



INTERNATIONAL ATOMIC ENERGY AGENCY



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IAEA-CPS-94/06
10 August 1994
Original: ENGLISH

COUNTRY PROGRAMME SUMMARY

**THE AGENCY'S TECHNICAL CO-OPERATION
PROGRAMME WITH
PARAGUAY
1984 - 1994
COUNTRY PROGRAMME SUMMARIES**

DEPARTMENT OF TECHNICAL CO-OPERATION

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EVALUATION SECTION

DEPARTMENT OF TECHNICAL CO-OPERATION

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PROGRAMME WITH
PARAGUAY
1984 - 1994
COUNTRY PROGRAMME SUMMARIES**

This report contains a review of the Agency's technical co-operation activities in Paraguay carried out during 1984 - 1994. 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.

PARAGUAY

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INTRODUCTION

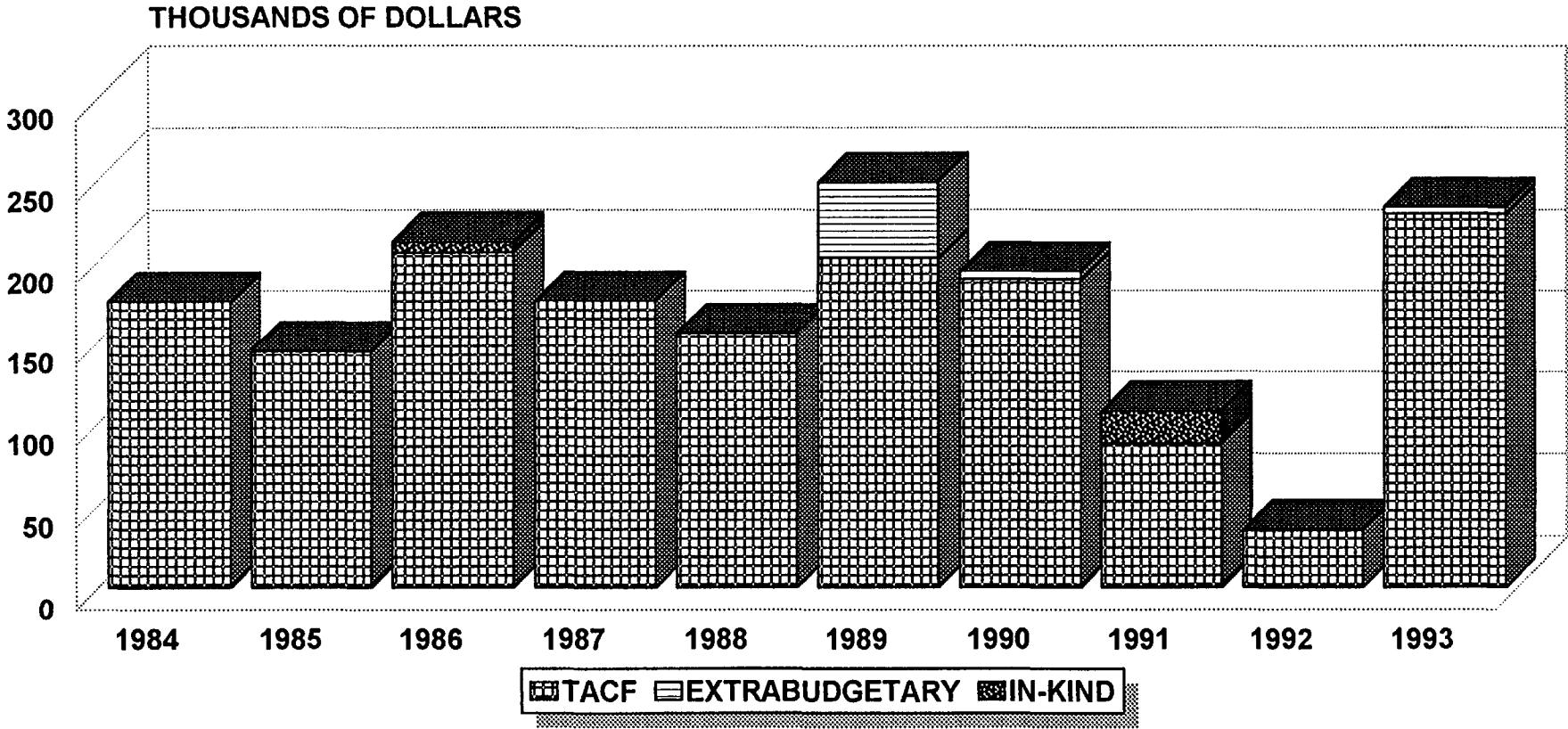
The country programme summary reported on here is one in the series of such studies being undertaken of the Agency's TC programme with Member States. With \$2.3 million of Agency support received, Paraguay ranks 58th among all recipients of technical assistance during the period 1958 through 1993.

More than two thirds of the assistance received over the past ten years has been provided in the form of equipment (70%), the rest was shared to almost equal parts by expert services (16%) and training (14%). The bulk of the resources was made available through the TACF (95%), supplemented by extrabudgetary contributions (3%) and assistance provided in kind (2%).

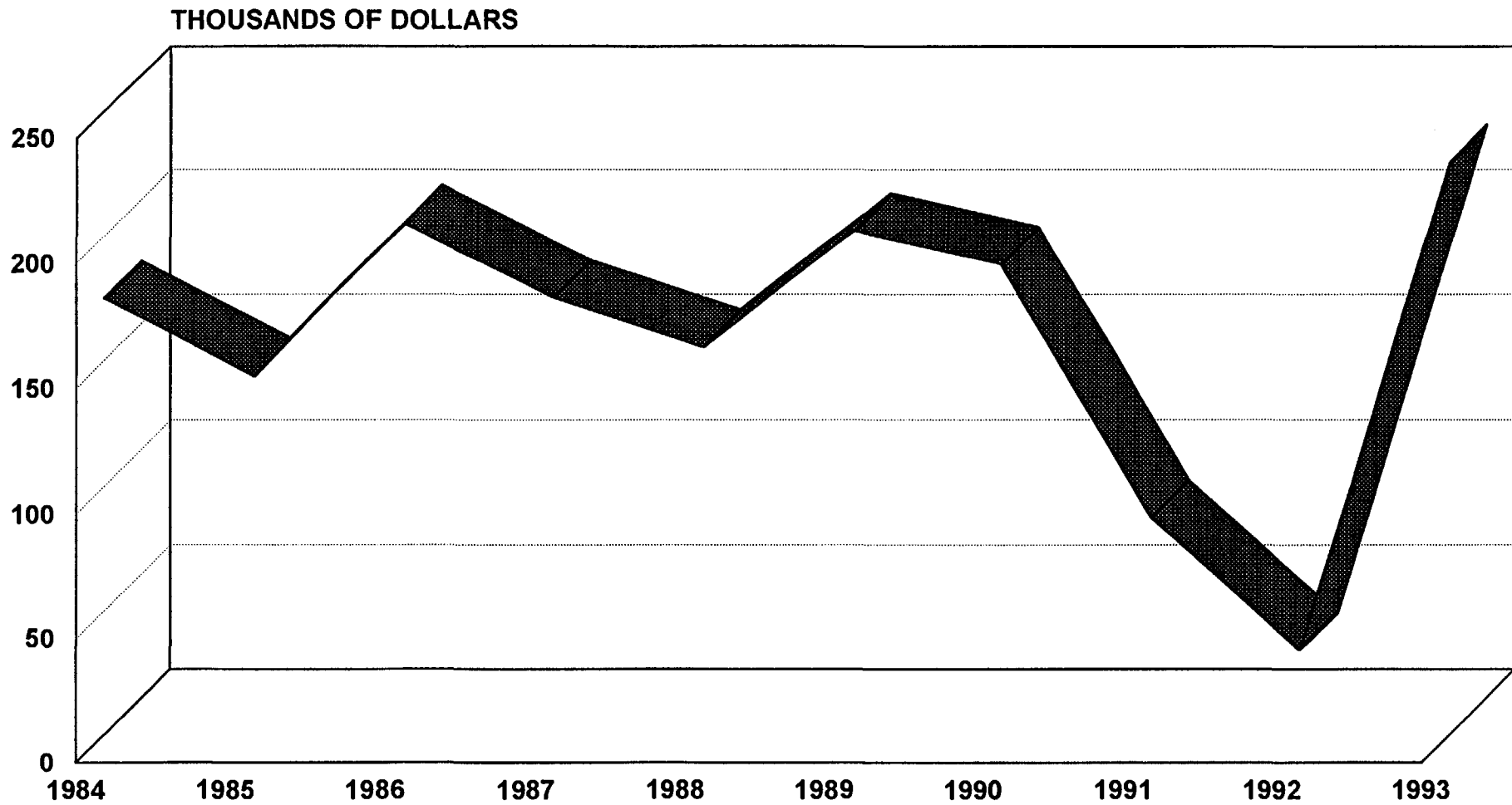
Disbursements under those projects that were operational or completed during the period 1984 through the end of July 1994 show two major areas, nuclear physics and chemistry (44%) and nuclear medicine (21%). Smaller shares went to industry and hydrology (13%), agriculture (10%), nuclear engineering and technology (8%) and nuclear safety (4%).

Since 1984, scientists from Paraguay have completed 40 assignments as Agency experts and training course lecturers or as participants in co-ordination meetings. During the same period, Paraguay has hosted nine regional group training events for a total of 87 participants.

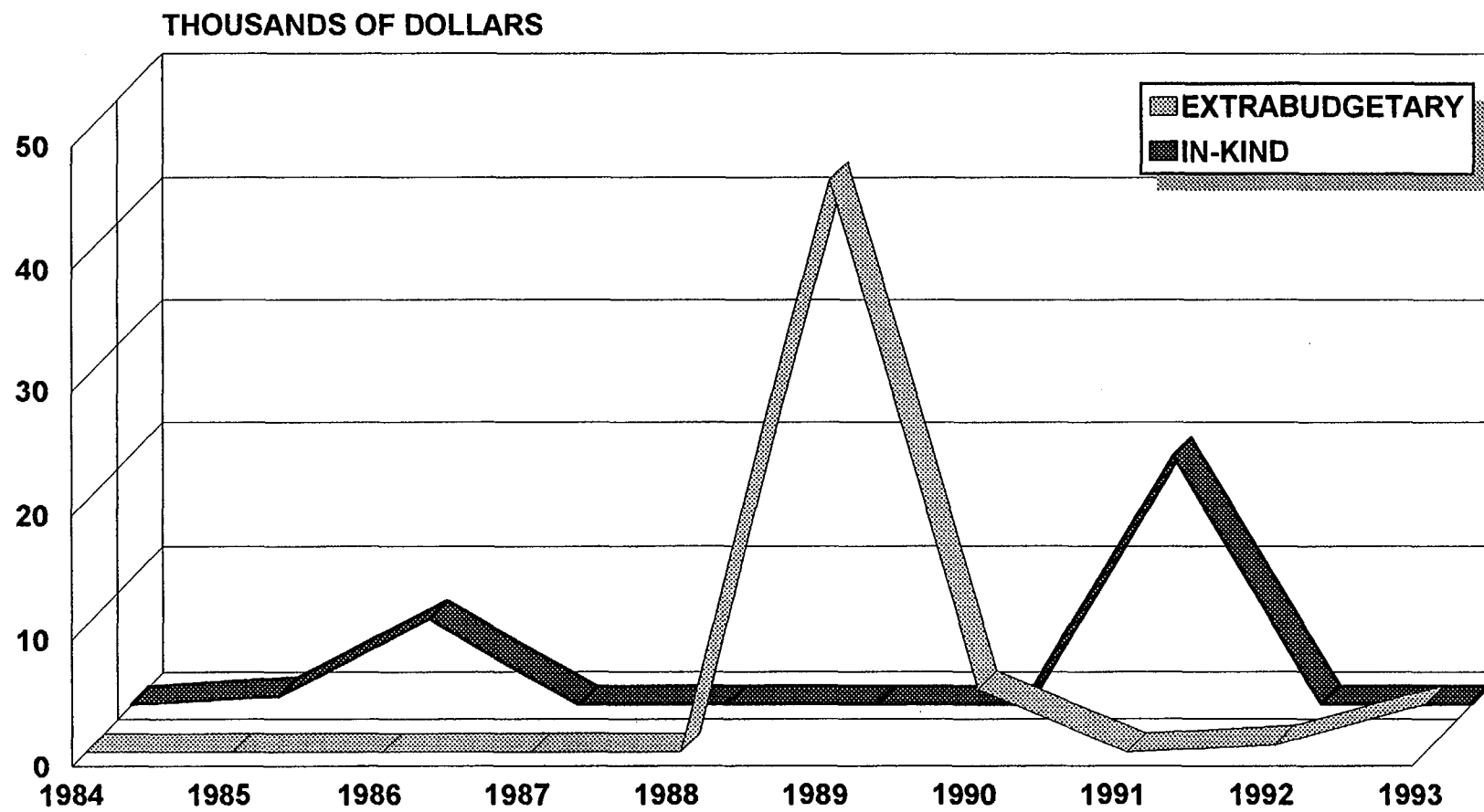
ASSISTANCE PROVIDED BY THE AGENCY TO PARAGUAY BY SOURCE (1984 - 1993)



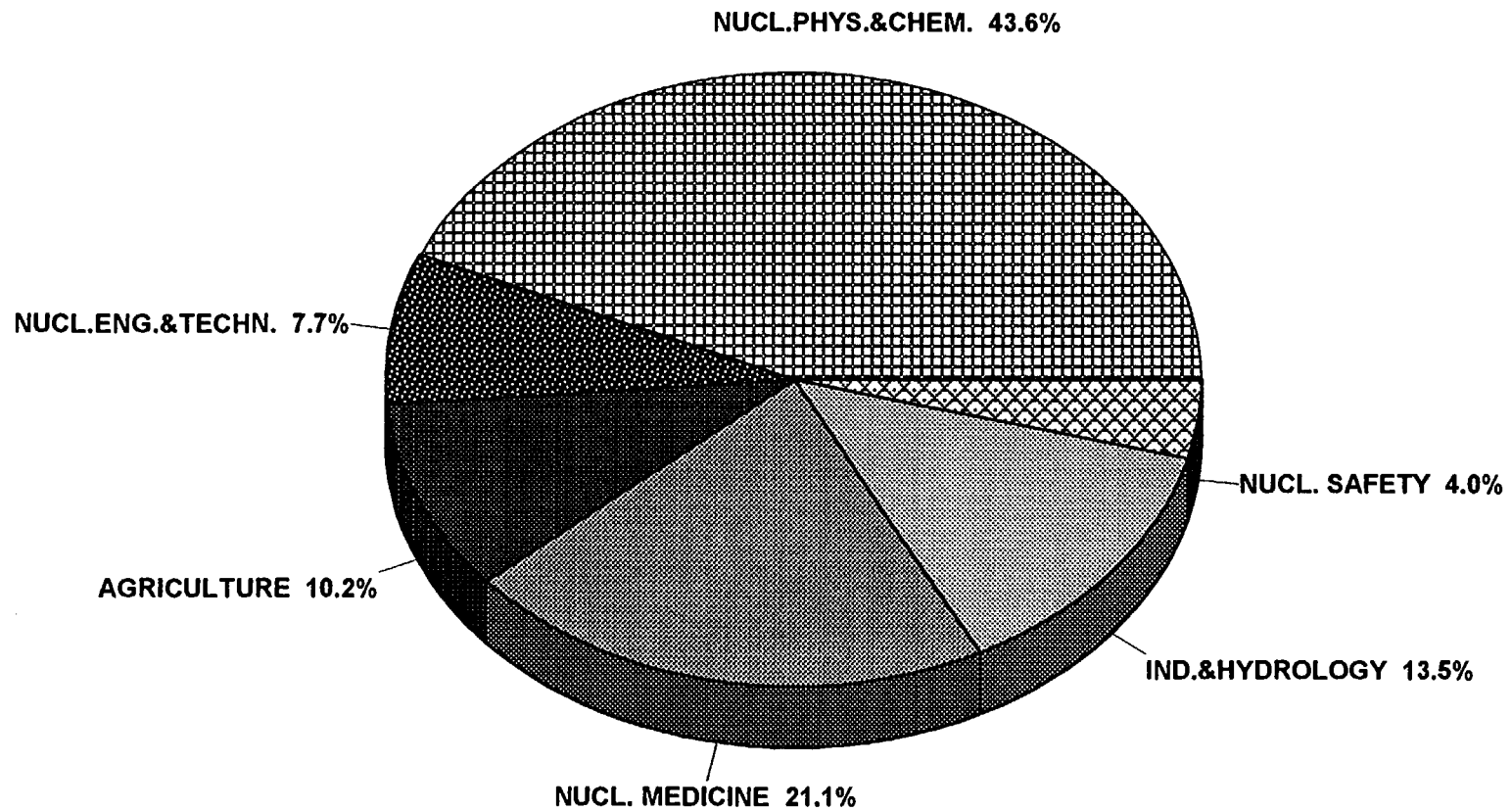
TACF ASSISTANCE PROVIDED TO PARAGUAY (1984 - 1993)



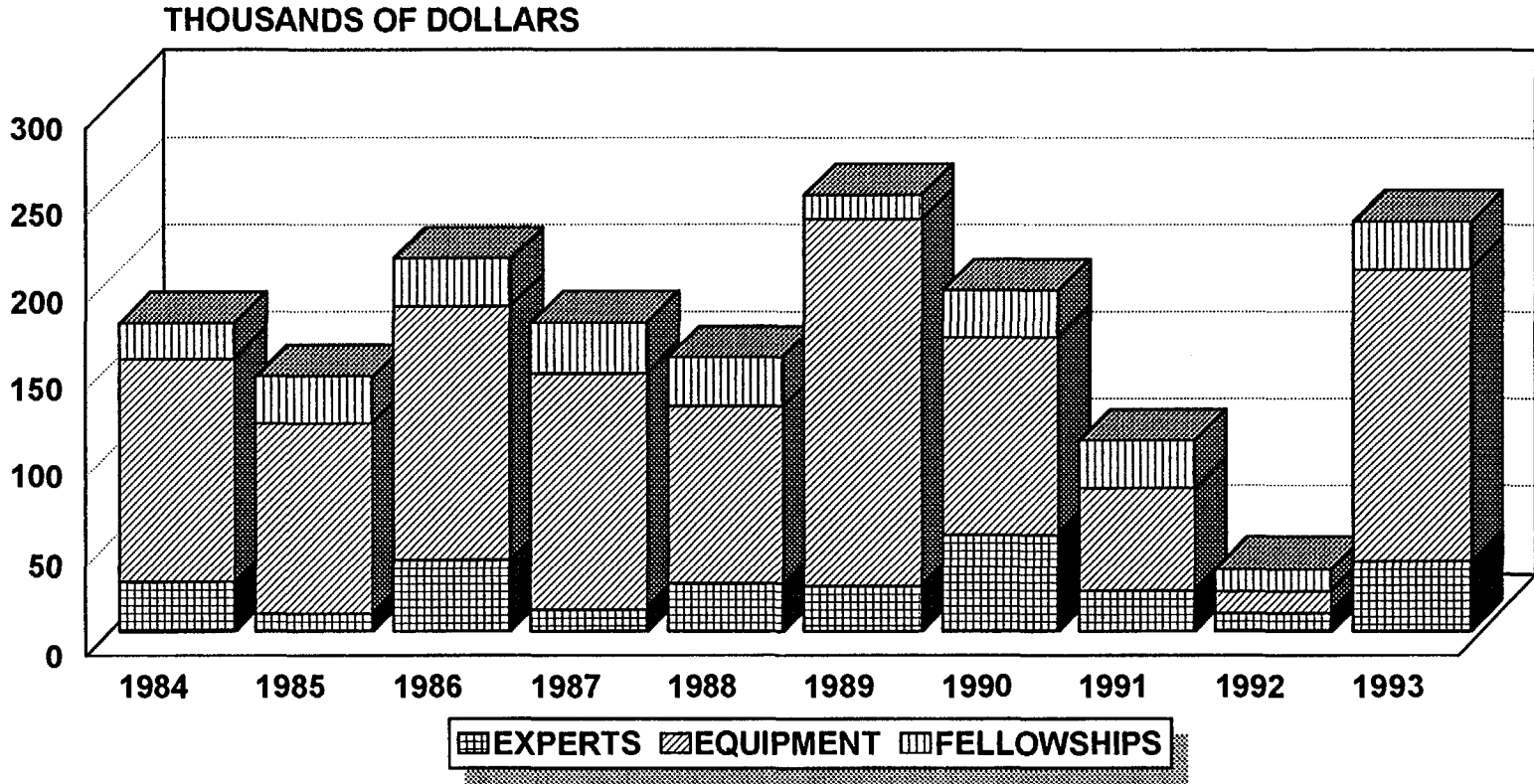
EXTRABUDGETARY AND IN-KIND ASSISTANCE PROVIDED TO PARAGUAY (1984 - 1993)



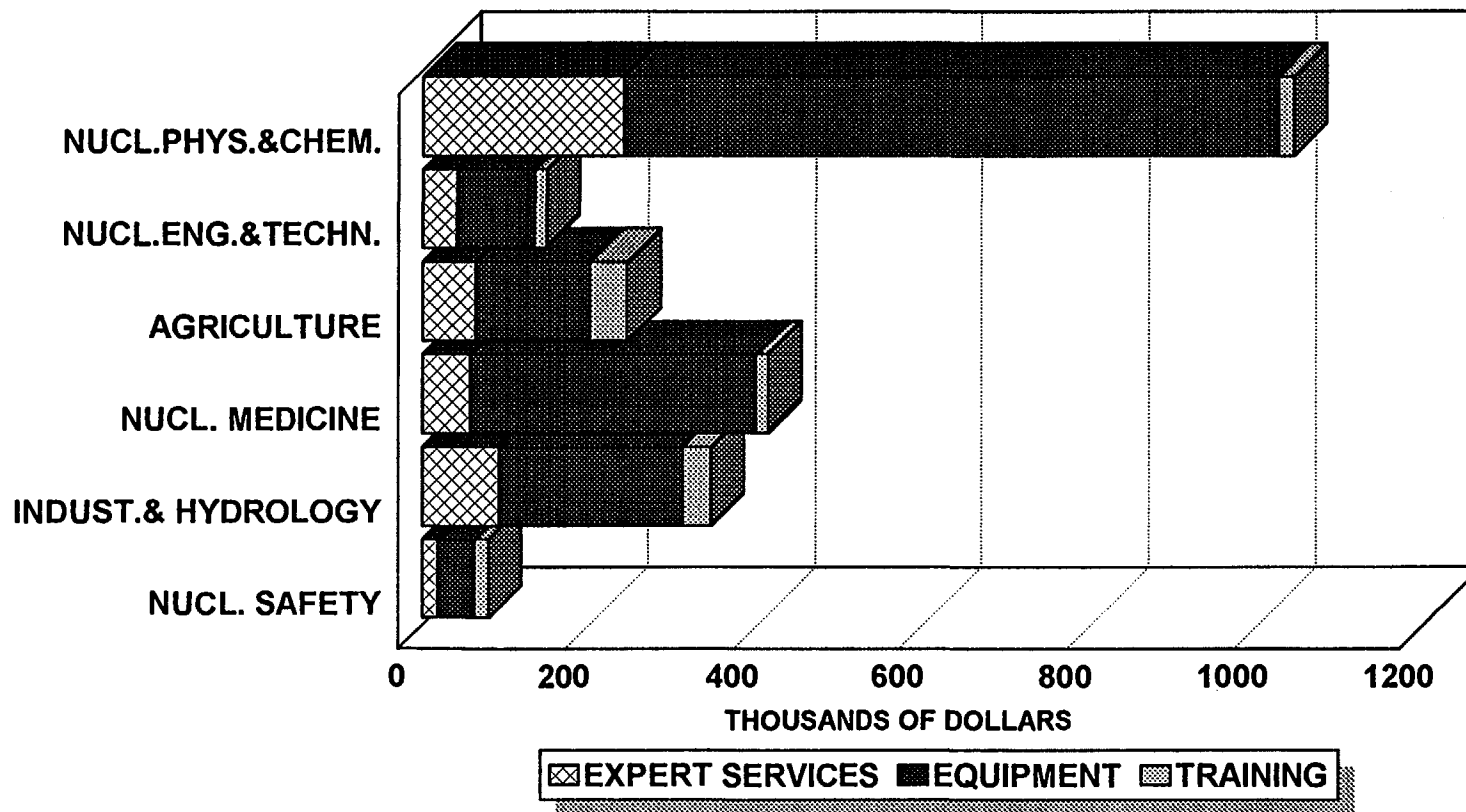
TC PROJECT DISBURSEMENTS IN PARAGUAY BY SECTOR (1984 - 1994)



ASSISTANCE PROVIDED BY THE AGENCY TO PARAGUAY BY TYPE (1984 - 1993)



EXPERT SERVICES, EQUIPMENT AND PROJECT-FUNDED TRAINING PROVIDED TO PARAGUAY BY SECTOR (1984 - 1994)



THE AGENCY'S TECHNICAL CO-OPERATION PROGRAMME WITH PARAGUAY

ALL SOURCES

PARAGUAY'S RANKING AS A TC RECIPIENT
1958 - 1993
(in \$1000)

YEAR	RANKING	AMOUNT
1958-83	57 th	631.7
1984	46 th	174.7
1985	51 st	144.1
1986	42 nd	211.8
1987	54 th	175.0
1988	50 th	154.9
1989	46 th	248.2
1990	52 nd	193.5
1991	66 th	107.0
1992	75 th	34.6
1993	51 st	233.0
1958-93	58 th	2308.5

**"TOP FIVE" RECIPIENTS OF AGENCY ASSISTANCE
1958 - 1993 (in \$1000)**

ALL SOURCES

Year	I	II	III	IV	V	PARAGUAY
1958-83	BRA 8887.6	IND 7197.4	EGY 7024.5	PAK 6008.9	ARG 5912.2	57 th - 631.7
1984	EGY 3625.9	PER 1750.4	THA 1094.6	CUB 1028.7	PHI 881.2	46 th - 174.7
1985	EGY 2494.8	PER 1120.7	THA 1117.4	BGD 1068.2	PHI 963.7	51 st - 144.1
1986	EGY 2317.0	BRA 1452.9	THA 1169.4	POL 1050.3	BGD 896.4	42 nd - 211.8
1987	HUN 3452.6	EGY 1775.4	THA 1742.4	INS 1312.5	YUG 1223.2	54 th - 175.0
1988	EGY 1486.9	BUL 1361.6	CPR 1278.5	THA 1158.7	BRA 1096.7	50 th - 154.9
1989	CPR 1542.3	EGY 1505.1	THA 1205.3	BRA 1096.5	INS 999.1	46 th - 248.2
1990	POL 2308.1	CPR 2005.0	VIE 1589.2	INS 1412.6	BRA 1229.1	52 nd - 193.5
1991	INS 1305.2	CPR 975.0	EGY 959.8	BRA 951.2	BUL 934.7	66 th - 107.0
1992	EGY 1586.3	INS 1342.1	CPR 1328.8	MEX 1127.8	POL 1036.4	75 th - 34.6
1993	INS 1285.9	CPR 1091.7	PAK 1012.2	EGY 905.3	IRA 810.1	51 st - 233.0
1958-93	EGY 24713.9	BRA 18541.4	THA 16125.1	INS 15011.8	PER 13772.0	58 th - 2308.5

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**"TOP FIVE" RECIPIENTS OF AGENCY ASSISTANCE
1958 - 1993 (in \$1000)**

TECHNICAL ASSISTANCE AND CO-OPERATION FUND

Year	I	II	III	IV	V	PARAGUAY
1958-83	EGY 3455.2	HUN 3221.6	PAK 2839.0	THA 2354.1	BRA 2158.9	57 th - 440.4
1984	EGY 1197.2	CUB 655.6	ECU 565.6	BGD 506.3	BUL 472.4	38 th - 174.7
1985	BGD 991.8	VIE 745.0	THA 708.7	BRA 571.8	POR 538.7	45 th - 143.4
1986	BRA 1381.8	THA 871.9	POL 833.5	BGD 823.9	SYR 751.8	39 th - 205.0
1987	HUN 3305.2	DRK 986.8	BUL 888.5	INS 885.8	EGY 878.9	48 th - 175.0
1988	BUL 1195.6	PER 856.5	EGY 768.6	INS 751.7	MAL 656.0	46 th - 154.9
1989	EGY 990.9	CPR 868.2	POR 769.6	CHI 756.9	MAL 619.4	46 th - 202.0
1990	POL 1562.3	VIE 1518.8	DRK 1156.2	IRA 958.0	YUG 933.4	48 th - 188.5
1991	BUL 893.1	PAK 868.8	INS 855.1	VIE 817.6	CPR 814.5	67 th - 87.1
1992	EGY 1255.7	CPR 1009.0	VIE 872.8	INS 826.6	IRA 795.5	74 th - 34.0
1993	INS 1040.5	CPR 896.5	PAK 847.6	IRA 807.4	THA 721.5	47 th - 229.2
1958-93	EGY 11549.2	PAK 8963.2	VIE 8908.2	POL 8820.1	INS 8814.1	56 th - 2034.2

ASSISTANCE PROVIDED BY THE AGENCY TO PARAGUAY

Financial Summary 1984 - 1993
(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
1984	27.8	126.2	20.7	-	-	174.7	-	174.7	-	-	-	174.7
1985	9.9	107.1	27.1	-	-	144.1	-	143.4	-	-	0.7	144.1
1986	39.6	144.7	27.5	-	-	211.8	-	179.1	25.9	-	6.8	211.8
1987	12.1	133.5	29.4	-	-	175.0	-	175.0	-	-	-	175.0
1988	26.6	100.2	28.1	-	-	154.9	-	151.6	3.3	-	-	154.9
1989	25.1	209.2	13.9	-	-	248.2	-	191.1	10.9	46.2	-	248.2
1990	53.5	113.1	26.9	-	-	193.5	-	188.5	-	5.0	-	193.5
1991	22.5	56.9	27.6	-	-	107.0	-	87.1	-	-	19.9	107.0
1992	10.3	11.8	12.5	-	-	34.6	-	34.0	-	0.6	-	34.6
1993	39.0	166.5	27.5	-	-	233.0	-	229.2	-	3.8	-	233.0
1984-93	266.4	1 169.2	241.2	-	-	1 676.8	-	1 553.7	40.1	55.6	27.4	1 676.8

TECHNICAL CO-OPERATION PROJECTS IN PARAGUAY
BY SECTOR

PROJECTS COMPLETED AND OPERATIONAL 1984 - 1994

TOTAL PROJECT ALLOTMENTS AND DISBURSEMENTS
(as of 31 July 1994)

SECTOR	NO. OF PROJECTS	ALLOTMENTS \$	% OF TOTAL	DISBURSEMENTS \$	% OF TOTAL
General atomic energy development	-	-	-	-	-
Nuclear physics and chemistry	4	1 043 061	45.9	843 140	43.6
Nuclear raw materials	-	-	-	-	-
Nuclear engineering and technology	1	148 498	6.5	148 944	7.7
Nuclear techniques in agriculture	3	245 005	10.8	196 824	10.2
Nuclear medicine	3	412 605	18.2	407 341	21.0
Nuclear techniques in biology	-	-	-	-	-
Nuclear techniques in industry and hydrology	3	343 886	15.1	261 216	13.5
Nuclear safety	2	78 808	3.5	76 957	4.0
TOTAL	16	2 271 863	100.0	1 934 422	100.0

TECHNICAL CO-OPERATION PROJECTS IN PARAGUAY
 COMPLETED AND OPERATIONAL, BY SECTOR, 1984 - 1994
 (As of 31 July 1994)

Sector	No. of projects	Total project allotments \$	Total project disbursements \$
<u>Completed projects</u>			
General atomic energy development	-	-	-
Nuclear physics and chemistry	3	685 811	661 469
Nuclear raw materials	-	-	-
Nuclear engineering and technology	-	-	-
Nuclear techniques in agriculture	2	153 055	143 871
Nuclear medicine	2	353 875	359 099
Nuclear techniques in biology	-	-	-
Nuclear techniques in industry & hydrology	2	127 836	109 191
Nuclear safety	1	7 050	5 193
TOTAL	10	1 327 627	1 278 823
<u>Operational projects</u>			
General atomic energy development	-	-	-
Nuclear physics and chemistry	1	357 250	181 671
Nuclear raw materials	-	-	-
Nuclear engineering and technology	1	148 498	148 944
Nuclear techniques in agriculture	1	91 950	52 953
Nuclear medicine	1	58 730	48 242
Nuclear techniques in biology	-	-	-
Nuclear techniques in industry & hydrology	1	216 050	152 025
Nuclear safety	1	71 758	71 764
TOTAL	6	944 236	655 599

**EXPERT SERVICES, EQUIPMENT AND PROJECT-FUNDED TRAINING PROVIDED TO PARAGUAY, BY SECTOR
PROJECTS COMPLETED AND OPERATIONAL 1984 - 1994
(As of 31 July 1994)**

FIELD	TOTAL PROJECT ALLOTMENTS				TOTAL PROJECT DISBURSEMENTS			
	EXPERT SERVICES		EQUIPMENT	TRAINING	EXPERT SERVICES		EQUIPMENT	TRAINING
	M/M	\$	\$	\$	M/M	\$	\$	\$
General atomic energy development	-	-	-	-	-	-	-	-
Nuclear physics and chemistry	31/00	240 825	783 336	18 900	28/00	195 449	647 691	-
Nuclear raw materials	-	-	-	-	-	-	-	-
Nuclear engineering and technology	5/00	41 100	92 880	14 518	5/02	41 223	93 203	14 518
Nuclear techniques in agriculture	6/23	63 110	138 485	43 410	5/05	32 715	130 992	33 117
Nuclear medicine	10/04	57 320	340 738	14 547	9/24	53 089	336 971	17 281
Nuclear techniques in biology	-	-	-	-	-	-	-	-
Nuclear techniques in industry & hydrology	10/00	91 200	219 086	33 600	4/26	32 556	208 918	19 742
Nuclear safety	1/21	18 016	44 547	16 245	1/18	16 159	44 553	16 245
TOTAL	64/18	511 571	1 619 072	141 220	54/15	371 191	1 462 328	100 903

AGENCY FELLOWS FROM PARAGUAY

1984 - 1994¹
(As of 31 July 1994)

Sector	No. of fellowships	No. of months/days	Host countries
General atomic energy development	3	3/02	URU
Nuclear physics	5	18/16	FRA, CHI, USA, VEN, BEL
Nuclear chemistry	2	6/16	HUN, AUS, SWE, ARG
Nuclear raw materials	-	-	-
Nuclear engineering and technology	4	11/07	ARG, BRA, PER, AUS
Nuclear techniques in agriculture	6	19/25	BRA, URU, CHI, ARG, IAEA
Nuclear medicine	6	30/26	SWI, USA, ARG, BRA
Nuclear techniques in biology	-	-	-
Nuclear techniques in industry and hydrology	4	8/04	ITA, IAEA
Nuclear safety	9	11/29	USA, CHI, ECU, VEN, ARG, SWE, IAEA
TOTAL	39	110/05	

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

PARAGUAY
LONG-TERM FELLOWSHIPS
1984 - 1994
(As of 31 July 1994)

Name	Field of study	Host country	Date	Duration	Project
CANETE TARMAN	Medical physics 6F	USA	Jul.83 - Aug.84	13/18	PAR/6/006
DUARTE CASTRO	Nuclear medicine 6B	URU	Apr.87 - Mar.88	12/00	PAR/6/006
GALIANO RIVEROS	Medical physics 6F	USA	Aug.86 - Dec.87	16/02	PAR/6/006

PARAGUAYAN NATIONALS WHO WERE AWARDED MORE THAN ONE
FELLOWSHIP OR SCIENTIFIC VISIT
1984 - 1994
(As of 31 July 1994)

Name	Field of study	Host country	Date	Duration	Project
FACETTI-FERNANDEZ	1. Nuclear analytical techniques 2. Ground water hydrology	BEL IAEA	Mar.91 - Sep.91 Jun.94	6/01 0/12	RLA/0/014 PAR/8/005
SAPENA PASTOR, O.	1. Nuclear law 2. Radiation protection 3. Radiation protection 4. Radiation protection	URU USA/CHI VEN SWE/IAEA	Oct.84 Jun.86 - Jul.86 Oct.85 - Nov.85 May 88 - Jun.88	0/06 0/26 0/05 0/16	RLA/0/007 - RLA/0/006 PAR/9/002
VELAZQUEZ FERNANDEZ	1. Analytical nuclear physics 2. Moessbauer spectroscopy 3. Analytical nuclear physics	GER CHI VEN	Mar.85 - Sep.85 Nov.85 Sep.90 - Nov.90	6/01 0/12 2/13	PAR/1/002 RLA/0/006 PAR/4/002

AGENCY TRAINING COURSES WITH PARAGJAYAN PARTICIPATION

1984 - 1994
(As of 31 July 1994)

Field	Number of participants	Number of courses
General atomic energy development	7	7
Nuclear physics	5	5
Nuclear chemistry	8	8
Nuclear raw materials	-	-
Nuclear engineering and technology	15	15
Nuclear techniques in agriculture	12	12
Nuclear medicine	10	9
Nuclear techniques in biology	-	-
Nuclear techniques in industry & hydrology	61	61
Nuclear safety	19	17
TOTAL	137	134

**MULTIPLE PARTICIPATION IN AGENCY TRAINING COURSES
BY PARAGUAYAN NATIONALS
1984 - 1994
(As of 31 July 1994)**

Name	Course No.	Course title	Year	Location
ACOSTA CABELLO	RLA/2/004 (001)	RTC on nuclear analytical techniques in the agroindustry and food analysis	1988	BRA
	RLA/8/019 (001)	RTC on industrial applications of tracer techniques	1993	MEX
AUAD BENITEZ	INT/6/041 (001)	ITC on advanced single photon emission computerized tomography with emphasis in brain and heart studies	1992	ITA
	RLA/6/018 (001)	RTC on interventional methods in nuclear medicine	1993	COL
BOGARIN	RLA/8/005 (136)	RTC on ultrasonics in welded joints	1986	BRA
	RLA/8/006 (013)	RTC on materials and processes	1987	MEX
	RLA/8/013 (004)	Regional seminar on non-destructive testing in railways	1988	JAM
	RLA/8/013 (024)	RTC on real time radiography	1989	BRA
	RLA/8/013 (072)	RWS on underwater inspection	1990	BRA
	RLA/8/013 (109)	RWS on criteria for conception and management of test pieces for qualification and certification of NDT personnel	1991	CHI
CABALLERO C.	RLA/5/028 (001)	RWS on the utilization of immunoassay for the diagnosis and epidemiology of animal diseases	1991	BRA
	RLA/5/028 (002)	RTC on animal health	1992	COL
CABELLO LEIVA	INT/1/037 (001)	ITC on advanced data processing and interpretation in X-ray fluorescence analysis	1985	YUG
	RLA/4/006 (002)	RWS on design, mounting and maintenance of modular nuclear instrumentation	1986	COL
	RLA/4/006 (010)	RWS on computer interfacing and the design and construction of a pneumatic transfer system and its computer control	1987	PER
	RLA/4/006 (021)	RWS on maintenance of gamma cameras	1990	COL
	RLA/8/005 (223)	Regional informative course on eddy current testing in boiler-tube inspection	1988	CHI
DUARTE GUERIN	RLA/6/008 (001)	Regional train-the-trainers course on medical radioimmunoassay	1984	MEX
	RLA/6/010 (001)	Regional train-the-trainers course on data processing in radioimmunoassay	1985	ARG

**MULTIPLE PARTICIPATION IN AGENCY TRAINING COURSES
BY PARAGUAYAN NATIONALS
1984 - 1994
(As of 31 July 1994)**

Name	Course No.	Course title	Year	Location
FACETTI MASULLI	RLA/2/003 (004)	First RWS on nuclear analytical techniques	1989	COL
	RLA/4/006 (008)	Regional seminar on recent advances in nuclear data acquisition and analysis systems	1987	GUA
	RLA/8/005 (086)	Regional train-the-trainers course on magnetic particles	1985	CAN
	RLA/8/006 (017)	Regional Co-ordinators' Meeting at the 13th World Conference on Non-Destructive Testing	1992	BRA
	RLA/8/013 (056) RLA/8/017 (013)	RWS on quality assessment Regional working group meeting on quality engineering	1990 1992	BRA ARG
FLORES OCAMPOS	RLA/8/005 (081)	RTC on non-destructive testing on thermography	1985	ARG
	RLA/8/013 (006)	Regional seminar on non-destructive testing in petrochemical industry	1988	TRI
	RLA/8/017 (115)	RTC on quality and control of testing laboratories	1994	BRA
	RLA/9/009 (004)	Regional seminar on radioactive waste management	1986	BRA
GALIANO RIVEROS	RLA/1/008 (001)	Regional practical course on physical dosimetry in radiotherapy for Latin American physicists	1988	USA
	RLA/9/009 (012)	Regional seminar on quality control in radiotherapy	1988	PER
	RLA/9/009 (041)	RTC on clinical and radiation protection dosimetry	1989	BRA
GARCIA DE ZUNIGA	RLA/8/005 (087)	Regional train-the-trainers course in ultrasonics	1985	CAN
	RLA/8/013 (001)	Regional informative course on computers in non-destructive testing	1988	ARG
GROHEN RIVAROLA TEJADA	RLA/8/005 (110)	RTC on non-destructive testing in aircraft maintenance	1985	ECU
	RLA/8/006 (012)	RTC on radiography (level III)	1986	COL
INSFRAN	RLA/8/005 (193)	RTC on eddy currents (level III)	1987	BRA
	RLA/8/005 (216)	Regional informative course on on-line applications non-destructive testing	1988	BRA
	RLA/8/013 (031)	RTC on eddy currents in aircraft maintenance	1989	URU
	RLA/8/013 (079)	RTC on eddy currents (level III - tubes)	1990	PER

**MULTIPLE PARTICIPATION IN AGENCY TRAINING COURSES
BY PARAGUAYAN NATIONALS
1984 - 1994
(As of 31 July 1994)**

Name	Course No.	Course title	Year	Location
LEON DE LOZANO	RLA/5/020 (001)	RWS on food irradiation	1986	BRA
	RLA/5/020 (002)	RTC on food irradiation technology	1987	ARG
MARTINEZ ORTEGA	RLA/0/009 (001)	RWS on the latest advances in librarianship and information management	1986	MEX
	RLA/0/009 (003)	Second RTC for librarians and information specialists in nuclear science and technology	1988	COL
	RLA/0/009 (006)	Third RWS on nuclear information	1991	ECU
MORE TORRES	RLA/8/013 (058)	RWS on radiation protection for radiographers	1990	ARG
	RLA/9/009 (002)	RWS on calibration procedures in dosimetry	1986	ECU
	RLA/9/009 (008)	RTC on quality control of diagnostic X-ray equipment	1988	BRA
	RLA/9/011 (014)	Regional meeting on co-ordinated studies on regulatory criteria	1993	MEX
	RLA/9/013 (001)	RTC on management of spent radiation sources	1992	BRA
ORTIZ DE ROJAS	INT/9/059 (001)	ITC on radiological protection and nuclear safety	1985	ARG
	RLA/9/015 (001)	RTC on safety and regulation of radiation sources	1993	MEX
ROJAS RAMIREZ	INT/9/059 (001)	ITC on radiological protection and nuclear safety	1985	ARG
	RLA/9/015 (001)	RTC on safety and regulation of radiation sources	1993	MEX
ROLON CABRERA	INT/0/043 (001)	ITC on interfacing in nuclear experiments	1987	POR
	INT/4/085 (001)	ITC on advanced nuclear electronics	1986	JAM
	RLA/4/008 (005)	RTC on application of transducers to nuclear instrumentation	1992	ECU
ROMERO DE GONZALEZ	INT/1/030 (001)	ITC on energy dispersive X-ray analysis	1984	YUG
	RLA/2/003 (010)	RWS on nuclear analytical techniques and quality assurance	1990	ARG
	RLA/8/016 (003)	Regional seminar on environmental applications of radiation and isotopes	1993	CHI

**MULTIPLE PARTICIPATION IN AGENCY TRAINING COURSES
BY PARAGUAYAN NATIONALS
1984 - 1994
(As of 31 July 1994)**

Name	Course No.	Course title	Year	Location
VELAZQUEZ DUARTE	RLA/8/005 (078)	RTC on ultrasonics (level II)	1985	PER
	RLA/8/005 (084)	RTC on non-destructive testing in radiography (level II)	1985	ECU
	RLA/8/005 (088)	Regional study tour for Regional Working Group Members	1985	CAN
	RLA/8/005 (116)	VI Regional Working Group Meeting	1985	GUA
	RLA/8/005 (200)	VIII Regional Working Group Meeting	1987	BOL
	RLA/8/006 (011)	RTC on computer-aided non-destructive testing	1986	MEX
	RLA/8/013 (088)	RTC on computers in RT inspection	1990	MEX
	RLA/8/013 (106)	RTC on preparation of test procedures	1991	GUY
	RLA/8/017 (001)	RWS on industrial quality in production and maintenance	1991	BRA
VELAZQUEZ FERNANDEZ	RLA/1/003 (001)	RTC on radiochemistry and nuclear analytical techniques	1984	ECU
	RLA/8/013 (005)	Regional informative course on non-destructive testing in composite materials	1988	PER
VILLALBA	RLA/8/005 (128)	RTC on surface methods (level II)	1986	GUA
	RLA/8/005 (194)	Regional seminar on high energy RT	1987	ECU
	RLA/8/005 (232)	IX Regional Working Group Meeting	1988	PER
	RLA/8/005 (233)	II Regional Congress on Non-Destructive Testing	1988	PER
	RLA/8/013 (002)	RWS on qualification and certification	1988	BRA
	RLA/8/013 (003)	RWS on preparation of test specimens	1988	BRA
	RLA/8/013 (026)	Regional Working Group Meeting	1989	COS
VILLANUEVA DE DIAZ	RLA/4/006 (016)	RTC on maintenance of radiation protection equipment	1989	COL
	RLA/4/006 (022)	RTC on maintenance of power supplies in nuclear instruments	1990	GUA
	RLA/4/008 (007)	RWS on nuclear instruments in industry and their electronics	1992	CHI
ZALDIVAR DE BASUALDO	RLA/9/009 (001)	RWS on radiation protection	1986	CHI
	RLA/9/009 (005)	RWS on radiation protection	1987	PER
	RLA/9/009 (042)	Fifth RWS on radiation protection	1989	BRA

PROJECTS COMPLETED IN PARAGUAY SINCE 1984
(As of 31 July 1994)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS				COMPLETED
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING	
			M/M	\$	\$	\$	M/M	\$	\$	\$	
1982	PAR/1/002	Nuclear science	17/00	109 050	397 220	-	17/01	93 969	389 507	-	1988
1987	PAR/1/003	Accelerator laboratory	1/00	7 200	19 961	-	0/29	5 440	19 919	-	1989
1984	PAR/2/002	Radiochemistry laboratory	1/22	11 770	140 610	-	1/22	11 982	140 652	-	1990
1988	PAR/5/022	Nuclear techniques in agriculture	3/29	32 840	92 225	27 510	3/29	22 482	92 225	29 064	1994
1988	PAR/5/003	Mutation breeding	0/02	480	-	-	0/02	100	-	-	1989
1980	PAR/6/004	Radioimmunoassay	8/00	39 400	49 000	-	8/14	44 301	46 557	-	1985
1982	PAR/6/006	Nuclear medicine	-	-	250 928	14 547	-	-	250 960	17 281	1989
1982	PAR/8/003	Isotopes in hydrology	1/00	5 400	10 000	-	0/12	3 311	605	-	1984
1986	PAR/8/004	Non-destructive testing	3/00	22 350	90 086	-	2/29	15 140	90 135	-	1990
1987	PAR/9/003	Radiation protection	1/00	7 050	-	-	0/27	5 193	-	-	1989
	TOTAL	10 Projects	36/23	235 540	1 050 030	42 057	36/15	201 918	1 030 560	46 345	

OPERATIONAL PROJECTS IN PARAGUAY
(As of 31 July 1994)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS			
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING
			M/M	\$	\$	\$	M/M	\$	\$	\$
1991	PAR/1/004	Nuclear techniques in national technology development	11/08	112 805	225 545	18 900	8/08	84 058	97 613	-
1989	PAR/4/002	Nuclear instrumentation	5/00	41 100	92 880	14 518	5/02	41 223	93 203	14 518
1993	PAR/5/005	Immunoassay methods in animal diseases	2/22	29 790	46 260	15 900	1/04	10 133	38 767	4 053
1988	PAR/6/007	Radioimmunoassay diagnostic services (Encarnación)	2/04	17 920	40 810	-	1/10	8 788	39 454	-
1993	PAR/8/005	Use of tracers in water supply and pollution studies	6/00	63 450	119 000	33 600	1/15	14 105	118 178	19 742
1986	PAR/9/002	Radiation protection in medicine	0/21	10 966	44 547	16 245	0/21	10 966	44 553	16 245
	TOTAL	6 Projects	27/25	276 031	569 042	99 163	18/00	169 273	431 768	54 558

COUNTERPART INSTITUTIONS IN PARAGUAY (I)
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>NUCLEAR PHYSICS AND CHEMISTRY</u>		
PAR/1/002	1. National Nuclear Energy Commission, Directorate General of Science and Technology, Asunción 2. University of Asunción, Institute of Basic Sciences, Department of Physics, San Lorenzo	FACETTI MASULLI -
PAR/1/003	1. National Nuclear Energy Commission, Directorate General of Science and Technology, Asunción 2. University of Asunción, Institute of Basic Sciences, Department of Physics, San Lorenzo	FACETTI MASULLI CABELLO LEIVA FACETTI MASULLI VASQUEZ
PAR/1/004	National Nuclear Energy Commission, Directorate General of Science and Technology, Asunción	ROMERO DE GONZALEZ
PAR/2/002	University of Asunción, Faculty of Chemical Sciences, San Lorenzo	FACETTI MASULLI
<u>NUCLEAR ENGINEERING AND TECHNOLOGY</u>		
PAR/4/002	National Nuclear Energy Commission, Directorate General of Science and Technology, Asunción	ROLON CABRERA CABELLO LEIVA
<u>AGRICULTURE</u>		
PAR/5/002	Ministry of Agriculture and Livestock Breeding, Directorate of Research and Agricultural, Stockbreeding and Forestry Development, Department of Research and Extension Services, Asunción	ALARCON LOPEZ

COUNTERPART INSTITUTIONS IN PARAGUAY (I)
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>AGRICULTURE (cont'd)</u>		
PAR/5/003	Ministry of Agriculture and Livestock Breeding, Directorate of Research and Agricultural, Stockbreeding and Forestry Development, Department of Research and Extension Services, Asunción	ALARCON LOPEZ RODAS
PAR/5/005	National Animal Health Service, San Lorenzo	CABALLERO C.
<u>NUCLEAR MEDICINE</u>		
PAR/6/004	1. University of Asunción, Institute for Research in Health Sciences, San Lorenzo 2. Ministry of Public Health, Encarnación	DIAZ GILL VALENZANO
PAR/6/006	University of Asunción, Institute for Research in Health Sciences, San Lorenzo	SOSKY GIMENEZ JARA YORG
PAR/6/007	Health Science Research Institute, Asunción	MERLO DE ZARZA
<u>NUCLEAR TECHNIQUES IN INDUSTRY AND HYDROLOGY</u>		
PAR/8/003	1. National Nuclear Energy Commission, San Lorenzo 2. Pilcomayo Project, OAS Regional Development Programme, Asunción	PECCI VIVEROS -
PAR/8/004	University of Asunción, Faculty of Physics and Mathematical Sciences, San Lorenzo	VILLALBA GONZALEZ
PAR/8/005	Sanitary Works Corporation, Asunción	DUARTE AMADO

COUNTERPART INSTITUTIONS IN PARAGUAY (I)
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>NUCLEAR SAFETY</u>		
PAR/9/002	National Nuclear Energy Commission, General Directorate of Nuclear Biomedicine, Asunción	SAPENA PASTOR RAMIREZ
PAR/9/003	National Nuclear Energy Commission, Directorate General of Science and Technology, Asunción	FACETTI MASULLI RAIMER BUHLER

COUNTERPART INSTITUTIONS IN PARAGUAY (II)
(By Institute)

ASUNCION

National Nuclear Energy Commission
Directorate General of Science and Technology
Asunción

PAR/1/002	Nuclear Science
PAR/1/003	Accelerator Laboratory
PAR/1/004	Nuclear Techniques in National Technology Development
PAR/4/002	Nuclear Instrumentation
PAR/9/003	Radiation Protection

National Nuclear Energy Commission
General Directorate of Nuclear Biomedicine
Asunción

PAR/9/002	Radiation Protection in Medicine
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Ministry of Agriculture and Livestock Breeding
Directorate of Research and Agricultural,
Stockbreeding and Forestry Development,
Department of Research and Extension Services,
Asunción

PAR/5/002	Nuclear Techniques in Agriculture
PAR/5/003	Mutation Breeding

Health Science Research Institute
Asunción

PAR/6/007	Radioimmunoassay Diagnostic Services (Encarnación)
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Pilcomayo Project
OAS Regional Development Programme
Asunción

PAR/8/003	Isotopes in Hydrology
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Sanitary Works Corporation
Asunción

PAR/8/005	Use of Tracers in Water Supply and Pollution Studies
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COUNTERPART INSTITUTIONS IN PARAGUAY (II)
(By Institute)

SAN LORENZO

National Nuclear Energy Commission
San Lorenzo

PAR/8/003 Isotopes in Hydrology

National Animal Health Service
San Lorenzo

PAR/5/005 Immunoassay Methods in Animal Diseases

University of Asunción
Institute of Basic Sciences
Department of Physics
San Lorenzo

PAR/1/002 Nuclear Science
PHI/1/003 Accelerator Laboratory

University of Asunción
Faculty of Chemical Sciences
San Lorenzo

PAR/2/002 Radiochemistry Laboratory

University of Asunción
Institute for Research in Health Sciences
San Lorenzo

PAR/6/004 Radioimmunoassay
PAR/6/006 Nuclear Medicine

University of Asunción
Faculty of Physics and Mathematical Sciences
San Lorenzo

PAR/8/004 Non-Destructive Testing

COUNTERPART INSTITUTIONS IN PARAGUAY (II)
(By Institute)

ENCARNACION

Ministry of Public Health
Encarnación

PAR/6/004 Radioimmunoassay

**THE AGENCY'S TECHNICAL CO-OPERATION PROGRAMME WITH
PARAGUAY
(1984 - 1994)**

LONG-TERM EXPERT ASSIGNMENTS

NONE

RESEARCH CONTRACTS/AGREEMENTS IN PARAGUAY SINCE 1984 ¹
(As of 31 July 1994)

Field of activity	No. of contracts/ agreements	Amount allocated \$
Nuclear chemistry	3	11 000
Nuclear engineering and technology	1	5 000
Nuclear techniques in agriculture	4	32 000
Nuclear medicine	3	13 800
Nuclear techniques in biology	1	10 000
TOTAL	12	71 800

¹/ New awards since 1984

**SCIENTISTS FROM PARAGUAY SERVING AS AGENCY
TECHNICAL CO-OPERATION EXPERTS AND
TRAINING COURSE LECTURERS
OR
PARTICIPATING IN CO-ORDINATION MEETINGS
1984 - 1994
(As of 31 July 1994)**

Name	No. of assignments	Project(s)
ALARCON LOPEZ	1	PAR/5/002
CACERES AGUILERA	1	RLA/0/009
DE LORENZI CROVATO	1	RLA/6/011
FACETTI MASULLI	10	RLA/0/006, RLA/8/005, RLA/8/013
FLORES OCAMPOS	1	RLA/8/006
GARCIA DE ZUNIGA	2	RLA/8/006
GONZALEZ DE SANCHEZ	1	INT/4/054
GROHEN RIVAROLA TEJADA	2	RLA/8/005
MARIN	1	RLA/4/006
MARTINEZ ORTEGA	1	RLA/0/009
MEDINA CARDOZA	1	RLA/6/011
MORE TORRES	2	RLA/9/011, RLA/9/016
NAGY	2	RLA/8/016
ROLON CABRERA	1	RLA/4/008
ROMERO DE GONZALEZ	1	RLA/2/003
SAUCEDO MARINO	3	RLA/6/011
SOSA DE PEREIRA	2	CUB/2/005, RLA/2/007
VELAZQUEZ DUARTE	4	RLA/8/005, RLA/8/006, RLA/8/013
VELAZQUEZ FERNANDEZ	1	RLA/2/003
VILLANUEVA DE DIAZ	1	RLA/4/008
ZALDIVAR DE BASUALDO	1	RLA/9/009
TOTAL	40	

**AGENCY FELLOWSHIPS AND SCIENTIFIC VISITS
HOSTED BY PARAGUAY
1984 - 1994
(As of 31 July 1994)**

NONE

**REGIONAL AND INTERREGIONAL TRAINING EVENTS
HOSTED BY PARAGUAY
1984 - 1994
(As of 31 July 1994)**

Course No.	Course Title	Partici- pants	Year
RLA/2/003 (001)	RTC on Advanced Fluorescence Analysis	10	1986
RLA/2/003 (006)	RTC on the Application of X-ray Fluorescence to Environmental Problems	8	1990
RLA/2/003 (018)	RWS on Determination of Toxic Elements at Trace Level in Water and Sediments Using X-ray Fluorescence	5	1993
RLA/4/006 (012)	RWS on Development of Appropriate Software for Small Computers	5	1988
RLA/4/006 (017)	RTC on Advanced Aspects of Nuclear Spectroscopy	12	1989
RLA/4/008 (008)	RWS on Selection and Optimization of Analytical Equipment	9	1993
RLA/6/011 (019)	RWS on External Quality Control	12	1989
RLA/6/016 (005)	RWS on Data Processing and External Quality Assessment in Radioimmunoassay	16	1992
RLA/8/013 (095)	Regional Seminar on Hydro-electric Plant Maintenance	10	1990
	TOTAL	87	