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INTERNATIONAL ATOMIC ENERGY AGENCY

IAEA-CPS-92/10
3 September 1992
Original: ENGLISH

COUNTRY PROGRAMME SUMMARY

**THE AGENCY'S TECHNICAL CO-OPERATION
PROGRAMME WITH
NIGERIA
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

NIGERIA

1982 - 1992

COUNTRY PROGRAMME SUMMARIES

This report contains a review of the Agency's technical co-operation activities in Nigeria 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.

NIGERIA

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INTRODUCTION

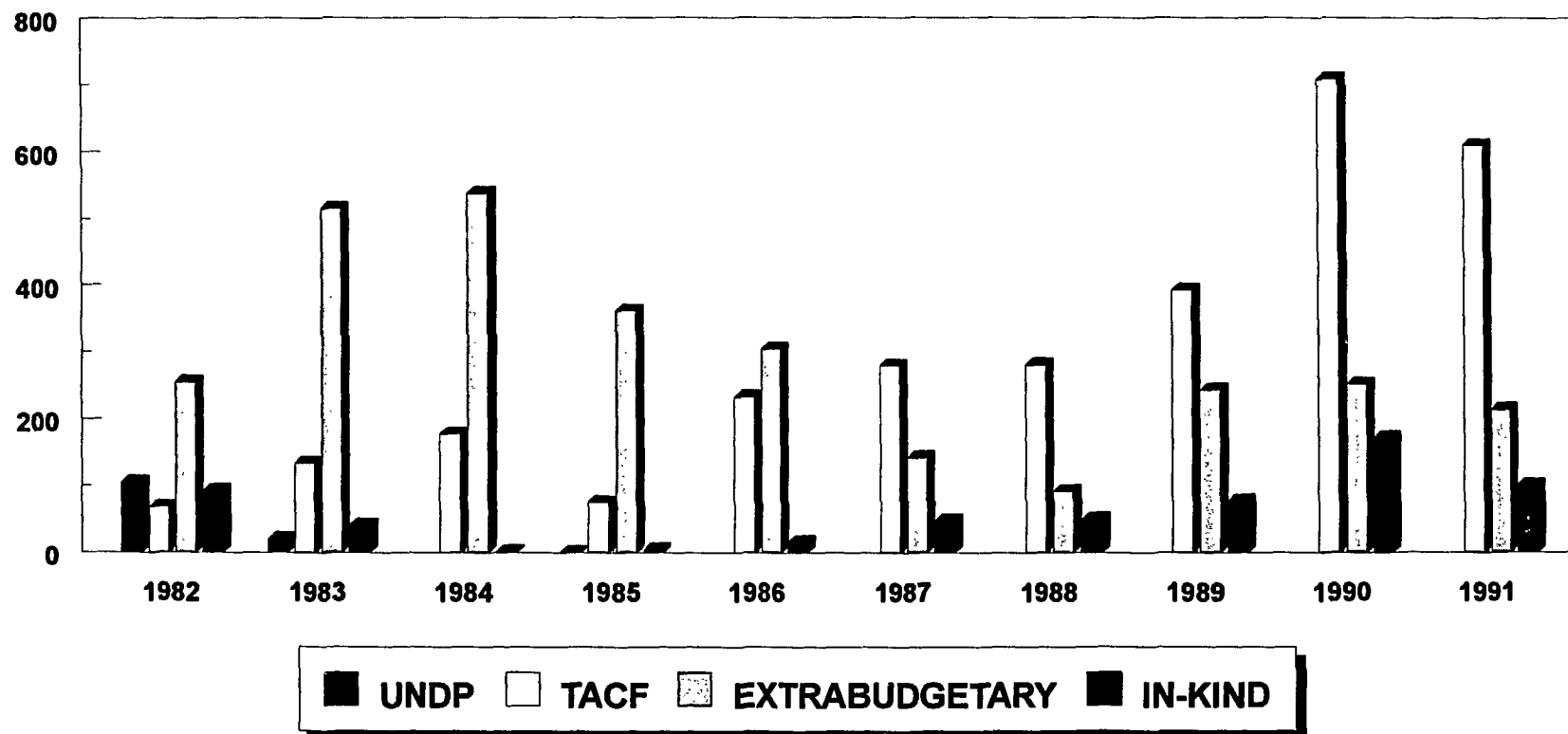
The country programme summary reported on here is one in the series of such studies being undertaken of the Agency's TC programme with Member States. With over \$9.3 million of Agency support received, Nigeria ranks 14th among all recipients of technical assistance in the period 1958 through 1991.

During the past ten years, 44% of this assistance has been provided in the form of equipment, followed by training (27%), expert services (26%) and sub-contracts (3%). With 45% and 44%, respectively, the Technical Assistance and Co-operation Fund and extrabudgetary contributions hold almost equal shares in the total resources made available, while in-kind assistance accounts for 9% and UNDP for 2% of the resources.

With regard to project disbursements during the past ten years, by sector, by far the largest area has been agriculture (70%), with significantly smaller shares going to nuclear physics and chemistry (11%), nuclear medicine (8%) and nuclear safety (7%).

ASSISTANCE PROVIDED BY THE AGENCY TO NIGERIA, BY SOURCE, 1982 - 1991

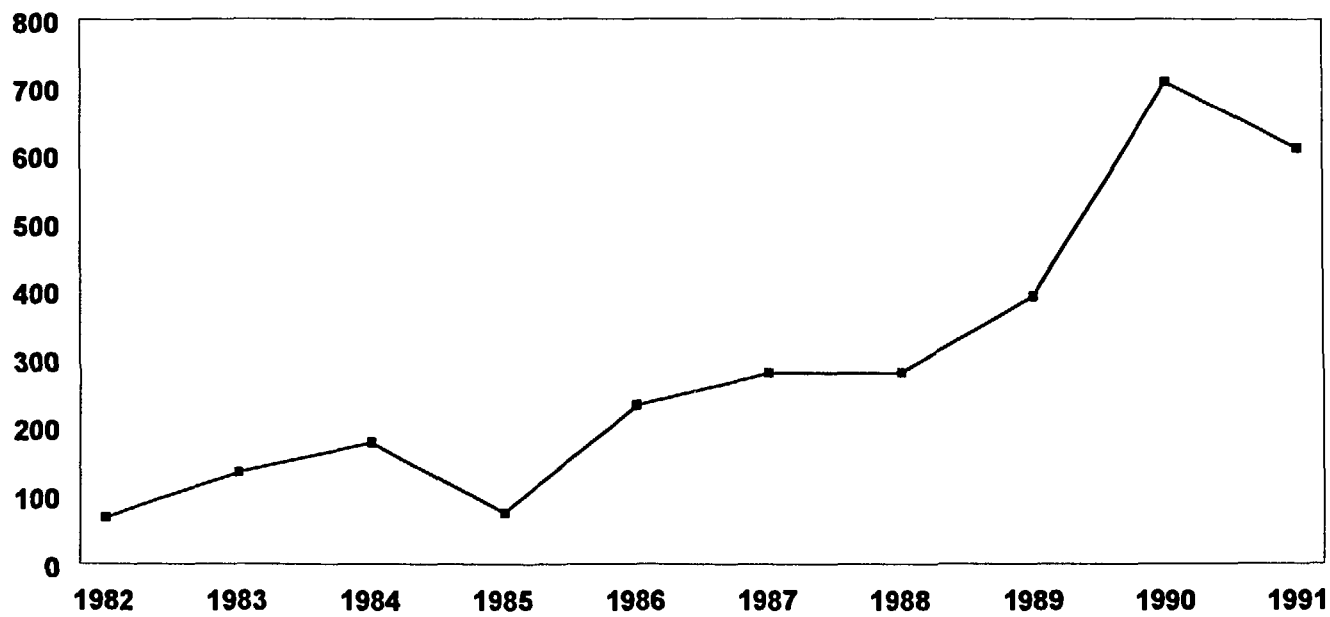
THOUSANDS OF DOLLARS



TACF ASSISTANCE PROVIDED TO NIGERIA

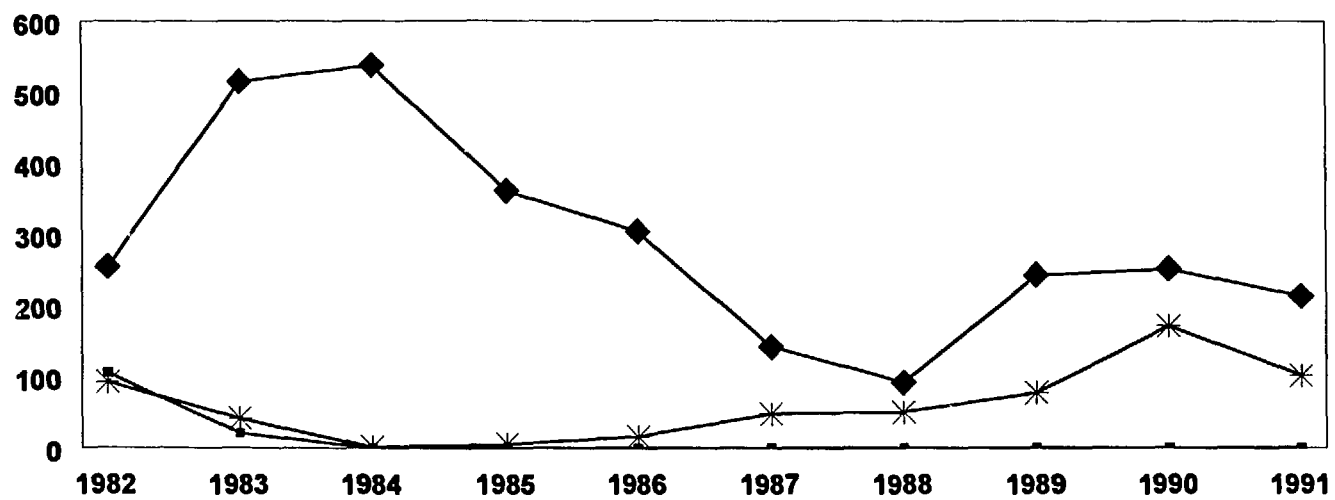
1982 - 1991

THOUSANDS OF DOLLARS



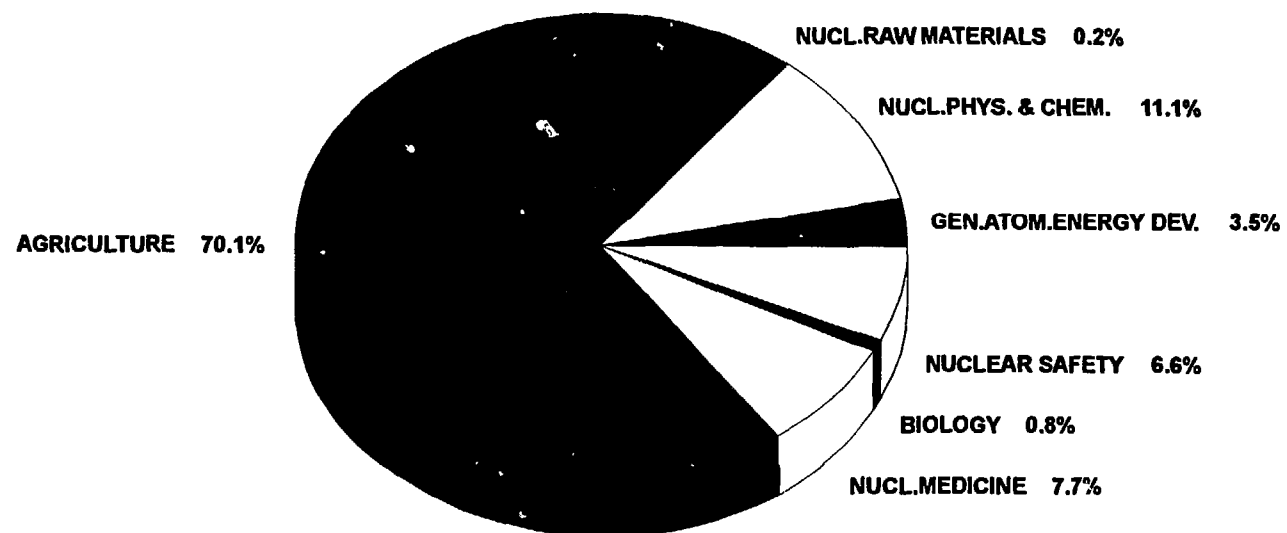
**UNDP, EXTRABUDGETARY AND IN-KIND ASSISTANCE
PROVIDED TO NIGERIA, 1982 - 1991**

THOUSANDS OF DOLLARS



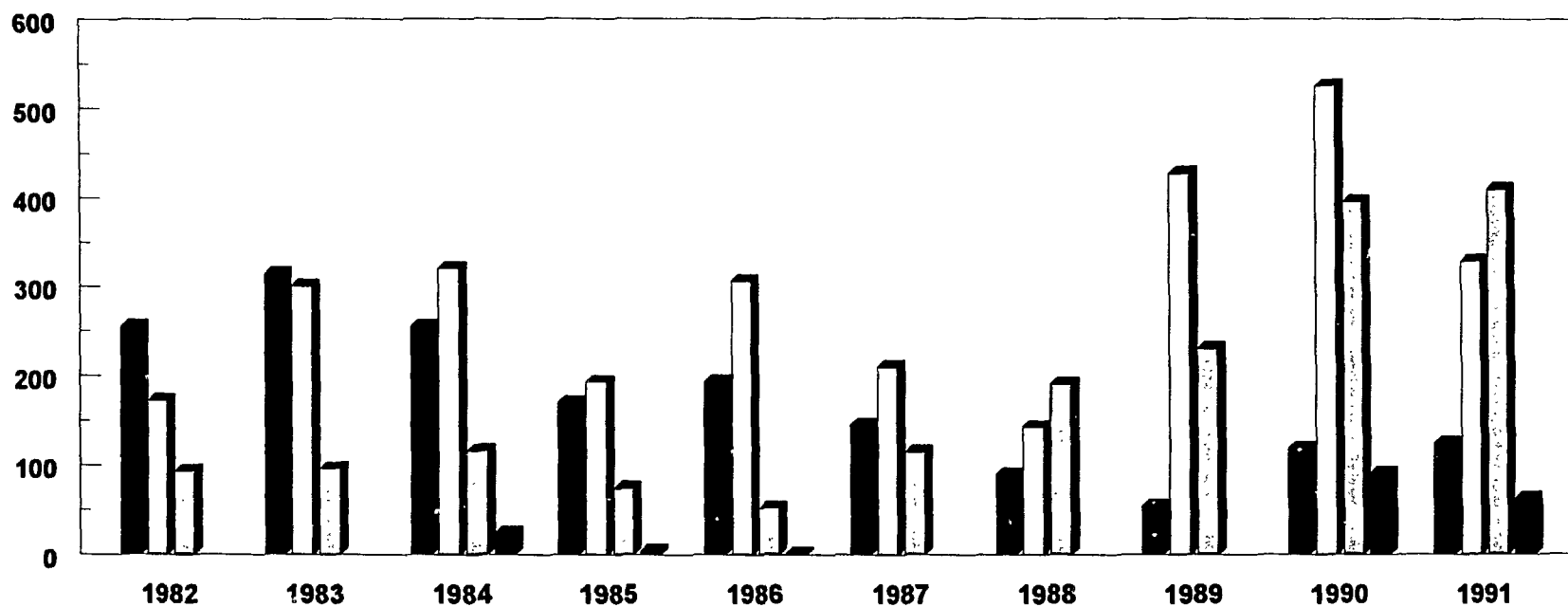
UNDP EXTRABUDGETARY IN-KIND

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



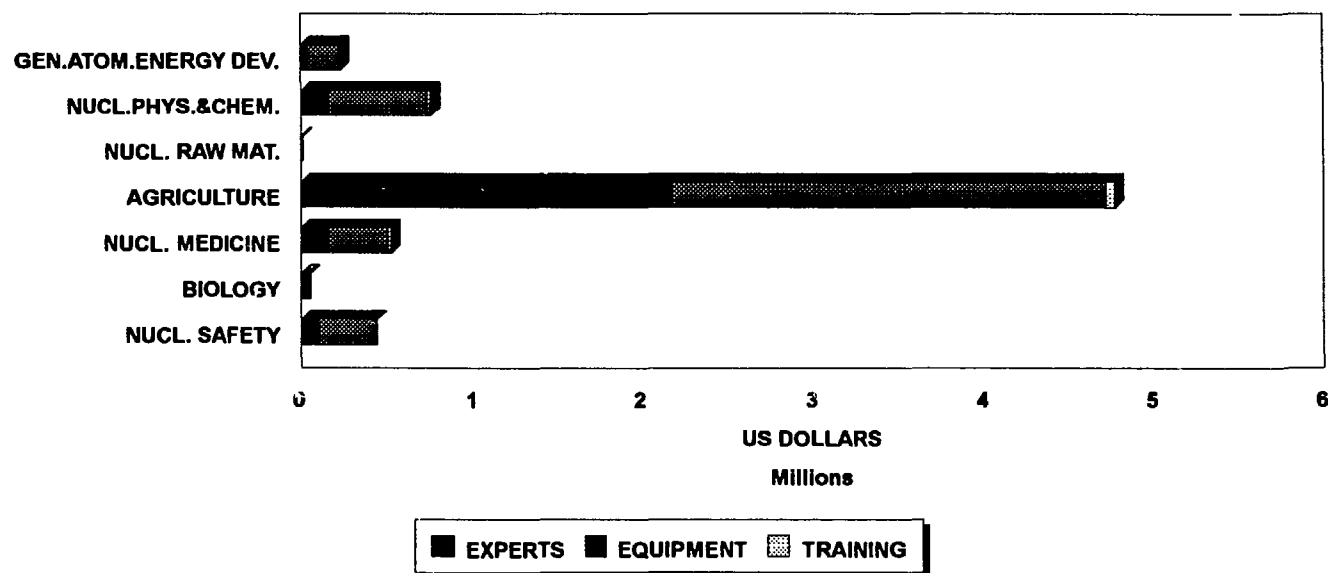
ASSISTANCE PROVIDED BY THE AGENCY TO NIGERIA, BY TYPE, 1982 - 1991

THOUSANDS OF DOLLARS



EXPERTS
 EQUIPMENT
 FELLOWSHIPS
 SUBCONTRACTS

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



THE AGENCY'S TECHNICAL CO-OPERATION PROGRAMME WITH NIGERIA

ALL SOURCES

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

YEAR	RANKING	AMOUNT
1958-81	17 th	2732.8
1982	13 th	521.0
1983	6 th	711.1
1984	8 th	716.4
1985	18 th	441.7
1986	21 st	552.0
1987	28 th	468.5
1988	24 th	422.0
1989	11 th	711.5
1990	9 th	1130.2
1991	7 th	923.4
1958-91	14 th	9330.6

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

ALL SOURCES

Year	I	II	III	IV	V	NIGERIA
1958-81	BRA 7907.9	IND 6670.7	ARG 5200.4	PAK 5091.2	CHI 5005.7	17 th - 2732.8
1982	EGY 807.5	PER 746.4	CUB 715.7	COL 667.7	THA 654.3	13 th - 521.0
1983	EGY 2077.9	PER 1116.8	VIE 948.1	PHI 778.6	IRA 722.1	6 th - 711.1
1984	EGY 3625.9	PER 1750.4	THA 1094.6	CUB 1028.7	PHI 881.2	8 th - 716.4
1985	EGY 2494.8	PER 1120.7	THA 1117.4	BGD 1068.2	PHI 963.7	18 th - 441.7
1986	EGY 2317.0	BRA 1452.9	THA 1169.4	POL 1050.3	BGD 896.4	21 st - 552.0
1987	HUN 3452.6	EGY 1775.4	THA 1742.4	INS 1312.5	YUG 1223.2	28 th - 468.5
1988	EGY 1486.9	BUL 1361.6	CPR 1278.5	THA 1158.7	BRA 1096.7	24 th - 422.0
1989	CPR 1542.3	EGY 1505.1	THA 1205.3	BRA 1096.5	INS 999.1	11 th - 711.5
1990	POL 2308.1	CPR 2005.0	VIE 1589.2	INS 1412.6	BRA 1229.1	9 th - 1130.2
1991	INS 1305.2	CPR 975.0	EGY 959.8	BRA 951.2	BUL 934.7	7 th - 923.4
1958-91	EGY 22222.3	BRA 17021.1	THA 14596.1	PER 12631.1	INS 12383.8	14 th - 9330.6

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

TECHNICAL ASSISTANCE AND CO-OPERATION FUND

Year	I	II	III	IV	V	NIGERIA
1958-81	HUN 2533.0	PAK 2010.9	EGY 1898.7	THA 1712.8	BRA 1704.8	40 th - 558.9
1982	EGY 507.1	HUN 438.2	CUB 430.7	ECU 398.4	ZAM 354.9	53 rd - 68.2
1983	EGY 1049.4	VIE 897.4	POL 667.8	PAK 498.5	PHI 430.0	46 th - 133.8
1984	EGY 1197.2	CUB 655.6	ECU 565.6	BGD 506.3	BUL 472.4	36 th - 177.2
1985	BGD 991.8	VIE 745.0	THA 708.7	BRA 571.8	POR 538.7	60 th - 74.9
1986	BRA 1381.8	THA 871.9	POL 833.5	BGD 823.9	SYR 751.8	35 th - 232.1
1987	HUN 3305.2	DRK 986.8	BUL 888.5	INS 885.8	EGY 878.9	35 th - 279.0
1988	BUL 1195.6	PER 856.5	EGY 768.6	INS 751.7	MAL 656.0	25 th - 280.2
1989	EGY 990.9	CPR 868.2	POR 769.6	CHI 756.9	MAL 619.4	23 rd - 391.5
1990	POL 1562.3	VIE 1518.8	DRK 1156.2	IRA 958.0	YUG 933.4	10 th - 707.7
1991	BUL 893.1	PAK 868.8	INS 855.1	VIE 817.6	CPR 814.5	11 th - 609.5
1958-91	EGY 9591.3	HUN 8256.5	POL 7793.5	BRA 7433.5	PAK 7346.0	31 st - 3513.0

ASSISTANCE PROVIDED BY THE AGENCY TO NIGERIA

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	255.5	172.4	93.1	-	-	521.0	105.7	68.2	-	254.4	92.7	521.0
1983	314.8	300.0	96.3	-	-	711.1	20.8	133.8	-	514.7	41.8	711.1
1984	255.3	320.5	116.0	-	24.6	716.4	-	177.2	-	537.7	1.5	716.4
1985	170.1	193.0	74.1	-	4.5	441.7	0.8	74.9	-	360.6	5.4	441.7
1986	193.2	305.5	52.0	-	1.3	552.0	-	232.1	-	304.0	15.9	552.0
1987	144.7	209.3	114.5	-	-	468.5	-	268.8	10.2	141.7	47.8	468.5
1988	89.5	142.4	190.1	-	-	422.0	-	244.6	35.6	91.5	50.3	422.0
1989	54.4	427.1	230.0	-	-	711.5	-	369.9	21.6	242.6	77.4	711.5
1990	119.1	524.6	395.3	-	91.2	1 130.2	-	688.4	19.3	251.3	171.2	1 130.2
1991	124.5	327.8	408.9	-	62.2	923.4	-	595.3	14.2	212.9	101.0	923.4
1982-91	1 721.1	2 922.6	1 770.3	-	183.8	6 597.8	127.3	2 853.2	100.9	2 911.4	605.0	6 597.8

TECHNICAL CO-OPERATION PROJECTS IN NIGERIA
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	396 988	5.0	234 943	3.5
Nuclear physics and chemistry	8	839 163	10.7	754 610	11.1
Nuclear raw materials	1	10 800	0.1	14 606	0.2
Nuclear engineering and technology	-	-	-	-	-
Nuclear techniques in agriculture	12	5 118 377	64.9	4 769 656	70.1
Nuclear medicine	7	745 076	9.5	526 735	7.7
Nuclear techniques in biology	1	49 000	0.6	56 842	0.8
Nuclear techniques in industry and hydrology	-	-	-	-	-
Nuclear safety	4	723 747	9.2	451 315	6.6
TOTAL	35	7 883 151	100.0	6 808 707	100.0

TECHNICAL CO-OPERATION PROJECTS IN NIGERIA
 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	1	162 553	153 012
Nuclear physics and chemistry	5	161 741	163 617
Nuclear raw materials	1	10 800	14 606
Nuclear engineering and technology	-	-	-
Nuclear techniques in agriculture	7	3 944 825	3 945 911
Nuclear medicine	2	131 240	182 919
Nuclear techniques in biology	1	49 000	56 842
Nuclear techniques in industry & hydrology	-	-	-
Nuclear safety	1	240 978	235 186
TOTAL	18	4 701 137	4 752 093
<u>Operational projects</u>			
General atomic energy development	1	234 435	81 931
Nuclear physics and chemistry	3	677 422	590 993
Nuclear raw materials	-	-	-
Nuclear engineering and technology	-	-	-
Nuclear techniques in agriculture	5	1 173 552	823 745
Nuclear medicine	5	613 836	343 816
Nuclear techniques in biology	-	-	-
Nuclear techniques in industry & hydrology	-	-	-
Nuclear safety	3	482 769	216 129
TOTAL	17	3 182 014	2 056 614

EXPERT SERVICES, EQUIPMENT AND PROJECT-FUNDED TRAINING PROVIDED TO NIGERIA, 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	11/05	96 450	265 038	35 500	6/09	44 549	175 582	14 812
Nuclear physics and chemistry	25/28	185 730	592 433	61 000	22/07	155 178	582 368	17 064
Nuclear raw materials	2/00	10 800	-	-	2/00	14 606	-	-
Nuclear engineering and technology	-	-	-	-	-	-	-	-
Nuclear techniques in agriculture	467/26	2 291 420	2 718 008	108 949	468/29	2 183 430	2 529 627	56 599
Nuclear medicine	40/17	211 950	464 726	68 400	28/21	158 065	350 804	17 866
Nuclear techniques in biology	14/00	49 000	-	-	10/20	56 842	-	-
Nuclear techniques in industry & hydrology	-	-	-	-	-	-	-	-
Nuclear safety	28/06	216 715	496 682	10 350	17/04	100 609	350 706	-
TOTAL	589/22	3 062 065	4 536 887	284 199	556/00	2 713 279	3 989 087	106 341

AGENCY FELLOWS FROM NIGERIA

1982 - 1992¹
(As of 31 August 1992)

Sector	No. of fellowships	No. of months/days	Host countries
General atomic energy development	1	1/18	USSR
Nuclear physics	22	142/14	USA, YUG, HUN, BEL, GRE, UKR, ITA, THA, PAK, GDR, POL, UK, IAEA
Nuclear chemistry	8	84/03	HUN, USA, BEL, UK, CEC, IAEA
Nuclear raw materials	2	10/00	CAN, IND
Nuclear engineering and technology	13	92/12	GER, USA, HUN, AUS, RUS, UK, IAEA
Nuclear techniques in agriculture	45	280/17	USA, BKF, CAN, AUL, BEL, AUS, NET, KEN, ITA, UK, IAEA
Nuclear medicine	22	218/07	USA, BEL, AUS, IND, UK, IAEA
Nuclear techniques in biology	2	6/16	AUS, USA
Nuclear techniques in industry and hydrology	-	-	-
Nuclear safety	17	139/15	USA, CAN, BRA, GER, AUS, UK, IAEA
TOTAL	132	975/12	

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

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

Name	Field of study	Host country	Date	Duration	Project
OBIDAH	Radiation technology	USA	Sep.81 - Sep.82	12/00	-
IBRAHIM	Analytical nuclear physics (XRF)	HUN	Apr.89 - Jul.90	15/00	-
IGE	Neutron activation analysis	GRE	Jun.88 - Jun.89	12/01	NIR/1/004
JONAH	Fast neutron activation analysis	HUN	Nov.90 - Nov.91	12/01	RAF/0/003
OBI	Solid state physics	USA	Sep.84 - Sep.85	12/00	-
TOGUN	Nuclear physics	ITA	Sep.89 - Sep.90	12/00	RAF/0/003
ADEDOYIN	Radiochemistry	UK	Oct.83 - Jan.85	15/01	NIR/2/003
JIMBA	Analytical chemistry	HUN	Nov.89 - Nov.90	12/00	RAF/0/003
OKUNADE	Analytical chemistry	USA	Apr.91 - Mar.92	12/00	NIR/1/007
OLUYEMI	Analytical chemistry	CEC	May 91 - May 92	12/01	RAF/0/007
AGBENDEH	Nuclear instrumentation and electronics	UK	Sep.88 - Oct.89	13/01	-
AYEMONISAN	Nuclear instrumentation	UK	Started: Oct.91	12/00	RAF/0/007
OLOWOLAFE	Irradiation effects	USA	Aug.83 - Aug.84	12/01	-

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

Name	Field of study	Host country	Date	Duration	Project
ADESIYAN	Entomology	UK	Oct.88 - Oct.89	12/01	NIR/5/011
AFOLABI	Food radiobiology	USA	Nov.82 - Dec.83	12/00	-
AINA	Soil/water conservation	USA	Jul.84 - Sep.85	13/29	-
ALONGE	Food irradiation	NET	Apr.89 - Mar.90	12/00	NIR/5/017
AWONAIKE	Nitrogen fixation	IAEA	Oct.88 - Jan.90	15/02	RAF/5/010
BADERO	Sterile insect technique	UK	Oct.89 - Oct.90	12/01	RAF/0/003
DENGWAT	Entomology	UK	Oct.85 - Oct.87	24/02	NIR/5/011
ILORI	Animal nutrition	USA	Sep.82 - Sep.83	12/00	-
OFODILE	Entomology	UK	Sep.89 - Sep.91	24/00	RAF/0/003
OGUNJI	Sterile insect technique	USA	Sep.83 - Aug.84	12/00	-
OKORONKWO	Soil science	BEL	Nov.86 - Nov.87	12/00	-
AGBELUSI	Nuclear medicine	UK	Oct.89 - Oct.91	24/17	RAF/0/003
AJEKIGBE	Radiotherapy	AUS	Oct.89 - Oct.90	12/01	RAF/0/003

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

Name	Field of study	Host country	Date	Duration	Project
AJEKIGBE	Radiotherapy	UK	Nov.90 - Oct.91	12/00	RAF/0/007
EKISOLA	Radiotherapy	UK	Oct.89 - Oct.91	24/17	RAF/0/003
IGBINOBA	Radiotherapy	AUS	Started: Oct.90	24/00	RAF/0/003
IJANDIPE	Radiotherapy	UK	Apr.91 - Apr.92	12/20	RAF/0/007
HOJIMONIYI	Nuclear medicine	UK	Oct.87 - Apr.89	18/02	NIR/6/003
ODU	Radiotherapy	UK	Started: Nov.91	18/00	RAF/0/007
ODUNLAMI	Radiopharmacy	USA	Aug.81 - Aug.83	23/10	-
OKOYE	Radiotherapy	UK	Started: Oct.91	12/00	NIR/6/007
OLASINDE	Radiotherapy	AUS	Oct.89 - Oct.91	23/16	RAF/0/003
SAIDU	Radiotherapy	AUS	Started: Oct.91	12/00	RAF/0/007
SHOLARIN	Radiotherapy	AUS	Started: Oct.90	24/00	RAF/0/003
ADENIYI	Hydrobiology	USA	Sep.83 - Sep.84	12/00	-
ADEYEMO	Radiation protection	UK	Oct.90 - Nov.91	13/17	RAF/0/003

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

Name	Field of study	Host country	Date	Duration	Project
AKANDE	Dosimetry	UK	Jan.90 - Jan.91	12/02	RAF/0/003
ANEDA	Radiation protection	USA	Sep.88 - Mar.90	30/01	-
IBEANU	Radiation protection	UK	Oct.89 - Oct.90	12/01	RAF/0/003
IDEHEN	Radiation protection	USA	Oct.83 - Dec.84	15/00	-

NIGERIAN 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
AJEKIGBE	1. Radiotherapy 2. Radiotherapy	AUS UK	Oct.89 - Oct.90 Nov.90 - Oct.91	12/01 12/00	RAF/0/003 RAF/0/003
BANGBELU	1. Analytical nuclear physics 2. Analytical nuclear physics	HUN POL	Sep.88 - Oct.88 Oct.90	0/12 0/19	NIR/0/003 RAF/0/003
DENGWAT	1. Radiation entomology 2. Entomology	BKF UK	Feb.83 Oct.85 - Oct.87	0/14 12/02	- NIR/5/002
ELEGBA	1. Analytical nuclear physics 2. Research reactors	HUN BEL AUS GER HUN	Mar.88 Jan.90 - Feb.90	0/12 0/22	NIR/1/004 RAF/0/003
IDEHEN	1. Radiation protection technology 2. Radiation protection	USA USA	Oct.82 - Aug.83 Oct.83 - Dec.84	11/00 15/00	NIR/9/003 -
OBIDAH	1. Radiation technology 2. Radiation protection	USA USA	Sep.81 - Sep.82 Sep.88 - May 89	12/00 8/01	- NIR/9/003
OLADUNMADE	1. Mass rearing tsetse flies 2. Radiation entomology	IAEA BKF	Sep.82 - Oct.82 Feb.83	0/24 0/14	NIR/5/011 -
OLANIYI	1. Nuclear physics 2. Nuclear reaction study	YUG UK	Sep.86 - Jan.87 Started: Nov.91	4/06 12/00	- RAF/0/007

NIGERIAN 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
ORESEGUN	1. Radiation protection 2. Radiation protection 3. Radiation protection	CAN USA IAEA	Sep.84 - Oct.84 Sep.90 - Nov.90 Sep.91	1/19 3/00 0/09	NIR/9/003 RAF/0/003 RAF/0/003
OWOLABI	1. Radiological physics 2. Radiological physics	USA USA	Sep.84 - Jun.85 Sep.85 - Feb.86	9/09 5/00	NIR/1/003 NIR/1/003
YOLOYE	1. Nuclear instrumentation 2. Radiation monitoring	GER BRA	Jul.82 - Apr.83 Feb.88 - Aug.88	8/24 5/29	NIR/1/003 NIR/9/003

AGENCY TRAINING COURSES WITH NIGERIAN PARTICIPATION

1982 - 1992
(As of 31 August 1992)

Field	Number of participants	Number of courses
General atomic energy development	12	8
Nuclear physics	12	11
Nuclear chemistry	7	5
Nuclear raw materials	2	2
Nuclear engineering and technology	14	9
Nuclear techniques in agriculture	33	22
Nuclear medicine	16	14
Nuclear techniques in biology	2	2
Nuclear techniques in industry & hydrology	3	3
Nuclear safety	20	15
TOTAL	121	91

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

Name	Course No.	Course title	Year	Location
ADESANMI	INT/1/036 (001)	Advanced ITC on elemental analysis by nuclear techniques ITC on determination of radionuclides in food and environmental samples	1985	CPR
	INT/2/007 (001)		1990	GFR
AKINTUNDE	INT/4/078 (001)	ITC on advanced nuclear electronics ITC on interfacing in nuclear experiments	1985	AUS
	INT/4/100 (001)		1989	THA
AKPA	INT/7/009 (001)	ITC on radiation cytogenetics in biomedical and environmental health and radiation problems RTC on radiation protection	1987	JPN
	RAF/9/004 (001)		1988	EGY
AMONAIKE	INT/5/102 (001)	ITC on the use of isotope and radiation techniques in studies on soil/plant relationships RWS on biological nitrogen fixation	1986	AUS
	RAF/5/010 (001)		1987	GHA
EZEOKOLI	RAF/5/006 (001)	RWS on the establishment and use off a monoclonal-antibody-based competitive ELISA-system for the sero-monitoring of rinderpest RTC on the diagnosis of rinderpest	1991	CMR
	RAF/5/011 (002)		1988	ETH
FARAI	RAF/9/004 (001)	RTC on radiation protection RTC on management of spent sealed radiation sources	1988	EGY
	RAF/9/006 (001)		1991	KEN
JUMARE	RAF/4/006 (001)	RTC on nuclear instrumentation maintenance RWS on trouble shooting and maintenance of Vinten TLD equipment	1989	ZAM
	RAF/9/005 (006)		1991	AUS
OBI	RAF/5/006 (001)	RWS on the establishment and use off a monoclonal-antibody-based competitive ELISA-system for the sero-monitoring of rinderpest RTC on the diagnosis of rinderpest	1991	CMR
	RAF/5/011 (002)		1988	ETH

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

Name	Course No.	Course title	Year	Location
OKEREKE	INT/5/100 (001)	ITC on the use of isotope and radiation techniques to enhance biological nitrogen fixation	1985	AUS
	RAF/5/010 (001)	RWS on biological nitrogen fixation	1987	GHA
	RAF/5/010 (002)	First Research Co-ordination Meeting of the regional project RAF/5/010	1989	TUN
OLABANJI	INT/1/031 (001)	Study tour on the utilization of low energy accelerators	1985	GFR HUN ITA USSR
	INT/1/034 (001) RAF/1/003 (001)	ITC on basic and applied nuclear physics RTC on advanced X-ray fluorescence analysis	1985 1987	ITA GHA
OLADEJI	INT/1/033 (001)	Interregional study tour on primary and secondary dosimetry laboratories for technical staff of SSDLs	1985	GFR HUN USSR
	RAF/6/005 (001)	RTC on dosimetry in radiotherapy, including treatment planning	1991	SWE EGY
OLOMO	INT/9/045 (001)	ITC for radiation protection officers in regulatory bodies	1984	GDR
	INT/9/079 (001)	ITC on management of radioactive waste	1987	GFR
	INT/9/090 (001)	ITC on the determination of radionuclides in food and environmental samples	1988	GFR
	INT/9/103 (001)	ITC on safety and regulation of radiation sources	1990	USA
ORESEGUN	INT/1/032 (001)	ITC on solid state nuclear track detectors and their application	1985	GFR
	RAF/9/005 (007)	RWS on emergency planning, preparedness and international co-operation	1991	AUS
	RAF/9/005 (008)	Regional meeting on co-operation in radiation protection in Africa	1992	URT
OSHIN	INT/3/011 (001)	ITC on uranium prospecting	1983	YUG
	RAF/2/002 (001)	RTC on radiochemistry and nuclear analytical techniques	1985	KEN

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

Name	Course No.	Course title	Year	Location
TUBOSUN	INT/3/013 (001)	ITC on uranium prospection and processing	1984	FRA
	INT/9/100 (001)	ITC on radioactivity measurements for environmental monitoring purposes	1989	FRA
YESUFU	INT/9/083 (001)	ITC on planning, preparedness and response to nuclear accidents or radiological emergencies	1987	USA
	INT/9/093 (001)	ITC on safety and regulation of sealed sources of radioactive material	1989	USA
	RAF/4/006 (001)	RTC on nuclear instrumentation maintenance	1989	ZAM
	RAF/9/004 (001)	RTC on radiation protection	1988	EGY

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

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS				COMPLETED
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING	
			M/M	\$	\$	\$	M/M	\$	\$	\$	
1988	NIR/0/003	Nuclear science laboratories	5/12	42 715	105 038	14 800	5/05	33 070	105 130	14 812	1991
1982	NIR/1/004	Nuclear techniques application	6/02	39 360	28 490	-	6/08	41 953	26 943	-	1989
1983	NIR/1/005	Nuclear physics (Ilorin)	-	-	11 400	-	-	-	10 423	-	1986
1987	NIR/1/006	Repair of neutron generator	-	-	10 000	-	-	-	11 237	-	1989
1988	NIR/1/007	Nuclear analytical techniques	2/00	22 071	46 900	-	1/22	22 071	46 900	-	1991
1983	NIR/2/003	Radiochemical laboratory	0/16	3 520	-	-	0/16	4 090	-	-	1985
1982	NIR/3/002	Nuclear raw materials	2/00	10 800	-	-	2/00	14 606	-	-	1983
1978	NIR/5/010	Use of nuclear techniques in animal production	76/12	387 867	200 400	-	76/12	387 867	200 400	-	1983

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

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS				COMPLETED
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING	
			M/M	\$	\$	\$	M/M	\$	\$	\$	
1977	NIR/5/011	Sterile-male technique for control of tsetse fly ¹	221/06	886 614	1 099 250	-	232/28	886 614	1 099 250	-	1988
1983	NIR/5/012	Preventing tsetse fly re-invasion with the SIT	129/28	581 839	401 710	-	129/28	583 000	402 161	-	1990
1986	NIR/5/013	Biological nitrogen fixation (Ibadan)	1/03	7 590	128 931	-	1/03	7 010	126 596	-	1989
1986	NIR/5/014	Radioimmunoassay in animal production	5/05	37 930	139 492	14 180	5/05	41 337	139 678	15 560	1991
1987	NIR/5/016	Oil palm production	-	-	20 238	-	-	-	20 238	-	1989
1988	NIR/5/017	Food irradiation	3/01	22 740	-	16 044	3/00	22 581	-	13 619	1991
1973	NIR/6/002	Hospital physics	24/00	63 000	25 950	-	23/28	116 289	24 218	-	1982
1985	NIR/6/003	Nuclear medicine	0/13	3 290	39 000	-	0/13	3 435	38 977	-	1990

^{1/} Allotments include: 39/19 man-months of expert services and \$20,000 worth of equipment offered in kind;
Disbursements include: 51/19 man-months of expert services and \$20,000 worth of equipment provided in kind.

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

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS				COMPLETED
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING	
			M/M	\$	\$	\$	M/M	\$	\$	\$	
1978	NIR/7/002	Radiation biology	14/00	49 000	-	-	10/20	56 842	-	-	1985
1982	NIR/9/003	Radiation protection	15/00	94 650	146 328	-	15/10	88 687	146 499	-	1992
	TOTAL	18 projects	506/08	2 252 986	2 403 127	45 024	514/18	2 309 452	2 398 650	43 991	

OPERATIONAL PROJECTS IN NIGERIA
(As of 31 August 1992)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS			
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING
			M/M	\$	\$	\$	M/M	\$	\$	\$
1991	NIR/0/004	Nuclear science laboratory (phase II)	5/23	53 735	160 000	20 700	1/04	11 479	70 452	-
1977	NIR/1/003	Nuclear physics	13/10	82 042	252 931	20 500	13/05	83 646	254 162	17 064
1988	NIR/2/004	Trace-element determination	1/00	9 937	170 912	-	0/16	3 418	171 022	-
1991	NIR/2/005	Neutron activation analysis	3/00	28 800	71 800	40 500	-	-	61 681	-
1986	NIR/5/015	Nitrogen fixation - mixed cropping system	3/23	29 435	105 820	-	3/23	37 780	103 687	-
1989	NIR/5/018	Nitrogen fixation and fertilizer use efficiency	1/21	13 830	22 165	34 025	1/21	10 043	24 091	27 420
1989	NIR/5/019	Animal science	-	-	29 458	-	-	-	29 924	-
1989	NIR/5/020	Mutation breeding	2/05	17 975	45 000	-	2/06	22 478	46 414	-

OPERATIONAL PROJECTS IN NIGERIA
(As of 31 August 1992)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS			
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING
			M/M	\$	\$	\$	M/M	\$	\$	\$
1989	NIR/5/021	Preventing tsetse fly re-invasion (phase II) ¹	23/12	305 600	525 544	44 700	12/23	184 720	337 188	-
1989	NIR/6/004	Radiation therapy ²	1/15	12 760	203 593	-	1/29	21 539	181 592	-
1989	NIR/6/005	Nuclear medicine	6/25	60 600	31 000	-	-	-	23 202	-
1991	NIR/6/006	Thyroid-related radioimmunoassay unit	2/00	17 700	45 783	-	2/00	13 549	26 374	-
1991	NIR/6/007	Radiation therapy (phase II)	3/08	31 280	47 080	59 400	-	-	3 212	17 866
1991	NIR/6/008	Radiological physics laboratory	2/16	23 320	72 320	9 000	0/11	3 253	53 229	-
1988	NIR/9/004	Radiation protection (Ahmadu Bello University)	2/06	17 260	108 060	-	1/11	7 978	107 878	-

^{1/} Allotments include: \$220,000 for sub-contracted expert services and equipment;
Disbursements include: \$196,534 for sub-contracted expert services and equipment.

^{2/} Figures for equipment include \$100,000 offered and provided in kind.

OPERATIONAL PROJECTS IN NIGERIA
(As of 31 August 1992)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS			
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING
			M/M	\$	\$	\$	M/M	\$	\$	\$
1991	NIR/9/005	Strengthening the federal radiation protection service	3/00	28 605	167 294	10 350	0/13	3 944	62 013	-
1991	NIR/9/006	Environmental monitoring of radionuclides	8/00	76 200	75 000	-	-	-	34 316	-
	TOTAL	17 projects	83/14	809 079	2 133 760	239 175	41/12	403 827	1 590 437	62 350

Footnote-a/ projects not yet upgraded:

NIR/3/003 Uranium ore processing
 NIR/5/022 Pesticide residue analysis using nuclear techniques
 NIR/8/003 Nuclear analytical laboratory

COUNTERPART INSTITUTIONS IN NIGERIA (I)
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>GENERAL ATOMIC ENERGY DEVELOPMENT</u>		
NIR/0/003	Ahmadu Bello University, Centre for Energy Research and Training, Zaria	ELEGBA
NIR/0/004	Ahmadu Bello University, Centre for Energy Research and Training, Zaria	JIMBA
<u>NUCLEAR PHYSICS AND CHEMISTRY</u>		
NIR/1/003	University of Ife, Department of Physics, Ile-Ife	OSADEBE
NIR/1/004	Ahmadu Bello University, Zaria	ADETUNJI
NIR/1/005	University of Ilorin, Department of Physics, Ilorin	ARO
NIR/1/006	University of Ife, Centre for Energy Research and Development, Ile-Ife	SALAU
NIR/1/007	University of Ife, Centre for Energy Research and Development, Ile-Ife	OSHIN
NIR/2/003	University of Ife, Centre for Energy Research and Development, Ile-Ife	ADEPETU
NIR/2/004	University of Ife, Department of Physics, Ile-Ife	OLUWOLE
NIR/2/005	Obafemi Awolowo University, Department of Physics, Ile-Ife	OSADEBE

COUNTERPART INSTITUTIONS IN NIGERIA (I)
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>NUCLEAR RAW MATERIALS</u>		
NIR/3/002	University of Ife, Ile-Ife	ADEGOKE
<u>AGRICULTURE</u>		
NIR/5/010	University of Ife, Department of Animal Science Ile-Ife	ADEGBOLA
NIR/5/011	Federal Ministry of Agriculture, Department of Pest Control Services, Biological Control Project, Vom, Plateau State	JAWONISI
NIR/5/012	Federal Ministry of Agriculture, Department of Pest Control Services, Biological Control Project, Vom, Plateau State	OLADUNMADE
NIR/5/013	Obafemi Awolowo University, Institute of Agricultural Research and Training, Ibadan	AWONAIKE
NIR/5/014	Ahmadu Bello University, National Animal Production Research Institute, Zaria	OYEDIPE
NIR/5/015	Anambra State University of Technology, Department of Horticulture and Plant Protection, Agricultural-Biotechnology Research Unit, Enugu	OKEREKE
NIR/5/016	University of Ibadan, Department of Agronomy, Ibadan	BABALOLA
NIR/5/017	University of Ibadan, Faculty of Technology, Department of Food Technology, Ibadan	OLORUNDA
NIR/5/018	Obafemi Awolowo University, Institute of Agricultural Research and Training, Ibadan	DARAMOLA

COUNTERPART INSTITUTIONS IN NIGERIA (I)
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>AGRICULTURE (cont'd)</u>		
NIR/5/019	National Veterinary Research Institute, Vom, Plateau State	OKEKE
NIR/5/020	National Root Crops Research Institute, Umudike, Umuahia	ENE
NIR/5/021	Federal Ministry of Agriculture, Department of Pest Control Services, Biological Control Project, Vom, Plateau State	OLADUNMADE
<u>NUCLEAR MEDICINE</u>		
NIR/6/002	University of Ibadan, College of Medicine, Department of Chemical Pathology, Ibadan	OLATUNBOSUN
NIR/6/003	University of Ibadan, College of Medicine, Department of Chemical Pathology, Ibadan	OSOTIMEHIN
NIR/6/004	Lagos University Teaching Hospital, College of Medicine, Department of Radiation Biology and Radiotherapy, Lagos	ADEKUNLE
NIR/6/005	University of Ibadan, College of Medicine, Department of Chemical Pathology, Ibadan	LUKANMBI
NIR/6/006	University of Nigeria Teaching Hospital, Department of Radiation Medicine, Radioimmunoassay Unit, Enugu	OBIOHA
NIR/6/007	Lagos University Teaching Hospital, College of Medicine, Department of Radiation Biology and Radiotherapy, Lagos	ADEKUNLE

COUNTERPART INSTITUTIONS IN NIGERIA 1(I)
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>NUCLEAR MEDICINE (cont'd)</u>		
NIR/6/008	University College Hospital, Radiology Department, Radiotherapy Unit, Ibadan	LAGUNDOYE ADENIRAN
<u>NUCLEAR TECHNIQUES IN BIOLOGY</u>		
NIR/7/002	Ahmadu Bello University, Faculty of Veterinary Medicine, Department of Physiology and Pharmacology, Zaria	ALIU
<u>NUCLEAR SAFETY</u>		
NIR/9/003	University of Ibadan, Department of Physics, Federal Radiation Protection Service, Ibadan	ORESEGUN
NIR/9/004	Ahmadu Bello University, Centre for Energy Research and Training, Zaria	ELEGBA
NIR/9/005	University of Ibadan, Department of Physics, Federal Radiation Protection Service, Ibadan	ORESEGUN
NIR/9/006	Obafemi Awolowo University, Department of Physics, Ile-Ife	OLUWOLE

COUNTERPART INSTITUTIONS IN NIGERIA (II)
(By Institute)

LAGOS

Lagos University Teaching Hospital
College of Medicine
Department of Radiation Biology and Radiotherapy
Lagos

NIR/6/004 Radiation Therapy
NIR/6/007 Radiation Therapy (Phase II)

IBADAN

Obafemi Awolowo University
Institute of Agricultural Research and Training
Ibadan

NIR/5/013 Biological Nitrogen Fixation (Ibadan)
NIR/5/018 Nitrogen Fixation and Fertilizer Use Efficiency

University of Ibadan
Department of Agronomy
Ibadan

NIR/5/016 Oil Palm Production

University of Ibadan
Faculty of Technology
Department of Food Technology
Ibadan

NIR/5/017 Food Irradiation

University of Ibadan
College of Medicine
Department of Chemical Pathology
Ibadan

NIR/6/002 Hospital Physics
NIR/6/003 Nuclear Medicine
NIR/6/005 Nuclear Medicine

COUNTERPART INSTITUTIONS IN NIGERIA (II)

(By Institute)

IBADAN (cont'd)

**University of Ibadan
Department of Physics
Federal Radiation Protection Service
Ibadan**

NIR/9/003 Radiation Protection
NIR/9/005 Strengthening the Federal Radiation Protection Service

**University College Hospital
Radiology Department
Radiotherapy Unit
Ibadan**

NIR/6/008 Radiological Physics Laboratory

ILE-IFE

**University of Ife
Ile-Ife**

NIR/3/002 Nuclear Raw Materials

**University of Ife
Department of Physics
Ile-Ife**

NIR/1/003 Nuclear Physics
NIR/2/004 Trace Element Determination

**University of Ife
Centre for Energy Research and Development
Ile-Ife**

NIR/1/006 Repair of Neutron Generator
NIR/1/007 Nuclear Analytical Techniques
NIR/2/003 Radiochemical Laboratory

COUNTERPART INSTITUTIONS IN NIGERIA (II)

(By Institute)

ILE-IFE (cont'd)

**University of Ife
Department of Animal Science
Ile-Ife**

NIR/5/010 Use of Nuclear Techniques in Animal Production

**Obafemi Awolowo University
Department of Physics
Ile-Ife**

NIR/2/005 Neutron Activation Analysis
NIR/9/006 Environmental Monitoring of Radionuclides

ZARIA

**Ahmadu Bello University
Zaria**

NIR/1/004 Nuclear Techniques Application

**Ahmadu Bello University
Centre for Energy Research and Training
Zaria**

NIR/0/003 Nuclear Science Laboratories
NIR/0/004 Nuclear Science Laboratory (Phase II)
NIR/9/004 Radiation Protection (Ahmadu Bello University)

**Ahmadu Bello University
National Animal Production Research Institute
Zaria**

NIR/5/014 Radioimmunoassay in Animal Production

COUNTERPART INSTITUTIONS IN NIGERIA (II)

(By Institute)

ZARIA (cont'd)

**Ahmadu Bello University
Faculty of Veterinary Medicine
Department of Physiology and Pharmacology
Zaria**

NIR/7/002 Radiation Biology

VOM, PLATEAU STATE

**Federal Ministry of Agriculture
Department of Pest Control Services
Biological Control Project
Vom, Plateau State**

NIR/5/011 Sterile Male Technique for Control of Tsetse Fly
NIR/5/012 Preventing Tsetse Fly Re-invasion with the SIT
NIR/5/021 Preventing Tsetse Fly Re-invasion (Phase II)

**National Veterinary Research Institute
Vom, Plateau State**

NIR/5/019 Animal Science

ENUGU

**Anambra State University of Technology
Department of Horticulture and Plant Protection
Agricultural-Biotechnology Research Unit
Enugu**

NIR/5/015 Nitrogen Fixation - Mixed Cropping System

**University of Nigeria Teaching Hospital
Department of Radiation Medicine
Radioimmunoassay Unit
Enugu**

NIR/6/006 Thyroid-related Radioimmunoassay Unit

COUNTERPART INSTITUTIONS IN NIGERIA (II)
(By Institute)

ILORIN

University of Ilorin
Department of Physics
Ilorin

NIR/1/005 Nuclear Physics (Ilorin)

UMUDIKE, UMUAHIA

National Root Crops Research Institute
Umudike, Umuhia

NIR/5/020 Mutation Breeding

THE AGENCY'S TECHNICAL CO-OPERATION PROGRAMME WITH NIGERIA

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

Project NIR/5/014, Sterile Male Technique for Control of Tsetse Fly

- Task 01 - Project Director
R. SARMIENTO (USA), Mar 1980 - Sep 1983 42.8 months
- Task 02 - Chief Supervisor - Laboratory
J. GREILING (GFR), Aug 1979 - Jul 1982 36 months
H.J. HAMANN (GFR), Oct 1982 - Dec 1984 26.9 months
- Task 03 - Chief Supervisor - Field
D.M. BOURN (UK), Jul 1979 - Jun 1982 36 months
W. TAKKEN (NET), Feb 1983 - Jun 1983 4.3 months
(continued: NIR/5/012)
- Task 07 - Project Support (Seibersdorf)
R. BOIGNER (IAEA) Jul 1985 - Nov 1985 6 months
Jan 1986 - Nov 1986 11 months

Project NIR/5/012, Preventing Tsetse Fly Re-invasion with the SIT

- Task 01 - Chief Supervisor
F. TAKKEN (NET), Jul 1983 - Feb 1986 31 months
- Task 02 - Tsetse Fly Rearing
U. FELDMANN (GFR), Feb 1984 - Aug 1987 43 months
- Task 05 - Laboratory Technician
M. AUGUSTIN (IAEA), Feb 1986 - Jan 1987 12 months
Apr 1988 - Dec 1988 9 months
R. BOIGNER (IAEA), Dec 1986 - Dec 1988 25 months

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

Field of activity	No. of contracts/ agreements	Amount allocated \$
Nuclear techniques in agriculture	28	271 930
Nuclear medicine	8	73 000
Nuclear techniques in biology	3	25 000
Nuclear techniques in hydrology	1	5 000
TOTAL	40	374 930

¹/ New awards since 1982

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

Name	No. of assignments	Project(s)
AJEKIGBE	1	EGY/6/004
CAMPBELL	1	EGY/6/004
DAOUDA	1	RAF/8/012
DARAMOLA	1	RAF/5/010
DUNCAN	2	INT/0/045
EZEOKOLI	1	RAF/5/006
MADUBUNYI	3	GHA/5/011, URT/5/007, ZAM/5/009
OBI	5	ETH/5/007, GHA/5/013, SUD/6/016, RAF/5/006
OGUGBUAJA	1	NIR/1/004
OGUNYEMI	2	INT/5/086, INT/5/089
OKEREKE	1	RAF/5/010
OKIWELU	2	GHA/5/011, MLI/5/012
OLADEJI	1	EGY/6/004
OLADUNMADE	5	NIR/5/011, NIR/5/012
OLATUNJI	1	EGY/6/004
OLORUNDA	2	RAF/5/021
ONAH	1	NIR/5/012
ORESEGUN	1	RAF/9/007
OYEDIPE	1	RAF/5/008
TENABE	1	NIR/5/011
TOTAL	34	

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

Recipient country	No. of fellowships	No. of scientific visits	TOTAL ¹
GHANA	1	2	3
SIERRA LEONE	-	1	1
UGANDA	-	1	1
TANZANIA	-	3	3
ZAMBIA	2	2	4
TOTAL	3	9	12

¹/ Includes trainees who have completed or at least started their studies.

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

Course No.	Course Title	Participants	Year
RAF/5/009 (001)	RTC on integrated control of tsetse with emphasis on the sterile insect technique	14	1988
RAF/5/020 (001)	RTC on isotope and nuclear techniques in studies on soil/plant relations with emphasis on agroforestry and on plant nutrition	14	1991
RAF/9/005 (004)	RWS on basic radiation and development of national infrastructure for radiation safety	18	1990
	TOTAL	46	