

XA9333779



INTERNATIONAL ATOMIC ENERGY AGENCY

IAEA-CPS-92/07  
22 June 1992  
Original: ENGLISH

## COUNTRY PROGRAMME SUMMARY

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

DEPARTMENT OF TECHNICAL CO-OPERATION

IAEA-CPS-92/07  
22 June 1992  
Original: ENGLISH

## COUNTRY PROGRAMME SUMMARY

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

EVALUATION SECTION  
DEPARTMENT OF TECHNICAL CO-OPERATION

**THE AGENCY'S TECHNICAL CO-OPERATION**

**PROGRAMME WITH**

**SENEGAL**

**1982 - 1992**

**COUNTRY PROGRAMME SUMMARIES**

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

IAEA-CPS-92/07

Pages

Pages

**SENEGAL**

<b>Introduction</b>		<b>I</b>
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	
Senegal'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	18-19	
Projects Completed	20-21	
Operational Projects	22	
Counterpart Institutions (by Project)	23-25	
Counterpart Institutions (by Institute)	26-27	
Long-Term Expert Assignments	28	
Research Contracts/Agreements	29	
Senegalese Experts or Lecturers	30	
Fellowships and Scientific Visits Hosted	31	
Regional/Interregional Courses Hosted	32	

**T**

**A**

**B**

**L**

**E**

**OF**

**C**

**O**

**N**

**T**

**E**

**N**

**T**

**S**

## INTRODUCTION

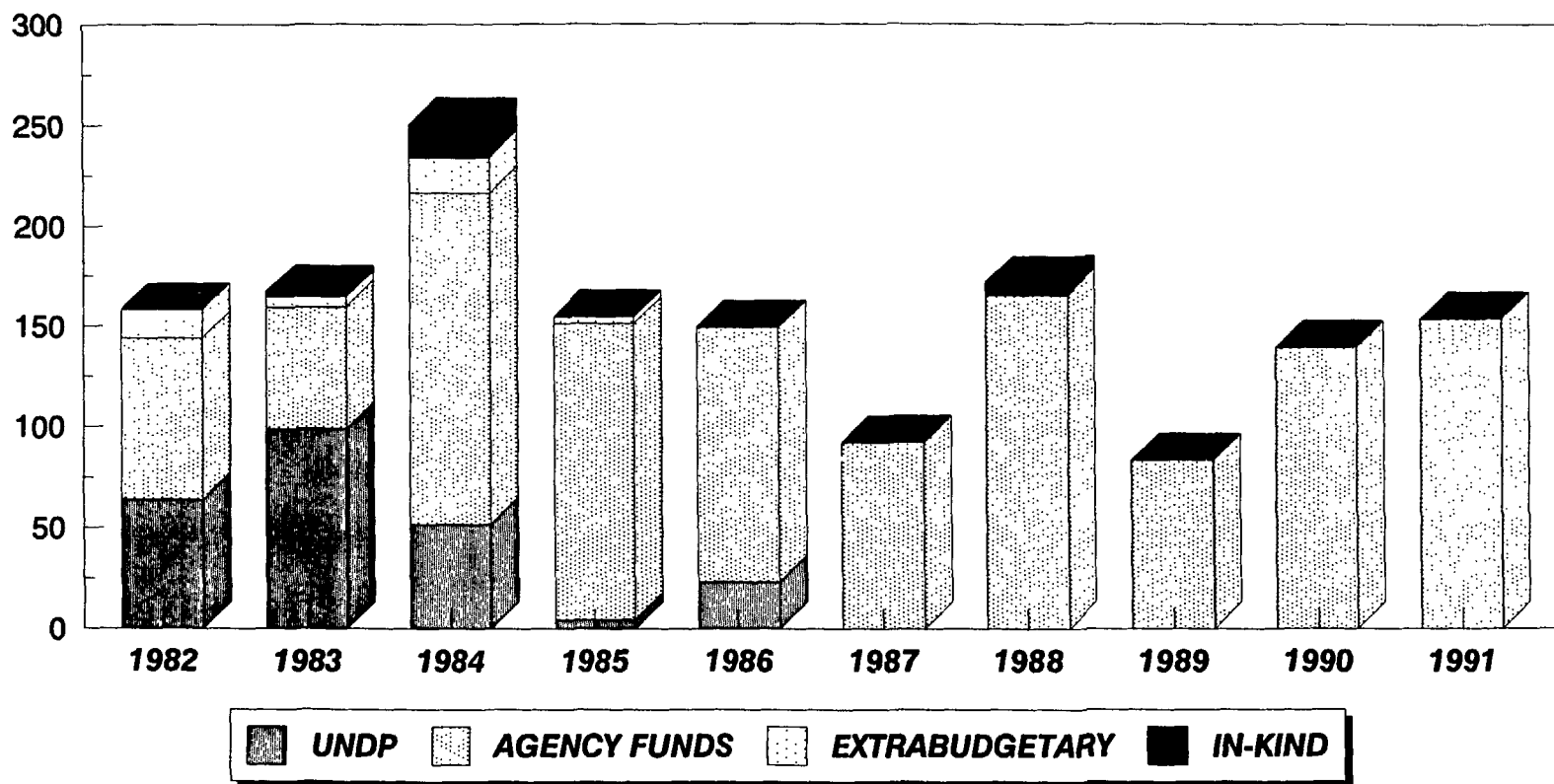
The country programme summary reported on here is one in the series of such studies being undertaken of the Agency's TC programme with Member States. With \$2.2 million of Agency support received, Senegal ranks 56<sup>th</sup> among all recipients of technical assistance in the period 1958 - 1991.

More than one-third of the assistance during the past ten years has been provided in the form of equipment (67%), followed by expert services (21%) and training (12%). Eighty per cent of the resources were provided by the Technical Assistance and Co-operation Fund, while 16% were made available by UNDP and about 2% each through extrabudgetary contributions and assistance in kind.

With regard to project disbursement by sector, by far the largest area has been agriculture (43%). Smaller shares have gone to general atomic energy development (15%), nuclear physics and chemistry (13%), nuclear medicine and hydrology (11% each), and nuclear safety (7%).

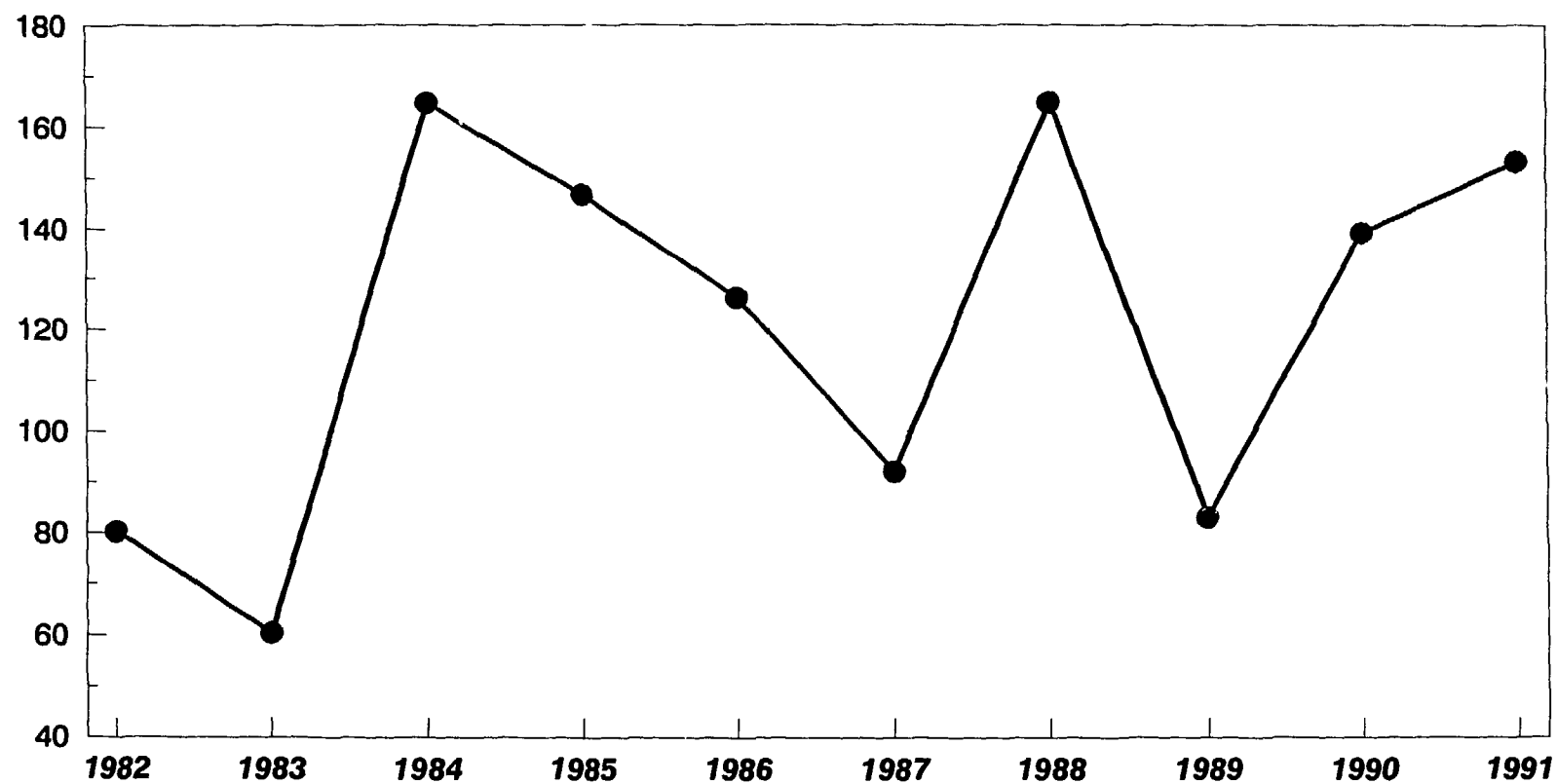
**ASSISTANCE PROVIDED BY THE AGENCY TO  
SENEGAL, BY SOURCE, 1982 -1991**

THOUSANDS OF DOLLARS



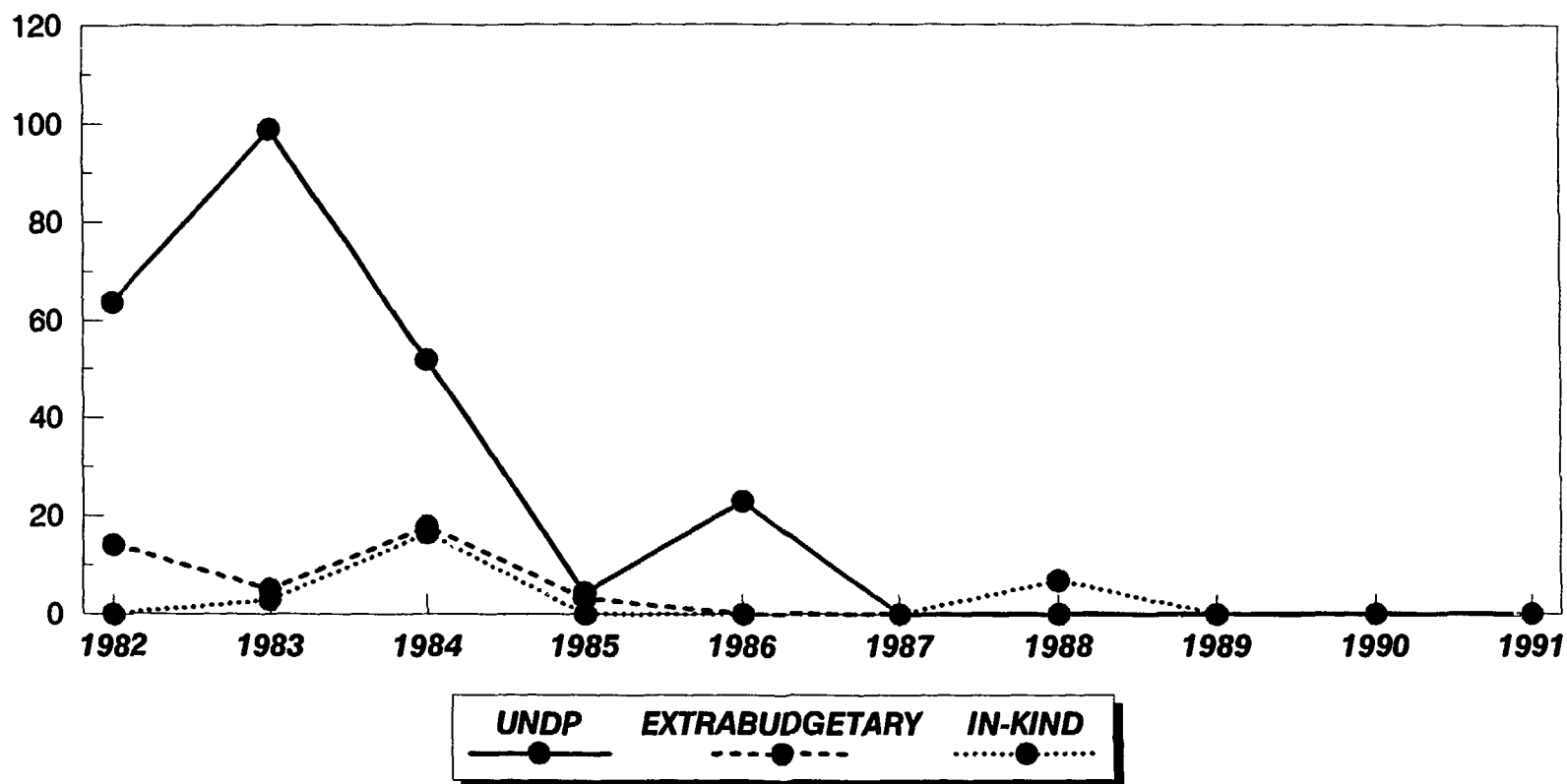
**TACF ASSISTANCE PROVIDED TO  
SENEGAL, 1982 -1991**

**THOUSANDS OF DOLLARS**



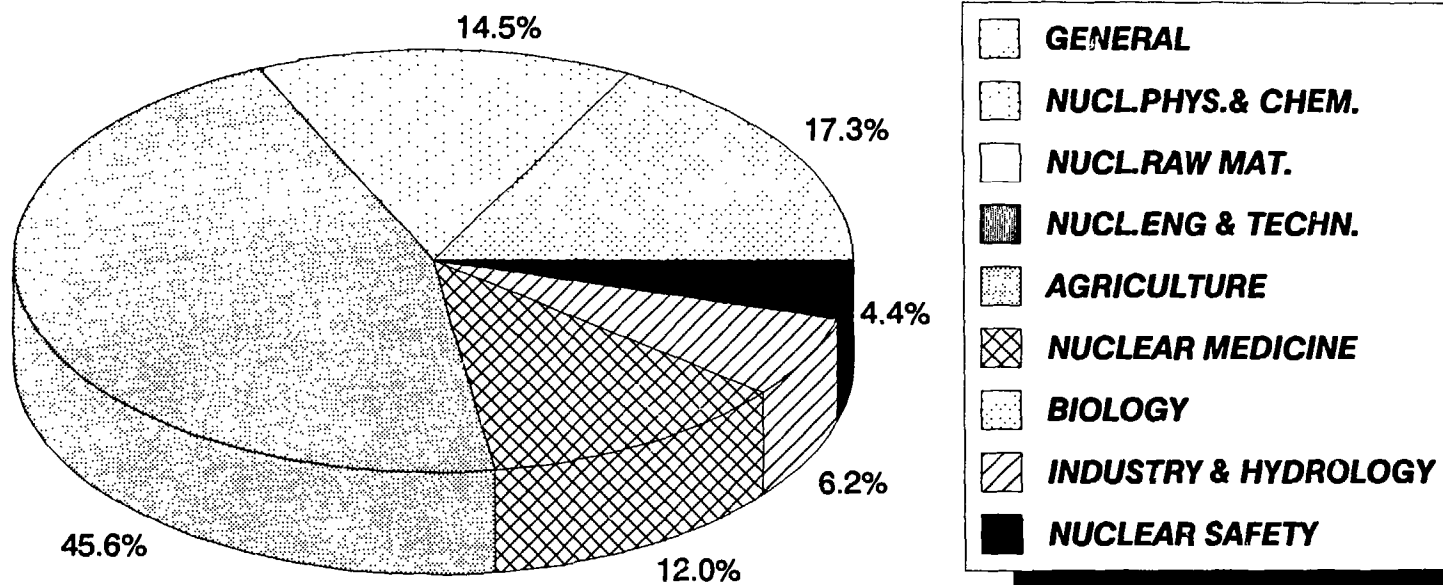
**UNDP, EXTRABUDGETARY AND IN-KIND ASSISTANCE  
PROVIDED TO SENEGAL, 1982 - 1991**

THOUSANDS OF DOLLARS



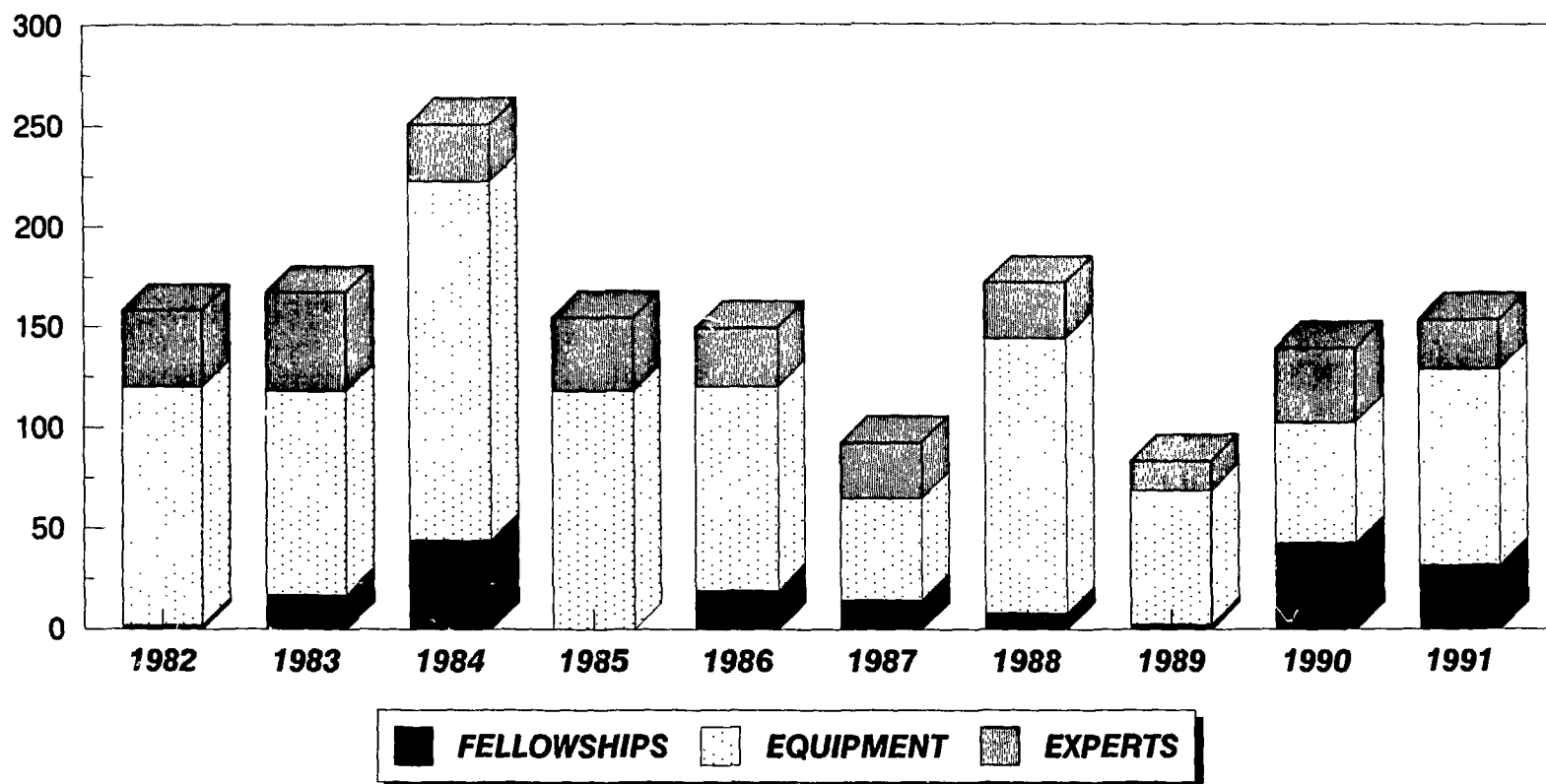


**TC PROJECT DISBURSEMENTS IN SENEGAL,  
BY SECTOR, 1982 - MAY 1992**



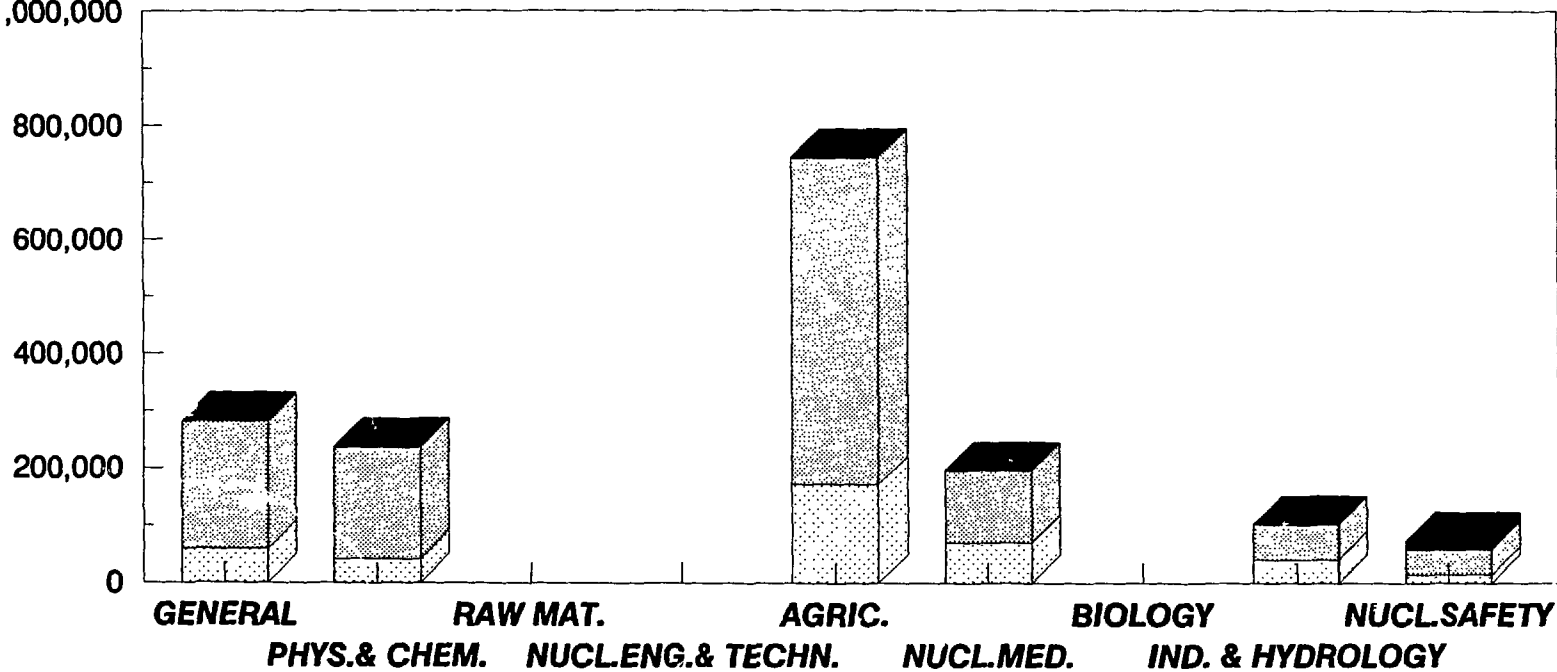
**ASSISTANCE PROVIDED BY THE AGENCY TO  
SENEGAL, BY TYPE, 1982 - 1991**

THOUSANDS OF DOLLARS



**EXPERT SERVICES, EQUIPMENT AND PROJECT-FUNDED  
TRAINING PROVIDED TO SENEGAL, 1982 - MAY 1992**

**DOLLARS**  
1,000,000



EXPERTS
  EQUIPMENT
  TRAINING

THE AGENCY'S TECHNICAL CO-OPERATION PROGRAMME WITH SENEGAL

ALL SOURCES

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

YEAR	RANKING	AMOUNT
1958-81	47 <sup>th</sup>	707.1
1982	46 <sup>th</sup>	158.0
1983	48 <sup>th</sup>	167.0
1984	29 <sup>th</sup>	250.3
1985	49 <sup>th</sup>	154.3
1986	54 <sup>th</sup>	149.1
1987	65 <sup>th</sup>	92.0
1988	46 <sup>th</sup>	171.6
1989	66 <sup>th</sup>	83.0
1990	63 <sup>rd</sup>	139.1
1991	63 <sup>rd</sup>	153.2
1958-91	56 <sup>th</sup>	2224.7

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

**ALL SOURCES**

Year	I	II	III	IV	V	SENEGAL
1958-81	BRA 7907.9	IND 6670.7	ARG 5200.4	PAK 5091.2	CHI 5005.7	47 <sup>th</sup> - 707.1
1982	EGY 807.5	PER 746.4	CUB 715.7	COL 667.7	THA 654.3	46 <sup>th</sup> - 158.0
1983	EGY 2077.9	PER 1116.8	VIE 948.1	PHI 778.6	IRA 722.1	48 <sup>th</sup> - 167.0
1984	EGY 3625.9	PER 1750.4	THA 1094.6	CUB 1028.7	PHI 881.2	29 <sup>th</sup> - 250.3
1985	EGY 2494.8	PER 1120.7	THA 1117.4	BGD 1068.2	PHI 963.7	49 <sup>th</sup> - 154.3
1986	EGY 2317.0	BRA 1452.9	THA 1169.4	POL 1050.3	BGD 896.4	54 <sup>th</sup> - 149.1
1987	HUN 3452.6	EGY 1775.4	THA 1742.4	INS 1312.5	YUG 1223.2	65 <sup>th</sup> - 92.0
1988	EGY 1486.9	BUL 1361.6	CPR 1278.5	THA 1158.7	BRA 1096.7	46 <sup>th</sup> - 171.6
1989	CPR 1542.3	EGY 1505.1	THA 1205.3	BRA 1096.5	INS 999.1	66 <sup>th</sup> - 83.0
1990	POL 2308.1	CPR 2005.0	VIE 1589.2	INS 1412.6	BRA 1229.1	63 <sup>rd</sup> - 139.1
1991	INS 1305.2	CPR 975.0	EGY 959.8	BRA 951.2	BUL 934.7	63 <sup>rd</sup> - 153.2
1958-91	EGY 22222.3	BRA 17021.1	THA 14596.1	PER 12631.1	INS 12383.8	56 <sup>th</sup> - 2224.7

I  
∞  
I

- 22 -

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

TECHNICAL ASSISTANCE AND CO-OPERATION FUND

Year	I	II	III	IV	V	SENEGAL
1958-81	HUN 2533.0	PAK 2010.9	EGY 1898.7	THA 1712.8	BRA 1704.8	49 <sup>th</sup> - 441.6
1982	EGY 507.1	HUN 438.2	CUB 430.7	ECU 398.4	ZAM 354.9	51 <sup>st</sup> - 80.2
1983	EGY 1049.4	VIE 897.4	POL 667.8	PAK 498.5	PHI 430.0	60 <sup>th</sup> - 60.4
1984	EGY 1197.2	CUB 655.6	ECU 565.6	BGD 506.3	BUL 472.4	40 <sup>th</sup> - 164.7
1985	BGD 991.8	VIE 745.0	THA 708.7	BRA 571.8	POR 538.7	44 <sup>th</sup> - 146.7
1986	BRA 1381.8	THA 871.9	POL 833.5	BGD 823.9	SYR 751.8	53 <sup>rd</sup> - 126.2
1987	HUN 3305.2	DRK 986.8	BUL 888.5	INS 885.8	EGY 878.9	63 <sup>rd</sup> - 92.0
1988	BUL 1195.6	PER 856.5	EGY 768.6	INS 751.7	MAL 656.0	42 <sup>nd</sup> - 164.8
1989	EGY 990.9	CPR 868.2	POR 769.6	CHI 756.9	MAL 619.4	65 <sup>th</sup> - 83.0
1990	POL 1562.3	VIE 1518.8	DRK 1156.2	IRA 958.0	YUG 933.4	61 <sup>st</sup> - 139.1
1991	BUL 893.1	PAK 868.8	INS 855.1	VIE 817.6	CPR 814.5	57 <sup>th</sup> - 153.2
1958-91	EGY 9591.3	HUN 8256.5	POL 7793.5	BRA 7433.5	PAK 7346.0	58 <sup>th</sup> - 1651.9

ASSISTANCE PROVIDED BY THE AGENCY TO SENEGAL

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	38.2	117.9	1.9	-	-	158.0	63.7	77.0	3.2	14.1	-	158.0
1983	49.4	100.7	16.9	-	-	167.0	98.8	60.4	-	5.0	2.8	167.0
1984	28.2	178.2	43.9	-	-	250.3	51.6	159.6	5.1	17.7	16.3	250.3
1985	36.6	117.7	-	-	-	154.3	4.4	95.8	50.9	3.2	-	154.3
1986	29.2	100.8	19.1	-	-	149.1	22.9	126.2	-	-	-	149.1
1987	27.5	50.1	14.4	-	-	92.0	-	90.7	1.3	-	-	92.0
1988	27.8	135.8	8.0	-	-	171.6	-	133.4	31.4	-	6.8	171.6
1989	14.8	65.8	2.4	-	-	83.0	-	69.3	13.7	-	-	83.0
1990	37.1	59.6	42.4	-	-	139.1	-	139.1	-	-	-	139.1
1991	24.6	97.1	31.5	-	-	153.2	-	149.2	4.0	-	-	153.2
1982-91	313.4	1 023.7	180.5	-	-	1 517.6	241.4	1 100.7	109.6	40.0	25.9	1 517.6

TECHNICAL CO-OPERATION PROJECTS IN SENEGAL  
BY SECTOR

PROJECTS COMPLETED AND OPERATIONAL 1982 - 1992

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

SECTOR	NO. OF PROJECTS	ALLOTMENTS \$	% OF TOTAL	DISBURSEMENTS \$	% OF TOTAL
General atomic energy development	2	281 942	15.1	281 942	17.3
Nuclear physics and chemistry	2	242 500	12.9	236 467	14.5
Nuclear raw materials	-	-	-	-	-
Nuclear engineering and technology	-	-	-	-	-
Nuclear techniques in agriculture	8	795 826	42.5	743 183	45.6
Nuclear medicine	3	213 567	11.4	195 598	12.0
Nuclear techniques in biology	-	-	-	-	-
Nuclear techniques in industry and hydrology	3	203 006	10.8	101 542	6.2
Nuclear safety	1	135 825	7.3	72 518	4.4
TOTAL	19	1 872 666	100.0	1 631 250	100.0



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

Sector	No. of projects	Total project allotments \$	Total project disbursements \$
<u>Completed projects</u>			
General atomic energy development	2	281 942	281 942
Nuclear physics and chemistry	1	200 700	195 036
Nuclear raw materials	-	-	-
Nuclear engineering and technology	-	-	-
Nuclear techniques in agriculture	7	703 126	723 572
Nuclear medicine	2	146 567	161 246
Nuclear techniques in biology	-	-	-
Nuclear techniques in industry & hydrology	2	53 006	57 039
Nuclear safety	-	-	-
TOTAL	14	1 385 341	1 418 835
<u>Operational projects</u>			
General atomic energy development	-	-	-
Nuclear physics and chemistry	1	41 800	41 431
Nuclear raw materials	-	-	-
Nuclear engineering and technology	-	-	-
Nuclear techniques in agriculture	1	92 700	19 611
Nuclear medicine	1	67 000	34 352
Nuclear techniques in biology	-	-	-
Nuclear techniques in industry & hydrology	1	150 000	44 503
Nuclear safety	1	135 825	72 518
TOTAL	5	487 325	212 415

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

FIELD	TOTAL PROJECT ALLOTMENTS				TOTAL PROJECT DISBURSEMENTS			
	EXPERT SERVICES		EQUIPMENT	TRAINING	EXPERT SERVICES		EQUIPMENT	TRAINING
	M/M	\$	\$	\$	M/M	\$	\$	\$
General atomic energy development	10/03	59 262	222 680	-	10/03	59 262	222 680	-
Nuclear physics and chemistry	5/00	37 500	205 000	-	4/26	41 216	195 251	-
Nuclear raw materials	-	-	-	-	-	-	-	-
Nuclear engineering and technology	-	-	-	-	-	-	-	-
Nuclear techniques in agriculture	27/13	161 247	614 779	19 800	24/00	171 329	571 854	-
Nuclear medicine	13/10	73 567	140 000	-	10/25	69 849	125 749	-
Nuclear techniques in biology	-	-	-	-	-	-	-	-
Nuclear techniques in industry & hydrology	7/11	59 275	123 931	19 800	5/13	40 536	61 006	-
Nuclear safety	1/10	20 425	94 500	20 900	1/21	14 148	43 761	14 609
TOTAL	65/17	411 276	1 400 890	60 500	56/28	396 340	1 220 301	14 609

AGENCY FELLOWS FROM SENEGAL

1982 - 1992<sup>1</sup>  
(As of 31 May 1992)

Sector	No. of fellowships	No. of months/days	Host countries
General atomic energy development	-	-	-
Nuclear physics	2	24/00	FRA
Nuclear chemistry	3	12/21	YUG, BEL, CEC, IAEA
Nuclear raw materials	-	-	-
Nuclear engineering and technology	3	29/08	FRA, IVC
Nuclear techniques in agriculture	5	26/13	FRA, MOR
Nuclear medicine	-	-	-
Nuclear techniques in biology	-	-	-
Nuclear techniques in industry and hydrology	9	21/24	FRA, MLI, UK
Nuclear safety	2	6/26	FRA
TOTAL	24	121/02	

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

SENEGAL  
FELLOWSHIPS LONGER THAN 12 M/M  
1982 - 1992  
(As of 31 May 1992)

Name	Field of study	Host country	Date	Duration	Project
KABA	Analytical nuclear physics	FRA	Nov.83 - Nov.84	12/00	SEN/0/003
TIDJANI	Analytical nuclear physics	FRA	Jun.83 - Jun 84	12/00	SEN/0/003
DEME	Nuclear instrument technology	FRA	Sep.83 - Sep 84	12/00	-
DIEYE	Nuclear instrument technology	FRA	Sep.83 - Sep.84	12/00	-

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

Name	Field of study	Host country	Date	Duration	Project
CISSE	1. Agronomy	FRA	Jan.84 - Jul.84	6/01	SEN/5/011
	2. Soil Science	FRA	Jun.86 - Dec.86	6/00	SEN/5/016
FAYE	1. Isotopes in hydrology	FRA	Jan.84 - May 84	3/17	SEN/8/002
	2. Neutron moisture gauges	FRA	Jun.86 - Aug.86	2/07	SEN/5/016
	3. Isotope hydrology	IVC	Oct.86 - Jan.87	3/01	RAF/0/003
	4. Groundwater hydrology	UK	Dec.89 - Feb.90	3/00	RAF/8/012
GAYE	1. Isotopes in hydrology	FRA	Jan.84 - May 84	3/17	SEN/8/002
	2. Isotope hydrology	UK	Nov.89 - Feb.90	3/02	RAF/9/003

AGENCY TRAINING COURSES WITH SENEGALESE PARTICIPATION

1982 - 1992  
(As of 31 May 1992)

Field	Number of participants	Number of courses
General atomic energy development	5	5
Nuclear physics	1	1
Nuclear chemistry	2	2
Nuclear raw materials	-	-
Nuclear engineering and technology	7	5
Nuclear techniques in agriculture	16	15
Nuclear medicine	4	4
Nuclear techniques in biology	-	-
Nuclear techniques in industry & hydrology	13	7
Nuclear safety	10	8
TOTAL	58	47

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

Name	Course No.	Course title	Year	Location
ANDRADE	RAF/4/002 (001)	RTC on nuclear electronics	1983	ZAM
	RAF/4/007 (001)	RTC on nuclear instrumentation maintenance	1990	MOR
BADIANE	INT/5/117 (001)	ITC on the use of isotopes and radiation techniques in studies on soil/plant relationships	1989	AUS
	RAF/5/010 (002)	First Research Co-ordination Meeting of the regional project RAF/5/010	1989	TUN
DIAGNE	INT/4/070 (001)	ITC on nuclear instrumentation	1984	TUR
	RAF/8/014 (001)	RTC on non-destructive testing, radiography (level 2)	1991	ALG
DIABATE	INT/9/110 (001)	ITC on the management of radioactive wastes	1990	FRA
	RAF/0/006 (001)	RTC on design, management and evaluation techniques of IAEA TC projects	1991	GHA
	RAF/8/012 (002)	First Research Co-ordination Meeting of the regional project RAF/8/012	1989	MLI
DIEYE	INT/9/074 (001)	ITC on radiation protection	1987	FRA
	INT/9/100 (001)	ITC on radioactivity measurements for environmental monitoring purposes	1989	FRA
DIOP	INT/8/025 (001)	ITC on non-destructive testing, radiography and ultrasonics techniques	1987	KEN
	RLA/8/013 (009)	International XII World Conference on non-destructive testing	1989	NET
	RLA/8/013 (010)	International workshop on project achievements	1989	GER
GASSAMA	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
	RAF/6/006 (002)	RTC on bulk reagent methodology, reagent preparation and quality control for RIA thyroid hormones	1992	TUN
MBAYE	RAF/5/006 (002)	RTC on the use of personal computers in the analysis of animal production data	1992	ETH
	RAF/5/008 (001)	RTC on the use of radio- and enzyme-immunoassay techniques for studies on animal reproduction and disease diagnosis	1986	KEN
	RAS/5/013 (001)	RTC and study tour on animal production	1982	AUL

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

Name	Course No.	Course title	Year	Location
MBOUP	INT/0/039 (001) RAF/0/005 (001)	IWS on IAEA technical co-operation practices and procedures Regional seminar on nuclear science for peace and development	1984 1990	SUD UGA
SADIO	INT/5/093 (001) INT/5/102 (001)	ITC on the use of isotope and radiation techniques in soil physics studies ITC on the use of isotope and radiation techniques in studies on soil/plant relationships	1984 1986	BEL AUS
SARR	RAF/5/006 (001) RAF/5/011 (002)	RWS on the establishment and use of monoclonal antibody-based competitive ELISA system for the sero-monitoring of rinderpest RTC on the diagnosis of rinderpest	1991 1988	CMR ETH



PROJECTS COMPLETED IN SENEGAL SINCE 1982  
(As of 31 May 1992)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS				COMPLETED
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING	
			M/M	\$	\$	\$	M/M	\$	\$	\$	
1980	SEN/0/003	Assistance to institute for applied nuclear technology	10/03	59 262	200 133	-	10/03	59 262	200 133	-	1984
1982	SEN/0/004	Radiocarbon laboratory	-	-	22 547	-	-	-	22 547	-	1985
1984	SEN/1/003	Nuclear analytical laboratory	3/00	20 700	180 000	-	3/00	20 438	174 598	-	1990
1977	SEN/5/011	Radioisotopes in agriculture	8/10	29 800	111 470	-	8/10	49 530	111 469	-	1985
1980	SEN/5/014	Isotopes in agriculture	2/00	10 800	90 000	-	1/20	7 350	89 682	-	1983
1981	SEN/5/015	Radioisotopes in agriculture	2/01	9 807	52 000	-	2/01	14 190	39 517	-	1985
1982	SEN/5/016	Soil science	1/22	8 460	30 000	-	1/27	7 545	30 741	-	1987
1984	SEN/5/017	Radioisotopes in agriculture	5/03	34 755	135 100	-	4/20	39 050	136 725	-	1989
1987	SEN/5/018	Biological nitrogen fixation	1/08	9 105	107 314	-	1/08	12 046	102 756	-	1991

PROJECTS COMPLETED IN SENEGAL SINCE 1982  
(As of 31 May 1992)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS				COMPLETED
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING	
			M/M	\$	\$	\$	M/M	\$	\$	\$	
1988	SEN/5/019	Animal production and disease diagnosis	3/29	30 620	43 895	-	3/29	39 117	43 854	-	1991
1978	SEN/6/007	Radioisotopes in medicine	7/10	25 667	28 000	-	7/06	38 066	27 833	-	1985
1980	SEN/6/008	Nuclear medicine	3/00	20 900	72 000	-	2/21	21 050	74 297	-	1990
1982	SEN/8/002	Isotopes in hydrology	1/00	5 400	5 000	-	1/07	7 090	3 990	-	1985
1984	SEN/8/003	Isotope hydrology	2/11	16 675	25 931	-	2/12	22 283	23 676	-	1989
	TOTAL	14 projects	51/07	281 951	1 103 390	-	50/14	337 017	1 081 818	-	

OPERATIONAL PROJECTS IN SENEGAL  
(As of 31 May 1992)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS			
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING
			M/M	\$	\$	\$	M/M	\$	\$	\$
1990	SEN/2/002	X-ray fluorescence laboratory	2/00	16 800	25 000	-	1/26	20 778	20 653	-
1991	SEN/5/020	Plant rooting system studies	3/00	27 900	45 000	19 800	0/05	2 501	17 110	-
1991	SEN/6/009	Upgrading of radioimmuno-assay laboratory	3/00	27 000	40 000	-	0/28	10 733	23 619	-
1991	SEN/8/004	Water resource assessment	4/00	37 200	93 000	19 800	1/24	11 163	33 340	-
1990	SEN/9/002	Radiation protection	2/10	20 425	94 500	20 900	1/21	14 148	43 761	14 609
	TOTAL	5 projects	14/10	129 325	297 500	60 500	6/14	59 323	138 483	14 609

**COUNTERPART INSTITUTIONS IN SENEGAL (I)**  
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>GENERAL ATOMIC ENERGY DEVELOPMENT</u>		
SEN/C/003	University of Dakar, Faculty of Sciences, Institute of Applied Nuclear Technology, Dakar	FALL
SEN/O/004	1. Basic Research Institute for Black Africa, Radiocarbon Laboratory, Dakar 2. University of Dakar, Dakar	DIOP -
<u>NUCLEAR PHYSICS AND CHEMISTRY</u>		
SEN/1/003	University of Dakar, Faculty of Sciences, Institute of Applied Nuclear Technology, Dakar	DIATTA, C.
SEN/2/002	University of Dakar, Faculty of Sciences, Institute of Applied Nuclear Technology, Dakar	DIATTA, C.
<u>AGRICULTURE</u>		
SEN/5/011	National Agronomy Research Centre, Bambey	DANCETTE
SEN/5/014	National Agronomy Research Centre, Bambey	DANCETTE DIATTA, S.
SEN/5/015	Senegal Agricultural Research Institute, Richard Toll Agriculture Research Centre, Richard Toll	KHOUMA
SEN/5/016	1. Senegal Agricultural Research Institute, Richard Toll Agriculture Research Centre, Richard Toll 2. National Agronomy Research Centre, Bambey	BEYE -
SEN/5/017	Senegal Agricultural Research Institute, Bambey	CISSE

**COUNTERPART INSTITUTIONS IN SENEGAL (I)**  
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>AGRICULTURE (cont'd)</u>		
SEN/5/018	National Agronomy Research Centre, Bambey	BADIANE
SEN/5/019	Senegal Agricultural Research Institute, National Laboratory for Breeding and Veterinary Research, Dakar	SARR MBAYE
SEN/5/020	National Agronomy Research Centre, Bambey	CISSE
<u>NUCLEAR MEDICINE</u>		
SEN/6/007	Le Dantec Hospital, Dakar	PAULIN
SEN/6/008	1. Le Dantec Hospital, Dakar 2. University of Dakar, Faculty of Medicine, Dakar	N'DOYE -
SEN/6/009	University of Dakar, Faculty of Medicine, Dakar	GASSAMA
<u>NUCLEAR TECHNIQUES IN HYDROLOGY</u>		
SEN/8/002	University of Dakar, Faculty of Sciences, Department of Geology, Dakar	GUIRAUD
SEN/8/003	University of Dakar, Faculty of Sciences, Department of Geology, Dakar	DIA
SEN/8/004	Directorate for Water Research, Bambey	LAKH

**COUNTERPART INSTITUTIONS IN SENEGAL (I)**  
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
	<u>NUCLEAR SAFETY</u>	
SEN/9/002	University of Dakar, Faculty of Sciences, Institute of Applied Nuclear Technology, Dakar	DIATTA

**COUNTERPART INSTITUTIONS IN SENEGAL (II)**  
(By Institute)

**DAKAR**

**University of Dakar**  
**Dakar**

SEN/0/004 Radiocarbon Laboratory

**University of Dakar**  
**Faculty of Sciences**  
**Institute of Applied Nuclear Technology**  
**Dakar**

SEN/0/003 Assistance to Institute of Applied Nuclear Technology  
SEN/1/003 Nuclear Analytical Laboratory  
SEN/2/002 X-ray Fluorescence Laboratory  
SEN/9/002 Radiation Protection

**University of Dakar**  
**Faculty of Sciences**  
**Department of Geology**  
**Dakar**

SEN/8/002 Isotopes in Hydrology  
SEN/8/003 Isotope hydrology

**University of Dakar**  
**Faculty of Medicine**  
**Dakar**

SEN/6/008 Nuclear Medicine  
SEN/6/009 Upgrading of Radioimmunoassay Laboratory

**Basic Research Institute for Black Africa**  
**Radiocarbon Laboratory**  
**Dakar**

SEN/0/004 Radiocarbon Laboratory

**Senegal Agricultural Research Institute**  
**National Laboratory for Breeding and Veterinary Research**  
**Dakar**

SEN/5/019 Animal Production and Disease Diagnosis

**COUNTERPART INSTITUTIONS IN SENEGAL (II)**  
(By Institute)

**DAKAR (cont'd)**

**Le Dantec Hospital  
Dakar**

SEN/6/007      Radioisotopes in Medicine  
SEN/6/008      Nuclear Medicine

**BAMBEY**

**National Agronomy Research Centre  
Bambey**

SEN/5/011      Radioisotopes in Agriculture  
SEN/5/014      Isotopes in Agriculture  
SEN/5/016      Soil Science  
SEN/5/018      Biological Nitrogen Fixation  
SEN/5/020      Plant Rooting System Studies

**Senegal Agricultural Research Institute  
Bambey**

SEN/5/017      Radioisotopes in Agriculture

**Directorate for Water Research  
Bambey**

SEN/8/004      Water Resource Assessment

**RICHARD TOLL**

**Senegal Agricultural Research Institute  
Richard Toll Agriculture Research Centre  
Richard Toll**

SEN/5/015      Radioisotopes in Agriculture  
SEN/5/016      Soil Science



**THE AGENCY'S TECHNICAL CO-OPERATION PROGRAMME WITH  
SENEGAL  
SINCE 1982**

**LONG-TERM EXPERT ASSIGNMENTS**

NONE

**RESEARCH CONTRACTS/AGREEMENTS IN SENEGAL SINCE 1982 <sup>1</sup>**  
**(As of 31 May 1992)**

Field of activity	No. of contracts/ agreements	Amount allocated \$
Nuclear techniques in agriculture	10	64 500
Nuclear medicine	1	7 500
Nuclear techniques in hydrology	2	25 000
TOTAL	13	97 000

---

<sup>1</sup> New awards since 1982

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

Name	No. of assignments	Project(s)
ADAMA	1	RAF/8/012
BADIANE	1	RAF/5/010
DIOP	1	RLA/8/006
TANDIA	1	RAF/8/012
TOTAL	4	

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

Recipient country	No. of fellowships	No. of scientific visits	TOTAL <sup>1</sup>
MALI	1	-	1
MOROCCO	1	-	1
TOTAL	2	-	2

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

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

Course No.	Course Title	Participants	Year
RAF/5/016 (001)	RTC on the use of isotopes and radiation techniques in studies of biological nitrogen fixation and soil/plant nutrition	11	1989
RAF/8/012 (005)	RWS on the study of non-saturated zones	6	1991
RAF/8/013 (001)	RTC on the application of isotope techniques in water resources development	11	1989
3 EVENTS	TOTAL	28	