



INTERNATIONAL ATOMIC ENERGY AGENCY



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IAEA-CPS-93/11
24 May 1993
Original: ENGLISH

COUNTRY PROGRAMME SUMMARY

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

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

PANAMA

INTRODUCTION	i
Assistance by Source	1
TACF Assistance	2
Extrabudgetary Assistance	3
TC Project Disbursements by Sector	4
Assistance by Type	5
Assistance by Component/Sector	6
Panama's Ranking as TC Recipient	7
Top Five Recipients	8-9
Financial Summary of Assistance	10
Projects by Sector (Allotments/Disbursements)	11
Projects by Sector (Completed & Operational)	12
TC Project Components by Sector	13
Agency Fellows	14
Long-term Fellowships	15
Fellows Holding More than One Award	16
Training Course Participants	17
Multiple Participants in Training Courses	18
Projects Completed	19
Operational Projects	20
Counterpart Institutions (by Project)	21-23
Counterpart Institutions (by Institute)	24-25
Long-Term Assignments	26
Research Contracts/Agreements	27
Panamanian Experts or Lecturers	28
Fellowships and Scientific Visits Hosted	39
Regional/Interregional Courses Hosted	30

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B

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E

OF

C

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INTRODUCTION

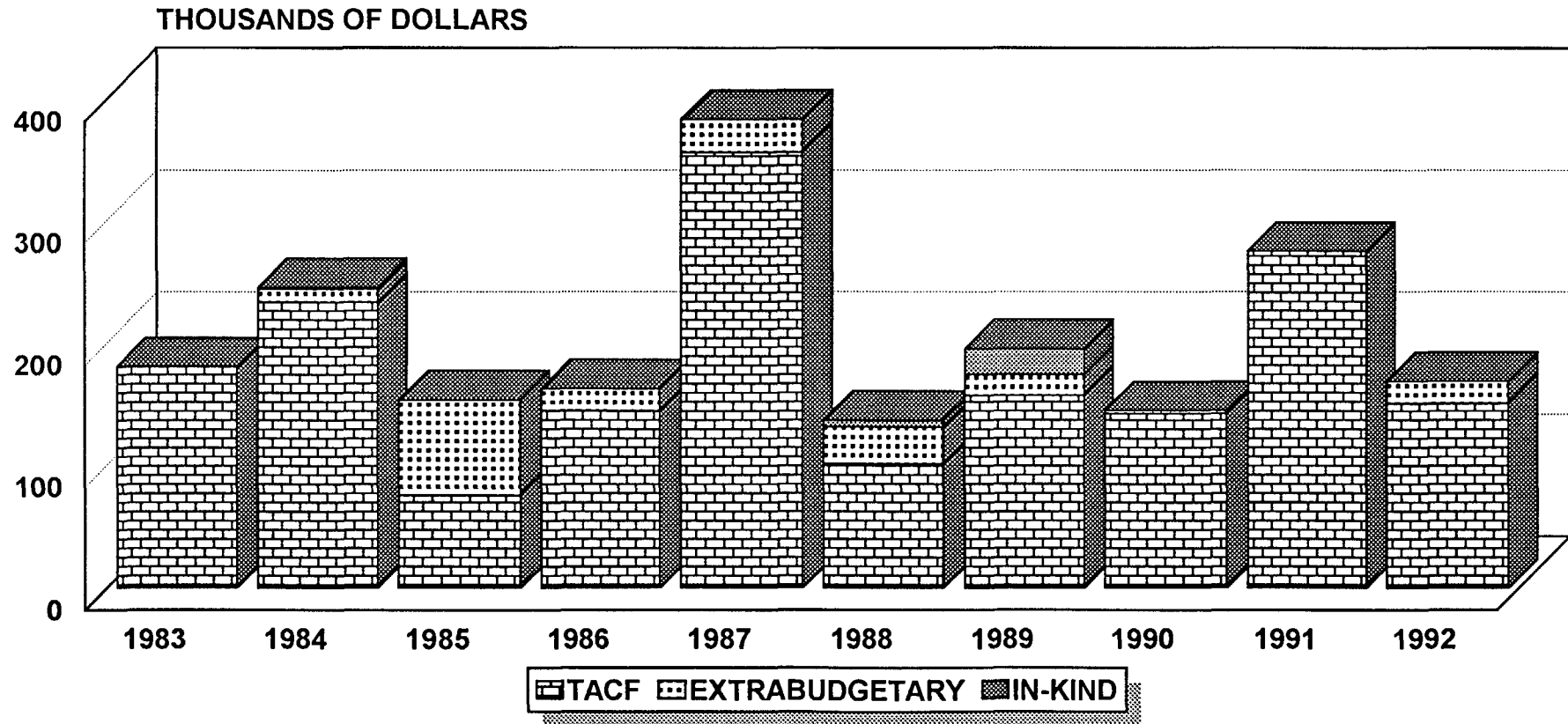
The country programme summary reported on here is one in the series of such studies being undertaken of the Agency's TC programme with Member States. With \$2.4 million of Agency support received, Panama ranks 56th among all recipients of technical assistance during the period 1958 through 1992.

Over two-thirds of the assistance received during the past ten years has been provided in the form of equipment (71%), followed by expert services (19%) and training (10%). The best part of the resources was made available through the TACF (89%), the rest was provided through extrabudgetary contributions (10%) and in kind (1%).

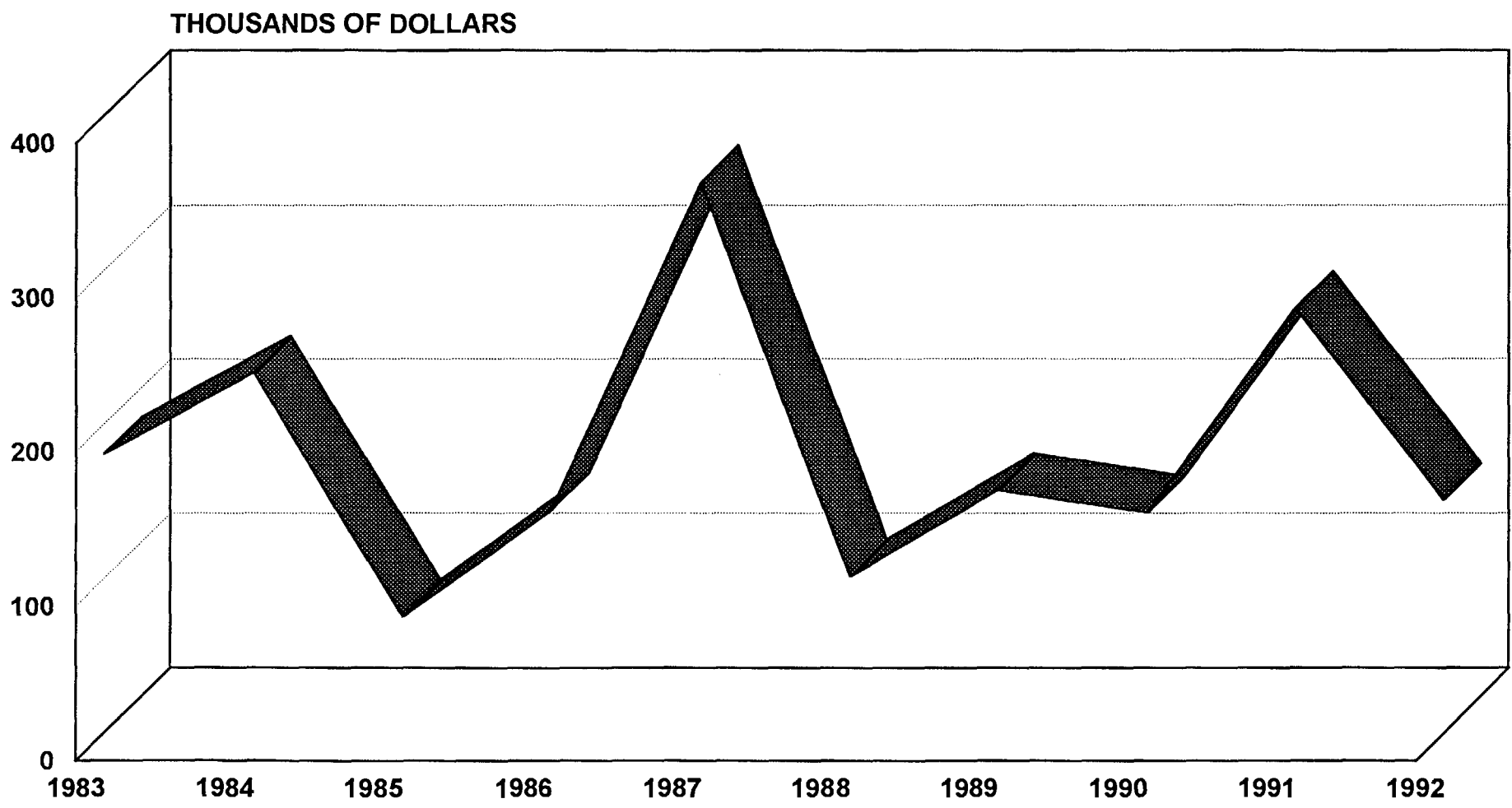
With regard to total disbursements -- by sector -- under those projects that were operational during the period 1983 through mid-May 1993, the three largest sectors have been agriculture (33%), nuclear medicine (26%) and nuclear physics and chemistry (25%). Significantly smaller shares went to nuclear safety (8%) and nuclear raw materials (7%).

During the past ten years, the country has provided experts and training course lecturers for a total of ten assignments, and has hosted one Agency fellowship.

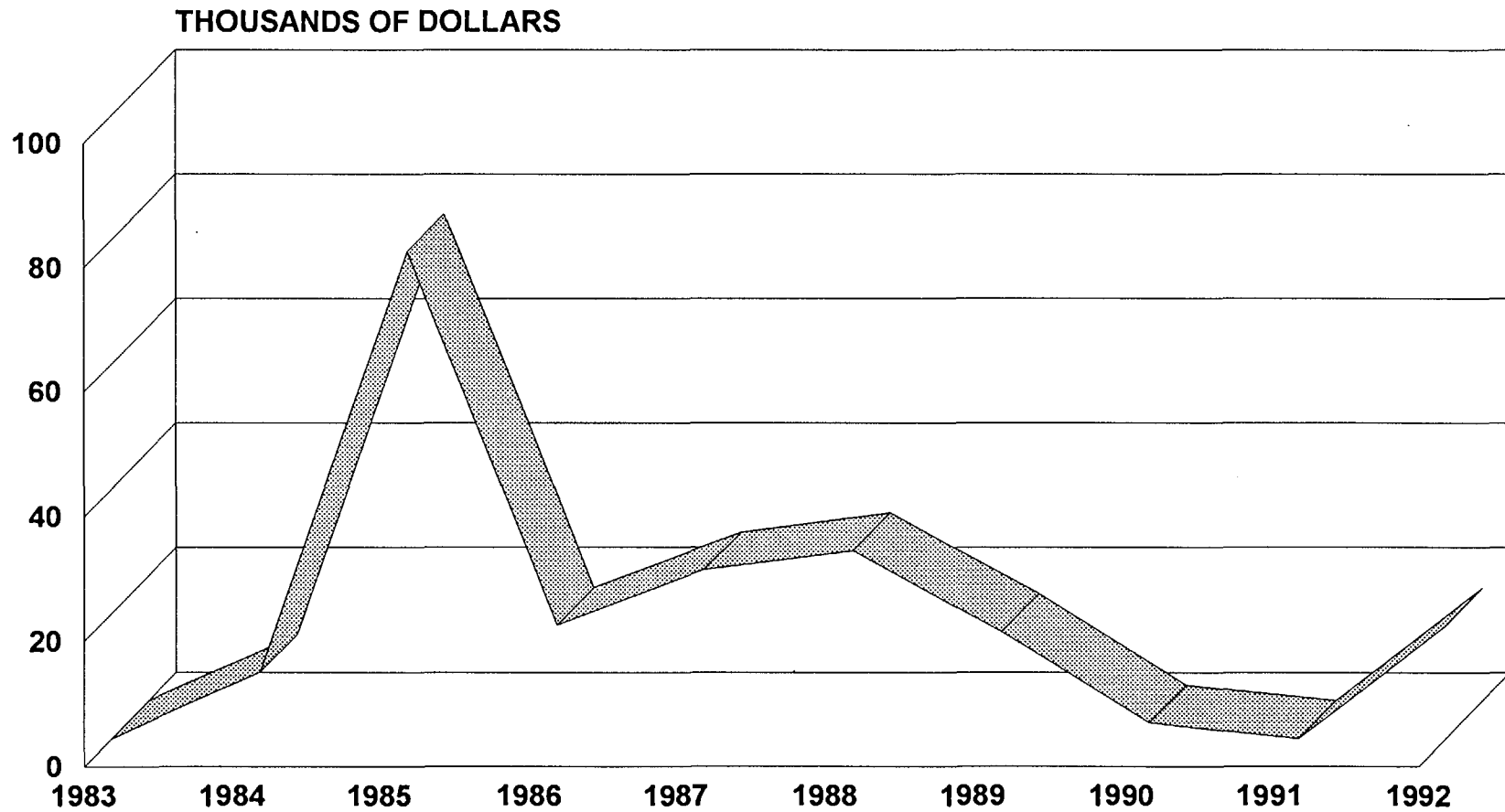
ASSISTANCE PROVIDED BY THE AGENCY TO PANAMA BY SOURCE (1983 - 1992)



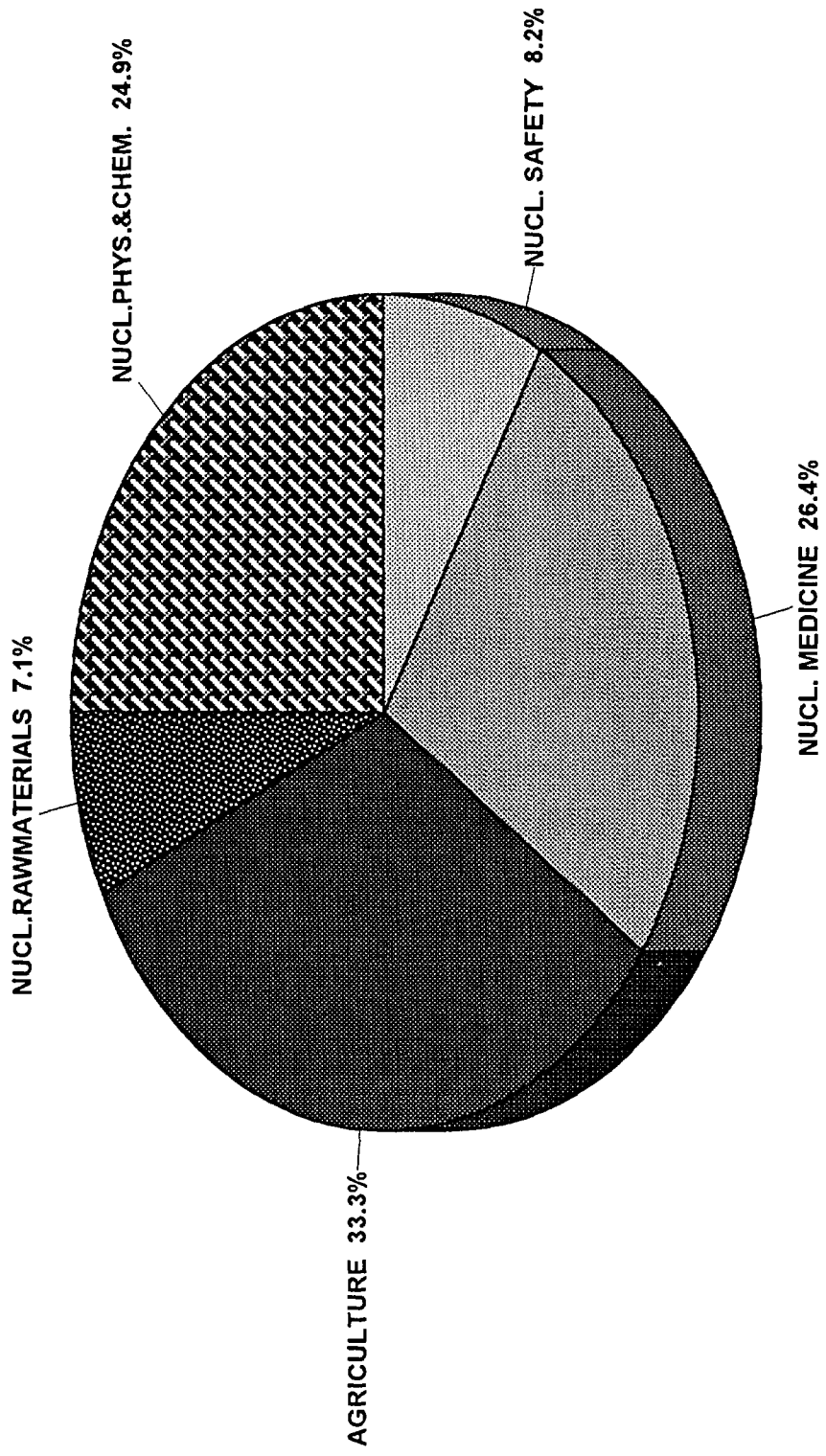
TACF ASSISTANCE PROVIDED TO PANAMA (1983 - 1992)



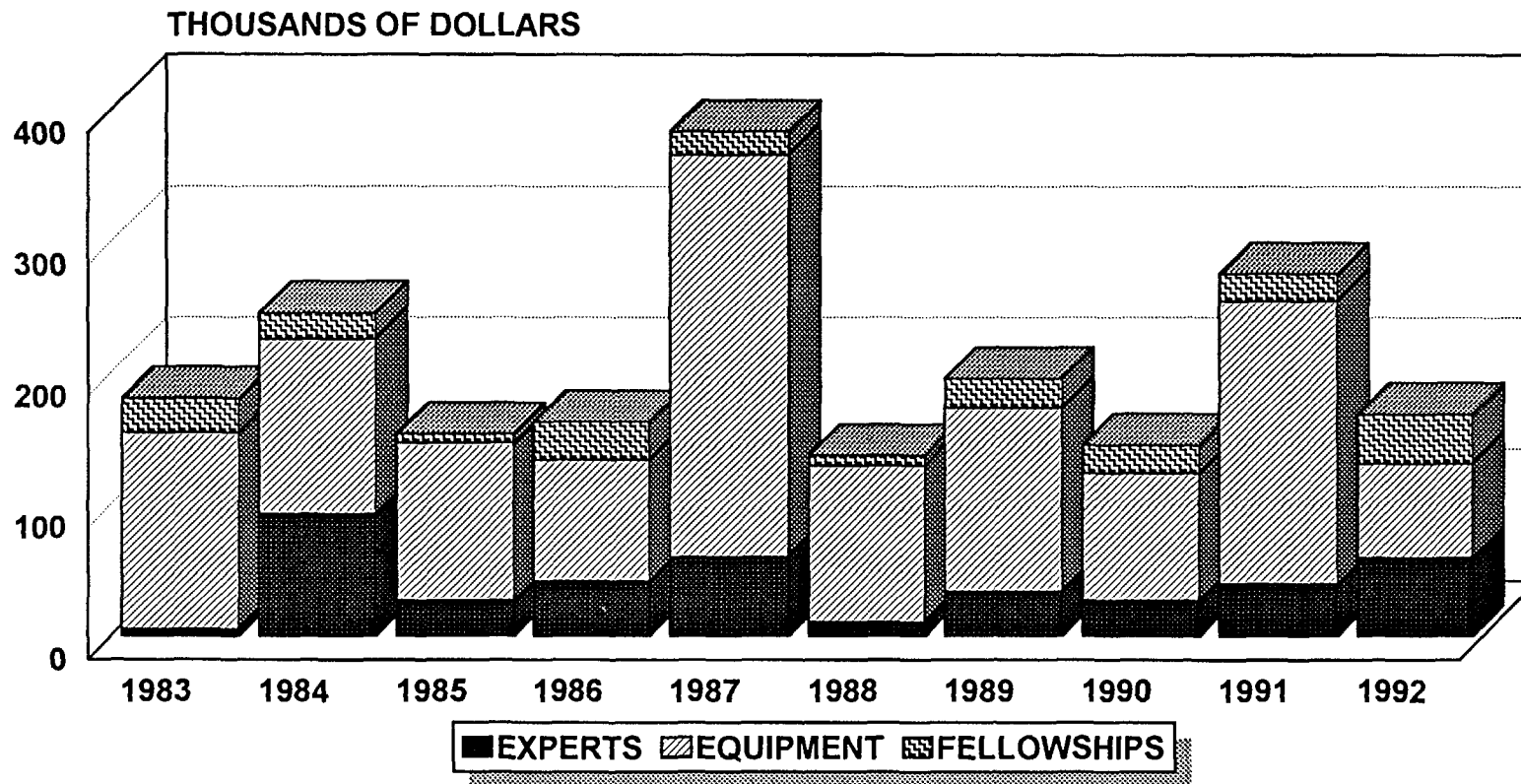
EXTRABUDGETARY ASSISTANCE PROVIDED TO PANAMA (1983 - 1992)



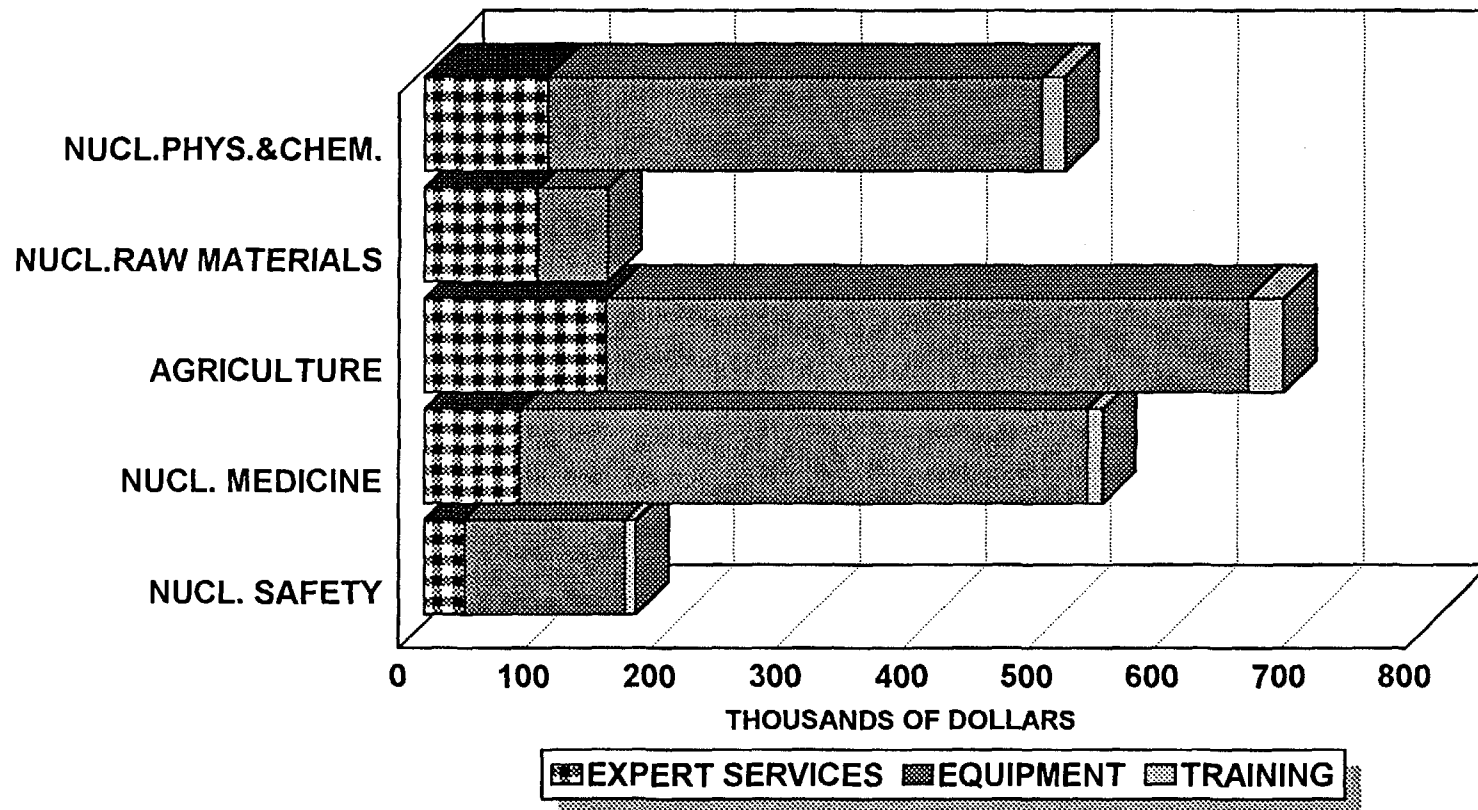
TC PROJECT DISBURSEMENTS IN PANAMA BY SECTOR (1983 - 1993)



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



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



THE AGENCY'S TECHNICAL CO-OPERATION PROGRAMME WITH PANAMA

ALL SOURCES

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

YEAR	RANKING	AMOUNT
1958-82	70 th	329.8
1983	45 th	180.4
1984	31 st	245.3
1985	50 th	153.0
1986	50 th	162.2
1987	34 th	383.3
1988	55 th	136.5
1989	52 nd	195.1
1990	61 st	144.5
1991	43 rd	275.0
1992	62 nd	168.2
1958-92	56 th	2373.3

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

ALL SOURCES

Year	I	II	III	IV	V	PANAMA
1958-82	BRA 8507.3	IND 6849.4	ARG 5528.2	PAK 5492.7	CHI 5240.1	70 th - 329.8
1983	EGY 2077.9	PER 1116.8	VIE 948.1	PHI 778.6	IRA 722.1	45 th - 180.4
1984	EGY 3625.9	PER 1750.4	THA 1094.6	CUB 1028.7	PHI 881.2	31 st - 245.3
1985	EGY 2494.8	PER 1120.7	THA 1117.4	BGD 1068.2	PHI 963.7	50 th - 153.0
1986	EGY 2317.0	BRA 1452.9	THA 1169.4	POL 1050.3	BGD 896.4	50 th - 162.2
1987	HUN 3452.6	EGY 1775.4	THA 1742.4	INS 1312.5	YUG 1223.2	34 th - 383.3
1988	EGY 1486.9	BUL 1361.6	CPR 1278.5	THA 1158.7	BRA 1096.7	55 th - 136.5
1989	CPR 1542.3	EGY 1505.1	THA 1205.3	BRA 1096.5	INS 999.1	52 nd - 195.1
1990	POL 2308.1	CPR 2005.0	VIE 1589.2	INS 1412.6	BRA 1229.1	61 st - 144.5
1991	INS 1305.2	CPR 975.0	EGY 959.8	BRA 951.2	BUL 934.7	43 rd - 275.0
1992	EGY 1586.3	INS 1342.1	CPR 1328.8	MEX 1127.8	POL 1036.4	62 nd - 168.2
1958-92	EGY 23808.6	BRA 17736.8	THA 15332.0	INS 13725.9	PER 13129.6	56 th - 2373.3

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

TECHNICAL ASSISTANCE AND CO-OPERATION FUND

Year	I	II	III	IV	V	PANAMA
1958-82	HUN 2971.7	EGY 2405.8	PAK 2340.5	THA 2000.3	BRA 1983.5	68 th - 201.9
1983	EGY 1049.4	VIE 897.4	POL 667.8	PAK 498.5	PHI 430.0	28 th - 180.4
1984	EGY 1197.2	CUB 655.6	ECU 565.6	BGD 506.3	BUL 472.4	27 th - 233.2
1985	BGD 991.8	VIE 745.0	THA 708.7	BRA 571.8	POR 538.7	61 st - 74.9
1986	BRA 1381.8	THA 871.9	POL 833.5	BGD 823.9	SYR 751.8	51 st - 144.1
1987	HUN 3305.2	DRK 986.8	BUL 888.5	INS 885.8	EGY 878.9	27 th - 356.4
1988	BUL 1195.6	PER 856.5	EGY 768.6	INS 751.7	MAL 656.0	57 th - 100.9
1989	EGY 990.9	CPR 868.2	POR 769.6	CHI 756.9	MAL 619.4	53 rd - 156.8
1990	POL 1562.3	VIE 1518.8	DRK 1156.2	IRA 958.0	YUG 933.4	60 th - 142.0
1991	BUL 893.1	PAK 868.8	INS 855.1	VIE 817.6	CPR 814.5	39 th - 275.0
1992	EGY 1255.7	CPR 1009.0	VIE 872.8	INS 826.6	IRA 795.5	59 th - 150.2
1958-92	EGY 10847.0	HUN 8743.7	POL 8486.4	VIE 8199.9	PAK 8115.6	53 rd - 2015.8

ASSISTANCE PROVIDED BY THE AGENCY TO PANAMA

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	5.3	148.9	26.2	-	-	180.4	-	136.7	43.7	-	-	180.4
1984	92.3	133.2	19.8	-	-	245.3	-	227.8	5.4	10.6	1.5	245.3
1985	26.7	119.8	6.5	-	-	153.0	-	74.9	-	78.1	-	153.0
1986	41.2	92.2	28.8	-	-	162.2	-	144.1	-	18.1	-	162.2
1987	59.8	305.8	17.7	-	-	383.3	-	356.4	-	26.9	-	383.3
1988	10.5	118.6	7.4	-	-	136.5	-	100.5	0.4	30.0	5.6	136.5
1989	33.9	139.3	21.9	-	-	195.1	-	153.3	3.5	17.1	21.2	195.1
1990	26.9	96.5	21.1	-	-	144.5	-	142.0	-	2.5	-	144.5
1991	39.4	214.9	20.7	-	-	275.0	-	275.0	-	-	-	275.0
1992	59.3	71.2	37.7	-	-	168.2	-	150.2	-	18.0	-	168.2
1983-92	395.3	1 440.4	207.8	-	-	2 043.5	-	1 760.9	53.0	201.3	28.3	2 043.5

TECHNICAL CO-OPERATION PROJECTS IN PANAMA
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	3	512 890	19.7	509 658	24.9
Nuclear raw materials	1	169 700	6.5	146 021	7.1
Nuclear engineering and technology	-	-	-	-	-
Nuclear techniques in agriculture	6	994 968	38.2	682 181	33.4
Nuclear medicine	3	552 479	21.2	539 949	26.4
Nuclear techniques in biology	-	-	-	-	-
Nuclear techniques in industry and hydrology	-	-	-	-	-
Nuclear safety	3	375 085	14.4	168 437	8.2
TOTAL	16	2 605 122	100.0	2 046 246	100.0

TECHNICAL CO-OPERATION PROJECTS IN PANAMA
 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	2	403 440	407 004
Nuclear raw materials	1	169 700	146 021
Nuclear engineering and technology	-	-	-
Nuclear techniques in agriculture	3	481 068	482 233
Nuclear medicine	1	353 497	357 704
Nuclear techniques in biology	-	-	-
Nuclear techniques in industry & hydrology	-	-	-
Nuclear safety	1	90 135	91 770
TOTAL	8	1 497 840	1 484 732
<u>Operational projects</u>			
General atomic energy development	-	-	-
Nuclear physics and chemistry	1	109 450	102 654
Nuclear raw materials	-	-	-
Nuclear engineering and technology	-	-	-
Nuclear techniques in agriculture	3	513 900	199 948
Nuclear medicine	2	198 982	182 245
Nuclear techniques in biology	-	-	-
Nuclear techniques in industry & hydrology	-	-	-
Nuclear safety	2	284 950	76 667
TOTAL	8	1 107 282	561 514

EXPERT SERVICES, EQUIPMENT AND PROJECT-FUNDED TRAINING PROVIDED TO PANAMA, 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	13/24	96 425	390 635	25 830	13/17	98 020	392 837	18 801
Nuclear raw materials	18/15	113 700	56 000	-	18/15	89 764	56 257	-
Nuclear engineering and technology	-	-	-	-	-	-	-	-
Nuclear techniques in agriculture	28/11	216 193	678 625	100 150	19/03	144 654	510 269	27 258
Nuclear medicine	8/16	66 998	468 181	17 300	8/20	76 115	451 726	12 108
Nuclear techniques in biology	-	-	-	-	-	-	-	-
Nuclear techniques in industry & hydrology	-	-	-	-	-	-	-	-
Nuclear safety	6/20	61 060	275 705	38 320	3/20	32 124	127 772	8 541
TOTAL	75/26	554 376	1 869 146	181 600	63/15	440 677	1 538 861	66 708

AGENCY FELLOWS FROM PANAMA

1983 - 1993¹
(As of mid-May 1993)

Sector	No. of fellowships	No. of months/days	Host countries
General atomic energy development	1	0/09	COL, PER, IAEA
Nuclear physics	5	5/09	CHI, ELS, FRA, NIC
Nuclear chemistry	6	14/07	ARG, AUS, DEN, HUN, SWE, VEN, IAEA
Nuclear raw materials	3	9/16	COS, IAEA
Nuclear engineering and technology	2	8/06	MEX, IAEA
Nuclear techniques in agriculture	8	24/02	BRA, CAN, CZE, GER, PER, USA, IAEA
Nuclear medicine	5	35/08	BRA, CAN, COL, USA
Nuclear techniques in biology	-	-	-
Nuclear techniques in industry and hydrology	-	-	-
Nuclear safety	4	10/02	BRA, MEX, USA
TOTAL	34	106/29	

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

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

Name	Field of study	Host country	Date	Duration	Project
CHEN LEE	Nuclear medicine	CAN	Oct.86 - Sep.87	12/00	PAN/6/005
NUNEZ	Radiopharmacy	USA	Aug.82 - Aug.84	24/02	PAN/2/003

PANAMANIAN 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
FERNANDEZ	1. Radiometry and dosimetry 2. Analytical chemistry	FRA AUS	Jan.87 - Apr.87 Oct.92 - Nov.92	2/29 1/03	PAN/2/004 PAN/2/005
GARCIA DE SALDANA	1. Nuclear radiochemistry 2. Analytical chemistry	ARG VEN	Mar.86 - Sep.86 May 92 - Jul.92	5/07 2/01	PAN/2/004 PAN/2/005
JAEN OSORIO	1. Moessbauer spectroscopy 2. Analytical chemistry	CHI HUN	Nov.85 Sep.88 - Dec.88	0/12 3/03	RLA/0/006 PAN/2/004
MATURELL GAMIZ	1. General nuclear physics 2. Nuclear instrumentation, electronics and reactor control	NIC MEX	Jul.83 Sep.92 - Jan.93	0/19 4/00	RLA/1/004 PAN/2/005
SCOTLAND WILTSHIRE	1. Radiation protection 2. Radiation protection	USA BRA	May 90 - Jun.90 Oct.91 - Dec.91	0/10 2/23	RLA/0/011 PAN/9/004

AGENCY TRAINING COURSES WITH PANAMANIAN PARTICIPATION

1983 - 1993
(As of mid-May 1993)

Field	Number of participants	Number of courses
General atomic energy development	7	6
Nuclear physics	5	3
Nuclear chemistry	8	7
Nuclear raw materials	-	-
Nuclear engineering and technology	4	4
Nuclear techniques in agriculture	13	12
Nuclear medicine	5	4
Nuclear techniques in biology	-	-
Nuclear techniques in industry & hydrology	1	1
Nuclear safety	14	12
TOTAL	57	49

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

Name	Course No.	Course title	Year	Location
BARRERA FERNANDEZ	RLA/5/017 (001)	RTC on radioimmunoassay methods in animal reproduction	1984	PER
	RLA/5/028 (001)	RWS on the utilization of immunoassay for the diagnosis and epidemiology of animal diseases	1991	BRA
	RLA/5/028 (002)	RTC on animal health	1992	COL
DEL ROSARIO DE INFANTE	RLA/2/005 (001)	RTC on determination of radionuclides in food and environmental samples	1989	BRA
	RLA/9/011 (007)	RTC on measurement of environmental samples	1992	ARG
DONALDSON	RLA/9/011 (006)	RTC on establishment of a programme on occupational monitoring	1992	BRA
	RLA/9/015 (001)	RTC on safety and regulation of radiation sources	1993	MEX
GIBBS COUSIN	INT/9/045 (001)	ITC for radiation protection officers in regulatory bodies	1984	GDR
	INT/9/129 (001)	ITC on planning, organization and implementation of radiation protection on a national level	1992	USA
	RLA/9/009 (041)	RTC on clinical and radiation protection dosimetry	1989	BRA
LEONE KAM	INT/1/026 (001)	ITC on radiochemistry and nuclear analytical techniques	1984	FRA
	RLA/2/003 (005)	RTC on application of nuclear analytical techniques in fossil energy resources	1990	GFR
	RLA/2/004 (001)	RTC on nuclear analytical techniques in the agroindustry and food analysis	1988	MEX BRA
MEJIA RODRIGUEZ	INT/1/029 (001)	ITC on dosimetry	1984	BRA
	RLA/9/011 (010)	RTC on clinical dosimetry and radiological protection	1993	MEX
PALMA PEREZ	RLA/4/006 (021)	RWS on maintenance of gamma cameras	1990	COL
	RLA/6/009 (001)	RTC on the maintenance of nuclear medical instruments	1985	COS
TERAN CARLYSLE	RLA/9/011 (004)	RTC on thermoluminescence applied to dosimetry	1991	ECU
	RLA/9/011 (006)	RTC on establishment of a programme on occupational monitoring	1992	BRA

PROJECTS COMPLETED IN PANAMA 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	PAN/2/003	Radiopharmaceuticals	6/20	41 700	154 928	-	6/20	40 709	158 969	-	1988
1985	PAN/2/004	Nuclear analytical techniques	5/04	36 575	164 207	6 030	5/04	36 994	164 302	6 030	1990
1982	PAN/3/002	Radioactive minerals prospection	18/15	113 700	56 000	-	18/15	89 764	56 257	-	1985
1981	PAN/5/003	Radioisotopes in agriculture	8/01	46 538	137 630	-	8/01	45 843	130 827	-	1990
1983	PAN/5/004	Genetic improvement of bananas, plantains and sugar-cane	4/10	17 350	198 295	-	2/10	19 530	198 350	-	1991
1987	PAN/5/006	Radioimmunoassay in reproductive efficiency studies	3/00	22 255	59 000	-	3/10	28 362	59 321	-	1990
1982	PAN/6/005	Nuclear medicine	4/12	30 688	322 809	-	4/16	35 387	322 317	-	1990
1987	PAN/9/003	Film dosimetry	2/09	16 250	73 885	-	2/09	17 885	73 885	-	1991
	TOTAL	8 projects	52/11	325 056	1 166 754	6 030	50/25	314 474	1 164 228	6 030	

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

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS			
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING
			M/M	\$	\$	\$	M/M	\$	\$	\$
1991	PAN/2/005	Radioanalytical laboratory	2/00	18 150	71 500	19 800	1/23	20 317	69 566	12 771
1989	PAN/5/007	Pesticide residues in food and agriculture	5/00	42 600	105 700	28 600	5/02	47 091	103 917	27 258
1993	PAN/5/008	Bound pesticide residues: impact in food and environment	4/00	42 900	130 000	52 200	-	-	17 550	-
1993	PAN/5/009	Immunoassay in animal health	4/00	44 550	48 000	19 350	0/10	3 828	304	-
1990	PAN/6/006	Use of DNA probes in diagnosis of tropical diseases	1/26	15 680	59 772	17 300	1/26	15 551	59 355	12 108
1991	PAN/6/007	Upgrading in nuclear medicine	2/08	20 630	85 600	-	2/08	25 177	70 054	-
1991	PAN/9/004	Monitoring and control of radioactive contamination	1/11	12 260	51 820	10 870	1/11	14 239	53 887	8 541
1993	PAN/9/005	Environmental monitoring	3/00	32 550	150 000	27 450	-	-	-	-
	TOTAL	8 projects	23/15	229 320	702 392	175 570	12/20	126 203	374 633	60 678

Footnote-a/ project not yet upgraded:

PAN/5/010 Improvement of crops through mutation breeding

COUNTERPART INSTITUTIONS IN PANAMA (I)
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>NUCLEAR PHYSICS AND CHEMISTRY</u>		
PAN/2/003	University of Panama, Research and Teaching Department, Specialized Analysis Institute, Panama City	NUNEZ
PAN/2/004	University of Panama, Faculty of Natural and Exact Sciences, Research Centre for Nuclear Techniques, Panama City	RAMON GONZALEZ
PAN/2/005	University of Panama, Faculty of Natural and Exact Sciences, Research Centre for Nuclear Techniques, Panama City	RAMON GONZALEZ FERNANDEZ
<u>NUCLEAR RAW MATERIALS</u>		
PAN/3/002	Ministry of Commerce and Industry, Office of Mineral Resources, Panama City	ESQUIVEL K.
<u>AGRICULTURE</u>		
PAN/5/003	University of Panama, Faculty of Agriculture and Livestock Breeding Sciences, Panama City	TEJEIRA AROSEMENA
PAN/5/004	Agricultural and Stockbreeding Research Institute, Panama City	SILVERA
PAN/5/006	1. University of Panama, Faculty of Natural and Exact Sciences, Research Centre for Biology of Animal Reproduction, Panama City 2. Ministry of Agriculture, Panama City	DE GRACIA SCANAPIECO CARRIZO

COUNTERPART INSTITUTIONS IN PANAMA (I)

(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>AGRICULTURE (cont'd)</u>		
PAN/5/007	Agricultural and Stockbreeding Research Institute, Panama City	ESPINOSA GONZALES RAMON GONZALEZ
PAN/5/008	Agricultural and Stockbreeding Research Institute, Panama City	ESPINOSA GONZALES CEBALLOS ALFONSO
PAN/5/009	1. University of Panama, Panama City 2. Ministry of Agriculture, Panama City 3. Agricultural and Stockbreeding Research Institute, Panama City	JARAMILLO ESPANO CLAVEL GONZALEZ VEGA ALBA CABALLERO
<u>NUCLEAR MEDICINE</u>		
PAN/6/005	Ministry of Health, Santo Tomas Hospital, Nuclear Medicine Service, Panama City	HERRERA CASTILLO
PAN/6/006	Centre for Research and Diagnostics of Tropical Diseases, Panama City	DE CARREIRA PASCALE
PAN/6/007	Ministry of Health, Santo Tomas Hospital, Nuclear Medicine Service, Panama City	HERRERA CASTILLO QUINTERO CORTES
<u>NUCLEAR SAFETY</u>		
PAN/9/003	Social Security Fund, Metropolitan Hospital Complex, Service of Radiological Protection, Panama City	GIBBS COUSIN
PAN/9/004	Social Security Fund, Metropolitan Hospital Complex, Service of Radiological Protection, Panama City	GIBBS COUSIN SCOTLAND WILTSHIRE

COUNTERPART INSTITUTIONS IN PANAMA (I)
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>NUCLEAR SAFETY</u> (cont'd)		
PAN/9/005	Social Security Fund, Metropolitan Hospital Complex, Service of Radiological Protection, Panama City	GIBBS COUSIN HENRIQUEZ

COUNTERPART INSTITUTIONS IN PANAMA (II)
(By Institute)

PANAMA CITY

Ministry of Commerce and Industry
Office of Mineral Resources
Panama City

PAN/3/002 Radioactive Minerals Prospection

Ministry of Agriculture
Panama City

PAN/5/006 Radioimmunoassay in Reproductive Efficiency Studies
PAN/5/009 Immunoassay in Animal Health

Ministry of Health
Santo Tomas Hospital
Nuclear Medicine Service
Panama City

PAN/6/005 Nuclear Medicine
PAN/6/007 Upgrading in Nuclear Medicine

University of Panama
Panama City

PAN/5/009 Immunoassay in Animal Health

University of Panama
Research and Teaching Department
Specialized Analysis Institute
Panama City

PAN/2/003 Radiopharmaceuticals

University of Panama
Faculty of Natural and Exact Sciences
Research Centre for Nuclear Techniques
Panama City

PAN/2/004 Nuclear Analytical Techniques
PAN/2/005 Radioanalytical Laboratory

COUNTERPART INSTITUTIONS IN PANAMA (II)
(By Institute)

PANAMA CITY (cont'd)

University of Panama
Faculty of Agriculture and Livestock Breeding Sciences
Panama City

PAN/5/003 Radioisotopes in Agriculture

University of Panama
Faculty of Natural and Exact Sciences
Research Centre for Biology of Animal Reproduction
Panama City

PAN/5/006 Radioimmunoassay in Reproductive Efficiency Studies

Agricultural and Stockbreeding Research Institute
Panama City

PAN/5/004 Genetic Improvement of Bananas, Plantains and Sugar-Cane
PAN/5/007 Pesticide Residues in Food and Agriculture
PAN/5/008 Bound Pesticide Residues: Impact in Food and Environment
PAN/5/009 Immunoassay in Animal Health

Centre for Research and Diagnostics of Tropical Diseases
Panama City

PAN/6/006 Use of DNA Probes in Diagnosis of Tropical Diseases

Social Security Fund
Metropolitan Hospital Complex
Service of Radiological Protection
Panama City

PAN/9/003 Film Dosimetry
PAN/9/004 Monitoring and Control of Radioactive Contamination
PAN/9/005 Environmental Monitoring

THE AGENCY'S TECHNICAL CO-OPERATION PROGRAMME WITH

PANAMA

SINCE 1983

LONG-TERM EXPERT ASSIGNMENTS

Project PAN/3/002 Radioactive Minerals Prospection

- Task 03 - Reconnaissance Geochemical and Radiometry Survey

M.A. GAMBÁ (ARG)

Nov 83 - Nov 84

12 months

- To assist the Dirección General de Recursos Minerales (DGRM) del Ministerio de Comercio e Industrias (MCI) in the planning and the actual execution of co-ordinated reconnaissance of geological, geochemical (multi-element) and radiometric (including airborne) surveys over a 6000 km² area in the Cordillera Central of Panama (Serranía del Tabasará between Cañazas and Penonomé).

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

Field of activity	No. of contracts/ agreements	Amount allocated \$
Nuclear engineering and technology	1	5 000
Nuclear techniques in agriculture	7	79 300
TOTAL	8	84 300

^{1/} New awards since 1983

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

Name	No. of assignments	Project(s)
FLETCHER	1	PAN/9/004
GIBBS COUSIN	1	PAN/9/003
JEAN OSORIO	1	RLA/2/003
PERDOMO EHLERS	5	PER/5/012, PER/5/017, INT/0/048
SCOTLAND WILTSHIRE	1	RLA/9/011
TEJEIRA AROSEMENA	1	PAN/5/003
TOTAL	10	

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

Recipient country	No. of fellowships	No. of scientific visits	TOTAL ¹
ECUADOR	1	-	1
TOTAL	1	-	1

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

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

NONE