ph.D., University of Reading.

Toleva, Adugna. 1990. Animal Production and Feed Resources Constraints in Welayta Sodo and the Supplementary value of *Desmodium Intortum, Stylosanthes Guianesis* and *Macrotyloma Axillare* when fed to growing sheep feeding on a basal diet of maize stover. M.Sc. Thesis, The Agricultural university of Norway.

Getachew, Girma. 1991. Field and feeding value of selected species of tropical forage legumes. Agricultural University of Norway.

PAPERS IN REFEREE JOURNALS

Fall, S.T. 1991. Digestibilité in vitro et dégradabilité in situ dans le rumen de ligneux fourrager disponible sur pâturages naturels du Sénégal. Premiers résultats. Revue d'Élevage et de Médecine Vétérinaire des pays tropicaux. V. 44(3); p. 334-354.

Ahoud, A.A.O. E. Owen, J.D. Reed, A.N. Said, and A.B. McAllan. 1991. Feeding sorghum stover to Ethiopian goats and sheep. Effect of amount offered on growth, intake, and selection. Animal Production Abstract No. 154. Animal Production 52:607.

Osafo, E.L.K., E. Owen, A.A.O. Ahoud, N. Said, E.M. Gall, and A.A.B. McAllan 1991. Feeding sorghum stover to Ethiopia sheep. Effect for chopping and amount offered on growth, intake and selection. Abstract No. 115, animal Production 52:607.

PASTURES NETWORK FOR EASTERN AND SOUTHERN AFRICA (PANESA)

SOME PUBLICATIONS IN REFEREE JOURNALS

Dzowela, B.H. (1990). The pastures network for Eastern and Southern Africa (PANESA): Its regional collaborative research programme. *Tropical Grasslands* 24:113-120.

Dzowela, B.H., M.S.L. Kumwenda, H.D.C. Msiska, E.M. Hodges and R.C. Gray (1990). Animal performance on improved planted pastures in relations to chemical composition of the forages in Malawo. *Animal Feed Science and Technology Journal:* Elsevier Science Publishers, Amsterdam. 28:255-266.

Otieno, R., J.f.M. Onim, M.J. Bryant and B.H. Dzowela (1990). The relation between biomass yield and linear measures of growth in *Sesbania Sesban.* Submitted and accepted to Agroforestry Systems.

AFRICAN FEED RESOURCES NETWORK (AFRNET)

MSc AND PhD THESIS

Since march 1991, ARNET has supported research protocols for post-graduate students in Ghana, Cameroon, Kenya and Uganda as show below.

Recipient	Country/Institution	Area of Research
Bernice Sefakoy Quashda	Univ. of Ghana	Agro-industrial by-products and residues
crop		
Nouanda Eschey	Bamanda Cameroon, MSc.	Agro-industrial by-products and residues
crop		
Obesa Frederick Yehiah	KST Kumasi Ghasa, MSc.	Agro-industrial by-products and residues
crop		
Kayongo Jonathan	Univ. Of Nairobi, MSc. Kenya	Forage Legumes
Wondafresh B.	Univ. Of Nairobi, MSc. Kenya	Forage Legumes

ANNEX V

Objectives of ILRI, ILCA and ILCA Networks

ILRI	CARNET	AFRNET	SRNET	ILCA
Operational Goals - to serve within the CGIAR as a world centre for research on major problems of animal production and health - to provide ways and means of controlling major animal diseases which seriously limit livestock production - to strengthen the ability of national agricultural research systems (NARS) to conduct technical and policy research on sustainable livestock systems and thus to develop their own technical solutions to production problems and to promote environmentally sound animal agriculture and rural development - to develop, through its own research and in proactive collaboration with other organisations, technical solutions for increasing livestock production and enhancing the contribution of livestock to sustainable agricultural production and equitable income distribution; and - to contribute to scientific knowledge in a way conducive to solving livestock production problems; such knowledge should relate to the understanding of production and natural resource management constraints and opportunities or to research methods and techniques - to act as lead organisation and also as catalyst for CGIAR livestock research.	**Operational Goals** - Assistance in convening planning and programme review meetings - assistance in the establishment of the network's organizational and institutional structure - assistance in the establishment of training and information programmes - providing training opportunities for individual NARS scientists - seeking donor funding support for programme implementation. **Specific Objectives** - Encourage and stimulate cattle milk and meat research by assisting NARS in developing the required institutional infrastructure - help NARS develop their research programmes within and between national institutions, between NARS and regionally - facilitate information exchange through workshops, visits by scientists to collaborating institutions, newsletter, journals, proceedings of national societies and publication of farmers' newsletter - develop research-extension-user linkages - assist NARS in data collection, analysis, interpretation and reporting - maintain a regular and up-to-date directory of NARS scientist and their programmes in cattle milk and meat research - help NARS obtain donor funds for programme implementation.	**Operational Goals** - To support the African Feed Resources Network in order to strengthen the capabilities of National Agricultural Research scientists and institutions in the conduct of research on forage, crop residues and agro-industrial by-products as the basis for the development of improved sustainable animal production systems. **Specific Objectives** - To promote collaborative research among participating institutions and catalyze applied feed research initiatives for the improvement of relevant crop-animal systems - to exchange information among animal scientist working on feed resources and to disseminate information on the utilisation of forages, crop residues and agro-industrial by-products in sub-Saharan Africa - to train African scientists in applied pasture research techniques.	**Operational Goals** - To assist NARS prioritize their small ruminant research and development programmes - to strengthen NARS small ruminant production research capacity - to create a critical mass of NARS scientists to enhance collaboration among themselves, with ILCA and other stakeholders. **Specific Goals** - Improving general awareness of the importance of small ruminants as a basic resource for large numbers of smallholder farmers and agro-pastoralists throughout Africa. - identifying constraints to increased productivity and production efficiency - defining research priorities and research strategies arising from (b) - encouraging national, regional and international support and funding for research and development - strengthening national capabilities through training and research support - co-ordinating research activities to avoid repetition and duplication and thus assuring efficient resource utilisation - disseminating information and especially research results to all participating groups - facilitating transfer of technology to potential users - advising national and regional organisations on latest research results and on their utilisation through seminars, workshops, conferences and publications.	**Operational Goals** - To strengthen the ability of NARS to conduct technical and policy research in livestock-related fields and thus to develop their own technical solutions to production and marketing problems - to develop, through ILCA's own research and that of other organisations, technologies for increasing both livestock output and the contribution of livestock to sustainable agricultural production and income - to contribute to scientific knowledge in a way conductive to solving livestock production and marketing problems, such knowledge may related to the understanding of production constraints and opportunities, or to research methods and techniques.

ILRI	CARNET	AFRNET	SRNET	ILCA
- Increase productivity by reducing impact of animal diseases - conserve animal genetic diversity and improve animal performance - improve productivity of livestock and crop-livestock production systems and maintain long-term productivity - improve technical and economic performance of the livestock sector to increase food security and economic welfare - improve development, transfer and utilisation of technology.	- Improved feeding and management - reproductive wastage, disease and health care - milk preservation, processing and marketing - characterization and conservation of cattle breeds - economics of production.	- Evaluation of forage germplasm - development and on-farm testing of forage-based feeding systems - seed production and utilisation - development and on-farm testing of feeding systems based on forages, crop residues and agro-industrial by-products.	- Impact of reproductive and health management on small ruminant productivity - characterization and conservation of indigenous African small ruminants - feeds and feeding systems for smallholder milk and meat production from small ruminants.	- To find solutions to the major constraints to increased cattle milk and meat production in the mixed crop-livestock smallholder farming systems of sub-Saharan Africa - to develop solutions to the constraints to increased small ruminant meat and milk production in the mixed crop-farming systems of sub-Saharan Africa - to increase and sustain agricultural production and incomes in the smallholder farming systems of sub-Saharan Africa through a wider use of effective draught animal technologies - to develop suitable forages and other feeds to increase livestock production in sub-Saharan Africa, and to improve the ecological sustainability of mixed farming systems through improved soil fertility - to contribute to improved livestock production in tsetse-infested Africa through a better understanding of the factors affecting the performance of trypanotolerant animals and the effectiveness of trypanosomiasis control measures - to assist national efforts to improve the policies affecting the livestock sector and to increase the efficiency with which natural and other resources are used in sub-Saharan Africa - to help build national research capabilities in various livestock-related fields.

ANNEX VI

Financial Analysis

1. Breakdown of annual network budgets from 1987 to 1994.

2. SRNET on-going project, budgets.

   SRNET, Status of EEC In-Trust Funding for small ruminant network, collaborators as of September 15, 1994.

4. CARNET, Research Grants Distributed.

5. AFRNET, On-Going Protocols approved for renewal of funding in 1993.

ILCA - ANIMAL FEED RESOURCES NETWORK
BREAKDOWN OF ANNUAL BUDGETS (IN US$)
1987 - 1994

	1987	1988	1989	1990	1991	1992	1993	1994
1. CO-ORDINATION								
- Personnel Cost:								
Co-ordinator				78,070	83,020	80,000	75,540	73,530
Support Staff				6,730	9,130	8,000	4,950	4,810
Sub-total		86,000	108,060	84,800	92,150	88,000	80,490	78,340
-Travel (Co-ordinator)		6,000	9,800	14,000	16,000	15,000	26,500	21,500
-Communication (Tel., fax, etc.)				1,000	4,500	4,500	9,000	9,000
-Office Support (Material)			33,000	2,500	2,500	3,000	6,000	7,500
-Office support (Gen. Exp)				24,000	17,000	3,000	21,000	19,000
		32,000						
2. STEERING COMMITTEE TRAVEL				22,000	20,000	15,000	15,000	15,000
			15,000					
3. CONFERENCES, WORKSHOPS & PUB.				12,000	30,000	10,000		
4. TRAINING			*36,000	20,000				
5. VISITING SCIENTIST						19,000	35,000	
6. CONSULTANT						6,000	10,000	10,000
7. "NARS" SUPPORT							1,000	5,000
8. MISC. EXP. (OTHER COSTS)				9,800	9,900	1,200	1,700	
		124,000	165,860	190,100	192,050	164,700	205,690	1,325
								166,665
IN-TRUST FUND					35,470	29,833	112,190	

* The money is included in the Training Budget. Not included in the total here.

ILCA - SMALL RUMINANTS NETWORK
BREAKDOWN OF ANNUAL BUDGETS (IN US$)
1987 - 1994

	1987	1988	1989	1990	1991	1992	1993	1994
1. CO-ORDINATION								
- Personnel Cost:								
Co-ordinator				115,060	63,000	93,700	96,810	95,780
Support Staff						8,000	5,910	6,080
Sub-total	110,000	124,000	135,500	31,030	20,140	101,700		101,860
			0	146,090	83,140		102,720	
- Travel (Co-ordinator)	16,500	16,000				17,600		18,800
- Communication (Tel., fax, etc.)			19,000	32,500	34,000	4,500	18,000	4,500
- Office Support (Material)				3,000	5,000	5,300	4,000	6,500
- Office support (Gen. Exp.)			120,500	3,000	7,500	13,500	5,000	9,560
				2,000	2,000		8,000	
	27,500	48,000						
2. STEERING COMMITTEE TRAVEL						20,000		18,500
					19,000		20,000	
3. CONFERENCES, WORKSHOPS & PUB.			21,000			110,000		
				175,000	97,000		15,000	
4. TRAINING						*36,000		
				19,000	6,501			
5. VISITING SCIENTIST						28,500		
6. CONSULTANT						7,500		
				6,500	10,000			
7. "NARS" SUPPORT								6,000
							2,000	
8. MISC. EXP. (OTHER COSTS)						1,350		950
					12,800		900	
	154,000	188,000		11,000		309,950		166,670
			296,000		276,941		175,620	
				398,090				
IN-TRUST FUND					98,183	208,616	18,700	110,527

* The money is included in the Training Budget. Not included in the total here.

ILCA - CATTLE RESEARCH NETWORK
BREAKDOWN OF ANNUAL BUDGETS (IN US$)
1987 - 1994

	1987	1988	1989	1990	1991	1992	1993	1994
1. CO-ORDINATION								
- Personnel Cost:								
Co-ordinator				104,530	94,280	80,416	105,150	97,700
Support Staff					2,720	7,500	22,340	6,910
Sub-total				104,530	97,000	87,916	127,490	104,610
- Travel (Co-ordinator)				14,000	20,000	22,500		12,100
- Communication (Tel., fax, etc.)					3,500	3,500	19,500	5,000
- Office Support (Material)				11,500	3,500	2,000	5,000	1,900
- Office Support (Gen. Exp.)					8,472	2,500	1,500	750
2. STEERING COMMITTEE TRAVEL				13,500				25,000
3. CONFERENCES, WORKSHOPS & PUB.				38,500	66,000	75,000		
							75,000	
4. TRAINING			*36,000	*36,000	*36,000	*36,000		
5. "NARS" SUPPORT					3,000	88,250		12,000
							30,000	
6. MISC. EXP. (OTHER COSTS)				12,000	6,900	12,840		5,250
							5,700	
				194,030	208,372	294,506		166,610
							264,190	
IN-TRUST FUND							31,583	69,822

* The money is included in the Training Budget. Not included in the total here.

NETWORKS
PATTERNS OF EXPENDITURE AND FUNDING SOURCE

				Funding Source	
		Budget (US$	Actual (US$)	EEC (US$)	ILCA CORE (US$
Animal Traction N/W:					
	1989	346,100	260,226	22,681	237,545
	1990	326,000	377,951	377,951	0
	1991	271,426	216,403	216,403	0
	1992	265,422	155,070	84,663	71,407
	1993	0	0	0	0
Small Ruminants N/W:					
	1989	296,000	309,890	41,599	268,291
	1990	398,100	343,990	343,990	0
	1991	276,941	170,499	170,499	0
	1992	309,950	174,724	123,521	51,230
	1993	175,620	164,000	0	164,000

				Funding Source	
		Budget (US$	Actual (US$)	IDRC (US$)	ILCA CORE (US$
Feed Resources N/W:					
	1989	165,860	174,542	164,207	10,335
	1990	190,100	176,270	176,270	0
	1991	192,050	211,075	161,749	49,326
	1992	164,700	151,794	49,552	102,242
	1993	205,690	356,641	229,182	127,459

				Funding Source	
		Budget (US$	Actual (US$)	IDRC (US$)	ILCA CORE (US$
Cattle Research N/W					
	1989	0	0	0	0
	1990	194,000	146,061	0	146,061
	1991	208,372	185,097	0	185,097
	1992	294,506	216,481	0	216,481
	1993	264,190	208,050	34,650	173,400

SRNET ON-GOING PROJECTS
BUDGET SUMMARY (US$)

PROJECT COUNTRY/LEADER	RECIPIENT'S CONTRIBUTION					SRNET'S CONTRIBUTION					GRAND TOTAL
	Year 1	Year 2	Year 3	Year 4	TOTAL	Year 1	Year 2	Year 3	Year 4	TOTAL	
TOGO: PNPR (Traore & Hadzi)	39,200	20,160	21,160	21,160	101,680	14,333	9,135	10,290	2,625	36,383	138,063
TOGO: PRNR (Pessinaba & Bonfoa)	46,500	19,425	20,395		86,320	9,680	9,240	8,800		27,720	114,040
SENEGAL: ISRA (Ndiaye)	28,400	20,500	9,100		58,000	20,500	19,600	10,100		50,200	108,200
SENEGAL: ISRA (M. Cisse)	34,979	34,979			69,958	18,082	10,685			28,767	98,725
SENEGAL: ISRA (M. Ba Diao)	20,090	20,090			40,180	17,350	13,550			30,900	71,080
COTE D'IVOIRE: SODEPRA (Oya)	33,900	27,450	25,800		87,150	24,990	11,550	7,245		43,785	130,935
COTE D'IVOIRE: SODEPRA (Cisse)	33,900	27,450	25,800		87,150	20,900	20,400	5,350		46,650	133,800
ZIMBABWE: Univ. of Zimbabwe (Ndlovu): The Univ. will supply equipment, lab technicians, etc.						18,700	15,620	6,930		41,250	41,250
NIGER: INRAN (Douma)	Contribution is in kind					18,051	18,051			36,102	36,102
NIGER: INRAN (Yenikoye)	8,168	8,000			16,168	16,700	16,700			33,400	49,568
ETHIOPIA (Mebratu)	12,464	11,013			23,477	13,200	10,200			23,400	46,877
KENYA: NBI UNIV. (O. Mwai)	79,618	55,191	55,191		190,000	23,510	12,188	12,346		48,044	238,044
TANZANIA (S. Das)	27,000	22,500	22,500	16,500	88,500	25,725	9,450	8,400	4,725	48,300	136,800
BOTSWANA: BCA (J. Katongole)	43,050	43,050	42,735		128,835	45,203	16,664	11,046		72,913	201,748
SWAZILAND: UNISWA (Ogwang)	29,159	32,309	36,509	40,709	138,686	25,988	13,913	10,700	15,068	65,669	204,355
					1,116,10					633,483	1,749,58

STATUS OF EEC IN-TRUST FUNDING
FOR SMALL RUMINANTS NETWORK COLLABORATORS
AS OF SEPTEMBER 15, 1994

	Commited (US$)	Disbursed (US$)	Balance (US$)
- Allocated (Committed) to NARs:			
ISRA - Senegal	109,867.00	109,867.00	0.00
INRAN - Niger	36,102.00	36,102.00	0.00
Univ. Niamey - Niger	33,400.00	33,400.00	0.00
N.V.I. - Ethiopia	23,400.00	23,400.00	0.00
SODEPRA - C.N.O.	46,650.00	4,650.00	0.00
SODEPRA - P.N.S.O.	43,735.00	43,735.00	0.00
Botswana College	72,914.00	72,914.00	0.00
Univ. of Nairobi	48,044.00	48,044.00	0.00
P.N.R.P. - Togo I	27,720.00	27,720.00	0.00
P.N.R.P. - Togo II	36,383.00	36,383.00	0.00
Univ. of Zimbabwe	41,250.00	41,250.00	0.00
LPRI - Tanzania	48,300.00	48,300.00	0.00
	567,765.00	567,765.00	0.00
- Uncommitted to NARs:	123,803.04	0.00	123,803.04
TOTAL	691,568.04	567,765.00	123,803.04

NETWORKS
PATTERNS OF EXPENDITURE AND TYPES OF SPENDING

		BUDGET		ACTUAL	
		Personnel (US$)	Operating (US$)	Personnel (US$)	Operating (US$)
Animal Traction N/W:					
	1989	68,900	277,200	58,454	210,772
	1990	131,600	194,400	137,261	240,690
	1991	128,036	143,390	119,850	96,553
	1992	112,132	153,290	114,860	40,210
	1993	0	0	0	0
Small Ruminants N/W:					
	1989	135,500	160,500	138,948	170,942
	1990	146,100	252,000	87,524	256,466
	1991	83,140	193,801	88,881	81,618
	1992	101,700	208,250	115,369	59,355
	1993	102,720	72,900	108,161	55,839
Feed Resources N/W:					
	1989	108,060	57,800	96,954	77,588
	1990	84,800	105,300	87,210	89,060
	1991	92,150	99,900	53,131	157,944
	1992	88,000	76,700	78,677	61,717
	1993	80,490	125,200	77,250	279,391
Cattle Research N/W:					
	1989	0	0	0	0
	1990	104,500	89,500	74,027	72,034
	1991	97,000	111,372	91,795	93,302
	1992	87,916	206,590	91,561	124,920
	1993	127,490	136,700	125,125	82,925

STATUS OF EEC IN-TRUST FUNDING
FOR ANIMAL TRACTION NETWORK COLLABORATORS
AS FOR SEPTEMBER 15, 1994

	Commited (US$)	Disbursed (US$)	Balance (US$)
- Allocated (Commited) to NARs:			
IAR - Ethiopia	131,625.00	116,461.38	15,163.62
ISRA - Senegal	157,694.00	65,704.00	91,990.00
PROPTA - Togo	157,550.00	101,861.00	55,689.00
	446,869.00	28,402,638.00	162,842.62
- Uncommitted to NARs:	164,432.66	9,965.99	154,466.67
TOTAL	611,301.66	293,992.37	317,309.29

CATTLE RESEARCH NETWORK (CARNET)
FUNDING OF RESEARCH ACTIVITIES
Research Grants Disbursed

Name of Recipient *	Institute	Country	Topic of Research	Ecological Zone
1. Mrs. J. Macala	Animal Production Research Unit Dept. Of Agricultural Research Grant: US$ 5,000 Dates: 01/93 - 01/95	Botswana	Development and evaluation of feeding and management systems for improved reproduction and milk production in smallholder herds in peri-urban Gaborone.	Semi-Arid
2. Dr. E.R. Mutiga	Dept. Of Vet. Clinical Studies University of Nairobi Grant: US$ 11,000 Dates: 01/93 - 01/95	Kenya	Development and evaluation of feeding and management systems for improved reproduction and milk production in smallholder herds in Central Kenya	Highlands
3. Dr. L.A. Kamwanja	Dept. Of Animal Science, Bunda College of Agriculture Grant US$ 10,000 Dates: 01/93 - 01/95	Malawi	Development and evaluation of feeding and management systems for improved reproduction and milk production in smallholder herds in Malawi.	Sub-Humid
4. Dr. S. Sibanda	Dept. Of Animal Science, University of Zimbabwe Grant: US$ 7,000 Dates: 07/92 - 06/94	Zimbabwe	Development and evaluation of feeding and management systems for improved reproduction and milk production in communal and small scale commercial herds in Zimbabwe.	Sub-Humid
5. Dr. S.A. Okantah	Animal Research Institute, Achimota Grant: US$ 8,912.86 (Phase I) Dates: 09/93 - 08/96	Ghana	Evaluation of peri-urban dairy production systems on the Accra Plains.	Sub-Humid

* Lead Executing Scientist

Name of Recipient	Institute	Country	Topic of Research	Ecological Zone
6. Mr. M.D. Coulibaly	Institut d'Économie Rurale (IER) Grant: US$ 8,912.86 (Phase I) Dates: 09/93 - 08/96	Mali	Evaluation of peri-urban dairy production systems in the Segou region of Mali.	Semi-Arid
7. Dr. W.O. Ehoche	National Animal Production Research Institute (NAPRI) Ahmadou Bello University, Zaria Grant: US$ 8,912.86 (Phase I) Dates: 09/93 - 08/96	Nigeria	Evaluation of peri-urban dairy production systems in the Kaduna/Zaria and Abeokuta areas of Nigeria	Sub-Humid
8. Dr. Maty Ba-Diao	Dept. De Recherches sur les Production et la Santé Animale (DRPSA/ISRA)	Senegal	Evaluation of peri-urban dairy production systems in the Dakar and St. Louis regions of Senegal.	Semi-Arid

* Lead Executing Scientist

Name of Recipient	Institute	Country	Topic of Research	Ecological Zone
1. Dr. Alemu Gebre Wolde	Institute of Agric. Research	Ethiopia	Development of milk recording schemes for smallholder producers in East and Southern Africa	Highlands
2. Dr. R.O. Mosi	Department of Animal Production, University of Nairobi	Kenya		Highlands
3. Prof. M. Mgheni	Dept. Of Animal Sciencc y Production, Sokoinc Univcrsity	Tanzania		Highlands
4. Prof. G. Kiwuwa	Dcpt. Of Animal Sciencc, Makarere University	Uganda		Sub-Humid
5. Mr. C. Banga	Dept. Of Research & Spccialist Services, Zimbabwe	Zimbabwe		Sub-Humid
6. Mr. A. Zimba	Dcpt. Of Agric.. Rcsearch, Chitcdzc	Malawi		Sub-Humid
7. Mr. W. Boitumelo	Animal Production Rescarch Unit (APRU), Gaborone	Botswana		Semi-Arid
8. Mr. E. Kaluba	Dept. Of Agric. Research, Mochipapa	Zambia		Sub-Humid

* Regional Collaborative project being implemented in five phases. In phase I, small grants of US$ 1,000 disbursed to each of the above scientist in March 1992 for in-country survey of the milk recording systems.

In Phase II & III, recipients 1, 2, 3 rcceived US$ 1,000 grants to carry out report reviews and synthesis resulting in a DRAFT rcport, which will form the basis of work in Phases IV & V.

ANNEX VII

Training

1. Network Training Courses
2. Title and Participants of Training Courses
3. Frequency/Repetition of Attendance in Group Training Courses
4. Participants in Group Training Courses by Networks
5. AFRNET, On-Going Protocols Approved for Renewal of Funding in 1993

CARNET Title of Course	Lang.	Year	Number of Participants	Number of Countries
Improving Milk Production in Africa	En	1989	15	7
Improving Milk Production in Africa	Fr	1990	15	9
Improving Milk Production in Africa	En	1991	13	8
Improving Milk Production in Africa	Fr	1992	15	12
Rural Dairy Husbandry and Technology	En	1986	19	6
Rural Dairy Technology for National Teaching Staff	En	1987	14	9
Rural Dairy Processing	En	1988	15	11
Rural Dairy Processing	Fr	1989	10	8
Rural Dairy Processing	En	1990	14	10
Rural Dairy Processing	En	1991	13	8
Rural Dairy Processing	En	1992	15	8
Rural Dairy Processing	En	1993	14	7
SRNET				
Small Ruminant Production Techniques	Fr	1987	25	16
Small Ruminant Production Techniques	En	1988	20	13
Small Ruminant Production Techniques	Fr	1989	24	13
Small Ruminant Production Techniques	En	1990	15	8
Small Ruminant Production Techniques	En	1992	14	11
AFRNET				
Forage Evaluation Techniques	En	1986	16	10
Forage Evaluation Techniques	En	1987	13	10
Forage Evaluation Techniques	En	1988	23	8
Forage Evaluation Techniques	Fr	1988	19	15
Forage Evaluation Techniques	Fr	1989	27	15
Forage Evaluation Techniques	En	1989	23	11
Forage Evaluation and Production	En	1990	14	8
Forage Evaluation and Production	Fr	1991	15	9

Country	Title of course *							
	IMPA	RDHT	RDT	RDP	SRPT	FET	FEP	TOTAL
Angola					1	1		2
Benin	1			1	3	2	1	8
Botswana	2	1		1	2	2		8
Burundi	2				1	4	1	8
Burkina Faso	3			1	5	4		13
Cameroon	1			1	3	4	2	11
Central African Rep.	1					1	1	3
Chad	2			1	2	2		7
Congo				1	2	3	1	7
Cote d'Ivoire	3				6	6	3	18
Djibouti					2	1		3
Ethiopia	5	13	5	15	9	19	2	68
Gabon					1			1
Gambia			1	1		1	2	5
Ghana	2			5	2	2	2	13
Guinea	2			1	2	2		7
Guinea-Bissau					1			1
Kenya	2		1	6	3	9	2	23
Lesotho				1				1
Liberia						1		1
Madagascar	2				1	4		7
Malawi	2			1	3	2		8
Mali	6			1	4	3	2	16
Mauritania	1				1	2		4
Mauritius						1		1
Mozambique	1			1	2	1		5
Niger	3			3	6	6		18
Nigeria	4	1	1	8	4	4	1	23
Rwanda						1		1
Senegal	3			1	2	2	2	10

Country	Title of course *							
	IMPA	RDHT	RDT	RDP	SRPT	FET	FEP	TOTAL
Sierra Leone					1			1
Somalia			1	1	1	5		8
Sudan	1	1	1	3	4	2	2	14
Swaziland				2	3	2		7
Tanzania			2	9	6	13	2	32
Togo					4			4
Uganda	3		1	4	2	3		13
Yemen					1			1
Zaire					3	2	2	7
Zambia	1	2		3		1		7
Zimbabwe	5	1	1	9	5	3	1	25
TOTAL	58	19	14	81	98	121	29	420

* IMPA - Improving Milk Production in Africa (En & Fr)
RDHT - Rural Dairy Husbandry & Technology
RDT - Rural Dairy Technology for National Teaching Staff
DRP - Rural Dairy Processing (En & Fr)
SRPT - Small Ruminant Production Techniques (En & Fr)
FET - Forage Evaluation Techniques (En & Fr)
FEP - Forage Evaluation and Production (En & Fr)

FREQUENCY/REPETITION OF ATTENDANCE IN GROUP TRAINING COURSES

On evaluating the Networks participants attendance on the group training courses, we found that the following individuals have attended either the same course twice, or two similar courses:

CARNET

BECHIR - Mahamat Hideri	Tchad	IMPA - 1990 IMPA - 1992
KARIKARI - Paul Kofi	Ghana	IMPA - 1991 RDP - 1988
TSHUMA - Adam	Zimbabwe	IMPA - 1991 RDP - 1992

SRNET

VILAKATI - Rosemary	Swaziland	SRPT - 1990 SRPT - 1992

AFRNET

ADINGRA - Kouame	Ivory Coast	FEP - 1988 FEP - 1991
KIWIA - Hudson H.	Tanzania	FET - 1986 FET - 1988

PARTICIPANTS IN GROUP TRAINING COURSES BY NETWORKS 1987-1993

COUNTRY	CARNET	SRNET	AFRNET	TOTAL
Ethiopia	38	9	21	68
Tanzania	11	6	15	32
Zimbabwe	16	5	4	25
Nigeria	14	4	5	23
Kenya	9	3	11	23
Total	88	27	56	171
Percentage against 41 countries	51%	28%	37%	41%
Total courses in all countries	172	98	150	420

CONCLUSION

The above information was collected from all the group courses offered in 41 countries through all the Networks.

The table shows that 41% of all the Network courses offered in all the countries were concentrated in 5 countries as listed above.

ANNEX VIII

ACRONYMS

ACRONYMS

AFRENA	Agroforestry Research Network
AFRNET	African Feed Resources Network
ARI	Animal Research Institute - Ghana
CARNET	Cattle Research Network
CG	Consultative Group
CGIAR	Consultative Group on International Agricultural Research
CIRL	Centre for International Research in Livestock
CRN	Collaborative Research Networking
CSIR	Council for Scientific & Industrial Research - Ghana
DRSS	Department of Research and Special Services - Zimbabwe
ESA	East and Southern Africa
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit - Germany
IAR	Institute of Agricultural Research - Ethiopia
IDRC	International Development Research Centre - Canada
ILCA	International Livestock Centre for Africa
ILRI	International Livestock Research Institute
IRAN	Institut de la Recherche Agricole du Niger
ISNAR	International Service for Agricultural Research
KARI	Kenya Agricultural Research Institute
NARS	National Agricultural Research Systems
ODA	Overseas Development Agency - United Kingdom
S.C.	Steering Committee
SRNET	Small Ruminant Research Network
TORs	Terms of Reference
USAID	United States Agency for International Development
UST	University of Science & Technology - Kumasi, Ghana
WA	West Africa
WCA	West & Central Africa

ANNEX IX

DONOR PERSPECTIVES ON LIVESTOCK RESEARCH

Donor Perspectives on Livestock Research

Across the donor community, research agendas are varied by region and subject matter. Donor consensus does exist that research can not exist in a vacuum. The purpose of donor funded research is to impact economic development and environmental stability within targeted countries. For their investment in livestock research the donor community is investing in the potential of new innovations which will meet the goal of economic development.

As a result of previous livestock experiences, donor funding for livestock has been reduced, a result of the perception that international and national research systems have performed poorly in defining and conducting livestock research. With the exception of a few animal health activities, a commonly held view is that livestock research investment has not resulted in many new technologies which could be successfully introduced in development projects.

Another area of consensus between donors is that research is often production system specific. To therefore understand the impact of a research innovation, the innovation has to be evaluated in the context of the production system. The testing of new innovations requires the full participation of all partners (NARs, international centres and donors).

Regional and ecozone emphasis varies across the donor community. In many instances donors have long established relationships with countries or regions, this situation is not expected to change. Because the donors have specialized interests there will be a need to coalesce and coordinate (on an informal basis) information and initiatives on a global basis. It is with this situation in mind that the ILRI networks can play an important global role.

To make networking feasible, strong and interlinked international centers and NARs must exist. Networking provides a mechanism to improve the technical expertise of the NARs, transfer technology and build north-south and south-south research linkages. In an era of limited financial resources, it is very likely that networking research institutes will be the most effective and innovative way to leverage human and physical resources.

ANNEX X

APPENDIX

APPENDIX

(A) AFRNET On-Going Protocols Approved for Renewal of Funding in 1993

BENIN

1. Title: On-farm forage production under coconut and palm small holder plantations.
   Executing Scientists: Marcellin Ehouinsou and Adrien Bako
   Site: URZV, Cotonou
   Funding: US$3,000 (Already remitted)

2. Title: Introduction and evaluation of forage legumes
   Executing Scientist: Dr. Claude Adandedjan
   Site: Université Nationale du Benin, Cotonou
   Funding: US$3,000 (Already remitted)

CAMEROON

3. Title: Evaluation of Napier and Pennisetum hybrids
   Executing Scientist: Dr. E.T. Pamo
   Site: Dschang University Centre
   Funding: US$3,000

4. Title: Introduction and evaluation of *Arachis glabrata*
   Executing Scientists: R.M. Njwe, Tala Francis and Asha Henry Asah
   Site: Dschang University Centre
   Funding: US$3,000

COTE D'IVOIRE

5. Title: Evaluation of forage legumes in Central Cote d'Ivoire
   Executing Scientist: Bodji C. Ng'uesan
   Site: Korhogo
   Funding: US$3,000

6. Title: Evaluation of Napier and Pennisetum hybrids
   Executing Scientist: Bodji, C. Ng'uessan
   Site: Bouake
   Funding: US$3,000 (Already remitted)

ETHIOPIA

7.	Title:	Identification of production constraints and alternative strategies in Ethiopian highlands
	Executing Scientist:	Zinash Sileshi et al
	Site:	I.A.R. Holetta and Bako
	Funding:	US$3,000 (Subject to clearance with I.A.R. Management)
8.	Title:	Evaluation of Napier and Pennisetum hybrids
	Executing Scientist:	To be identified
	Site:	To be specified
	Funding:	US$3,000 (Subject to clearance with I.A.R. Management)

GHANA

9.	Title:	Nutritional studies to determine the most suitable supplements to diets of grazing animals using crop residues, browses and poultry manure simulating village conditions.
	Executing Scientist:	Dr. A.K. Tuah
	Site:	UST Kumasi
	Funding:	US$3,000
10.	Title:	Evaluation of Napier and Pennisetum hybrids
	Executing Scientist:	Dr. A.M. Tuah et al
	Site:	UST Kumasi
	Funding:	US$3,000

KENYA

11.	Title:	Evaluation of Napier and Pennisetum hybrids
	Executing Scientist:	Dr. A.B. Orodho
	Site:	KARI Kakamega
	Funding:	US$3,000 (NB: Funds for 1993 US$3,000 already disbursed)

MADAGASCAR

12.	Title:	Evaluation of Napier and Pennisetum hybrids
	Executing Scientist:	Dr. J.H. Rasambainarivo
	Site:	DRZV-FOFIFA-Antannarivo
	Funding:	US$3,000

MALAWI

13. Title: Evaluation of Napier and Pennisetum hybrids
    Executing Scientist: Dr. G. Kanyama Phiri
    Site: Bunda College of Agriculture
    Funding: US$3,000

NIGERIA

14. Title: Evaluation of Napier and Pennisetum hybrids
    Executing Scientist: Dr. E.C. Agishi
    Site: Benue State University, Makurdi
    Funding: US$3,000

15. Title: Performance of West African Dwarf Goats and Sheep fed crop residues in Oyo State
    Executing Scientist: E. Lufadeju
    Site: NAPRI Shika
    Funding: US$2,500 budgeted for 1992 recently disbursed. No need for funds for 1993 as protocol did not start in 1992.

16. Title: Introduction and evaluation of feed technologies based on crop residues and forage legumes
    Executing Scientist: O. Onifade et al
    Site: Ahmadu Bello University, Zaria
    Funding: US$3,000 (Subject to production of satisfactory progress report)

SUDAN

17. Title: Evaluation of forage legumes in Sudan
    Executing Scientists: Dr. A. El Wakeel and F.M. El Haq
    Site: Kadugli Research Station
    Funding: US$3,000 (Subject to production of a satisfactory progress report to the co-ordinator)

SWAZILAND

18. Title: Introduction and evaluation of Urea/Molasses for draft oxen
    Executing Scientists: Dr. B.J. Ogwang, B. Xaba and P. Mbhatshwa
    Site: University of Swaziland, Luyengo Campus
    Funding: US$3,000

TANZANIA

19. Title: Forage legume seed production
    Executing Scientist: M.L. Kusekwa
    Site: LPRI, Mpwapwa
    Funding: US$3,000

20. Title: Multilocation supplementation in semi-arid areas
    Executing Scientists: M.L. Kusekwa and A.J. Kitalyi
    Site: LPRI, Mpwapwa
    Funding: US$3,000

21. Title: Evaluation of Napier and Pennisetum hybrids
    Executing Scientists: Dr. N.A. Urio and E.J. Mtengeti
    Site: Sokoine University of Agriculture, Morogoro
    Funding: US$3,000

22. Title: Evaluation of Napier and Pennisetum hybrids
    Executing Scientist: Mr. Kapinga
    Site: LRC Tanga
    Funding: US$3,000

UGANDA

23. Title: Evaluation of Napier and Pennisetum hybrids
    Executing Scientist: Dr. E.N. Sabiiti
    Site: Makarere University, Mampala
    Funding: US$3,000

ZIMBABWE

24. Title: Introduction and evaluation of technologies in the utilisation of crop residues on small-scale farms
    Executing Scientist: Dr. L.R. Ndlovu
    Site: University of Zimbabwe, Harare
    Funding: US$3,000

(B) New AFRNET Protocols Approved for Funding for 1993

BURUNDI

25.	Title:	Influence des conditions climatiques et des modes de stockage sur la qualité des foins obtenus à partir de diverses cultures prêtes à la conservation.
	Executing Scientists:	Oscar Ncamihigo and P. Branderlard
	Site:	ISABU, Bujumbura
	Funding:	US$4,000
26.	Title:	Introduction and evaluation of forage germplasm materials in Burundi
	Executing Scientists:	Oscar Ncamihigo and P. Branderlard
	Site:	MOSO
	Funding:	US$3,000

CAMEROON

27.	Title:	Forage legume seed multiplication in Cameroon
	Executing Scientists:	Dr. E.T. Pamo, R. Njwe and J.Y. Pinta
	Site:	Dschang University Centre
	Funding:	US$3,000

GHANA

28.	Title:	Performance of small ruminants fed crop residues supplemented with tree leaves and shrub.
	Executing Scientist:	J.E. Fleicher
	Institution/Site:	Department of Animal Science, University of Ghana Legon, Accra
	Funding:	US$3,000

KENYA

29.	Title:	On farm legume seed production on smallholder farms in Western and Coastal Kenya
	Executing Scientists:	1. Dr. J.L. Wandera, Highland Sub-project 2. Mr. M.N. Njunie, Coastal Sub-project
	Site:	KARI, Kitale; KARI-Mtwapa; KARI, Kakamega and AHRS, Mariakani
	Funding:	US$5,000

30. Title: *Pennisetum purpureum/Clitoria ternatea* silage
Silage studies for dairy cattle feeding in coastal Kenya
Executing Scientists: E.M. Kiruiro, N.N. Njunie and A.R. Ali
Site: KARI Mtwapa
Funding: US$2,000

31. Title: Forage intake and nutritive value of sheep and goat diets in South Central Kenya
Executing Scientist: Mr. J.N. Ndung'u (MSc student)
Site: Department of Range Management
Funding: US$1,500

RWANDA

32. Title: Definitions des rations alimentaires pour petits ruminants à base de fourrage de sous-produits agricoles et industriels
Executing Scientists: Dr. Papias Kamatali and Mr. Ernest Gasarabwe
Site: Faculté d'Agronomie, Université Nationale du Rwanda, Butare
Funding: US$3,000

33. Title: Introduction and evaluation of forage germplasm materials in Rwanda
Executing Scientists: Mr. J. Kabiligi
Site: Ruboma
Funding: US$3,000

SUDAN

34. Title: Improvement of irrigated forage legumes in the Sudan
Executing Scientists: Dr. Mohammed A. Khair and Ahmed Ali Silih
Site: University of Khartoum
Funding: US$3,000 (Subject to submission of a satisfactory revised protocol)

UGANDA

35. Title: Integration of the best forage legumes into the Crop/Livestock production systems
Executing Scientists: Dr. E.N. Sabiiti, Prof. J. Mugerwa and P. Lusembo
Site: Department of Crop Science, Makerere University
Funding: US$3,000

36. Title: Calliandra leaf meal in goat rations. Effect on protein degradability in the rumen and growth in goats
Executing Scientist: Cyprian Ebong
Site: Namulonge Research Station
Funding: US$3,000

37. Title: Evaluation of *Gliricidia sepium* as a fodder tree for ruminant production
Executing Scientist: Mr. Denis Mpairwe (MSc student)
Site: Makerere University
Funding: US$1,000

ZIMBABWE

38. Title: Introduction and evaluation of forage germplasm
Executing Scientists: Rosemary Muchadeyi
Site: Morondera
Funding: US$3,000