

# **23<sup>rd</sup> FNCA Ministerial Level Meeting**

31 October 2022, Ulaanbaatar, Mongolia

## **Country Report: Bangladesh**

Presented by:

Dr. Md. Azizul Haque

Chairman

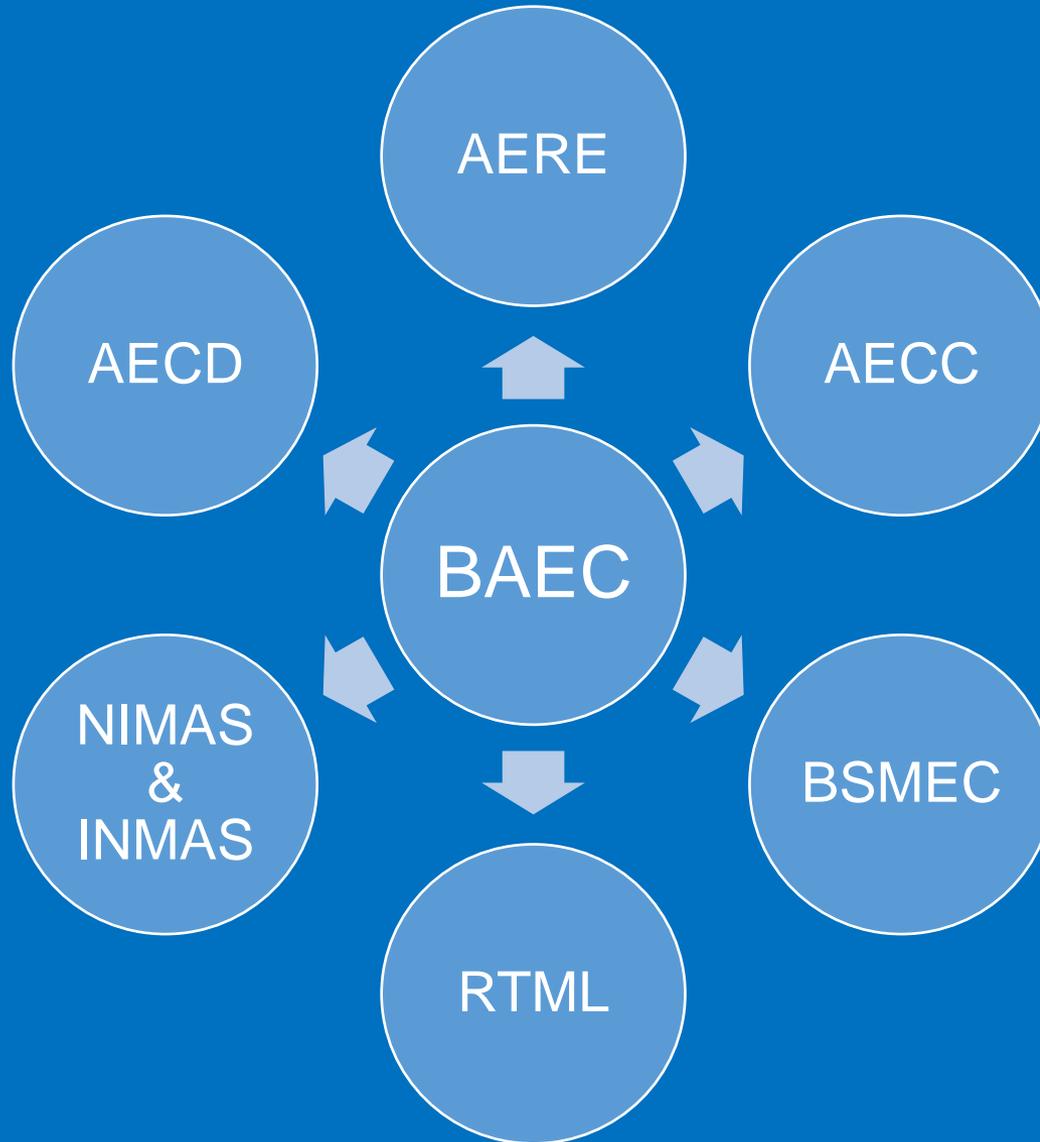
Bangladesh Atomic Energy Commission

# Bangladesh Atomic Energy Commission (BAEC)

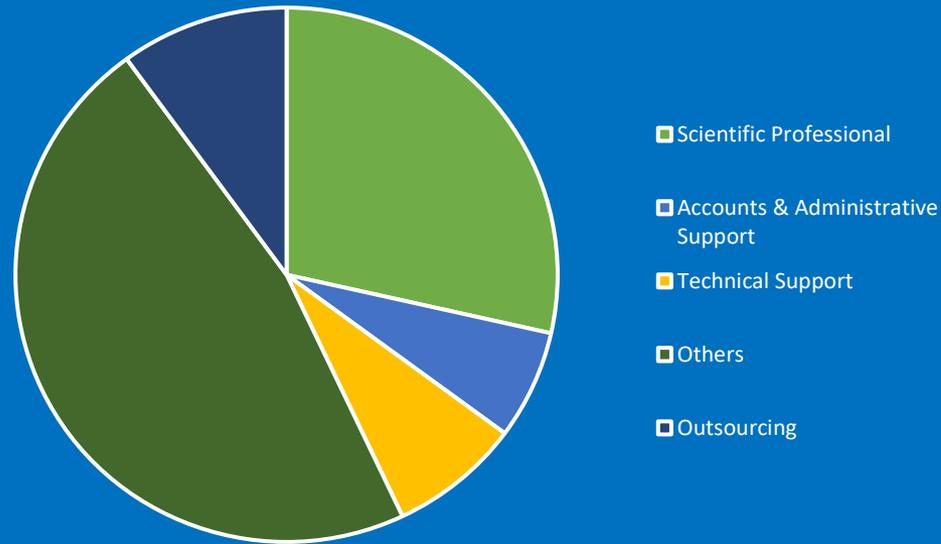
- Established in the February, 1973 through the promulgation of Presidential Order (P.O.) 15 – 73
- P. O has been replaced by Bangladesh Atomic Energy Act. 2017

**Objective : To conduct R & D on peaceful application of nuclear energy**

# BAEC Structure



# BAEC Manpower



- Scientific Professional: 588
- Accounts & Administrative Support : 136
- Technical Support : 162
- Others: 969
- Outsourcing : 207
- Total : 2062**

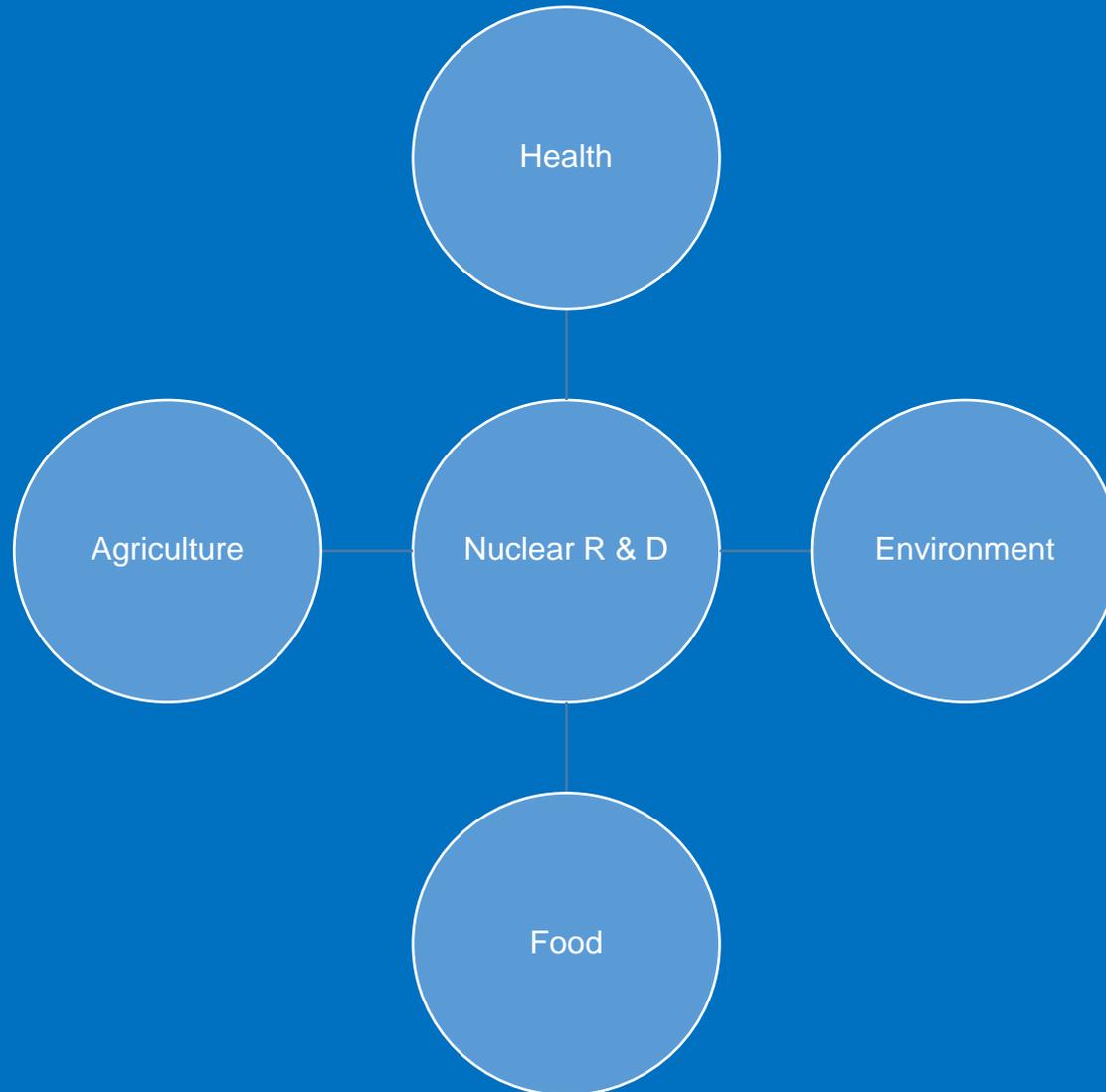
# Nuclear Policy Program of Bangladesh

## □ Nuclear policy program of Bangladesh focuses on:

- Nuclear power program
- Modern nuclear medicine services to people
- Protection of public health and the environment
- Food preservation
- Encouraging and facilitating international cooperation to reduce nuclear risks
- Human resources and capacity building

# Research and Development

- The main area of research to promote peaceful uses of nuclear energy by using radiation sources and research reactor facilities are:



# International Nuclear Cooperation

- ❑ The following project activities with a view and information exchanges led by Japan are being conducted under the nuclear cooperation framework
- Mutation breeding
- Radiation processing and polymer modification for agriculture, environmental and medical applications
- Bio fertilizer
- Research on climate change using nuclear and isotopic techniques
- Radiation oncology
- Radiation safety and radioactive waste management
- Nuclear security and safeguard

# International Nuclear Cooperation

- Nuclear non-proliferation treaty
- Nuclear non-proliferation treaty for safe guard
- Regional cooperative agreement
- Convention on early notification of nuclear accident
- Convention on nuclear safety developing infrastructure and support systems for a nuclear power plant in Bangladesh
- Cooperative agreement for research, development and training related to nuclear science and technology

# International Nuclear Cooperation

- International convention for nuclear suppression of acts of nuclear terrorism
- Convention on physical protection of nuclear material
- Comprehensive nuclear test ban treaty organization
- Convention on nuclear safety
- Convention on assistance for nuclear accident and radiological emergency
- Forum for Nuclear Cooperation in Asia (FNCA)
- Asian Nuclear Safety Network (ANSN)
- Asia-Pacific Safeguards Network (APSN)

# Recent Progress

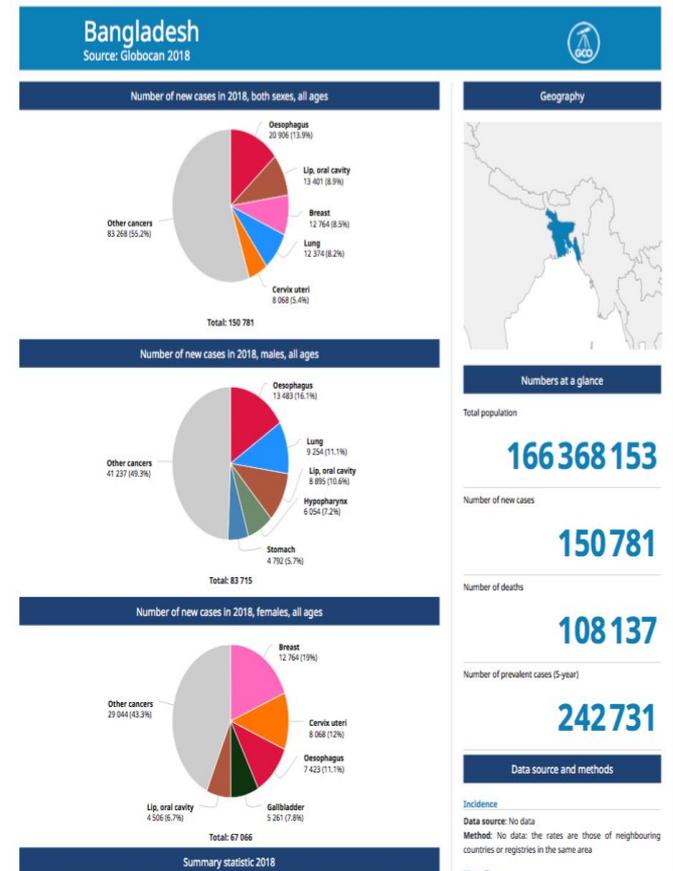
□ For peaceful use of nuclear technology in Bangladesh the following development have been made in the recent years

- Infrastructure development for nuclear R&D facilities
- Infrastructure development for nuclear medicine
- Infrastructure development for radioactivity monitoring
- Implementation of nuclear power program
- Nuclear technology based services
- Area survey for nuclear power plant in the southern region of the country
- Nuclear medical physics
- Development of human resources in the area of nuclear science and technology

Domestic situation of  
cancer radiotherapy  
in  
Bangladesh

# Cancer Burden

- Population:  
166368153
- Number of new cases:  
150781
- Number of Deaths:  
108137
- Number of prevalent cases:  
242731



# Geography of Bangladesh





# RT machines in Bangladesh

Sector	LINAC	COBALT	Simmulator	Barchytherapy
Government	11	10	11	11
Private	15	3	10	9
Total	26	13	21	20

# Machines in Govt Sector

Sl no	Institution	LINAC	Co-60 Teletherapy	Brachytherapy	Simulator	Comment
1	NICRH	4	2	2 (Ir 192+ Co-60)	2(CT)	(Ir 192) is out of order
2	Dhaka MCH	1	2	1 (Co 60)	1 (CT)	One Co 60 Teletherapy Machine is out of order. Simulator to be installed
3	Rajshahi MCH	0	1	1 (Co 60)	1	
4	Chottagram MCH	0	1	1 (Co 60)	1	
5	Mymensingh MCH	0	1	0	0	Teletherapy out of order
6	MAG Osmani MCH	0	1	0	1 (CT)	
7	Sher E Bangla MCH	0	1	1 (Co 60)		Teletherapy out of order, Co-60 BT Installed
8	Shahid Ziaur Rahman MCH	1	0	1 (Ir 192)	1 (2D) 1 (CT)	BT not yet commissioned
9	CMH	1 (TB)		1 (Ir 192)	1 (CT)	All machine running
10	Rangpur MCH	0	1	0		Co 60 Teletherapy Out of order for last >3 years
11	Faridpur MCH	1 (6MV)		1(Ir 192)	1 (CT )	Not yet Installed
12	Khulna MCH	1	0	0	0	Infrastructure is under construction
13	ARMCH, Dinajpur	0	0	1 (Ir 192)	0	Not yet Installed
14	BAEC, Savar, Dhaka	1	0	0	0	
15	BSMMU	1	0	1	1	BT- Non- functioning ,
	<b>Total (15 with RT)</b>	<b>11</b>	<b>10</b>	<b>11</b>	<b>11</b>	

# Machines in Private Sector

Sl no	Hospitals	Linac	Cobalt	Brachy	Simulator	
1	Delta MCH	3	2	1 (Cobalt)	1 (CT) + 1(2D)	3DCRT, IMRT, VMAT
2	Square HL	1	0	1 (Ir 192)	1 (CT)	3DCRT, IMRT, VMAT
3	United HL	2	0	1 (Ir 192)	1 (CT)	3DCRT, IMRT, VMAT
4	Evercare HL	1	0	1 (Cobalt 60)	1 (CT)	3DCRT, IMRT, VMAT
5	Ahsania MCGH	2	1	1 (Cobalt 60)	1 (CT)	3DCRT, IMRT, VMAT
6	KYAMCH	2	0	1 (Ir 192)	1 (CT)	3DCRT, IMRT, VMAT
7	Enam MCH	1	0	1 (Cobalt)	1 (CT)	3DCRT, IMRT, VMAT
8	NEMCH, Sylhet	1	0	1 (Ir 192)	1 (CT)	3DCRT, IMRT, VMAT
9	LabAid Hospital	2	0	1	1(CT)	3DCRT, IMRT, VMAT
<b>PVT</b>	<b>Total (9with RT)</b>	<b>15</b>	<b>3</b>	<b>9</b>	<b>10</b>	

# Manpower in RT sector

<b>Nomenclature</b>	<b>Number</b>
Radiation Oncologist	150
Medical Physicists	70
Radiation Therapy Technologist	115

# Education in RT sector

## For Radiation Oncology

Four post graduate courses :

- Bangabandhu Sheikh Mujib University is offering MD in Radiation Oncology and MD in Clinical Oncology
- Bangladesh College of Physicians and Surgeons(BCPS) - Fellowship in Radiotherapy (FCPS) and Membership in Radiotherapy (MCPS).
- DMRT and MPhil Radiotherapy courses are now discontinued.

# Education in RT sector

## For Medical Physics

- Gono Bishwabiddalaya a private university offers both masters and Bachelor program of medical physics in the country.
- Masters program started at Dhaka University but discontinued.
- No accredited program is available.

# Education in RT sector

## For Radiation therapy technologist(RTT)

- Eight institutes are offering diploma degree to the RTT around the country.
- No bachelor or masters program based on IAEA syllabus is available.

*Thank You!*