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INTERNATIONAL LIVESTOCK CENTRE
FOR AFRICA (ILCA)

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PROGRAMME AND BUDGET
1985

August 1984

ILCA

PROGRAMME OF WORK AND BUDGET

1985

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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. The technical base for improving livestock production in Africa has proved to be less extensive than was perceived when ILCA was established just a few years ago. In consequence, ILCA has recently placed greater emphasis on its research responsibilities, seeking particularly to understand better how key changes in vital parts of livestock production systems, such as taking steps to improve pasture quality and dry-season nutrition, might improve the productivity and efficiency of the relevant farming system as a whole. The main research task at ILCA lies in identifying the key constraints in the production systems with which ILCA works, and finding ways to modify these constraints.

The training of African research scientists, the provision of a continent-wide documentation service, and supporting national research efforts are further major 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, with emphasis on short courses in areas of key importance. While the primary focus is on training 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services unique in sub-Saharan Africa - a comprehensive library in the livestock field, a microfiche service based on unpublished literature from national research organizations and a computerized information storage and retrieval system from which ILCA provides literature searches and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 support 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 is supported and sponsored by the CGIAR. ILCA's activities are based on the premise that the food output of Africa is the major determinant of economic growth, and that an inadequate increase in livestock and crop output in most African countries in recent years is a key reason for the unsatisfactory rate of economic growth in these countries.

The annual growth rates in sub-Saharan Africa's agricultural output over the period 1970-1980 may be summarized as follows:

Cereals	1.2%
Meat	1.8%
Milk	1.3%
Human population	2.9%

The decline in food availability per caput associated with these inadequate production figures, and a population increase of about 2.8% p.a., has been offset by a marked rise in imports of both cereal and livestock products. 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 role of livestock in stimulating economic growth is based on the potential livestock provides for generating large and sustained increases in the cash income of subsistence farmers. Such increases enable these farmers to purchase the agricultural inputs needed for increases in 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.

THE CURRENT STAGE OF DEVELOPMENT

When the case for establishing ILCA was first considered in the early 1970s, the lag in agricultural and livestock development was thought to be due primarily to a failure to make effective use of available technology. The lack of an appropriate technology was not itself seen as a major barrier to livestock development and very large sums were spent by development agencies on livestock development projects in sub-Saharan Africa. The results have been disappointing. The two major donors concerned are agreed that livestock development in Africa requires a much stronger knowledge of the production systems they seek to improve. As Eicher and Baker noted in 1982 "Research on the behaviour of livestock herders in Africa is about at the same point where research on the economics of crop production was some 20 years ago ... many assertions and a sparse supply of facts."

What is missing is not only the facts but also the methodology of how best to obtain those facts. ILCA has sought to tackle both tasks, recognizing that the site specificity of most problems requires the development, and transfer to national researchers, of simple techniques of constraint identification and amelioration.

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.

During 1983 and 1984 this balance has been modified; HQ staff and facilities were strengthened and the core funding of field sites reduced. The benefits of a strengthened HQ operation are very evident, as are the non-financial costs of reduced field activities. The balance of ILCA's core

operating expenditure over the last three years is summarized in the following table:

	1981	1982	1983	1984*
Field Research	3.5	3.0	3.1	3.1
Central Research	2.2	2.4	3.5	4.2
Info. & Training	1.3	1.0	1.6	1.8
Board and Management	0.6	0.6	0.4	0.5
General Operations	1.4	1.2	1.5	1.9

* Projected

Three conclusions emerge from an analysis of expenditure trends: ILCA has significantly raised expenditure at HQ in compliance with the QQR/TAC directive to strengthen HQ research capability; core budget expenditures in field programmes have been reduced; and international staff salaries as well as Board and Management costs show a significant decline as a proportion of total costs.

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

The issue of the balance between HQ an field operations is 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 has yet to attain 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 hostel 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 1983

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 now pinpointing appropriate legumes for incorporation into prevalent farming systems.

In the semi-arid zone cowpea - millet intercropping greatly enhances the value of cereal crop residues and increases total crop yields. In the sub-humid zone fodder banks of Stylosanthes spp. are proving an excellent dry season feed resource. In the humid areas alley cropping with Gliricidia and Leucaena spp. grown in rows across cereal fields is most promising. In the highlands annual native Trifolium spp. sown with very small amounts of phosphate are greatly increasing forage yields on crop fallows. In all systems biological nitrogen fixation appears to be of the order of 40 - 100 kg N/ha with significant effects on subsequent crop yields.

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 de-

veloping 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.

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 capable of widespread applicability and adoption.

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.

ILCA's network activities in trypanotolerance, animal nutrition, forage production and documentation have expanded greatly in 1983 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, are now quite clear, as are the large differences in breed productivity in areas of differing trypanosomiasis challenge and other environmental stresses. Very large productivity differences among grazing cattle and sheep herded in communal areas are also apparent.

The aerial survey team has developed a rapid resource inventory technique for development planning. This three-phased interlinked approach comprises remote sensing, followed by aerial surveys and complemented by socio-economic investigations on the ground. 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.

The use of ground interpretation of satellite imagery at ILCA increased markedly in 1983 and a strong ILCA-NAASA collaborative programme focusing on the development of early warning systems for drought has now been started. A new computer programme which assesses and specifies areas of overlapping ecological characteristics was also developed.

ILCA's new Livestock Policy Unit began operations in 1983. Three major studies initiated during the year focused on the financing of livestock services in Africa, the identification of factors influencing the performance of the livestock sector and the effects of imports of dairy commodities on domestic consumption, production and welfare.

Initial 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 .e 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.

THE 1983 BUDGET EXPERIENCE

Underfunding of CGIAR-approved budgets has been a continuing problem at ILCA since 1980, although to a lesser degree in 1983. The lower bracket approved for ILCA in 1983 was US$ 11.665 million net; core funds received (including transferred special projects and excluding the Swiss restricted capital grant [$319,000]) amounted to $11.46 million. Included in this income is $ 953,000 in restricted core funding provided in mid-December 1983 by the Italian Government for incremental work on reproductive physiology; an as yet unpaid pledge of about $ 300,000 from another donor is also outstanding. In these circumstances the Centre has had to be managed most conservatively to protect against a repetition of the deficit incurred in 1981. An additional negative factor has been the combination of higher inflation coupled with over valuation of the currencies of several of the countries in which the centre operates.

The 1983 budget provided for a further reduction in field programmes and a compensatory increase in senior scientific staffing at HQ, as well as a strengthening of training programmes and the computer unit. Field programme reductions were made as scheduled but the rate of strengthening of HQ operations had to be moderated because of funding uncertainities. An additional complication was the trend to increased restricted core funding: 23% of the budget in 1983 compared with 12% in the previous three years. Core expenditures in 1983 amounted to US$ 11.161 million ($ 10.80 million excluding transferred special funds). The receipt and application of funds for the years 1981 to 1983 may be summarized as follows on the next page.

Sources of Funds (US$ million)	1981	1982	1983	Application of Funds (US$ million)	1981	1982	1983
Brought forward	0.425	(0.115)	0.573#				
CGIAR donors	9.163	9.852	11.464##	Operations	9.018	8.223	10.098
Earned income	0.126	0.159	0.137	Capital	0.811	1.095	1.063
				Working capital	(0.115)	0.578	1.013
	9.714	9.896	12.174		9.714	9.896	12.174

adjusted for SF projects transferred to restricted core in 1983, and including as yet unpaid pledges of $ 300,000

excluding a restricted capital grant from Switzerland for housing.

As noted above the 1983 income figures provide for a restricted capital grant of $ 319,000 to be used in 1984 for staff housing. Some $ 300,000 of the 1983 projected income is expected to be received in mid-1984. Actual expenditures for 1983 in relation to the budget proved to be:

	Budget	Actuals
Research		
Direction	103	143
Central Scientific Units	2,232	2,203
Central Support Units	1,131	1,120
Field Programmes	3,313	3,126
Training	770	663
Information Services	840	955
Board and Management	417	392
General Operations	992	911
Administration	620	585
Capital	1,075	1,063
Working Capital Increase	322	440
Gross Core	11,815	11,601
Earned Income	150	137
Net Requirement	11,665	11,464

THE OUTLOOK FOR 1984

The objectives established for the 1984 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 1984 is $ 13.545 million. The budget items at risk, depending upon the level of contributions, are essentially two posts in information services, one in central research, capital expenditures and the proposed increase in training. Present indications are that funding will be below the bottom of the bracket ($12.674 million). Clearly in 1984 ILCA will again have to follow a most conservative policy and operate below the lower bracket level until the funding situation becomes clearer later in the year. For this reason, a further revision of the 1984 budget has been prepared and is summarized in the following table. The key objective of this revision has been to secure funding of base operations with funding uncertainties being largely shifted to the capital items.

1984 BUDGET SUMMARY

(Amounts in US$ '000s)

	CGIAR Approved				Previous (March) Estimate		Current (August) Estimate	
	Lower		Upper					
	MY	Amount	MY	Amount	MY	Amount	MY	Amount
Research								
Direction	1.0	120	1.0	120	1.0	147	1.0	151
Central Scientific Units	18.5	3,136	19.5	3,287	19.1	3,454	18.3	3,400
Central Support Units	7.0	1,301	7.0	1,301	6.5	999	6.1	1,184
Field Programmes	18.5	3,703	18.5	3,704	15.0	3,052	14.2	3,071
Total Research	45.0	8,260	46.0	8,412	41.6	7,652	39.6	7,806
Information Services	2.0	1,007	4.0	1,155	2.3	1,108	2.3	1,100
Liaison & Training	2.0	773	2.0	991	2.5	1,090	2.5	932
Board and Management	1.0	440	1.0	440	2.0	480	2.5	540
Operations								
Direction	1.0	121	1.0	121	0.4	56	0.4	56
Finance	2.0	374	2.0	374	2.0	352	1.5	322
Administration	1.0	380	1.0	380	1.0	391	1.0	390
General Operations	2.0	932	2.0	932	2.0	1,111	2.0	1,094
Total Operations	6.0	1,807	6.0	1,807	5.4	1,910	4.9	1,862
Total Core Expenditures	56.0	12,287	59.0	12,805	53.8	12,240	51.8	12,240
Capital*		774		1,119		1,684		1,684
Working Capital Increase		82		90		90		90
Gross Core		13,143		14,014		14,014		14,014
Restricted Capital Grant*		(319)		(319)		(319)		(319)
Earned Income		(150)		(150)		(150)		(150)
Net Requirements		12,674		13,545		13,545		13,545

* Includes Swiss 1983 extra grant of US$ 319,000 for housing purpose.

A SUMMARY OF THE 1985 BUDGET REQUEST

Summary

The core budget proposed for 1985 is built upon the TAC approved budget for ILCA of US$ 14,921,000 including transferred projects of $ 102,000. The following table (page 13) summarizes the 1985 budget proposal and provides a comparison with 1983 and 1984.

The highlight of programme changes built into this budget is as follows:

1. Essentially decreases are foreseen in:

   a. Board and Management costs; management consultants were employed in 1984 to review ILCA's administrative and financial procedures at a cost of about $ 80,000, while the TAC and Centre Directors meeting at ILCA also required one-time expenditures of about $ 25,000.

   b. Livestock Policy Unit costs arising from the non-repetition of the expense of the livestock policy conference and associated travel in 1984 ($ 73,000).

   c. Miscellaneous decreases totalling $ 295,000 arising from reductions in the operating budget including one manyear of senior staff.

2. The fresh increases projected at the "top" of the "bracket" for 1985 include provision for the fractional manyears carried over from the 1984 budget plus three additional manyears for additional work on animal traction, joint ICRISAT/ILCA programme in Niger and the recruitment of a systems engineer for the Computer Unit at HQ.

1985 BUDGET SUMMARY

(Amounts in US$ '000s)

	Actual 1983		Current Estimate (August) 1984		1985 Approved Budget "Lower"		1985 Approved Budget "Upper"	
	MY	Amount	MY	Amount	MY	Amount	MY	Amount
Research								
Direction	1.0	143	1.0	151	1.0	147	1.0	147
Central Scientific Units	13.6	2,203	18.3	3,400	20.6	3,431	21.6	3,661
Central Support Units	7.5	1,120	6.1	1,184	6.5	1,074	7.5	1,139
Field Programmes	16.0	3,126	14.2	3,071	14.6	3,037	16.6	3,196
Total Research	38.1	6,592	39.6	7,806	42.7	7,689	46.7	8,143
Information Services	1.8	955	2.3	1,100	2.3	1,119	2.3	1,119
Liaison & Training	2.0	663	2.5	932	2.5	986	2.5	986
Board and Management	1.3	392	2.5	540	2.5	462	2.5	462
Operations								
Direction	-	-	0.4	56	1.0	123	1.0	123
Finance	2.0	253	1.5	322	1.5	328	1.5	328
Administration	1.0	332	1.0	390	1.0	430	1.0	430
General Operations	2.0	911	2.0	1,094	1.5	1,018	1.5	1,018
Total Operations	5.0	1,496	4.9	1,862	5.0	1,899	5.0	1,899
Total Core Expenditures	48.2	10,098	51.8	12,240	55.0	12,155	59.0	12,609
Price Increases		-		-		972		1,009
Capital		1,063		1,684		990		1,219
Working Capital Increase		440		90		81		84
Restricted Capital Grant C/F*		319		-		-		-
Gross Core		11,920		14,014		14,198		14,921
Restricted Capital Grant B/F*		-		(319)		-		-
Earned Income		(137)		(150)		(208)		(208)
Net Requirement		11,783		13,545		13,990		14,713

* Relates to Swiss 1983 extra grant for housing purpose.

SPECIAL PROJECTS

A key feature of ILCA's management policy is to use its core funding for basic programmes in key areas of research, training and documentation. Part of the special funding received in 1984 is closely related to strengthening core activities and has been approved for transfer to core funding as follows:

			(Amount in US$'000s)		
Project	Donor	Location	1983	1984	1985
Alley Cropping I	IDRC	Nigeria	48	8	-
Alley Cropping II	IDRC	Nigeria	-	53	90
Forage Production (Highlands)	SDC	Ethiopia	218	217	102
Animal Production Doc.	IDRC	HQ	129	96	-
LSR Workshop	IDRC	HQ	26	-	-
TOTAL			421	374	192

ILCA expects special project funding commitments of approximately US$ 1.6 million in 1984 and possibly about the same amount in 1985. The confirmed projects and those under negotiation are summarized in the following table.

SUMMARY OF PROPOSED SPECIAL FUND PROJECTS

Name of Project	Location	Source of Fund	1984	1985 (US$'000)	1986
Confirmed:					
Ethiopian Rangelands	Ethiopia	RDP/IBRD	95	-	-
Trypanotolerance Network	Zaire	Belgium/AGCD	123	120	120
Trypanotolerance Network	Kenya	GTZ	25	-	-
Trypanotolerance Network	Ivory Coast	GTZ	181	203	133
Livestock Systems Research	Zimbabwe	IDRC	10	13	-
Livestock Development	Nigeria	Nigeria/FLD	235	-	-
Small Ruminants Economics Research	Nigeria	Ford	75	-	-
Production Systems Research	Mali	USAID	430	310	394
Gliricidia	Nigeria	IDRC	6	49	24
Livestock Policy -Conference	Ethiopia	Ford	70	-	-
-Conference	Ethiopia	USAID	50	-	-
Legume Collection	Ethiopia	IBPGR	11	-	-
Ndama Productivity Research	Senegambia	EEC	200	500	500
Agr. by-products	African	IDRC	54	102	93
Total			1565	1297	1264
Under Negotiation:					
Remote Sensing Survey	Niger	USAID	110	-	-
Aerial Reconnaissance	Upper Volta	GTZ	60	-	-
Small Ruminant Network	African	BMZ	-	170	192

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 1984	Manyears 1985
Arid	Mali	Forage Agronomy	FAO	0.4	-
EARLS/Kenya	Kenya	Human Nutrition	Ford F.	1.0	-
Trypanotolerance Network	Kenya	Animal Nutrition	IEMVT	0.9	-
Highlands	Ethiopia	Sociology	Rock. F.	1.0	-
Publications	Ethiopia	Translation	Egypt F.	0.5	1.0
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

CAPITAL REQUIREMENTS

Housing problems in Ethiopia are acute and the restructuring 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 modest budget provision in relation to the size of the problem has been made in 1984 for new construction. As a result of the staff transfers made to HQ, laboratory and housing facilities are now inadequate, and require considerable expansion and upgrading. Proposed capital spending in 1985 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 1985 budget are detailed in Table VIII. The overall inflation estimate used for 1985 is 8%. Exchange rates in several African countries in which ILCA is operating are overvalued and appear likely to be revised but changes in these rates, in both extent and timing, are most uncertain. Inflation rates in these particular countries now greatly exceed those associated with most of ILCA's donor countries and ILCA is consequently suffering a significant price squeeze. Further exchange rate changes could quickly modify or increase this problem. Great uncertainty is the major feature of the assumed price change in the 1985 budget.

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 requiring incremental capital and operating costs in order to:

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

- 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 1989 are reflected in the table below.

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 1985-1988 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 construction of additional office, laboratory, housing and related infrastructures.

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

Five-Year Projection (in 1984 US$ millions)

	1985	1986	1987	1988	1989
BASIC OPERATIONAL REQUIREMENTS					
Operation at 1984 level	12.24	12.24	12.24	12.24	12.24
Estimated net increment to upgrade current operations	0.37	1.59	2.33	2.33	2.33
CAPITAL REQUIREMENTS					
Headquarters	1.13	1.45	1.85	1.85	1.85
Field Programmes	0.09	0.15	0.15	0.15	0.15
ADDITIONAL ELEMENTS					
Working capital increase	0.08	0.18	0.29	0.38	0.43
New Programmes:					
Francophone Africa	-	0.75	1.50	1.50	1.50
Southeast Africa	-	-	-	0.75	1.50
Gross Requirements	13.91	16.36	18.36	19.20	20.00

STAFF CLASSIFICATION

Pending the outcome of the current budget study of the CGIAR, ILCA has re-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

ILCA - 1985 BUDGET

"TAC" RECOMMENDATION

Annex I

(In thousands of US$)

	OPERATIONS				CAPITAL			TOTAL REQUIREMENTS		REMARKS
	Sr. MY	84 $	PP	85 $	W.C.A.	Cap.Exp.	Total	Gross	Net	
Bottom of Bracket	55.0	12,155	972	13,127	81	990	1,071	14,198	13,920	
Top of Bracket										
Add:										
1.	1.0	210	17	227	1	7	8	235	235	≠ Animal Traction Programme - New
2.	1.0	65	5	70	1	100	101	171	171	≠ Computer (Systems Engineer) and Laboratory
3.	-	-	-	-	-	112	112	112	112	≠ Office & Housing Construction at HQ
4.	1.0	56	5	61	-	10	10	71	71	≠ Niger - Forage Agronomy
5.	1.0	123	10	133	1	-	1	134	134	≠ Botswana Programme Continuation
Sub-Total	4.0	454	37	491	3	229	232	723	723	
TOTAL	59.0	12,609	1,009	13,618	84	1,219	1,303	14,921	14,713	

Table I

Annex I

1985-1986 CORE OPERATING BUDGET

SUMMARY OF COSTS BY PROGRAMME & ACTIVITY 1982-1988

(Amount in US$ '000s)

	Actual 1982		Actual 1983		Previous (March) Estimate 1984		Current (August) Estimate 1984		Approved Budget 1985 Lower		Approved Budget 1985 Upper		Projection 1986		Projection 1987		Projection 1988	
	MY	Cost	MY	Cost	MY	Cost	MY	Cost	MY	Cost	MY	Cost	MY	Cost	MY	Cost	MY	Cost
RESEARCH:																		
Director of Research	1.0	98	1.0	143	1.0	147	1.0	151	1.0	147	1.0	147	1.0	147	1.0	147	1.0	147
Central Scientific Units																		
Basic Animal Sciences	3.0	219	2.3	341	4.0	639	3.6	600	4.5	588	4.5	588	5.5	766	6.5	846	6.5	846
Legume Agronomy	1.7	182	2.0	356	2.5	477	2.1	445	3.0	506	3.0	549	4.0	666	4.0	666	4.0	666
Animal Traction	-	2	-	-	-	-	-	-	-	-	1.0	187	1.0	210	1.0	210	1.0	210
Systems Research	-	-	-	8	0.5	84	0.5	44	1.0	138	1.0	138	1.0	138	2.0	218	2.0	218
Livestock Policy Unit	1.8	155	2.0	169	2.7	302	2.7	306	2.7	229	2.7	229	3.7	315	3.7	345	3.7	345
Trypanotolerance	1.0	39	1.4	253	1.9	420	1.9	450	1.4	375	1.4	375	2.4	485	3.4	575	3.4	575
HQ Range Research	1.0	143	1.2	257	2.5	562	2.5	580	3.0	619	3.0	619	3.0	641	3.0	641	3.0	641
Highlands	3.0	664	4.7	819	5.0	970	5.0	975	5.0	976	5.0	976	5.0	976	5.0	976	5.0	976
- of which related to transf. projects			(1.7)	(213)	(2.0)	(217)	(2.0)	(217)	(2.0)	(102)	(2.0)	(102)						
Central Support Services																		
HQ Farm & Grounds	1.0	90	1.0	131	1.0	98	1.0	118	1.0	120	1.0	120	1.0	130	1.0	150	1.0	150
HQ Laboratory	2.0	240	2.0	255	1.0	310	1.0	350	1.0	363	1.0	363	1.0	380	1.0	480	1.0	480
Computer Unit	2.0	239	3.0	343	3.0	386	3.0	536	3.0	377	4.0	436	4.0	576	5.0	676	5.0	676
Aerial Survey & Cartography	1.5	320	1.5	391	1.5	205	1.1	180	1.5	220	1.5	220	3.0	358	3.0	358	3.0	358
Arid Zones																		
Mali	4.0	649	4.0	809	3.0	629	3.0	678	3.0	688	3.0	688	3.0	688	3.0	688	3.0	688
Niger	-	-	0.7	79	1.0	133	1.0	133	1.0	147	2.0	203	2.0	223	2.0	223	2.0	223
Kenya	4.0	642	3.6	543	3.6	550	3.6	550	3.6	560	3.6	560	3.6	576	3.6	576	3.6	576
Botswana	0.7	22	0.7	68	0.7	100	0.1	50	-	-	1.0	103	1.0	123	1.0	123	1.0	123
Subhumid Zone	5.0	943	4.0	952	4.0	920	4.0	920	4.0	895	4.0	895	4.0	895	4.0	895	4.0	895
Humid Zone	3.3	709	3.0	675	2.7	720	2.5	740	3.0	747	3.0	747	3.0	757	3.0	757	3.0	757
- of which related to transferred projects			(-)	(48)	(-)	(28)	(-)	(61)		(90)		(90)		(50)				
TOTAL RESEARCH	36.0	5,356	38.1	6,592	41.6	7,652	39.6	7,806	42.7	7,689	46.7	8,143	52.2	9,050	56.2	9,550	56.2	9,550

Table I continued
Annex I

	Actual 1982		Actual 1983		Previous (March) Estimate 1984		Current (August) Estimate 1984		Approved Budget 1985 Lower		Approved Budget 1985 Upper		Projection 1986		Projection 1987		Projection 1988	
	MY	Cost	MY	Cost	MY	Cost	MY	Cost	MY	Cost	MY	Cost	MY	Cost	MY	Cost	MY	Cost
INFORMATION SERVICES	1.4	693	1.8	955	2.3	1,108	2.3	1,100	2.3	1,119	2.3	1,119	2.3	1,239	2.3	1,289	2.3	1,289
- of which related to transferred projects			(-)	(122)	(-)	(84)	(-)	(84)										
INTERNATIONAL LIAISON	-	-	2.0	325	2.0	262	2.0	276	2.0	272	2.0	272	2.0	272	2.0	272	2.0	272
TRAINING	0.5	316	-	338	0.5	828	0.5	656	0.5	714	0.5	714	0.5	814	0.5	914	0.5	914
- of which related to transferred projects			(-)	(26)														
BOARD AND MANAGEMENT	4.3	626	1.3	392	2.0	480	2.5	540	2.5	462	2.5	462	2.5	462	2.5	462	2.5	462
OPERATIONS:																		
Director of Operations	0.5	75	-	-	0.4	56	0.4	56	1.0	123	1.0	123	1.0	123	1.0	123	1.0	123
Finance	1.8	206	2.0	253	2.0	352	1.5	322	1.5	328	1.5	328	1.5	348	1.5	348	1.5	348
Administration	1.5	309	1.0	332	1.0	391	1.0	390	1.0	430	1.0	430	1.0	430	1.0	430	1.0	430
General Operations	1.0	642	2.0	911	2.0	1,111	2.0	1,094	1.5	1,018	1.5	1,018	1.0	1,089	1.0	1,182	1.0	1,182
TOTAL	47.0	8,223	48.2	10,098	53.8	12,240	51.8	12,240	55.0	12,155	59.0	12,609	64.0	13,827	68.0	14,570	68.0	14,570
- approved increase for transf. projects			(1.7)	(409)	(2.0)	(335)	(2.0)	(362)	(-)	(192)	(-)	(192)	-	(50)				
INFLATION	-	-	-	-	-	-	-	-	-	972	-	1,009	-	2,215	-	3,497	-	4,662
TOTAL CORE OPERATION	47.0	8,223	48.2	10,098	53.8	12,240	51.8	12,240	55.0	13,127	59.0	13,618	64.0	16,042	68.0	18,067	68.0	19,232
TOTAL SPECIAL PROJECTS		1,195		678		1,243		1,667		1,297		1,297		1,264		**		**
BY OBJECT OF EXPENDITURE																		
Personnel		5,314		6,126		7,181		6,974		7,602		7,964		8,581		9,042		9,042
Supplies & Services		2,346		3,102		4,045		4,001		3,672		3,744		4,024		4,240		4,240
Travel		526		611		683		710		681		701		730		769		769
Equipment Replacement		37		259		331		555		200		200		492		519		519
Inflation		-		-		-		-		972		1,009		2,215		3,497		4,662
TOTAL CORE OPERATIONS		8,223		10,098		12,240		12,240		13,127		13,618		16,042		18,067		19,232
- approved increase for transferred projects				(409)		(335)		(362)		(192)		(192)		(50)				

** Full data not available for special projects 1987-1988.

Table II
Annex I

1985-1986 BUDGET*

SUMMARY OF SOURCES AND APPLICATION OF FUNDS
(US$ '000s)

SOURCE OF FUNDS	Actual 1982	Actual 1983	Current (August) Estimate 1984	Approved Budget 1985 "Lower"	Approved Budget 1985 "Upper"	Projected 1986
CORE OPERATIONS						
Unrestricted						
African Development Bank	17	-				
Australia	328	350				
Belgium	160	125				
Canada	-	321				
Denmark	126	129				
Germany (Federal Republic)	804	755				
India	50	50				
Italy	260	366				
Intern. Develop. Association (World Bank)	2,610	2,600				
Netherlands	360	260				
Nigeria	219	204				
Norway	323	297				
Sweden	224	106				
Switzerland	370	395				
United Kingdom	258	296				
U.S.A. (USAID)	2,550	2,800				
Unidentified Sources	-	-	11,411	12,103	12,826	16,040
Income Applied in Year	159	137	150	208	208	208
SUBTOTAL	8,828	9,191	11,561	12,311	13,034	16,248
Less Allocation to Capital	(1,788)	(1,822)	(1,455)	(1,071)	(1,303)	(1,782)
SUBTOTAL	7,040	7,369	10,106	11,240	11,731	14,466
Restricted						
Australia	-	3	-	-	-	-
Belgium	200	160	123	120	120	
France	122	117	100	100	100	
International Development Research Centre (IDRC)	-	203	157	90	90	50
- of which for transferred projects		(203)	(157)	(90)	(90)	(50)
Intern. Fund for Agricultural Development (IFAD)	600	600	500	500	500	500
Ireland	143	156	178	150	150	150
Italy	-	953	859	825	825	876
Switzerland	118	537	217	102	102	
- of which for transf. projects		(218)	(217)	(102)	(102)	
SUBTOTAL	1,183	2,729	2,134	1,887	1,887	1,576
TOTAL CORE OPERATION FUNDS	8,223	10,098	12,240	13,127	13,618	16,042
CAPITAL						
Allocation from Core Operating Funds	1,788	1,822	1,774	1,071	1,303	1,782
Balance of Working Funds B/F	-	573**	1,013	1,103	1,103	1,187
Restricted Capital Grant B/F***	-	-	(319)	-	-	-
Deficit Brought Forward	(115)	-	-	-	-	-
TOTAL CAPITAL FUNDS	1,673	2,395	2,468	2,174	2,406	2,969

* Projections for 1987-1988 shown in Table I - Annex I.
** Adjusted for Special Fund Projects transferred to Restricted Core in 1983.
*** Refers to Swiss Restricted Core Capital Grant made at the end of 1983 for housing purpose.

Table II continued
Annex I

1985-1986 BUDGET*
SUMMARY OF SOURCES AND APPLICATION OF FUNDS
(US$ '000s)

SOURCE OF FUNDS	Actual 1982	Actual 1983	Current (August) Estimate 1984	Approved Budget 1985 "Lower"	Approved Budget 1985 "Upper"	Projected 1986
SPECIAL PROJECTS****						
Confirmed:						
Belgium (AGCD)	70	59	123	120	120	120
Botswana	92	56	-	-	-	-
Economic Development Institute	-	31	-	-	-	-
Ethiopia (RDP)	209	200	95	-	-	-
European Economic Community (EEC)	-	-	200	500	500	500
Ford Foundation	10	149	145	-	-	-
Germany, Fed. Republic (GTZ)	-	80	206	203	203	133
Int. Dev. Research Centre (IDRC)	94	-	70	164	164	117
Int. Board for Plant Genetic Resources (IBPGR)	-	-	11	-	-	-
Nigeria (FLD)	438	56	235	-	-	-
Office de Developement de l' Elevage de la Region de Mopti (O.D.E.M.)	349	-	-	-	-	-
U.S.A. (USAID)	-	193	480	310	310	394
Balance from Previous Period	34	106**	252	150	150	150
TOTAL SPECIAL PROJECTS-CONFIRMED	1,296	930	1,517	1,447	1,447	1,414
TOTAL SOURCE OF FUNDS	11,192	13,423	16,525	16,748	17,471	20,425
APPLICATION OF FUNDS						
CORE OPERATIONS	8,223	10,098	12,240	13,127	13,618	16,042
- of which for transferred projects		(409)	(362)	(192)	(192)	(50)
CAPITAL	1,095	1,063	1,684	990	1,219	1,600
- of which for transferred projects		(12)	(12)			
SPECIAL PROJECTS	1,195	678	1,667	1,297	1,297	1,264
UNEXPENDED BALANCES:						
Capital - Working Funds C/F	578**	1,013	1,103	1,184	1,187	1,369
Restricted Capital Grant***	-	319	(319)	-	-	-
Special Projects	101	252	150	150	150	150
TOTAL APPLICATION OF FUNDS	11,192	13,423	16,525	16,748	17,471	20,425
MEMO:						
1. Total Core Operating Funds required	8,223	10,098	12,240	13,127	13,618	16,042
- of which for transferred projects		(409)	(362)	(192)	(192)	(50)
Less Earned Income Applied	(159)	(137)	(150)	(208)	(208)	(208)
Net Core Operating Required	8,064	9,961	12,090	12,919	13,410	15,834
2. Total Capital Funds Required	1,673	2,395	2,787	2,174	2,406	2,969
- of which for transferred projects		(12)	(12)	-	-	-
Balance of Working Funds B/F	-	(573)**	(1,013)	(1,103)	(1,103)	(1,187)
Restricted Capital Grant B/F	-	-	(319)	-	-	-
Deficit Brought Forward	115	-	-	-	-	-
Net Capital Funds Required	1,788	1,822	1,455	1,071	1,303	1,782
3. Total Funds Required from Donors	9,852	11,783	13,545	13,990	14,713	17,616
- of which for transferred projects		(421)	(374)	(192)	(192)	(50)
4. Earned Income Applied to Core Operations	159	137	150	208	208	208

* Projections for 1987-1988 shown on Table I - Annex I.
** Adjusted for Special Fund Projects transferred to Restricted Core in 1983.
*** Refers to Swiss Restricted Core Capital Grant made at the end of 1983 for housing purpose.
**** Provisional data pending conclusion of current negotiations about additional Special Fund Projects for 1984-1986.

Table III
Annex I

INTERNATIONAL LIVESTOCK CENTRE FOR AFRICA
SUMMARY OF FINANCIAL DATA 1982-1985
(Amount in US$ '000)

	Actual 1982	Actual 1983	1984 Estimates Previous (March) Estimate	1984 Estimates Current (August) Estimate	1985 Budget "Lower" Bracket	1985 Budget "upper" Bracket	1986 Budget Projection
CURRENT ASSETS							
Cash	1,508	2,689	1,750	1,750	1,780	1,780	1,800
Receivables from:							
Donors	613	427	650	650	700	700	750
Employees	34	69	48	48	44	47	49
Others	624	683	745	745	800	800	850
Inventories	173	376	250	250	350	350	400
Prepaid Expenses	193	181	220	220	240	240	250
TOTAL CURRENT ASSETS	3,145	4,425	3,663	3,663	3,914	3,917	4,099
FIXED ASSETS							
Buildings	6,600	7,150	7,951	7,950	8,557	8,669	9,469
Research & Lab. Equipment	894	1,216	1,479	1,521	1,729	1,746	2,061
Computer	513	556	791	689	689	789	839
Furnishings & Office Equipment	1,596	1,887	2,124	2,151	2,296	2,296	2,641
- of which related to transferred projects		(12)	(12)	(12)			
Vehicles and Aircraft	1,524	1,583	1,706	1,740	1,770	1,770	1,860
Others	310	113	138	138	138	138	138
TOTAL FIXED ASSETS	11,442	12,505	14,189	14,189	15,179	15,408	17,008
TOTAL ASSETS	14,587	16,930	17,852	17,852	19,093	19,325	21,107
LIABILITIES							
Bank Overdraft	2	-	-	-	-	-	-
Accounts Payable - Employees	171	256	260	260	280	280	280
Other Payables & Accruals	1,660	2,070	1,700	1,700	1,800	1,800	1,800
Contributions Received in Advance	633	515	450	450	500	500	500
TOTAL LIABILITIES	2,466	2,841	2,410	2,410	2,580	2,580	2,580
FUND BALANCES							
Invested in Fixed Assets	11,442	12,505	14,189	14,189	15,179	15,408	17,008
Unexpended Funds:							
Working Capital	578	1,013	1,103	1,103	1,184	1,187	1,369
Restricted Capital Grant*	-	319	-	-	-	-	-
Special Projects	101	252	150	150	150	150	150
TOTAL FUND BALANCES	12,121	14,089	15,442	15,442	16,513	16,745	18,527
TOTAL LIABILITIES AND FUND BALANCES	14,587	16,930	17,852	17,852	19,093	19,325	21,107

* Refers to Swiss Restricted Capital Grant made at the end of 1983 for housing purpose.

1985-1986 CORE BUDGET
TABLE OF POSITIONS AND MANYEARS
GROUP I

Table IV
Annex I(a)

	POSITIONS				MANYEARS			
	Act. 1983	Est. 1984	Bud. 1985	Bud. 1986	Act. 1983	Est. 1984	Bud. 1985*	Bud. 1986
RESEARCH								
Director	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Central Scientific Units								
Basic Animal Sciences	3.0	5.0	5.0	6.0	2.3	3.6	4.5	5.5
Legume Agronomy	2.0	3.0	3.0	4.0	2.0	2.1	3.0	4.0
Animal Traction	-	-	1.0	1.0	-	-	1.0	1.0
Systems Research	-	1.0	1.0	1.0	-	0.5	1.0	1.0
Livestock Policy	2.0	3.0	3.0	4.0	2.0	2.7	2.7	3.7
Trypanotolerance	2.0	2.0	2.0	3.0	1.4	1.9	1.4	2.4
HQ Range Research	2.0	3.0	3.0	3.0	1.2	2.5	3.0	3.0
Highlands	5.0	5.0	5.0	5.0	4.7	5.0	5.0	5.0
- of which related to transferred projects	(2.0)	(2.0)	(2.0)		(1.7)	(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	2.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0
Computer Unit	3.0	3.0	4.0	4.0	3.0	3.0	4.0	4.0
Aerial Survey & Cartography	2.0	2.0	2.0	3.0	1.5	1.1	1.5	3.0
Arid Zones								
Mali	5.0	4.0	3.0	3.0	4.0	3.0	3.0	3.0
Niger	1.0	1.0	2.0	2.0	0.7	1.0	2.0	2.0
Kenya	4.0	4.0	4.0	4.0	3.6	3.6	3.6	3.6
Botswana	1.0	1.0	1.0	1.0	0.7	0.1	1.0	1.0
Subhumid Zone	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Humid Zone	3.0	3.0	3.0	3.0	3.0	2.5	3.0	3.0
TOTAL RESEARCH	43.0	47.0	49.0	54.0	38.1	39.6	46.7	52.2
INFORMATION SERVICES	2.0	4.0	4.0	4.0	1.8	2.3	2.3	2.3
INTERNATIONAL LIAISON	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
TRAINING	-	1.0	1.0	1.0	-	0.5	0.5	0.5
BOARD AND MANAGEMENT	2.0	3.0	3.0	3.0	1.3	2.5	2.5	2.5
OPERATIONS								
Director	-	1.0	1.0	1.0	-	0.4	1.0	1.0
Finance	2.0	2.0	2.0	2.0	2.0	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	1.0	2.0	2.0	1.5	1.0
GRAND TOTAL	54.0	63.0	65.0	69.0	48.2	51.8	59.0	64.0

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

Table IV
Annex I(b)

1985-1986 CORE BUDGET
TABLE OF POSITIONS AND MANYEARS
GROUP II

	POSITIONS				MANYEARS			
	Act. 1983	Est. 1984	Bud. 1985	Bud. 1986	Act. 1983	Est. 1984	Bud. 1985	Bud. 1986
RESEARCH								
Director	-	-	-	-	-	-	-	-
Central Scientific Units								
Basic Animal Sciences	-	1.0	1.0	5.0	-	0.3	1.0	5.0
Legume Agronomy	1.0	2.0	2.0	3.0	0.5	1.5	2.0	3.0
Animal Traction	-	-	3.0	3.0	-	-	3.0	3.0
System Research	-	1.0	1.0	1.0	-	0.1	1.0	1.0
Livestock Policy	-	-	-	-	-	-	-	-
Trypanotolerance	2.0	3.0	3.0	3.0	1.5	2.8	3.0	3.0
HQ Range Research	1.0	6.0	6.0	6.0	1.0	4.7	6.0	6.0
Highlands	4.0	5.0	5.0	5.0	4.0	4.5	5.0	5.0
Central Support Services								
HQ Farm & Grounds	-	-	-	-	-	-	-	-
HQ Laboratory	1.0	2.0	2.0	3.0	1.0	1.8	2.0	3.0
Computer Unit	1.0	1.0	1.0	2.0	1.0	1.0	1.0	2.0
Aerial Survey & Cartography	-	2.0	2.0	2.0	-	1.1	1.5	2.0
Arid Zones								
Mali	7.0	9.0	8.0	8.0	6.5	7.8	8.0	8.0
Niger	-	1.0	2.0	2.0	-	1.0	2.0	2.0
Kenya	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Botswana	-	-	-	-	-	-	-	-
Subhumid Zone	2.0	3.0	2.0	2.0	2.0	2.5	2.0	2.0
Humid Zone	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
TOTAL RESEARCH	25.0	42.0	44.0	51.0	23.5	35.1	43.5	51.0
INFORMATION SERVICES	5.0	8.0	8.0	9.0	5.0	6.8	8.0	9.0
INTERNATIONAL LIAISON	2.0	2.0	2.0	2.0	1.5	2.0	2.0	2.0
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
OPERATIONS								
Director	-	-	-	-	-	-	-	-
Finance	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Administration	1.0	3.0	3.0	3.0	1.0	2.3	3.0	3.0
General Operations	3.0	5.0	5.0	5.0	2.3	4.0	5.0	5.0
GRAND TOTAL	40.0	65.0	67.0	75.0	37.3	55.2	66.5	75.0

Table IV
Annex I(c)

1985-1986 CORE BUDGET
TABLE OF POSITIONS AND MANYEARS
GROUP III

	POSITIONS				MANYEARS			
	Act. 1983	Est. 1984	Bud. 1985	Bud. 1986	Act. 1983	Est. 1984	Bud. 1985	Bud. 1986
RESEARCH								
Director	1.0	1.0	1.0	1.0	0.5	1.0	1.0	1.0
Central Scientific Units								
Basic Animal Sciences	-	3.0	3.0	3.0	-	0.8	3.0	3.0
Legume Agronomy	12.0	14.0	14.0	14.0	11.5	12.5	14.0	14.0
Animal Traction	-	-	3.0	3.0	-	-	3.0	3.0
Systems Research	-	1.0	1.0	1.0	-	0.2	1.0	1.0
Livestock Policy	-	2.0	2.0	3.0	-	1.7	2.0	3.0
Trypanotolerance	13.0	14.0	15.0	15.0	7.6	8.6	9.6	9.6
HQ Range Research	1.0	6.0	6.0	7.0	1.0	4.0	6.0	7.0
Highlands	30.0	46.0	46.0	46.0	30.0	41.2	46.0	46.0
Central Support Services								
HQ Farm & Grounds	2.0	11.0	11.0	11.0	2.0	10.8	11.0	11.0
HQ Laboratory	15.0	21.0	21.0	21.0	14.5	19.5	21.0	21.0
Computer Unit	6.0	8.0	8.0	8.0	6.0	7.6	8.0	8.0
Aerial Survey & Cartography	4.0	4.0	4.0	5.0	4.0	3.5	4.0	5.0
Arid Zones								
Mali	84.0	84.0	84.0	84.0	84.0	84.0	84.0	84.0
Niger	5.0	5.0	5.0	5.0	2.5	5.0	5.0	5.0
Kenya	23.0	23.0	23.0	23.0	19.4	19.4	19.4	19.4
Botswana	2.0	4.0	4.0	4.0	1.2	0.2	4.0	4.0
Subhumid Zone	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
Humid Zone	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
TOTAL RESEARCH	267.0	316.0	320.0	323.0	253.2	289.0	311.0	314.0
INFORMATION SERVICES	36.0	41.0	41.0	42.0	35.0	39.4	41.0	42.0
INTERNATIONAL LIAISON	4.0	5.0	5.0	5.0	4.0	5.0	5.0	5.0
TRAINING	2.0	4.0	4.0	4.0	2.0	3.8	4.0	4.0
BOARD AND MANAGEMENT	2.0	2.0	2.0	2.0	1.5	1.8	2.0	2.0
OPERATIONS								
Director	-	1.0	1.0	1.0	-	0.5	1.0	1.0
Finance	11.0	11.0	11.0	11.0	8.8	9.0	10.5	10.5
Administration	19.0	20.0	20.0	20.0	19.0	19.5	20.0	20.0
General Operations	93.0	122.0	122.0	122.0	92.5	113.3	121.5	121.5
GRAND TOTAL	434.0	522.0	526.0	530.0	416.0	481.3	516.0	520.0

Table V
Annex I

1985-1986 CAPITAL BUDGET

SECTION 1 - NEW/MODIFIED BUILDINGS

(Amount in US$ '000s)

CATEGORIES			BUDGET		PROJECTED	
	1983	1984[a]	1985	1986	1987	1988
1. Advance Expenditure						
2. Land & Improvements						
3. Building & Site Improvements						
- Structure						
- Mechanical Ser.						
- Electrical Ser.						
- All Other & Site Impr.						
Total Bldg. & Impr.		760	685	760	1140	1140
4. Installed Equipt. Exc.						
- Furniture						
- Fittings						
- Equipment						
- Spares						
Total FF & E		-	-	-	-	-
5. Consulting Services						
6. Other Costs						
7. Total Before Contingencies		760	685	760	1140	1140
8. Contingencies		40	34	40	60	60
9. Total Capital Cost	340	800	719	800	1200	1200

[a] Includes Swiss Restricted Capital Grant of US$ 319,000 made at the end of 1983 for housing purpose.

Table VII
Annex I

1985-1986 CAPITAL BUDGET

SECTION 2 - ADDITIONAL MACHINERY & EQUIPMENT

(Amount in US$ '000s)

			BUDGET		PROJECTED	
	1983*	1984	1985	1986	1987	1988
RESEARCH:						
Director of Research	2	-	-	5	-	-
Central Scientific Units						
Basic Animal Sciences	3	60	30	30	30	30
Legume Agronomy	33	23	25	30	30	30
Animal Traction	-	-	7	20	20	20
System Research	-	3	-	-	-	-
Livestock Policy	3	5	-	5	-	-
Trypanotolerance	13	80	30	50	30	30
HQ Range Research	67	36	23	30	30	30
Highlands	89	92	20	50	50	50
- of which for transf. project	(5)					
Central Support Serivces						
HQ Farm & Grounds	38	5	-	10	20	20
HQ Laboratory	96	90	20	30	20	20
Computer Unit	46	100	100	50	50	50
Aerial Survey & Cartography	-	-	-	20	20	20
Arid Zones						
Mali	-	21	20	30	30	30
Niger	41	17	10	20	20	20
Kenya	30	12	20	30	30	30
Botswana	-	-	-	5	5	5
Subhumid Zone	-	55	20	30	30	30
Humid Zone	-	20	20	30	30	30
TOTAL RESEARCH	461	629	345	475	445	445
INFORMATION SERVICES	60	62	46	75	50	50
- of which for transferred projects	(7)	(12)				
INTERNATIONAL LIAISON	17	3	-	5	20	10
TRAINING	-	5	5	30	30	30
BOARD AND MANAGEMENT	25	10	-	10	-	-
OPERATIONS:						
Director of Operations	-	5	-	5	-	-
Finance	6	5	-	15	5	5
Administration	14	10	-	10	10	10
General Operations	140	155	104	175	240	250
TOTAL CAPITAL	723	884	500	800	800	800

* Allocated to respective cost centres.

Table VIII
Annex I

ASSUMPTIONS ON PRICE INCREASES AND FLUCTUATIONS OF EXCHANGE RATES
1985 CORE BUDGET PROPOSAL
(In '000)

IN 1984 $ COST*

	ET. BIRR		CFA		NAIRA		K. SH		PULA		US $	TOTAL
	Amt.	$ Equiv	Amt.	$ Equiv.	Amt.	$ Equiv.	Amt.	$ Equiv.	Amt.	$ Equiv.		
EXPENSE CATEGORIES:												
Personnel	6,312	3,079	129,200	323	472	635	4,368	312	26	23	3,592	7,964
Supplies/Services	2,440	1,190	80,800	202	275	369	2,814	201	23	20	1,762	3,744
Travel	959	468	19,200	48	52	70	980	70	12	10	35	701
Equipment Replacement	121	59	2,800	7	13	18	182	13	-	-	103	200
TOTAL	9,832	4,796	232,000	580	812	1,092	8,344	596	61	53	5,492	12,609

* Exchange Rates Assumed:
US$ 1 = 2.05 400 0.7438 14.00 1.15

IN 1985 $ COST**

	ET. BIRR		CFA		NAIRA		K. SH		PULA		US $	TOTAL
	Amt.	$ Equiv.	Amt.	$ Equiv.	Amt.	$ Equiv.	Amt.	$ Equiv.	Amt.	$ Equiv.		
EXPENSE CATEGORIES:												
Personnel	6,816	3,325	139,600	349	515	686	4,887	337	29	25	3,879	8,601
Supplies/Services	2,634	1,285	87,200	218	298	398	3,161	218	24	21	1,904	4,044
Travel	1,035	505	20,400	51	57	76	1,102	76	11	10	39	757
Equipment Replacement	131	64	3,200	8	15	20	203	14	-	-	110	216
TOTAL	10,616	5,179	250,400	626	885	1,180	9,353	645	64	56	5,932	13,618

** Exchange Rates Assumed:
US$ 1 = 2.05 400 0.7500 14.50 1.15

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)		LIVESTOCK SYSTEM RESEARCH WORKSHOP IDRC COST CENTRE: TRAINING		TOTAL PROJECTS TRANSFERRED		
	Actual 1983	1984	1985	Actual 1983	1984	1984	1985	Actual 1983	1984	Actual 1983	1984	Actual 1983	1984	1985
A. MANYEARS (SENIOR)	1.7	2.0	2.0	-	-	-	-	-	-	-	-	1.7	2.0	2.0
B. OPERATING COSTS:														
B1 Personnel		170	86		8	34	65		31	-	-		243	151
B2 Supplies & Services, Including Admin. Overhead		47	16		-	19	25		31		-		97	41
B3 Travel		-	-		-	-	-		22		-		22	-
B4 Equipt. Repl./Upgrading		-	-		-	-	-		-		-		-	-
Sub-Total	213	217	102	48	8	53	90	122	84	26	-	409	362	192
C. CAPITAL:														
C1 Machinery & Equipt.	5	-	-	-	-	-	-	7	12	-	-	12	12	-
C2 Buildings	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sub-Total	5	-	-	-	-	-	-	7	12	-	-	12	12	-
D. TOTAL PROJECT COST (B+C)	218	217	102	48	8	53	90	129	96	26	-	421	374	192

TABLE OF RESTRICTED CORE ACTIVITIES
(Amount in US$ '000)

SER. NO.	ACTIVITY	DONOR	REMARK	1983	1984	1985
1	Research in the Arid Zones of Mali	Belgium		160	123	120
2	Trypanotolerance Network	France		117	100	100
3	Livestock System Research Workshop	I.D.R.C.	Transf. Project	26	-	-
4	Animal Production Documentation	I.D.R.C.	Transf. Project	129	96	-
5	Alley Cropping I - Humid Zone	I.D.R.C.	Transf. Project	48	8	-
6	Alley Cropping II - Humid Zone	I.D.R.C.	Transf. Project	-	53	90
7	Research in the Arid Zones of Mali	I.F.A.D.		600	500	500
8	Small-holder Dairy Technology	Ireland		156	178	150
9	Reproductive Physiology Research	Italy		953	859	829
10	Forage Development - Highlands	S.D.C.	Transf. Project	218	217	102
11	Housing Construction at HQ	S.D.C.		319	-	-
				2726	2134	1887

APPENDIX I. DESCRIPTION OF THE 1985 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. A second main thrust of the nutrition work centres on mineral nutrition. Many areas of Africa exhibit mineral deficiencies of various types. ILCA is now studying the association of the mineral composition of animal tissues, and soil mineral composition in Africa with the overall productivity of livestock.

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 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.

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 39. Laboratory support to the animal health work is being assisted by the University of Milan.

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 39).

Livestock Policy

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 have started 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 will be 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 has begun 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 year. 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 Governments at other locations. A large special project is also under consideration by the EEC.

Systems Research

This unit is to be established at HQ in 1984. Its prime task will be 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 will have responsibility for funding the expanded work at ILCA on system modelling. The lack of availability of funds for staffing the unit delayed its start (first proposed in 1983) but staff have now been recruited to start operations in June 1984.

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 analyze 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 was greatly enhanced in 1983 by bringing into operation an atomic absorption spectrophotometer and an automatic analyzer both of which are now functioning on a routine basis. 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 and 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 Cartography

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 presently 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 more 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.

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 1982 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 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 improvements 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 analyzed 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 underway 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 is being 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 crossbred oxen is being intensified. 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 more 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 have now been detailed in "Systems Research in the Arid Zones in Mali" (ILCA Research Report No. 5, Addis Ababa), published in 1983.

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. Development of land resources inventories and early warning systems based on satellite imagery are also underway.

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 1984 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 will therefore be intensified, with 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. The ILCA Humid Zone Programme aims to increase the productivity of village flocks of small ruminants and to integrate crop and livestock production on the fragile lateritic soils.

Baseline surveys have highlighted disease problems 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 flocks, 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 7 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 (toxity 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 1984 and 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 1984/1985 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 two main units, Documentation and Publications. An Audio-Visuals Unit will be established in 1984 to design, prepare and supply high quality audio-visual material to promote ILCA's training, research and other activities. 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.

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 about 16,000 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 has also 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 17 African countries and photographed about 5000 items in the collections of national institutes. Countries visited in 1983 included Zimbabwe, Malawi and Tanzania. Catalogues listing all documents microfilmed have been published for each country visited.

In 1984/85 documentation activities will intensify still further, with increasing emphasis on advertizing the facilities and services available in order to extend their use. The policy of exchange with other libraries will also be more intensively pursued than in the past. The computer will be increasingly used, not only in library administration, but also in the pro-

vision of on-line literature searches, and selected bibliographies. The selective dissemination of information (SDI) will be further extended. The IDRC project, already deemed highly successful, will continue with visits to Togo, Benin, Guinea and Mauritania, while Kenya, Botswana and possibly Zimbabwe will be visited for the second time.

Publications

Over the past 2 years, ILCA's publishing and printing activities have been centralized at headquarters. With its range of equipment, including Linotype CRTronic typesetters and two Heidelberg GTO offset presses, the publications section is now independent of commercial printing facilities.

Until early 1982 the main scientific and technical publications of ILCA were systems studies, monographs and the ILCA Bulletin, with working documents and newsletters playing a supportive role.

Some changes in publications policy were instituted in 1982 reflecting the recommendations of the QQR and the arrival of a new Director General. ILCA's first Annual Report appeared in April 1982, following the launching of the quarterly ILCA Newsletter. The publication of further monographs and systems studies beyond existing commitments was suspended, and the two series were replaced by the single series of Research Reports. A measure of continuity was provided by the ILCA Bulletin, which continues to reach a wide and appreciative African audience, and which has also been changed appreciably in content and layout to increase its audience appeal.

1984 and 1985 will see the further development of these new policies.

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 post-doctorals 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.

In 1984, 12 group activities are planned comprising of workshops and courses. This number will increase during 1985. Most of these will be held in Addis Ababa. About 350 trainees will participate in these group activities at an estimated cost of US$ 300,000 in 1985.

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 1984 and 1985. These include

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

b) Strengthening the maintenance section of General Operations to cope with HQ construction defects, to modify hostel facilities and to provide temporary staff accommodation.

c) Strengthening the internal audit group.

Appendix Table 2.1

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

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Director of Research	1.0	1.0	1.0	1.0	-	-	-	-	0.5	1.0	1.0	1.0
Total	1.0	1.0	1.0	1.0	-	-	-	-	0.5	1.0	1.0	1.0

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	103	116	116	116
Supplies and Services	18	8	8	8
Travel	22	23	23	23
Equipment Replacement	-	4	-	-
Total	143	151	147	147
Price Increases	-	-	12	24
Grand Total	143	151	159	171

Appendix Table 2.2

CENTRAL SCIENTIFIC UNITS
CORE RESOURCES - BASIC ANIMAL SCIENCES

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Animal Genetics	1.0	1.0	1.0	1.0	-	-	-	1.0	-	-	-	-
Animal Nutrition	1.0	1.0	1.0	1.0	-	-	-	-	-	0.2	1.0	1.0
Animal Physiology	-	-	-	1.0	-	-	-	1.0	-	-	-	-
Small Ruminants & Camel Group	0.3	1.0	1.0	1.0	-	-	-	1.0	-	0.4	1.0	1.0
Animal Health	-	0.3	0.5	0.5	-	-	-	1.0	-	0.2	1.0	1.0
Reproduction & Fertility	-	0.3	1.0	1.0	-	0.3	1.0	1.0	-	-	-	-
Intake & Metabolism	-	*	*	*	-	-	-	-	-	-	-	-
Total	2.3	3.6	4.5	5.5	-	0.3	1.0	5.0	-	0.8	3.0	3.0

* Special funding.

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	272	436	463	621
Supplies and Services	40	100	75	95
Travel	29	64	50	50
Equipment Replacement	-	-	-	-
Total	341	600	588	766
Price Increases	-	-	47	123
Grand Total	341	600	635	889

Appendix Table 2.3

CENTRAL SCIENTIFIC UNITS
CORE RESOURCES - LEGUME AGRONOMY

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Forage Agronomy	1.0	0.1	1.0	1.0	0.5	-	-	1.0	4.0	3.0	3.0	3.0
Ecology	1.0	1.0	1.0	1.0	-	-	-	-	3.5	4.0	4.0	4.0
Plant Introduction	-	1.0	1.0	1.0	-	1.0	1.0	1.0	4.0	4.0	4.0	4.0
Plant Nutrition/Soils	-	-	-	1.0	-	0.5	1.0	1.0	-	1.5	3.0	3.0
Total	2.0	2.1	3.0	4.0	0.5	1.5	2.0	3.0	11.5	12.5	14.0	14.0

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	183	258	365	4[illegible]0
Supplies and Services	152	157	157	175
Travel	15	16	20	25
Equipment Replacement	6	14	7	10
Total	356	445	549	666
Price Increases	-	-	44	107
Grand Total	356	445	593	773

Appendix Table 2.4

CENTRAL SCIENTIFIC UNITS
CORE RESOURCES - ANIMAL TRACTION*

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Agricultural Engineer	-	-	1.0	1.0	-	-	1.0	1.0	-	-	1.0	1.0
Crop Agronomy	-	-	-	-	-	-	1.0	1.0	-	-	1.0	1.0
Soil Physics	-	-	-	-	-	-	1.0	1.0	-	-	1.0	1.0
Total	-	-	1.0	1.0	-	-	3.0	3.0	-	-	3.0	3.0

*Traction Programme included at the "top" of the bracket for 1985.

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984**	Budget 1985**	Budget 1986**
Personnel	-	-	135	150
Supplies and Services	-	-	42	50
Travel	-	-	10	10
Equipment Replacement	-	-	-	-
Total	-	-	187	210
Price Increases	-	-	15	34
Grand Total	-	-	202	244

** Possibility of partial financing by special funding.

Appendix Table 2.5

CENTRAL SCIENTIFIC UNITS
CORE RESOURCES - SYSTEMS RESEARCH

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Agricultural Economy	-	0.5	1.0	1.0	-	0.1	1.0	1.0	-	0.2	1.0	1.0
Total	-	0.5	1.0	1.0	-	0.1	1.0	1.0	-	0.2	1.0	1.0

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	-	31	118	118
Supplies and Services	8	5	10	10
Travel	-	8	10	10
Equipment Replacement	-	-	-	-
Total	8	44	138	138
Price Increases	-	-	11	22
Grand Total	8	44	149	160

Appendix Table 2.6

CENTRAL SCIENTIFIC UNITS
CORE RESOURCES - LIVESTOCK POLICY UNIT

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Agricultural Economy	2.0+	2.7+	2.7+	3.7+	-	-	-	-	-	1.7	2.0	3.0
Total	2.0	2.7	2.7	3.7	-	-	-	-	-	1.7	2.0	3.0

+ Represents one locally recruited Senior Staff.

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	141	171	175	245
Supplies and Services	13	87	30	40
Travel	15	44	24	30
Equipment Replacement	-	4	-	-
Total	169	306	229	315
Price Increases	-	-	18	50
Grand Total	169	306	247	365

Appendix Table 2.7

CENTRAL SCIENTIFIC UNITS
CORE RESOURCES - TRYPANOTOLERANCE*

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Animal Nutrition *	*	*	*	*	-	-	-	-	-	-	-	-
Agricultural Economy	1.0	1.5	1.0	1.0	-	0.8	1.0	1.0	2.0	2.0	3.0	3.0
Animal Science*	-	-	-	1.0	1.5	2.0	2.0	2.0	-	-	-	-
Administration**	0.4+	0.4+	0.4+	0.4+	-	-	-	-	5.6	6.6	6.6	6.6
Total	1.4	1.9	1.4	2.4	1.5	2.8	3.0	3.0	7.6	8.6	9.6	9.6

* Partially funded by special funding.
** Administrative costs shared between Trypanotolerance and Rangelands (Kenya) in the ratio of 40 and 60%, respectively.
\+ Local recruitment.

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	126	180	165	225
Supplies and Services	98	190	150	200
Travel	29	50	50	50
Equipment Replacement	-	30	10	10
Total	253	450	375	485
Price Increases	-	-	30	78
Grand Total	253	450	405	563

Appendix Table 2.8

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

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Ecology	0.2*	1.5*	2.0	2.0	*	2.5*	3.0	3.0	*	1.0	2.0	3.0
Animal Nutrition	-	-	-	-	1.0	1.0	1.0	1.0	*	0.5*	1.0	1.0
Sociology	1.0	1.0	1.0	1.0	-	-	-	-	1.0	1.5	2.0	2.0
Animal Science	-	-	-	-	*	1.2*	2.0	2.0	-	1.0	1.0	1.0
Total	1.2	2.5	3.0	3.0	1.0	4.7	6.0	6.0	1.0	4.0	6.0	7.0

* Partially funded by special funding.

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	175	380	454	466
Supplies and Services	63	150	120	120
Travel	14	35	35	35
Equipment Replacement	5	15	10	20
Total	257	580	619	641
Price Increases	-	-	-	103
Grand Total	257	580	619	744

**HQ Range Research replaces the previous Ethiopian Rangelands Programme and Range Research.

Appendix Table 2.9

HIGHLAND ZONE
CORE RESOURCES - ETHIOPIA

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Agricultural Economy	2.0	1.0	1.0	1.0	1.0	1.5	2.0	2.0	2.0	3.5	4.0	4.0
Forage Agronomy	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	16.0	17.5	18.0	18.0
Sociology	*	*	-	-	-	-	-	-	1.0	2.0	2.0	2.0
Animal Science	1.0+	1.0+	1.0+	1.0+	2.0	2.0	2.0	2.0	5.0	9.0	12.0	12.0
Soil Science	0.8	1.0	1.0	1.0	-	-	-	-	4.0	7.2	8.0	8.0
Dairy Technology	-	1.0	1.0	1.0	-	-	-	-	2.0	2.0	2.0	2.0
Total	4.7	5.0	5.0	5.0	4.0	4.5	5.0	5.0	30.0	41.2	46.0	46.0

* Partially funded by special funding.
+ Local recruitment

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	496	582	636	636
Supplies and Services	273	343	300	300
Travel	39	40	30	30
Equipment Replacement	11	10	10	10
Total	819	975	976	976
Price Increases	-	-	78	156
Grand Total	819	975	1054	1132

Appendix Table 2.10

CENTRAL SUPPORT SERVICES
CORE RESOURCES - HQ FARM & GROUNDS

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Animal Science	1.0	1.0+	1.0+	1.0+	-	-	-	-	2.0	10.8	11.0	11.0
Total	1.0	1.0	1.0	1.0	-	-	-	-	2.0	10.8	11.0	11.0

+ Local recruitment

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	88	58	60	60
Supplies and Services	42	60	60	60
Travel	-	-	-	-
Equipment Replacement	1	-	-	10
Total	131	118	120	130
Price Increases	-	-	10	21
Grand Total	131	118	130	151

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Appendix Table 2.11

CENTRAL SUPPORT SERVICES
CORE RESOURCES - HQ LABORATORY

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Animal Nutrition	1.0	1.0	1.0	1.0	1.0	1.8	2.0	3.0	14.5	19.5	21.0	21.0
Animal Science	1.0+	-	-	-	-	-	-	-	-	-	-	-
Total	2.0	1.0	1.0	1.0	1.0	1.8	2.0	3.0	14.5	19.5	21.0	21.0

+ Local recruitment

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	185	225	243	260
Supplies and Services	52	90	90	90
Travel	18	20	15	15
Equipment Replacement	-	15	15	15
Total	255	350	363	380
Price Increases	-	-	29	61
Grand Total	255	350	392	441

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Appendix Table 2.12

CENTRAL SUPPORT UNITS
CORE RESOURCES - BIOMETRICS/COMPUTER UNIT

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
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	-	-	-	-	-	1.6	2.0	2.0
Biometrician	1.0	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	1.0	-	-	-	-	-	-	-	-
Total	3.0	3.0	4.0	4.0	1.0	1.0	1.0	2.0	6.0	7.6	8.0	8.0

* Systems Engineer included at the "top" of the bracket for 1985.

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	206	243	311	356
Supplies and Services	79	95	100	100
Travel	12	13	15	20
Equipment Replacement	46	185	10	100
Total	343	536	436	576
Price Increases	-	-	35	92
Grand Total	343	536	471	668

Appendix Table 2.13

CENTRAL SUPPORT SERVICES
CORE RESOURCES - AERIAL SURVEY AND CARTOGRAPHY

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Cartographer	0.5	-	-	-	-	1.0	1.0	1.0	4.0	3.0	3.0	4.0
Remote Sensing	-	0.1	0.5	1.0	-	0.1	0.5	1.0	-	0.5	1.0	1.0
Pilot	1.0	1.0	1.0	1.0	-	-	-	-	-	-	-	-
Land-use Expert	-	-	-	1.0	-	-	-	-	-	-	-	-
Total	1.5	1.1	1.5	3.0	-	1.1	1.5	2.0	4.0	3.5	4.0	5.0

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	194	94	124	218
Supplies and Services	183	78	78	90
Travel	14	8	8	10
Equipment Replacement	-	-	10	40
Total	391	180	220	358
Price Increases	-	-	18	57
Grand Total	391	180	238	415

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ARID ZONES RESEARCH IN WEST AFRICA
CORE RESOURCES - MALI

Appendix Table 2.14

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Animal Science	0.5	0.5	1.0	1.0	2.5	3.0	3.0	3.0	10.0	10.0	10.0	10.0
Ecology	1.5	1.5	1.0	1.0	2.0	2.0	2.0	2.0	10.0	10.0	10.0	10.0
Forage Agronomy	*	*	*	*	-	0.5	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	1.0	-	-	-	2.0	2.0	2.0	2.0	15.0	10.0	10.0	10.0
Agricultural Economy	*	*	*	*	-	-	-	-	-	-	-	-
Human Nutrition	-	-	-	-	*	-	-	-	1.0	1.0	1.0	1.0
Administration	1.0+	1.0+	1.0+	1.0+	-	-	-	-	33.0	33.0	33.0	33.0
Total	4.0	3.0	3.0	3.0	6.5	7.8	8.0	8.0	84.0	84.0	84.0	84.0

* Partially funded by special funding.
\+ Local recruitment

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	369	348	373	373
Supplies and Services	383	260	260	260
Travel	41	35	35	35
Equipment Replacement	16	35	20	20
Total	809	678	688	688
Price Increases	-	-	55	110
Grand Total	809	678	743	798

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Appendix Table 2.15

ARID ZONES RESEARCH IN WEST AFRICA
CORE RESOURCES - NIGER*

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Animal Nutrition	0.7	1.0	1.0	1.0	-	1.0	1.0	1.0	2.5	5.0	3.0	3.0
Forage Agronomy**	-	-	1.0	1.0	-	-	1.0	1.0	-	-	2.0	2.0
Total	0.7	1.0	2.0	2.0	-	1.0	2.0	2.0	2.5	5.0	5.0	5.0

** Forage Agronomy included at the "top" of the bracket for 1985.

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	49	78	138	138
Supplies and Services	26	45	50	60
Travel	4	10	15	15
Equipment Replacement	-	-	-	10
Total	79	133	203	223
Price Increases	-	-	16	36
Grand Total	79	133	219	259

* Operation started in second quarter of 1983

Appendix Table 2.16

EAST AFRICAN RANGE LIVESTOCK SYSTEMS
CORE RESOURCES - KENYA

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Agricultural Economy	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	3.0	3.0	3.0	3.0
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	5.0	5.0	5.0
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	6.4	6.4	6.4
Total	3.6	3.6	3.6	3.6	4.0	4.0	4.0	4.0	19.4	19.4	19.4	19.4

* Administrative costs shared between Rangelands (Kenya) and Trypanotolerance in the ratio of 60 and 40%, respectively.
\+ Local recruitment.

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	394	378	378	378
Supplies and Services	74	148	148	148
Travel	70	24	24	30
Equipment Replacement	5	-	10	20
Total	543	550	560	576
Price Increases	-	-	45	92
Grand Total	543	550	605	668

Appendix Table 2.17

EAST AFRICAN RANGE LIVESTOCK SYSTEMS
CORE RESOURCES - BOTSWANA**

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Ecology	0.7	0.1	1.0	1.0	-	-	-	-	-	0.1	2.0	2.0
Administration	-	-	-	-	-	-	-	-	1.2	0.1	2.0	2.0
Total	0.7*	0.1	1.0	1.0	-	-	-	-	1.2*	0.2	4.0	4.0

** Botswana Programme included at the "top" of the bracket for 1985.

OPERATING COSTS (IN US$'000)

Item	Actual 1983*	Budget 1984*	Budget 1985	Budget 1986
Personnel	31	5	63	83
Supplies and Services	35	40	30	30
Tr vel	2	5	10	10
Equipment Replacement	-	-	-	-
Total	68	50	103	123
Price Increases	-	-	8	20
Grand Total	68	50	111	143

* Partially funded by special fund'ng.

SUBHUMID ZONE
CORE RESOURCES - KADUNA

Appendix Table 2.18

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Agricultural Economy	1.0	1.0	1.0	1.0	-	-	-	-	3.0	3.0	3.0	3.0
Forage Agronomy	1.0	1.0	1.0	1.0	1.0	0.5	-	-	4.0	4.0	4.0	4.0
Animal Science	-	-	-	-	*	1.0	1.0	1.0	2.0	2.0	2.0	2.0
Animal Nutrition	1.0	1.0	1.0	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	2.0	2.5	2.0	2.0	29.0	29.0	29.0	29.0

* Partially funded by special funding
\+ Local recruitment

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	625	596	571	571
Supplies and Services	270	262	262	262
Travel	53	44	44	44
Equipment Replacement	4	18	18	18
Total	952	920	895	895
Price Increases	-	-	72	143
Grand Total	952	920	967	1038

Appendix Table 2.19

HUMID ZONE
CORE RESOURCES - IBADAN

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Animal Science	1.0	0.5	1.0	1.0	-	-	-	-	4.0	4.0	4.0	4.0
Forage Agronomy	-	-	-	-	1.0	1.0	1.0	1.0	8.0	8.0	8.0	8.0
Socio-Economics	1.0	1.0	1.0	1.0	-	-	-	-	4.0	4.0	4.0	4.0
Veterinary	1.0+	1.0+	1.0+	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	[illegible]
Agricultural Economy	-	-	-	-	*	*	*	*	4.0	4.0	4.0	4.0
Administration	-	-	-	-	-	-	-	-	12.0	12.0	12.0	12.0
Total	3.0	2.5	3.0	3.0	2.0	2.0	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 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	423	450	477	477
Supplies and Services	193	230	230	230
Travel	51	30	30	30
Equipment Replacement	8	30	10	20
Total	675	740	747	757
Price Increases	-	-	60	121
Grand Total	675	740	807	878

Appendix Table 2.20

INFORMATION SERVICES
CORE RESOURCES - INFORMATION SERVICES (SUMMARY)

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Director of Information Services	-	0.3	0.3	0.3	-	-	-	-	-	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	3.5	4.0	4.0	4.0
Head of Documentation Services	-	-	-	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Editing/Translation	0.8	0.5	0.5	0.5	1.0	2.3	3.0	4.0	2.0	1.3	2.0	3.0
Library	-	-	-	-	1.0	1.0	1.0	1.0	8.0	8.8	9.0	9.0
Inform. Processing	-	-	-	-	-	-	-	-	7.0	7.0	7.0	7.0
Layout	-	-	-	-	1.0	1.0	1.0	1.0	5.0	6.0	6.0	6.0
Printing Shop	-	-	-	-	-	-	-	-	7.5	8.0	8.0	8.0
Audio Visuals/Photo-Lab	-	0.5	0.5	0.5	-	0.5	1.0	1.0	1.0	2.3	3.0	3.0
Total	1.8	2.3	2.3	2.3	5.0	6.8	8.0	9.0	35.0	39.4	41.0	42.0

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	520	650	719	779
Supplies and Services	375	370	360	395
Travel	47	50	40	45
Equipment Replacement	13	30	-	20
Total	955	1100	1119	1239
Price Increases	-	-	90	198
Grand Total	955	1100	1209	1437

Appendix Table 2.20 (a)
(Supporting Table)

INFORMATION SERVICES
CORE RESOURCES - PUBLICATIONS

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Head of Publication Services	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	3.5	4.0	4.0	4.0
Editing/Translation	0.8	0.5*	0.5*	0.5*	1.0	2.3	3.0	4.0	2.0	1.3	2.0	3.0
Layout	-	-	-	-	1.0	1.0	1.0	1.0	5.0	6.0	6.0	6.0
Printing Shop	-	-	-	-	-	-	-	-	7.5	8.0	8.0	8.0
Total	1.8	1.5	1.5	1.5	3.0	4.3	5.0	6.0	18.0	19.3	20.0	21.0

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

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	317	394	436	496
Supplies and Services	228	200	200	220
Travel	10	10	10	10
Equipment Replacement	13	15	-	20
Total	568	619	646	746
Price Increases	-	-	52	119
Grand Total	568	619	698	865

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Appendix Table 2.20 (b)
(Supporting Table)

INFORMATION SERVICES
CORE RESOURCES - DOCUMENTATION

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
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	8.0	8.8	9.0	9.0
Inform. Processing	-	-	-	-	-	-	-	-	7.0	7.0	7.0	7.0
Photo Lab*	-	-	-	-	-	-	-	-	1.0	*	*	*
Total	-	-	-	-	2.0	2.0	2.0	2.0	17.0	16.8	17.0	17.0

* Photo-Lab Unit transferred to Audio-Visuals Unit effective 1984.

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	175	183	185	185
Supplies and Services	147	135	120	120
Travel	37	30	20	20
Equipment Replacement	-	15	-	-
Total	359	363	325	325
Price Increases	-	-	26	52
Grand Total	359	363	351	377

Appendix Table 2.20 (c)
(Supporting Table)

INFORMATION SERVICES
CORE RESOURCES - AUDIO VISUALS UNIT*

Position	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Audio-Visuals	-	0.5	0.5	0.5	-	0.5	1.0	1.0	-	0.5	1.0	1.0
Photo-Lab	-	-	-	-	-	-	-	-	-	1.8	2.0	2.0
Total	-	0.5	0.5	0.5	-	0.5	1.0	1.0	-	2.3	3.0	3.0

*Transferred from Training, Publications and Documentation Services effective 1984.

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	-	45	70	70
Supplies and Servies	-	25	30	45
Travel	-	10	10	15
Equipment Replacement	-	-	-	-
Total	-	80	110	130
Price Increases	-	-	9	21
Grand Total	-	80	119	151

Appendix Table 2.21

INTERNATIONAL LIAISON
CORE RESOURCES - INTERNATIONAL LIAISON *

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
International Liaison	1.0	1.0	1.0	1.0	1.5	2.0	2.0	2.0	4.0	5.0	5.0	5.0
Liaison	1.0+	1.0+	1.0+	1.0+								
Total	2.0	2.0	2.0	2.0	1.5	2.0	2.0	2.0	4.0	5.0	5.0	5.0

* Split from "Liaison, Training and Conferences" effective 1984.
+ Local recruitment

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	277	227	227	227
Supplies and Services	17	20	20	20
Travel	29	25	25	25
Equipment Replacement	2	4	-	-
Total	325	276	272	272
Price Increases	-	-	22	44
Grand Total	325	276	294	316

Appendix Table 2.22

TRAINING
CORE RESOURCES - TRAINING *

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Training & Conferences	-	0.5	0.5	0.5	1.0	1.0	1.0	1.0	2.0	3.8	4.0	4.0
Audio-Visuals**	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	0.5	0.5	0.5	1.0	1.0	1.0	1.0	2.0	3.8	4.0	4.0

* Split from "Liaison, Training and Conferences" effective 1984.
** Audio Visuals transferred to Audio-Visuals Unit under Information Services effective 1984.

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	61	136	189	189
Supplies and Services	277	500	500	600
Travel	-	10	15	15
Equipment Replacement	-	10	10	10
Total	338	656	714	814
Price Increases	-	-	57	130
Grand Total	338	656	771	944

Appendix Table 2.23

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

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Director General	1.0	1.0	1.0	1.0	-	1.0	1.0	1.0	1.0	-	-	-
Deputy Director General	0.3	-	-	-	-	-	-	-	0.5	-	-	-
Assistant to D.G.	-	1.0	1.0	1.0	-	-	-	-	-	-	-	-
Internal Audit Unit*	-	0.5	0.5	0.5	-	-	-	-	-	1.8	2.0	2.0
Total	1.3	2.5	2.5	2.5	-	1.0	1.0	1.0	1.5	1.8	2.0	2.0

*Transferred from Finance Department effective 1984

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	231	240	242	242
Supplies and Services	95	200	110	110
Travel	66	100	110	110
Equipment Replacement	-	-	-	-
Total	392	540	462	462
Price Increases	-	-	37	74
Grand Total	392	540	499	536

Appendix Table 2.23 (a)
(Supporting Table)

BOARD AND MANAGEMENT
CORE RESOURCES - BOARD

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-	-	-

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	-	-	-	-
Supplies and Services	55	150	60	60
Travel	44	50	60	60
Equipment Replacement	-	-	-	-
Total	99	200	120	120
Price Increases	-	-	10	19
Grand Total	99	200	130	139

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Appendix Table 2.23 (b)
(Supporting Table)

BOARD AND MANAGEMENT
CORE RESOURCES - MANAGEMENT

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Director General	1.0	1.0	1.0	1.0	-	1.0	1.0	1.0	1.0	-	-	-
Deputy Director General	0.3	-	-	-	-	-	-	-	0.5	-	-	-
Assistant to D.G.	-	1.0	1.0	1.0	-	-	-	-	-	-	-	-
Internal Audit Unit*	-	0.5+	0.5+	0.5+	-	-	-	-	-	1.8	2.0	2.0
Total	1.3	2.5	2.5	2.5	-	1.0	1.0	1.0	1.5	1.8	2.0	2.0

* Transferred from Finance Department effective 1984
\+ Local recruitment

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	231	240	242	242
Supplies and Services	40	50	50	50
Travel	22	50	50	50
Equipment Replacement	-	-	-	-
Total	293	340	342	342
Price Increases	-	-	27	55
Grand Total	293	340	369	397

Appendix Table 2.24

OFFICE OF DIRECTOR OF OPERATIONS
CORE RESOURCES - DIRECTOR OF OPERATIONS

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Director of Operations	-	0.4	1.0	1.0	-	-	-	-	-	0.5	1.0	1.0
Total	-	0.4	1.0	1.0	-	-	-	-	-	0.5	1.0	1.0

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	-	41	98	98
Supplies and Services	-	5	10	10
Travel	-	10	15	15
Equipment Replacement	-	-	-	-
Total	-	56	123	123
Price Increases	-	-	10	20
Grand Total	-	56	133	143

Appendix Table 2.25

FINANCE
CORE RESOURCES - FINANCE

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
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	7.5	8.0	9.5	9.5
Budget	0.5	0.5	0.5	0.5	-	-	-	-	-	-	-	-
Internal Audit*	0.5+	-	-	-	-	-	-	-	0.3	-	-	-
Total	2.0	1.5	1.5	1.5	3.0	3.0	3.0	3.0	8.8	9.0	10.5	10.5

* Transferred to Management effective 1984
\+ Local recruitment

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	247	247	258	258
Supplies and Services	(14)	50	50	60
Travel	19	20	20	20
Equipment Replacement	1	5	-	10
Total	253	322	328	348
Price Increases	-	-	26	56
Grand Total	253	322	354	404

Appendix Table 2.26

HQ ADMINISTRATION
CORE RESOURCES - HQ ADMINISTRATION DEPARTMENT

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Office of Department Head	1.0	1.0	1.0	1.0	-	0.3	1.0	1.0	1.0	1.0	1.0	1.0
Personnel	-	-	-	-	1.0	1.0	1.0	1.0	4.0	4.0	4.0	4.0
Office Services*	-	-	-	-	-	1.0	1.0	1.0	11.0	10.8	11.0	11.0
Clinic	-	-	-	-	-	-	-	-	3.0	3.7	4.0	4.0
Total	1.0	1.0	1.0	1.0	1.0	2.3	3.0	3.0	19.0	19.5	20.0	20.0

* Includes Registry & Communications

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	187	215	250	250
Supplies and Services	126	150	150	150
Travel	11	20	20	20
Equipment Replacement	8	5	10	10
Total	332	390	430	430
Price Increases	-	-	34	69
Grand Total	332	390	464	499

Appendix Table 2.27

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

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
General Services Officer	-	-	-	-	0.3	1.0	1.0	1.0	-	-	-	-
Purchases & Stores (G.S.)	-	-	-	-	1.0	1.0	1.0	1.0	5.5	6.5	6.5	6.5
Transport (G.S.)	-	-	-	-	-	-	-	-	18.0	19.4	20.0	20.0
Warden (Hostel & Catering)	1.0	1.0	0.5	-	1.0	1.5	2.0	2.0	39.0	49.0	50.0	50.0
Security (G.S)	-	-	-	-	-	0.5	1.0	1.0	26.0	28.4	29.0	29.0
Maintenance Engineer	1.0	1.0	1.0	1.0	-	-	-	-	-	-	-	-
Maintenance - General	-	-	-	-	-	-	-	-	4.0	10.0	16.0	16.0
Total	2.0	2.0	1.5	1.0	2.3	4.0	5.0	5.0	92.5	113.3	121.5	121.5

* Includes General Services, Warden and Maintenance.

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	500	589	616	591
Supplies and Services	264	358	344	351
Travel	11	6	8	8
Equipment Replacement	136	141	50	139
Total	911	1094	1018	1089
Price Increases	-	-	81	174
Grand Total	911	1094	1099	1263

Appendix Table 2.27 (a)
(Supporting Table)

GENERAL OPERATING EXPENSES
CORE RESOURCES - GENERAL SERVICES

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
General Services Officer	-	-	-	-	0.3	1.0	1.0	1.0	-	-	-	-
Purchases and Stores	-	-	-	-	1.0	1.0	1.0	1.0	5.5	6.5	6.5	6.5
Transport	-	-	-	-	-	-	-	-	18.0	19.4	20.0	20.0
Security	-	-	-	-	-	0.5	1.0	1.0	26.0	28.4	29.0	29.0
Total	-	-	-	-	1.3	2.5	3.0	3.0	49.5	54.3	55.5	55.5

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	253	285	302	302
Supplies and Services	214	262	262	262
Travel	8	3	5	5
Equipment Replacement	80	90	30	75
Total	555	640	599	644
Price Increases	-	-	48	103
Grand Total	555	640	647	747

Appendix Table 2.27 (b)
(Supporting Table)

GENERAL OPERATING EXPENSES
CORE RESOURCES - WARDEN

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Warden Officer	1.0	1.0	0.5	-	-	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	38.0	48.0	49.0	49.0
Total	1.0	1.0	0.5	-	1.0	1.5	2.0	2.0	39.0	49.0	50.0	50.0

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	145	186	169	144
Supplies and Services	(44)	12	12	12
Travel	-	-	-	-
Equipment Replacement	54	10	10	44
Total	156	208	191	200
Price Increases	-	-	15	32
Grand Total	156	208	206	232

Appendix Table 2.27 (c)
(Supporting Table)

GENERAL OPERATING EXPENSES
CORE RESOURCES - HQ MAINTENANCE

Positions	Man-Years											
	Group I				Group II				Group III			
	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86	Act 83	Bud 84	Bud 85	Bud 86
Supervisor (Engineer)	1.0	1.0	1.0	1.0	-	-	-	-	-	-	-	-
General	-	-	-	-	-	-	-	-	4.0	10.0	16.0	16.0
Total	1.0	1.0	1.0	1.0	-	-	-	-	4.0	10.0	16.0	16.0

OPERATING COSTS (IN US$'000)

Item	Actual 1983	Budget 1984	Budget 1985	Budget 1986
Personnel	101	118	145	145
Supplies and Services	94	84	70	77
Travel	3	3	3	3
Equipment Replacement	2	41	10	20
Total	200	246	228	245
Price Increases	-	-	18	39
Grand Total	200	246	246	284