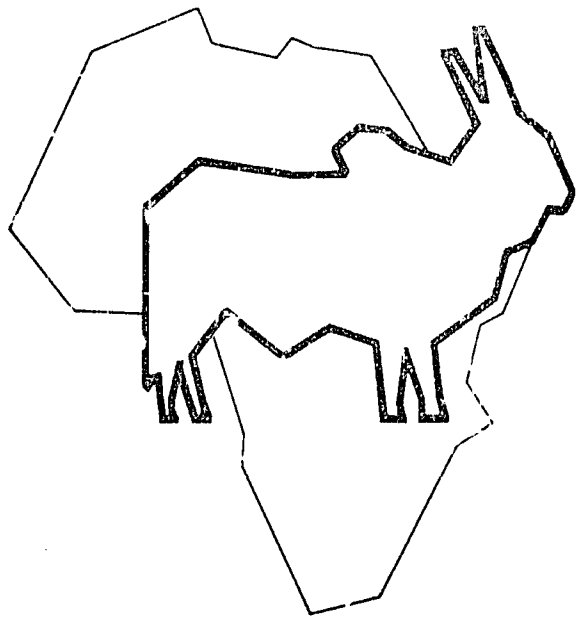
- PN-AAU-718 -

INTERNATIONAL LIVESTOCK CENTRE FOR AFRICA (ILCA)



PROGRAMME & BUDGET 1986

AUGUST 1985

INTERNATIONAL LIVESTOCK CENTRE
FOR AFRICA (ILCA)

PROGRAMME AND BUDGET
1986

August 1985

ILCA

PROGRAMME OF WORK AND BUDGET

1986

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THE OBJECTIVES OF ILCA

ILCA's task is twofold: to apply existing knowledge to improve livestock production and to undertake research on major gaps in that knowledge. Because the technical base for improving livestock production in Africa has proved to be less extensive than was perceived when ILCA was established, greater emphasis has recently been placed on the generation of new technology. The relevance of component research activities under way is assured by ILCA's traditional and continuing interest in farming system studies and on-farm research.

The training of African research scientists, the provision of a continent-wide documentation service, and supporting national research efforts are other key objectives at ILCA.

The ILCA training programme has the primary aim of increasing the knowledge and skills of African scientists in livestock research and production techniques; it emphasizes short courses designed to update and stimulate African research scientists. Other courses, workshops and seminars address the needs of planners, development staff, administrators and management personnel. Training includes both individual and group training activities.

ILCA's documentation centre provides services unique in sub-Saharan Africa - a comprehensive library in the livestock field, a microfiche service based on unpublished literature from national research organizations, and a computerized information storage and retrieval system from which ILCA provides literature searches and key abstracts, free of charge, on a monthly basis to research workers throughout Africa.

ILCA's strong support for the strengthening of national research is centred on the training, documentation and data processing services, on workshops on research priorities and management methodology, and direct advice and assistance on specific research problems.

ILCA's activities are based on the premise that the food output of Africa is the major determinant of economic growth, that livestock play a critical role in supporting farm cash flows and investment in fertilizer purchase, and that increases in livestock output are the catalyst to increased food grain

production. ILCA's work clearly demonstrates a strong complementarity between livestock output and crop production; an increase in the former quickly leads to an upturn in the latter. It is this complementarity which ILCA specifically seeks to develop. The large impact of increased livestock output on human nutrition is achieved primarily through the effect of increased cash income on both food purchases and increased agricultural production.

Imports of livestock and livestock products into sub-Saharan Africa now amount to about US$ 2500 million in value each year while the output value of the livestock industry in the region is estimated at US$ 10,000 million.

Increased food output with lower production costs is the overall objective of ILCA's work. This is feasible only with the development and adoption of improved technology, organizational structure and the increased use of key production inputs. The major source of improvement in the efficiency of output of agricultural production must be technical and organizational change, and such a change derives primarily from good research work leading to new technology and appropriate livestock and food grain policies.

THE CURRENT STAGE OF DEVELOPMENT

When ILCA was established in the mid-1970s it was generally believed there was a stock of technology suitable for African small farm conditions sitting on a shelf waiting to be used, provided a way was found to slot this technology into small farm systems. The pathway to this application was considered to be in a greater understanding of the socio-economic problems under which small farmers operated.

Ten years later the position appears less easy. Certainly more is known about a 'system approach' than was then the case; there is also much more known about existing livestock production practices in Africa. More importantly, we have come to realise that generating new and relevant technology is the immediate problem, as the stock of technology available is both less extensive, less relevant and less applicable than we fondly believed just a few years ago.

This is a critically important judgement. It is also one which underlies the important change in the work priorities of ILCA over the last few years; it is one which emphasizes the need to strengthen greatly the research capacity of national institutions in Africa and to ensure that national and international research groups work in a manner which enhances the comparative advantage of each.

What then is the role of systems studies in helping to generate new technology? It is convenient to distinguish three main categories of farming systems research:

a) 'FSR sensu stricto' is research on farming systems as they exist, their description, analysis, classification and understanding. It is holistic and seeks a description of the whole system. It analyses the chosen farming system with the aim simply of understanding the system.

b) 'On-farm research with a farming systems perspective' (OFR/FSP). This approach analyses the farming systems just enough to define the on-farm research necessary for practical progress.

c) 'New farming systems development' (NFSD) seeks to build radically new farming systems ab initio, rather than to evolve from existing ones. It has little, or none, of an 'on-farm research' element.

In brief, category (a) of FSR is essentially an academic activity, good for generating research papers, but not much use to technical change; category (b) seeks to generate stepwise changes in farming practice and has become a standard approach in much of Africa's agricultural research. Category (c) represents radical innovation and is essentially a research station concept.

OFR/FSP is based on the familiar steps of diagnosis, design and testing; it is an approach widely used by ILCA and other research groups. On-farm trials with livestock under smallholder conditions do not, however, readily provide the researcher with statistically meaningful results regarding animal productivity measurements. The multiple products produced by livestock, the difficulty in ensuring within-farm replicates, the long time span involved in measuring reproductive traits, the critical role of livestock management

factors, and the risk perceptions associated with the use of substantial assets of the small farmer that livestock represent indicate that experimental work with livestock is more efficiently done under research station conditions than on farm. The dilemma this conclusion poses is to ensure 'relevance' of the questions being asked, as the ivory tower nature of much research station experimentation in Africa and elsewhere is only too obvious. A close contact between researcher and farmer is crucial to cost-effective experimentation, but on-farm experimentation alone is rarely cost effective. A reasonable compromise lies in conducting on-farm trials that seek to assess the rate of adoption of new technology, and to ensure that research staff really are aware of the nature and priority of the production problems the small farmers they are trying to assist really encounter. This is the approach ILCA is pursuing.

Attainment of the objectives noted above requires a critical mass of scientific manpower and support at sufficient field sites, as well as at HQ, and achieving the best balance of staff and research facilities between field sites and HQ is a prime management issue at ILCA.

Over the last few years this balance has shifted; HQ staff and facilities have been strengthened and the core funding of field sites reduced. The balance of ILCA's core research and training operating expenditure over the last five years is summarized in the following table:

(in US$ '000s)

	1980	1981	1982	1983	1984
Field Research*	4.0	4.3	3.8	4.2	4.3
Central Research	1.3	1.4	1.6	2.4	3.1
Info. & Training	1.4	1.3	1.0	1.6	2.0

* Includes Ethiopian Highlands and Range Research which are based at HQ.

An analysis of expenditure trends at ILCA reveals a significantly raised expenditure at HQ in compliance with the QQR/TAC directive to strengthen HQ research capability while core budget expenditures in field programmes have been reduced in real terms.

The demands upon the Centre by national governments are growing rapidly, and strong field programmes are essential to widespread national support in Africa. An adequate assessment of research priorities for ILCA also depends on a good understanding of local problems.

The issue of the balance between HQ and field operations remains a serious one. Without a stronger HQ, field operations lack the support they need; without more field operations ILCA's ability to assess priorities, as well as to provide assistance to national services, are jeopardized. In brief, ILCA is an institution that is still well below its optimal size.

The structural problem is further complicated by the lack of housing in Addis Ababa and by current limits on office, laboratory and training facilities at ILCA. The Ethiopian Government, the sole landlord in the country, is unable to provide adequate numbers of rental houses to ILCA in Addis Ababa, nor are ILCA staff allowed by Government to buy or build houses. The only possibility for accommodating extra international staff at HQ is for ILCA to build additional housing on its HQ campus and to expand office and other facilities, thus increasing capital requirements.

RESEARCH ACHIEVEMENTS AT ILCA IN 1984

A major research objective at ILCA is to improve African food production by constructing a forage legume linkage between cropping and livestock enterprises, thereby promoting increases in both livestock and crop output. The three basic techniques under investigation comprise rotations of cereals with legume leys, cereals in alleys between rows of browse legumes grown as hedges, and intercropping with pulse legumes capable of also giving high forage yields.

These techniques are based on the premise that the inadequate nutrition of African livestock is a prime constraint to both increased livestock and agricultural output and to economic growth. The major nutritional problems occur in the dry season when the availability, quality and palatability of animal feed is at a minimum. The introduction of forage legumes suitable as animal feed during this period of maximum stress, offers great potential for productivity improvements in livestock output as well as in crop production.

ILCA's research in the major ecological zones of Africa is focussed on the selection and management of legumes suitable for incorporation into the prevalent farming systems.

Fodder banks of Stylosanthes in the moderate rainfall areas, alleys of Gliricidia, Leucaena and Sesbania in higher rainfall areas, Trifolium species in the fallows of temperate areas, and cowpeas as an intercrop in the Sahel are proving attractive options for small farmers.

Cattle in Africa have multiple functions and animal draught power is particularly important in the more densely settled arable areas. ILCA has sought to increase the productivity of animal traction by successfully developing a single-ox plough to replace the conventional plough drawn by two oxen, by conserving drinking water for both domestic and stock use using simple water ponds prepared by ox-drawn earthmoving scoops, and by modifying conventional flat-bed cultivation of heavy clay soils for better surface drainage. In 1984 these techniques were developed further and tested in further environments.

The use of an improvement package comprising the use of crossbred dairy cattle, legume forage crops on fallow land, the making of boiled curd cheese from surplus milk, water conservation in simple earth ponds and better land cultivation methods lead to quantum jumps in both land and labour productivity and consequently to a marked increase in the welfare of the African smallholder. This package represents a relatively low input, intermediate technology which is now being adopted in the Ethiopian highlands.

Some 40% of Africa's cattle are raised by pastoral groups in rangeland areas generally unsuited to arable farming. The scarcity of stock water limits the utilization of these range pastures, while very high labour requirements, in lifting water manually from deep wells and in desilting surface ponds, limit stock water supplies and reduce potential output levels. ILCA work has shown that the simple sealing of the water holding ponds associated with deep wells, and the use of ox-drawn scoops to desilt surface ponds increases greatly the efficiency of water use.

In the pastoral areas, calves and humans are in competition as consumers of milk from lactating cows. The widely varying wealth status of individual

pastoral families, and the seasonal availability of green grass, greatly influence milk availability and cash expenditures on purchased food. When subsistence milk is in short supply consumption of purchased cereals rises markedly, as does the purchase and consumption of tea, sugar, fats and oils; additionally calves experience high stress conditions and high mortality rates. The use of limited areas of cereal crops, alternated with a forage legume, is a most promising method for minimizing these nutritional problems in pastoral areas. This approach also provides attractive alternative investment opportunities for pastoralists whose surplus cash income is traditionally invested in additional livestock.

Drought feeding practices have been a major area of interest in 1984. The use of simple mixes of urea and molasses fed at 1 to 2 kg per beast per day have greatly reduced mortality in the drought areas of Ethiopia. The use of similar mixes in block form, preferably associated with a small amount of oilseed cake, greatly simplify and cheapen smallholder milk production and cattle fattening. Urea supplements are also markedly decreasing mortality in smallstock.

ILCA's network activities in trypanotolerance, animal nutrition, forage production and documentation have expanded in 1984 and an impressive database on many aspects of livestock production in Africa, and of the factors affecting it, is being compiled. The relationships between lactation length and calving interval, between body condition and fertility, and between sex of the calf reared and subsequent conception delays have been clarified. Differences in breed productivity in areas of differing trypanosomiasis challenge and other environmental stresses are now also apparent, as is the large value of chemotherapy in maintaining productivity under tsetse challenge. Current studies are emphasizing the inter-relationships among calf stunting, mature body size and subsequent reproductive and lactational performance.

The resource survey team has developed remote sensing methods for assessing the length of growing season and drought and famine warning. The team has also developed a new technique for surveying cropping activities as neither traditional aerial photography nor satellite imagery are suited to such surveys. The new technique uses low-altitude aerial surveys and a combination of wide-angle and telephoto photography giving enhanced resolution and clear identification of individual crop species. Computer programmes to

analyse and graphically display complex survey results have been developed.

The use of satellite imagery at ILCA increased markedly in 1984 and a strong ILCA-NASA collaborative programme continues.

ILCA's Livestock Policy Unit has major studies under way on the financing of livestock services in Africa, the identification of factors influencing the performance of the livestock sector, the effects of imports of dairy commodities on domestic consumption, production and welfare, and the identification of research priorities.

Results indicate that many governments expend on their livestock sector only a small proportion of the revenue they raise from that sector through taxation and various fees, and that an excessive and increasing proportion of expenditure on livestock services in most countries goes to staff costs with a consequent shortage of money available for vaccines, drugs and transport. The second policy study indicates strong positive correlations between growth in both cereal and livestock output, between changes in livestock output and livestock numbers and between GNP and growth in milk output. Dairy imports now provide 30% of Africa's milk needs; cheap imports and milk aid can readily depress incentives to local producers.

THE 1984 BUDGET EXPERIENCE

Core funds received by ILCA in 1984 amounted to US$ 12.641 million, approximately the lower bracket recommended by TAC. This amount includes transferred special projects and the Swiss restricted capital grant of $ 319,000. As in previous years, the Centre had to be managed most conservatively. Operating costs were held slightly below budget but because of the acute housing problem in Addis, working capital was drawn upon to enable six new cottages to be constructed. The continuation of high inflation, coupled with over valuation of the currencies of several of the countries in which the centre operates, added to the financial squeeze.

Field programme reductions were made in 1984 but the rate of strengthening of HQ operations had to be moderated because of funding uncertainities. An additional complication was the extent of restricted core funding: about

20% of the operating budget. The receipt and application of funds for the years 1983 to 1984 is summarized as follows.

Sources of Funds (US$ million)	1983	1984	Application of Funds (US$ million)	1983	1984
Brought forward	0.573	1.332	Operations	10.098	11.810
CGIAR donors	11.783	12.641	Capital	1.063	1.803
Earned income	0.137	0.127	Working capital	1.013	0.467
			Housing grant	0.319	
	12.493	14.100		12.493	14.100

The 1984 income figure includes the restricted capital grant of $ 319,000 used in 1984 for staff housing. This sum and more was expended for this purpose. Actual operating expenditures for 1984 in relation to the budget proved to be:

	Budget	Actuals
Research		
Direction	151	147
Central Scientific Units	1,845	1,556
Central Support Units	1,184	1,424
Field Programmes*	4,626	4,345
Liaison & Training	932	921
Information Services	1,100	1,085
Board and Management	540	569
General Operations	1,094	1,171
Administration	768	592
Gross Core	12,240	11,810

* Includes Ethiopian Highlands and Range Research which are based at HQ.

THE OUTLOOK FOR 1985

The objectives established for the 1985 budget include a consolidation of the HQ expansion achieved in 1982 and 1983, the stabilization of field programmes, the strengthening of training, information and documentation services and the provision of the physical facilities required to support the expanded research efforts at both the HQ and field level.

The approved net budget for ILCA in 1985 is $ 14.713 million at the top of the bracket. Present indications are that funding will be well below the revised bottom of the bracket ($ 14.06 million). In 1985 ILCA will again have to follow a most conservative policy and operate below the lower bracket level. Given the huge quantity of famine relief presently flowing to Africa, and the certainty that further famines will follow at increasingly frequent intervals unless agricultural production is rapidly increased, the continual underfunding of TAC recommended budgets is a matter of great concern.

A SUMMARY OF THE 1986 BUDGET REQUEST

Summary

The core budget proposed for 1986 is built upon the TAC approved budget for ILCA of US$ 16,775,000 (gross) at the "Requested" level and US$ 15,250,000 (gross) at the "Recommended" level including transferred projects of $ 150,000. The following table (page 12) summarizes the 1986 budget proposal and provides a comparison with 1984 and 1985.

At the "Requested" level, the funding approved by TAC would allow ILCA to continue its present restructuring. It also provides for an increment over the 1985 revised lower bracket of 5.2 manyears of senior staff and $ 1.451 million in operating costs, plus a price provision of $ 1.249 million (9%). Capital expenditure in 1986 is projected at $ 1.0 million, plus a provision of $ 0.675 million for an increase in working capital.

At the "Recommended" level, the budget approved by TAC provides for an increment over the 1985 revised lower bracket of 0.2 manyears of senior staff and $ 0.690 million in operating costs, plus a price provision of $ 1.180

million (9%). Capital expenditure at the "Recommended" level for 1986 is projected at $ 0.880 million, plus a provision of $ 0.100 million for an increase in working capital.

The above recommended funding levels (Requested and Recommended) would allow ILCA to effect some marginal increments in basic animal science, nutrition, animal traction and resource survey. Strengthening basic animal science involves an animal physiology post that lapsed two years ago, of strengthening the success of the nutritional group in developing drought feeding and crop residue feeding practices, of establishing the long planned animal traction post, and of building up the nucleus group working on the assessment of pasture and crop growing conditions over Africa using satellite data.

However, the "Recommended" funding level would necessitate serious programme changes including the termination of the Niger Programme (Arid Zone of West Africa), drastic reduction in field operations of HQ Range Research, curtailment of training activities and elimination of two senior posts in General Administration (HQ), one in Kenya Rangelands and decrease in capital expenditures and working capital adjustment.

Because of continuing financial constraints, the housing construction programme at headquarters, which TAC endorsed in 1984, is not fully included in the recommended budget.

Details of the TAC approved 1986 budget based on the "Recommended" and "Requested" levels of funding are provided in Budget Table I.

1984-1986 BUDGET SUMMARY

(Amounts in US$ '000s)

	Actual 1984		Revised 1985 Lower Bracket		Approved 1986 Recommended		Approved 1986 Requested	
	MY	Amount	MY	Amount	MY	Amount	MY	Amount
Research								
Direction	1.0	147	1.0	170	1.0	155	1.0	155
Central Scientific Units	17.8	3,150	19.7	3,756	20.6	4,155	21.6	4,450
Central Support Units	6.0	1,424	6.0	1,207	8.0	1,470	8.0	1,430
Field Programmes	12.6	2,751	12.8	2,673	11.1	2,550	13.1	2,717
Total Research	37.4	7,472	39.5	7,791	40.7	8,330	43.7	8,752
Information Services	2.3	1,085	3.3	1,091	3.3	1,208	3.3	1,208
Liaison & Training	2.2	921	2.5	1,205	3.5	1,161	3.5	1,361
Board and Management	2.5	569	2.5	503	2.5	493	2.5	493
Operations								
Direction	–	–	1.0	110	–	–	1.0	119
Finance	1.5	161	1.5	250	1.5	342	1.5	342
Administration	1.0	431	1.0	435	1.0	473	1.0	473
General Operations	2.0	1,171	2.0	1,015	1.0	1,083	2.0	1,103
Total Operations	4.5	1,763	5.5	1,810	3.5	1,898	5.5	2,037
Total Core Expenditures	48.9	11,810	53.3	12,400	53.5	13,090	58.5	13,851
Price Increase		–		–		1,180		1,249
Capital		1,803		960		880		1,000
Working Capital Increase		–		90		100		675
Gross Core		13,613		13,450		15,250		16,775
Earned Income		(127)		(150)		(110)		(110)
Funds Brought Forward		(319)		–		–		–
Working Capital Employed		(526)		–		–		–
Net Requirement		12,641		13,300		15,140		16,665

SPECIAL PROJECTS

About 8% of ILCA's 1984 expenditures in 1984 were on special fund projects. These projects, with 1984 expenditures and pr tions for 1985 and 1986 are summarized in the following table. The larger of these projects include the integration of livestock and crop residue utilization in southern Mali using USAID support; GTZ and EEC support to ILCA's trypanotolerance network activities in the Ivory Coast and Gambia respectively; IDRC support to the animal nutrition network, and likely Swiss support for a forage seeds unit at ILCA as well as for a project to utilize much more widely and effectively the vertisols of eastern Africa.

The bulk of special funds in use and projected at ILCA are used to supplement core activities. A major effort is planned in 1985 to enhance special funds flowing to training activities and to resource inventory studies.

SUMMARY OF PROPOSED SPECIAL FUND PROJECTS

(Amount in US$ '000s)

Source of Fund	Name of Project	Location	1984	1985	1986
Belgium	Trypanotolerance (1983 Bal.)	Zaire	12	-	-
Egyptian Fund	Publications - Staff	HQ	17	35	35
Ethiopia/RDP	Ethiopian Rangelands	Ethiopia	134	-	-
E.E.C.	Trypanotolerance Network	Senegambia	4	400	400
E.E.C.	Traction Network	HQ	-	-	100*
Ford Fndtn	Agric. Economics Component	Ibadan	89	-	-
Ford Fndtn	Socio-Econ. Crop/Livestock	Ibadan	11	70	64
Ford Fndtn	Women & Small Ruminant Prod.	Ibadan	31	-	-
Ford Fndtn	Livestock Policy Activities	HQ	70	-	-
G.T.Z.	Trypanotolerance Network	Ivory Coast	137	150	75
G.T.Z.	Livestock Economics - Staff	HQ	32	32	35
G.T.Z.	Trypanotolerance - Staff	HQ	35	10	-
IBPGR	Germplasm Collection	HQ	13	17	15
IBPGR	Seed Store	HQ	-	30	-
IDRC	Animal Production Systems	Zimbabwe	26	15	15
IDRC	By-products Network - ARNAB	HQ (Africa)	18	90	85
IDRC	Glyricidia	Ibadan	-	45	37
NAPRI	Symposium	Kaduna	13	-	-
Nigeria/FLD	Fodder Bank & Smallholder	Kaduna	131	150*	-
Nigeria/FLD	Small Ruminant	Ibadan	146	150*	-
Nigeria/FLD	Small Ruminant Workshop	Ibadan	13	-	-
Swiss/SDC	Seed Unit	HQ	-	-	200*
USAID	Livestock Production Systems	Mali	196	310	394
USAID	Livestock Policy Conference	HQ	50	-	-
USAID	Early Warning System	Niger/Tufts Univ.	-	250	250*
World Bank	Systems Research	Rwanda	-	150*	200*
World Bank	Systems Research	Ethiopia	-	150*	200*
			1,178	2,054	2,105

* Tentative data for Special Fund Projects 1985-1986 pending conclusion of current negotiation with various potential donors.

Additionally, several organizations have seconded scientific staff to ILCA's operations. In these cases, payment is made directly by the sponsor to the individual scientist and does not classify as an "SF" Project in the strict sense. However, these secondments do contribute to ILCA's operations and warrant mention below:

LIST OF "SECONDED" STAFF

Programme	Country	Discipline	Source	Manyears 1985	1986
LPU	Ethiopia	Agric. Economics	GTZ	1.0	1.0
Highlands	Ethiopia	Human Nutrition	Netherlands	1.0	1.0
Small Ruminants	Ethiopia	Animal Production	IEMVT	1.0	1.0

CAPITAL REQUIREMENTS

Housing problems in Ethiopia are acute and the adequate staffing of ILCA is hampered by the difficulty in finding suitable accommodation for additional HQ staff. In recognition of the overall funding situation in the CGIAR, a very modest budget provision is made in 1986 for new construction. As a result of staff changes between HQ and field programmes, laboratory, office and hostel facilities are inadequate, and require considerable expansion. Proposed capital spending in 1986 centres on additional laboratory, computer, workshop equipment, housing and hostel facilities to provide improved support services to research staff and trainees. Details are in Tables V and VII.

ASSUMPTIONS ON PRICE CHANGES

The price changes assumed in constructing the 1986 budget are detailed in Table VIII. The overall inflation estimate used for 1986 is 9%. Exchange rates in several African countries in which ILCA is operating are overvalued but changes in these rates, in both extent and timing, are most uncertain.

Inflation rates in the countries in which ILCA operates greatly exceed those associated with most of ILCA's donor countries; a significant price squeeze on ILCA results.

FIVE-YEAR PROJECTION

Based upon the observations of the QQR, TAC and the ILCA Programme Committee, the management of ILCA foresee, over the next five years, a steady extension of the changes initiated in 1982. These changes have two basic goals:

- to strengthen the senior scientific staffing, particularly in central operations;

- to consolidate existing field activities, giving greater emphasis to component research.

Additionally, in the years 1986 onwards, if funds allow, it is proposed to establish two new regional programmes in francophone and southeast Africa respectively. Project operating budget requirements until 1990 are reflected in the following table.

ILCA requires considerable capital expenditure in the years ahead to enlarge the headquarters buildings, provide adequate staff housing for senior scientific staff, and to create the physical facilities essential to an expansion of component research. Funds for these purposes are urgently required, but because of financial constraints in the CGIAR system they are included in the 5-year projection on a gradual basis.

The five-year projection incorporates:

a. The base projection for 1986-1990 as shown in the main Budget Tables; it assumes no significant growth in the level of operations during the forecast period.

b. Additional requirements over the base projection to permit the more complete implementation of the QQR recommendations, and the consequent con-

struction of additional office, laboratory, housing and related infrastructures.

c. The establishment of the postponed centres in west and southern Africa.

Five-Year Projection
(in millions of 1985 US$)

	1986 Rec. Base	1987	1988	1989	1990
BASIC OPERATIONAL REQUIREMENTS					
Operation at 1985 level	12.400	12.400	12.400	12.400	12.400
Estimated net increment to upgrade current operations	0.690	1.036	0.562	0.546	0.533
CAPITAL REQUIREMENTS					
Headquarters	0.800	0.880	1.400	1.400	1.400
Field Programmes	0.080	0.120	0.200	0.200	0.200
ADDITIONAL ELEMENTS					
Working Capital Increase	0.100	0.693	0.117	0.125	0.132
New Programmes (proposals):					
Francophone Africa	0.750	1.000	1.500	1.500	1.500
Southeast Africa	-	0.750	1.000	1.500	1.500
Gross Requirements	14.820	16.879	17.179	17.671	17.665

STAFF CLASSIFICATION

Pending the outcome of the current budget study of the CGIAR, ILCA has designated its existing staff classification as follows:

Old Classification	Present Designation
Senior Professionals	Group I
Scientific/Supervisory	Group II
Other Support	Group III

ANNEXES AND BUDGET TABLES

A

ILCA — 1986 BUDGET

SUMMARY OF "TAC" RECOMMENDATION

(In thousands of US$)

	Recommended Funding	Requested Funding
Core Operations — Total	13,090	13,851
Add: Price Provision (9%)	1,180	1,249
Sub-Total.....	14,270	15,100
Capital Expenditures:		
Machinery & Equipment	480	600
Buildings & Infrastructures	400	400
Sub-Total.....	880	1,000
Working Capital Adjustment	100	675
Gross Core Requirements	15,250	16,775
Earned Income	(110)	(110)
Net Requirement	15,140	16,665

Table I

Annex I

1986-1987 CORE OPERATING BUDGET

SUMMARY OF COSTS BY PROGRAMME & ACTIVITY 1983-1989

(Amount in US$ '000s)

	Actual 1983		Actual 1984		1985 Budget Revised Lower		1986 Approved Budget Recommended		1986 Approved Budget Requested		Projection 1987		Projection 1988		Projection 1989	
	MY	Cost	MY	Cost	MY	Cost	MY	Cost	MY	Cost	MY	Cost	MY	Cost	MY	Cost
RESEARCH:																
Director of Research	1.0	143	1.0	147	1.0	170	1.0	155	1.0	155	1.0	155	1.0	155	1.0	155
Central Scientific Units																
Basic Animal Sciences	2.3	341	3.2	419	3.6	710	5.5	974	5.5	1,040	5.5	1,038	6.5	1,128	6.5	1,128
Legume Agronomy	2.0	356	2.0	458	3.0	520	3.0	550	3.0	550	3.0	603	4.0	693	4.0	693
Animal Traction	-	-	-	-	-	30	1.0	117	1.0	117	1.0	152	1.0	152	1.0	175
Economics Unit	2.0	177	3.2	262	3.7	371	3.7	422	3.7	422	3.7	427	3.7	427	3.7	427
Trypanotolerance	1.4	253	1.9	416	1.4	480	1.4	540	1.4	540	2.4	615	2.4	655	3.4	750
- of which related to transferred projects*	(-)	(-)	(-)	(56)	(-)	(100)	(-)	(100)	(-)	(100)						
HQ Range Research	1.2	257	2.5	456	3.0	695	2.0	527	3.0	756	3.0	749	3.0	749	3.0	749
Highlands	4.7	819	5.0	1,138	5.0	950	4.0	1,025	4.0	1,025	4.0	1,025	4.0	1,025	4.0	1,040
- of which related to transferred projects	(1.7)	(213)	(2.0)	(211)	(2.0)	(190)										
Central Support Services																
HQ Farm & Grounds	1.0	131	1.0	131	1.0	145	1.0	150	1.0	150	1.0	156	1.0	156	1.0	156
HQ Laboratory	2.0	255	1.0	414	1.0	435	2.0	510	2.0	510	2.0	510	2.0	530	2.0	550
Computer Unit	3.0	343	3.0	595	3.0	440	3.0	500	3.0	500	4.0	560	4.0	650	5.0	750
Aerial Survey	1.5	391	1.0	284	1.0	187	2.0	310	2.0	270	2.0	270	2.0	310	2.0	350
Arid Zones																
Mali	4.0	809	2.0	585	2.2	610	2.5	645	2.5	645	3.0	670	3.0	700	3.0	750
Niger	0.7	79	1.0	106	1.0	105	-	-	1.0	104	1.0	109	1.0	114	1.0	120
Kenya	3.6	543	3.6	531	3.6	515	2.6	455	3.6	518	3.6	518	3.6	530	3.6	550
Botswana	0.7	68	-	41	-	20	-	20	-	20	-	20	-	20	-	20
Subhumid Zone	4.0	952	4.0	922	4.0	770	4.0	785	4.0	785	4.0	790	4.0	800	4.0	820
Humid Zone	3.0	675	2.0	567	2.0	638	2.0	645	2.0	645	2.0	645	2.0	650	2.0	650
- of which related to transferred projects	(-)	(47)	(-)	(91)	(-)	(90)	(-)	(50)	(-)	(50)						
TOTAL RESEARCH	38.1	6,592	37.4	7,472	39.5	7,791	40.7	8,330	43.7	8,752	46.2	9,012	48.2	9,444	50.2	9,833

* Belgian Special Project Fund for Trypanotolerance Network in Zaire was treated as Restricted Core in 1984 at the Donor's request.

	Actual 1983		Actual 1984		1985 Budget Revised Lower		1986 Approved Budget Recommended		1986 Approved Budget Requested		Projection 1987		Projection 1988		Projection 1989	
	MY	Cost	MY	Cost	MY	Cost	MY	Cost	MY	Cost	MY	Cost	MY	Cost	MY	Cost
INFORMATION SERVICES	1.8	955	2.3	1,084	3.3	1,091	3.3	1,208	3.3	1,208	3.3	1,208	3.3	1,220	3.3	1,250
- of which related to transferred projects	(-)	(83)	(-)	(94)	(-)	(60)										
INTERNATIONAL LIAISON	2.0	325	2.0	272	2.0	265	3.0	296	3.0	296	3.0	296	3.0	300	3.0	300
TRAINING		338	0.2	649	0.5	940	0.5	865	0.5	1,065	0.5	1,065	0.5	1,080	0.5	1,100
- of which related to transferred projects	(-)	(26)														
BOARD AND MANAGEMENT	1.3	392	2.5	569	2.5	503	2.5	493	2.5	493	2.5	488	2.5	500	2.5	500
OPERATIONS:																
Director of Operations	-	-	-	-	1.0	110	-	-	1.0	119	1.0	120	1.0	120	1.0	120
Finance	2.0	253	1.5	161	1.5	250	1.5	342	1.5	342	1.5	351	1.5	351	1.5	351
Administration	1.0	332	1.0	431	1.0	435	1.0	473	1.0	473	1.0	473	1.0	473	1.0	480
General Operations	2.0	911	2.0	1,172	2.0	1,015	1.0	1,083	2.0	1,103	2.0	1,113	2.0	1,200	2.0	1,300
TOTAL	48.2	10,098	48.9	11,810	53.3	12,400	53.5	13,090	58.5	13,851	61.0	14,126	63.0	14,688	65.0	15,234
- approved increase for transferred projects	(1.7)	(369)	(2.0)	(452)	(2.0)	(440)	(-)	(150)	(-)	(150)						
INFLATION	-	-	-	-	-	-	-	1,180	-	1,249	-	2,546	-	3,966	-	5,484
TOTAL CORE OPERATION	48.2	10,098	48.9	11,810	53.3	12,400	53.5	14,270	58.5	15,100	61.0	16,672	63.0	18,654	65.0	20,718
TOTAL SPECIAL PROJECTS		678		1,178		1,903		2,105		2,105		1,000**		1,000**		1,000**
BY OBJECT OF EXPENDITURE																
Personnel		6,126		7,165		7,017		7,598		8,038		8,257		8,585		8,904
Supplies & Services		3,102		3,672		4,464		4,419		4,741		4,777		4,967		5,152
Travel		611		663		708		751		790		799		831		862
Equipment Replacement		259		310		211		322		282		293		305		316
Inflation		-		-		-		1,180		1,249		2,546		3,966		5,484
TOTAL CORE OPERATIONS		10,098		11,810		12,400		14,270		15,100		16,672		18,654		20,718
- approved increase for transferred projects		(369)		(452)		(440)		(150)		(150)						

** Reliable Data not available for special projects 1987-1989.

Table II
Annex I

1986-1987 BUDGET*
SUMMARY OF SOURCES AND APPLICATION OF FUNDS
(US$ '000s)

SOURCE OF FUNDS	Actual 1983	Actual 1984	Revised Estimate 1985	1986 Approved Budget Recommended	1986 Approved Budget Requested	Projected 1987
CORE OPERATIONS						
Unrestricted						
Australia	350	279				
Belgium	125	128				
Canada	321	495				
China (Peoples Republic)	-	33				
Denmark	129	224				
Finland	-	250				
Germany (Federal Republic)	755	678				
India	50	50				
Italy	366	346				
Intern. Develop. Association (World Bank)	2,600	3,040				
Netherlands	260	253				
Nigeria	204	260				
Norway	297	248				
Sweden	106	184				
Switzerland	395	444				
United Kingdom	296	298				
U.S.A. (USAID)	2,800	3,200				
Unidentified Sources	-	-	11,168	13,274	14,799	16,740
Income Applied in Year	137	127	150	110	110	110
SUBTOTAL	9,191	10,537	11,318	13,384	14,909	16,850
Less Allocation to Capital	(1,822)	(958)	(1,050)	(980)	(1,675)	(1,118)
SUBTOTAL	7,369	9,579	10,268	12,404	13,234	15,732
Restricted						
Australia	3	-	-	-	-	-
Belgium	160	225	253	240	240	240
- of which for transferred projects	-	(78)	(100)	(100)	(100)	(100)
France	117	95	130	150	150	150
International Development Research Centre (IDRC)	203	157	150	50	50	-
- of which for transferred projects	(203)	(157)	(150)	(50)	(50)	
Intern. Fund for Agricultural Development (IFAD)	600	500	400	400	400	400
Ireland	156	178	184	150	150	150
Italy	953	859	825	876	876	-
Switzerland	537	217	190	-	-	-
- of which for transferred projects	(218)	(217)	(190)			
SUBTOTAL	2,729	2,231	2,132	1,866	1,866	940
TOTAL CORE OPERATION FUNDS	10,098	11,810	12,400	14,270	15,100	16,672
CAPITAL						
Allocation from Core Operating Funds	1,822	958	1,050	980	1,675	1,118
Balance of Working Funds B/F	573	1,013	487	577	577	1,252
Restricted Capital Grant B/F	-	319	-	-	-	-
TOTAL CAPITAL FUNDS	2,395	2,290	1,537	1,557	2,252	2,370

* Projections for 1988-1989 shown in Table I - Annex I.

Table II continued
Annex I

1986-1987 BUDGET*
SUMMARY OF SOURCES AND APPLICATION OF FUNDS
(US$ '000s)

SOURCE OF FUNDS	Actual 1983	Actual 1984	Revised Estimate 1985	1986 Approved Budget Recommended	1986 Approved Budget Requested	Projected 1987
SPECIAL PROJECTS**						
Belgium (AGCD)	59	***				
Botswana	56	-	-	-	-	
Economic Development Institute	31	-	-	-	-	
Egyptian Technical Cooperation Fund for Africa	-	17	35	35	35	
Ethiopia (RDP)	200	134	-	-	-	
European Economic Community (EEC)	-	-	400	500	500	
Ford Foundation	149	107	70	64	64	
Germany, Fed. Republic (GTZ)	80	254	192	110	110	
Int. Dev. Research Centre (IDRC)	-	61	150	137	137	
Int. Board for Plant Genetic Resources (IBPGR)	-	11	47	15	15	
National Animal Production Research Institute (NAPRI)	-	13	-	-	-	
Nigeria (FLD)	56	30	300	-	-	
Swiss (SDC)	-	-	-	200	200	
U.S.A. (USAID)	193	148	560	644	644	
World Bank	-	-	300	400	400	
Unidentified Sources	-	-	-	-	-	1,000
Balance from Previous Period	106	252	(151)	-	-	
TOTAL SPECIAL PROJECTS	930	1,027	1,903	2,105	2,105	1,000
TOTAL SOURCE OF FUNDS	13,423	15,127	15,840	17,932	19,457	20,042
APPLICATION OF FUNDS:						
CORE OPERATIONS	10,098	11,810	12,400	14,270	15,100	16,672
- of which for transferred projects	(369)	(452)	(440)	(150)	(150)	(100)
CAPITAL	1,063	1,803	960	880	1,000	1,000
- of which for transferred projects	(12)	(34)				
SPECIAL PROJECTS	678	1,178	1,903	2,105	2,105	1,000
UNEXPENDED BALANCES:						
Capital - Working Funds C/F	1,013	487	577	677	1,252	1,370
Restricted Capital Grant	319	-	-	-	-	-
Special Projects	252	(151)	-	-	-	-
TOTAL APPLICATION OF FUNDS	13,423	15,127	15,840	17,932	19,457	20,042
MEMO:						
1. Total Core Operating Funds Required	10,098	11,810	12,400	14,270	15,100	16,672
- of which for transferred projects	(369)	(452)	(440)	(150)	(150)	(100)
Less Earned Income Applied	(137)	(127)	(150)	(110)	(110)	(110)
Net Core Operating Required	9,961	11,683	12,250	14,160	14,990	16,562
2. Total Capital Funds Required	2,395	2,290	1,537	1,557	2,252	2,370
- of which for transferred projects	(12)	(34)				
Balance of Working Funds B/F	(573)	(1,013)	(487)	(577)	(577)	(1,252)
Restricted Capital Grant B/F	-	(319)	-	-	-	-
Net Capital Funds Required	1,822	958	1,050	980	1,675	1,118
3. Total Funds Required from Donors	11,783	12,641	13,300	15,140	16,665	17,680
- of which for transferred projects	(381)	(486)	(440)	(150)	(150)	(100)
4. Earned Income Applied to Core Operations	137	127	150	110	110	110

* Projections for 1988-1989 shown on Table I - Annex I.

** Tentative data for Special Fund Projects 1985-1987 pending conclusion of current negotiations with various potential donors.

*** Belgian Special Project Fund for Trypanotolerance Network in Zaire was treated as Restricted Core in 1984 at the Donor's request.

Table III
Annex I

INTERNATIONAL LIVESTOCK CENTRE FOR AFRICA
SUMMARY OF FINANCIAL DATA 1983-1986
(Amount in US$ '000)

	Actual 1983	Actual 1984	Rev. Estimate 1985	1986 Approved Budget Recommended	1986 Approved Budget Requested
CURRENT ASSETS					
Cash	2,689	1,762	1,250	525	1,100
Receivables from:					
Donors	427	995	700	700	700
Employees	70	56	50	50	50
Others	683	610	750	750	750
Inventories	376	380	300	300	300
Deposits & Prepayments	181	102	150	150	150
TOTAL CURRENT ASSETS	4,426	3,905	3,200	2,475	3,050
FIXED ASSETS					
Buildings	7,150	8,055	8,305	8,705	8,705
Research & Lab. Equipment	1,216	1,635	1,909	2,167	2,182
Computer	556	695	824	874	894
Furnishings & Office Equipment	1,887	2,125	2,319	2,441	2,501
- of which related to transferred projects	(12)	(34)			
Vehicles and Aircraft	1,583	1,682	1,795	1,845	1,870
Others	113	116	116	116	116
TOTAL FIXED ASSETS	12,505	14,308	15,268	16,148	16,268
TOTAL ASSETS	16,931	18,213	18,468	18,623	19,318
LIABILITIES					
Bank Overdraft	-	2	-	-	-
Accounts Payable - Employees	257	177	200	200	200
Other Payables & Accruals	2,070	3,248	2,023	1,448	1,448
Contributions Received in Advance	515	142	400	150	150
TOTAL LIABILITIES	2,842	3,569	2,623	1,798	1,798
FUND BALANCES					
Invested in Fixed Assets	12,505	14,308	15,268	16,148	16,268
Unexpended Funds:					
Working Capital	1,013	487	577	677	1,252
Restricted Capital Grant	319	-	-	-	-
Special Projects (Deficit)	252	(151)	-	-	-
TOTAL FUND BALANCES	14,089	14,644	15,845	16,825	17,520
TOTAL LIABILITIES AND FUND BALANCES	16,931	18,213	18,468	18,623	19,318

1986-1987 CORE BUDGET
TABLE OF POSITIONS AND MANYEARS
GROUP I

Table IV
Annex I(a)

	POSITIONS				MANYEARS			
	Act. 1984	Est. 1985	Bud. 1986	Bud. 1987	Act. 1984	Est. 1985*	Bud. 1986	Bud. 1987
RESEARCH								
Director	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Central Scientific Units								
Basic Animal Sciences	4.0	5.0	6.0	6.0	3.2	3.6	5.5	5.5
Legume Agromony	2.0	3.0	3.0	3.0	2.0	3.0	3.0	3.0
Animal Traction	-	-	1.0	1.0	-	-	1.0	1.0
Economics Unit	4.0	4.0	4.0	4.0	3.2	3.7	3.7	3.7
Trypanotolerance	3.0	2.0	2.0	3.0	1.9	1.4	1.4	2.4
HQ Range Research	3.0	3.0	3.0	3.0	2.5	3.0	3.0	3.0
Highlands	5.0	5.0	4.0	4.0	5.0	5.0	4.0	4.0
- of which related to transferred projects	(2.0)	(2.0)			(2.0)	(2.0)		
Central Support Services								
HQ Farm & Grounds	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HQ Laboratory	1.0	1.0	2.0	2.0	1.0	1.0	2.0	2.0
Computer Unit	3.0	3.0	3.0	4.0	3.0	3.0	3.0	4.0
Aerial Survey	1.0	1.0	2.0	2.0	1.0	1.0	2.0	2.0
Arid Zones								
Mali	3.0	3.0	3.0	3.0	2.0	2.2	2.5	3.0
Niger	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Kenya	4.0	4.0	4.0	4.0	3.6	3.6	3.6	3.6
Botswana	-	-	-	-	-	-	-	-
Subhumid Zone	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Humid Zone	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
TOTAL RESEARCH	42.0	43.0	46.0	48.0	37.4	39.5	43.7	46.2
INFORMATION SERVICES	4.0	5.0	5.0	5.0	2.3	3.3	3.3	3.3
INTERNATIONAL LIAISON	2.0	2.0	3.0	3.0	2.0	2.0	3.0	3.0
TRAINING	1.0	1.0	1.0	1.0	0.2	0.5	0.5	0.5
BOARD AND MANAGEMENT	3.0	3.0	3.0	3.0	2.5	2.5	2.5	2.5
OPERATIONS								
Director	-	1.0	1.0	1.0	-	1.0	1.0	1.0
Finance	2.0	2.0	2.0	2.0	1.5	1.5	1.5	1.5
Administration	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
General Operations	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
GRAND TOTAL	57.0	60.0	64.0	66.0	48.9	53.3	58.1	61.0

* For 1985 "TAC" recommended 59 "MY" at the top and 55 "MY" at the bottom of the bracket.

Table IV
Annex I(b)

1986-1987 CORE BUDGET
TABLE OF POSITIONS AND MANYEARS
GROUP II

	POSITIONS				MANYEARS			
	Act. 1984	Est. 1985	Bud. 1986	Bud. 1987	Act. 1984	Est. 1985	Bud. 1986	Bud. 1987
RESEARCH								
Director	-	-	-	-	-	-	-	-
Central Scientific Units								
Basic Animal Sciences	-	1.0	3.0	3.0	-	1.0	3.0	3.0
Legume Agromony	1.0	1.0	1.0	2.0	1.0	1.0	1.0	2.0
Animal Traction	-	-	-	1.0	-	-	-	1.0
Economics Unit	-	3.0	3.0	3.0	-	1.8	3.0	3.0
Trypanotolerance	3.0	3.0	3.0	3.0	2.4	3.0	3.0	3.0
HQ Range Research	6.0	6.0	6.0	6.0	4.7	6.0	6.0	6.0
Highlands	4.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0
Central Support Services								
HQ Farm & Grounds	-	-	-	-	-	-	-	-
HQ Laboratory	2.0	3.0	3.0	3.0	1.8	2.3	3.0	3.0
Computer Unit	1.0	2.0	2.0	2.0	1.0	2.0	2.0	2.0
Aerial Survey	1.0	-	1.0	1.0	1.0	-	1.0	1.0
Arid Zones								
Mali	9.0	7.0	7.0	8.0	7.8	7.0	7.0	8.0
Niger	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Kenya	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Botswana	-	-	-	-	-	-	-	-
Subhumid Zone	3.0	-	-	-	2.5	-	-	-
Humid Zone	2.0	1.0	2.0	2.0	2.0	1.0	2.0	2.0
TOTAL RESEARCH	37.0	37.0	41.0	44.0	33.2	35.1	41.0	44.0
INFORMATION SERVICES	6.0	10.0	10.0	10.0	5.8	9.0	10.0	10.0
INTERNATIONAL LIAISON	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
TRAINING	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BOARD AND MANAGEMENT	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
OPERATIONS								
Director	-	-	-	-	-	-	-	-
Finance	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Administration	2.0	4.0	4.0	4.0	2.0	3.3	4.0	4.0
General Operations	4.0	5.0	5.0	5.0	4.0	4.5	5.0	5.0
GRAND TOTAL	57.0	64.0	68.0	71.0	53.0	59.9	68.0	71.0

Table IV
Annex I(c)

1986-1987 CORE BUDGET
TABLE OF POSITIONS AND MANYEARS
GROUP III

	POSITIONS				MANYEARS			
	Act. 1984	Est. 1985	Bud. 1986	Bud. 1987	Act. 1984	Est. 1985	Bud. 1986	Bud. 1987
RESEARCH								
Director	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Central Scientific Units								
Basic Animal Sciences	2.0	9.0	12.0	12.0	0.3	9.0	12.0	12.0
Legume Agromony	11.0	12.0	15.0	16.0	11.0	10.8	15.0	16.0
Animal Traction	-	-	3.0	3.0	-	-	3.0	3.0
Economics Unit	2.0	3.0	3.0	3.0	1.5	2.8	3.0	3.0
Trypanotolerance	14.0	17.0	18.0	18.0	8.1	11.6	12.2	12.2
HQ Range Research	4.0	6.0	6.0	6.0	3.0	5.3	6.0	6.0
Highlands	32.0	39.0	40.0	40.0	32.0	39.0	40.0	40.0
Central Support Services								
HQ Farm & Grounds	11.0	11.0	11.0	11.0	10.8	11.0	11.0	11.0
HQ Laboratory	18.0	21.0	22.0	22.0	18.0	21.0	22.0	22.0
Computer Unit	8.0	8.0	8.0	8.0	7.6	8.0	8.0	8.0
Aerial Survey	2.0	-	1.0	1.0	2.0	-	1.0	1.0
Arid Zones								
Mali	84.0	79.0	84.0	84.0	84.0	79.0	84.0	84.0
Niger	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Kenya	23.0	22.0	22.0	22.0	19.4	17.9	17.9	17.9
Botswana	-	-	-	-	-	-	-	-
Subhumid Zone	29.0	37.0	37.0	37.0	29.0	37.0	37.0	37.0
Humid Zone	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
TOTAL RESEARCH	286.0	310.0	328.0	329.0	272.7	298.4	318.1	319.1
INFORMATION SERVICES	38.0	45.0	45.0	45.0	37.3	44.0	45.0	45.0
INTERNATIONAL LIAISON	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.0
TRAINING	4.0	5.0	5.0	5.0	3.8	5.0	5.0	5.0
BOARD AND MANAGEMENT	2.0	3.0	3.0	3.0	1.8	2.3	3.0	3.0
OPERATIONS								
Director	-	1.0	1.0	1.0	-	1.0	1.0	1.0
Finance	9.0	12.0	12.0	13.0	8.8	12.0	12.0	13.0
Administration	18.0	25.0	25.0	25.0	17.5	24.3	25.0	25.0
General Operations	111.0	137.0	137.0	137.0	110.5	135.8	137.0	137.0
GRAND TOTAL	472.0	542.0	560.0	562.0	456.4	527.3	550.1	552.1

Table V
Annex I

1986-1987 CAPITAL BUDGET

SECTION 1 - NEW/MODIFIED BUILDINGS

(Amount in US$ '000s)

CATEGORIES			BUDGET		PROJECTED	
	1984	1985	1986	1987	1988	1989
1. Advance Expenditure						
2. Land & Improvements						
3. Building & Site Improvements						
- Structure						
- Mechanical Ser.						
- Electrical Ser.						
- All Other & Site Impr.						
Total Bldg. & Impr.	905	240	381	381	762	762
4. Installed Equipt. Etc.						
- Furniture						
- Fittings						
- Equipment						
- Spares						
Total FF & E		-	-	-	-	-
5. Consulting Services						
6. Other Costs						
7. Total Before Contingencies	905	240	381	381	762	762
8. Contingencies	-	10	19	19	38	38
9. Total Capital Cost	905	250	400	400	800	800

1986-1987 CAPITAL BUDGET

Table VII
Annex I

SECTION 2 - ADDITIONAL MACHINERY & EQUIPMENT
(Amount in US$ '000s)

			BUDGET			PROJECTED	
	1984*	1985	1986 Recommended	1986 Requested	1987	1988	1989
RESEARCH:							
Director of Research	-	4	1	1	2	3	3
Central Scientific Units							
Basic Animal Sciences	171	160	95	95	50	40	40
Legume Agronomy	28	14	30	30	30	30	30
Animal Traction	-	-	10	10	5	12	12
Economics Unit	1	10	4	4	3	5	5
Trypanotolerance	96	60	40	40	40	40	40
- of which for transferred projects	(22)						
HQ Range Research	57	15	10	10	25	30	30
Highlands	76	50	40	50	50	50	50
Central Support Serivces							
HQ Farm & Grounds	25	5	10	10	10	10	10
HQ Laboratory	70	45	30	30	50	40	40
Computer Unit	95	60	50	50	50	100	100
Aerial Survey	-	10	-	-	5	20	20
Arid Zones							
Mali	31	10	20	30	30	30	30
Niger	5	5	-	10	10	10	10
Kenya	17	3	20	20	20	20	20
Botswana	(4)	-	-	-	-	-	-
Subhumid Zone	40	30	20	30	30	30	30
Humid Zone	2	12	20	30	30	30	30
TOTAL RESEARCH	710	493	400	450	440	500	500
INFORMATION SERVICES	79	54	33	42	55	50	50
- of which for transferred projects	(12)						
INTERNATIONAL LIAISON	-	1	1	1	3	5	5
TRAINING	6	15	5	5	10	15	15
BOARD AND MANAGEMENT	6	7	2	2	10	7	7
OPERATIONS:							
Director of Operations	-	10	-	1	2	3	3
Finance	2	3	2	2	5	10	10
Administration	8	7	2	2	10	10	10
General Operations	87	120	35	95	65	200	200
TOTAL CAPITAL	898	710	480	600	600	800	800

* Allocated to respective Cost Centres.

Table VIII
Annex I

ASSUMPTIONS ON PRICE INCREASES AND
FLUCTUATIONS OF EXCHANGE RATES
1986 APPROVED CORE BUDGET (REQUESTED)
(In '000)

IN 1985 $ COST*

	ET. BIRR		CFA		NAIRA		K. SH		PULA			
	Amt.	$ Equiv.	Amt.	$ Equiv.	Amt.	$ Equiv.	Amt.	$ Equiv.	Amt.	$ Equiv.	US $	TOTAL
EXPENSE CATEGORIES:												
Personnel	7,003	3,416	122,850	273	555	653	5,115	310	-	-	3,386	8,038
Supplies/Services	3,579	1,746	76,050	169	281	330	1,733	105	23	13	2,378	4,741
Travel	1,306	637	17,100	38	48	57	314	19	-	-	39	790
Equipment Replacement	223	109	3,150	7	9	10	49	3	-	-	153	282
TOTAL	12,111	5,908	219,150	467	893	1,050	7,211	437	23	13	5,956	13,851

* Exchange Rates Assumed:
US$ 1 = 2.05 450 0.8500 16.50 1.80

IN 1986 $ COST**

	ET. BIRR		CFA		NAIRA		K. SH		PULA			
	Amt.	$ Equiv.	Amt.	$ Equiv.	Amt.	$ Equiv.	Amt.	$ Equiv.	Amt.	$ Equiv.	US $	TOTAL
EXPENSE CATEGORIES:												
Personnel	7,632	3,723	126,225	297	641	712	5,915	338	-	-	3,691	8,761
Supplies/Services	3,903	1,904	78,200	184	324	360	2,013	115	28	14	2,592	5,169
Travel	1,423	694	17,850	42	56	62	368	21	-	-	43	862
Equipment Replacement	244	119	3,400	8	9	10	52	3	-	-	168	308
TOTAL	13,202	6,440	225,675	531	1,030	1,144	8,348	477	28	14	6,494	15,100

** Exchange Rates Assumed:
US$ 1 = 2.05 425 0.9000 17.50 2.00

TABLE OF "SF" PROJECTS TRANSFERRED
TO RESTRICTED CORE
(Amount in US$ '000s)

	FORAGE DEVELOPMENT SWITZERLAND COST CENTRE: HIGHLANDS (ETHIOPIA)		ALLEY CROPPING I IDRC COST CENTRE: HUMID ZONE (IBADAN, NIGERIA)	ALLEY CROPPING II IDRC COST CENTRE: HUMID ZONE (IBADAN, NIGERIA)			ANIMAL PRODUCTION DOCUMENTATION IDRC COST CENTRE: INFORMATION SERVICES (DOCUMENTATION)		TRYPANOTOLERANCE NETWORK, ZAIRE* BELGIUM COST CENTRE: TRYPANOTOLERANCE			TOTAL PROJECTS TRANSFERRED		
	1984	1985	1984	1984	1985	1986	1984	1985	1984	1985	1986	1984	1985	1986
A. MANYEARS (SENIOR)	2.0	2.0	-	-	-	-	-	-	-	-	-	2.0	2.0	
B. OPERATING COSTS:														
B1 Personnel														
B2 Supplies & Services, Including Admin. Overhead														
B3 Travel														
B4 Equipt. Repl./Upgrading														
Sub-Total	217	190	8	53	90	50	84	60	56	100	100	418	440	150
C. CAPITAL:														
C1 Machinery & Equipt.														
C2 Buildings														
Sub-Total	-	-	-	-	-	-	12	-	22	-	-	34	-	-
D. TOTAL PROJECT COST (B+C)	217	190	8	53	90	50	96	60	78	100	100	452	440	150

* Belgian Special Project Fund for Trypanotolerance Network in Zaire was treated as Restricted Core in 1984 at the Donor's request.

TABLE OF RESTRICTED CORE ACTIVITIES

(Amount in US$ '000)

SER. NO.	DONOR	ACTIVITY	REMARK	1984	1985	1986
1	Belgium	Research in the Arid Zones of Mali		147	153	140
2	Belgium	Trypanotolerance Network in Zaire*	Transf. Project	78	100	100
3	France	Trypanotolerance Network		95	130	150
4	I.D.R.C	Animal Production Documentation	Transf. Project	96	60	-
5	I.D.R.C.	Alley Cropping I - Humid Zone	Transf. Project	8	-	-
6	I.D.R.C.	Alley Cropping II - Humid Zone	Transf. Project	53	90	50
7	I.F.A.D.	Research in the Arid Zones of Mali		500	400	400
8	Ireland	Smallholder Dairy Technology		178	184	150
9	Italy	Reproductive Physiology Research		859	825	876
10	S.D.C	Forage Development - Highlands	Transf. Project	217	190	-
				2231	2132	1866

* Belgian Special Project Fund for Trypanotolerance Network in Zaire was treated as Restricted Core in 1984 at the Donor's request.

APPENDIX I. DESCRIPTION OF THE 1986 CORE PROGRAMME ACTIVITIES

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DETAILS OF THE 1985 CORE PROGRAMME ACTIVITIES

Details of the budget for each cost centre at ILCA are provided in the tables in Appendix II. The following brief comments relate to each respective cost centre:

DIRECTOR OF RESEARCH

The Director of Research is responsible for the supervision of the Central Research Units at Headquarters, and the technical aspects of all Field Research Programmes. He has the task of overseeing the sound analysis and presentation of research data from existing production systems, the preparation of research protocols and the implementation of all research projects.

CENTRAL SCIENTIFIC UNITS

In accordance with QQR and TAC recommendations, ILCA is strengthening the central scientific units at Headquarters. These units have two functions:

(a) An advisory role to the field programmes with a view to ensuring the highest possible standards of scientific quality.

(b) To undertake work on problems relevant to more than one production system or ecological zone.

The central scientific units noted below have been selected for their important role in improving livestock production in sub-Saharan Africa.

Animal Nutrition

Crop residues provide a major source of feed for many livestock in Africa. Conventional approaches to improving the feed value of the residues by chemical or biological treatment are impractical under smallholder conditions in Africa. Complementing these residues with legume forage is, however, feasible and has a profound effect on their overall utility. ILCA is now investigating the synergism in this supplementation, an area relatively

neglected in nutrition research. An important part of this programme in 1985 is the drought feeding of livestock, particularly with molasses/urea, and associated studies designed to make much greater use of presently wasted crop residues. Attention is also being given to the variability in the feed value of the leaf and stem of varieties of grain crops, and its association with grain yield.

Animal Physiology

The work in animal physiology is closely related to that of the animal nutrition unit. In 1982 and 1983 ILCA undertook a major review and publication of results of the interrelationship of water consumption, feed intake and animal performance. The development of new water points is a major component of most livestock development projects, but sound data on the impact of water restriction and of alternative watering strategies are very scarce. This topic is the focus of much of the present work of this unit. A second area of research, which also complements the nutrition studies, is the effect of various work levels on the energy balance of different breeds and sexes of cattle. This unit is now working in collaboration with several research centres in Europe. The reproductive physiology unit financed by restricted core funding from Italy has now completed construction of its basic facilities. Enzyme linked immune assays and diagnostic work are due to start in mid-1985.

Animal Health

Peri- and post-natal livestock losses are major reasons for low livestock productivity in Africa. About a quarter of all calves and 35% of all kids and lambs die between birth and shortly after weaning, and a marked effect of season of birth on this mortality is apparent. The large loss of young stock is under investigation by ILCA in each of the major ecological zones. The animal health programme also seeks to train African scientists in epidemiological methods and to undertake the economic assessment of disease control measures, skills very much lacking in sub-Saharan Africa. A second main area of animal health work at ILCA centers on trypanotolerance, detailed on page 37. Laboratory support to the animal health work is being assisted by the reproductive physiology laboratory.

Animal Genetics

ILCA is involved in a number of animal breeding studies in cooperation with national organizations. Previous studies have covered the Sahiwal breed. A major evaluation of the Boran breed in Kenya has now been completed, while in the Ethiopian highlands ILCA's cooperation with the Institute of Agricultural Research and the Arsi Rural Development Unit enabled a detailed analysis of dairy crossbreeding results to be published in 1983. Cooperation with the Ministry of Agriculture is now proceeding on a major sheep breeding project. The animal genetics unit is also closely involved in the trypanotolerance network (page 37).

Livestock Economics

The livestock policy unit was established in 1983; by early 1984 three senior professionals and two post-doctorals made up the staff of the unit. Studies are under way on the financing of livestock services, on the consequences especially on domestic milk production of the growing level of imports of dairy commodities into Africa, on pricing policies with respect to livestock output, and on dairy marketing systems. A major conference on livestock policy issues in Africa was held at ILCA in September 1984.

Legume Agronomy

The analysis of animal productivity data from ILCA's field programmes clearly shows the overriding importance of protein intake on livestock performance in the dry season. Supplementation of dry-season grazing with agro-industrial by-products substantially improves productivity, but limited availability of such products restricts this approach. On the other hand, the introduction of leguminous plants with high digestibility and protein content is a most promising avenue for development. ILCA is carrying out research on forage legumes in its programmes in Ethiopia, Mali and Nigeria. In the Ethiopian highlands, the search for local legumes has identified ecotypes of *Trifolium* with yields similar to those of introduced pasture species. In the subhumid zone of northern Nigeria, work on *Stylosanthes* is resulting in major advances in the productivity of settled Fulani livestock producers. In the humid zone integrated crop-livestock production based on alleys of *Leucaena* and *Gliricidia* is proving most promising. In the agro-pastoral system of Mali, improved cowpea varieties have aroused great interest from smallholders in ILCA's research area. A more concerted effort in the field of legume agronomy is justified, and ILCA proposes to give major

emphasis to this subject over the coming years. The extensive experience and germplasm collections of CIAT and of the CSIRO tropical pasture laboratories are now closely integrated with the legume agronomy activity at ILCA.

Animal Traction

Available data indicate that approximately 10 million draught animals are used in sub-Saharan Africa each year, and the importance of draught animals is expected to increase further during the coming years. The more efficient use of animal traction offers substantial opportunities for helping small farmers to increase food production. Animal traction is already a major component of ILCA's research in the Ethiopian highlands and in the arid zone programmes in Mali and Niger. The results obtained are most valuable and ILCA now seeks to reinforce and expand this initiative by establishing a pan-African research network on animal traction amongst national research institutes.

Trypanotolerance

In 1981 ILCA established a trypanotolerance network of countries interested in research on this topic. ILCA's role is that of coordinator and catalyst in operating this research network aimed at determining the interaction of breed, tsetse challenge and management systems, as well as the economics of the production of trypanotolerant livestock under different management systems. At present, operations cover Zaire, Gabon, Nigeria, Ivory Coast, Senegal, Togo and Kenya. Research is also under way on the inheritance of trypanotolerance characteristics. The trypanotolerance network operations are proving particularly productive and the network is expanding rapidly. All ILCA's work on trypanotolerance is closely coordinated with ILRAD.

The trypanotolerance programme also has a strong training component, which focuses on the evaluation of health status (with ILRAD), methods to assess tsetse and trypanosomiasis risk (with ICIPE), and on livestock productivity studies and analyses.

The possibility of combining training with practical data analysis greatly appeals to national organizations and is considered highly effective. The ILCA trypanotolerance programme is actively supported by the Belgian Government at four locations in Zaire, and by the German and French Govern-

ments at other locations. A special project in the Gambia has now been financed by the EEC.

Systems Research

This unit was established at HQ in 1984. Its prime task is to provide the focal point for the detailed systems analysis of the large amount of field data now available on livestock production systems in the major ecological zones of Africa. Additionally the unit has responsibility for funding the expanded work at ILCA on system modelling.

Range Research

A large body of data on the primary and secondary productivity of rangelands has been accumulated in ILCA's field programmes. Additionally, the non-published research findings of national research groups in this field are extensive. Late in 1983, a new Range Research Unit was established at ILCA HQ to collate and analyse this material and to act as a focal point in Africa for the examination of the potential for and limitations to rangeland improvement.

Small Ruminant and Camel

In spite of the increasingly recognised importance of goats, sheep and camels, relatively little research has been carried out on their production and future potential. However, ILCA has studied in detail the social and economic importance of small ruminants in several of its field programmes. The importance of the camel has also been recognised in earlier ILCA work. The small ruminant and camel unit was established at headquarters during 1983. The unit concentrates on the analysis of existing data collected by ILCA field programmes on small ruminants, the linking and stimulation of national research efforts, and the identification of gaps in existing research.

CENTRAL SUPPORT SERVICES

Headquarters Farm and Laboratories

The Headquarters farm and animal nutrition laboratory provides nutrition and analytical services to all research programmes and acts as an analytical reference point for national programmes. The capacity of the laboratory has

been greatly enhanced by bringing into operation an atomic absorption spectrophotometer, an automatic analyzer and a gas chromatograph which are now functioning on a routine basis. An HPLC is to be added in 1985. The HQ farm provides land and facilities for plant germplasm screening as well as a herd of experimental dairy cattle and a flock of experimental sheep. Modest experimental feeding facilities for both sheep and cattle are also in use.

Computer Unit

This unit provides statistical and computer programming services to the research, administration and documentation departments of ILCA. It is also active in providing computer training to African research workers.

The unit has two Hewlett Packard 3000 systems (an original Series III and a new Series 48) plus HP125 and HP150 microcomputers with Winchester discs connected to the 3000. These are supported in the field programmes by a system of micro-computers compatible with the HQ configuration. Demands on the computer unit continue to increase rapidly. Increased computing assistance is being provided to national organizations; much of ILCA's financial work is now computerized; the documentation centre is a major user and research data analysis is using large amounts of Central Processor Unit computer time. ILCA has also developed increased graphics and computerized mapping capabilities. A continuing expansion of computing hardware is projected to enable this unit to continue to satisfy the rapidly increasing demands for its services.

Aerial Survey and Satellite Imagery

ILCA's commitment to aerial survey developed from the need to understand the patterns of distribution of livestock in relation to range ecology, and to assess the extent to which ILCA's study areas are typical of the major ecological zones. The techniques developed, and the results produced, have led to an increasing demand from outside agencies for ILCA's assistance in this technique. The survey team has carefully selected these opportunities to help build ILCA's data base. The cartography unit of this section works mainly on conventional aerial images to prepare land-use maps, and the ground-truthing required is strongly supported by low-level aerial surveys in Ethiopia and Mali. This work is now moving towards computer and thematic mapping based on a combination of satellite imagery, strategic reconnaissance flights with ILCA aircraft and ground-truthing by mobile field teams. Image

interpretation and reporting is increasingly computerized, and based on NOAA satellite imagery. Increasing attention is being given to recording plant growing periods from both meteorological data and satellite imagery, and linking these to drought warning systems.

THE FIELD PROGRAMMES

In commenting on ILCA's field programmes the QQR noted they are an essential feature of the mandate and work of ILCA and that they provide a most valuable mechanism for ILCA to operate at the grass roots level of African agricultural and livestock production.

Pastoral Zone Programmes

African livestock are raised in widely differing food production systems. One of the more important of these is range livestock production in which sheep, goats, cattle and camels are maintained under extensive conditions using the naturally occurring vegetation in the arid and semi-arid zones.

Of the 726 million hectares of usable land in sub-Saharan Africa, 526 million ha (72%) are suitable only for grazing. These pastoral lands are inhabited by close to 40 million people owning about 80 million livestock units, about 60% of the total ruminant livestock population of Africa. Although production systems vary according to location, climate, animal species, social organization and market characteristics, a number of their basic characteristics are common. All are under presssure due to the encroachment of cropping into the dry-season grazing areas; increasing population pressure and the consequent increase in stocking densities now threaten the survival of many such pastoral production systems in their present form.

During the last 15 years over US$ 1 billion have been invested by African governments in an attempt to improve range livestock systems in Africa. Governments and aid agencies generally agree that the outcome of this investment has been disappointing. The main reason for this unfortunate result is the inadequate knowledge base on which development interventions were designed. More work is clearly needed to improve knowledge of the livestock

systems which are the targets of development. Such research must be interdisciplinary in order to capture the often complex interactions of the components of the systems. It is also time-consuming because of the need to establish time-series data.

East African Livestock Systems

ILCA is working in association with three large-scale livestock development projects in Kenya, Ethiopia and Botswana, with the objective of understanding better the dynamics of the target pastoral systems, of their components and the interactions involved. Based on this work, new procedures for studying range livestock systems in Africa have been developed.

Kenya. Since its start in 1979, the focus of the Kenya programme has been on the changes occurring in the different income groups of the pastoral people distributed across a development gradient in Kajiado District.

The information collected on range dynamics now covers a 4-year period, livestock production over a 2-year period and household economic data over a 1-year period. Data analyses show significant differences in overall management strategies between rich and poor households. Neonatal losses both in cattle and small ruminants have been identified as having major importance. Marketing constraints limit the sale of small ruminants. Income, herd growth, household budgets and nutrition are markedly influenced by wealth status.

Results have led to the establishment of a national monitoring unit by government and the establishment of a selective field data collection system. Further time-series data for these analyses are now being collected. ILCA has a collaborative agreement with the Government of Kenya to test the monitoring techniques proposed and to train a group of Kenyan nationals in their use. ILCA's Kenyan range programme was reviewed by ILCA's Programme Committee in late 1984 and an extension of the work recommended.

A seminar on ILCA's work in the Maasai pastoral system in February 1984 resulted in enthusiastic endorsement of the programme's work to date, and proposals for additional collaboration between ILCA and Kenyan institutions in dryland farming systems of the Machakos area.

Botswana. ILCA's operations in Botswana focus on research into the improved use of the communal grazing lands, an area almost completely neglected by previous research in that country. These communal lands provide grazing for the draught stock and milking cows of small arable farmers and ILCA's research efforts are directed at improving the productivity of these animals. The ILCA computer simulation model was developed and used in Botswana to study the economic trade-offs between milk and meat under different genetic improvement and management options. Current research centres on understanding the distribution of animals over successive seasons in relation to vegetation and water resources, and is carried out in collaboration with the Government of Botswana's Integrated Farming Pilot Project.

Ethiopia. The systems research programme in Ethiopia became fully operational in 1982. It centres on the Borana system in the southern rangelands of Ethiopia where permanent water is the most critical resource.

The research proposals under way were prepared in collaboration with the Ethiopian Government and data collection includes detailed economic input/output, demographic and social information, and animal growth and production parameters on several thousand livestock. Market and meteorological records have been analysed, and baseline studies completed on the utilization and organization of the Borana well water system. Arable agriculture/pastoral grazing interrelations are now the subject of increasing research interest.

Component research resulting from the initial systems analysis centres on the effect of alternative watering strategies on livestock productivity, the impact of legume forage production on livestock performance, and the effect on calf mortality and productivity of substituting grain for milk in human diets.

The Highlands. The Highlands programme in East Africa is developing and testing an integrated approach for the use of mixed crop and livestock farming systems, and conducting research on production components important to smallholder systems in the African highlands generally. In these areas livestock are kept by most smallholders to provide milk, meat, manure, draught power, hides and increased security in the event of crop failure. Substantial im-

provements in the output of all of these production objectives have been shown to be feasible. ILCA has demonstrated that their increased output also leads to increases in food grain production.

Substantial information has now been collected and analysed from the traditional farming system, the potentials and constraints of which have been identified.

A package of innovations introduced to farmers demonstrated that net farm incomes can be increased substantially through the inclusion of crossbred cows and forages in the traditional system. Significantly higher yields and returns per unit area have also been obtained. Simple water catchment development is providing water storage for domestic and stock purposes, and modified cultivation systems are increasing the productivity of draught animals and increasing crop yields.

The cold environment of the higher elevations poses great constraints on cereal and pulse production. Early maturing crop varieties are being introduced with the assistance of CIP, CIMMYT and ICARDA. Intensive milk production and potato cropping are further production alternatives being evaluated.

The screening and testing of different forage species has enabled promising new varieties to be identified. Emphasis is being placed on "easy-care", low-input species. Forage research in the highlands now emphasises the use of legume pastures in the fallow areas. ILCA is participating in multi-location trials in Ethiopia to evaluate promising forages in the broader national context. Ethiopia is a rich but largely unexplored source of Trifolium species. In 1980 ILCA began collecting and assessing these legumes. Production trials indicate that four local species of Trifolium are particularly promising as ley pastures, and respond dramatically to modest rates of phosphorus fertilizer.

Research on improved animal traction has been intensified and expanded and an experiment to evaluate the short- and long-term effects of traction on milking cows has been established. Experimental work is also being undertaken on the use of crossbred oxen with improved implements to cultivate low-lying land presently unused because of seasonal waterlogging. These lands

are high in fertility and their use for cropping could provide a substantial increase in human food supplies.

An important feature of the highlands programme is the simultaneous and complementary nature of component research and farming systems research. The systems research has been at three levels: ongoing studies with a sample of farmers in the traditional system; studies with a sample of farmers who have, to different extents, used an improvement package devised by ILCA; and studies on research farms where more innovative enterprise combinations have been tested under ILCA management. The component research under way centres on forage legumes, animal traction, and the drainage and intensive use of valley bottom land. It is now also focussing greater attention on sheep improvement.

The work on forage agronomy has been intensified as a result of a special grant from the Swiss Development Corporation. Germplasm collection of indigenous legumes is being intensified. An animal traction trial, in cooperation with national research agencies, started in 1982 covering different soil types, using different implements and different breeds of oxen in several parts of the country. The work on valley bottom development using bed and furrow cultivation shows very promising results. Towards the higher elevations, the drainage problem is compounded by frost risks. Trials on early maturing and frost tolerant varieties are being intensified.

Systems level studies will continue to be an important activity and will progressively have an on-farm testing orientation. The Highlands Programme is now making important contributions to farming systems research (FSR) methodology and a document detailing the ILCA experience was published in 1983. The primary product of this work is an FSR model which can be applied by national agencies to mixed crop/livestock farming zones. ILCA's comparative advantage in these studies is its focus on the contribution of both crops and livestock to many smallholder agricultural systems.

Agreements are now being developed with research agencies in several other African highland countries to extend these research methods and results.

West African Livestock Systems

The Arid Zone. Dryland range research by ILCA in West Africa has been centred on Mali where the main objective of ILCA's work has been to develop productive range management techniques within the traditional grazing framework. This objective has involved a relatively heavy emphasis on socio-economic studies. In the agro-pastoral systems of the southern and higher rainfall zone of the Sahel, the objective is to improve the total food production of the millet/livestock farmer through improved livestock nutrition and improved animal traction techniques. Initial results are detailed in "Systems Research in the Arid Zones in Mali" (ILCA Research Report No. 5).

In the agro-pastoral system, protein deficiency in dry-season forage and grazing is a major factor limiting livestock output. Research focuses on the introduction of forage legumes to improve both the nitrogen status of crop lands and feed quality of crop residues for animals. Promising results have been obtained with cowpea (*Vigna* spp.). The effect of improved nutrition using cowpea supplements on the work output of oxen is being studied.

In the pastoral system, the high calf mortality (35%) found in the traditional systems is a major topic of investigation. An improved grazing management scheme for natural vegetation has been developed which requires the establishment of clearly defined social-territorial units. Methods to establish such pastoral units are being developed in close association with the Malian Government.

Baseline studies on the economic and social framework of the Mali delta are now complete. Component research work on calf nutrition and disease control is being continued. In the agro-pastoral system the germplasm base for annual forage legumes is being expanded both in Mali and in Niger, and work on the intercropping system of millet and legumes is being intensified. Current studies on the effect of improved nutrition using legumes on the traction efficiency of work oxen also continue; improved nutrition of oxen is particularly important for the timeliness of cultivation under the erratic rainfall conditions of the Sahel. The programme is assessing the role of forage legumes in improved agriculture and livestock husbandry in the higher rainfall areas of (800-1000 mm) the zone, partly under a joint ILCA/USAID/INRAZ special fund project which started in late 1983. Develop-

ment of land resources inventories and early warning systems based on satellite imagery are also under way.

For sheep and goats, disease is the major factor limiting output. Detailed diagnostic and epidemiological surveys are being intensified in conjunction with the Malian Central Veterinary Services Laboratory in Bamako.

The Subhumid Zone. The Subhumid Zone Programme seeks to provide improved technology for settled Fulani livestock owners, particularly to increase milk production and reduce neonatal mortality in a manner which requires a minimum of inputs.

Animal production studies centre on the role of legumes grown as an intercrop or in forage banks. Rapid progress is being achieved and both the intercrop and forage bank technology is being adopted. Key problems centre on varietal selection, utilization patterns and crop husbandry techniques.

In 1985 improvement in animal nutrition remains the central objective of the research work with emphasis on the strategic feeding of grazing legumes in pastoral areas.

The widespread land tenure conflicts between arable and cattle farmers in this zone, as well as the prevailing labour constraints on crop production, can be overcome by the integration of arable farming and livestock production. Research on intercropping grain and forage crops gives particular attention to the planting of millet and sorghum into existing Stylosanthes swards. This approach is based on traditional planting techniques of cereals, but in a manner which reduces labour requirements and thereby enables larger areas to be cultivated. This provides the exciting possibility of a major shift in land productivity through the integration of food and forage crops.

Another technique for overcoming labour constraints is the preparation of areas for forage legumes by cattle trampling. The pastoralists have neither the capital nor the expertise to use machinery; yet without machines the packed soils make poor seedbeds for legumes. Early maturing natural grasses also make formidable weeds. ILCA is intensifying current on-farm trials in which all land preparation and weed control is done by cattle

management, with the objective of using large areas of fallow land for Stylosanthes forage production.

To reduce neonatal mortality, a series of parasite control measures is being tested. Continuing baseline studies on animal production, health, nutrition economics and sociology are also being followed. The aerial survey group will continue to monitor the dynamics of herd and stock movements. Funds permitting, research will also commence on the reasons for sedentarization of the Fulani, as recommended by the QQR.

The Humid Zone. Over recent years the ILCA Humid Zone Programme has sought, successfully, to increase the productivity of village flocks of small ruminants and to integrate crop and livestock production on the fragile lateritic soils. Emphasis is now moving to the greater use of trypanotolerant cattle in the humid zone, for draught and for milk production.

Baseline surveys have highlighted disease problems in small ruminants as major production constraints. An evaluation of veterinary interventions to control these major health problems (consisting of a PPR vaccination programme using tissue culture rinderpest vaccine and monthly dipping to control sarcoptic mange and other ectoparasitic infestations) showed that mortality decreased by 75% and the number of animals weaned increased by 25%.

While the health package is the first step in improving the productivity of village animals, there is a clear need to develop fodder systems allowing more intensive forms of production. Considerable emphasis is now being placed on the browse species Leucaena leucocephala and Gliricidia sepium as dry-season supplements. When alley-cropped, these tree legumes serve also to sustain soil fertility during the crop phase. IITA now has 8 years' data on crop productivity in alley cropping systems and ILCA is working closely with IITA to integrate livestock into these systems.

The research programme can be divided as follows: animal health (including screening for specific diseases), forage agronomy (germplasm assessment, productivity and management of legumes, grasses and browse), nutrition (toxicity and mineral studies, digestibility and intake), animal and pasture management, and socio-economic studies (including farm management studies and economic evaluation of improvements).

The overall strategy is the systems approach which begins by examining the existing production systems, identifying constraints and providing solutions through experimental work. The effects of innovations are then monitored at farm level. The research work involves close collaboration with both IITA and national institutions. Throughout 1985 it is planned to continue the detailed animal productivity survey at the village level to understand better the biology of the dwarf breeds.

The initial success with the village health package is being followed in 1985 by detailed field trials in cooperation with the University of Ibadan and the Federal Livestock Department. The Federal Livestock Department has also provided special project funding to introduce the health package.

The forage agronomy work emphasises the screening and assessment of available browse species, particularly the carry-over of wet-season growth into the dry season. The nutritional work emphasizes mineral balance and toxicity problems.

In cooperation with IITA, a research programme is under way to study the effect of animals on soil fertility in the alley cropping system. The Federal Livestock Department is also supporting 60 on-farm development projects to test the joint alley cropping and livestock farming system.

INFORMATION SERVICES

Information services at headquarters are presently in three main sections, Documentation, Publications, and Audio-Visuals and Mapping. ILCA's documentation services seek to collect, process and disseminate information relevant to animal production in Africa, while the publications section provides publishing and printing services for the centre's research programmes and administrative departments. The Audio-Visuals and Mapping section was established in 1984 to design, prepare and supply high quality audio-visual material to promote ILCA's training, research and other activities.

Documentation

Documentation activities have steadily increased over the years, and a number of new services have been made possible by the centre's computer and printing facilities. There are three main areas of documentation activity at headquarters - the library, the information processing unit and the IDRC microfiche project.

The central library now contains over 50,000 items with well over half this collection devoted to non-conventional literature. As well as running the usual loan, circulation and exchange services, the library sends out microfiche photocopies of selected articles, and tables of contents of periodicals, free of charge to researchers throughout Africa. A question and answer service has been developed and bibliographical searches on specific topics are carried out on request, using the centre's computerized data base. The library also assists the training programme of ILCA by providing visiting trainees full access to its resources, and by running a small training programme of its own for apprentice librarians from third world countries.

Closely associated with the library, the information processing unit is responsible for indexing, abstracting and retrieving literature. The centre's data base now contains references and abstracts of 35,000 documentary items. All inputs are processed on ILCA's computer using IDRC's MINISIS software. The unit has developed a Manual of Document Analysis and the ILCA Thesaurus.

The Documentation Centre initiated in 1983 an SDI service based on regular searches of CAB and AGRIS abstract tapes for research workers throughout Africa. ILCA is one of the very few research units in the world providing this service to both its own staff and to research workers in national institutes. Monthly printouts of key abstracts selected for the specific research interest of each scientist are sent out free of charge. In a continent where library services are minimal this is quickly proving to be a most highly appreciated service.

A special project funded by IDRC is implemented by a two-man team responsible for building the centre's non-conventional collection of documents on microfiche. Since its inception in 1978, the team has visited 21 African countries to microfiche documents in the collections of national institutes.

Catalogues listing documents microfilmed in 17 countries have been published.

In 1985 documentation activities are being further intensified, with increasing emphasis on advertizing the facilities and services available in order to extend their use. The policy of exchange with other libraries is being continued. The computer is being increasingly used, not only in library administration, but also in the provision of on-line literature searches, and selected bibliographies. The selective dissemination of information (SDI) will be further extended.

Publications

ILCA's publishing and printing activities, centralized at headquarters, are independent of commercial printing facilities in Addis Ababa. Eleven Research Reports and three bibilographies have now been produced. Recent publishing ventures include two new network newsletters.

During 1984, the scope and appeal of the ILCA Bulletin were broadened by including a wider variety of articles in each issue and by redesigning the cover and text layout. ILCA's 1982 Annual Report won a prize for excellence under the Critique and Awards Program of the Agricultural Communicators in Education. The 1983 Annual Report was also widely acclaimed for both its content and design.

Also in 1984, the work of ILCA and the CGIAR was brought to the attention of a wider audience in both the developed and the developing world. ILCA's mailing list grew rapidly, from 3234 names in January 1984 to 4714 in December 1984.

Audio-Visuals and Mapping

The Audio-Visuals section was formed in August 1984; it became the Audio-Visuals and Mapping section at the end of the year. The section brings together photographic and cartographic staff who were previously working in different ILCA units.

The major aims of the section are to produce tape/slide presentations on ILCA's work for a variety of audiences, to produce visual aids for ILCA staff giving conference presentations, to provide audio-visual support to ILCA's training courses, and to provide photographic services.

In 1984 the section produced copies of tape/slide presentations on ILCA's work in general. Two English versions of the ILCA slide show are now available, complemented by one in French. The section is developing expertise in the production of computer graphics using an HP 150 microcomputer and plotter.

During 1985, the section will concentrate on producing visual aids for ILCA's expanded training programme, while continuing to develop tape/slide presentations and computer graphics.

TRAINING AND CONFERENCES

Through its training programme ILCA aims to increase the basic understanding of Africa's livestock production systems and to help African countries develop the expertise needed to improve their agricultural sectors. Following the QQR, emphasis is being given to short specific courses in areas of key importance in livestock production.

The primary recipient of ILCA training is the African research scientist, though attention is also given to the needs of planners, development staff, administrators and managers from Africa and elsewhere. Activities are of two kinds: individual and group training.

From the inception of the individual training programme in 1978 to early 1984, 70 awards have been made to scientists from 14 African countries. The scientists have been invited to work on specific research assignments in ILCA's field programmes or central research units under the supervision of ILCA scientists.

During 1985, ILCA has budgeted for 14 visiting scientists and/or postdoctorals at an estimated total cost of US$ 200,000. During 1985, it is also estimated that 10 research associate trainee fellowships will be awarded to younger or junior scientists at an estimated cost of US$ 100,000. The success of this individual training programme is highly dependent on the handling and supervisory capacity of field programmes, and the current intention is to increase the above intake rates in 1985 and 1986.

While most of the emphasis is placed on training non-ILCA staff, an increasing number of ILCA (particularly local) staff are being supported in a variety of staff-training exercises.

FINANCE, ADMINISTRATION AND GENERAL OPERATIONS

In the last two years there has been a reorganisation of the ILCA Administration; the major features of which were:

- The abolishment of the position of Director of Finance and Administration.
- Finance and Administration was split into two departments, both reporting to the Director of Operations.
- The Finance department includes Accounts, Budget and Data Processing sections.
- The Administration department includes Personnel, Warden, Maintenance and General Service sections.
- The country programmes have been decentralised and all country programme administrative positions are now held by local national staff.
- Much greater computerization of all activities has been undertaken.
- Management consultants were recruited in 1984 to review all management procedures.

Based on this experience several further changes are planned for 1985 and 1986. These include

a) Strengthening computing facilities in the Finance department to cope with the increasing accounting task and to provide better budgetary control.

b) Strengthening computing in General Operations to control construction programmes, maintenance and transport.

c) Strengthening the internal audit group.

d) Computerization of all personnel records.

Appendix Table 2.1

OFFICE OF THE DIRECTOR OF RESEARCH
CORE RESOURCES - DIRECTOR OF RESEARCH

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Director of Research	1.0	1.0	1.0	1.0	-	-	-	-	1.0	1.0	1.0	1.0
Total	1.0	1.0	1.0	1.0	-	-	-	-	1.0	1.0	1.0	1.0

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	119	140	125	125
Supplies and Services	15	10	10	10
Travel	13	20	20	20
Equipment Replacement	-	-	-	-
Total	147	170	155	155
Price Increase	-	-	14	28
Grand Total	147	170	169	183

Appendix Table 2.2

CENTRAL SCIENTIFIC UNITS
CORE RESOURCES - BASIC ANIMAL SCIENCES

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Animal Genetics	1.0	1.0	1.0	1.0	-	-	-	-	-	-	-	-
Animal Nutrition	1.0	1.0	1.0	1.0	-	-	-	-	-	-	-	-
Animal Physiology	-	-	1.0	1.0	-	-	1.0	1.0	-	-	-	-
Small Ruminants & Camel Group	1.0	0.6*	1.0	1.0	-	-	-	-	0.1	2.0	2.0	2.0
Animal Health	0.2	0.5	0.5	0.5	-	-	-	-	-	-	1.0	1.0
Reproduction & Fertility	-	0.5	1.0	1.0	-	1.0	2.0	2.0	0.2	7.0	9.0	9.0
Total	3.2	3.6	5.5	5.5	-	1.0	3.0	3.0	0.3	9.0	12.0	12.0

* Partially funded by special funding.

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	310	374	623	623
Supplies and Services	84	286	352	350
Travel	25	50	65	65
Equipment Replacement	-	-	-	-
Total	419	710	1040	1038
Price Increase	-	-	94	187
Grand Total	419	710	1134	1225

Appendix Table 2.3

CENTRAL SCIENTIFIC UNITS
CORE RESOURCES - LEGUME AGRONOMY

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Forage Agronomy	1.0	1.0	1.0	1.0	-	-	-	-	3.0	4.0	4.0	4.0
Ecology	1.0	1.0	1.0	1.0	-	-	-	-	4.0	4.0	4.0	4.0
Plant Introduction	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	4.0	2.8	4.0	4.0
Plant Nutrition/Soils	-	-	-	-	-	-	-	1.0	-	-	3.0	4.0
Total	2.0	3.0	3.0	3.0	1.0	1.0	1.0	2.0	11.0	10.8	15.0	16.0

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1937
Personnel	264	280	348	383
Supplies and Services	160	200	162	170
Travel	29	33	35	40
Equipment Replacement	5	7	5	10
Total	458	520	550	603
Price Increase	-	-	50	109
Grand Total	458	520	600	712

Appendix Table 2.4

CENTRAL SCIENTIFIC UNITS
CORE RESOURCES - ANIMAL TRACTION

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Animal Science	-	-	1.0	1.0	-	-	-	-	-	-	1.0	1.0
Crop Agronomy	-	-	-	-	-	-	-	-	-	-	1.0	1.0
Soil Physics	-	-	-	-	-	-	-	1.0	-	-	1.0	1.0
Total	-	-	1.0	1.0	-	-	-	1.0	-	-	3.0	3.0

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	-	-	77	102
Supplies and Services	-	30	35	40
Travel	-	-	5	10
Equipment Replacement	-	-	-	-
Total	-	30	117	152
Price Increase	-	-	11	27
Grand Total	-	30	128	179

Appendix Table 2.5

CENTRAL SCIENTIFIC UNITS
CORE RESOURCES - ECONOMICS UNIT

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Agricultural Economy	2.7+	2.7+	2.7+	2.7+	-	0.8	2.0	2.0	1.5	2.0	2.0	2.0
Systems Research	0.5	1.0	1.0	1.0	-	1.0	1.0	1.0	-	0.8	1.0	1.0
Total	3.2	3.7	3.7	3.7	-	1.8	3.0	3.0	1.5	2.8	3.0	3.0

+ Includes one local recruitment.

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	240	250	297	297
Supplies and Services	(9)	80	75	80
Travel	28	40	50	50
Equipment Replacement	3	1	-	-
Total	262	371	422	427
Price Increases	-	-	38	77
Grand Total	262	371	460	504

Appendix Table 2.6

CENTRAL SCIENTIFIC UNITS
CORE RESOURCES - TRYPANOTOLERANCE*

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Animal Nutrition *	*	*	*	*	-	-	-	-	-	-	-	-
Agricultural Economy	1.5	1.0	1.0	1.0	0.4	1.0	1.0	1.0	2.5	4.0	4.0	4.0
Animal Science*	-	-	-	1.0	2.0	2.0	2.0	2.0	-	2.0	2.0	2.0
Administration**	0.4+	0.4+	0.4+	0.4+	-	-	-	-	5.6	5.6	6.2	6.2
Total	1.9	1.4	1.4	2.4	2.4	3.0	3.0	3.0	8.1	11.6	12.2	12.2

* Partially funded by special funding.
** Administrative costs shared between Trypanotolerance (40%) and Rangelands-Kenya (60%).
\+ Local recruitment.

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	166	190	200	265
Supplies and Services	202	230	270	280
Travel	43	40	50	50
Equipment Replacement	5	20	20	20
Total	416	480	540	615
Price Increases	-	-	49	111
Grand Total	416	480	589	726

Appendix Table 2.7

EAST AFRICAN RANGE LIVESTOCK SYSTEMS
CORE RESOURCES - HQ RANGE RESEARCH*

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Ecology	1.5**	2.0	2.0	2.0	2.5**	3.0	3.0	3.0	0.5**	1.0	1.0	1.0
Animal Nutrition	-	-	-	-	1.0	1.0	1.0	1.0	0.5**	1.0	1.0	1.0
Sociology	1.0	1.0	1.0	1.0	-	-	-	-	1.0	2.0	2.0	2.0
Animal Science	-	-	-	-	1.2**	2.0	2.0	2.0	1.0	1.3	2.0	2.0
Total	2.5	3.0	3.0	3.0	4.7	6.0	6.0	6.0	3.0	5.3	6.0	6.0

* HQ Range Research includes Ethiopian Rangelands and Range Science Unit.
** Partially funded by special funding.

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	456	465	489	489
Supplies and Services	(36)	175	210	210
Travel	36	40	41	40
Equipment Replacement	-	15	16	10
Total	456	695	756	749
Price Increase	-	-	68	135
Grand Total	456	695	824	884

Appendix Table 2.8

HIGHLAND ZONE
CORE RESOURCES - ETHIOPIA

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Agricultural Economy	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	6.0	12.0	12.0	12.0
Forage Agronomy	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	12.0	13.0	13.0	13.0
Sociology	*	-	-	-	-	-	-	-	1.0	-	-	-
Animal Science	1.0+	1.0+	-	-	2.0	3.0	2.0	2.0	7.0	7.0	8.0	8.0
Soil Science	1.0	1.0	1.0	1.0	-	-	-	-	5.0	6.0	6.0	6.0
Dairy Technology	1.0	1.0	1.0	1.0	-	-	-	-	1.0	1.0	1.0	1.0
Total	5.0	5.0	4.0	4.0	4.0	5.0	5.0	5.0	32.0	39.0	40.0	40.0

* Partially funded by special funding.
\+ Local recruitment.

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	568	590	630	630
Supplies and Services	492	300	330	330
Travel	52	35	35	35
Equipment Replacement	26	25	30	30
Total	1138	950	1025	1025
Price Increases	-	-	92	185
Grand Total	1138	950	1117	1210

Appendix Table 2.9

CENTRAL SUPPORT SERVICES
CORE RESOURCES - HQ FARM & GROUNDS

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Animal Science	1.0+	1.0+	1.0+	1.0+	-	-	-	-	10.8	11.0	11.0	11.0
Total	1.0	1.0	1.0	1.0	-	-	-	-	10.8	11.0	11.0	11.0

+ Local recruitment.

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	64	60	60	60
Supplies and Services	57	83	85	85
Travel	10	1	1	1
Equipment Replacement	-	1	4	10
Total	131	145	150	156
Price Increase	-	-	13	28
Grand Total	131	145	163	184

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Appendix Table 2.10

CENTRAL SUPPORT SERVICES
CORE RESOURCES - HQ LABORATORY

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Animal Nutrition	1.0	1.0	2.0	2.0	1.8	2.3	3.0	3.0	18.0	21.0	22.0	22.0
Total	1.0	1.0	2.0	2.0	1.8	2.3	3.0	3.0	18.0	21.0	22.0	22.0

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	243	255	310	310
Supplies and Services	130	150	160	160
Travel	33	25	30	30
Equipment Replacement	8	5	10	10
Total	414	435	510	510
Price Increase	-	-	46	92
Grand Total	414	435	556	602

Appendix Table 2.11

CENTRAL SUPPORT UNITS
CORE RESOURCES - BIOMETRICS/COMPUTER UNIT

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Management	1.0	1.0	1.0	1.0	-	-	-	-	4.0	4.0	4.0	4.0
Scientific Programmer	1.0	1.0	1.0	1.0	-	1.0	1.0	1.0	1.6	2.0	2.0	2.0
Biometrician	1.0	1.0	1.0	1.0	-	-	-	-	2.0	2.0	2.0	2.0
Admin. Programmer	-	-	-	-	1.0	1.0	1.0	1.0	-	-	-	-
Systems Engineer	-	-	-	1.0	-	-	-	-	-	-	-	-
Total	3.0	3.0	3.0	4.0	1.0	2.0	2.0	2.0	7.6	8.0	8.0	8.0

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	295	290	320	380
Supplies and Services	93	125	130	130
Travel	22	15	20	20
Equipment Replacement	185	10	30	30
Total	595	440	500	560
Price Increase	-	-	45	101
Grand Total	595	440	545	661

Appendix Table 2.12

CENTRAL SUPPORT SERVICES
CORE RESOURCES - AERIAL SURVEY

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Cartography *	-	-	-	-	1.0	-	-	-	2.0	-	-	-
Remote Sensing	-	-	1.0	1.0	-	-	1.0	1.0	-	-	1.0	1.0
Pilot	1.0	1.0	1.0	1.0	-	-	-	-	-	-	-	-
Total	1.0	1.0	2.0	2.0	1.0	-	1.0	1.0	2.0	-	1.0	1.0

* Cartography Unit transferred to Audio-Visuals and Mapping Section (Information Services) effective 1985.

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	122	67	150	150
Supplies and Services	154	100	100	100
Travel	8	10	10	10
Equipment Replacement	-	10	10	10
Total	284	187	270	270
Price Increase	-	-	24	49
Grand Total	284	187	294	319

Appendix Table 2.13

ARID ZONES RESEARCH IN WEST AFRICA
CORE RESOURCES - MALI

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Animal Science	-	0.7	1.0	1.0	2.5	2.0	2.0	2.0	10.0	10.0	10.0	10.0
Ecology	1.5	1.0	1.0	1.0	2.0	2.0	2.0	2.0	10.0	10.0	10.0	10.0
Forage Agronomy	*	*	*	*	1.0	1.0	1.0	1.0	5.0	10.0	10.0	10.0
Animal Nutrition	-	-	-	-	0.3	-	-	-	10.0	10.0	10.0	10.0
Sociology	-	-	-	-	2.0	2.0	2.0	2.0	15.0	9.0	10.0	10.0
Agricultural Economy	*	*	*	*	-	-	-	-	-	-	-	-
Human Nutrition	-	-	-	-	*	-	-	-	1.0	-	1.0	1.0
Administration *	0.5+	0.5+	0.5+	1.0+	*	*	*	1.0	33.0	30.0	33.0	33.0
Total	2.0	2.2	2.5	3.0	7.8	7.0	7.0	8.0	84.0	79.0	84.0	84.0

* Partially funded by special funding.
\+ Local recruitment.

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	308	330	350	375
Supplies and Services	232	230	240	240
Travel	36	30	35	35
Equipment Replacement	9	20	20	20
Total	585	610	645	670
Price Increase	-	-	58	121
Grand Total	585	610	703	791

Appendix Table 2.14

ARID ZONES RESEARCH IN WEST AFRICA
CORE RESOURCES - NIGER

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Animal Nutrition	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	4.0
Forage Agronomy	-	-	-	-	-	-	-	-	-	-	-	1.0
Total	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	56	79	79	79
Supplies and Services	44	21	20	20
Travel	2	5	5	5
Equipment Replacement	4	-	-	5
Total	106	105	104	109
Price Increase	-	-	9	20
Grand Total	106	105	113	129

Appendix Table 2.15

EAST AFRICAN RANGE LIVESTOCK SYSTEMS
CORE RESOURCES - KENYA

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Agricultural Economy	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	3.0	2.0	2.0	2.0
Ecology	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	3.0	3.0	3.0	3.0
Animal Science	-	-	-	-	1.0	1.0	1.0	1.0	5.0	4.0	4.0	4.0
Sociology	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0
Administration *	0.6+	0.6+	0.6+	0.6+	-	-	-	-	6.4	6.9	6.9	6.9
Total	3.6	3.6	3.6	3.6	4.0	4.0	4.0	4.0	19.4	17.9	17.9	17.9

* Administrative costs shared between Rangelands-Kenya (60%) and Trypanotolerance (40%).
\+ Local recruitment.

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	394	350	353	353
Supplies and Services	90	140	140	140
Travel	38	20	20	20
Equipment Replacement	9	5	5	5
Total	531	515	518	518
Price Increase	-	-	47	93
Grand Total	531	515	565	611

EAST AFRICAN RANGE LIVESTOCK SYSTEMS
CORE RESOURCES - BOTSWANA*

Appendix Table 2.16

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Ecology	-	-	-	-	-	-	-	-	-	-	-	-
Administration	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-	-	-

* Continued co-operation with Botswana research institutions through an ILCA consultant.

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	-	-	-	-
Supplies and Services	41	20	20	20
Travel	-	-	-	-
Equipment Replacement	-	-	-	-
Total	41	20	20	20
Price Increase	-	-	2	4
Grand Total	41	20	22	24

SUBHUMID ZONE
CORE RESOURCES - KADUNA

Appendix Table 2.17

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Agricultural Economy	1.0	1.0	1.0	1.0	-	-	-	-	3.0	4.0	4.0	4.0
Forage Agronomy	1.0	1.0	1.0	1.0	0.5	-	-	-	4.0	8.0	8.0	8.0
Animal Science	-	-	-	-	1.0	-	-	-	2.0	5.0	5.0	5.0
Animal Nutrition	1.0	-	-	-	-	-	-	-	4.0	4.0	4.0	4.0
Ecology	1.0+	1.0+	1.0+	1.0+	-	-	-	-	-	-	-	-
Veterinary	-	1.0	1.0	1.0	1.0	-	-	-	3.0	3.0	3.0	3.0
Administration	-	-	-	-	-	-	-	-	13.0	13.0	13.0	13.0
Total	4.0	4.0	4.0	4.0	2.5	-	-	-	29.0	37.0	37.0	37.0

+ Local recruitment.

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	627	460	460	460
Supplies and Services	242	280	290	290
Travel	45	25	30	30
Equipment Replacement	8	5	5	10
Total	922	770	785	790
Price Increase	-	-	71	142
Grand Total	922	770	856	932

Appendix Table 2.18

HUMID ZONE
CORE RESOURCES - IBADAN

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Animal Science	-	1.0	1.0	1.0	-	-	-	-	4.0	4.0	4.0	4.0
Forage Agronomy	-	-	-	-	1.0	-	-	-	8.0	8.0	8.0	8.0
Socio-Economics	1.0	-	-	-	-	-	-	-	4.0	4.0	4.0	4.0
Veterinary	1.0+	1.0+	1.0+	1.0+	1.0	-	-	-	4.0	4.0	4.0	4.0
Animal Nutrition	-	-	-	-	-	-	-	-	4.0	4.0	4.0	4.0
Agricultural Economy *	-	-	-	-	*	1.0	1.0	1.0	4.0	4.0	4.0	4.0
Administration	-	-	-	-	-	-	1.0	1.0	12.0	12.0	12.0	12.0
Total	2.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0	40.0	40.0	40.0	40.0

* Partially funded by special funding
\+ Local recruitment.

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	384	440	455	455
Supplies and Services	147	150	150	150
Travel	35	30	30	30
Equipment Replacement	1	18	10	10
Total	567	638	645	645
Price Increase	-	-	58	116
Grand Total	567	638	703	761

Appendix Table 2.19

INFORMATION SERVICES
CORE RESOURCES - INFORMATION SERVICES (SUMMARY)

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Director of Information Services	0.3	0.3	0.3	0.3	-	-	-	-	1.0	1.0	1.0	1.0
Head of Publication Services	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	4.0	3.0	3.0	3.0
Head of Documentation Services	-	1.0	1.0	1.0	1.0	-	-	-	1.0	1.0	1.0	1.0
Editing/Translation	0.5	0.5	0.5	0.5	1.8	3.5	4.0	4.0	1.3	3.0	3.0	3.0
Library	-	-	-	-	1.0	1.0	1.0	1.0	9.0	9.0	9.0	9.0
Inform. Processing	-	-	-	-	-	1.0	1.0	1.0	7.0	6.0	6.0	6.0
Layout	-	-	-	-	1.0	1.5	2.0	2.0	6.0	5.5	6.0	6.0
Printing Shop	-	-	-	-	-	-	-	-	8.0	9.0	9.0	9.0
Audio Visuals & Mapping	0.5	0.5	0.5	0.5	-	1.0	1.0	1.0	-	6.5	7.0	7.0
Total	2.3	3.3	3.3	3.3	5.8	9.0	10.0	10.0	37.3	44.0	45.0	45.0

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	643	663	758	758
Supplies and Services	385	378	386	386
Travel	39	34	44	44
Equipment Replacement	17	16	20	20
Total	1084	1091	1208	1208
Price Increase	-	-	108	217
Grand Total	1084	1091	1316	1425

Appendix Table 2.19 (a)
(Supporting Table)

INFORMATION SERVICES
CORE RESOURCES - PUBLICATIONS

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Head of Publication Services	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	4.0	3.0	3.0	3.0
Editing/Translation	0.5*	0.5*	0.5*	0.5*	1.8	3.5	4.0	4.0	1.3	3.0	3.0	3.0
Layout	-	-	-	-	1.0	1.5	2.0	2.0	6.0	5.5	6.0	6.0
Printing Shop	-	-	-	-	-	-	-	-	8.0	9.0	9.0	9.0
Total	1.5	1.5	1.5	1.5	3.8	6.0	7.0	7.0	19.3	20.5	21.0	21.0

* Senior Editor/Science Writer's "MY" shared equally between Publications and Audio-Visuals.

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	400	380	440	440
Supplies and Services	210	200	200	200
Travel	2	5	10	10
Equipment Replacement	17	8	10	10
Total	629	593	660	660
Price Increase	-	-	59	119
Grand Total	629	593	719	779

Appendix Table 2.19 (b)
(Supporting Table)

INFORMATION SERVICES
CORE RESOURCES - DOCUMENTATION

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Head of Documentation Services	-	1.0	1.0	1.0	1.0	-	-	-	1.0	1.0	1.0	1.0
Library	-	-	-	-	1.0	1.0	1.0	1.0	9.0	9.0	9.0	9.0
Inform. Processing	-	-	-	-	-	1.0	1.0	1.0	7.0	6.0	6.0	6.0
Total	-	1.0	1.0	1.0	2.0	2.0	2.0	2.0	17.0	16.0	16.0	16.0

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	174	153	183	183
Supplies and Services	128	147	150	150
Travel	35	15	20	20
Equipment Replacement	-	5	5	5
Total	337	320	358	358
Price Increase	-	-	32	64
Grand Total	337	320	390	422

Appendix Table 2.19 (c)
(Supporting Table)

INFORMATION SERVICES
CORE RESOURCES - AUDIO-VISUALS & MAPPING

Position	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Audio-Visuals	0.5*	0.5*	0.5*	0.5*	-	-	-	-	-	5.0	5.0	5.0
Mapping	-	-	-	-	-	1.0	1.0	1.0	-	1.5	2.0	2.0
Total	0.5	0.5	0.5	0.5	-	1.0	1.0	1.0	-	6.5	7.0	7.0

* Senior Audio-Visuals "MY" shared equally between Audio-Visuals and Publications (Senior Editor/Sciences Writer).

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	25	90	95	95
Supplies and Services	41	30	35	35
Travel	2	10	10	10
Equipment Replacement	-	3	5	5
Total	68	133	145	145
Price Increase	-	-	13	26
Grand Total	68	133	158	171

Appendix Table 2.20

INTERNATIONAL LIAISON
CORE RESOURCES - INTERNATIONAL LIAISON

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
International Liaison	1.0	1.0	1.0	1.0	3.0	3.0	3.0	3.0	4.0	4.5	4.0	4.0
Liaison	1.0+	1.0+	2.0+	2.0+								
Total	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.5	4.0	4.0

+ Local recruitment.

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	247	225	246	246
Supplies and Services	12	10	10	10
Travel	13	29	40	40
Equipment Replacement	-	1	-	-
Total	272	265	296	296
Price Increase	-	-	27	53
Grand Total	272	265	323	349

Appendix Table 2.21

TRAINING
CORE RESOURCES - TRAINING

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Training & Conferences	0.2	0.5	0.5	0.5	1.0	1.0	1.0	1.0	3.8	5.0	5.0	5.0
Total	0.2	0.5	0.5	0.5	1.0	1.0	1.0	1.0	3.8	5.0	5.0	5.0

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	326	130	130	130
Supplies and Services	314	775	900	900
Travel	6	20	20	20
Equipment Replacement	3	15	15	15
Total	649	940	1065	1065
Price Increase	-	-	96	192
Grand Total	649	940	1161	1257

Appendix Table 2.22

BOARD AND MANAGEMENT
CORE RESOURCES - BOARD AND MANAGEMENT (SUMMARY)

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Director General	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	-	0.3	1.0	1.0
Assistant to D.G.	1.0	1.0	1.0	1.0	-	-	-	-	-	-	-	-
Internal Audit Unit	0.5+	0.5+	0.5+	0.5+	-	-	-	-	1.8	2.0	2.0	2.0
Total	2.5	2.5	2.5	2.5	1.0	1.0	1.0	1.0	1.8	2.3	3.0	3.0

+ Local recruitment.

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	256	235	240	240
Supplies and Services	199	128	118	118
Travel	111	130	130	130
Equipment Replacement	3	10	5	-
Total	569	503	493	488
Price Increase	-	-	45	88
Grand Total	569	503	538	576

Appendix Table 2.22 (a)
(Supporting Table)

BOARD AND MANAGEMENT
CORE RESOURCES - BOARD

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-	-	-

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	1	-	-	-
Supplies and Services	163	65	65	65
Travel	62	65	65	65
Equipment Replacement	-	-	-	-
Total	226	130	130	130
Price Increase	-	-	12	23
Grand Total	226	130	142	153

Appendix Table 2.22 (b)
(Supporting Table)

BOARD AND MANAGEMENT
CORE RESOURCES - MANAGEMENT

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Director General	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	-	0.3	1.0	1.0
Assistant to D.G.	1.0	1.0	1.0	1.0	-	-	-	-	-	-	-	-
Internal Audit Unit	0.5+	0.5+	0.5+	0.5+	-	-	-	-	1.8	2.0	2.0	2.0
Total	2.5	2.5	2.5	2.5	1.0	1.0	1.0	1.0	1.8	2.3	3.0	3.0

+ Local recruitment.

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	223	235	240	240
Supplies and Services	35	63	53	53
Travel	37	65	65	65
Equipment Replacement	3	10	5	-
Total	298	373	363	358
Price Increase	-	-	33	65
Grand Total	298	373	396	423

Appendix Table 2.23

OFFICE OF DIRECTOR OF OPERATIONS
CORE RESOURCES - DIRECTOR OF OPERATIONS

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Director of Operations	-	1.0	1.0	1.0	-	-	-	-	-	1.0	1.0	1.0
Total	-	1.0	1.0	1.0	-	-	-	-	-	1.0	1.0	1.0

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	-	80	89	90
Supplies and Services	-	10	10	10
Travel	-	20	20	20
Equipment Replacement	-	-	-	-
Total	-	110	119	120
Price Increase	-	-	11	22
Grand Total	-	110	130	142

Appendix Table 2.24

FINANCE
CORE RESOURCES - FINANCE

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Financial Controller	1.0	1.0	1.0	1.0	-	-	-	-	1.0	1.0	1.0	1.0
Accounts & E.D.P.	-	-	-	-	3.0	3.0	3.0	3.0	7.8	11.0	11.0	12.0
Budget Officer	0.5+	0.5+	0.5+	0.5+	-	-	-	-	-	-	-	-
Total	1.5	1.5	1.5	1.5	3.0	3.0	3.0	3.0	8.8	12.0	12.0	13.0

+ Local recruitment.

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	260	210	282	290
Supplies and Services	(117)	13	33	33
Travel	18	25	25	25
Equipment Replacement	-	2	2	3
Total	161	250	342	351
Price Increase	-	-	31	63
Grand Total	161	250	373	414

Appendix Table 2.25

HQ ADMINISTRATION
CORE RESOURCES - ADMINISTRATION DEPARTMENT (HQ)

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Office of Department Head	1.0	1.0	1.0	1.0	-	0.5	1.0	1.0	1.0	1.0	1.0	1.0
Personnel	-	-	-	-	1.0	1.8	2.0	2.0	3.5	4.3	5.0	5.0
Office Services*	-	-	-	-	1.0	1.0	1.0	1.0	9.0	15.0	15.0	15.0
Clinic	-	-	-	-	-	-	-	-	4.0	4.0	4.0	4.0
Total	1.0	1.0	1.0	1.0	2.0	3.3	4.0	4.0	17.5	24.3	25.0	25.0

* Includes Registry & Communications.

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	212	210	283	283
Supplies and Services	204	200	160	160
Travel	15	20	20	20
Equipment Replacement	-	5	10	10
Total	431	435	473	473
Price Increase	-	-	43	85
Grand Total	431	435	516	558

Appendix Table 2.26

GENERAL OPERATING & MAINTENANCE EXPENSES
CORE RESOURCES - HQ GENERAL OPERATIONS & MAINTENANCE (SUMMARY)*

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
General Services Officer	-	-	-	-	1.0	1.0	1.0	1.0	-	-	-	-
Purchases & Stores (G.S.)	-	-	-	-	1.0	1.0	1.0	1.0	6.5	9.0	9.0	9.0
Transport (G.S.)	-	-	-	-	-	-	-	-	18.0	24.0	24.0	24.0
Security (G.S)	-	-	-	-	-	-	-	-	26.0	32.0	32.0	32.0
Warden (Hostel & Catering)	1.0	1.0	1.0	1.0	1.0	1.5	2.0	2.0	50.0	55.0	55.0	55.0
General Maintenance	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	10.0	15.8	17.0	17.0
Total	2.0	2.0	2.0	2.0	4.0	4.5	5.0	5.0	110.5	135.8	137.0	137.0

* Includes General Services, Warden and General Maintenance.

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	605	644	684	684
Supplies and Services	537	340	345	355
Travel	6	11	9	9
Equipment Replacement	24	20	65	65
Total	1172	1015	1103	1113
Price Increase	-	-	99	201
Grand Total	1172	1015	1202	1314

Appendix Table 2.26 (a)
(Supporting Table)

GENERAL OPERATING EXPENSES
CORE RESOURCES - GENERAL SERVICES

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
General Services Officer	-	-	-	-	1.0	1.0	1.0	1.0	-	-	-	-
Purchases and Stores	-	-	-	-	1.0	1.0	1.0	1.0	6.5	9.0	9.0	9.0
Transport	-	-	-	-	-	-	-	-	18.0	24.0	24.0	24.0
Security	-	-	-	-	-	-	-	-	26.[illegible]	32.0	32.0	32.0
Total	-	-	-	-	2.0	2.0	2.0	2.0	50.5	65.0	65.0	65.0

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	291	290	300	300
Supplies and Services	373	210	250	250
Travel	4	10	3	3
Equipment Replacement	20	5	30	30
Total	688	515	583	583
Price Increase	-	-	52	105
Grand Total	688	515	635	688

Appendix Table 2.26 (b)
(Supporting Table)

GENERAL OPERATING EXPENSES
CORE RESOURCES - WARDEN

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Warden	1.0	1.0	1.0	1.0	-	0.5	1.0	1.0	1.0	1.0	1.0	1.0
Hostel and Catering	-	-	-	-	1.0	1.0	1.0	1.0	49.0	54.0	54.0	54.0
Total	1.0	1.0	1.0	1.0	1.0	1.5	2.0	2.0	50.0	55.0	55.0	55.0

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	184	200	220	220
Supplies and Services	88	30	20	30
Travel	1	-	3	3
Equipment Replacement	3	10	30	30
Total	276	240	273	283
Price Increase	-	-	25	51
Grand Total	276	240	298	334

Appendix Table 2.26 (c)
(Supporting Table)

GENERAL OPERATING EXPENSES
CORE RESOURCES - HQ MAINTENANCE

Positions	Manyears											
	Group I				Group II				Group III			
	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87	Act 84	Bud 85	Bud 86	Bud 87
Supervisor (Engineer)	1.0	1.0	1.0	1.0	-	-	-	-	-	-	-	-
General Maintenance	-	-	-	-	1.0	1.0	1.0	1.0	10.0	15.8	17.0	17.0
Total	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	10.0	15.8	17.0	17.0

OPERATING COSTS (IN US$'000)

Item	Actual 1984	Budget 1985	Budget 1986 (Requested)	Budget 1987
Personnel	130	154	164	164
Supplies and Services	76	100	75	75
Travel	1	1	3	3
Equipment Replacement	1	5	5	5
Total	208	260	247	247
Price Increase	-	-	22	45
Grand Total	208	260	269	292