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INTERNATIONAL ATOMIC ENERGY AGENCY

IAEA-CPS-92/01
2 April 1992
Original: ENGLISH

COUNTRY PROGRAMME SUMMARY

THE AGENCY'S TECHNICAL CO-OPERATION

PROGRAMME WITH

COSTA RICA

1982 - 1992

COUNTRY PROGRAMME SUMMARIES

DEPARTMENT OF TECHNICAL CO-OPERATION

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COSTA RICA

1982 - 1992

COUNTRY PROGRAMME SUMMARIES

EVALUATION SECTION
DEPARTMENT OF TECHNICAL CO-OPERATION

THE AGENCY'S TECHNICAL CO-OPERATION

PROGRAMME WITH

COSTA RICA

1982 - 1992

COUNTRY PROGRAMME SUMMARIES

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

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INTRODUCTION

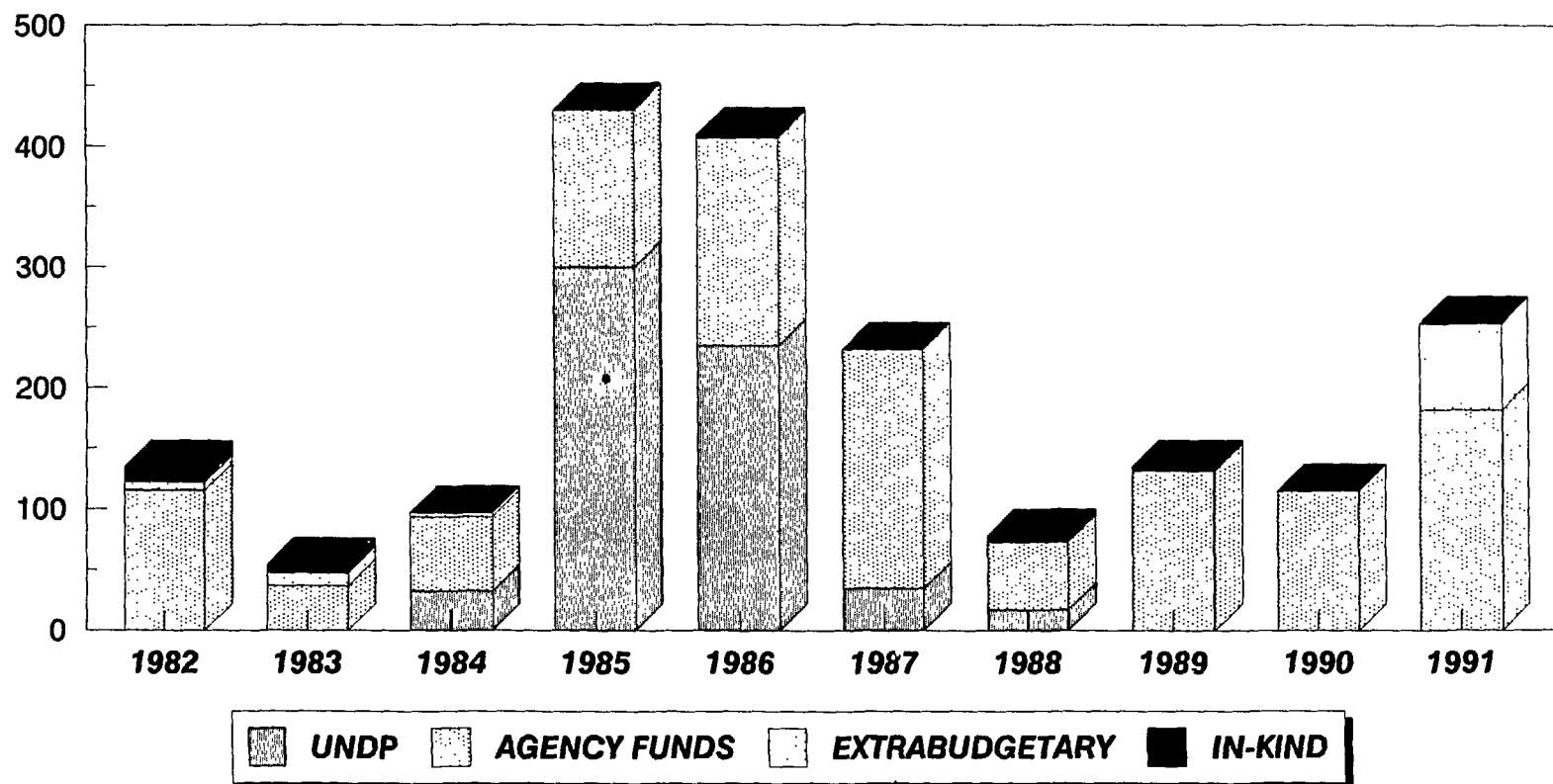
The country programme summary reported on here is one in the series of such studies being undertaken of the Agency's TC programme with Member States. With over \$2.8 million of Agency support received, Costa Rica ranks 49th among all recipients of technical assistance in the period 1958 - 1991.

Over half of the assistance during the past ten years has been provided in the form of equipment (52%), followed by expert services (37%) and training (11%). Sixty-two per cent of the resources were made available through the Technical Assistance and Co-operation Fund, while 37% of the resources were provided by UNDP. The rest was made available through extrabudgetary contributions (5%) and through in-kind assistance (1%).

With regard to project disbursements by sector, the largest areas have been nuclear raw materials (36%), nuclear physics and chemistry (24%) and agriculture (20%). Smaller shares have gone to hydrology (11%) and nuclear medicine (8%).

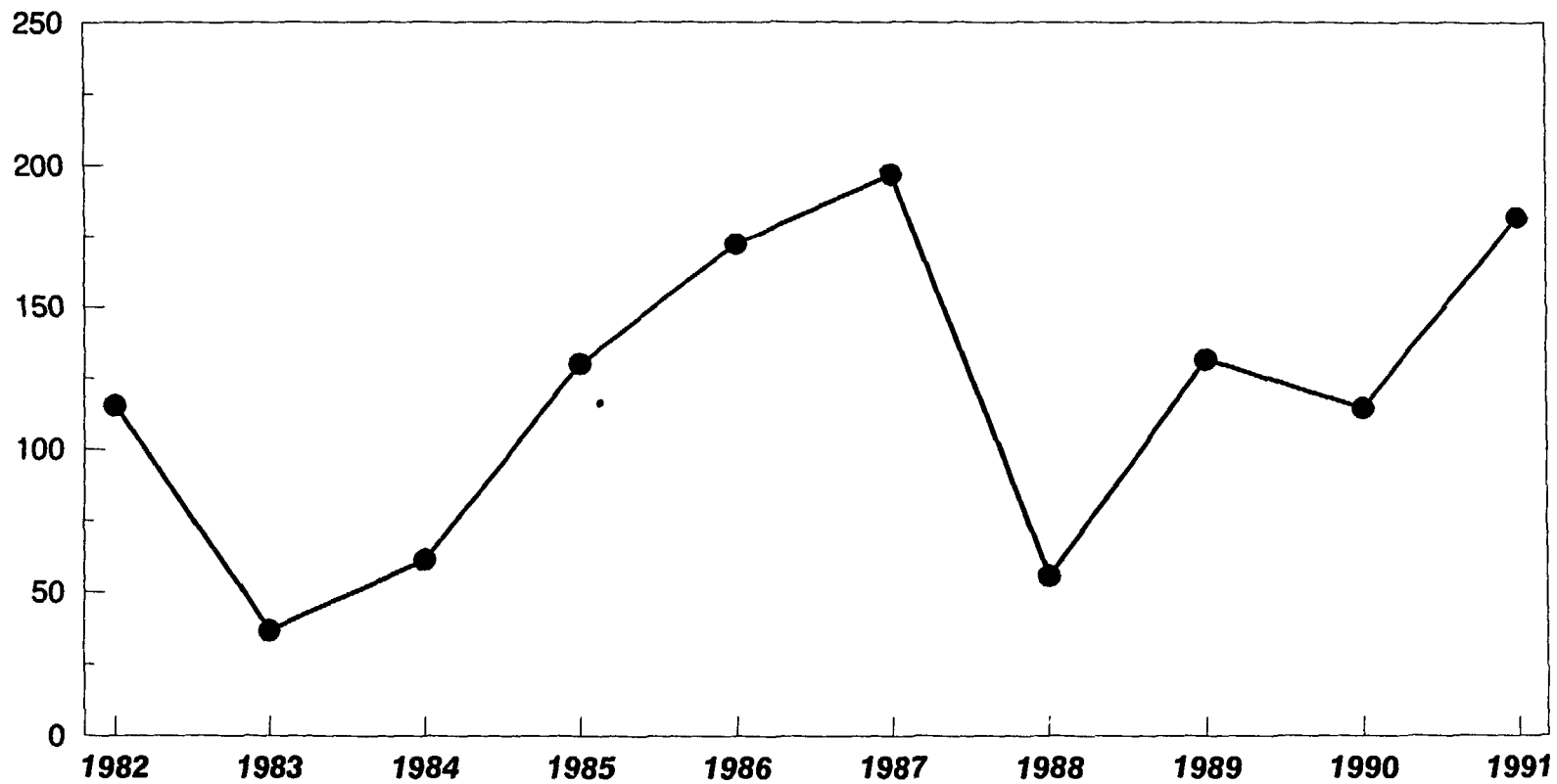
**ASSISTANCE PROVIDED BY THE AGENCY TO
COSTA RICA, BY SOURCE, 1982 -1991**

THOUSANDS OF DOLLARS



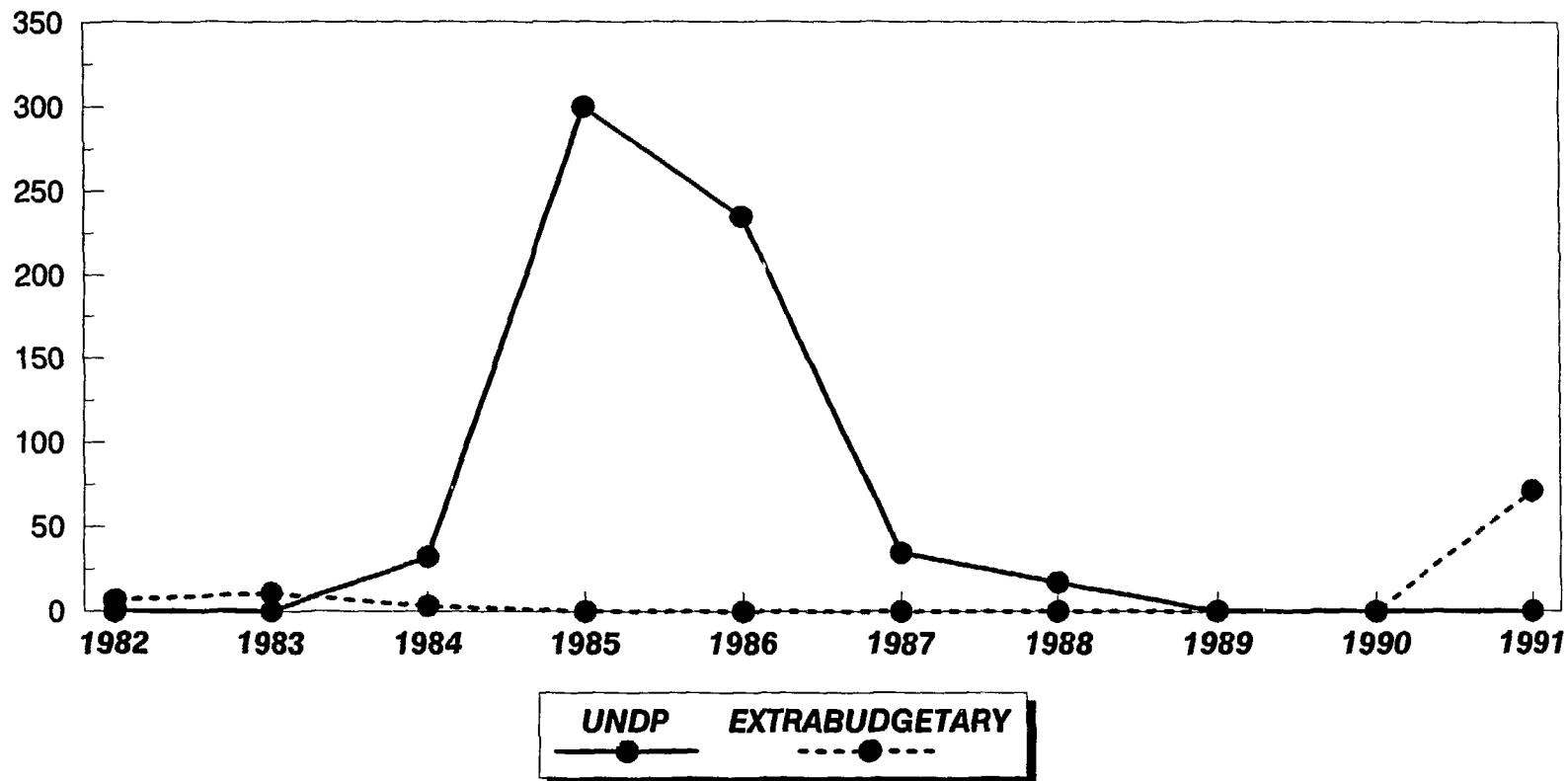
**TACF ASSISTANCE PROVIDED TO
COSTA RICA, 1982 - 1991**

THOUSANDS OF DOLLARS

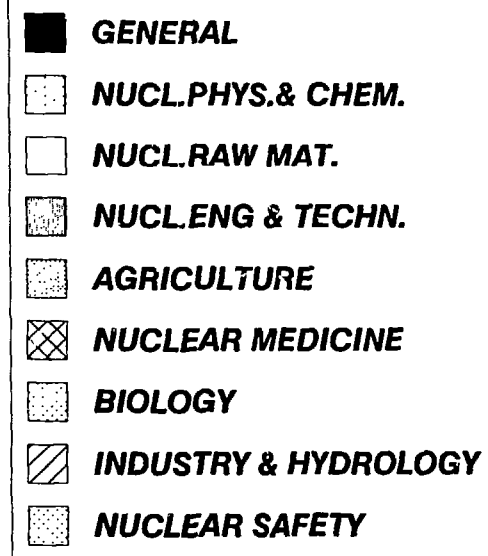
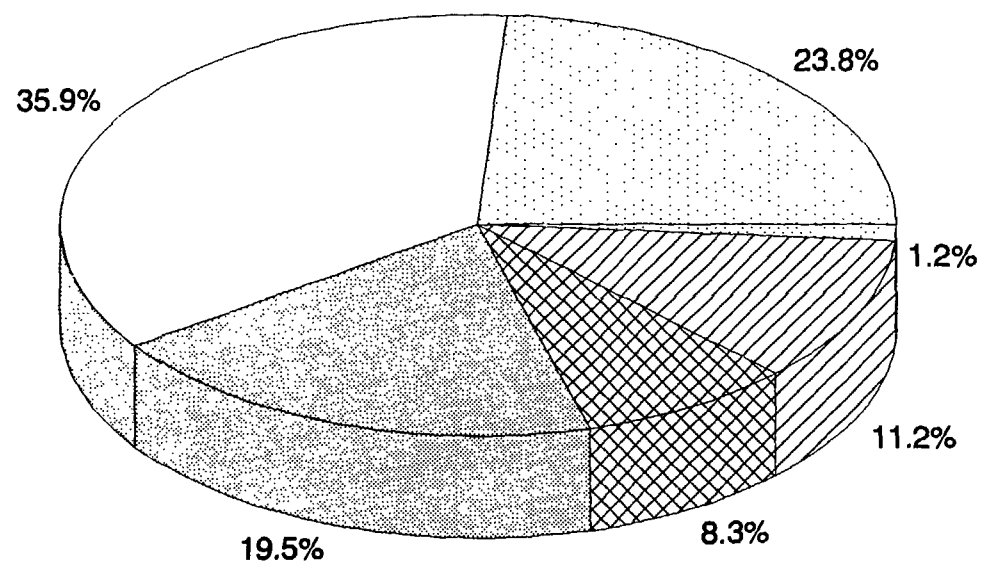


UNDP AND EXTRABUDGETARY ASSISTANCE PROVIDED TO COSTA RICA, 1982 - 1991

THOUSANDS OF DOLLARS

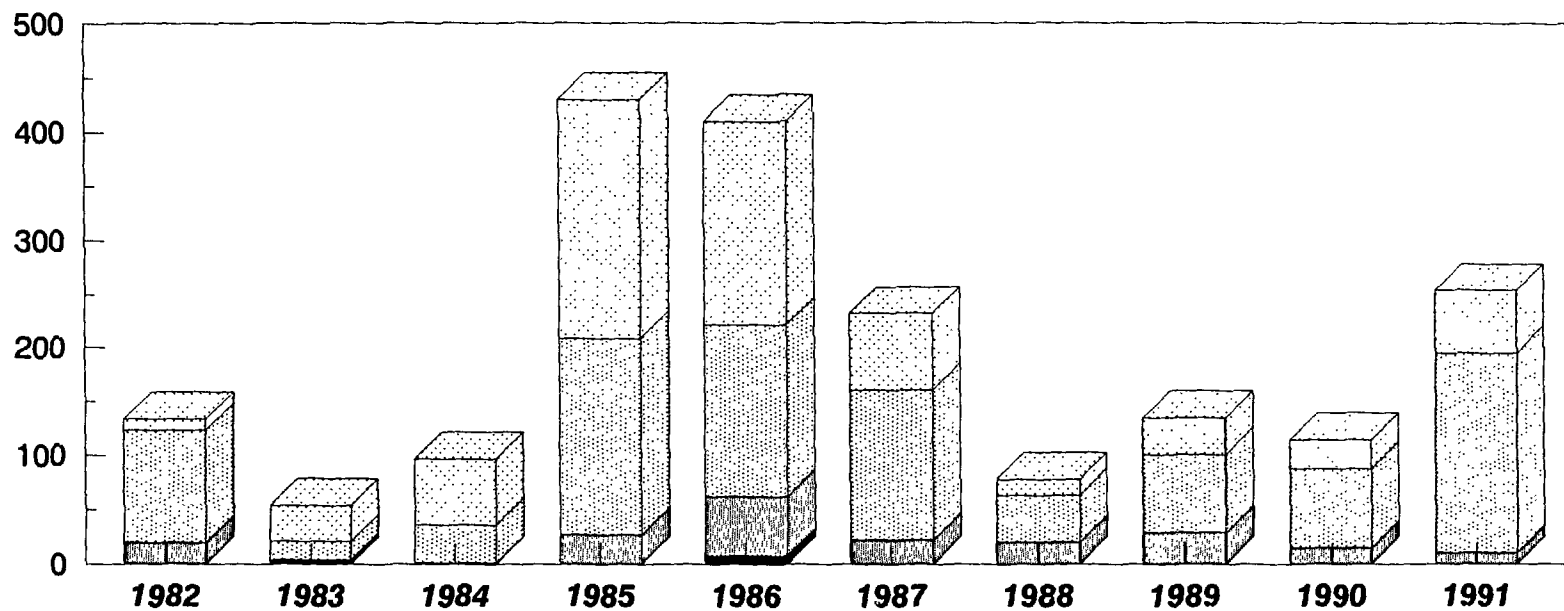


**TC PROJECT DISBURSEMENTS IN COSTA RICA,
BY SECTOR, 1982 - MARCH 1992**



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

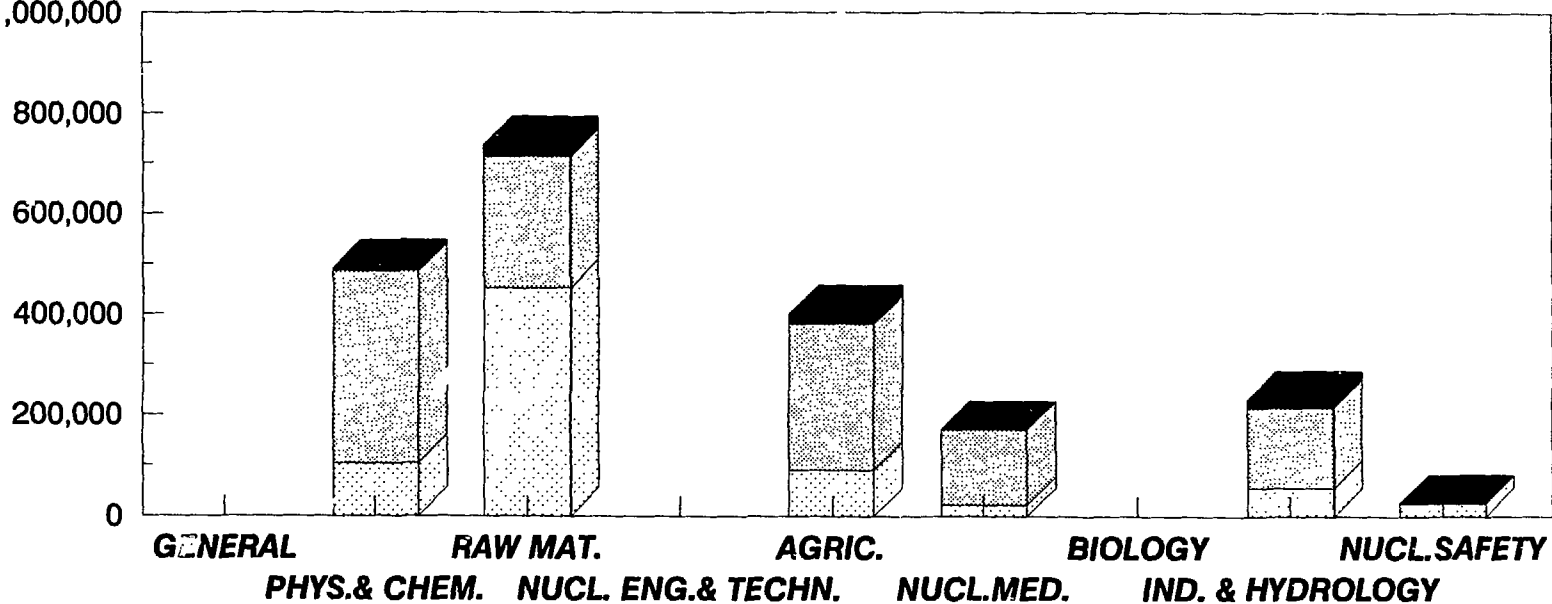
THOUSANDS OF DOLLARS



SUBCONTRACTS
 GROUP TRAINING
 FELLOWSHIPS
 EQUIPMENT
 EXPERTS

**EXPERT SERVICES, EQUIPMENT AND PROJECT-FUNDED
TRAINING PROVIDED TO COSTA RICA,
1982 - MARCH 1992**

DOLLARS
1,000,000



EXPERTS EQUIPMENT TRAINING

THE AGENCY'S TECHNICAL CO-OPERATION PROGRAMME WITH COSTA RICA

ALL SOURCES

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

YEAR	RANKING	AMOUNT
1958-81	42 nd	892.9
1982	48 th	133.7
1983	66 th	53.4
1984	61 st	96.5
1985	21 st	429.4
1986	30 th	409.0
1987	46 th	231.4
1988	65 th	77.5
1989	60 th	134.5
1990	68 th	114.4
1991	45 th	252.8
1958-91	49 th	2825.5

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

ALL SOURCES

Year	I	II	III	IV	V	COSTA RICA
1958-81	BRA 7907.9	IND 6670.7	ARG 5200.4	PAK 5091.2	CHI 5005.7	42 nd - 892.9
1982	EGY 807.5	PER 746.4	CUB 715.7	COL 667.7	THA 654.3	48 th - 133.7
1983	EGY 2077.9	PER 1116.8	VIE 948.1	PHI 778.6	IRA 722.1	66 th - 53.4
1984	EGY 3625.9	PER 1750.4	THA 1094.6	CUB 1028.7	PHI 881.2	61 st - 96.5
1985	EGY 2494.8	PER 1120.7	THA 1117.4	BGD 1068.2	PHI 963.7	21 st - 429.4
1986	EGY 2317.0	BRA 1452.9	THA 1169.4	POL 1050.3	BGD 896.4	30 th - 409.0
1987	HUN 3452.6	EGY 1775.4	THA 1742.4	INS 1312.5	YUG 1223.2	46 th - 231.4
1988	EGY 1486.9	BUL 1361.6	CPR 1278.5	THA 1158.7	BRA 1096.7	65 th - 77.5
1989	CPR 1542.3	EGY 1505.1	THA 1205.3	BRA 1096.5	INS 999.1	60 th - 134.5
1990	POL 2308.1	CPR 2005.0	VIE 1589.2	INS 1412.6	BRA 1229.1	68 th - 114.4
1991	INS 1305.2	CPR 975.0	EGY 959.8	BRA 951.2	BUL 934.7	45 th - 252.8
1958-91	EGY 22222.3	BRA 17021.1	THA 14596.1	PER 12631.1	INS 12383.8	49 th - 2825.5

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

TECHNICAL ASSISTANCE AND CO-OPERATION FUND

Year	I	II	III	IV	V	COSTA RICA
1958-81	HUN 2533.0	PAK 2010.9	EGY 1898.7	THA 1712.8	BRA 1704.8	43 rd - 515.0
1982	EGY 507.1	HUN 438.2	CUB 430.7	ECU 398.4	ZAM 354.9	42 nd - 115.2
1983	EGY 1049.4	VIE 897.4	POL 667.8	PAK 498.5	PHI 430.0	66 th - 36.5
1984	EGY 1197.2	CUB 655.6	ECU 565.6	BGD 506.3	BUL 472.4	62 nd - 61.1
1985	BGD 991.8	VIE 745.0	THA 708.7	BRA 571.8	POR 538.7	48 th - 129.8
1986	BRA 1381.8	THA 871.9	POL 833.5	BGD 823.9	SYR 751.8	44 th - 172.0
1987	HUN 3305.2	DRK 986.8	BUL 888.5	INS 885.8	EGY 878.9	46 th - 196.7
1988	BUL 1195.6	PER 856.5	EGY 768.6	INS 751.7	MAL 656.0	67 th - 55.6
1989	EGY 990.9	CPR 868.2	POR 769.6	CHI 756.9	MAL 619.4	54 th - 131.4
1990	POL 1562.3	VIE 1518.8	DRK 1156.2	IRA 958.0	YUG 933.4	62 nd - 114.4
1991	BUL 893.1	PAK 868.8	INS 855.1	VIE 817.6	CPR 814.5	52 nd - 181.5
1958-91	EGY 9591.3	HUN 8256.5	POL 7793.5	BRA 7433.5	PAK 7346.0	57 th - 1709.2

ASSISTANCE PROVIDED BY THE AGENCY TO COSTA RICA

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	10.6	103.7	19.4	-	-	133.7	-	59.3	55.9	6.7	11.8	133.7
1983	32.6	17.6	3.2	-	-	53.4	-	36.5	-	10.7	6.2	53.4
1984	60.6	35.1	0.8	-	-	96.5	32.2	61.1	-	3.2	-	96.5
1985	221.4	181.1	26.9	-	-	429.4	299.5	129.8	-	0.1	-	429.4
1986	188.6	158.5	54.9	-	7.0	409.0	234.6	172.0	-	-	2.4	409.0
1987	71.4	138.0	22.0	-	-	231.4	34.7	183.3	13.4	-	-	231.4
1988	14.5	43.0	20.0	-	-	77.5	17.1	48.6	7.0	-	4.8	77.5
1989	33.8	71.5	29.2	-	-	134.5	-	122.0	9.4	-	3.1	134.5
1990	27.0	72.3	15.1	-	-	114.4	-	95.4	19.0	-	-	114.4
1991	58.4	184.3	10.1	-	-	252.8	-	181.5	-	71.3	-	252.8
1982-91	718.9	1005.1	201.6	-	7.0	1932.6	618.1	1089.5	104.7	92.0	28.3	1932.6

TECHNICAL CO-OPERATION PROJECTS IN COSTA RICA
BY SECTOR

PROJECTS COMPLETED AND OPERATIONAL 1982 - 1992

TOTAL PROJECT ALLOTMENTS AND DISBURSEMENTS
(as of mid-March 1992)

SECTOR	NO. OF PROJECTS	ALLOTMENTS	% OF TOTAL	DISBURSEMENTS	% OF TOTAL
General atomic energy development	-	-	-	-	-
Nuclear physics and chemistry	3	498 061	20.3	489 656	23.8
Nuclear raw materials	2	768 260	31.2	737 380	35.9
Nuclear engineering and technology	-	-	-	-	-
Nuclear techniques in agriculture	8	604 351	24.6	400 734	19.5
Nuclear medicine	2	167 327	6.8	170 613	8.3
Nuclear techniques in biology	-	-	-	-	-
Nuclear techniques in industry and hydrology	3	396 846	16.1	231 043	11.3
Nuclear safety	2	23 900	1.0	24 911	1.2
TOTAL	20	2 458 745	100.0	2 054 337	100.0

TECHNICAL CO-OPERATION PROJECTS IN COSTA RICA
 COMPLETED AND OPERATIONAL, BY SECTOR, 1982 - 1992
 (As of mid-March 1992)

Sector	No. of projects	Total project allotments \$	Total project disbursements \$
<u>Completed projects</u>			
General atomic energy development	-	-	-
Nuclear physics and chemistry	2	359 671	363 075
Nuclear raw materials	2	768 260	737 380
Nuclear engineering and technology	-	-	-
Nuclear techniques in agriculture	4	198 526	203 834
Nuclear medicine	2	167 327	170 613
Nuclear techniques in biology	-	-	-
Nuclear techniques in industry & hydrology	1	142 121	153 200
Nuclear safety	2	23 900	24 911
TOTAL	13	1 659 805	1 653 013
<u>Operational projects</u>			
General atomic energy development	-	-	-
Nuclear physics and chemistry	1	138 390	126 581
Nuclear raw materials	-	-	-
Nuclear engineering and technology	-	-	-
Nuclear techniques in agriculture	4	405 825	196 900
Nuclear medicine	-	-	-
Nuclear techniques in biology	-	-	-
Nuclear techniques in industry & hydrology	2	254 725	77 843
Nuclear safety	-	-	-
TOTAL	7	798 940	401 324

EXPERT SERVICES, EQUIPMENT AND PROJECT-FUNDED TRAINING PROVIDED TO COSTA RICA, BY SECTOR
 PROJECTS COMPLETED AND OPERATIONAL 1982 - 1992
 (As of mid-March 1992)

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	14/10	106 405	386 656	5 000	13/16	103 738	381 043	4 875
Nuclear raw materials	74/12	482 501	261 032	24 727	74/10	451 438	261 215	24 727
Nuclear engineering and technology	-	-	-	-	-	-	-	-
Nuclear techniques in agriculture	20/15	167 000	389 889	47 462	10/28	90 541	290 244	19 949
Nuclear medicine	4/00	20 100	147 227	-	2/29	21 857	148 756	-
Nuclear techniques in biology	-	-	-	-	-	-	-	-
Nuclear techniques in industry & hydrology	12/06	104 675	247 330	44 841	6/18	55 416	159 587	16 040
Nuclear safety	4/15	23 900	-	-	3/17	24 911	-	-
TOTAL	129/28	904 581	1 432 134	122 030	111/28	747 901	1 240 845	65 591

AGENCY FELLOWS FROM COSTA RICA

1982 - 1992¹
(As of mid-March 1992)

Sector	No. of fellowships	No. of months/days	Host countries
General atomic energy development	1	0/06	URU
Nuclear physics	5	10/06	YUG, ELS, USA, FRA
Nuclear chemistry	-	-	-
Nuclear raw materials	9	5/06	ITA, PER, BOL
Nuclear engineering and technology	3	9/28	USA, JAM, BRA
Nuclear techniques in agriculture	16	29/27	PER, USA, ARG, COL, MEX, CAN, CH ² , BEL, PHI, IAEA
Nuclear medicine	6	30/08	CAN, USA, BRA, CHI
Nuclear techniques in biology	-	-	-
Nuclear techniques in industry and hydrology	3	9/14	NZE, ELS
Nuclear safety	-	-	-
TOTAL	43	95/05	

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

COSTA RICA
FELLOWSHIPS LONGER THAN 12 M/M
1982 - 1992
(As of mid-March 1992)

Name	Field of study	Host country	Date	Duration	Project
MORA RODRIGUEZ	Medical physics	USA	Sep.85 - Dec.86	16/00	-

COSTA RICAN NATIONALS WHO WERE AWARDED MORE THAN ONE
FELLOWSHIP OR SCIENTIFIC VISIT
1982 - 1992
(As of mid-March 1992)

Name	Field of study	Host country	Date	Duration	Project
CAMACHO VINDAS	1. Entomology 2. Entomology	IAEA IAEA	Apr.89 - Jun.89 Sep.91 - Oct.91	2/10 0/19	RLA/0/011 COS/5/012
FONSECA ZAMORA	1. Nuclear medicine 2. Nuclear medicine	CAN CHI	Jul.83 - Sep.83 Oct.91	2/01 0/04	COS/6/008 RLA/0/014
ORTUNO VICTORY	1. Animal reproduction 2. Animal production	USA CAN	Oct.86 - Nov.86 Feb.90 - Mar.90	1/01 0/28	COS/5/007 RLA/0/011
RETANA QUIROS	1. Volcanic uranium deposits 2. Uranium exploration	ITA PER BOL	Sep.85 Apr.86	0/05 0/19	COS/3/004 COS/3/004
SALAZAR ALVARADO	1. Volcanic uranium deposits 2. Uranium exploration	ITA PER BOL	Sep.85 Apr.86	0/05 0/19	COS/3/004 COS/3/004
SALAZAR MATARRITA	1. Analytical nuclear physics 2. Analytical nuclear physics	YUG USA	Mar.85 - Jul.85 Jan.88 - May 88	4/01 3/21	- COS/1/005
TAYLOR RIEGLER	1. Animal production 2. Animal reproduction	PER USA	Nov.84 Apr.85 - May 85	0/05 0/19	- COS/5/007
UMANA DI PALMA	1. Instrument repair/maintenance 2. Nuclear instrumentation	BRA JAM	May 82 - Aug.82 May 87 - Nov.87	3/02 6/01	- COS/1/005
VAZQUEZ ROJAS	1. Volcanic uranium deposits 2. Uranium exploration	ITA PER BOL	Sep.85 Apr.86	0/05 0/19	COS/3/004 COS/3/004

AGENCY TRAINING COURSES WITH COSTA RICAN PARTICIPATION

1982 - 1992
(As of mid-March 1991)

Field	Number of participants	Number of courses
General atomic energy development	7	7
Nuclear physics	7	5
Nuclear chemistry	10	10
Nuclear raw materials	-	-
Nuclear engineering and technology	9	9
Nuclear techniques in agriculture	21	17
Nuclear medicine	11	10
Nuclear techniques in biology	1	1
Nuclear techniques in industry & hydrology	39	37
Nuclear safety	12	12
TOTAL	117	108

MULTIPLE PARTICIPATION IN AGENCY TRAINING COURSES
BY COSTA RICAN NATIONALS
1982 - 1992
(As of mid-March 1991)

Name	Course No.	Course title	Year	Location
ARIAS VARGAS	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 (111)	RWS on inspection of LPG cylinders	1991	DOM
ARMIJO CABALCETA	INT/6/039 (001)	ITC on nuclear medicine	1990	USSR
	RLA/7/004 (001)	RTC on new approaches in radiation sterilization of medical supplies	1991	ARG
BEER ACOSTA	RLA/8/013 (001)	Regional informative course on computers in NDT	1988	ARG
	RLA/8/013 (018)	RTC on acoustic emission	1989	ARG
	RLA/8/013 (106)	RTC on preparation of test procedures	1991	GUY
BERMUDEZ JIMENEZ	RLA/9/009 (005)	RWS on radiation protection	1987	PER
	RLA/9/010 (001)	RTC on safety and regulation of radiation sources	1991	MEX
BRENES HINE	RLA/5/021 (006)	Advanced RTC on doubled haploid techniques in mutation breeding	1990	GUA
	RLA/5/021 (007)	Advanced RTC on the use of personal computers for field data analysis	1991	URU
CAMACHO	RLA/9/009 (008)	RTC on quality control of diagnostic X-ray equipment	1988	BRA
	RLA/9/009 (045)	RTC on radiation protection in radiodiagnosis	1990	ECU
FONSECA	RLA/8/013 (005)	Regional informative course on NDT in composite materials	1988	PER
	RLA/8/013 (023)	RTC on eddy currents in ferromagnetic materials	1989	CHI
GUEVARA	RLA/8/013 (072)	RWS on underwater inspection	1990	BRA
	RLA/8/013 (102)	RTC on UT characterization and dimensioning of welding defects	1991	TRI

MULTIPLE PARTICIPATION IN AGENCY TRAINING COURSES
BY COSTA RICAN NATIONALS
1982 - 1992
(As of mid-March 1991)

Name	Course No.	Course title	Year	Location
JIMENEZ FRANCO	RLA/0/009 (003)	Second RTC for librarians and information specialists in nuclear science and technology	1988	COL
	RLA/0/010 (001)	RTC for librarians and information specialists in nuclear science and technology	1987	CHI
LORIA MENESES	RLA/1/003 (001)	RTC on radiochemistry and nuclear analytical techniques	1984	ECU
	RLA/2/004 (001)	RTC on nuclear analytical techniques in the agroindustry and food analysis	1988	BRA
MADRIZ MUNOZ	RLA/5/021 (001)	RTC on the use of mutation techniques in connection with cereals in in-vitro cultures	1987	PER
	RLA/5/021 (005)	Second RWS on improvement of rice and other cereals in Latin America through mutation breeding	1990	BRA
	RLA/5/021 (007)	Advanced RTC on the use of personal computers for field data analysis	1991	URU
MORA RODRIGUEZ	RLA/2/005 (001)	RTC on determination of radionuclides in food and environmental samples	1989	BRA
	RLA/9/009 (010)	RWS (IV) on radiation protection	1988	COL
MOYA RODRIGUEZ	INT/1/025 (001)	ITC on the research and application of energy dispersive XRF analysis	1984	SIN
	INT/1/037 (001)	ITC on advanced data processing and interpretation in XRF analysis	1985	YUG
	INT/2/006 (001)	Advanced ITC on sampling, sample preparation and data evaluation for multi-element and radionuclide analysis by nuclear and instrumental methods	1989	GER
	RLA/2/003 (013)	RWS on collection strategies and preparation of samples in environmental problems	1992	CHI
MUNOZ	RLA/8/005 (232)	IX Regional Working Group Meeting on NDT	1988	PER
	RLA/8/005 (233)	II Regional Congress on NDT	1988	PER
	RLA/8/013 (009)	XII International World Conference on NDT	1989	NET
	RLA/8/013 (010)	International workshop on project achievements	1989	GER
	RLA/8/013 (011)	Regional seminar on NDT advanced techniques	1989	GER
	RLA/8/013 (012)	Regional seminar on NDT advanced techniques	1989	ITA
	RLA/8/013 (056)	RWS on quality assessment	1990	BRA
	RLA/8/017 (001)	RWS on industrial quality in production and maintenance	1991	BRA

MULTIPLE PARTICIPATION IN AGENCY TRAINING COURSES
BY COSTA RICAN NATIONALS
1982 - 1992
(As of mid-March 1991)

Name	Course No.	Course title	Year	Location
NAVARRO ALVAREZ	INT/5/089 (001)	ITC on the induction and use of mutations in plant breeding RTC on the use of mutation techniques in connection with cereals in in-vitro cultures	1983	AUS
	RLA/5/021 (001)		1987	PER
PACHECO JIMENEZ	INT/9/108 (001)	ITC on radiation protection and nuclear safety RTC on thermoluminescence applied to dosimetry	1990	ARG
	RLA/9/011 (004)		1991	ECU
PEREZ CORDERO	RLA/8/013 (078)	RTC on UT and RT in casting inspection RWS on criteria for conception and management of test pieces for qualification and certification of NDT personnel	1990	MEX
	RLA/8/013 (109)		1991	CHI
RODRIGUEZ AGUILAR	RLA/6/008 (001)	Regional train-the-trainers course on medical radioimmunoassay RWS on external quality control RTC on optimization of the production and preparation of bulk reagents with present methodology * RTC on promotion and use of bulk reagents for radioimmunoassay of thyroid related hormones	1984	MEX
	RLA/6/011 (019)		1989	PAR
	RLA/6/011 (028)		1990	CUB
	RLA/6/012 (001)		1988	CHI
SALAZAR MATARRITA	INT/1/020 (001)	ITC on the utilization of neutron generators First RWS on nuclear analytical techniques Second RWS on nuclear analytical techniques Regional seminar on recent advances in nuclear data acquisition and analysis systems	1982	HUN
	RLA/2/003 (004)		1989	COL
	RLA/2/003 (007)		1990	ARG
	RLA/4/006 (008)		1987	GUA
SEGURA SALAZAR	RLA/4/006 (004)	RTC on multi-channel analysers and interfacing RTC on design and production of printed boards RTC on repair of multi-channel analysers	1986	BRA
	RLA/4/006 (018)		1989	CUB
	RLA/4/008 (004)		1991	BRA

MULTIPLE PARTICIPATION IN AGENCY TRAINING COURSES
BY COSTA RICAN NATIONALS
1982 - 1992
(As of mid-March 1991)

Name	Course No.	Course title	Year	Location
UMANA DI PALMA	RLA/4/004 (001)	RTC on nuclear instrumentation for laboratory technicians	1982	PER
	RLA/4/006 (013)	RTC on high-resolution radiation detectors	1988	ARG
	RLA/4/006 (017)	RTC on advanced aspects of nuclear spectroscopy	1989	PAR
	RLA/4/006 (019)	RTC on maintenance of industrial nuclear equipment	1990	MEX
VARGAS ESQUIVEL	RLA/8/013 (021)	RTC on tomography	1989	URU
	RLA/8/013 (088)	RTC on computers in RT inspection	1990	MEX
VEGA MONTERO	INT/9/097 (001)	ITC on radiation protection	1989	ARG
	RLA/9/011 (002)	RTC on safe operation of industrial radiation facilities	1991	MEX

PROJECTS COMPLETED IN COSTA RICA SINCE 1982
(As of mid-March 1992)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS				COMPLETED
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING	
			M/M	\$	\$	\$	M/M	\$	\$	\$	
1979	COS/1/005	Applied nuclear physics	8/03	54 855	201 247	-	8/01	55 584	200 441	-	1988
1980	COS/1/006	Cryogenic service	0/08	1 880	101 689	-	0/08	5 550	101 500	-	1991
1981	COS/3/003	Uranium prospection	19/15	130 950	19 136	-	19/13	99 887	19 319	-	1988
1984	COS/3/004	Strengthening national capacity for mineral prospection	54/27	351 551	241 896	24 727	54/27	351 551	241 896	24 727	1989
1980	COS/5/006	Pesticide residues	3/00	12 600	68 000	-	3/01	20 406	60 055	-	1986
1984	COS/5/007	Hormone profiles in cattle	0/29	6 670	52 660	-	0/29	5 126	53 872	-	1988
1985	COS/5/008	Food irradiation	1/00	6 900	-	-	1/02	8 205	-	-	1986
1986	COS/5/009	Mutation breeding of legumes	1/06	8 580	27 804	15 312	1/08	11 593	28 012	16 565	1991
1977	COS/6/007	Nuclear medicine	2/00	7 700	132 227	-	1/14	9 464	132 270	-	1982
1983	COS/6/008	Nuclear medicine	2/00	12 400	15 000	-	1/15	12 393	16 486	-	1986
1982	COS/8/002	Isotopes in hydrology	3/24	26 735	99 395	15 991	3/20	34 977	102 183	16 040	1991

PROJECTS COMPLETED IN COSTA RICA SINCE 1982
(As of mid-March 1992)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS				COMPLETED
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING	
			M/M	\$	\$	\$	M/M	\$	\$	\$	
1981	COS/9/002	Radiation protection	3/00	14 400	-	-	2/03	11 371	-	-	1982
1983	COS/9/003	Radiation protection	1/15	9 500	-	-	1/14	13 540	-	-	1985
	TOTAL	13 projects	101/07	644 721	959 054	56 030	99/05	639 647	956 034	57 352	

OPERATIONAL PROJECTS IN COSTA RICA
(As of mid-March 1992)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS			
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING
			M/M	\$	\$	\$	M/M	\$	\$	\$
1989	COS/2/002	Nuclear analytical techniques	5/29	49 670	83 720	5 000	5/07	42 604	79 102	4 875
1991	COS/5/010	Livestock disease diagnosis	5/00	47 400	55 000	7 650	1/09	13 149	29 343	-
1991	COS/5/011	Mutation breeding (phase II)	2/15	23 025	66 425	16 500	0/16	8 600	29 948	-
1991	COS/5/012	Medfly research laboratory	5/25	52 975	40 000	8 000	2/06	16 697	13 501	3 384
1991	COS/5/013	Production of DNA probes	1/00	8 850	80 000	-	0/17	6 765	75 513	-
1991	COS/8/003	Groundwater hydrology	4/00	38 100	80 000	23 850	0/16	3 058	2 509	-
1991	COS/8/004	Isotope tracing in geothermics	4/12	39 840	67 935	5 000	2/12	17 381	54 895	-
	TOTAL	7 projects	28/21	259 860	473 080	66 000	12/23	108 254	284 811	8 259

Footnote-a/ projects not yet upgraded;

COS/5/014 Agroecology
COS/5/015 Provision of irradiation facility for medfly research

COUNTERPART INSTITUTIONS IN COSTA RICA (I)
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>NUCLEAR PHYSICS AND CHEMISTRY</u>		
COS/1/005	University of Costa Rica, School of Physics, San José	SALAZAR MATARRITA GALLARDO ZAMORA
COS/1/006	University of Costa Rica, School of Physics, San José	SALAZAR MATARRITA GALLARDO ZAMORA
COS/2/002	University of Costa Rica, School of Physics, San José	SALAZAR MATARRITA MOYA RODRIGUEZ
<u>NUCLEAR RAW MATERIALS</u>		
COS/3/003	1. Minera Nacional S.A., San José 2. Costa Rican Atomic Energy Commission, San José	MONGE URENA CONSTENLA UMANA
COS/3/004	1. Costa Rican Development Corporation, San José 2. Costa Rican Atomic Energy Commission, San José	MONGE URENA CONSTENLA UMANA
<u>AGRICULTURE</u>		
COS/5/006	University of Costa Rica, School of Chemistry, San José	CONSTENLA UMANA
COS/5/007	National University, School of Veterinary Medicine, Heredia	PADILLA GUEVARA TAYLOR RIEGLER
COS/5/008	Costa Rican Atomic Energy Commission, San José	CONSTENLA UMANA
COS/5/009	National University, School of Agricultural Sciences, Heredia	MADRIZ MUNOZ
COS/5/010	National University, School of Veterinary Medicine, Heredia	RODRIGUEZ

COUNTERPART INSTITUTIONS IN COSTA RICA (I)
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>AGRICULTURE (cont'd)</u>		
COS/5/011	National University, School of Agricultural Sciences, Heredia	OROZCO RODRIGUEZ MADRIZ MUNOZ
COS/5/012	University of Costa Rica, School of Biology, San José	CAMACHO VINDAS
COS/5/013	University of Costa Rica, Centre for Research on Cellular and Molecular Biology, San José	LEON
<u>NUCLEAR MEDICINE</u>		
COS/6/007	San Juan de Dios Hospital, Nuclear Medicine Service, San José	FONSECA
COS/6/008	1. San Juan de Dios Hospital, Nuclear Medicine Service, San José 2. University of Costa Rica, Medical School, San José	ORTIZ ORTIZ CASTILLO DE SOLANO
<u>NUCLEAR TECHNIQUES IN INDUSTRY AND HYDROLOGY</u>		
COS/8/002	Costa Rican Electricity Institute, San José	VACA CASTELLON MURILLO SOLIS
COS/8/003	1. Servicio Nacional de Aguas Subterranas, Riego y Avenamiento, San José 2. Institución Costarricense de Acueductos y Alcantarillados, San José 3. University of Costa Rica, School of Biology, San José	ARREDONDO RODRIGUEZ ESTRADA REYNOLDS-VARGAS

COUNTERPART INSTITUTIONS IN COSTA RICA (I)
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>NUCLEAR TECHNIQUES IN INDUSTRY AND HYDROLOGY (cont'd)</u>		
COS/8/004	Costa Rican Electricity Institute, Department of Geothermal Resources, San José	VACA CASTELLON
<u>NUCLEAR SAFETY</u>		
COS/9/002	University of Costa Rica, School of Physics, San José	MARENCO ZUNIGA
COS/9/003	Costa Rican Atomic Energy Commission, San José	ROJAS SOLANO SALAZAR MATARRITA

COUNTERPART INSTITUTIONS IN COSTA RICA (II)
(By Institute)

SAN JOSE

Costa Rican Atomic Energy Commission
San José

COS/3/003 Uranium Prospection
COS/3/004 Strengthening National Safety for Mineral Prospection
COS/5/008 Food Irradiation
COS/9/003 Radiation Protection

Costa Rican Development Corporation
San José

COS/3/004 Strengthening National Safety for Mineral Prospection

Costa Rican Electricity Institute
San José

COS/8/002 Isotopes in Hydrology
COS/8/004 Isotope Tracing in Geothermics

Institución Costarricense de Acueductos y Alcantarillados
San José

COS/8/003 Groundwater Hydrology

San Juan de Dios Hospital
Nuclear Medicine Service
San José

COS/6/007 Nuclear Medicine
COS/6/008 Nuclear Medicine

Servicio Nacional de Aguas Subterráneas, Riego y Avenamiento
San José

COS/8/003 Groundwater Hydrology

COUNTERPART INSTITUTIONS IN COSTA RICA (II)
(By Institute)

SAN JOSE (cont'd)

Minera Nacional S.A.
San José

COS/3/003 Uranium Prospection

University of Costa Rica
School of Physics
San José

COS/1/005 Applied Nuclear Physics
COS/1/006 Cryogenic Service
COS/2/002 Nuclear Analytical Techniques
COS/9/002 Radiation Protection

University of Costa Rica
School of Chemistry
San José

COS/5/006 Pesticide Residues

University of Costa Rica
School of Biology
San José

COS/5/012 Medfly Research Laboratory
COS/8/003 Groundwater Hydrology

University of Costa Rica
Centre for Research on Cellular and Molecular Biology
San José

COS/5/013 Production of DNA Probes

University of Costa Rica
Medical School
San José

COS/6/008 Nuclear Medicine

COUNTERPART INSTITUTIONS IN COSTA RICA (II)

(By Institute)

HEREDIA

**National University
School of Veterinary Medicine
Heredia**

COS/5/007 Hormone Profiles in Cattle
COS/5/010 Livestock Disease Diagnosis

**National University
School of Agricultural Sciences
Heredia**

COS/5/009 Mutation Breeding of Legumes
COS/5/011 Mutation Breeding (Phase II)

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

LONG-TERM EXPERT ASSIGNMENTS

Project COS/3/004, Strengthening National Capacity for Mineral Prospection

- N.E. SCIVETTI (ITA), Task 01 - Chief Technical Adviser
Oct 1984 - Dec 1986, 16.2 months
 - To plan, organize and direct all activities both technical and administrative at the duty station as well as in the field area;
 - To ensure adequate liaison with Government officials associated with the project and with the local UNDP office;
 - To prepare periodic progress and other reports, as required;
 - To train the national counterpart on the different aspects of exploration activities.

- F. VITRANI (ITA), Task 02 - Geology/Geochemistry
Oct 1984 - Apr 1986, 18.5 months
 - To plan and supervise a reconnaissance and possibly follow-up survey programme using geochemical and radiometric techniques;
 - In addition to the primary objective of evaluating the uranium potential of the project area, to aim at other types of deposits which may be found in that geological environment;
 - To provide training to the national counterparts.

RESEARCH CONTRACTS/AGREEMENTS IN COSTA RICA SINCE 1982 ¹
(As of mid-March 1992)

Field of activity	No. of contracts/ agreements	Amount allocated \$
Nuclear chemistry	1	9 700
Nuclear techniques in agriculture	5	43 000
Nuclear medicine	3	16 500
Nuclear techniques in industry & hydrology	1	20 000
Safety in nuclear energy	1	5 000
TOTAL	11	94 200

¹/ New awards since 1982

**SCIENTISTS FROM COSTA RICA SERVING AS AGENCY
TECHNICAL CO-OPERATION EXPERTS OR
TRAINING COURSE LECTURERS
1982 - 1992
(As of mid-March 1992)**

Name	No. of assignments	Project(s)
BEER ACOSTA	2	RLA/8/013
BERMUDEZ JIMENEZ	1	RLA/9/011
BOLANOS PORRAS	1	COS/8/004
CHING MORALES	1	INT/4/054
CONSTENLA UMANA	1	ELS/0/004
CONTRERAS GARBANZO	4	RLA/0/006
GAMBOA ARIAS	2	COS/3/003, COS/3/004
GOMEZ CRUZ	1	RLA/8/014
HERNANDEZ MORALES	1	COS/8/004
MENDEZ SOTO	1	COS/3/004
MORA RODRIGUEZ	3	RLA/9/009, RLA/9/011
MOYA RODRIGUEZ	1	RLA/1/006
MUNOZ	3	RLA/8/013
ORTIZ ORTIZ	1	RLA/6/006
PAEZ JIMENEZ	1	RLA/4/004
RODRIGUEZ AGUILAR	2	RLA/6/011
RODRIGUEZ ESTRADA	1	RLA/0/006
RODRIGUEZ, L.	1	ELS/5/005
SALAZAR MATARRITA	1	RLA/1/006
SOLEY ALFARO	1	RLA/4/004
TAYLOR RIEGER	6	COL/5/012, MEX/5/012, RLA/5/017, RLA/5/019, VEN/5/009
UMANA DI PALMA	1	RLA/4/008
VIVES RODRIGUEZ	1	COS/8/004
ZAMORA GONZALEZ	1	RLA/0/009
TOTAL	39	

**AGENCY FELLOWSHIPS AND SCIENTIFIC VISITS
HOSTED BY COSTA RICA
1982 - 1992
(As of mid-March 1992)**

Recipient country	No. of fellowships	No. of scientific visits	TOTAL ¹
BOLIVIA	3	-	3
COLOMBIA	1	-	1
CUBA	1	-	1
EL SALVADOR	2	-	2
GUATEMALA	2	-	2
MEXICO	-	1	1
PANAMA	1	-	1
URUGUAY	-	1	1
VENEZUELA	1	-	1
TOTAL	11	2	13

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

**REGIONAL AND INTERREGIONAL TRAINING EVENTS
HOSTED BY COSTA RICA
1982 - 1992
(As of mid-March 1992)**

Course No.	Course Title	Participants	Year
RLA/4/006 (011)	RTC for technicians on maintenance and electromechanical problems of nuclear and related instruments in medicine	8	1988
RLA/5/018 (001)	RTC on isotope techniques in agrochemical research	16	1985
RLA/5/021 (003)	Advanced RTC on the use of mutants for different cross-breeding programmes	7	1989
RLA/6/009 (001)	RTC on the maintenance of nuclear medical instruments	12	1985
RLA/8/013 (026)	Regional working group meeting (NDT)	17	1989
5 COURSES	TOTAL	60	