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INTERNATIONAL ATOMIC ENERGY AGENCY

IAEA-CPS-92/12
14 September 1992
Original: ENGLISH

COUNTRY PROGRAMME SUMMARY

THE AGENCY'S TECHNICAL CO-OPERATION

PROGRAMME WITH

ZAIRE

1982 - 1992

COUNTRY PROGRAMME SUMMARIES

DEPARTMENT OF TECHNICAL CO-OPERATION



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COUNTRY PROGRAMME SUMMARIES

EVALUATION SECTION

DEPARTMENT OF TECHNICAL CO-OPERATION

**THE AGENCY'S TECHNICAL CO-OPERATION
PROGRAMME WITH
ZAIRE
1982 - 1992
COUNTRY PROGRAMME SUMMARIES**

This report contains a review of the Agency's technical co-operation activities in Zaire carried out during 1982 - 1992. In terms of coverage and analytical depth, country programme summaries stand somewhere midway between in-depth country programme evaluations and individual project evaluations. They attempt to provide a comprehensive, descriptive picture of the Agency's co-operation with a Member State in a manner that will be particularly useful for programming decisions. The attempt is very much to describe -- largely through statistical data -- not to provide independent analysis and evaluation.

INTRODUCTION

The country programme summary reported on here is one in the series of such studies being undertaken of the Agency's TC programme with Member States. With \$3.9 million of Agency support received, Zaire ranks 38th among all recipients of technical assistance in the period 1958 through 1991.

More than half of the assistance during the past ten years has been provided in the form of equipment (60%), followed by training (24%) and expert services (16%). With a share of 76%, the Technical Assistance and Co-operation Fund has provided more than three quarters of the total resources available, while only small shares were made available through UNDP (11%), extrabudgetary contributions (4%) and assistance in kind (9%).

With regard to project disbursements during the past ten years, by sector, the largest area has been general atomic energy development (26%), followed by agriculture (18%), nuclear safety (18%), nuclear techniques in industry and hydrology (13%), and nuclear physics and chemistry (11%).

IAEA-CPS-92/12

Pages

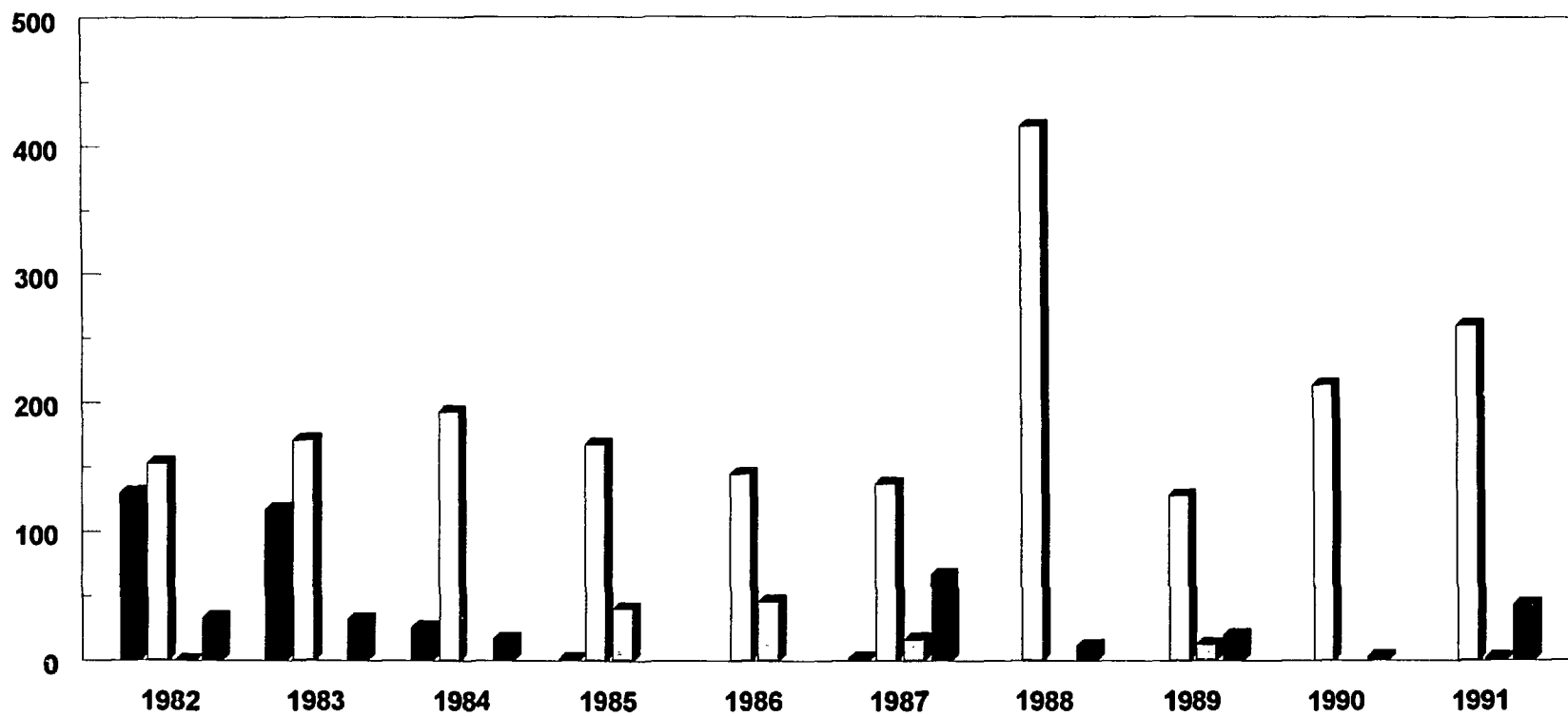
ZAIRE

INTRODUCTION	i
Assistance by Source	1
TACF Assistance	2
UNDP, Extrabudgetary and In Kind Assistance	3
TC Project Disbursements by Sector	4
Assistance by Type	5
Assistance by Component/Sector	6
Zaire's Ranking as TC Recipient	7
Top Five Recipients	8-9
Financial Summary of Assistance	10
Projects by Sector (Allotments/Disbursements)	11
Projects by Sector (Completed & Operational)	12
TC Project Components by Sector	13
Agency Fellows	14
Fellowships Longer than 12 M/M	15
Fellows Holding More than One Award	16
Training Course Participants	17
Multiple Participants in Training Courses	18-20
Projects Completed	21-23
Operational Projects	24
Counterpart Institutions (by Project)	25-27
Counterpart Institutions (by Institute)	28-30
Long-Term Assignments	31
Research Contracts/Agreements	32
Zairian Experts or Lecturers	33
Fellowships and Scientific Visits Hosted	34
Regional/Interregional Courses Hosted	35

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A
B
L
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N
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**ASSISTANCE PROVIDED BY THE AGENCY TO
ZAIRE, BY SOURCE, 1982 - 1991**

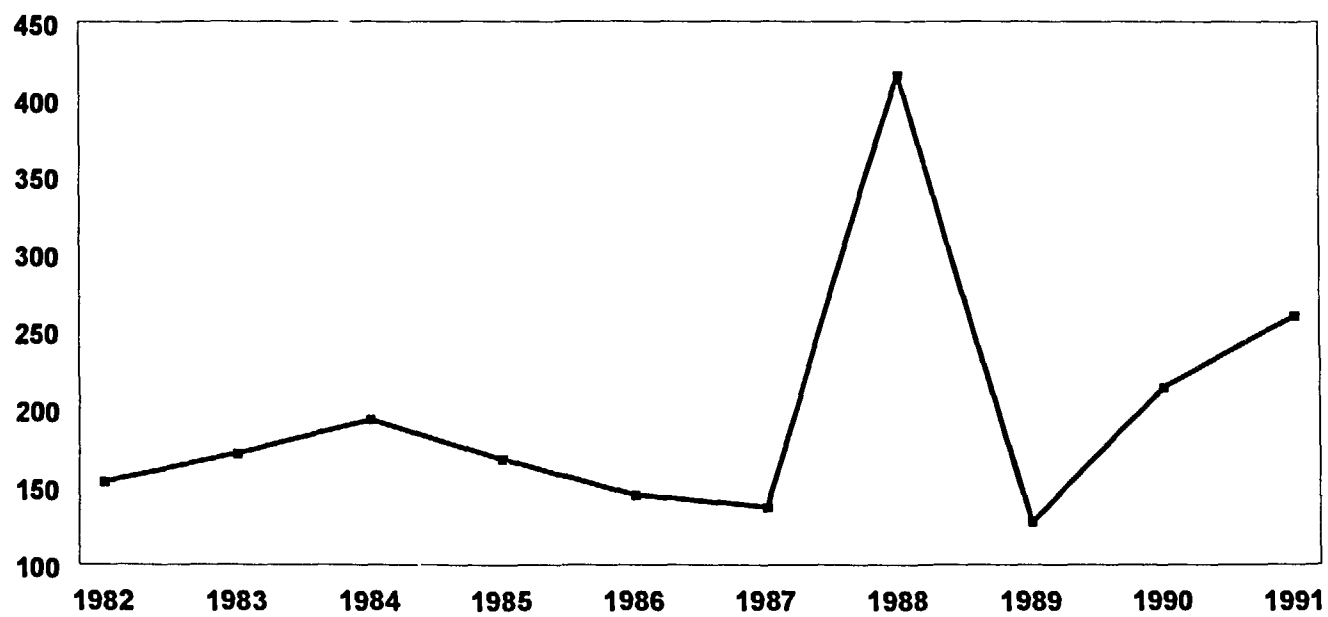
THOUSANDS OF DOLLARS



■ UNDP □ TACF □ EXTRABUDGETARY ■ IN-KIND

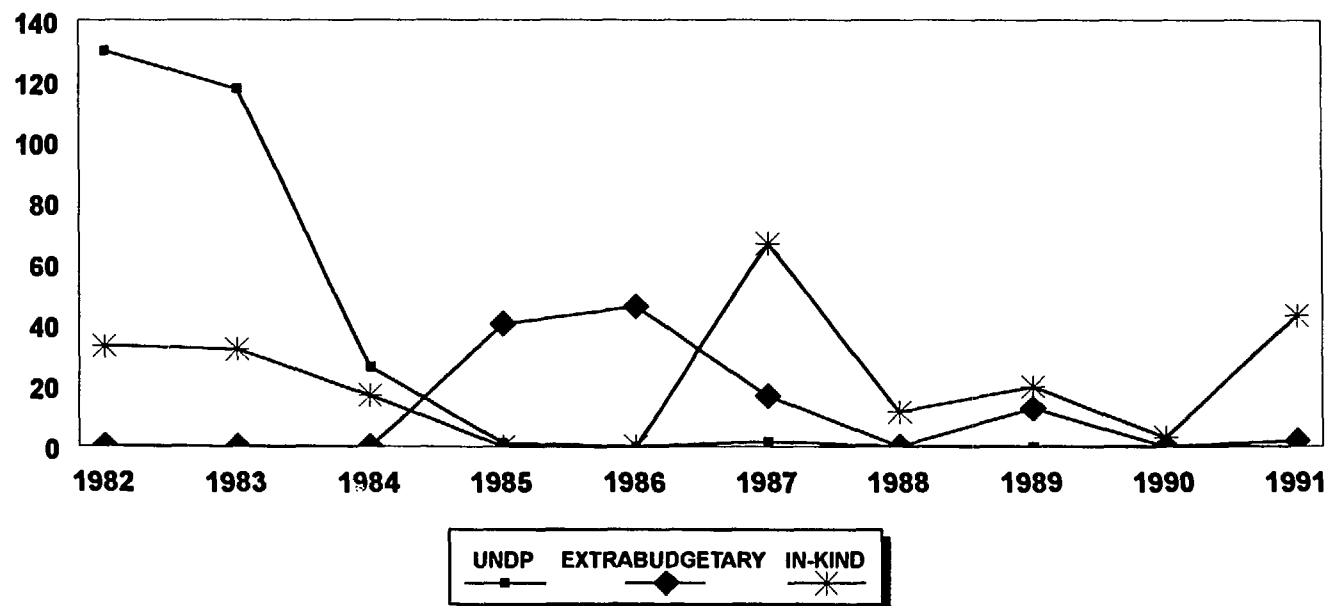
TACF ASSISTANCE PROVIDED TO ZAIRE
1982 - 1991

THOUSANDS OF DOLLARS

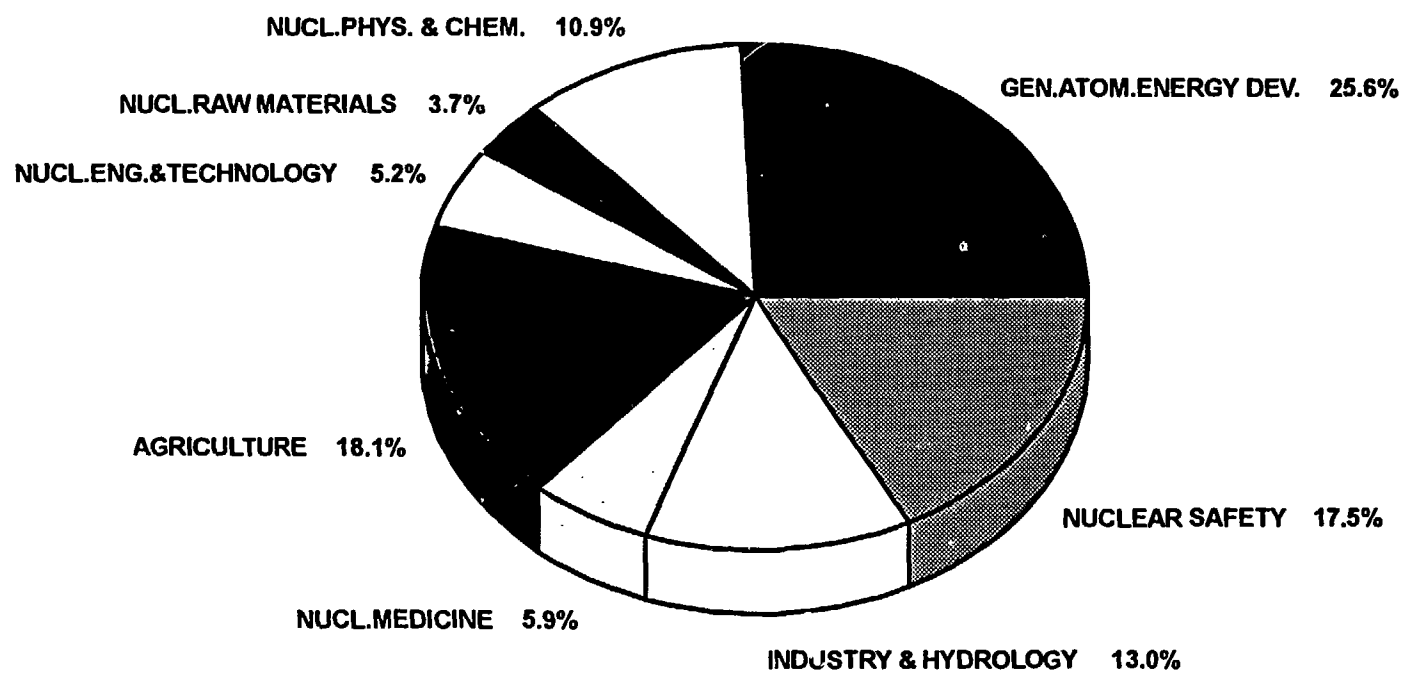


**UNDP, EXTRABUDGETARY AND IN-KIND ASSISTANCE
PROVIDED TO ZAIRE, 1982 - 1991**

THOUSANDS OF DOLLARS

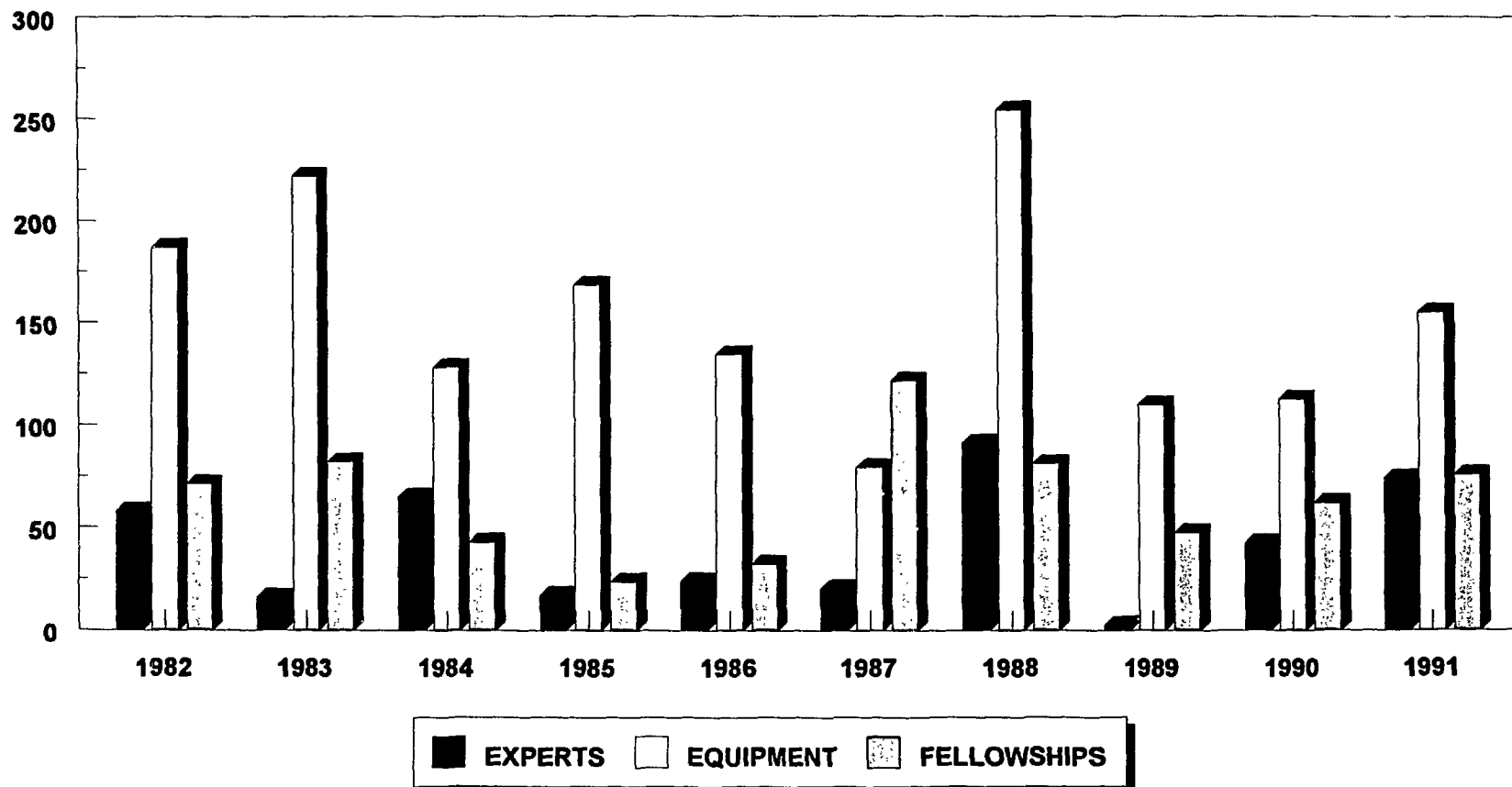


**TC PROJECT DISBURSEMENTS IN ZAIRE
BY SECTOR, 1982 - 1992**

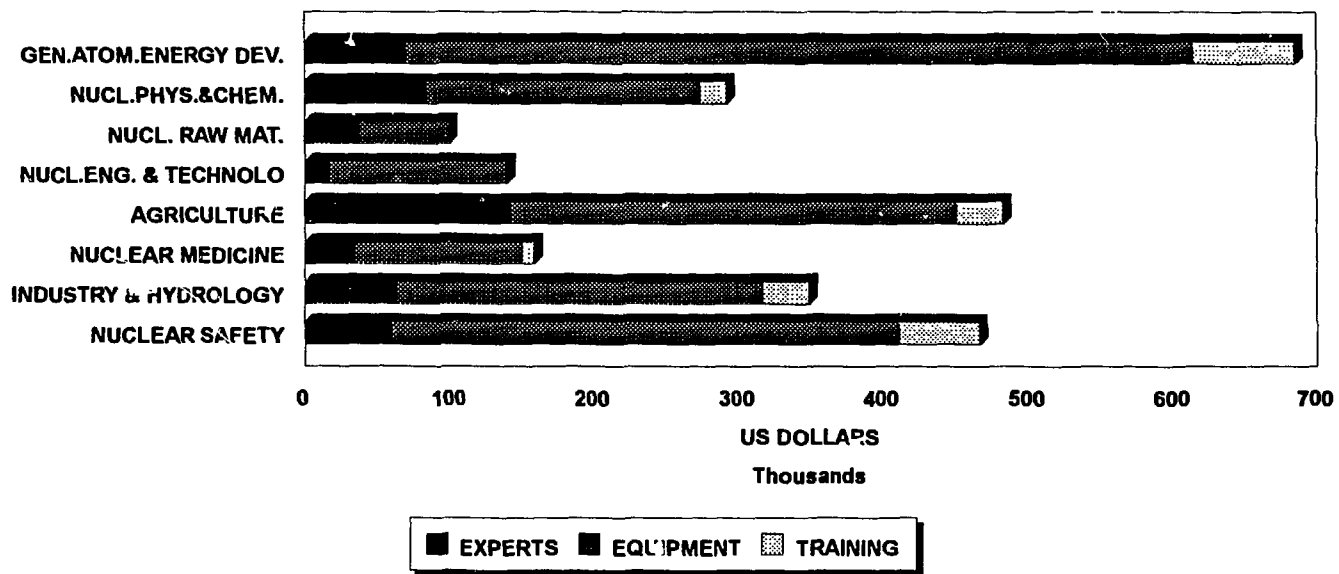


**ASSISTANCE PROVIDED BY THE AGENCY TO
ZAIRE, BY TYPE, 1982 - 1991**

THOUSANDS OF DOLLARS



**EXPERT SERVICES, EQUIPMENT, AND PROJECT-
FUNDED TRAINING PROVIDED TO ZAIRE
BY SECTOR, 1982 - 1992**



THE AGENCY'S TECHNICAL CO-OPERATION PROGRAMME WITH ZAIRE

ALL SOURCES

ZAIRE'S RANKING AS A TC RECIPIENT
1958 - 1991
(in \$1000)

YEAR	RANKING	AMOUNT
1958-81	34 th	1313.5
1982	27 th	315.4
1983	25 th	319.6
1984	33 rd	235.5
1985	41 st	208.6
1986	45 th	190.2
1987	48 th	221.3
1988	23 rd	426.3
1989	56 th	159.6
1990	50 th	216.5
1991	40 th	304.3
1958-91	38 th	3910.8

"TOP FIVE" RECIPIENTS OF AGENCY ASSISTANCE
1958 - 1991 (in \$1000)

ALL SOURCES

Year	I	II	III	IV	V	ZAIRE
1958-81	BRA 7907.9	IND 6670.7	APG 5200.4	PAK 5091.2	CHI 5005.7	34 th - 1313.5
1982	EGY 807.5	PER 746.4	CUB 715.7	COL 667.7	THA 654.3	27 th - 315.4
1983	EGY 2077.9	PER 1116.8	VIE 948.1	PHI 778.6	IRA 722.1	25 th - 319.6
1984	EGY 3625.9	PER 1750.4	THA 1094.6	CUB 1026.7	PHI 881.2	33 rd - 235.5
1985	EGY 2494.8	PER 1120.7	THA 1117.4	BGD 1068.2	PHI 963.7	41 st - 208.6
1986	EGY 2317.0	BRA 1452.9	THA 1169.4	POL 1050.3	BGD 896.4	45 th - 190.2
1987	HUN 3452.6	EGY 1775.4	THA 1742.4	INS 1312.5	YUG 1223.2	48 th - 221.3
1988	EGY 1486.9	BUL 1361.6	CPR 1278.5	THA 1158.7	BRA 1096.7	23 rd - 426.3
1989	CPR 1542.3	EGY 1505.1	THA 1205.3	BRA 1096.5	INS 999.1	56 th - 159.6
1990	POL 2308.1	CPR 2005.0	VIE 1589.2	INS 1412.6	BRA 1229.1	50 th - 216.5
1991	INS 1305.2	CPR 975.0	EGY 959.8	BRA 951.2	BUL 934.7	40 th - 303.3
1958-91	EGY 22222.3	BRA 17021.1	THA 14596.1	PER 12631.1	INS 12383.8	38 th - 3910.8

"TOP FIVE" RECIPIENTS OF AGENCY ASSISTANCE
1958 - 1991 (in \$1000)

TECHNICAL ASSISTANCE AND CO-OPERATION FUND

Year	I	II	III	IV	V	ZAIRE
1958-81	HUN 2533.0	PAK 2010.9	EGY 1893.7	THA 1712.8	BRA 1704.8	34 th - 703.7
1982	EGY 507.1	HUN 438.2	CUB 430.7	ECU 398.4	ZAM 354.9	35 th - 152.7
1983	EGY 1049.4	VIE 897.4	POL 667.8	PAK 498.5	PHI 430.0	33 rd - 170.7
1984	EGY 1197.2	CUB 655.6	ECU 565.6	BGD 506.3	BUL 472.4	32 nd - 192.7
1985	BGD 991.8	VIE 745.0	THA 708.7	BRA 571.8	POR 538.7	42 nd - 167.2
1986	BRA 1381.8	THA 871.9	POL 833.5	BGD 823.9	SYR 751.8	49 th - 144.4
1987	HUN 3305.2	DRK 986.8	BUL 888.5	INS 885.8	EGY 878.9	57 th - 136.8
1988	BUL 1195.6	PER 856.5	EGY 768.6	INS 751.7	MAL 656.0	16 th - 415.0
1989	EGY 990.9	CPR 868.2	POR 769.6	CHI 756.9	MAL 619.4	55 th - 127.5
1990	POL 1562.3	VIE 1518.8	DRK 1156.2	IRA 958.0	YUG 933.4	44 th - 213.5
1991	BUL 893.1	PAK 868.8	INS 855.1	VIE 817.6	CPR 814.5	42 nd - 259.6
1958-91	EGY 9591.3	HUN 8256.5	POL 7793.5	BRA 7433.5	PAK 7346.0	40 th - 2683.8

ASSISTANCE PROVIDED BY THE AGENCY TO ZAIRE

Financial Summary 1982 - 1991
(In thousands of dollars)

Year	ASSISTANCE PROVIDED, BY TYPE						ASSISTANCE PROVIDED, BY SOURCE					
	Experts	Equipment	Fellowships	Group training	Sub-contracts	Total	UNDP	TACF CC	TACF NCC	Extra-budgetary	In-kind	Total
1982	57.8	186.5	71.1	-	-	315.4	129.8	152.1	0.6	0.1	32.8	315.4
1983	16.0	221.7	81.9	-	-	319.6	117.2	168.0	2.7	-	31.7	319.6
1984	64.8	127.9	42.8	-	-	235.5	26.1	169.9	22.8	-	16.7	235.5
1985	17.0	168.0	23.6	-	-	208.6	1.2	161.2	6.0	40.2	-	208.6
1986	23.8	134.2	32.2	-	-	190.2	-	140.9	3.5	45.8	-	190.2
1987	20.5	79.3	121.5	-	-	221.3	1.6	131.6	5.2	16.5	66.4	221.3
1988	91.1	254.1	81.1	-	-	426.3	-	376.4	38.6	-	11.3	426.3
1989	2.6	109.7	47.3	-	-	159.6	-	120.4	7.1	12.5	19.6	159.6
1990	42.4	112.3	61.8	-	-	216.5	-	201.9	11.6	-	3.0	216.5
1991	73.8	154.8	75.7	-	-	304.3	-	254.5	5.1	1.8	42.9	304.3
1982-91	409.8	1 548.5	639.0	-	-	2 597.3	275.9	1 876.9	103.2	116.9	224.4	2 597.3

TECHNICAL CO-OPERATION PROJECTS IN ZAIRE
BY SECTOR

PROJECTS COMPLETED AND OPERATIONAL 1982 - 1992

TOTAL PROJECT ALLOTMENTS AND DISBURSEMENTS
(as of 31 August 1992)

SECTOR	NO. OF PROJECTS	ALLOTMENTS \$	% OF TOTAL	DISBURSEMENTS \$	% OF TOTAL
General atomic energy development	2	681 881	20.3	685 510	25.7
Nuclear physics and chemistry	4	279 967	8.4	292 230	10.9
Nuclear raw materials	1	85 200	2.5	99 632	3.7
Nuclear engineering and technology	2	148 270	4.4	139 854	5.2
Nuclear techniques in agriculture	4	497 565	14.8	483 166	18.1
Nuclear medicine	5	473 216	14.1	158 390	5.9
Nuclear techniques in biology	-	-	-	-	-
Nuclear techniques in industry and hydrology	7	660 176	19.7	348 121	13.0
Nuclear safety	4	530 590	15.8	466 649	17.5
TOTAL	29	3 356 865	100.0	2 673 552	100.0

TECHNICAL CO-OPERATION PROJECTS IN ZAIRE
 COMPLETED AND OPERATIONAL, BY SECTOR, 1982 - 1992
 (As of 31 August 1992)

Sector	No. of projects	Total project allotments \$	Total project disbursements \$
<u>Completed projects</u>			
General atomic energy development	2	681 881	685 510
Nuclear physics and chemistry	4	279 967	292 230
Nuclear raw materials	1	85 200	99 632
Nuclear engineering and technology	1	100 000	99 588
Nuclear techniques in agriculture	3	368 408	399 503
Nuclear medicine	2	49 200	51 043
Nuclear techniques in biology	-	-	-
Nuclear techniques in industry & hydrology	4	111 009	125 280
Nuclear safety	3	411 575	429 005
TOTAL	20	2 087 240	2 181 791
<u>Operational projects</u>			
General atomic energy development	-	-	-
Nuclear physics and chemistry	-	-	-
Nuclear raw materials	-	-	-
Nuclear engineering and technology	1	48 270	40 266
Nuclear techniques in agriculture	1	129 157	83 663
Nuclear medicine	3	424 016	107 347
Nuclear techniques in biology	-	-	-
Nuclear techniques in industry & hydrology	3	549 167	222 841
Nuclear safety	1	119 015	37 644
TOTAL	9	1 269 625	491 761

EXPERT SERVICES, EQUIPMENT AND PROJECT-FUNDED TRAINING PROVIDED TO ZAIRE, BY SECTOR
 PROJECTS COMPLETED AND OPERATIONAL 1982 - 1992
 (As of 31 August 1992)

FIELD	TOTAL PROJECT ALLOTMENTS				TOTAL PROJECT DISBURSEMENTS			
	EXPERT SERVICES		EQUIPMENT	TRAINING	EXPERT SERVICES		EQUIPMENT	TRAINING
	M/M	\$	\$	\$	M/M	\$	\$	\$
General atomic energy development	8/12	65 475	544 270	72 136	8/12	68 790	544 584	72 136
Nuclear physics and chemistry	16/13	73 151	187 860	18 956	16/24	82 928	190 225	19 077
Nuclear raw materials	2/22	22 660	62 540	-	2/22	38 197	61 435	-
Nuclear engineering and technology	1/22	13 270	135 000	-	1/22	17 459	122 395	-
Nuclear techniques in agriculture	17/19	94 881	370 074	32 610	15/18	142 423	308 133	32 610
Nuclear medicine	9/26	78 210	376 398	18 608	3/27	34 021	115 761	8 608
Nuclear techniques in biology	-	-	-	-	-	-	-	-
Nuclear techniques in industry & hydrology	18/17	147 417	418 262	94 497	5/11	62 944	253 680	31 497
Nuclear safety	6/03	44 696	430 834	55 060	5/07	59 364	351 626	55 659
TOTAL	81/14	539 760	2 525 238	291 867	59/23	506 126	1 947 839	219 587

AGENCY FELLOWS FROM ZAIRE

1982 - 1992¹
(As of 31 August 1992)

Sector	No. of fellowships	No. of months/days	Host countries
General atomic energy development	2	8/24	FRA, IAEA
Nuclear physics	1	9/16	BEL
Nuclear chemistry	5	15/03	TUR, YUG, GDR, GRE
Nuclear raw materials	-	-	-
Nuclear engineering and technology	4	28/16	FRA, GRE, IAEA
Nuclear techniques in agriculture	14	77/13	GDR, FRA, YUG, POL, NET, BEL, USA, BRA, IAEA
Nuclear medicine	13	87/08	FRA, BEL, POL, SWI, YUG, USA, UK
Nuclear techniques in biology	-	-	-
Nuclear techniques in industry and hydrology	3	18/07	FRA, IAEA
Nuclear safety	13	81/09	FRA, BEL, AUS, YUG
TOTAL	55	326/06	

¹ Only includes fellows who have completed or at least started training.

ZAIRE
 FELLOWSHIPS LONGER THAN 12 M/M
 1982 - 1992
 (As of 31 August 1992)

Name	Field of study	Host country	Date	Duration	Project
LOKOTO	Nuclear instrument maintenance	FRA	May 82 - May 83	12/01	ZAI/4/007
MAKOSSO	Plant breeding and genetics	FRA	Mar.91 - Mar.92	12/02	ZAI/5/008
NSONSA	Microbiology	BEL	Sep.81 - Sep.82	12/00	-
MBIRIBINDI	Radioimmunoassay	FRA	Started: Dec.91	12/00	RAF/0/007
MWANZA	Nuclear medicine	FRA	Jul.82 - Jul.84	24/02	-
NTUNDULU	Nuclear medicine	USA	Jan.91 - Mar.92	14/01	RAF/0/007
TSHIBANDA	Nuclear medicine	BEL	Oct.86 - Oct.87	12/01	ZAI/2/010
BIKWAKU	Radiation protection	FRA	Jan.84 - Oct.85	20/19	ZAI/9/003
KONDI	Radiation protection	BEL	May 83 - Sep.84	16/26	-
MBENDI	Radiation protection technology	FRA	Sep.83 - Nov.84	13/20	-

ZAIRIAN NATIONALS WHO WERE AWARDED MORE THAN ONE
FELLOWSHIP OR SCIENTIFIC VISIT
1982 - 1992
(As of 31 August 1992)

Name	Field of study	Host country	Date	Duration	Project
BILEAU	1. Radiopharmaceuticals 2. Nuclear medicine	TUR	Jul.82 - Jan.83	6/01	ZA1/6/003
		FRA	May 90 - Jul.90	1/08	ZA1/2/010
KASONGO	1. Radioimmunoassay 2. Nuclear medicine	POL	Jul.84 - Oct.84	3/01	ZA1/0/003
		UK	Mar.87 - Jun.87	3/21	ZA1/2/010
		BEL			
KAWAYA-TSHIMANGA	1. Radiopharmaceuticals 2. Radiopharmaceutical production/control	YUG	May 83 - Aug.83	3/01	ZA1/6/003
		GRE	Feb.87 - May 87	2/27	ZA1/6/004
LOKOTO	1. Nuclear instrument maintenance 2. Radiation protection	FRA	May 82 - May 83	12/01	ZA1/4/007
		BEL	Feb.88 - Jun.88	3/29	ZA1/4/009
MBAYA	1. Biological nitrogen fixation 2. Nitrogen fixation	FRA	Jan.82 - Jul.82	6/01	-
		BEL	Sep.87 - Mar.88	6/00	ZA1/5/006
NDOITE	1. Isotopes in agriculture 2. Soil-plant nutrition	GDR	May 83 - Aug.83	2/19	ZA1/5/003
		FRA	Aug.87 - Feb.88	6/01	ZA1/5/006
NSONSA	1. Microbiology 2. Analytical chemistry	BEL	Sep.81 - Sep.82	12/00	-
		GDR	Feb.86 - May 86	2/24	ZA1/5/006
NTUNDULU	1. Nuclear medicine 2. Nuclear medicine	BEL	Apr.83 - Feb.84	10/03	ZA1/0/003
		USA	Jan.91 - Mar.92	14/01	RAF/0/007

AGENCY TRAINING COURSES WITH ZAIRIAN PARTICIPATION

1982 - 1992
(As of 31 August 1992)

Field	Number of participants	Number of courses
General atomic energy development	5	5
Nuclear physics	7	6
Nuclear chemistry	2	2
Nuclear raw materials	2	2
Nuclear engineering and technology	14	11
Nuclear techniques in agriculture	10	8
Nuclear medicine	6	5
Nuclear techniques in biology	-	-
Nuclear techniques in industry & hydrology	2	2
Nuclear safety	22	20
TOTAL	70	61

MULTIPLE PARTICIPATION IN AGENCY TRAINING COURSES
BY ZAIRIAN NATIONALS
1982 - 1992
(As of 31 August 1992)

Name	Course No.	Course title	Year	Location
BIZIMANA	INT/3/014 (001)	ITC on exploration drilling and ore reserve estimation for uranium deposit	1985	BRA
	INT/9/069 (001)	ITC on radiation protection in the mining and milling of radioactive ores	1986	BRA
KABEYA	RAF/1/003 (001)	RTC on advanced X-ray fluorescence analysis	1987	GHA
	RAF/8/014 (001)	RTC on non-destructive testing, radiography (level 2)	1991	ALG
KABONZA	INT/4/069 (001)	Interregional study tour on isotope production, including radiopharmaceuticals	1984	CZE GDR HUN USSR
	INT/9/068 (001)	ITC on management and disposal of radioactive waste	1986	CAN
KAHIMBI	INT/4/085 (001)	ITC on advanced nuclear electronics	1986	JAM
	INT/4/100 (001)	ITC on interfacing in nuclear experiments	1989	THA
	RAF/4/007 (001)	RTC on nuclear instrumentation maintenance	1990	MOR
KANYINDA	INT/4/105 (001)	Advanced ITC on nuclear electronics	1991	MEX
	RAF/4/005 (001)	RTC on preventive maintenance and quality control of nuclear and related equipment in medicine	1989	ALG
	RAF/4/006 (001)	RTC on nuclear instrumentation maintenance	1989	ZAM
KASONGO	RAF/6/004 (001)	RTC on radioimmunoassay	1990	ETH
	RAF/6/006 (001)	Regional co-ordinators' meeting on radioimmunoassay of thyroid-related hormones	1991	URT
KINAYA	INT/9/053 (001)	ITC on safety of nuclear power plants and of fuel cycle installations	1984	FRA
	INT/9/061 (001)	ITC on physical protection of nuclear facilities and materials	1985	USA

MULTIPLE PARTICIPATION IN AGENCY TRAINING COURSES
BY ZAIRIAN NATIONALS
1982 - 1992
(As of 31 August 1992)

Name	Course No.	Course title	Year	Location
KOKAKOZETE	INT/9/071 (001)	ITC on physical protection of nuclear facilities and materials	1987	USA
	INT/9/104 (001)	ITC on safety in the operation of research reactors	1990	USA
KONDI	INT/9/040 (001)	ITC on nuclear power plant siting	1982	FRA
	INT/9/058 (001)	ITC on radioactive waste management	1985	FRA
	INT/9/083 (001)	ITC on planning, preparedness and response to nuclear accidents or radiological emergencies	1987	USA
	RAF/9/003 (001)	RTC on radiation protection	1987	EGY
	RAF/9/006 (001)	RTC on management of spent sealed radiation sources	1991	KEN
LUKANDA	RAF/8/008 (001)	RTC on hydrology	1984	URT
	RAF/9/003 (001)	RTC on radiation protection	1987	EGY
LUMU	INT/0/039 (001)	IWS on IAEA technical co-operation practices and procedures	1984	SUD
	INT/4/086 (001)	Interregional study tour on research reactor utilization	1986	FRA GFR USSR YUG UGA
	RAF/0/005 (001)	Regional seminar on nuclear science for peace and development	1990	UGA
MATAMBA	INT/1/030 (001)	ITC on energy dispersive X-ray analysis	1984	YUG
	INT/9/100 (001)	ITC on radioactivity measurements for environmental monitoring purposes	1989	FRA
MULUMBA	INT/1/046 (001)	ITC on nuclear measurements and methods in reactor and personal neutron dosimetry	1989	USSR
	INT/9/114 (001)	ITC on planning, preparedness and response to radiological emergencies	1991	USA
	RAF/9/005 (003)	RTC for radiation protection officers	1990	TUN
NAKAMWAMBILA	INT/4/099 (001)	ITC on research reactor operation, utilization and safety	1988	FRA
	INT/9/070 (001)	ITC on management of radioactive waste	1987	GFR
	INT/9/098 (001)	ITC on safety and regulation of unsealed sources of radioactive material	1989	IRE
	RAF/9/005 (003)	RTC for radiation protection officers	1990	TUN

MULTIPLE PARTICIPATION IN AGENCY TRAINING COURSES
 BY ZAIRIAN NATIONALS
 1982 - 1992
 (As of 31 August 1992)

Name	Course No.	Course title	Year	Location
SOLO	INT/9/121 (001)	ITC on target and sample preparation and assay in nuclear analytical techniques and nuclear data measurements	1991	USSR
	RAF/2/003 (001)	RTC on application of nuclear analytical techniques in mineral exploration and exploitation	1991	GHA
TSHIASHALA	INT/1/026 (001)	ITC on radiochemistry and nuclear analytical techniques	1984	FRA
	INT/2/006 (001)	Advanced ITC on sampling, sample preparation and data evaluation for multi-element and radionuclide analysis by nuclear and instrumental methods	1989	GFR

PROJECTS COMPLETED IN ZAIRE SINCE 1982
(As of 31 August 1992)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS				COMPLETED
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING	
			M/M	\$	\$	\$	M/M	\$	\$	\$	
1979	ZAI/0/003	Strengthening of technical-scientific infrastructure	7/24	62 955	434 150	72 136	7/24	62 955	434 150	72 136	1985
1980	ZAI/0/004	Computing facility	0/18	2 520	110 120	-	0/18	5 835	110 434	-	1987
1985	ZAI/1/002	Analytical support	-	-	35 000	-	-	-	35 679	-	1989
1974	ZAI/2/007	Neutron activation	6/23	16 916	60 240	-	6/23	25 058	60 664	-	1986
1981	ZAI/2/009	Radioimmunoassay	3/00	14 400	17 800	-	3/11	19 869	17 955	-	1982
1983	ZAI/2/010	Radioimmunoassay kit production	6/20	41 835	74 820	18 956	6/20	38 001	75 927	19 077	1991
1988	ZAI/3/002	Uranium exploration	2/22	22 660	62 540	-	2/22	38 197	61 435	-	1992
1982	ZAI/4/008	Research reactor instrumentation	-	-	100 000	-	-	-	99 588	-	1986
1974	ZAI/5/003	Radioisotopes in ¹ agriculture	6/13	16 083	39 500	-	6/13	47 309	33 909	-	1986

^{1/} Figures include equipment offered (\$15,000) and provided (\$9,313) in kind.

PROJECTS COMPLETED IN ZAIRE SINCE 1982
(As of 31 August 1992)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS				COMPLETED
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING	
			M/M	\$	\$	\$	M/M	\$	\$	\$	
1980	ZAI/5/006	Radioisotopes in agriculture	3/04	20 018	181 200	-	3/04	31 168	163 549	-	1988
1981	ZAI/5/007	Food preservation	2/22	18 060	93 547	-	2/21	30 654	92 914	-	1991
1978	ZAI/6/003	Radiopharmaceuticals	2/00	7 000	32 200	-	2/01	13 072	28 600	-	1983
1985	ZAI/6/005	Nuclear medicine	-	-	10 000	-	-	-	9 371	-	1989
1975	ZAI/8/002	Radioisotopes in industry/food preservation ²	2/05	5 417	12 000	-	-	-	20 143	-	1982
1980	ZAI/8/004	Nuclear methods in mineralogy	1/00	4 200	28 547	-	0/21	6 253	28 547	-	1982
1981	ZAI/8/005	Radioisotopes in hydrology	1/08	6 080	28 997	-	1/08	15 573	28 996	-	1988
1983	ZAI/8/007	Industrial applications of nuclear techniques	-	-	25 768	-	-	-	25 768	-	1987

^{2/} Figures include equipment offered (\$12,000) and provided (20,143) in kind.

PROJECTS COMPLETED IN ZAIRE SINCE 1982
(As of 31 August 1992)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS				COMPLETED
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING	
			M/M	\$	\$	\$	M/M	\$	\$	\$	
1973	ZA1/9/002	Health physics ³	0/21	6 121	5 000	-	0/21	6 121	5 781	-	1984
1983	ZA1/9/003	Radioactivity monitoring	2/13	16 420	157 247	13 913	2/13	23 338	156 714	13 912	1991
1986	ZA1/9/004	Research reactor safety	2/10	16 550	155 177	41 147	1/25	26 499	154 893	41 747	1992
	TOTAL	20 projects	51/23	277 235	1 663 853	146 152	49/05	389 902	1 645 017	146 872	

^{3/} Figures includes 21 days of partly cost-free expert services and equipment offered (\$5,000) and provided (\$5,781) in kind.

OPERATIONAL PROJECTS IN ZAIRE
(As of 31 August 1992)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS			
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING
			M/M	\$	\$	\$	M/M	\$	\$	\$
1987	ZAI/4/009	Strengthening of maintenance capability	1/22	13 270	35 000	-	1/22	17 459	22 807	-
1986	ZAI/5/008	Radiation-induced mutations	5/10	40 720	55 827	32 610	3/10	33 292	17 761	32 610
1984	ZAI/6/004	Radiopharmaceuticals	1/26	13 160	86 771	8 608	1/26	20 949	77 790	8 608
1991	ZAI/6/006	Upgrading the nuclear medicine service	4/00	39 000	82 427	-	-	-	-	-
1991	ZAI/6/007	Upgrading the radioimmunoassay capability	2/00	19 050	165 000	10 000	-	-	-	-
1986	ZAI/8/008	Activation analysis in mining	2/04	17 120	91 900	-	1/10	16 925	84 467	-
1988	ZAI/8/009	Isotopes in water resources assessment	3/00	26 700	121 050	31 497	0/29	9 440	65 759	31 497
1991	ZAI/8/010	Gamma irradiation facility	9/00	87 900	110 000	63 000	1/03	14 753	-	-
1991	ZAI/9/005	Radiation protection	0/19	5 605	113 410	-	0/08	3 406	34 238	-
	TOTAL	9 projects	29/21	262 525	861 385	145 715	10/18	116 224	302 822	72 715

COUNTERPART INSTITUTIONS IN ZAIRE (I)
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>GENERAL ATOMIC ENERGY DEVELOPMENT</u>		
ZAI/0/003	1. Kinshasa Regional Nuclear Research Centre, Kinshasa	WA KALENGA LUMU
	2. University of Kinshasa, Kinshasa	-
ZAI/0/004	Kinshasa Regional Nuclear Research Centre, Electronics Department Kinshasa	WA KALENGA
<u>NUCLEAR PHYSICS AND CHEMISTRY</u>		
ZAI/1/002	Kinshasa Regional Nuclear Research Centre, Central Analytical Laboratory, Kinshasa	MATAMBA
ZAI/2/007	Kinshasa Regional Nuclear Research Centre, Central Analytical Laboratory, Kinshasa	MATAMBA
ZAI/2/009	Kinshasa Regional Nuclear Research Centre, Kinshasa	KADIMA
ZAI/2/010	Kinshasa Regional Nuclear Research Centre, Kinshasa	KASONGO
<u>NUCLEAR RAW MATERIALS</u>		
ZAI/3/002	Kinshasa Regional Nuclear Research Centre, Central Analytical Laboratory, Kinshasa	AKILIMALI
<u>NUCLEAR ENGINEERING AND TECHNOLOGY</u>		
ZAI/4/008	Kinshasa Regional Nuclear Research Centre, Reactor Service Technical Division, Kinshasa	NGONGA NGENJI
ZAI/4/009	Kinshasa Regional Nuclear Research Centre, Reactor Service Technical Division, Kinshasa	OSIEN

COUNTERPART INSTITUTIONS IN ZAIRE (I)

(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
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AGRICULTURE

ZAI/5/003	Kinshasa Regional Nuclear Research Centre, Radioagronomy Department, Kinshasa	MASOZERA KEMBOLA
ZAI/5/006	Kinshasa Regional Nuclear Research Centre, Life Science Division, Kinshasa	LUYINDULA
ZAI/5/007	Kinshasa Regional Nuclear Research Centre, Kinshasa	ONYEMBE
ZAI/5/008	Kinshasa Regional Nuclear Research Centre, Radioagronomy Department, Kinshasa	MASOZERA

NUCLEAR MEDICINE

ZAI/6/003	Kinshasa Regional Nuclear Research Centre, Kinshasa	WA KALENGA
ZAI/6/004	Kinshasa Regional Nuclear Research Centre, Nuclear Chemistry and Physics Department, Radioisotope and Labelled Molecule Production Laboratory, Kinshasa	LUMU
ZAI/6/005	Kinshasa Regional Nuclear Research Centre, Life Science Division, Kinshasa	DITU
ZAI/6/006	Kinshasa Regional Nuclear Research Centre, Department of Nuclear Medicine, Kinshasa	DITU
ZAI/6/007	Kinshasa Regional Nuclear Research Centre, Kinshasa	KASONGO

NUCLEAR TECHNIQUES IN INDUSTRY AND HYDROLOGY

ZAI/8/002	Kinshasa Regional Nuclear Research Centre, Kinshasa	WA KALENGA
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COUNTERPART INSTITUTIONS IN ZAIRE (I)
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>NUCLEAR TECHNIQUES IN INDUSTRY AND HYDROLOGY (cont'd)</u>		
ZAI/8/004	University of Kinshasa, Faculty of Sciences, Department of Physics, Kinshasa	POLLAK
ZAI/8/005	Kinshasa Regional Nuclear Research Centre, Nuclear Chemistry and Physics Department, Kinshasa	LUMU
ZAI/8/007	University of Kinshasa, Faculty of Sciences, Department of Physics, Kinshasa	POLLAK
ZAI/8/008	Kinshasa Regional Nuclear Research Centre, Central Analytical Laboratory, Kinshasa	TSHIASHALA
ZAI/8/009	Kinshasa Regional Nuclear Research Centre, Department of Soil Physics and Hydrology, Kinshasa	NDEMBO
ZAI/8/010	Kinshasa Regional Nuclear Research Centre, Department of Biochemistry and Food Technology, Kinshasa	ONYEMBE
<u>NUCLEAR SAFETY</u>		
ZAI/9/002	University of Kinshasa, Nuclear Centre, Kinshasa	WA KALENGA
ZAI/9/003	Kinshasa Regional Nuclear Research Centre, Radiation Protection Department, Kinshasa	KONDI TAMBA
ZAI/9/004	Kinshasa Regional Nuclear Research Centre, Reactor Service Technical Division, Kinshasa	OSIEN
ZAI/9/005	Kinshasa Regional Nuclear Research Centre, Kinshasa	MULUMBA

COUNTERPART INSTITUTIONS IN ZAIRE (II)
(By Institute)

KINSHASA REGIONAL NUCLEAR RESEARCH CENTRE (KRNR)

KRNR
Kinshasa

ZAI/0/003	Strengthening of Technical-Scientific Infrastructure
ZAI/2/009	Radioimmunoassay
ZAI/2/010	Radioimmunoassay Kit Production
ZAI/5/007	Food Preservation
ZAI/6/003	Radiopharmaceuticals
ZAI/6/007	Upgrading the Radioimmunoassay Capability
ZAI/8/002	Radioisotopes in Industry/Food Preservation
ZAI/9/005	Radiation Protection

KRNR, Electronics Department
Kinshasa

ZAI/0/004	Computing Facility
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KRNR, Central Analytical Laboratory
Kinshasa

ZAI/1/002	Analytical Support
ZAI/2/007	Neutron Activation
ZAI/3/002	Uranium Exploration
ZAI/8/008	Activation Analysis in Mining

KRNR, Reactor Service Technical Division
Kinshasa

ZAI/4/008	Research Reactor Instrumentation
ZAI/4/009	Strengthening of Maintenance Capability
ZAI/9/004	Research Reactor Safety

KRNR, Radioagronomy Department
Kinshasa

ZAI/5/003	Radioisotopes in Agriculture
ZAI/5/008	Radiation-Induced Mutations

COUNTERPART INSTITUTIONS IN ZAIRE (II)
(By Institute)

KRNRC (cont'd)

KRNRC, Life Science Division
Kinshasa

ZAI/5/006 Radioisotopes in Agriculture
ZAI/6/005 Nuclear Medicine

KRNRC, Nuclear Chemistry and Physics Department
Kinshasa

ZAI/8/005 Radioisotopes in Hydrology

KRNRC, Nuclear Chemistry and Physics Department
Radioisotope and Labelled Molecule Production Laboratory
Kinshasa

ZAI/6/004 Radiopharmaceuticals

KRNRC, Department of Nuclear Medicine
Kinshasa

ZAI/6/006 Upgrading of Nuclear Medicine Service

KRNRC, Department of Soil Physics and Hydrology
Kinshasa

ZAI/8/009 Isotopes in Water Resources Assessment

KRNRC, Department of Biochemistry and Food Technology
Kinshasa

ZAI/8/010 Gamma Irradiation Facility

KRNRC, Radiation Protection Department
Kinshasa

ZAI/9/003 Radioactivity Monitoring

COUNTERPART INSTITUTIONS IN ZAIRE (II)
(By Institute)

UNIVERSITY OF KINSHASA

University of Kinshasa
Kinshasa

ZAI/0/003 Strengthening of Technical-Scientific Infrastructure

University of Kinshasa
Faculty of Sciences
Department of Physics
Kinshasa

ZAI/8/004 Nuclear Methods in Mineralogy
ZAI/8/007 Industrial Application of Nuclear Techniques

University of Kinshasa
Nuclear Centre
Kinshasa

ZAI/9/002 Health Physics

THE AGENCY'S TECHNICAL CO-OPERATION PROGRAMME WITH ZAIRE

**LONG-TERM EXPERT ASSIGNMENTS
(1982 - 1992)**

NONE

RESEARCH CONTRACTS/AGREEMENTS IN ZAIRE SINCE 1982 ¹
(As of 31 August 1992)

Field of activity	No. of contracts/ agreements	Amount allocated \$
Nuclear techniques in agriculture	2	21 000
Nuclear medicine	1	23 000
Nuclear techniques in biology	1	8 000
Safety in nuclear energy	1	17 000
TOTAL	5	69 000

¹/ New awards since 1982

**SCIENTISTS FROM ZAIRE SERVING AS AGENCY
TECHNICAL CO-OPERATION EXPERTS OR
TRAINING COURSE LECTURERS
1982 - 1992
(As of 31 August 1992)**

Name	No. of assignments	Project(s)
LUYINDULA	2	RAF/5/010
SANGINGA	2	MOR/5/017, SIL/5/002
TOTAL	4	

**AGENCY FELLOWSHIPS AND SCIENTIFIC VISITS
HOSTED BY ZAIRE
1982 - 1992
(As of 31 August 1992)**

NONE

**REGIONAL AND INTERREGIONAL TRAINING EVENTS
HOSTED BY ZAIRE
1982 - 1992
(As of 31 August 1992)**

NONE