



INTERNATIONAL ATOMIC ENERGY AGENCY



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COUNTRY PROGRAMME SUMMARY

THE AGENCY'S TECHNICAL CO-OPERATION

PROGRAMME WITH

PARAGUAY

1983 - 1993

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
PARAGUAY
1983 - 1993
COUNTRY PROGRAMME SUMMARIES**

This report contains a review of the Agency's technical co-operation activities in Paraguay carried out during 1983 - 1993. 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

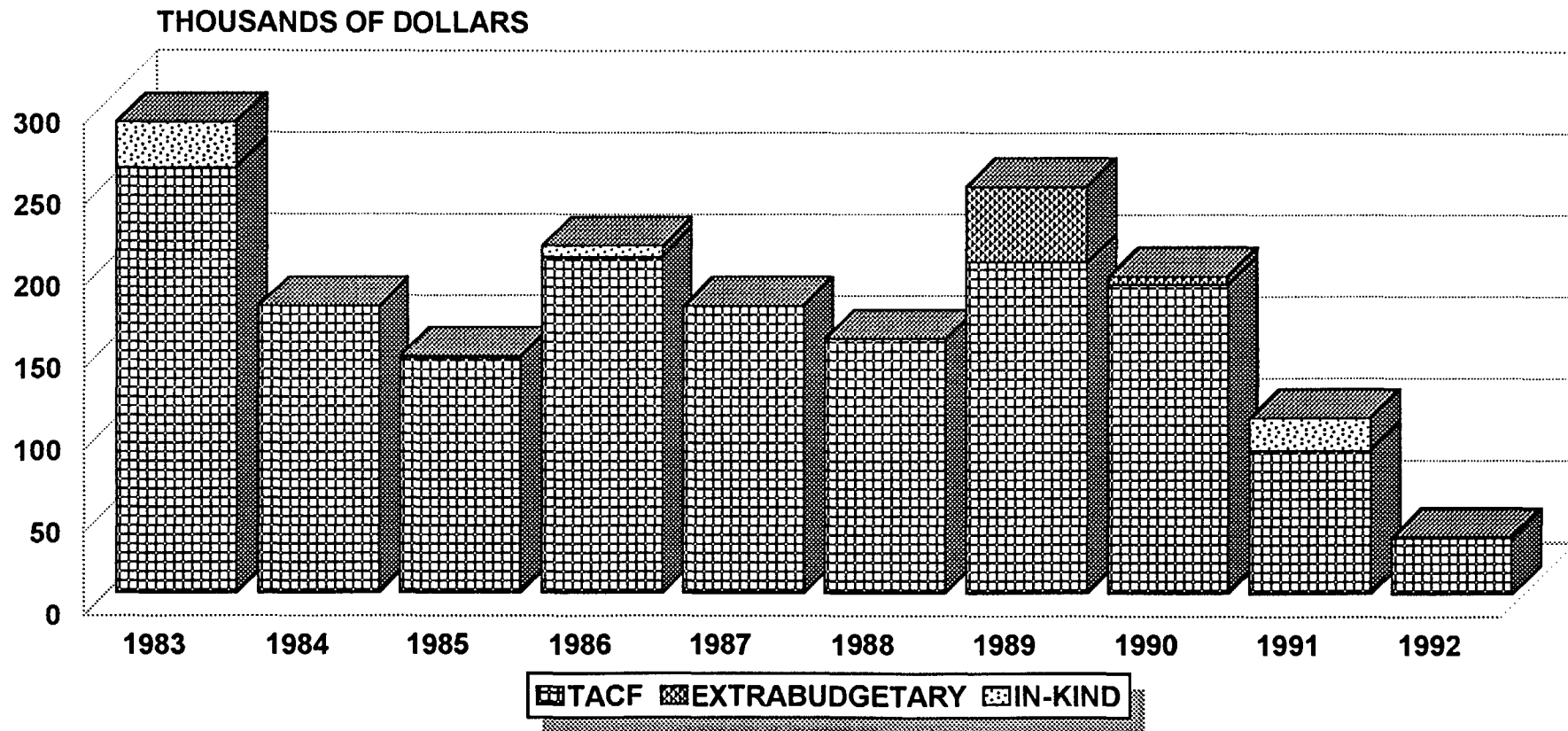
The country programme summary reported on here is one in the series of such studies being undertaken of the Agency's TC programme with Member States. With \$2.1 million of Agency support received, Paraguay ranks 58th among all recipients of technical assistance during the period 1958 through 1992.

More than two-thirds of the assistance received during the past ten years has been provided in the form of equipment (69%), complemented by expert services (16%) and training (15%). Almost all of the resources were made available through the TACF (94%), with very small shares (3% each) provided through extrabudgetary contributions and in kind.

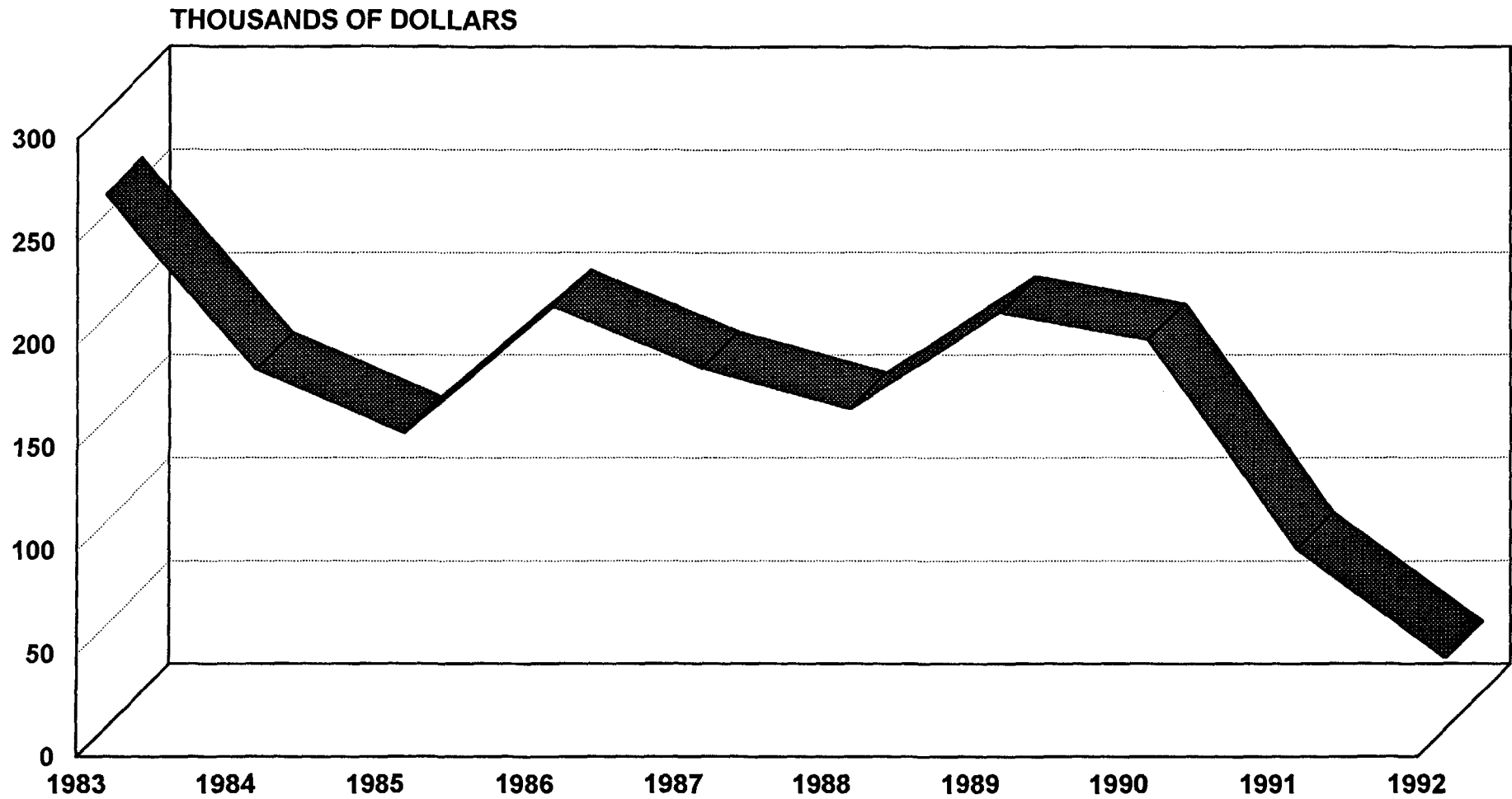
With regard to total disbursements -- by sector -- under those projects that were operational during the period 1983 through mid-May 1993, the two largest areas have been nuclear physics and chemistry (45%) and nuclear medicine (25%). Smaller shares went to nuclear engineering and technology and to agriculture (9% each), to industry and hydrology (7%) and to nuclear safety (5%).

Since 1983, the country has provided experts and training course lecturers for a total of 37 assignments, and has hosted seven regional training courses with a total of 73 participants.

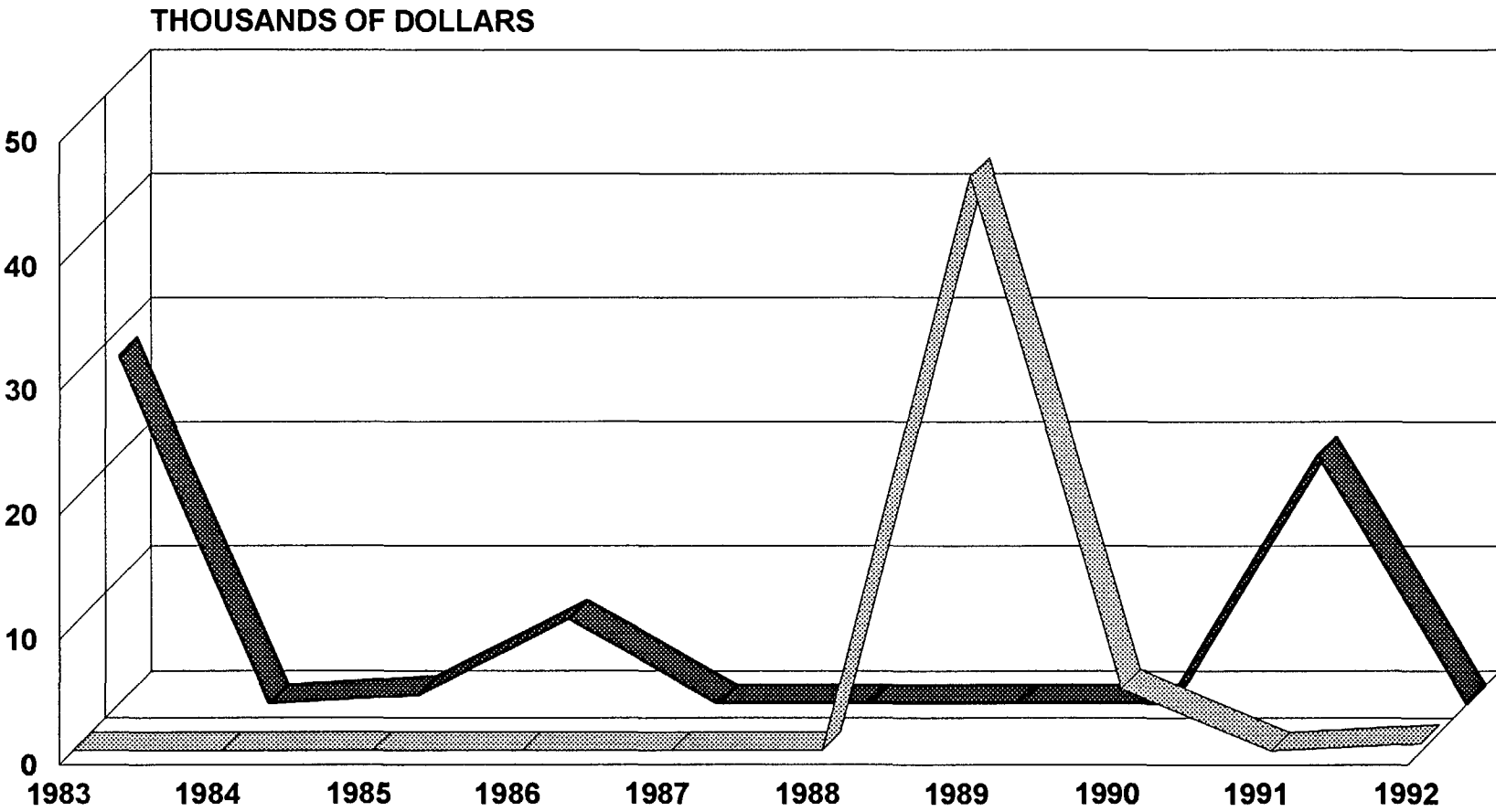
ASSISTANCE PROVIDED BY THE AGENCY TO PARAGUAY BY SOURCE (1983 - 1992)



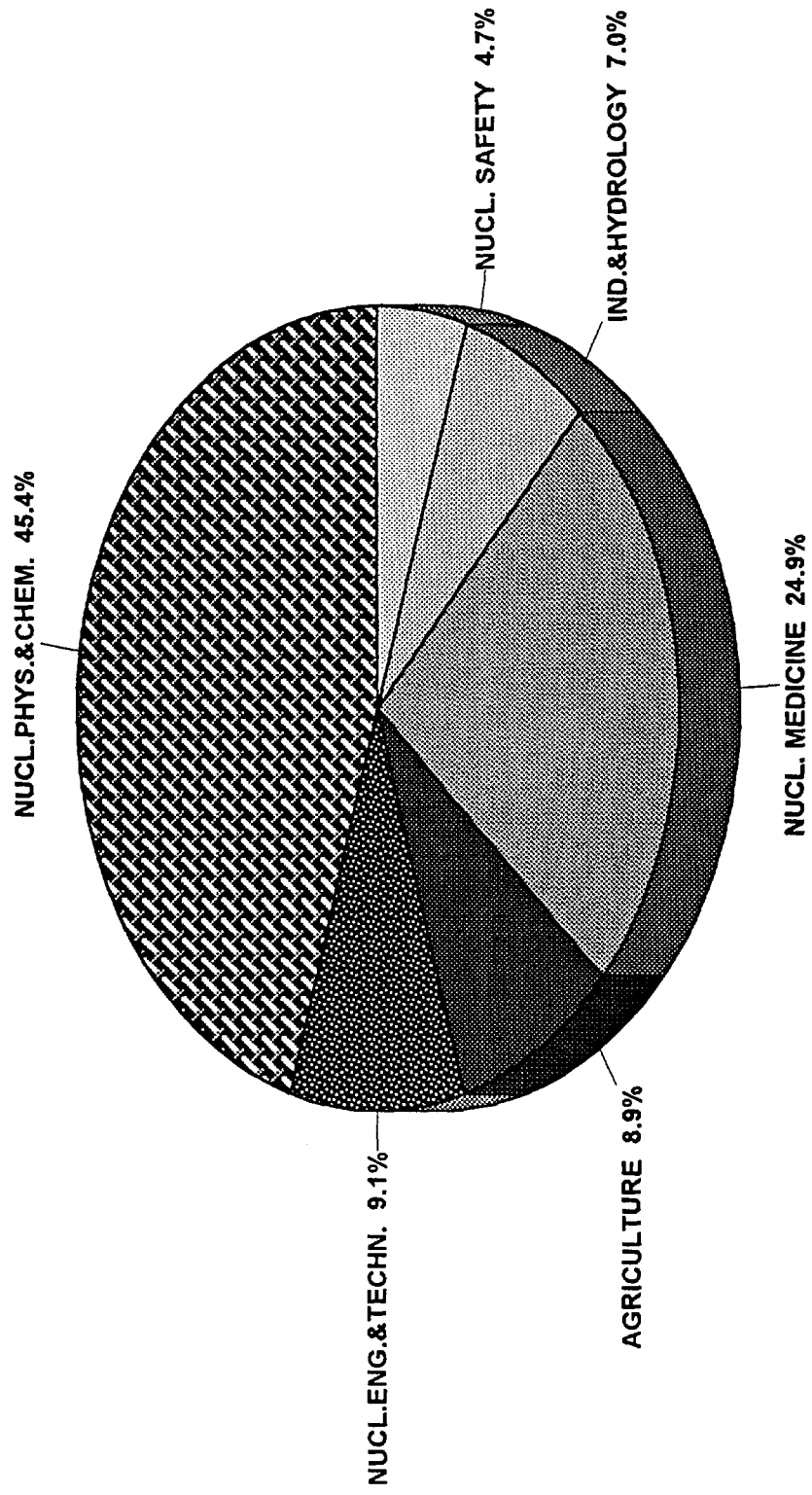
TACF ASSISTANCE PROVIDED TO PARAGUAY (1983 - 1992)



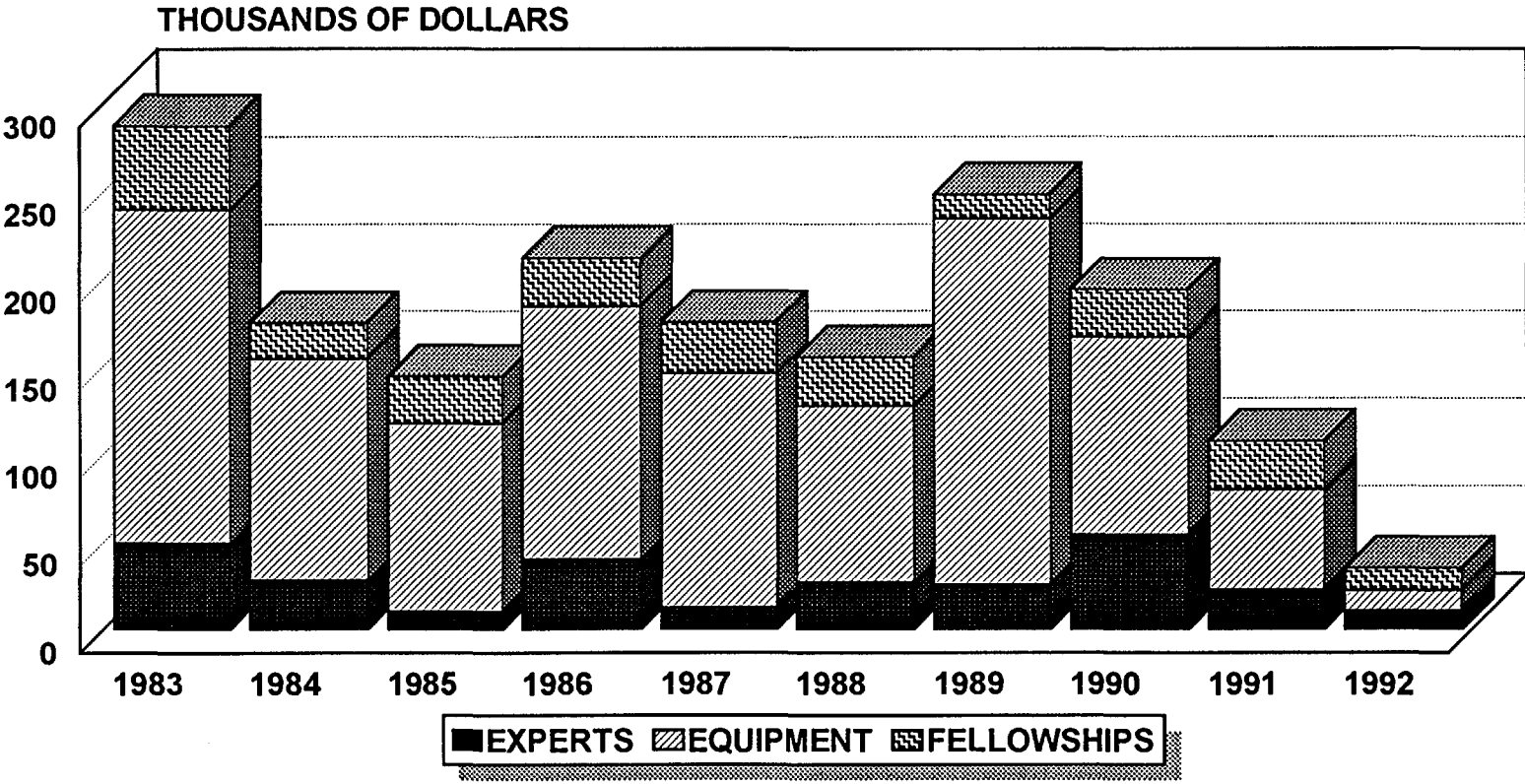
EXTRABUDGETARY AND IN-KIND ASSISTANCE PROVIDED TO PARAGUAY (1983 - 1992)



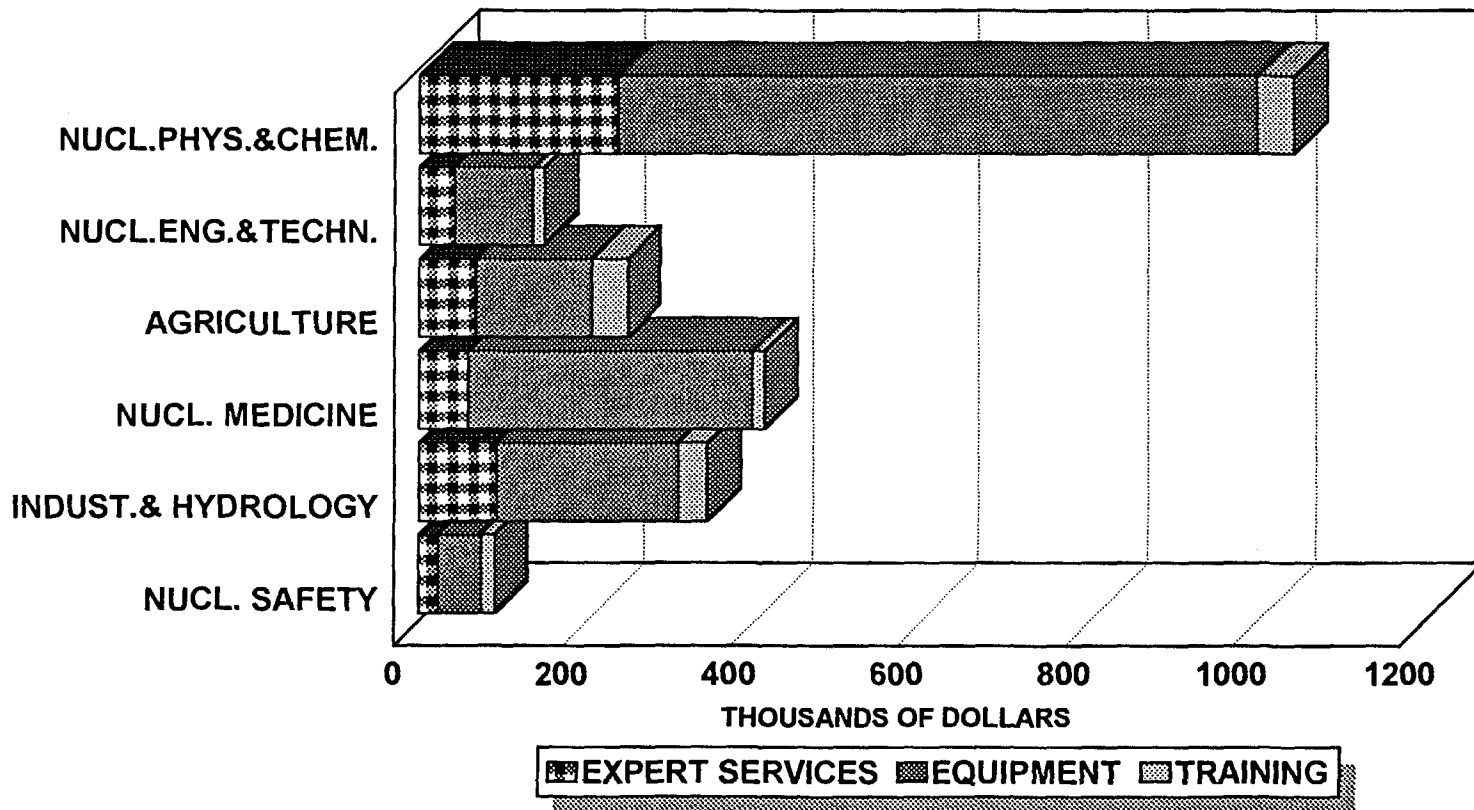
TC PROJECT DISBURSEMENTS IN PARAGUAY BY SECTOR (1983 - 1993)



ASSISTANCE PROVIDED BY THE AGENCY TO PARAGUAY BY TYPE (1983 - 1992)



EXPERT SERVICES, EQUIPMENT AND PROJECT-FUNDED TRAINING PROVIDED TO PARAGUAY BY SECTOR (1983 - 1993)



THE AGENCY'S TECHNICAL CO-OPERATION PROGRAMME WITH PARAGUAY

ALL SOURCES

PARAGUAY'S RANKING AS A TC RECIPIENT
1958 - 1992
(in \$1000)

YEAR	RANKING	AMOUNT
1958-82	69 th	344.4
1983	28 th	287.3
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
1958-92	58 th	2075.5

**"TOP FIVE" RECIPIENTS OF AGENCY ASSISTANCE
1958 - 1992 (in \$1000)**

ALL SOURCES

Year	I	II	III	IV	V	PARAGUAY
1958-82	BRA 8507.3	IND 6849.4	ARG 5528.2	PAK 5492.7	CHI 5240.1	69 th - 344.4
1983	EGY 2077.9	PER 1116.8	VIE 948.1	PHI 778.6	IRA 722.1	28 th - 287.3
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
1958-92	EGY 23808.6	BRA 17736.8	THA 15332.0	INS 13725.9	PER 13129.6	58 th - 2075.5

**"TOP FIVE" RECIPIENTS OF AGENCY ASSISTANCE
1958 - 1992 (in \$1000)**

TECHNICAL ASSISTANCE AND CO-OPERATION FUND

Year	I	II	III	IV	V	PARAGUAY
1958-82	HUN 2971.7	EGY 2405.8	PAK 2340.5	THA 2000.3	BRA 1983.5	71 st - 181.0
1983	EGY 1049.4	VIE 897.4	POL 667.8	PAK 498.5	PHI 430.0	17 th - 259.4
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
1958-92	EGY 10847.0	HUN 8743.7	POL 8486.4	VIE 8199.9	PAK 8115.6	56 th - 1805.0

ASSISTANCE PROVIDED BY THE AGENCY TO PARAGUAY

Financial Summary 1983 - 1992
(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
1983	48.7	190.5	48.1	-	-	287.3	-	201.9	57.5	-	27.9	287.3
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
1983-92	276.1	1 193.2	261.8	-	-	1 731.1	-	1 526.4	97.6	51.8	55.3	1 731.1

TECHNICAL CO-OPERATION PROJECTS IN PARAGUAY
BY SECTOR

PROJECTS COMPLETED AND OPERATIONAL 1983 - 1993

TOTAL PROJECT ALLOTMENTS AND DISBURSEMENTS
(as of mid-May 1993)

SECTOR	NO. OF PROJECTS	ALLOTMENTS \$	% OF TOTAL	DISBURSEMENTS \$	% OF TOTAL
General atomic energy development	-	-	-	-	-
Nuclear physics and chemistry	4	1 043 561	46.6	740 692	45.4
Nuclear raw materials	-	-	-	-	-
Nuclear engineering and technology	1	149 700	6.6	148 621	9.1
Nuclear techniques in agriculture	3	248 950	10.9	145 613	8.9
Nuclear medicine	3	411 405	18.0	405 367	24.9
Nuclear techniques in biology	-	-	-	-	-
Nuclear techniques in industry and hydrology	3	343 886	15.0	113 988	7.0
Nuclear safety	2	90 116	3.9	76 951	4.7
TOTAL	16	2 287 618	100.0	1 631 232	100.0

TECHNICAL CO-OPERATION PROJECTS IN PARAGUAY
 COMPLETED AND OPERATIONAL, BY SECTOR, 1983 - 1993
 (As of mid-May 1993)

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	1	480	100
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	9	1 175 052	1 135 052
<u>Operational projects</u>			
General atomic energy development	-	-	-
Nuclear physics and chemistry	1	357 750	79 223
Nuclear raw materials	-	-	-
Nuclear engineering and technology	1	149 700	148 621
Nuclear techniques in agriculture	2	248 470	145 513
Nuclear medicine	1	57 530	46 268
Nuclear techniques in biology	-	-	-
Nuclear techniques in industry & hydrology	1	216 050	4 797
Nuclear safety	1	83 066	71 758
TOTAL	7	1 112 566	496 180

**EXPERT SERVICES, EQUIPMENT AND PROJECT-FUNDED TRAINING PROVIDED TO PARAGUAY, BY SECTOR
PROJECTS COMPLETED AND OPERATIONAL 1983 - 1993
(As of mid-May 1993)**

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	31/02	237 470	762 791	43 300	23/21	144 938	595 754	-
Nuclear raw materials	-	-	-	-	-	-	-	-
Nuclear engineering and technology	5/00	41 100	93 850	14 750	5/02	41 223	92 880	14 518
Nuclear techniques in agriculture	7/03	66 430	139 110	43 410	4/08	24 324	92 225	29 064
Nuclear medicine	10/04	57 320	339 538	14 547	9/24	53 089	334 997	17 281
Nuclear techniques in biology	-	-	-	-	-	-	-	-
Nuclear techniques in industry & hydrology	10/00	91 200	219 086	33 600	3/24	23 248	90 740	-
Nuclear safety	2/06	22 916	50 000	17 200	1/18	16 159	44 547	16 245
TOTAL	65/15	516 436	1 604 375	166 807	48/07	302 981	1 251 143	77 108

AGENCY FELLOWS FROM PARAGUAY

1983 - 1993¹
(As of mid-May 1993)

Sector	No. of fellowships	No. of months/days	Host countries
General atomic energy development	4	3/07	SPA, URU, IAEA
Nuclear physics	7	30/15	BEL, CHI, FRA, GER, USA, VEN
Nuclear chemistry	1	0/15	AUS, HUN, SWE
Nuclear raw materials	-	-	-
Nuclear engineering and technology	4	11/07	ARG, AUS, BRA, PER
Nuclear techniques in agriculture	4	16/25	BRA, URU, IAEA
Nuclear medicine	8	51/22	ARG, BRA, SWI, URU, USA
Nuclear techniques in biology	-	-	-
Nuclear techniques in industry and hydrology	1	0/19	ITA
Nuclear safety	9	11/29	ARG, CHI, ECU, SWE, USA, VEN, IAEA
TOTAL	38	126/19	

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

PARAGUAY
LONG-TERM FELLOWSHIPS
1983 - 1993
(As of mid-May 1993)

Name	Field of study	Host country	Date	Duration	Project
CANETE TARMAN	Medical physics	USA	Jul.83 - Aug.84	13/18	PAR/6/006
DUARTE CASTRO	Nuclear medicine	URU	Apr.87 - Mar.88	12/00	PAR/6/006
GALIANO RIVEROS	Medical physics	USA	Aug.86 - Aug.87	12/01	PAR/6/006
JARA YORG	Nuclear medicine	USA	Jun.82 - Dec.83	18/00	PAR/6/005

PARAGUAYAN NATIONALS WHO WERE AWARDED MORE THAN ONE
FELLOWSHIP OR SCIENTIFIC VISIT
1983 - 1993
(As of mid-May 1993)

Name	Field of study	Host country	Date	Duration	Project
GALIANO RIVEROS	1. Medical physics 2. Medical physics	USA	Aug.86 - Aug.87	12/01	PAR/6/006
		USA	Aug.87 - Dec.87	4/01	PAR/6/006
JARA YORG	1. Nuclear medicine 2. Nuclear medicine instrumentation	USA	Jun.82 - Dec.83	18/00	PAR/6/005
		USA	Aug.89 - Sep.89	1/01	PAR/6/006
SAPENA PASTOR, O.	1. Nuclear law 2. Radiation protection 3. Radiation protection 4. Radiation protection	URU	Oct.84	0/06	RLA/0/007
		USA	Jun.86 - Jul.86	0/26	-
		CHI			
		VEN	Oct.85 - Nov.85	0/05	RLA/0/006
		SWE	May 88 - Jun.88	0/16	PAR/9/002
		IAEA			
VELAZQUEZ FERNANDEZ	1. Analytical nuclear physics 2. Moessbauer spectroscopy 3. Analytical nuclear physics	GER	Mar.85 - Sep.85	6/01	PAR/1/002
		CHI	Nov.85	0/12	RLA/0/006
		VEN	Sep.90 - Nov.90	2/13	PAR/4/002

AGENCY TRAINING COURSES WITH PARAGUAYAN PARTICIPATION

1983 - 1993
(As of mid-May 1993)

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	8	8
Nuclear techniques in biology	-	-
Nuclear techniques in industry & hydrology	57	57
Nuclear safety	18	16
TOTAL	130	128

**MULTIPLE PARTICIPATION IN AGENCY TRAINING COURSES
BY PARAGUAYAN NATIONALS
1983 - 1993
(As of mid-May 1993)**

Name	Course No.	Course title	Year	Location
ACOSTO CABELLO	RLA/2/004 (001) RLA/8/019 (001)	RTC on nuclear analytical techniques in the agro-industry and food analysis RTC on industrial applications of tracer techniques	1988 1993	BRA MEX
BOGARIN	RLA/8/005 (136) RLA/8/006 (013) RLA/8/013 (004) RLA/8/013 (024) RLA/8/013 (072) RLA/8/013 (109)	RTC on ultrasonics in welded joints RTC on materials and processes Regional seminar on NDT in railways RTC on real-time radiography RWS on underwater inspection RWS on criteria for conception and management of test pieces for qualification and certification of NDT personnel	1986 1987 1988 1989 1990 1991	BRA MEX JAM BRA BRA CHI
CABALLERO C.	RLA/5/028 (001) RLA/5/028 (002)	RWS on the utilization of immunoassay for the diagnosis and epidemiology of animal diseases RTC on animal health	1991 1992	BRA COL
CABELLO LEIVA	INT/1/037 (001) RLA/4/006 (002) RLA/4/006 (010) RLA/4/006 (021) RLA/8/005 (223)	ITC on advanced data processing and interpretation in X-ray fluorescence analysis RWS on design, mounting and maintenance of modular nuclear instrumentation RWS on computer interfacing and the design and construction of a pneumatic transfer system and its computer control RWS on maintenance of gamma cameras Regional informative course on eddy current testing in boiler-tube inspection	1985 1986 1987 1990 1988	YUG COL PER COL CHI
DUARTE GUERIN	RLA/6/008 (001) RLA/6/010 (001)	Regional train-the-trainers course on medical radioimmunoassay Regional train-the-trainers course on data processing in radioimmunoassay	1984 1985	MEX ARG
FACETTI MASULLI	RLA/2/003 (004) RLA/4/006 (008) RLA/8/005 (086) RLA/8/006 (017) RLA/8/013 (056) RLA/8/017 (013)	First RWS on nuclear analytical techniques Regional seminar on recent advances in nuclear data acquisition and analysis systems Regional train-the-trainers course on magnetic particles Regional co-ordinators meeting at the 13th World Conference on NDT RWS on quality assessment Regional working group meeting on quality engineering	1989 1987 1985 1992 1990 1992	COL GUA CAN BRA BRA ARG

**MULTIPLE PARTICIPATION IN AGENCY TRAINING COURSES
BY PARAGUAYAN NATIONALS
1983 - 1993
(As of mid-May 1993)**

Name	Course No.	Course title	Year	Location
FLORES OCAMPOS	RLA/8/005 (081)	RTC on NDT on thermography	1985	ARG
	RLA/8/013 (006)	Regional seminar on NDT in petrochemical industry	1988	TRI
	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 on ultrasonics	1985	CAN
	RLA/8/013 (001)	Regional informative course on computers in NDT	1988	ARG
GROHEN RIVAROLA TEJADA	RLA/8/005 (110)	RTC on NDT 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 NDT	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
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

**MULTIPLE PARTICIPATION IN AGENCY TRAINING COURSES
BY PARAGUAYAN NATIONALS
1983 - 1993
(As of mid-May 1993)**

Name	Course No.	Course title	Year	Location
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/9/013 (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
VELAZQUEZ DUARTE	RLA/8/005 (078)	RTC on ultrasonics (level II)	1985	PER
	RLA/8/005 (084)	RTC on NDT in radiography (level II)	1985	ECU
	RLA/8/005 (088)	Regional study tour for RWG members	1985	CAN
	RLA/8/005 (116)	Sixth Regional Working Group Meeting	1985	GUA
	RLA/8/005 (200)	Eighth Regional Working Group Meeting	1987	BOL
	RLA/8/006 (011)	RTC on computer-aided NDT	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
RLA/8/013 (005)		Regional informative course on NDT in composite materials	1988	PER

**MULTIPLE PARTICIPATION IN AGENCY TRAINING COURSES
BY PARAGUAYAN NATIONALS
1983 - 1993
(As of mid-May 1993)**

Name	Course No.	Course title	Year	Location
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)	Regional II Congress on NDT	1988	PER
	RLA/8/013 (002)	RWS on qualification and certification	1988	BRA
	RLA/8/013 (003) RLA/8/013 (026)	RWS on preparation of test specimens Regional Working Group Meeting	1988 1989	BRA 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 1983
(As of mid-May 1993)

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/5/003	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	9 projects	32/24	202 700	957 805	14 547	32/16	179 436	938 335	17 281	

OPERATIONAL PROJECTS IN PARAGUAY
(As of mid-May 1993)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS			
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING
			M/M	\$	\$	\$	M/M	\$	\$	\$
1991	PAR/1/004	Nuclear techniques in national technological development	11/10	109 450	205 000	43 300	3/29	33 547	45 676	-
1989	PAR/4/002	Nuclear instrumentation	5/00	41 100	93 850	14 750	5/02	41 223	92 880	14 518
1988	PAR/5/002	Nuclear techniques in agriculture	4/01	33 400	94 110	27 510	3/29	22 482	92 225	29 064
1993	PAR/5/005	Immunoassay methods in animal diseases	3/00	32 550	45 000	15 900	0/07	1 742	-	-
1988	PAR/6/007	Radioimmunoassay diagnostic services (Encarnacion)	2/04	17 920	39 610	-	1/10	8 788	37 480	-
1993	PAR/8/005	Use of tracers in water supply and pollution studies	6/00	63 450	119 000	33 600	0/13	4 797	-	-
1986	PAR/9/002	Radiation protection in medicine	1/06	15 866	50 000	17 200	0/21	10 966	44 547	16 245
	TOTAL	7 projects	32/21	313 736	646 570	152 260	15/21	123 545	312 808	59 827

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	FACETTI MASULLI
	2. University of Asunción, Institute of Basic Sciences, Department of Physics, San Lorenzo	-
PAR/1/003	1. National Nuclear Energy Commission, Directorate General of Science and Technology, Asunción	FACETTI MASULLI CABELLO LEIVA
	2. University of Asunción, Institute of Basic Sciences, Department of Physics, San Lorenzo	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, Directorate General of Nuclear Biomedicine, Asunción	SAPENA PASTOR RAMIREZ
PAR/9/003	National Nuclear Energy Commission, Directorate General of Science and Technology, Asunción	FACETTI MASULLI RAIMER

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 Technological Development
PAR/4/002	Nuclear Instrumentation
PAR/9/003	Radiation Protection

National Nuclear Energy Commission
Directorate General 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
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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

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

PAR/1/002 Nuclear Science
PAR/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

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

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
SINCE 1983**

LONG-TERM EXPERT ASSIGNMENTS

NONE

RESEARCH CONTRACTS/AGREEMENTS IN PARAGUAY SINCE 1983 ¹
(As of mid-May 1993)

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	26 000
Nuclear medicine	4	19 800
Nuclear techniques in industry & hydrology	1	5 000
TOTAL	13	66 800

¹/ New awards since 1983

**SCIENTISTS FROM PARAGUAY SERVING AS AGENCY
TECHNICAL CO-OPERATION EXPERTS OR
TRAINING COURSE LECTURERS
1983 - 1993
(As of mid-May 1993)**

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	1	RLA/9/011
NAGY	1	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	1	CUB/2/005
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	37	

**AGENCY FELLOWSHIPS AND SCIENTIFIC VISITS
HOSTED BY PARAGUAY
1983 - 1993
(As of mid-May 1993)**

NONE

**REGIONAL AND INTERREGIONAL TRAINING EVENTS
HOSTED BY PARAGUAY
1983 - 1993
(As of mid-May 1993)**

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/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/6/011 (019)	RWS on external quality control	12	1989
RLA/6/016 (005)	RWS on data processing and external quality assessment in RIA	16	1992
RLA/8/013 (095)	Regional seminar on hydro-electric plant maintenance	10	1990
	TOTAL	73	