



**INTERNATIONAL ATOMIC ENERGY AGENCY**



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IAEA-CPS-93/05  
22 April 1993  
Original: ENGLISH

## **COUNTRY PROGRAMME SUMMARY**

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

**PROGRAMME WITH**

**BOLIVIA**

**1983 - 1993**

**COUNTRY PROGRAMME SUMMARIES**

**DEPARTMENT OF TECHNICAL CO-OPERATION**

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# COUNTRY PROGRAMME SUMMARY

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BOLIVIA  
1983 - 1993  
COUNTRY PROGRAMME SUMMARIES

EVALUATION SECTION

DEPARTMENT OF TECHNICAL CO-OPERATION

**THE AGENCY'S TECHNICAL CO-OPERATION  
PROGRAMME WITH  
BOLIVIA  
1983 - 1993  
COUNTRY PROGRAMME SUMMARIES**

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

**BOLIVIA**

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## INTRODUCTION

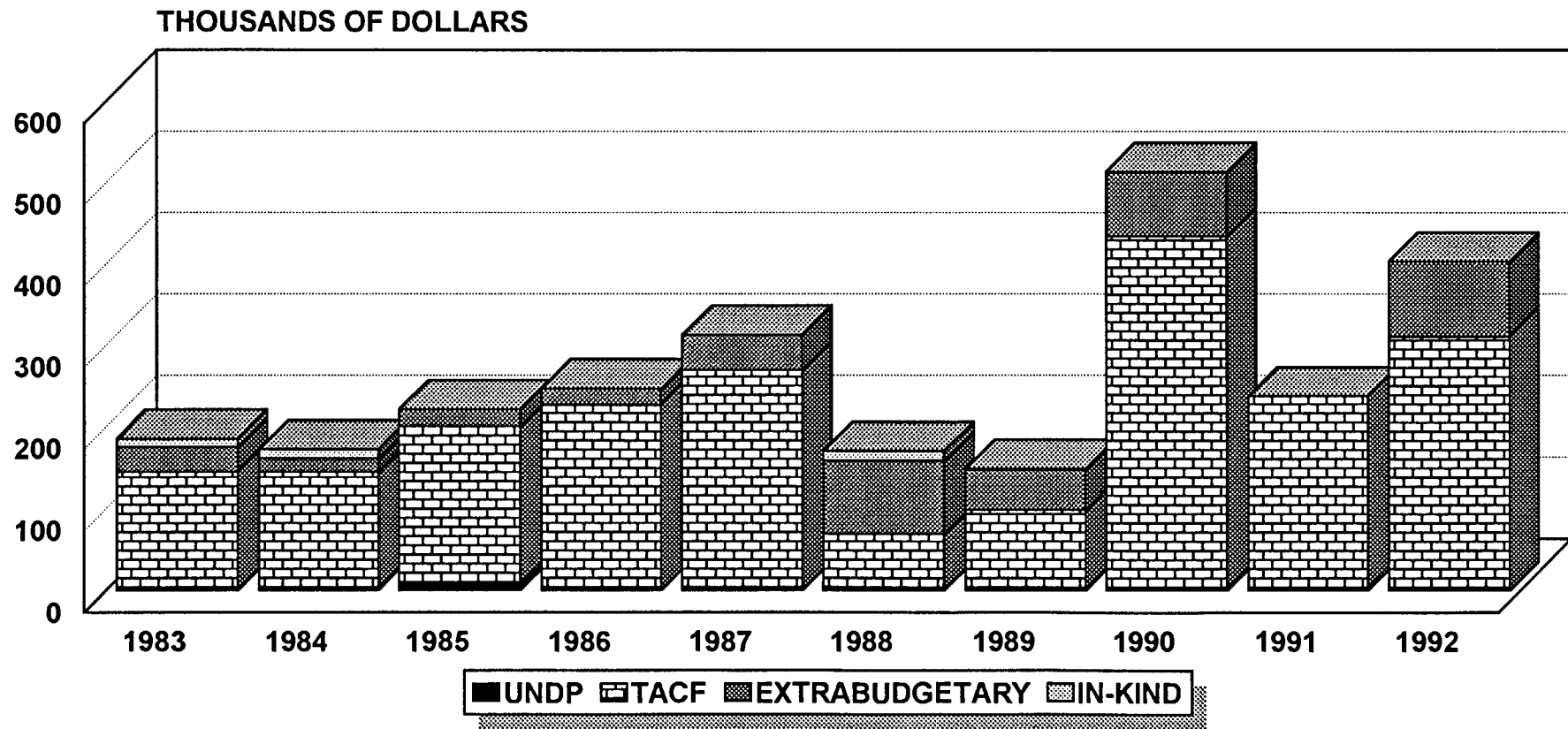
The country programme summary reported on here is one in the series of such studies being undertaken of the Agency's TC programme with Member States. With almost \$4 million of Agency support received, Bolivia ranks 40<sup>th</sup> among all recipients of technical assistance during the period 1958 through 1992.

Almost three quarters of the assistance received during the past ten years has been provided in the form of equipment (71%), complemented by expert services (17%) and training (12%). The bulk of the resources was made available through the TACF (82%), while only small shares were provided through extrabudgetary contributions (17%) and through assistance in kind (1%).

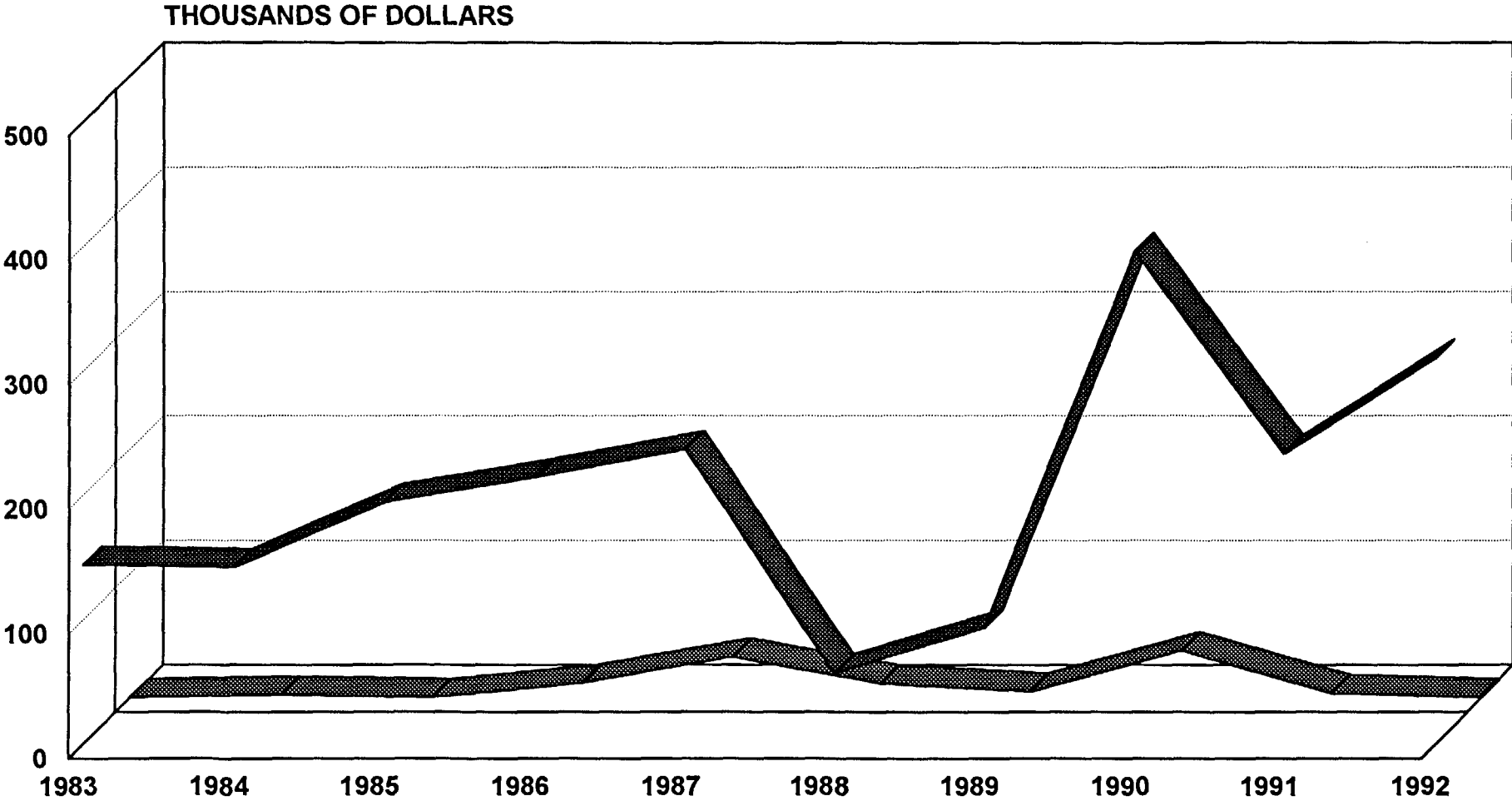
With regard to total disbursements -- by sector -- under those projects that were operational during the period 1983 through mid-April 1993, the two largest areas have been nuclear medicine (39%) and agriculture (27%), followed by nuclear safety (13%) and nuclear physics and chemistry (11%).

During the same period, the country has provided experts and training course lecturers for a total of 62 assignments, and has hosted eight scientific visits as well as three regional training course with a total of 34 participants.

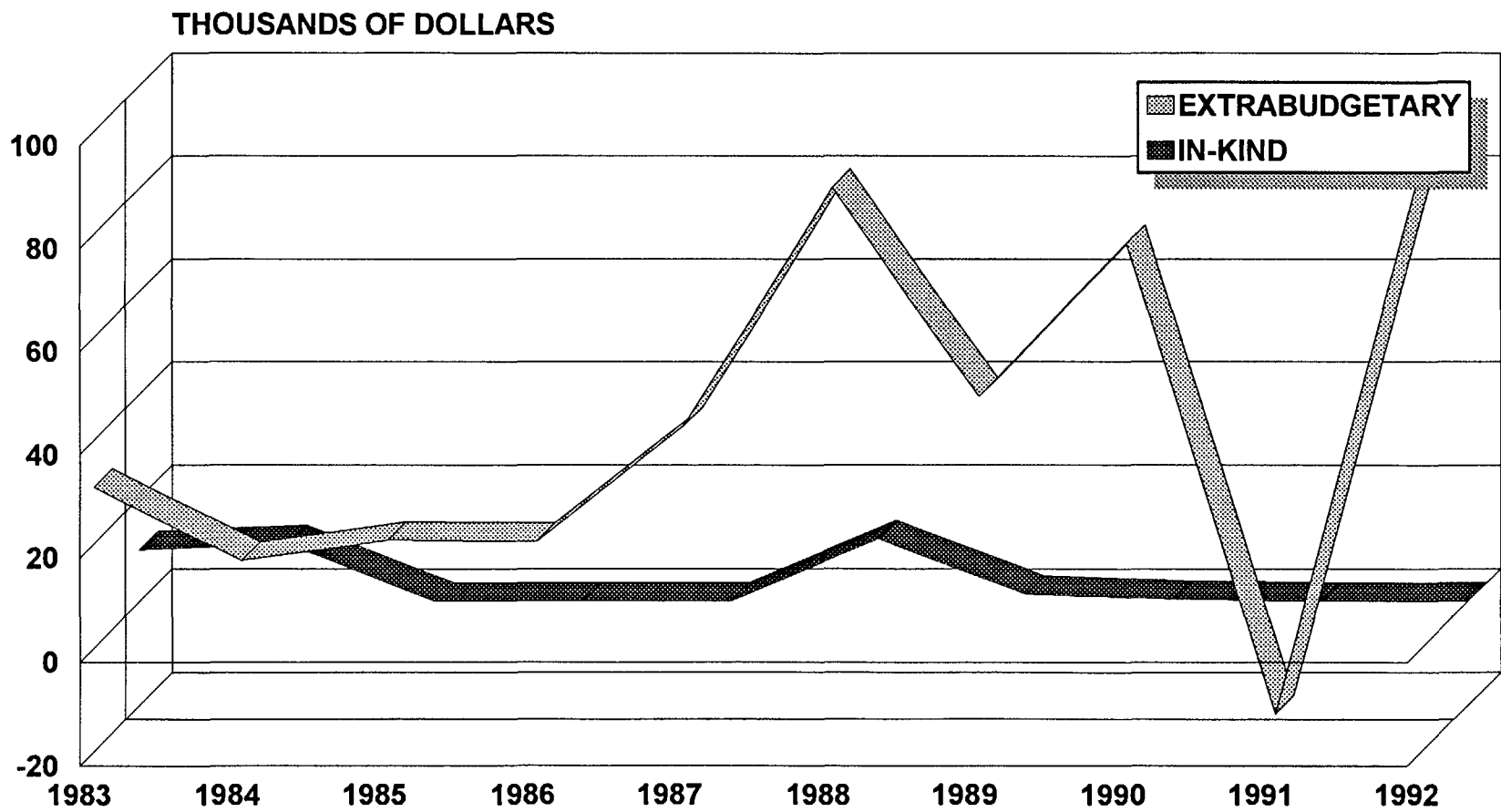
# ASSISTANCE PROVIDED BY THE AGENCY TO BOLIVIA BY SOURCE (1983 - 1992)



# TACF ASSISTANCE PROVIDED TO BOLIVIA (1983 - 1992) BY CC AND NCC

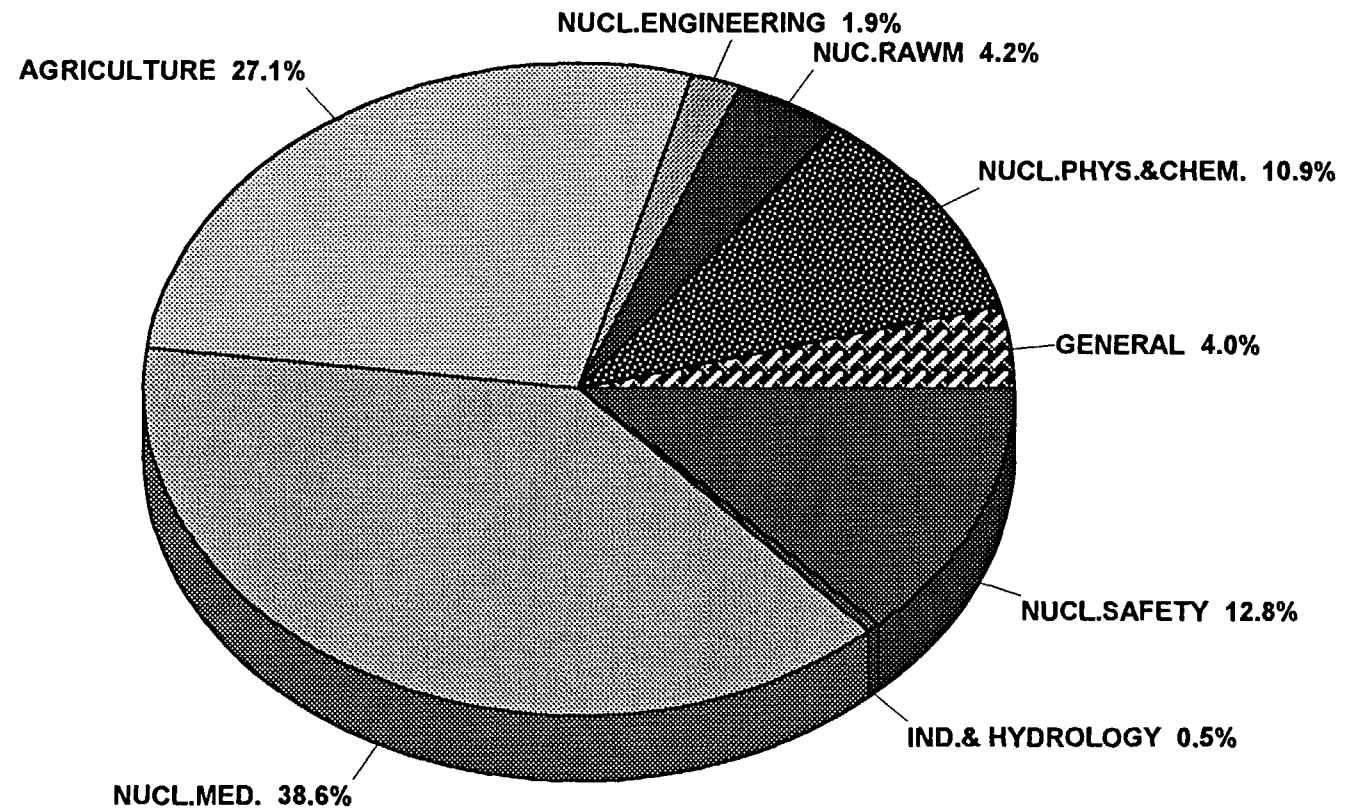


# EXTRABUDGETARY AND IN-KIND ASSISTANCE PROVIDED TO BOLIVIA (1983 - 1992)

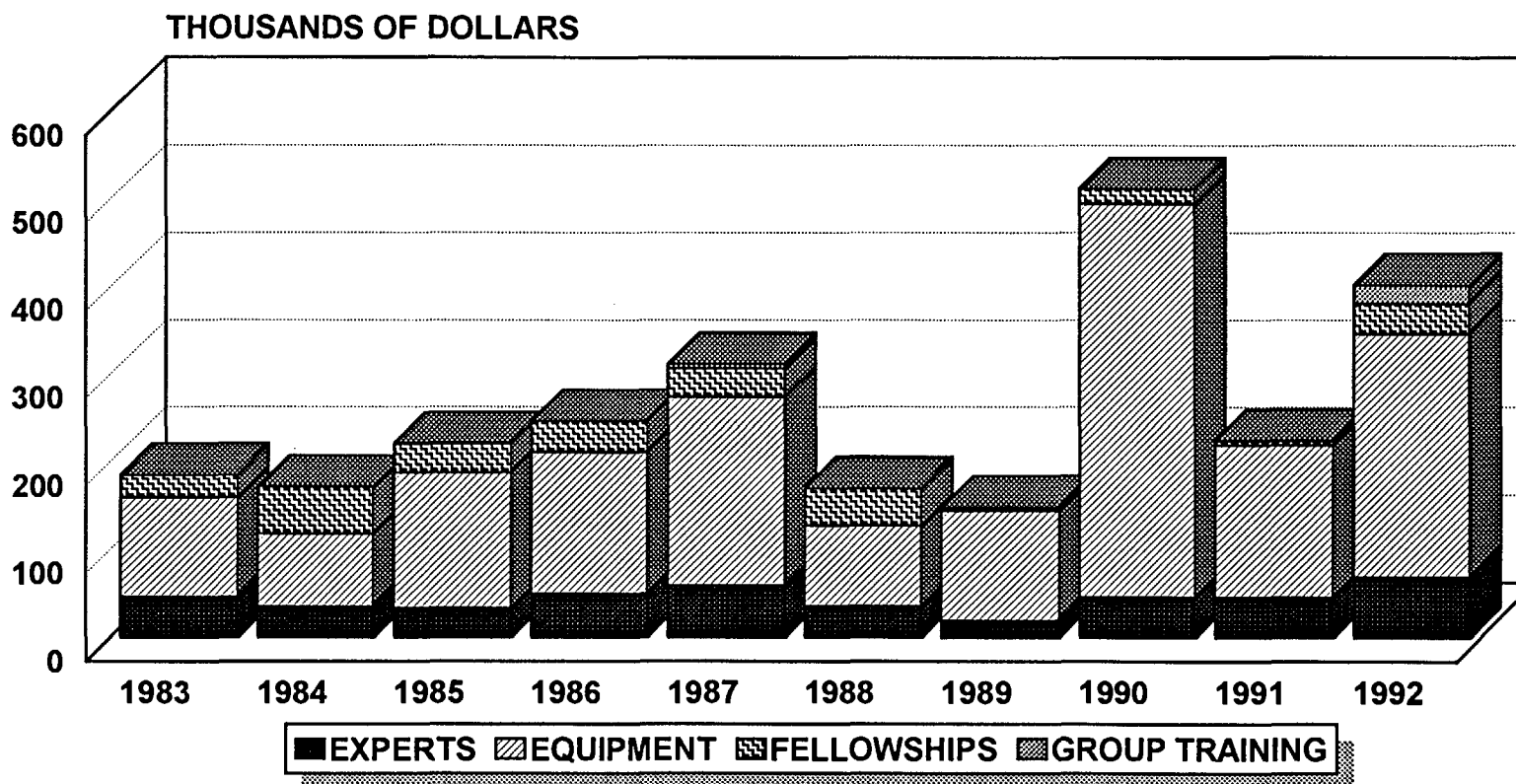




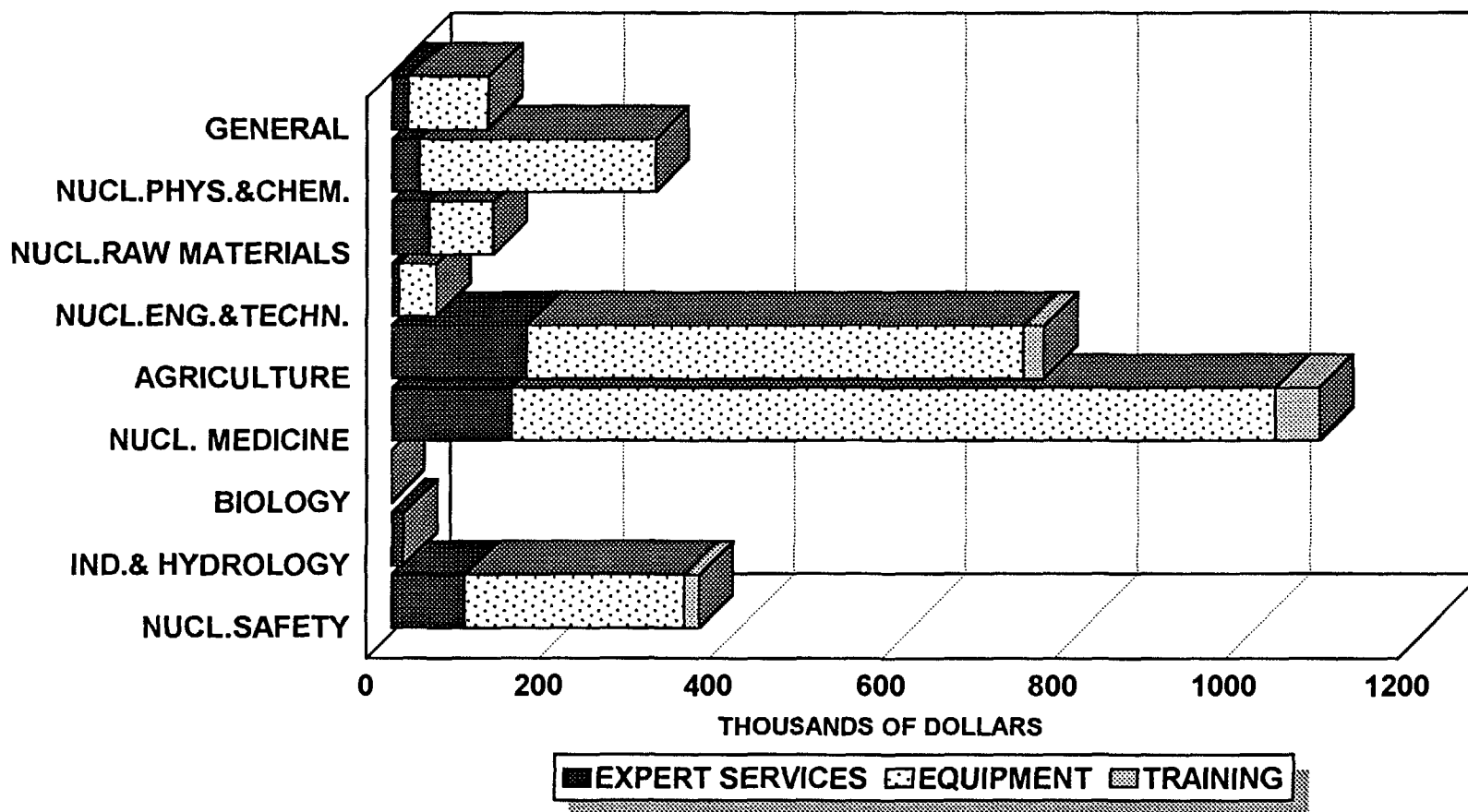
# TC PROJECT DISBURSEMENTS IN BOLIVIA BY SECTOR (1983 - 1993)



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



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



THE AGENCY'S TECHNICAL CO-OPERATION PROGRAMME WITH BOLIVIA

ALL SOURCES

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

YEAR	RANKING	AMOUNT
1958-82	37 <sup>th</sup>	1333.2
1983	43 <sup>rd</sup>	185.0
1984	49 <sup>th</sup>	171.8
1985	40 <sup>th</sup>	220.9
1986	40 <sup>th</sup>	246.5
1987	39 <sup>th</sup>	312.3
1988	47 <sup>th</sup>	169.9
1989	58 <sup>th</sup>	148.0
1990	27 <sup>th</sup>	512.7
1991	49 <sup>th</sup>	224.1
1992	36 <sup>th</sup>	402.8
1958-92	42 <sup>nd</sup>	3927.2

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

**ALL SOURCES**

Year	I	II	III	IV	V	BOLIVIA
1958-82	BRA 8507.3	IND 6849.4	ARG 5528.2	PAK 5492.7	CHI 5240.1	37 <sup>th</sup> - 1333.2
1983	EGY 2077.9	PER 1116.8	VIE 948.1	PHI 778.6	IRA 722.1	43 <sup>rd</sup> - 185.0
1984	EGY 3625.9	PER 1750.4	THA 1094.6	CUB 1028.7	PHI 881.2	49 <sup>th</sup> - 171.8
1985	EGY 2494.8	PER 1120.7	THA 1117.4	BGD 1068.2	PHI 963.7	40 <sup>th</sup> - 220.9
1986	EGY 2317.0	BRA 1452.9	THA 1169.4	POL 1050.3	BGD 896.4	40 <sup>th</sup> - 246.5
1987	HUN 3452.6	EGY 1775.4	THA 1742.4	INS 1312.5	YUG 1223.2	39 <sup>th</sup> - 312.3
1988	EGY 1486.9	BUL 1361.6	CPR 1278.5	THA 1158.7	BRA 1096.7	47 <sup>th</sup> - 169.9
1989	CPR 1542.3	EGY 1505.1	THA 1205.3	BRA 1096.5	INS 999.1	58 <sup>th</sup> - 148.0
1990	POL 2308.1	CPR 2005.0	VIE 1589.2	INS 1412.6	BRA 1229.1	27 <sup>th</sup> - 512.7
1991	INS 1305.2	CPR 975.0	EGY 959.8	BRA 951.2	BUL 934.7	49 <sup>th</sup> - 224.1
1992	EGY 1586.3	INS 1342.1	CPR 1328.8	MEX 1127.8	POL 1036.4	36 <sup>th</sup> - 402.8
1958-92	EGY 23808.6	BRA 17736.8	THA 15332.0	INS 13725.9	PER 13129.6	42 <sup>nd</sup> - 3927.2

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

**TECHNICAL ASSISTANCE AND CO-OPERATION FUND**

Year	I	II	III	IV	V	BOLIVIA
1958-82	HUN 2971.7	EGY 2405.8	PAK 2340.5	THA 2000.3	BRA 1983.5	36 <sup>th</sup> - 838.4
1983	EGY 1049.4	VIE 897.4	POL 667.8	PAK 498.5	PHI 430.0	42 <sup>nd</sup> - 144.1
1984	EGY 1197.2	CUB 655.6	ECU 565.6	BGD 506.3	BUL 472.4	46 <sup>th</sup> - 143.9
1985	BGD 991.8	VIE 745.0	THA 708.7	BRA 571.8	POR 538.7	34 <sup>th</sup> - 194.0
1986	BRA 1381.8	THA 871.9	POL 833.5	BGD 823.9	SYR 751.8	36 <sup>th</sup> - 226.0
1987	HUN 3305.2	DRK 986.8	BUL 888.5	INS 885.8	EGY 878.9	37 <sup>th</sup> - 269.5
1988	BUL 1195.6	PER 856.5	EGY 768.6	INS 751.7	MAL 656.0	60 <sup>th</sup> - 68.6
1989	EGY 990.9	CPR 868.2	POR 769.6	CHI 756.9	MAL 619.4	62 <sup>nd</sup> - 98.0
1990	POL 1562.3	VIE 1518.8	DRK 1156.2	IRA 958.0	YUG 933.4	23 <sup>rd</sup> - 434.0
1991	BUL 893.1	PAK 868.8	INS 855.1	VIE 817.6	CPR 814.5	46 <sup>th</sup> - 236.8
1992	EGY 1255.7	CPR 1009.0	VIE 872.8	INS 826.6	IRA 795.5	35 <sup>th</sup> - 309.9
1958-92	EGY 10847.0	HUN 8743.7	POL 8486.4	VIE 8199.9	PAK 8115.6	40 <sup>th</sup> - 2963.2

ASSISTANCE PROVIDED BY THE AGENCY TO BOLIVIA

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	46.4	112.9	25.7	-	-	185.0	-	144.1	-	31.0	9.9	185.0
1984	35.7	82.8	53.3	-	-	171.8	-	141.7	2.2	16.8	11.1	171.8
1985	33.9	153.8	33.2	-	-	220.9	6.1	194.0	-	20.8	-	220.9
1986	50.0	161.0	35.5	-	-	246.5	-	214.3	11.7	20.5	-	246.5
1987	59.2	214.9	32.9	5.3	-	312.3	-	236.6	32.9	42.8	-	312.3
1988	36.1	91.7	41.7	0.4	-	169.9	-	57.4	11.2	89.2	12.1	169.9
1989	19.6	124.6	3.8	-	-	148.0	-	93.3	4.7	48.6	1.4	148.0
1990	46.1	449.1	17.5	-	-	512.7	-	396.2	37.8	78.3	0.4	512.7
1991	46.1	173.2	4.8	-	-	224.1	-	233.2	3.6	(12.7)	-	224.1
1992	69.8	277.1	34.5	21.4	-	402.8	-	309.9	-	92.9	-	402.8
1983-92	442.9	1 841.1	282.9	27.1	-	2 594.0	6.1	2 020.7	104.1	428.2	34.9	2 594.0

TECHNICAL CO-OPERATION PROJECTS IN BOLIVIA  
BY SECTOR

PROJECTS COMPLETED AND OPERATIONAL 1983 - 1993

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

SECTOR	NO. OF PROJECTS	ALLOTMENTS \$	% OF TOTAL	DISBURSEMENTS \$	% OF TOTAL
General atomic energy development	1	111 327	2.7	111 327	4.0
Nuclear physics and chemistry	4	310 006	7.6	306 109	10.9
Nuclear raw materials	2	116 480	2.9	116 632	4.2
Nuclear engineering and technology	1	53 602	1.3	51 996	1.9
Nuclear techniques in agriculture	4	857 851	21.1	759 234	27.1
Nuclear medicine	11	2 220 165	54.6	1 079 530	38.6
Nuclear techniques in biology	-	-	-	-	-
Nuclear techniques in industry and hydrology	1	7 050	0.2	14 152	0.5
Nuclear safety	3	392 633	9.6	359 141	12.8
TOTAL	27	4 069 114	100.0	2 798 121	100.0



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

Sector	No. of projects	Total project allotments \$	Total project disbursements \$
<u>Completed projects</u>			
General atomic energy development	1	111 327	111 327
Nuclear physics and chemistry	4	310 006	306 109
Nuclear raw materials	2	116 480	116 632
Nuclear engineering and technology	1	53 602	51 996
Nuclear techniques in agriculture	2	648 821	644 005
Nuclear medicine	5	625 154	611 923
Nuclear techniques in biology	-	-	-
Nuclear techniques in industry & hydrology	1	7 050	14 152
Nuclear safety	2	188 773	183 201
TOTAL	18	2 061 213	2 039 345
<u>Operational projects</u>			
General atomic energy development	-	-	-
Nuclear physics and chemistry	-	-	-
Nuclear raw materials	-	-	-
Nuclear engineering and technology	-	-	-
Nuclear techniques in agriculture	2	209 030	115 229
Nuclear medicine	6	1 595 011	467 607
Nuclear techniques in biology	-	-	-
Nuclear techniques in industry & hydrology	-	-	-
Nuclear safety	1	203 860	175 940
TOTAL	9	2 007 901	758 776

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

FIELD	TOTAL PROJECT ALLOTMENTS				TOTAL PROJECT DISBURSEMENTS			
	EXPERT SERVICES		EQUIPMENT	TRAINING	EXPERT SERVICES		EQUIPMENT	TRAINING
	M/M	\$	\$	\$	M/M	\$	\$	\$
General atomic energy development	2/20	19 452	91 875	-	2/20	19 452	91 875	-
Nuclear physics and chemistry	6/01	33 372	276 634	-	6/00	33 200	272 909	-
Nuclear raw materials	11/07	45 980	70 500	-	11/09	44 930	71 702	-
Nuclear engineering and technology	1/07	9 990	43 612	-	1/07	8 427	43 569	-
Nuclear techniques in agriculture	25/18	206 953	616 428	34 470	22/09	156 912	579 178	23 144
Nuclear medicine	38/24	341 055	1 798 982	80 128	19/23	138 631	890 322	50 577
Nuclear techniques in biology	-	-	-	-	-	-	-	-
Nuclear techniques in industry & hydrology	1/00	7 050	-	-	1/03	14 152	-	-
Nuclear safety	14/18	101 494	259 839	31 300	14/08	85 899	255 386	17 856
TOTAL	101/05	765 346	3 157 870	145 898	78/19	501 603	2 204 941	91 577

AGENCY FELLOWS FROM BOLIVIA

1983 - 1993<sup>1</sup>  
(As of mid-April 1993)

Sector	No. of fellowships	No. of months/days	Host countries
General atomic energy development	4	1/13	CUB, URU
Nuclear physics	5	10/10	COS, ECU, UKR, USA
Nuclear chemistry	1	3/01	CHI
Nuclear raw materials	2	9/13	FRA, USA
Nuclear engineering and technology	4	16/16	COL, HUN, PER, USA
Nuclear techniques in agriculture	11	63/02	BRA, SWE, USA, MEX, PER, POL, UK, IAEA
Nuclear medicine	12	82/20	URU, SWI, ECU, SPA, CHI, MEX, USA
Nuclear techniques in biology	-	-	-
Nuclear techniques in industry and hydrology	2	1/15	ITA
Nuclear safety	12	23/02	FRA, ECU, VEN, SPA, ARG, BRA, CHI, MEX, UK, IAEA
TOTAL	53	211/02	

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

**BOLIVIA**  
**LONG-TERM FELLOWSHIPS**  
**1983 - 1993**  
**(As of mid-April 1992)**

Name	Field of study	Host country	Date	Duration	Project
LUNA AGUIRRE	Nuclear instrumentation	HUN	Apr.86 - Apr.87	12/00	BOL/2/008
MIRANDA FLORES	Soil fertility	BRA	Feb.84 - Apr.86	25/24	BOL/5/004
ANCHORENA MATIENZO	Nuclear medicine	URU	Mar.92 - Mar.93	12/02	BOL/6/016
DALENZ CULTRERA	Nuclear medicine	URU	Aug.84 - Aug.86	12/02	-
SANZETENEA CASTRO	Medical physics	ECU	Sep.87 - Sep.88	12/00	RLA/6/006
VERA RUIZ	Nuclear medicine	URU	Aug.86 - Aug.87	12/01	-

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

Name	Field of study	Host country	Date	Duration	Project
ALARCON CALDERON	1. Neutron physics 2. General atomic energy development	UKR CUB	Sep.87 - Oct.87 Oct.90	0/12 0/06	INT/1/043 RLA/0/011
LUNA AGUIRRE	1. Nuclear instrumentation 2. Nuclear instrumentation	URU HUN	Nov.85 Apr.86 - Apr.87	0/25 12/00	RLA/0/006 BOL/2/008
MIRANDA-CUADROS	1. Radiological protection 2. Radiation protection	ECU BRA ARG CHI	Oct.84 Aug.89	0/12 0/19	RLA/0/006 RLA/0/011
SANCHEZ-GUTIERREZ	1. Radiological protection 2. Radiation protection	ECU ECU	Oct.84 Feb.85 - Mar.85	0/12 0/05	RLA/0/006 RLA/0/006
SOTO SANCHEZ	1. Analytical nuclear physics 2. General atomic energy development	USA CUB	Jan.88 - May 88 Oct.90	3/21 0/06	BOL/2/008 RLA/0/011
VILLCA QUISPE	1. Radiation protection 2. Radiation protection	VEN MEX	Oct.85 - Nov.85 Feb.92 - May 92	0/05 3/00	RLA/0/006 BOL/9/006

AGENCY TRAINING COURSES WITH BOLIVIAN PARTICIPATION

1983 - 1993  
(As of mid-April 1993)

Field	Number of participants	Number of courses
General atomic energy development	16	11
Nuclear physics	6	6
Nuclear chemistry	13	12
Nuclear raw materials	3	3
Nuclear engineering and technology	24	21
Nuclear techniques in agriculture	17	14
Nuclear medicine	20	17
Nuclear techniques in biology	1	1
Nuclear techniques in industry & hydrology	69	69
Nuclear safety	33	26
TOTAL	202	180

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

Name	Course No.	Course title	Year	Location
ABELA GISBERT	RLA/4/006 (004)	RTC on multichannel analysers and interfacing	1986	BRA
	RLA/4/008 (001)	RWS on the preparation of national training courses in nuclear medical equipment maintenance	1991	COL
	RLA/6/009 (001)	RTC on the maintenance of nuclear medical instruments	1985	COS
ALARCON CALDERON	INT/1/040 (001)	ITC on the use of neutron generators in material and analytical research	1986	THA
	INT/1/045 (001)	ITC on the technology and application of neutron generators	1989	USSR
	RLA/2/003 (007)	Second RWS on nuclear analytical techniques	1990	ARG
	RLA/4/006 (008)	Regional seminar on recent advances in nuclear data acquisition and analysis systems	1987	GUA
ALVARADO	RLA/8/017 (002)	RWS on ISO criteria for a survey on quality control in the region	1991	ECU
	RLA/8/017 (071)	Regional working group on criteria for a survey on quality in the region	1992	BRA
ALVAREZ POMMIER	INT/0/047 (001)	ITC on electric system expansion planning (WASP)	1989	USA
	INT/4/083 (001)	ITC on electricity demand forecasting in nuclear power planning	1986	USA
ASTURIZAGA	RLA/8/005 (144)	Regional seminar on non-destructive testing in fracture mechanics	1985	BRA
	RLA/8/013 (018)	RTC on acoustic emission	1989	ARG
BARRIENTOS ZAMORA	INT/9/082 (001)	ITC on radiological protection and nuclear safety	1987	ARB
	RLA/2/005 (001)	RTC on determination of radionuclides in Food and environmental samples	1989	BRA
BERDEJA AMATLLER	INT/9/116 (001)	ITC on radiation protection and nuclear safety	1991	ARG
	RLA/4/006 (016)	RTC on maintenance of radiation protection equipment	1989	COL
	RLA/9/009 (002)	RWS on calibration procedures in dosimetry	1986	ECU
	RLA/9/011 (006)	RTC on establishment of a programme on occupational monitoring	1992	BRA
DEUER DEUER	INT/1/037 (001)	ITC on advanced data processing and interpretation in X-ray fluorescence analysis	1985	YUG
	RLA/1/003 (001)	RTC on radiochemistry and nuclear analytical techniques	1984	ECU

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

Name	Course No.	Course title	Year	Location
GONZALEZ GANDARILLAS	RLA/6/011 (019)	RWS on external quality control	1989	PAR
	RLA/6/011 (020)	Second RTC on the preparation and use of regional (local) bulk reagents for RIA of thyroid-related hormones	1989	BRA
	RLA/6/012 (001)	RTC on promotion and use of bulk reagents for RIA of thyroid-related hormones	1988	CHI
	RLA/6/017 (001)	RTC on advances in hospital radiopharmacy	1992	SPA
GUZMAN HOZUMI	RLA/2/003 (002)	RTC on the application of nuclear analytical techniques for mineral resources	1989	CHI
	RLA/2/003 (008)	RWS on atomic absorption spectrometry and ICP (induced coupled plasma spectrometry) for analysis of agroindustrial products and food	1990	BRA
	RLA/9/011 (007)	RTC on measurement of environmental samples	1992	ARG
HUBNER MENDEZ	INT/0/036 (001)	ITC on energy planning in developing countries with special attention to nuclear energy	1985	ARG
	INT/0/047 (001)	ITC on electric system expansion planning (WASP)	1989	BRA USA
LIMACHI KANTUTA	RLA/8/005 (196)	RTC on eddy currents (level II)	1987	CHI
	RLA/8/005 (232)	IX Regional Working Group meeting	1988	PER
	RLA/8/005 (233)	Regional II Congress on NDT	1988	PER
	RLA/8/006 (011)	RTC on computer-aided NDT	1986	MEX
	RLA/8/013 (023)	RTC on eddy currents in ferromagnetic materials	1989	CHI
	RLA/8/013 (026)	Regional Working Group meeting	1989	COS
LLAGUNO SOLER	RLA/8/013 (058)	RWS on radiation protection for radiographers	1990	ARG
	INT/4/078 (001)	ITC on advanced nuclear electronics	1985	AUS
MENDEZ-FERRY	INT/9/046 (001)	ITC on radiological protection and nuclear safety	1983	ARG
	INT/0/031 (001)	ITC on nuclear power planning and feasibility studies	1983	FRA
	INT/9/100 (001)	ITC on radioactivity measurements for environmental monitoring purposes	1989	FRA
	RLA/0/008 (001)	RWS on IAEA technical co-operation practices and procedures	1985	CHI



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

Name	Course No.	Course title	Year	Location
MIRANDA-CUARDOS	INT/9/070 (001)	ITC on radiological protection and nuclear safety	1986	ARG
	RLA/9/009 (001)	RWS on radiation protection	1986	CHI
	RLA/9/009 (008)	RTC on quality control of diagnostic X-ray equipment	1988	BRA
	RLA/9/009 (047)	RTC on radiation protection in medical applications of ionizing radiation	1990	CUB
	RLA/9/010 (001)	RTC on safety and regulation of radiation sources	1991	MEX
MONTANO ORTIZ	INT/9/053 (001)	ITC on safety of nuclear power plants and fuel cycle installations	1984	FRA
	INT/9/070 (001)	ITC on radiological protection and nuclear safety	1986	ARG
OLAECHEA TORO	INT/6/031 (001)	ITC and study tour on nuclear medicine	1985	USSR
	INT/6/041 (001)	ITC on advanced single photon emission computerized tomography with emphasis in brain and heart studies	1992	ITA
PRADO TAPIA	RLA/8/005 (110)	RTC on NDT in aircraft maintenance	1985	ECU
	RLA/8/005 (193)	RTC on eddy currents (level III)	1987	BRA
PUNO RAMIREZ	RLA/4/006 (018)	RTC on design and construction of printed boards	1989	CUB
	RLA/4/006 (022)	RTC on maintenance of power supplies in nuclear instruments	1990	GUA
REVOLLO ZAMORA	RLA/0/009 (003)	Second RTC for librarians and information specialists in nuclear science and technology	1988	COL
	RLA/0/009 (005)	Third RTC for librarians and information specialists in nuclear science and technology	1990	CUA
REYES BARBEITO	INT/4/101 (001)	Advanced ITC on nuclear electronics	1990	USA
	RLA/4/008 (004)	RTC on repair of multichannel analysers	1991	BRA
ROCADADO	RLA/8/006 (013)	RTC on materials and processes	1987	MEX
	RLA/8/013 (024)	RTC on real-time radiography	1989	BRA

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

Name	Course No.	Course title	Year	Location
RODRIGUEZ	RLA/8/005 (216) RLA/8/013 (061) RLA/0/013 (109)	Regional informative course on on-line applications NDT RTC on inspection of LPG cylinders RWS on criteria for conception and management of test pieces for qualification and certification of NDT personnel	1988 1990 1991	BRA PER CHI
ROMERO BOLANOS	INT/9/108 (001) RLA/5/018 (001)	ITC on radiation protection and nuclear safety RTC on isotope techniques in agrochemical research	1990 1985	ARG COS
SANCHEZ-GUTIERREZ	INT/9/059 (001) RLA/9/009 (005) RLA/9/009 (010) RLA/9/009 (012) RLA/0/011 (001)	ITC on radiological protection and nuclear safety RWS on radiation protection RWS IV on radiation protection Regional seminar on quality control in radiotherapy RTC on radiological emergencies	1985 1987 1988 1988 1991	ARG PER COL PER PER
SORIA ORTEGA	INT/1/031 (001)  RLA/8/005 (113) RLA/8/006 (007)	Study tour on the utilization of low-energy accelerators  Regional seminar on NDT in steel industry RTC on industrial radiography (level II)	1985  1985 1984	GFR HUN ITA USSR MEX PER
SOTO SANCHEZ	RLA/2/003 (002) RLA/2/003 (004) RLA/2/003 (010) RLA/4/006 (001)	RTC on the application of nuclear analytical techniques for mineral resources First RWS on nuclear analytical techniques RWS on nuclear analytical techniques and quality assurance RWS on FORTRAN programming for nuclear applications	1989 1989 1990 1986	CHI COL ARG PER
TQUICHIRI	RLA/8/013 (005) RLA/8/013 (021)	Regional informative course on NDT in composite materials RTC on tomography	1988 1989	PER URU
TORRICO CALVIMONTES	INT/4/093 (001) RLA/4/006 (011)	ITC on advanced nuclear electronics RTC for technicians on maintenance and electromechanical problems of nuclear and related instruments in medicine	1987 1988	JAM COS

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

Name	Course No.	Course title	Year	Location
TRIGO FREDERICKSEN	RLA/4/007 (002)	RWS on radioisotope production in reactors, including the technology of radionuclide generators	1986	ARG
	RLA/4/007 (006)	RTC on radioisotope production and processing	1989	MEX
	RLA/6/014 (001)	RTC on preparation and control of radiopharmaceuticals	1989	CHI
TRISTAN PORCEL	RLA/6/008 (001)	Regional train-the-trainers course on medical radioimmunoassay	1984	MEX
	RLA/6/011 (001)	Regional train-the-trainers course on radioisotope methodology with special emphasis on radioimmunoassay	1988	ARG
VELASQUEZ TAPIA	INT/0/043 (001)	ITC on interfacing in nuclear experiments	1987	POR
	INT/9/070 (001)	ITC on radiological protection and nuclear safety	1986	ARG
VERASTEGUI	RLA/8/005 (150)	Regional seminar on NDT in petroleum refinery	1985	VEN
	RLA/8/013 (106)	RTC on preparation of test procedures	1991	GUY
VILLCA QUISPE	INT/9/108 (001)	ITC on radiation protection and nuclear safety	1990	ARG
	RLA/9/011 (004)	RTC on thermoluminescence applied to dosimetry	1991	ECU
	RLA/9/015 (001)	RTC on safety and regulation of radiation sources	1993	MEX

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

Name	Course No.	Course title	Year	Location
VILLEGAS IBANEZ	RLA/8/005 (085)	RTC on ultrasonics (level III)	1985	COL
	RLA/8/005 (087)	Regional train-the-trainers course on ultrasonics	1985	CAN
	RLA/8/005 (127)	RTC on radiography (level II)	1986	CHI
	RLA/8/005 (136)	RTC on ultrasonics in welded joints	1986	BRA
	RLA/8/006 (015)	International WS on implementation and implications of ISO international standards	1988	GUA
	RLA/8/006 (017)	Regional Co-ordinators meeting at the 13th World Conference on NDT	1992	BRA
	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 (009)	International 12th World Conference on NDT	1989	NET
	RLA/8/013 (010)	International WS on project achievements	1989	GFR
	RLA/8/013 (011)	Regional seminar on NDT advanced techniques	1989	GFR
	RLA/8/013 (012)	Regional seminar on NDT advanced techniques	1989	ITA
	RLA/8/013 (035)	RTC on NDT in quality assurance	1089	BRA
	RLA/8/013 (056)	RWS on quality assessment	1990	BRA
	RLA/8/017 (001)	RWS on industrial quality in production and maintenance	1991	BRA
RLA/8/017 (013)	Regional Working Group meeting on quality engineering	1992	ARG	
RLA/8/017 (016)	RWS on NDT for quality	1992	CHI	
VILLEGAS	RLA/8/005 (078)	RTC on ultrasonics (level II)	1985	PER
	RLA/8/005 (079)	RTC on welding inspection	1985	URU
	RLA/8/005 (084)	RTC on NDT in radiography (level II)	1985	ECU
ZAPATA PANIAGUA	RLA/8/005 (081)	RTC on NDT in thermography	1985	ARG
	RLA/8/005 (192)	Regional seminar on NDT of vibrations	1987	ARG
	RLA/8/005 (237)	National informative study tour on vibrations	1988	GFR
	RLA/8/013 (025)	RTC on vibration monitoring in rotating machinery	1989	MEX
ZAPATA SILES	INT/5/108 (001)	ITC on the induction and use of mutations in plant breeding	1987	AUS
	RLA/5/021 (002)	RWS on improvement of rice and other cereals through mutation breeding	1988	CZE COL
ZURITA NOVILLO	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
	RLA/8/013 (088)	RTC on computers in RT inspection	1990	MEX

PROJECTS COMPLETED IN BOLIVIA SINCE 1983  
(As of mid-April 1993)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS				COMPLETED
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING	
			M/M	\$	\$	\$	M/M	\$	\$	\$	
1983	BOL/0/005	Nuclear centre infrastructure	2/20	19 452	91 875	-	2/20	19 452	91 875	-	1992
1981	BOL/1/007	Secondary standards dosimetry laboratory	2/28	15 222	38 061	-	2/28	15 222	39 204	-	1988
1984	BOL/1/008	Accelerator feasibility study	0/16	3 520	6 900	-	0/16	3 679	5 684	-	1986
1981	BOL/2/008	X-ray fluorescence	0/14	3 290	189 373	-	0/14	3 995	189 880	-	1992
1982	BOL/2/009	Quality control of radiopharmaceuticals	2/03	11 340	42 300	-	2/02	10 304	38 141	-	1986
1979	BOL/3/008	Uranium prospecting	10/07	39 380	70 500	-	10/07	39 817	71 702	-	1984
1984	BOL/3/010	Uranium exploration planning	1/00	6 600	-	-	1/02	5 113	-	-	1984
1988	BOL/4/005	Nuclear electronics	1/07	9 990	43 612	-	1/07	8 427	43 569	-	1992
1981	BOL/5/004	Radioisotopes in agriculture	16/00	119 953	413 674	22 870	16/03	111 152	415 552	23 144	1992
1988	BOL/5/005	Nuclear techniques in soil science studies	1/04	9 070	83 254	-	1/04	9 686	84 471	-	1992

**PROJECTS COMPLETED IN BOLIVIA SINCE 1983  
(As of mid-April 1993)**

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS				COMPLETED
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING	
			M/M	\$	\$	\$	M/M	\$	\$	\$	
1979	BOL/6/010	Radiopharmaceuticals <sup>1</sup>	3/05	900	92 100	-	0/28	927	93 523	-	1984
1980	BOL/6/011	Radioimmunoassay	7/05	50 975	110 077	5 690	7/05	37 950	110 216	5 690	1992
1983	BOL/6/012	Computer gamma camera studies	2/22	19 605	19 810	-	2/22	19 605	19 810	-	1992
1984	BOL/6/013	Nuclear medicine centre upgrading	2/07	15 410	73 787	-	2/10	13 517	75 091	-	1992
1989	BOL/6/014	Nuclear medicine centre	-	-	236 800	-	-	-	235 594	-	1992
1987	BOL/8/004	Isotope hydrology	1/00	7 050	-	-	1/03	14 152	-	-	1987
1979	BOL/9/004	Radiation protection	3/00	14 689	42 929	-	2/29	14 689	42 929	-	1983
1980	BOL/9/005	Radiation protection	6/13	42 355	88 800	-	6/13	36 844	88 739	-	1992
	TOTAL	18 projects	64/01	388 801	1 643 852	28 560	62/03	364 531	1 645 980	28 834	

<sup>1/</sup> Experts include 3 man-months offered and 23 days provided cost-free by Argentina.

**OPERATIONAL PROJECTS IN BOLIVIA**  
(As of mid-April 1993)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS			
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING
			M/M	\$	\$	\$	M/M	\$	\$	\$
1991	BOL/5/006	Immunoassay in animal disease and reproduction studies	4/14	40 730	64 500	11 600	4/13	33 569	62 469	-
1991	BOL/5/007	Mutation breeding	4/00	37 200	55 000	-	0/19	2 505	16 686	-
1989	BOL/6/015	Improvement of nuclear medicine	1/06	19 475	116 624	-	1/06	22 457	116 476	-
1991	BOL/6/016	Upgrading of nuclear medicine services	5/09	47 940	245 362	49 438	5/12	44 175	239 612	44 887
1992	BOL/6/017	Brachytherapy service	1/00	9 300	40 700	-	-	-	-	-
1993	BOL/6/018	Upgrading of nuclear medicine services	10/00	110 700	453 722	25 000	-	-	-	-
1993	BOL/6/019	Radiotherapy	4/00	44 550	350 000	-	-	-	-	-
1993	BOL/6/020	National brachytherapy services	2/00	22 200	60 000	-	-	-	-	-
1989	BOL/9/006	Radiation protection (phase II)	5/05	44 450	128 110	31 300	4/26	34 366	123 718	17 856
	TOTAL	9 projects	37/04	376 545	1 514 018	117 338	16/16	137 072	558 961	62 743

Footnote-a/ projects not yet upgraded:  
BOL/8/005 Hydrological studies of lake Titicaca

**COUNTERPART INSTITUTIONS IN BOLIVIA (I)**

(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>GENERAL ATOMIC ENERGY DEVELOPMENT</u>		
BOL/0/005	Bolivian Institute for Nuclear Science and Technology, Viacha Nuclear Research Centre, Viacha	RONDON ARAMAYO
<u>NUCLEAR PHYSICS AND CHEMISTRY</u>		
BOL/1/007	Bolivian Institute for Nuclear Science and Technology, Department of Radiation Protection, La Paz	SANCHEZ-GUTIERREZ
BOL/1/008	Bolivian Institute for Nuclear Science and Technology, Viacha Nuclear Research Centre, Viacha	RONDON ARAMAYO CHAVEZ RIOS
BOL/2/008	Bolivian Institute for Nuclear Science and Technology, Viacha Nuclear Research Centre, Viacha	ALVAREZ APAZA
BOL/2/009	Bolivian Institute for Nuclear Science and Technology, Nuclear Medicine Centre, Division of Radiopharmacology, La Paz	CASANOVA JURADO
<u>NUCLEAR RAW MATERIALS</u>		
BOL/3/008	Bolivian Institute for Nuclear Science and Technology, Department of Raw Materials, La Paz	QUIROGA GARCIA ROCHA HERRERA
BOL/3/010	1. Bolivian Geological Service, La Paz 2. Bolivian Institute for Mining and Metallurgical Research, La Paz	- -



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

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>NUCLEAR ENGINEERING AND TECHNOLOGY</u>		
BOL/4/005	Bolivian Institute for Nuclear Science and Technology, La Paz	APARICIO COLLAZOS LUNA AGUIRRE
<u>AGRICULTURE</u>		
BOL/5/004	Bolivian Institute for Nuclear Science and Technology, Division of Isotope Applications, La Paz	PASCUALI CABRERA ORSAG CESPEDDES
BOL/5/005	1. Bolivian Institute for Nuclear Science and Technology, Division of Isotope Applications, La Paz 2. Ministry of Rural and Agricultural Affairs, La Paz	PASCUALI CABRERA ORSAG CESPEDDES -
BOL/5/006	1. Technical University of Oruro, Research and Extension Direction, Oruro 2. Veterinary Research and Diagnostics Laboratory, Santa Cruz	SEMPERTEGUI GONZALES  MENDEZ
BOL/5/007	1. Bolivian Institute for Nuclear Science and Technology, La Paz 2. Technical University of Oruro, Research and Extension Direction, Oruro 3. Bolivian Institute of Agriculture and Stockbreeding Technology, La Paz	SILVA RAMOS  ZAPATA SILES -
<u>NUCLEAR MEDICINE</u>		
BOL/6/010	Bolivian Institute for Nuclear Science and Technology, Nuclear Medicine Centre, Division of Radiopharmacology, La Paz	CASANOVA JURADO

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

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>NUCLEAR MEDICINE</u> (cont'd)		
BOL/6/011	Bolivian Institute for Nuclear Science and Technology, Nuclear Medicine Centre, La Paz	SALINAS LOPEZ TRISTAN PORCES
BOL/6/012	Bolivian Institute for Nuclear Science and Technology, Nuclear Medicine Centre, La Paz	CORDOVA ROCA
BOL/6/013	Ministry of Social Security and Public Health, Nuclear Medicine Centre, La Paz	BARRAGAN MARTINEZ CORDOVA ROCA
BOL/6/014	National Institute of Nuclear Medicine, La Paz	OLAECHEA TORO
BOL/6/015	National Institute of Nuclear Medicine, La Paz	OLAECHEA TORO
BOL/6/016	<ol style="list-style-type: none"> <li>1. National Institute of Nuclear Medicine, La Paz</li> <li>2. San Juan de Dios Hospital, Tarija</li> <li>3. Viedna Hospital, Nuclear Medicine Centre, Cochabamba</li> </ol>	BARRAGEN MARTINEZ  PIZARRO  SAAVEDRA
BOL/6/017	<ol style="list-style-type: none"> <li>1. Ministry of Social Security and Public Health, La Paz</li> <li>2. Hospital de Clinicas, La Paz</li> </ol>	CALDERON SAINZ  MEDINA
BOL/6/018	<ol style="list-style-type: none"> <li>1. National Institute of Nuclear Medicine, La Paz</li> <li>2. Hospital Santa Barbara, Nuclear Medicine Centre, Sucre</li> <li>3. Viedna Hospital, Nuclear Medicine Centre, Cochabamba</li> </ol>	BARRAGAN MARTINEZ  KAWANO  SAAVEDRA

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

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>NUCLEAR MEDICINE (cont'd)</u>		
BOL/6/019	1. Ministry of Social Security and Public Health, La Paz	CALDERON SAINZ
	2. Hospital Obrero No.2, Cochabamba	PENARANDA ROJAS
	3. Santa Cruz Oncological Institute, Santa Cruz	SERRATE
BOL/6/020	1. Ministry of Social Security and Public Health, La Paz	CALDERON SAINZ
	2. Hospital Obrero No.2, Cochabamba	PENARANDA ROJAS
	3. Santa Cruz Oncological Institute, Santa Cruz	SERRATE
<u>NUCLEAR TECHNIQUES IN HYDROLOGY</u>		
BOL/8/004	1. Bolivian Institute for Nuclear Science and Technology, La Paz	MENDEZ-FERRY LIZARAZU VALDIVIA
	2. Bolivian Geological Service, La Paz	-
<u>NUCLEAR SAFETY</u>		
BOL/9/004	Bolivian Institute for Nuclear Science and Technology, Department of Radiation Protection, Viacha	MARTINEZ PACHECO
BOL/9/005	Bolivian Institute for Nuclear Science and Technology, Department of Radiation Protection, La Paz	SANCHEZ-GUTIERREZ
BOL/9/006	1. Bolivian Institute for Nuclear Science and Technology, La Paz	MIRANDA-CUARDOS
	2. National Public Health Service, Occupational Medicine Department, La Paz	CORDOVA CARDOZO

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

**LA PAZ**

**Bolivian Institute for Nuclear Science and Technology**  
**La Paz**

BOL/4/005	Nuclear Electronics
BOL/5/007	Mutation Breeding
BOL/8/004	Isotope Hydrology
BOL/9/006	Radiation Protection (Phase II)

**Bolivian Institute for Nuclear Science and Technology**  
**Department of Radiation Protection**  
**La Paz**

BOL/1/007	Secondary Standards Dosimetry Laboratory
BOL/9/005	Radiation Protection

**Bolivian Institute for Nuclear Science and Technology**  
**Nuclear Medicine Centre**  
**La Paz**

BOL/6/011	Radioimmunoassay
BOL/6/012	Computer Gamma Camera Studies

**Bolivian Institute for Nuclear Science and Technology**  
**Nuclear Medicine Centre**  
**Division of Radiopharmacology**  
**La Paz**

BOL/2/009	Quality Control of Radiopharmaceuticals
BOL/6/010	Radiopharmaceuticals

**Bolivian Institute for Nuclear Science and Technology**  
**Department of Raw Materials**  
**La Paz**

BOL/3/008	Uranium Prospection
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**COUNTERPART INSTITUTIONS IN BOLIVIA (II)**  
(By Institute)

**LA PAZ** (cont'd)

**Bolivian Institute for Nuclear Science and Technology**  
**Division of Isotope Applications**  
**La Paz**

BOL/5/004      Radioisotopes in Agriculture  
BOL/5/005      Nuclear Techniques in Soil Science Studies

**Bolivian Geological Service**  
**La Paz**

BOL/3/010      Uranium Exploration Planning  
BOL/8/004      Isotope Hydrology

**Bolivian Institute for Mining and Metallurgical Research**  
**La Paz**

BOL/3/010      Uranium Exploration Planning

**Ministry of Rural and Agricultural Affairs**  
**La Paz**

BOL/5/005      Nuclear Techniques in Soil Science Studies

**Bolivian Institute of Agriculture and Stockbreeding Technology**  
**La Paz**

BOL/5/007      Mutation Breeding

**Ministry of Social Security and Public Health**  
**La Paz**

BOL/6/017      Brachytherapy Service  
BOL/6/019      Radiotherapy  
BOL/6/020      National Brachytherapy Services

**Ministry of Social Security and Public Health**  
**Nuclear Medicine Centre**  
**La Paz**

BOL/6/013      Nuclear Medicine Centre Upgrading

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

**LA PAZ** (cont'd)

**National Institute of Nuclear Medicine**  
**La Paz**

BOL/6/014	Nuclear Medicine Centre
BOL/6/015	Improvement of Nuclear Medicine
BOL/6/016	Upgrading of Nuclear Medicine Services
BOL/6/018	Upgrading of Nuclear Medicine Services

**Hospital de Clinicas**  
**La Paz**

BOL/6/017	Brachytherapy Service
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**National Public Health Service**  
**Occupational Medicine Department**  
**La Paz**

BOL/9/006	Radiation Protection (Phase II)
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**VIACHA**

**Bolivian Institute for Nuclear Science and Technology**  
**Viacha Nuclear Research Centre**  
**Viacha**

BOL/0/005	Nuclear Centre Infrastructure
BOL/1/008	Accelerator Feasibility Study
BOL/2/008	X-Ray Fluorescence

**Bolivian Institute for Nuclear Science and Technology**  
**Department of Radiation Protection**  
**Viacha**

BOL/9/004	Radiation Protection
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**COUNTERPART INSTITUTIONS IN BOLIVIA (II)**  
(By Institute)

**ORURO**

**Technical University of Oruro**  
**Research and Extension Direction**  
**Oruro**

BOL/5/006      Immunoassay in Animal Disease and Reproduction Studies  
BOL/5/007      Mutation Breeding

**SANTA CRUZ**

**Veterinary Research and Diagnostics Laboratory**  
**Santa Cruz**

BOL/5/006      Immunoassay in Animal Disease and Reproduction Studies

**Santa Cruz Oncological Institute**  
**Santa Cruz**

BOL/6/019      Radiotherapy  
BOL/6/020      National Brachytherapy Services

**COCHABAMBA**

**Vidna Hospital**  
**Nuclear Medicine Centre**  
**Cochabamba**

BOL/6/016      Upgrading of Nuclear Medicine Services  
BOL/6/018      Upgrading of Nuclear Medicine Services

**Hospital Obrero No.2**  
**Cochabamba**

BOL/6/019      Radiotherapy  
BOL/6/020      National Brachytherapy Services

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

**SUCRE**

**Hospital Santa Barbara**  
**Nuclear Medicine Centre**  
**Sucre**

BOL/6/018      Upgrading of Nuclear Medicine Services

**TARIJA**

**San Juan de Dios Hospital**  
**Tarija**

BOL/6/016      Upgrading of Nuclear Medicine Services



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

**LONG-TERM EXPERT ASSIGNMENTS**

**(1983 - 1993)**

**NONE**

**RESEARCH CONTRACTS/AGREEMENTS IN BOLIVIA SINCE 1983 <sup>1</sup>**  
**(As of mid-April 1993)**

Field of activity	No. of contracts/ agreements	Amount allocated \$
Nuclear physics	2	6 000
Nuclear chemistry	1	15 800
Nuclear engineering and technology	2	19 700
Nuclear techniques in agriculture	4	21 800
Nuclear medicine	2	14 500
Nuclear techniques in industry & hydrology	4	47 500
TOTAL	15	125 300

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<sup>1/</sup> New awards since 1983

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

Name	No. of assignments	Project(s)
ABELA GISBERT	7	BOL/6/011, BOL/6/016
ARANO ROSENDORN	2	INT/4/054, RLA/6/009
BARRAGAN MARINEZ	5	BOL/6/016, INT/0/053, RLA/6/006, RLA/6/017
BERDEJA AMATLLER	1	BOL/9/006
CHOQUE VICENTE	1	RLA/5/019
FERNANDEZ VILLA	1	RLA/8/005
JUAREZ	2	RLA/8/006
LEON	1	RLA/8/013
LIMACHI KANTUTA	2	RLA/8/013
LIZARAZU VALDIVIA	1	RLA/8/014
MENDEZ-FERRY	6	RLA/0/006
MIRANDA-CUADROS	2	BOL/9/006, RLA/9/009
OROPEZA MARTINEZ	1	RLA/8/005
ORSAG CESPEDDES	1	BOL/5/004
PASCUALI CABRERA	2	BOL/5/004, BOL/5/005
PRADO TAPIA	1	RLA/8/005
REYES BARBEITO	1	RLA/4/008
RONDON ARAMAYO	2	RLA/0/006
SAAVEDRA	1	VEN/3/005
SALINAS LOPEZ	8	BOL/6/011, BOL/6/016, RLA/6/011, RLA/6/016
VELASCO HURTADO	1	BOL/5/004
VELASQUEZ TAPIA	1	RLA/4/006
VILLEGAS	1	RLA/8/005
VILLEGAS IBANEZ	11	RLA/8/005, RLA/8/006, RLA/8/013
TOTAL	62	

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

Recipient country	No. of fellowships	No. of scientific visits	TOTAL <sup>1</sup>
COSTA RICA	-	4	4
ECUADOR	-	4	4
TOTAL	-	8	8

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

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

Course No.	Course Title	Partici- pants	Year
RLA/2/003 (011)	RWS on analytical applications of neutron generators and isotopic neutron sources	7	1991
RLA/6/016 (001)	RTC on optimization of radioimmunoassay methodology for neonatal hypothyroid screening	11	1991
RLA/8/005 (200)	Regional VIII meeting of the Working Group on non-destructive testing	16	1987
	TOTAL	34	

In addition, two national group training events were organized under project BOL/6/016, Upgrading of Nuclear Medicine Services, for a total of seven local participants.