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INTERNATIONAL ATOMIC ENERGY AGENCY

IAEA-CPS-93/02
12 March 1993
Original: ENGLISH

COUNTRY PROGRAMME SUMMARY

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

1983 - 1993

COUNTRY PROGRAMME SUMMARIES**

DEPARTMENT OF TECHNICAL CO-OPERATION

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COUNTRY PROGRAMME SUMMARIES

EVALUATION SECTION

DEPARTMENT OF TECHNICAL CO-OPERATION

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BANGLADESH
1983 - 1993
COUNTRY PROGRAMME SUMMARIES**

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

BANGLADESH

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INTRODUCTION

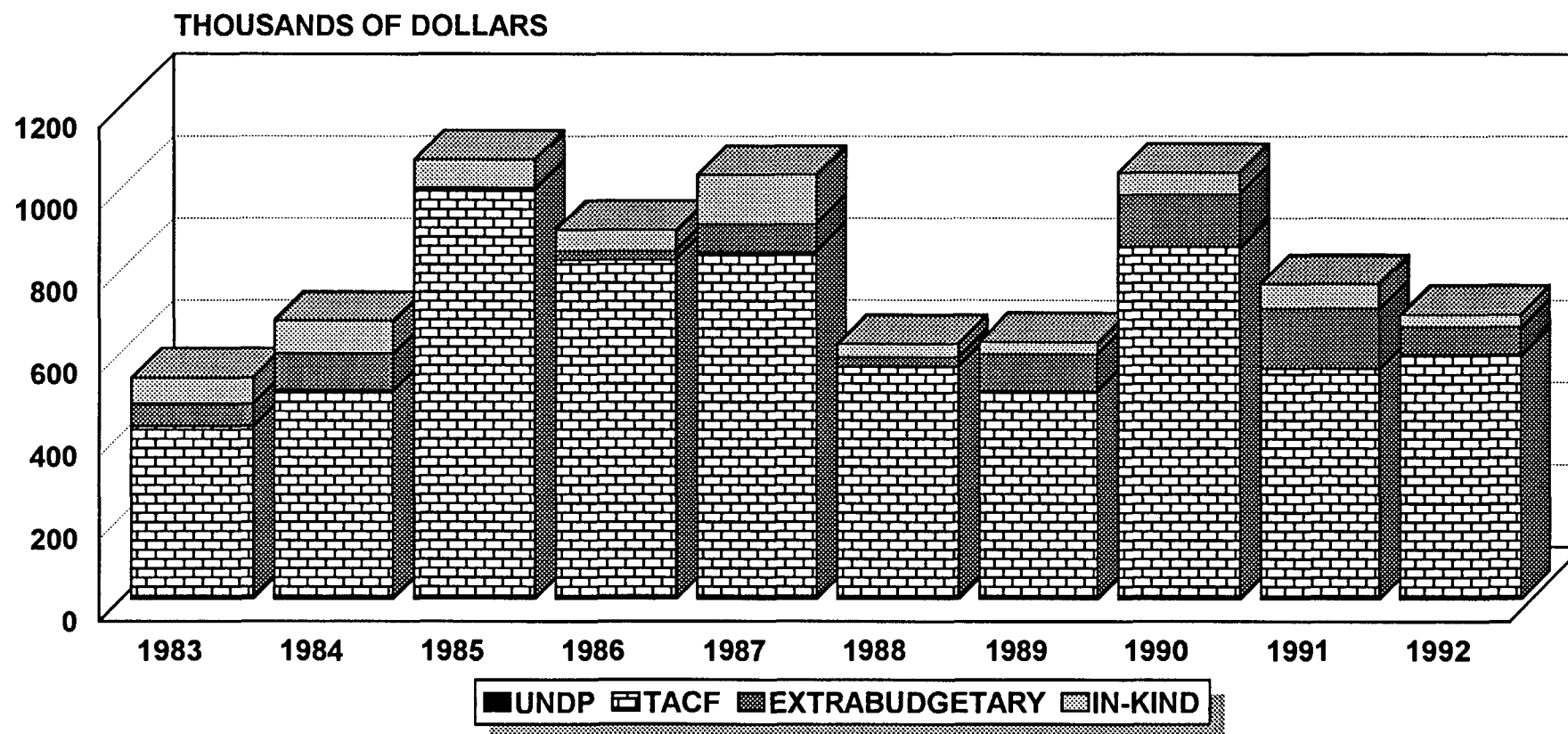
The country programme summary reported on here is one in the series of such studies being undertaken of the Agency's TC programme with Member States. With \$11.0 million of Agency support received, Bangladesh ranks 10th among all recipients of technical assistance during the period 1958 through 1992.

More than half of the assistance received during the past ten years has been provided in the form of equipment (62%), complemented by training (28%) and expert services (10%). The bulk of the resources was made available through the TACF (84%), using a significant amount of NCC (over \$1.4 million), while only small shares were provided in kind (7%) and through extrabudgetary contributions (9%).

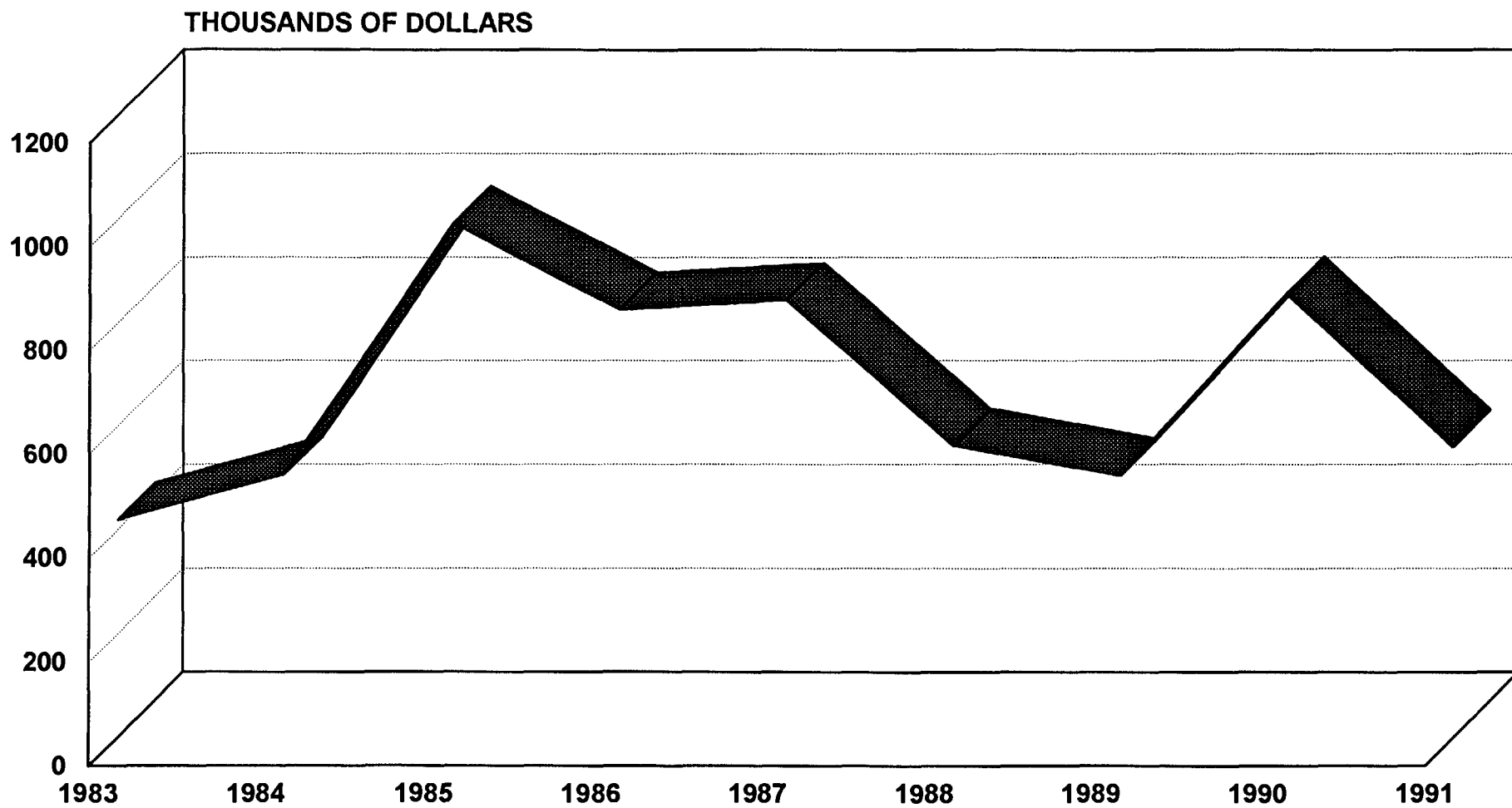
With regard to total disbursements -- by sector -- under those projects that were operational during the period 1983 through 1 March 1993, the three major areas have been agriculture (35%), nuclear engineering and technology (28%) and nuclear physics and chemistry (11%). Smaller shares went to nuclear medicine (7%), industry and hydrology (7%), nuclear safety (6%) and nuclear raw materials (5%).

During the same period, the country has provided experts and training course lecturers for a total of 61 assignments, and has hosted five fellowships and scientific visits as well as one interregional and two regional training courses with a total of 25 participants.

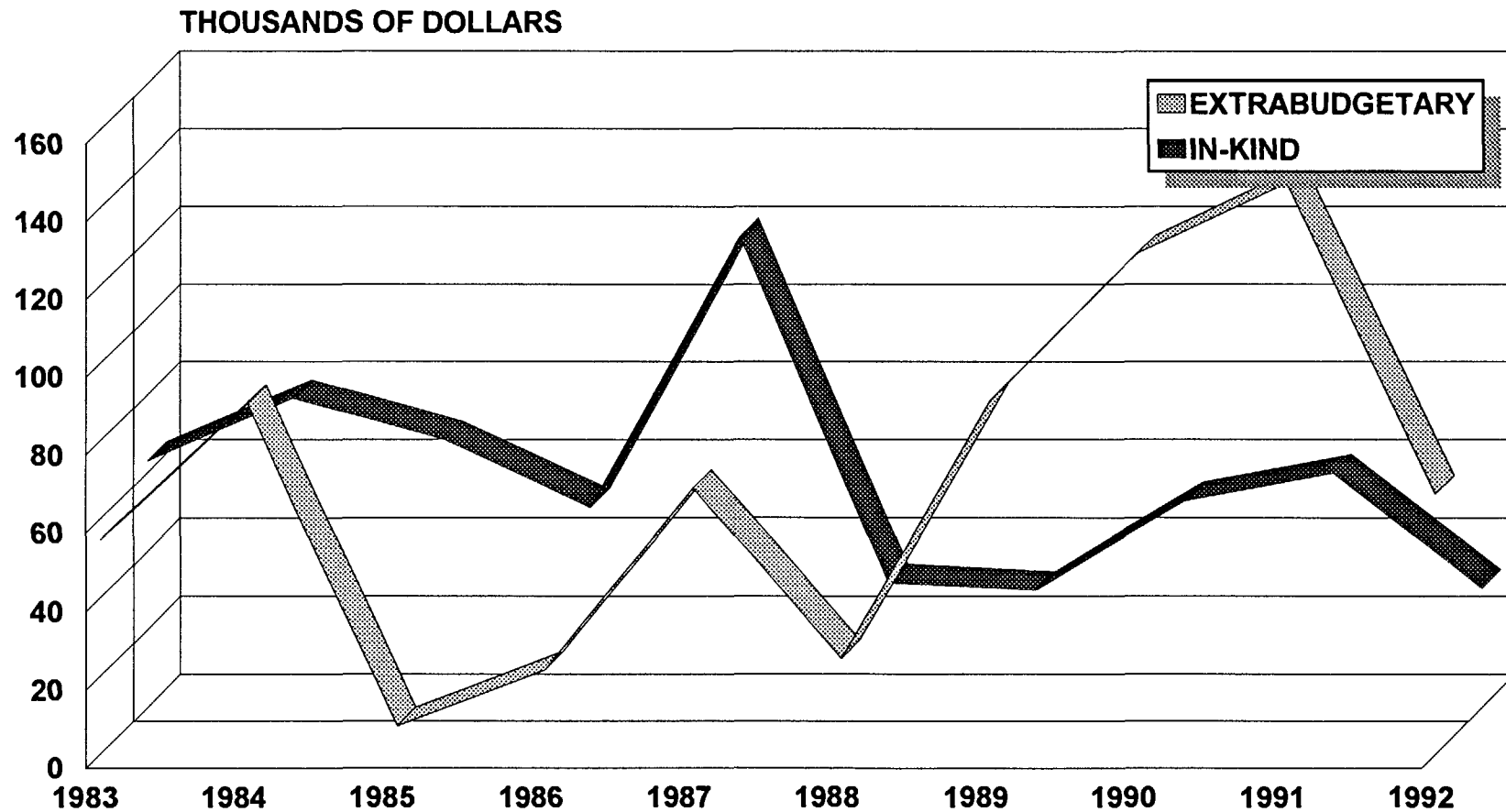
ASSISTANCE PROVIDED BY THE AGENCY TO BANGLADESH BY SOURCE (1983 - 1992)



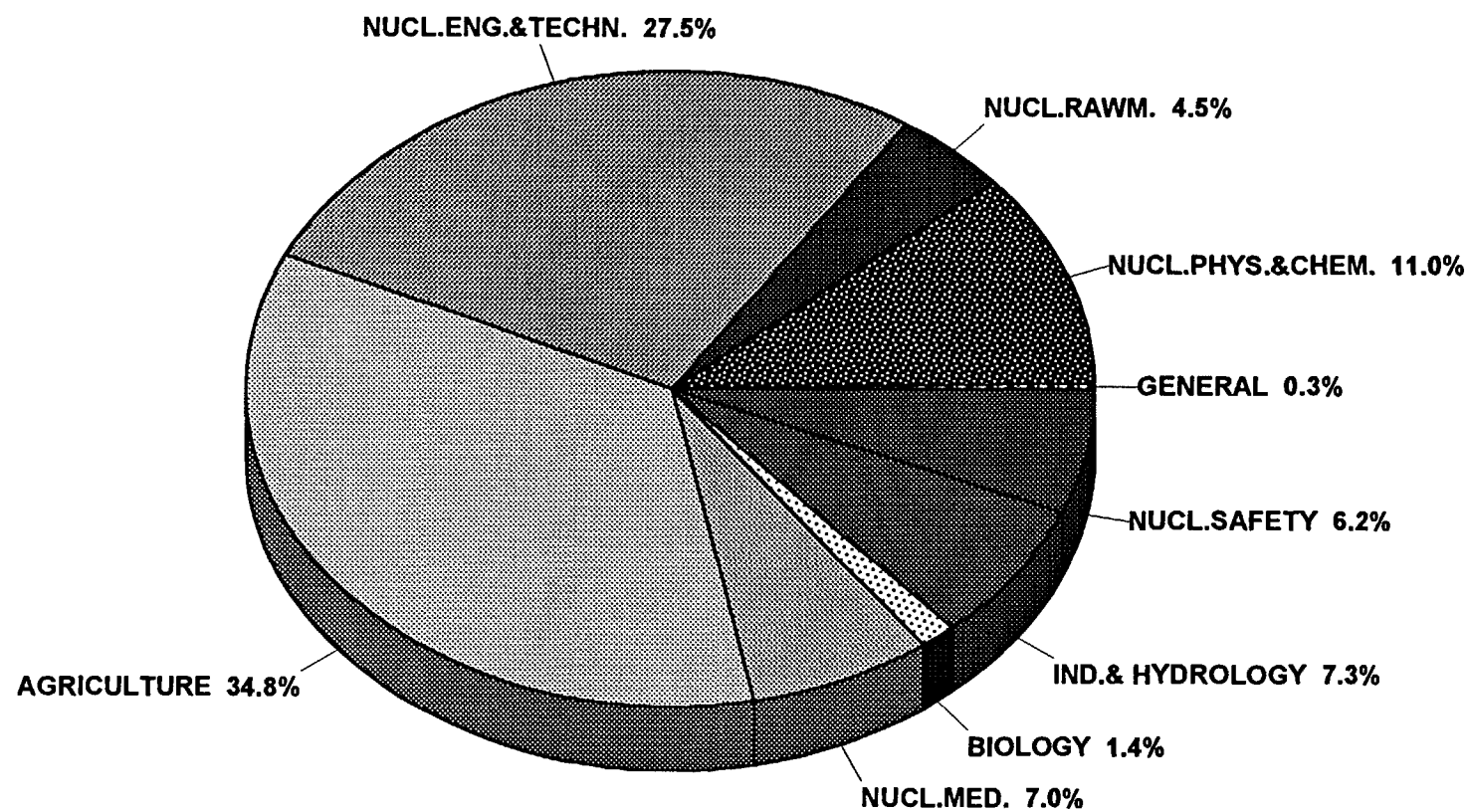
TACF ASSISTANCE PROVIDED TO BANGLADESH (1983 - 1992)



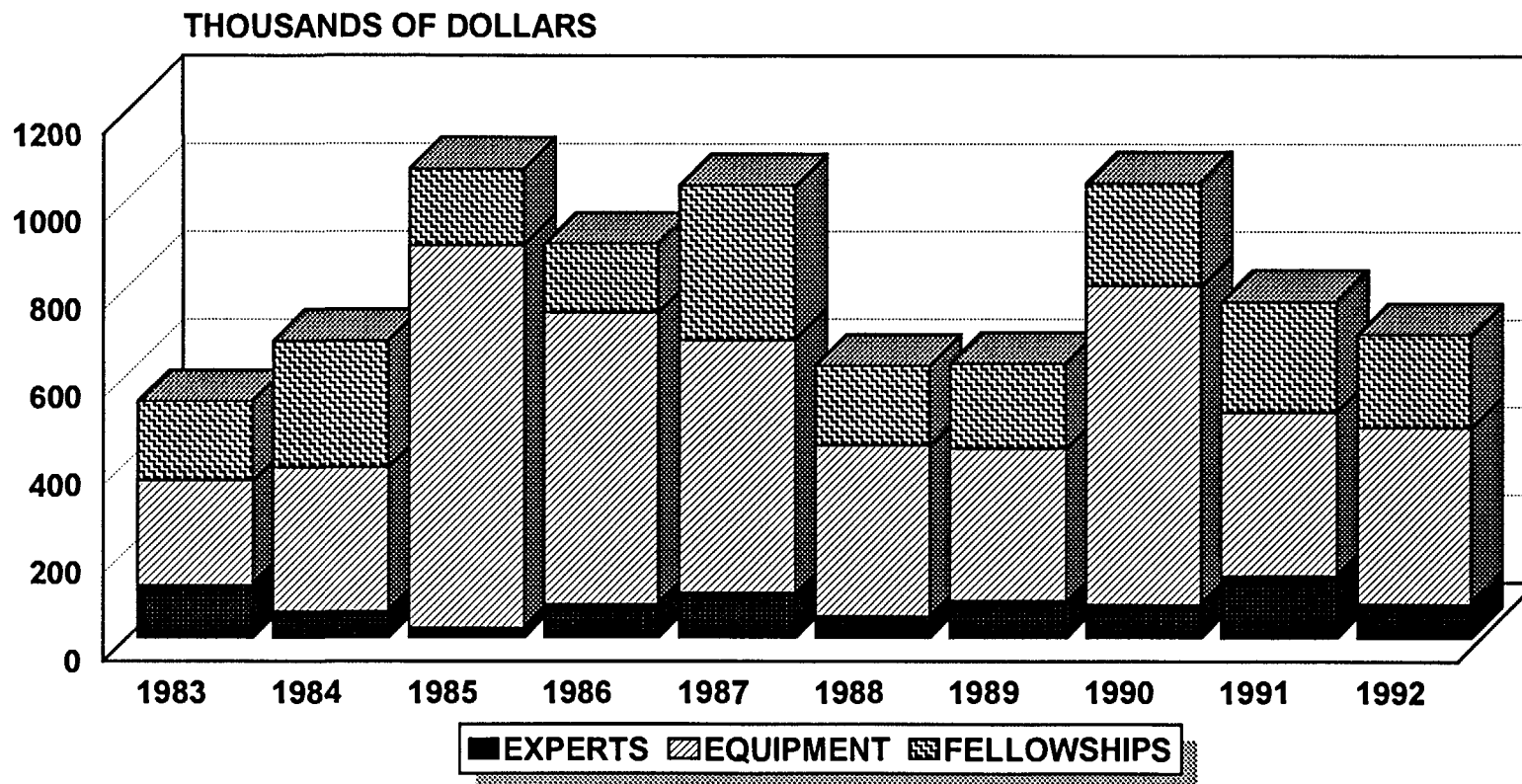
EXTRABUDGETARY AND IN-KIND ASSISTANCE PROVIDED TO BANGLADESH (1983 - 1992)



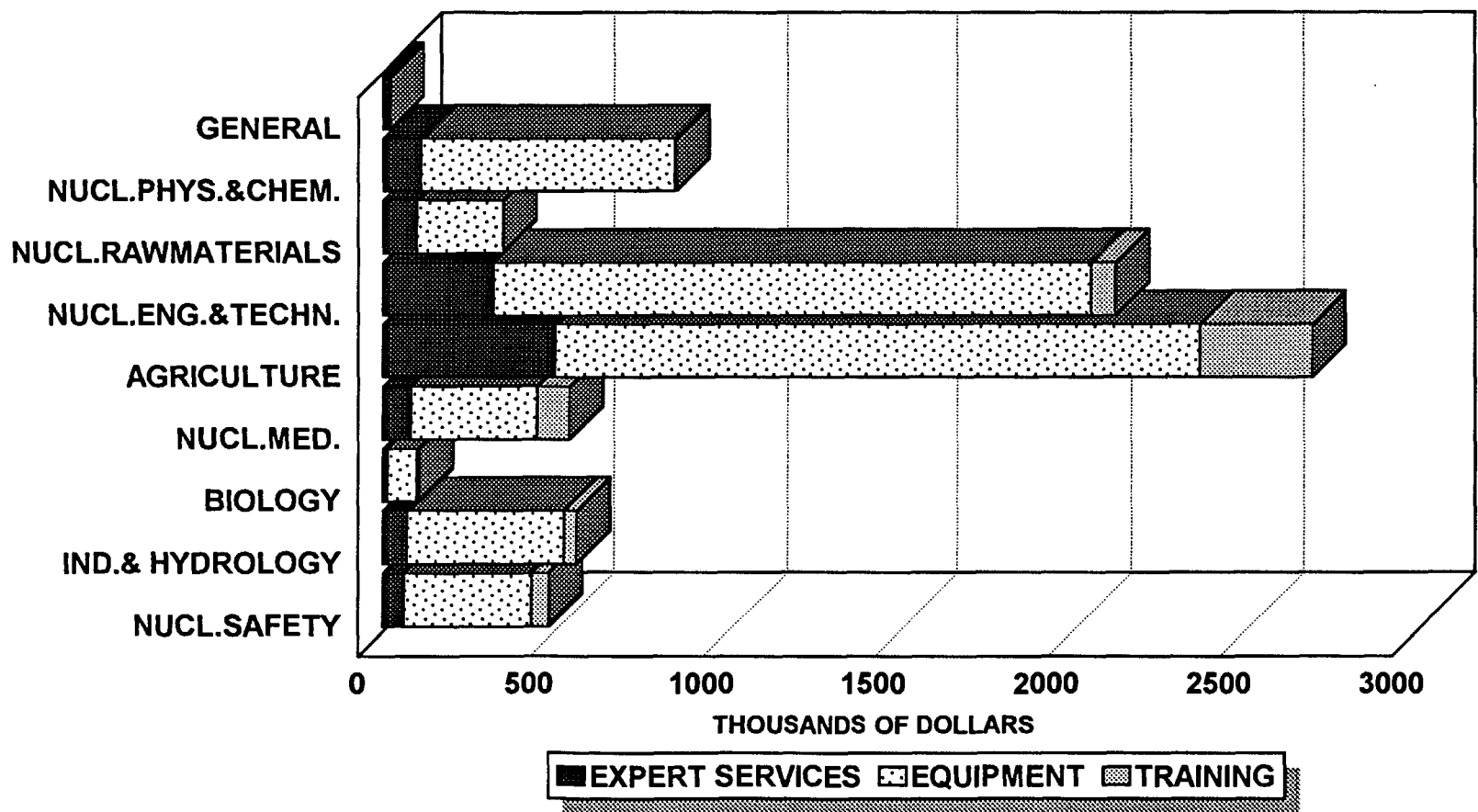
TC PROJECT DISBURSEMENTS IN BANGLADESH BY SECTOR (1983 - 1993)



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



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



THE AGENCY'S TECHNICAL CO-OPERATION PROGRAMME WITH BANGLADESH

ALL SOURCES

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

YEAR	RANKING	AMOUNT
1958-82	19 th	3059.6
1983	14 th	536.5
1984	10 th	675.0
1985	4 th	1068.2
1986	5 th	896.4
1987	8 th	1030.9
1988	12 th	618.2
1989	16 th	623.1
1990	10 th	1036.1
1991	14 th	764.7
1992	19 th	690.3
1958-92	10 th	10999.0

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

ALL SOURCES

Year	I	II	III	IV	V	BANGLADESH
1958-82	BRA 8507.3	IND 6849.4	ARG 5528.2	PAK 5492.7	CHI 5240.1	19 th - 3059.6
1983	EGY 2077.9	PER 1116.8	VIE 948.1	PHI 778.6	IRA 722.1	14 th - 536.5
1984	EGY 3625.9	PER 1750.4	THA 1094.6	CUB 1028.7	PHI 881.2	10 th - 675.0
1985	EGY 2494.8	PER 1120.7	THA 1117.4	BGD 1068.2	PHI 963.7	4 th - 1068.2
1986	EGY 2317.0	BRA 1452.9	THA 1169.4	POL 1050.3	BGD 896.4	5 th - 896.4
1987	HUN 3452.6	EGY 1775.4	THA 1742.4	INS 1312.5	YUG 1223.2	8 th - 1030.9
1988	EGY 1486.9	BUL 1361.6	CPR 1278.5	THA 1158.7	BRA 1096.7	12 th - 618.2
1989	CPR 1542.3	EGY 1505.1	THA 1205.3	BRA 1096.5	INS 999.1	16 th - 623.1
1990	POL 2308.1	CPR 2005.0	VIE 1589.2	INS 1412.6	BRA 1229.1	10 th - 1036.1
1991	INS 1305.2	CPR 975.0	EGY 959.8	BRA 951.2	BUL 934.7	14 th - 764.7
1992	EGY 1586.3	INS 1342.1	CPR 1328.8	MEX 1127.8	POL 1036.4	19 th - 690.3
1958-92	EGY 23808.6	BRA 17736.8	THA 15332.0	INS 13725.9	PER 13129.6	10 th - 10999.0

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

TECHNICAL ASSISTANCE AND CO-OPERATION FUND

Year	I	II	III	IV	V	BANGLADESH
1958-82	HUN 2971.7	EGY 2405.8	PAK 2340.5	THA 2000.3	BRA 1983.5	29 th - 1057.2
1983	EGY 1049.4	VIE 897.4	POL 667.8	PAK 498.5	PHI 430.0	7 th - 418.4
1984	EGY 1197.2	CUB 655.6	ECU 565.6	BGD 506.3	BUL 472.4	4 th - 506.3
1985	BGD 991.8	VIE 745.0	THA 708.7	BRA 571.8	POR 538.7	1 st - 991.8
1986	BRA 1381.8	THA 871.9	POL 833.5	BGD 823.9	SYR 751.8	4 th - 823.9
1987	HUN 3305.2	DRK 986.8	BUL 888.5	INS 885.8	EGY 878.9	7 th - 842.4
1988	BUL 1195.6	PER 856.5	EGY 768.6	INS 751.7	MAL 656.0	10 th - 562.1
1989	EGY 990.9	CPR 868.2	POR 769.6	CHI 756.9	MAL 619.4	14 th - 502.9
1990	POL 1562.3	VIE 1518.8	DRK 1156.2	IRA 958.0	YUG 933.4	6 th - 855.2
1991	BUL 893.1	PAK 868.8	INS 855.1	VIE 817.6	CPR 814.5	18 th - 558.4
1992	EGY 1255.7	CPR 1009.0	VIE 872.8	INS 826.6	IRA 795.5	14 th - 593.6
1958-92	EGY 10847.0	HUN 8743.7	POL 8486.4	VIE 8199.9	PAK 8115.6	9 th - 7712.2

ASSISTANCE PROVIDED BY THE AGENCY TO BANGLADESH

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	119.2	237.8	179.5	-	-	536.5	0.3	412.1	6.3	54.8	63.0	536.5
1984	59.9	326.4	288.7	-	-	675.0	-	421.8	84.5	89.7	79.0	675.0
1985	21.4	871.1	175.7	-	-	1 068.2	0.8	535.4	456.4	7.2	68.4	1 068.2
1986	74.6	665.0	156.8	-	-	896.4	-	477.2	346.7	21.5	51.0	896.4
1987	100.8	574.9	355.2	-	-	1 030.9	-	753.2	89.2	67.9	120.6	1 030.9
1988	49.4	387.3	181.5	-	-	618.2	-	492.1	70.0	24.4	31.7	618.2
1989	83.7	345.4	194.0	-	-	623.1	-	399.7	103.2	90.4	29.8	623.1
1990	74.9	725.5	235.7	-	-	1 036.1	-	608.7	246.5	128.2	52.7	1 036.1
1991	140.3	371.6	252.8	-	-	764.7	-	525.3	33.1	146.5	59.8	764.7
1992	76.5	400.6	213.2	-	-	690.3	-	593.0	0.6	66.4	30.3	690.3
1983-92	800.7	4 905.6	2 233.1	-	-	7 939.4	1.1	5 218.5	1 436.5	697.0	586.3	7 939.4

TECHNICAL CO-OPERATION PROJECTS IN BANGLADESH
BY SECTOR

PROJECTS COMPLETED AND OPERATIONAL 1983 - 1993

TOTAL PROJECT ALLOTMENTS AND DISBURSEMENTS
(as of 1 March 1993)

SECTOR	NO. OF PROJECTS	ALLOTMENTS \$	% OF TOTAL	DISBURSEMENTS \$	% OF TOTAL
General atomic energy development	2	210 910	2.3	20 798	0.3
Nuclear physics and chemistry	9	944 043	10.4	851 183	11.0
Nuclear raw materials	3	331 349	3.7	348 874	4.5
Nuclear engineering and technology	13	2 555 344	28.1	2 126 002	27.5
Nuclear techniques in agriculture	9	3 029 165	33.3	2 696 009	34.8
Nuclear medicine	4	531 082	5.8	542 260	7.0
Nuclear techniques in biology	2	128 564	1.4	108 682	1.4
Nuclear techniques in industry and hydrology	6	694 375	7.6	563 128	7.3
Nuclear safety	5	672 524	7.4	482 785	6.2
TOTAL	53	9 097 356	100.0	7 739 721	100.0

TECHNICAL CO-OPERATION PROJECTS IN BANGLADESH
COMPLETED AND OPERATIONAL, BY SECTOR, 1983 - 1993
(As of 1 March 1993)

Sector	No. of projects	Total project allotments \$	Total project disbursements \$
<u>Completed projects</u>			
General atomic energy development	1	10 660	20 798
Nuclear physics and chemistry	6	448 283	459 646
Nuclear raw materials	3	331 349	348 874
Nuclear engineering and technology	6	1 208 911	1 219 324
Nuclear techniques in agriculture	5	1 437 230	1 437 499
Nuclear medicine	4	531 082	542 260
Nuclear techniques in biology	1	30 400	32 139
Nuclear techniques in industry & hydrology	4	421 685	422 811
Nuclear safety	3	330 332	331 359
TOTAL	33	4 749 932	4 814 710
<u>Operational projects</u>			
General atomic energy development	1	200 250	-
Nuclear physics and chemistry	3	495 760	391 537
Nuclear raw materials	-	-	-
Nuclear engineering and technology	7	1 346 433	906 678
Nuclear techniques in agriculture	4	1 591 935	1 258 510
Nuclear medicine	-	-	-
Nuclear techniques in biology	1	98 164	76 543
Nuclear techniques in industry & hydrology	2	272 690	140 317
Nuclear safety	2	342 192	151 426
TOTAL	20	4 347 424	2 925 011

**EXPERT SERVICES, EQUIPMENT AND PROJECT-FUNDED TRAINING PROVIDED TO BANGLADESH, BY SECTOR
PROJECTS COMPLETED AND OPERATIONAL 1983 - 1993
(As of 1 March 1993)**

FIELD	TOTAL PROJECT ALLOTMENTS				TOTAL PROJECT DISBURSEMENTS			
	EXPERT SERVICES		EQUIPMENT	TRAINING	EXPERT SERVICES		EQUIPMENT	TRAINING
	M/M	\$	\$	\$	M/M	\$	\$	\$
General atomic energy development	1/22	6 200	4 460	200 250	1/22	19 607	1 191	-
Nuclear physics and chemistry	16/09	120 889	801 018	22 136	15/15	111 571	736 340	3 272
Nuclear raw materials	20/00	82 888	248 461	-	19/25	100 720	248 154	-
Nuclear engineering and technology	52/22	402 580	1 924 976	227 788	42/12	321 179	1 734 558	70 265
Nuclear techniques in agriculture	118/01	579 090	2 036 787	413 288	109/28	502 464	1 868 425	325 120
Nuclear medicine	15/13	71 250	365 826	94 006	13/26	82 653	367 227	92 380
Nuclear techniques in biology	3/12	21 210	99 150	8 204	2/14	12 228	88 250	8 204
Nuclear techniques in industry & hydrology	9/13	77 840	543 664	72 871	8/23	71 481	456 771	34 876
Nuclear safety	11/11	84 845	447 214	140 465	8/21	62 170	370 300	50 315
TOTAL	248/13	1 446 792	6 471 556	1 179 008	223/06	1 284 073	5 871 216	584 432

AGENCY FELLOWS FROM BANGLADESH

1983 - 1993¹
(As of 1 March 1993)

Sector	No. of fellowships	No. of months/days	Host countries
General atomic energy development	15	42/07	IND, PHI, USA, AUL, AUS, GDR, GER, BRA, JPN, UK, IAEA
Nuclear physics	16	101/25	YUG, HUN, CAN, USA, IND, GER, UKR, JPN, AUL, FRA, DEN, AUS
Nuclear chemistry	9	57/03	AUS, USA, GDR, AUL, IND, UK, USSR, IAEA
Nuclear raw materials	2	10/20	AUL, CAN
Nuclear engineering and technology	33	174/10	INS, ROK, AUL, PHI, USA, IND, SRL, GDR, MAL, YUG, CUB, EGY, IRA, NOR, GER, GRE, AUS, UK, USSR, IAEA
Nuclear techniques in agriculture	23	117/18	NET, HUN, USA, AUL, JPN, CAN, PHI, BEL, GDR, IND, PAK, MYA, THA, MAL, UK, USSR, CEC, IAEA
Nuclear medicine	25	225/13	USA, IND, CAN, AUL, EGY, THA, UK
Nuclear techniques in biology	4	33/17	AUS, IND, UK
Nuclear techniques in industry and hydrology	8	22/22	MAL, AUL, USA, JPN, IND, UK
Nuclear safety	24	174/01	USA, CAN, INS, AUS, MAL, JPN, UK
TOTAL	159	959/16	

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

**BANGLADESH
LONG-TERM FELLOWSHIPS
1983 - 1993
(As of 1 March 1992)**

Name	Field of study	Host country	Date	Duration	Project
RAHMAN, MAFIZUR	Data processing by computer	USA	Feb.88 - Feb.89	12/00	BGD/4/009
AHMED, FARID UDDIN	Neutron physics	CAN	May 84 - May 85	12/01	BGD/4/009
BISWAS, SWAPAN KUMAR	Analytical nuclear physics	HUN	Oct.89 - Oct.90	12/01	RAS/0/014
RAHMAN, MD.AZIZUR	Neutron physics	YUG	Oct.83 - Oct.84	12/01	BGD/4/009
RAHMAN, MD.MIZANUR	Nuclear data	GFR	Jan.83 - Jan.84	12/01	BGD/1/005
CHOWDHURY, MD.DIDARUL	Analytical chemistry	UK	Oct.86 - Oct.87	12/01	BGD/4/009
ALI, MD HANIF	Nuclear instrumentation	UK	Jan.87 - Jan.88	12/01	BGD/4/007
CHOWDHURY, MD.AMANULLAH	Nuclear instrumentation	USA	Dec.83 - Dec.84	12/01	BGD/4/005
FIROZ, ABU SAYEED MD.	Nuclear instruments	UK	Aug.84 - Sep.85	13/01	BGD/4/007
MANNAN, FAZLE	Nuclear electronics	USA	Jan.88 - Jan.89	12/01	BGD/4/007
QUAMRUZZAMAN, MD.	Nuclear instrumentation	IAEA	Sep.86 - Sep.87	12/00	BGD/4/007
AHMED, ZIA UDDIN	Mutation breeding	AUL	Nov.83 - Jan.85	14/00	BGD/5/003
KHAN, ZAINUL ABEDIN	Food preservation	USA	Oct.83 - Oct.84	12/01	BGD/5/007

**BANGLADESH
LONG-TERM FELLOWSHIPS
1983 - 1993
(As of 1 March 1992)**

Name	Field of study	Host country	Date	Duration	Project
LOKMAN HAKIM, LOKMAN	Plant breeding and genetics	UK	Started: Feb.92	13/00	RAS/0/018
NILUFAR, KHATUN	Food preservation	AUL	Oct.86 - Oct.87	12/01	BGD/5/010
RAHMAN, MD.SAIFUR	Food irradiation	JPN	Aug.85 - Aug.86	12/01	BGD/5/010
RAHMAN, MD.SAIFUR	Pesticide residues	CEC	Started: Sep.92	12/00	RAS/0/016
RAHMAN, REZAUR	Food irradiation	IAEA	Jan.87 - Jan.88	12/00	BGD/5/010
RASHID, HARUN-OR	Food irradiation	JPN	Sep.89 - Sep.90	12/00	RAS/0/014
ABU TAHER, MD.	Nuclear medicine	USA	Oct.86 - Oct.87	12/01	BGD/6/007
AFROZ, SHAHANA	Nuclear medicine	IND	Jul.85 - Jul.86	12/01	BGD/6/008
AHMED, FARID UDDIN	Nuclear medicine	AUL	Sep.86 - Sep.87	12/00	BGD/6/007
AHMED, ROSTAMUDDIN	Nuclear medicine	AUL	Jul.91 - Jul.92	12/01	RAS/0/018
ANSARI, SELIM MD.	Nuclear medicine	AUL	Jan.91 - Jan.92	12/01	RAS/0/014
ISHAQUE, ABU MD.	Radiopharmacy	USA	Aug.84 - Sep.85	13/02	BGD/6/008
JEHAN, ATIA	Nuclear medicine	USA	Oct.89 - Oct.90	12/01	RAS/0/014

**BANGLADESH
LONG-TERM FELLOWSHIPS
1983 - 1993
(As of 1 March 1992)**

Name	Field of study	Host country	Date	Duration	Project
JESMIN, SALMA	Nuclear medicine instrumentation	USA	Aug.84 - Aug.85	12/01	BGD/6/007
KABIR, FAISAL	Nuclear medicine	UK	Feb.88 - Apr.89	14/00	BGD/6/007
KABIR, MD.FAZLUL	Nuclear medicine	USA	Feb.87 - Feb.88	12/00	BGD/6/003
KHAN, MOHAFIZUL HOQUE	Nuclear medicine	IND	Nov.89 - Nov.90	12/00	RAS/0/014
MOINUL ISLAM, SHEFAT	Nuclear medicine	AUL	Jul.91 - Jul.92	12/01	BGD/6/009
NISA, LUTFUN	Nuclear medicine	USA	Jul.85 - Jul.86	12/01	-
RASHID, HARUNAR	Medical physics	USA	Aug.88 - Oct.89	14/02	BGD/6/003
SHAHABUDDIN, SUFIA	Nuclear medicine	UK	Sep.90 - Sep.91	12/00	BGD/6/007
UDDIN, MD.ROKON	Medical physics	CAN	Nov.85 - Nov.86	12/00	-
BEGUM, REHANA	Radiation biology	AUS	Jul.84 - Jul.85	12/01	-
NESSA, AZIZUN	Radiation biology	UK	Nov.86 - Feb.88	14/27	-
HAQUE, MEAH MD.SIRAJUL	Non-destructive testing	UK	Mar.87 - Apr.88	12/03	BGD/8/005
AHMED, ABU BAKAR	Radiation protection	USA	Sep.82 - Mar.84	18/00	-

**BANGLADESH
LONG-TERM FELLOWSHIPS
1983 - 1993
(As of 1 March 1992)**

Name	Field of study	Host country	Date	Duration	Project
ALAM, MD.NURUL	Radiation protection	USA	Aug.84 - Oct.85	14/09	BGD/9/004
BOSE, SATYA RANJAN	Radiation protection	USA	Sep.86 - Sep.87	12/00	BGD/9/004
JALIL MIAH, ABDUL	Environmental monitoring	UK	Aug.84 - Oct.85	13/12	BGD/9/004
KHAN, MD.ABDUL HAMID	Radiation protection	USA	Apr.91 - Apr.92	12/00	RAS/0/014
NAZNEEN, SOHELI	Radioactive waste management	USA	Jul.89 - Jul.90	12/01	RAS/0/014
ROY, SAMARENDRA	Radiation protection	USA	Sep.86 - Sep.87	12/00	-

**BANGLADESH NATIONALS WHO WERE AWARDED MORE THAN ONE
FELLOWSHIP OR SCIENTIFIC VISIT
1983 - 1993
(As of 1 March 1993)**

Name	Field of study	Host country	Date	Duration	Project
AHMED, FARID UDDIN	1. Neutron physics 2. Nuclear medicine	YUG AUL	Oct.83 - Oct.84 Sep.86 - Sep.87	12/01 12/00	BGD/4/009 BGD/6/007
BHUIYAN, M.SHAFIQUL	1. Radiation shielding 2. Nuclear data processing	USA IAEA	Aug.82 - Feb.83 Feb.91 - Jun.91	6/01 3/23	- RAS/0/018
CHOWDHURY, MANZUR AHMED	1. Food irradiation 2. Radiation protection	USSR INS	Dec.89 - Jan.90 Oct.92 - Jan.93	0/21 3/01	RAS/0/014 BGD/4/014
HASAN, MAHMUDUL	1. Nuclear instrument repair 2. Medical physics	SRL IND	Jun.84 - Aug.84 Jan.90 - Feb.90	2/19 0/27	INT/4/054 RAS/0/014
RAHMAN, MD.MAHBUBUR	1. Research reactors 2. Reactor technology	INS AUS	Jun.83 - Dec.83 Jun.92 - Aug.92	6/00 2/00	BGD/4/006 BGD/4/016
RAHMAN, MD.SAIFUR	1. Food irradiation 2. Pesticide residues	JPN CEC	Aug.85 - Aug.86 Started: Sep.92	12/01 12/00	BGD/5/010 RAS/0/016

AGENCY TRAINING COURSES WITH BANGLADESH PARTICIPATION

1983 - 1993
(As of 1 March 1993)

Field	Number of participants	Number of courses
General atomic energy development	23	19
Nuclear physics	14	11
Nuclear chemistry	7	5
Nuclear raw materials	2	2
Nuclear engineering and technology	22	21
Nuclear techniques in agriculture	32	28
Nuclear medicine	28	23
Nuclear techniques in biology	10	8
Nuclear techniques in industry & hydrology	73	66
Nuclear safety	22	20
TOTAL	233	203

**MULTIPLE PARTICIPATION IN AGENCY TRAINING COURSES
BY BANGLADESH NATIONALS
1983 - 1993
(As of 1 March 1993)**

Name	Course No.	Course title	Year	Location
AHSAN, QUMRUL	RAS/8/061 (072) RAS/8/061 (105)	RTC on NDT of ultrasonics (level III) RTC on NDT of magnetic particle and liquid penetrant (level III)	1990 1991	INS INS
AL-SIDDIQUE, FAIZUR R.	INT/4/069 (001) RAS/8/008 (041)	Interregional study tour on isotope production, including radiopharmaceuticals Regional training demonstration on radiation cross-linking applications in the wire and cable industry	1984 1985	CZE GDR HUN USSR CPR
AMIN, MD.RUHUL	RAS/5/020 (006) RAS/8/061 (011) RAS/8/061 (074)	RWS on food irradiation process control RTC on industrial radiation sterilization - quality control and sterility assurance RWS on industrial sterilization of medical products - regulatory aspects	1992 1987 1990	CPR THA MAL
ATIQUEZZAMAN, A.K.M.	RAS/8/061 (005) RAS/8/061 (053)	RTC on NDT of radiography (level II) RTC on NDT of radiography (level III)	1987 1989	IND MAL
AWAL, ABDUL M.	INT/1/031 (001) INT/1/034 (001)	Study tour on the utilization of low energy accelerators ITC on basic and applied nuclear physics	1985 1985	GFR HUN ITA USSR ITA
BISWAS, SWAPAN KUMAR	RAS/1/006 (001) RAS/8/061 (019)	RWS on neutron activation analysis Third regional training demonstration on the use of tracer technology in industry	1985 1988	IND CPR
CHOWDHURY, NAJMUL ALAM	RAS/8/061 (027) RAS/8/061 (048)	RTC on industrial radiation sterilization - selection and compatibility of materials RTC on industrial radiation sterilization - quality control and sterility assurance	1988 1989	IND THA

**MULTIPLE PARTICIPATION IN AGENCY TRAINING COURSES
BY BANGLADESH NATIONALS
1983 - 1993
(As of 1 March 1993)**

Name	Course No.	Course title	Year	Location
DAS, MANIK LAL	INT/5/090 (001)	ITC on the use of isotope and radiation techniques in plant breeding	1983	BUL
	RAS/5/021 (004)	Regional RCM on the use of isotopes in studies to improve yield and nitrogen fixation of grain legumes in the tropics and sub-tropics of Asia	1991	USSR
	RAS/5/021 (005)	Regional RCM on the use of isotopes in studies to improve yield and nitrogen fixation of grain legumes in the tropics and sub-tropics of Asia	1992	THA CPR
FALAQUE, KHANDAKER A.	RAS/8/008 (028)	RTC on tracer technology in industry	1984	IND
	RAS/8/061 (049)	RTC on tracer technology in industry	1989	SIN MAL
HAQUE, MD.MONZURUL	INT/0/034 (001)	ITC on the physical protection of nuclear facilities and materials	1983	USA
	RAS/0/015 (003)	RTC on research reactor safety principles	1990	IND
HAQUE, MD.MUZAMMEL	RAS/0/015 (006)	RTC on nuclear power pre-project activities and manpower development	1991	ROK
	RAS/8/061 (029)	Regional executive management seminar on the use of nucleonic instrumental techniques in civil engineering	1988	JPN
IDRISS ALI, KHONDOKER	RAS/8/008 (041)	Regional training demonstration on radiation cross-linking applications in the wire and cable industry	1985	CPR
	RAS/8/008 (057)	Regional third training demonstration on radiation curing of surface coating of wood products	1986	INS
	RAS/8/061 (012)	RTC on radiation engineering - electron beam facilities	1987	JPN
	RAS/8/061 (070)	RTC on formulation technology for radiation cross-linking applications	1989	CPR
ISLAM, MD.ASHRAFUL	INT/8/003 (001)	ITC on applications of nuclear analytical techniques to air pollution	1991	USA
	RAS/1/008 (001)	RTC on nuclear analytical techniques and their applications	1987	JPN
KARIM MIAH, MD.FAZLE	RAS/9/006 (002)	RTC on radiation protection	1989	JPN
	RAS/9/006 (004)	RWS on intercomparison for personal dosimeters	1990	JPN
	RAS/9/011 (001)	RTC on safety and regulation of radiation sources	1991	MAL

**MULTIPLE PARTICIPATION IN AGENCY TRAINING COURSES
BY BANGLADESH NATIONALS
1983 - 1993
(As of 1 March 1993)**

Name	Course No.	Course title	Year	Location
KARIM, CHOUDHURY S.	INT/0/050 (001) RAS/0/013 (003) RAS/0/013 (005)	ITC on electric system expansion planning (WASP) RTC on nuclear power project planning and implementation Fourth RWS on energy, electricity and nuclear power planning (WASP/MAED)	1990 1989 1990	USA ROK ROK
KAZI, OBAIDUL AWAL	INT/9/093 (001) INT/9/104 (001)	ITC on safety and regulation of sealed sources of radioactive material ITC on safety in the operation of research reactors	1989 1990	USA USA
KHAN, ABDUR RASHID	RAS/7/003 (003) RAS/8/008 (018)	RTC on radiation sterilization of tissue grafts for clinical use in health care Regional second training-demonstration on nuclear control systems for paper manufacture	1990 1983	ROK JPN THA
KHAN, HUMAYUN MD.M.	INT/4/104 (001) RAS/9/009 (001)	ITC on planning of management of the nuclear fuel cycle RTC on national infrastructure for radioactive waste management	1990 1991	ARG INS
KHAN, MUBARAK AHMAD	INT/4/097 (001) RAS/8/062 (015)	ITC on radiation technology and engineering RWS on radiation engineering - electron beam facilities	1988 1989	HUN JPN
MAROOF, FAZLUL BARI A.	INT/2/006 (001) RAS/6/009 (001) RAS/8/061 (106)	Advanced ITC on sampling, sample preparation and data evaluation for multi-element and radionuclide analysis by nuclear and instrumental methods RTC on the use of nuclear techniques in health-related environmental research and monitoring RTC on tracer application in industry	1989 1986 1991	GFR AUL INS
MATIN, MD.ABDUL	RAS/5/017 (001) RAS/5/024 (001)	Study tour on food irradiation development RTC on nuclear and associated techniques for pesticide research	1986 1992	CPR THA
MOLLA, MD.ENAYET ULLAH	RAS/8/008 (040) RAS/8/061 (006) RAS/8/061 (107)	Fifth RTC on advanced NDT RWS on NDT of non-metallic materials RTC on model (NDT) qualifying examination for radiography (level III)	1985 1987 1991	JPN JPN MAL

**MULTIPLE PARTICIPATION IN AGENCY TRAINING COURSES
BY BANGLADESH NATIONALS
1983 - 1993
(As of 1 March 1993)**

Name	Course No.	Course title	Year	Location
MOLLAH, ABDUS SATTAR	INT/1/046 (001)	ITC on nuclear measurements and methods in reactor and personal neutron dosimetry	1989	USSR
	INT/9/079 (001)	ITC on management of radioactive waste	1987	GFR
	INT/9/090 (001)	ITC on the determination of radionuclides in food and environmental samples	1988	GFR
MOSLEM, FAUZIA	INT/6/031 (001)	ITC and study tour on nuclear medicine	1985	USSR
	RAS/6/011 f(004)	RTC on diagnosis of viral hepatitis infection by radioimmunoassay	1991	CPR
PODDER, AJIT KUMAR	RAS/5/021 (003)	RWS on rhizobium technology	1991	THA
	RAS/5/021 (005)	Regional RCM on the use of isotopes in studies to improve yield and nitrogen fixation of grain legumes in the tropics and sub-tropics of Asia	1992	CPR
RAHMAN, MD.MATIUR	INT/4/086 (001)	Interregional study tour on research reactor utilization	1986	FRA GFR USSR YUG
	RAS/0/015 (009)	RWS on neutron transmutation doping technology	1992	CPR
	RAS/0/017 (001)	RWS on project management and evaluation techniques for TC projects	1990	INS
RAHMAN, MD.MUNSUR	INT/1/014 (001)	RWS on calibration procedures in dosimetry (SSDL)	1987	MAL
	RAS/9/009 (001)	RTC on national infrastructure for radioactive waste management	1991	INS
ROUF, MD.ABDUR	RAS/2/003 (001)	RTC on preparation and control of radiopharmaceuticals	1990	CPR
	RAS/8/062 (005)	RTC on radioisotope production in research reactors	1989	IND
SADIQUE, JAFAR	RAS/0/015 (014)	RTC on NDT and evaluation in nuclear power plants	1992	ROK
	RAS/8/061 (008)	RTC on NDT of ultrasonics (level II)	1987	ROK
	RAS/8/061 (050)	RTC on NDT of ultrasonics (level III)	1989	PHI
	RAS/8/061 (105)	RTC on NDT of magnetic particle and liquid penetrant (level III)	1991	INS
	RAS/8/062 (022)	RWS on fabrication of NDT test pieces	1990	JPN

**MULTIPLE PARTICIPATION IN AGENCY TRAINING COURSES
BY BANGLADESH NATIONALS
1983 - 1993
(As of 1 March 1993)**

Name	Course No.	Course title	Year	Location
SHAHIDULLAH, MD.	RAS/8/061 (021) RAS/8/061 (080)	RTC on NDT of radiography (level II) RTC on NDT of surface methods (level II)	1988 1990	IND MAL
SHARIF, ABUL KASHEM M.	RAS/1/006 (001) RAS/1/008 (001) RAS/8/062 (006)	RWS on neutron activation analysis RTC on nuclear analytical techniques and their applications RTC on neutron activation analysis for mineral resource prospecting and mineral characterization	1985 1987 1989	IND JPN IND
SIDDIQUI, MD.ANWAR K.	RAS/8/008 (032) RAS/8/061 (048)	RTC on radiation sterilization of medical products RTC on industrial radiation sterilization - quality control and sterility assurance	1984 1989	IND ROK THA
ULLAH, MD.SANA	RAS/8/008 (052) RAS/8/061 (107)	Regional UNDP/IAEA/RCA train-the-trainers course on ultrasonic testing RTC on model (NDT) qualifying examination for radiography (level III)	1986 1991	CPR MAL
YUNUS, SHEIKH MD.	RAS/4/011 (006) RAS/6/017 (001)	RTC on materials characterization using low and medium neutron flux reactors RTC on radiotherapy for medical physicists	1992 1989	CPR PAK

PROJECTS COMPLETED IN BANGLADESH SINCE 1983
(As of 1 March 1993)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS				COMPLETED
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING	
			M/M	\$	\$	\$	M/M	\$	\$	\$	
1983	BGD/0/003	Data base development	1/22	6 200	4 460	-	1/22	19 607	1 191	-	1992
1981	BGD/1/005	Neutron physics	3/00	14 400	119 000	-	3/04	13 874	121 743	-	1984
1983	BGD/1/007	Neutron dosimetry	0/29	7 147	29 749	-	0/29	7 147	29 749	-	1989
1986	BGD/1/010	Trace analytical laboratory	2/05	15 300	118 807	-	2/04	21 987	119 099	-	1992
1980	BGD/2/006	X-ray fluorescence	2/00	8 400	44 894	-	2/03	10 780	44 534	-	1983
1984	BGD/2/007	Elemental analysis	-	-	16 000	-	-	-	16 224	-	1984
1988	BGD/2/008	Development of nuclear analytical facilities	0/05	1 200	69 700	3 686	0/05	1 435	69 802	3 272	1991
1977	BGD/3/003	Exploration of thorium and uranium in Bangladesh	1/21	10 618	53 161	-	1/21	10 618	53 161	-	1983
1978	BGD/3/004	Nuclear raw materials prospection	14/00	51 400	97 000	-	13/22	67 510	96 580	-	1983
1980	BGD/3/005	Nuclear materials prospection	4/09	20 870	98 300	-	4/12	22 592	98 413	-	1987

PROJECTS COMPLETED IN BANGLADESH SINCE 1983
(As of 1 March 1993)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS				COMPLETED
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING	
			M/M	\$	\$	\$	M/M	\$	\$	\$	
1980	BGD/4/005	Nuclear electronics	4/00	18 000	42 000	-	3/26	26 133	41 520	-	1985
1982	BGD/4/006	Reactor utilization (isotope production)	11/20	74 900	850 490	-	11/20	67 564	850 490	-	1991
1982	BGD/4/007	Repair and maintenance of nuclear instruments	5/24	37 325	56 714	-	5/24	37 325	57 062	-	1989
1983	BGD/4/008	Research reactor commissioning	2/00	13 100	57 722	-	1/27	19 522	58 710	-	1990
1987	BGD/4/010	Training of manpower for quality assurance	3/00	22 200	-	-	3/03	12 453	-	-	1989
1988	BGD/4/012	Research reactor data base and computer code development	3/07	24 460	12 000	-	3/07	31 123	11 876	5 546	1990
1974	BGD/5/003	Development of the Institute of Nuclear Agriculture	91/09	374 990	466 199	296 638	91/08	374 990	466 199	296 638	1985
1978	BGD/5/007	Food preservation	6/00	21 000	-	-	5/20	29 164	-	-	1986
1982	BGD/5/009	Isotopes in agriculture	-	-	14 639	-	-	-	14 639	-	1987

PROJECTS COMPLETED IN BANGLADESH SINCE 1983
(As of 1 March 1993)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS				COMPLETED
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING	
			M/M	\$	\$	\$	M/M	\$	\$	\$	
1985	BGD/5/012	Nitrogen fixation in grain legumes	2/03	14 505	108 989	-	2/03	6 650	108 891	-	1990
1988	BGD/5/013	Nuclear techniques in agriculture	3/07	27 370	112 900	-	2/18	25 062	115 266	-	1992
1976	BGD/6/003	Radioisotopes in medicine	8/00	24 000	22 000	-	7/05	36 255	23 734	-	1985
1982	BGD/6/006	Nuclear medicine	3/00	16 200	40 500	-	3/04	17 138	42 074	-	1984
1983	BGD/6/007	Nuclear medicine	4/09	29 970	261 728	41 000	3/13	28 263	259 647	40 766	1991
1989	BGD/6/009	Nuclear medicine (phase II)	0/04	1 080	41 598	53 006	0/04	997	41 772	51 614	1992
1980	BGD/7/003	Sterilization of pharmaceuticals	2/00	8 400	22 000	-	2/00	8 387	23 752	-	1984
1984	BGD/8/004	Tracers in sedimentology	2/11	18 300	121 994	2 951	2/16	20 271	122 691	2 950	1992
1983	BGD/8/005	Industrial radiography	-	-	43 000	-	-	-	42 276	-	1983
1986	BGD/8/006	Development of non-destructive testing	2/00	13 950	138 900	6 600	2/01	14 511	139 165	6 797	1991

PROJECTS COMPLETED IN BANGLADESH SINCE 1983
(As of 1 March 1993)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS				COMPLETED
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING	
			M/M	\$	\$	\$	M/M	\$	\$	\$	
1990	BGD/8/009	Radiation induced vulcanization of natural rubber latex	1/02	9 440	63 270	3 280	1/02	6 829	63 174	4 147	1992
1981	BGD/9/004	Radiation protection	4/00	20 400	102 455	-	4/11	16 380	102 453	-	1989
1984	BGD/9/005	Radioactive waste management	0/28	6 160	66 300	-	0/28	9 308	66 880	-	1989
1989	BGD/9/006	Occupational radiation monitoring	2/08	18 440	99 719	16 858	2/08	19 427	100 053	16 858	1992
	TOTAL	33 projects	192/13	929 725	3 396 188	424 019	190/10	983 302	3 402 820	428 588	

OPERATIONAL PROJECTS IN BANGLADESH
(As of 1 March 1993)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS			
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING
			M/M	\$	\$	\$	M/M	\$	\$	\$
1993	BGD/0/004	Manpower development	-	-	-	200 250	-	-	-	-
1985	BGD/1/008	Secondary standards dosimetry laboratory	4/00	31 050	305 844	-	3/27	23 756	300 377	-
1989	BGD/1/011	Utilization of the neutron generator	3/00	32 592	37 024	-	3/03	32 592	34 812	-
1993	BGD/2/009	Van de Graaff utilization	1/00	10 800	60 000	18 450	-	-	-	-
1983	BGD/4/009	Research reactor utilization	9/06	72 685	606 574	20 488	7/20	65 505	555 246	9 197
1989	BGD/4/013	Repair and maintenance of nuclear instruments (Dhaka)	1/25	17 300	33 850	-	1/25	18 020	33 398	-
1991	BGD/4/014	Reactor utilization (isotope production) (phase II)	2/15	23 010	125 626	46 800	1/24	15 747	91 881	41 041
1991	BGD/4/016	Thermal stress analysis programme	2/15	23 850	43 000	18 900	1/16	27 787	34 375	14 481
1993	BGD/4/017	Repair and maintenance of nuclear instruments (phase II)	1/00	10 800	40 000	30 900	-	-	-	-

OPERATIONAL PROJECTS IN BANGLADESH
(As of 1 March 1993)

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS			
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING
			M/M	\$	\$	\$	M/M	\$	\$	\$
1993	BGD/4/018	Research reactor utilization (phase II)	4/00	42 750	37 000	52 200	-	-	-	-
1993	BGD/4/019	Development of computer codes for reactor engineering	2/00	22 200	20 000	58 500	-	-	-	-
1983	BGD/5/010	Food irradiation	5/04	37 350	1 064 635	29 200	5/14	43 844	1 029 102	28 482
1989	BGD/5/014	Agrochemical residues	4/08	39 375	139 425	8 700	2/25	22 754	134 328	-
1993	BGD/5/015	Nuclear techniques to improve agricultural production	4/00	42 300	100 000	49 500	-	-	-	-
1993	BGD/5/016	Insect pest management by genetic manipulation	2/00	22 200	30 000	29 250	-	-	-	-
1991	BGD/7/005	Tissue banking	1/12	12 810	77 150	8 204	0/14	3 841	64 498	8 204
1988	BGD/8/008	Radiation processing technology	3/00	25 350	91 500	23 140	3/04	29 870	89 465	20 982
1993	BGD/8/012	Non-destructive testing	1/00	10 800	85 000	36 900	-	-	-	-

**OPERATIONAL PROJECTS IN BANGLADESH
(As of 1 March 1993)**

STARTED	PROJECT NO.	TITLE	ALLOTMENTS				DISBURSEMENTS			
			EXPERTS		EQUIPMENT	TRAINING	EXPERTS		EQUIPMENT	TRAINING
			M/M	\$	\$	\$	M/M	\$	\$	\$
1991	BGD/9/007	Safe management of radioactive waste	3/20	35 195	67 440	56 257	0/27	13 431	41 899	19 073
1991	BGD/9/008	Strengthening of radiation protection infrastructure	0/15	4 650	111 300	67 350	0/07	3 624	59 015	14 384
	TOTAL	20 projects	56/00	517 067	3 075 368	754 989	32/26	300 771	2 468 396	155 844

Footnote-a/ projects not yet upgraded:

BGD/6/011 Modernization of nuclear medicine
 BGD/8/011 Radiation processing technology

COUNTERPART INSTITUTIONS IN BANGLADESH (I)

(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>GENERAL ATOMIC ENERGY DEVELOPMENT</u>		
BGD/0/003	Bangladesh Atomic Energy Commission, Atomic Energy Research Establishment, Institute of Computer Science, Savar, Dhaka	MUSA
BGD/0/004	Bangladesh Atomic Energy Commission, Dhaka	AHSAN
<u>NUCLEAR PHYSICS AND CHEMISTRY</u>		
BGD/1/005	Bangladesh Atomic Energy Commission, Atomic Energy Centre, Dhaka	MOLLA
BGD/1/007	Bangladesh Atomic Energy Commission, Dhaka	KASIM
BGD/1/008	Bangladesh Atomic Energy Commission, Atomic Energy Research Establishment, Institute of Nuclear Science and Technology, Savar, Dhaka	RAHMAN
BGD/1/010	Bangladesh Atomic Energy Commission, Atomic Energy Centre, Dhaka	KHAN
BGD/1/011	Bangladesh Atomic Energy Commission, Atomic Energy Research Establishment, Institute of Nuclear Science and Technology, Savar, Dhaka	MOLLA
BGD/2/006	Bangladesh Atomic Energy Commission, Atomic Energy Centre, Dhaka	KHAN
BGD/2/007	Bangladesh Atomic Energy Commission, Atomic Energy Centre, Chemistry Division Dhaka	KHAN
BGD/2/008	Bangladesh Atomic Energy Commission, Atomic Energy Research Establishment, Institute of Nuclear Science and Technology, Savar, Dhaka	ALAMGIR

COUNTERPART INSTITUTIONS IN BANGLADESH (I)
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>NUCLEAR PHYSICS AND CHEMISTRY (cont'd)</u>		
BGD/2/009	Bangladesh Atomic Energy Commission, Atomic Energy Centre, Dhaka	KHALIQUZZAMAN
<u>NUCLEAR RAW MATERIALS</u>		
BGD/3/003	Bangladesh Atomic Energy Commission, Dhaka	FARUQUEE
BGD/3/004	1. Bangladesh Atomic Energy Commission, Institute of Nuclear Minerals and Materials, Dhaka 2. Bangladesh Atomic Energy Commission, Atomic Energy Centre, Chemistry Division, Dhaka	AHMED
BGD/3/005	Bangladesh Atomic Energy Commission, Atomic Energy Research Establishment, Savar. Dhaka	FARUQUEE
<u>NUCLEAR ENGINEERING AND TECHNOLOGY</u>		
BGD/4/005	Bangladesh Atomic Energy Commission, Atomic Energy Research Establishment, Institute of Electronics, Savar, Dhaka	HUSSAIN
BGD/4/006	Bangladesh Atomic Energy Commission, Atomic Energy Research Establishment, Institute of Nuclear Science and Technology, Savar, Dhaka	RAHMAN
BGD/4/007	Bangladesh Atomic Energy Commission, Atomic Energy Research Establishment, Institute of Electronics, Savar, Dhaka	HUSSAIN
BGD/4/008	Bangladesh Atomic Energy Commission, Atomic Energy Research Establishment, Institute of Nuclear Science and Technology, Savar, Dhaka	AHMED

COUNTERPART INSTITUTIONS IN BANGLADESH (I)
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>NUCLEAR ENGINEERING AND TECHNOLOGY (cont'd)</u>		
BGD/4/009	Bangladesh Atomic Energy Commission, Atomic Energy Research Establishment, Institute of Nuclear Science and Technology, Savar, Dhaka	MOLLA
BGD/4/010	Bangladesh Atomic Energy Commission, Nuclear Power and Energy Division, Dhaka	QUAIYUM
BGD/4/012	Bangladesh Atomic Energy Commission, Atomic Energy Research Establishment, Institute of Nuclear Science and Technology, Savar, Dhaka	BHUIYAN
BGD/4/013	Bangladesh Atomic Energy Commission, Atomic Energy Centre, Electronics Division, Dhaka	TAHER
BGD/4/014	Bangladesh Atomic Energy Commission, Atomic Energy Research Establishment, Institute of Nuclear Science and Technology, Savar, Dhaka	RAHMAN
BGD/4/016	Bangladesh Atomic Energy Commission, Atomic Energy Research Establishment, Institute of Nuclear Science and Technology, Savar, Dhaka	FAZLUL KARIM
BGD/4/017	1. Bangladesh Atomic Energy Commission, Atomic Energy Centre, Electronics Division, Dhaka 2. Bangladesh Atomic Energy Commission, Atomic Energy Research Establishment, Institute of Electronics, Savar, Dhaka	ZAHUR TAHER
BGD/4/018	Bangladesh Atomic Energy Commission, Atomic Energy Research Establishment, Institute of Nuclear Science and Technology, Savar, Dhaka	MOLLA

COUNTERPART INSTITUTIONS IN BANGLADESH (I)
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>NUCLEAR ENGINEERING AND TECHNOLOGY (cont'd)</u>		
BGD/4/019	Bangladesh Atomic Energy Commission, Atomic Energy Research Establishment, Savar, Dhaka	BHUIYAN
<u>AGRICULTURE</u>		
BGD/5/003	Bangladesh Institute of Nuclear Agriculture, Mymensingh	MIA
BGD/5/007	Bangladesh Atomic Energy Commission, Institute of Irradiation and Pest Control Research, Dhaka	HOSSAIN
BGD/5/009	Bangladesh Institute of Nuclear Agriculture, Mymensingh	PATWARY
BGD/5/010	Bangladesh Atomic Energy Commission, Atomic Energy Research Establishment, Institute of Food and Radiation Biology, Savar, Dhaka	BHUIYA
BGD/5/012	Bangladesh Institute of Nuclear Agriculture, Mymensingh	MAIH
BGD/5/013	Bangladesh Institute of Nuclear Agriculture, Mymensingh	MAIH
BGD/5/014	Bangladesh Atomic Energy Commission, Atomic Energy Research Establishment, Institute of Food and Radiation Biology, Savar, Dhaka	MATIN
BGD/5/015	Bangladesh Institute of Nuclear Agriculture, Mymensingh	IDRISS ALI SHAIKH
BGD/5/016	Bangladesh Atomic Energy Commission, Atomic Energy Research Establishment, Institute of Food and Radiation Biology, Savar, Dhaka	BHUIYAN SHAHJAHAN

COUNTERPART INSTITUTIONS IN BANGLADESH (I)
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>NUCLEAR MEDICINE</u>		
BGD/6/003	Atomic Energy Medical Centre, Chittagong	AHMED
BGD/6/006	Atomic Energy Medical Centre, Chittagong	AHMED
BGD/6/007	Bangladesh Atomic Energy Commission, Institute of Nuclear Medicine, Dhaka	AHMED
BGD/6/009	Bangladesh Atomic Energy Commission, Nuclear Medicine Centre, Chittagong	KARIM
<u>NUCLEAR TECHNIQUES IN BIOLOGY</u>		
BGD/7/003	Bangladesh Atomic Energy Commission, Institute of Irradiation and Pest Control Research, Dhaka	SIDDIQUI
BGD/7/005	Bangladesh Atomic Energy Commission, Institute of Food and Irradiation Biology, Division of Genetics, Dhaka	ISLAM
<u>NUCLEAR TECHNIQUES IN INDUSTRY AND HYDROLOGY</u>		
BGD/8/004	Bangladesh Atomic Energy Commission, Institute of Nuclear Science and Technology, Isotope Hydrology Division, Dhaka	SIKDER
BGD/8/005	Bangladesh Atomic Energy Commission, Atomic Energy Centre, Isotope Application Division, Dhaka	HAQUE
BGD/8/006	Bangladesh Atomic Energy Commission, Atomic Energy Centre, Isotope Application Division, Dhaka	ULLAH

COUNTERPART INSTITUTIONS IN BANGLADESH (I)
(By Project)

<u>Project No.</u>	<u>Institute</u>	<u>Counterpart(s)</u>
<u>NUCLEAR TECHNIQUES IN INDUSTRY AND HYDROLOGY (cont'd)</u>		
BGD/8/008	Bangladesh Atomic Energy Commission, Atomic Energy Research Establishment, Institute of Nuclear Science and Technology, Savar, Dhaka	ALI
BGD/8/009	Bangladesh Atomic Energy Commission, Atomic Energy Research Establishment, Institute of Nuclear Science and Technology, Nuclear Chemistry Division, Savar, Dhaka	AL-SIDDIQUE
BGD/8/012	Bangladesh Atomic Energy Commission, Atomic Energy Centre, Non-Destructive Testing Division, Dhaka	SANAULLAH
<u>NUCLEAR SAFETY</u>		
BGD/9/004	Bangladesh Atomic Energy Commission, Atomic Energy Research Establishment, Health Physics Division, Savar, Dhaka	MOLLA JALIL MIAH
BGD/9/005	Bangladesh Atomic Energy Commission, Atomic Energy Research Establishment, Institute of Nuclear Science and Technology, Savar, Dhaka	HUSAIN
BGD/9/006	Bangladesh Atomic Energy Commission, Atomic Energy Centre, Dhaka	MOLLA
BGD/9/007	Bangladesh Atomic Energy Commission, Atomic Energy Research Establishment, Health Physics Division, Savar, Dhaka	KHAN RAHMAN
BGD/9/008	Bangladesh Atomic Energy Commission, Nuclear Safety and Radiation Protection Division, Dhaka	MOLLA

COUNTERPART INSTITUTIONS IN BANGLADESH (II)
(By Institute)

DHAKA

Bangladesh Atomic Energy Commission
Dhaka

BGD/0/004	Manpower Development
BGD/1/007	Neutron Dosimetry
BGD/3/003	Exploration of Thorium and Uranium in Bangladesh

Bangladesh Atomic Energy Commission
Atomic Energy Centre
Dhaka

BGD/1/005	Neutron Physics
BGD/1/010	Trace Analytical Laboratory
BGD/2/006	X-Ray Fluorescence
BGD/2/009	Van de Graaff Utilization
BGD/9/006	Occupational Radiation Monitoring

Bangladesh Atomic Energy Commission
Atomic Energy Centre
Chemistry Division
Dhaka

BGD/2/007	Elemental Analysis
BGD/3/004	Nuclear Raw Materials Prospection

Bangladesh Atomic Energy Commission
Atomic Energy Centre
Electronics Division
Dhaka

BGD/4/013	Repair and Maintenance of Nuclear Instruments
BGD/4/017	Repair and Maintenance of Nuclear Instruments (Phase II)

Bangladesh Atomic Energy Commission
Atomic Energy Centre
Isotope Application Division
Dhaka

BGD/8/005	Industrial Radiography
BGD/8/006	Development of Non-Destructive Testing

COUNTERPART INSTITUTIONS IN BANGLADESH (II)
(By Institute)

DHAKA (cont'd)

Bangladesh Atomic Energy Commission
Atomic Energy Centre
Non-Destructive Testing Division
Dhaka

BGD/8/012 Non-Destructive Testing

Bangladesh Atomic Energy Commission
Institute of Nuclear Minerals and Materials
Dhaka

BGD/3/004 Nuclear Raw Materials Prospection

Bangladesh Atomic Energy Commission
Nuclear Power and Energy Division
Dhaka

BGD/4/010 Training of Manpower for Quality Assurance

Bangladesh Atomic Energy Commission
Institute of Irradiation and Pest Control Research
Dhaka

BGD/5/007 Food Preservation
BGD/7/003 Sterilization of Pharmaceuticals

Bangladesh Atomic Energy Commission
Institute of Nuclear Medicine
Dhaka

BGD/6/007 Nuclear Medicine

Bangladesh Atomic Energy Commission
Institute of Food and Irradiation Biology
Division of Genetics
Dhaka

BGD/7/005 Tissue Banking

COUNTERPART INSTITUTIONS IN BANGLADESH (II)
(By Institute)

DHAKA (cont'd)

Bangladesh Atomic Energy Commission
Institute of Nuclear Science and Technology
Isotope Hydrology Division
Dhaka

BGD/8/004 Tracers in Sedimentology

Bangladesh Atomic Energy Commission
Nuclear Safety and Radiation Protection Division
Dhaka

BGD/9/008 Strengthening of Radiation Protection Infrastructure

SAVAR, DHAKA

Bangladesh Atomic Energy Commission
Atomic Energy Research Establishment
Savar, Dhaka

BGD/3/005 Nuclear Materials Prospection
BGD/4/019 Development of Computer Codes for Reactor Engineering

Bangladesh Atomic Energy Commission
Atomic Energy Research Establishment
Institute of Nuclear Science and Technology
Savar, Dhaka

BGD/1/008 Secondary Standards Dosimetry Laboratory
BGD/1/011 Utilization of Neutron Generator
BGD/2/008 Development of Nuclear Analytical Facilities
BGD/4/006 Reactor Utilization - Isotope Production
BGD/4/008 Research Reactor Commissioning
BGD/4/009 Research Reactor Utilization
BGD/4/012 Research Reactor Data Base and Computer Code Development
BGD/4/014 Reactor Utilization - Isotope Production (Phase II)
BGD/4/016 Thermal Stress Analysis Programme
BGD/4/018 Research Reactor Utilization (Phase II)
BGD/8/008 Radiation Processing Technology
BGD/9/005 Radioactive Waste Management

COUNTERPART INSTITUTIONS IN BANGLADESH (II)
(By Institute)

SAVAR, DHAKA (cont'd)

**Bangladesh Atomic Energy Commission
Atomic Energy Research Establishment
Institute of Nuclear Science and Technology
Nuclear Chemistry Division
Savar, Dhaka**

BGD/8/009 Radiation Induced Vulcanization of Natural Rubber Latex

**Bangladesh Atomic Energy Commission
Atomic Energy Research Establishment
Institute of Computer Science
Savar, Dhaka**

BGD/0/003 Data Base Development

**Bangladesh Atomic Energy Commission
Atomic Energy Research Establishment
Institute of Electronics
Savar, Dhaka**

BGD/4/005 Nuclear Electronics
BGD/4/007 Repair and Maintenance of Nuclear Instruments
BGD/4/017 Repair and Maintenance of Nuclear Instruments (Phase II)

**Bangladesh Atomic Energy Commission
Atomic Energy Research Establishment
Institute of Food and Radiation Biology
Savar, Dhaka**

BGD/5/010 Food Irradiation
BGD/5/014 Agrochemical Residues
BGD/5/016 Insect Pest Management by Genetic Manipulation

**Bangladesh Atomic Energy Commission
Atomic Energy Research Establishment
Health Physics Division
Savar, Dhaka**

BGD/9/004 Radiation Protection
BGD/9/007 Safe Management of Radioactive Waste

COUNTERPART INSTITUTIONS IN BANGLADESH (II)
(By Institute)

MYMENSINGH

Bangladesh Institute of Nuclear Agriculture
Mymensingh

BGD/5/003	Development of the Institute of Nuclear Agriculture
BGD/5/009	Isotopes in Agriculture
BGD/5/012	Nitrogen Fixation in Grain Legumes
BGD/5/013	Nuclear Techniques in Agriculture
BGD/5/015	Nuclear Techniques to Improve Agricultural Production

CHITTAGONG

Atomic Energy Medical Centre
Chittagong

BGD/6/003	Radioisotopes in Medicine
BGD/6/006	Nuclear Medicine

Bangladesh Atomic Energy Commission
Nuclear Medicine Centre
Chittagong

BGD/6/009	Nuclear Medicine (Phase II)
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**THE AGENCY'S TECHNICAL CO-OPERATION PROGRAMME WITH
BANGLADESH
SINCE 1983**

LONG-TERM EXPERT ASSIGNMENTS

NONE

RESEARCH CONTRACTS/AGREEMENTS IN BANGLADESH SINCE 1983 ¹
(As of 1 March 1993)

Field of activity	No. of contracts/ agreements	Amount allocated \$
Nuclear physics	4	32 000
Nuclear chemistry	1	8 000
Nuclear engineering and technology	2	18 000
Nuclear techniques in agriculture	22	270 600
Nuclear medicine	7	69 700
Nuclear techniques in biology	3	43 500
Nuclear techniques in industry & hydrology	3	38 400
Safety in nuclear energy	2	20 000
TOTAL	44	500 200

¹/ New awards since 1983

**SCIENTISTS FROM BANGLADESH SERVING AS AGENCY
TECHNICAL CO-OPERATION EXPERTS OR
TRAINING COURSE LECTURERS
1983 - 1993
(As of 1 March 1993)**

Name	No. of assignments	Project(s)
AHMAD, ABU ABDULLAH Z.	1	INT/0/045
AHMED, KAMALUDDIN	8	ETH/6/003, KEN/6/009, INT/6/035, RAF/6/004, RAS/6/011, RAS/6/018
AHMED, MAINUDDIN	3	CUB/5/006, GHA/5/008, LIB/5/005
AL-SIDDIQUE, FAIZUR R.	5	RAS/8/011, RAS/8/062
HOSSAIN, MD.AFZAL	1	RAS/4/008
HOSSAIN, MOAZZEM	1	RAS/A4/009
HUSSAIN, MD. EMDAD	2	RAS/8/061
ISHAQUE, ABU MD.	1	RAS/6/011
ISLAM, MD.MIZANUL	3	RAS/8/008, RAS/8/011
KARIM, CHOUDHURY S.	1	RAS/0/013
KARIM, MESBAHUL	3	RAS/8/008, RAS/8/061
KARIM MIAH, MD.FAZLE	2	RAS/9/006
KAZI, OBAIDUL AWAL	1	BGD/9/008
KHAN, AMIR HUSSAIN	1	RAS/8/061
KHAN, MD.ABDUL HAMID	2	RAS/8/008, RAS/8/061
MD.LABIBULLAH	1	RAS/8/064
MOINUL ISLAM, SHEFAT	1	RAS/6/018
MOLLA, M.A.RAB	3	RAS/9/006
RAHMAN, MAHFUZUR	1	BGD/4/014
RAHMAN, MD.MATIUR	1	BGD/4/014
SHAIKH, MD.ANWARUL Q.	7	MYA/5/005, INT/5/092, INT/5/101, INT/5/108, INT/5/112, INT/5/116, RAS/5/015

**SCIENTISTS FROM BANGLADESH SERVING AS AGENCY
TECHNICAL CO-OPERATION EXPERTS OR
TRAINING COURSE LECTURERS
1983 - 1993
(As of 1 March 1993)**

Name	No. of assignments	Project(s)
SIDDIQUE, MD.ABDUL BARI	2	RAS/8/062
SIKDER, MD.DELWAR HOSSAIN	2	BGD/8/004
ULLAH, MD.SANA	7	SRL/8/011, RAS/8/008, RAS/8/011, RAS/8/061
ZAHUR, ALI MD.	1	INT/4/054
TOTAL	61	

**AGENCY FELLOWSHIPS AND SCIENTIFIC VISITS
HOSTED BY BANGLADESH
1983 - 1993
(As of 1 March 1993)**

Recipient country	No. of fellowships	No. of scientific visits	TOTAL ¹
LIBYA	-	1	1
MALAYSIA	-	2	2
THAILAND	-	1	1
VIET NAM	1	-	1
TOTAL	1	4	5

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

**REGIONAL AND INTERREGIONAL TRAINING EVENTS
HOSTED BY BANGLADESH
1983 - 1993
(As of 1 March 1993)**

Course No.	Course Title	Partici- pants	Year
INT/1/024 (001)	IWS on monsoon rainfall prediction	9	1983
RAS/4/011 (005)	RTC on safety documentation for research reactors	11	1992
RAS/8/008 (049)	Regional first executive management seminar on industrial tracer applications	5	1986
	TOTAL	25	

In addition, one national training course was held in 1988:
BGD/8/006 (001) - NTC on NDT (radiographic testing, level II).