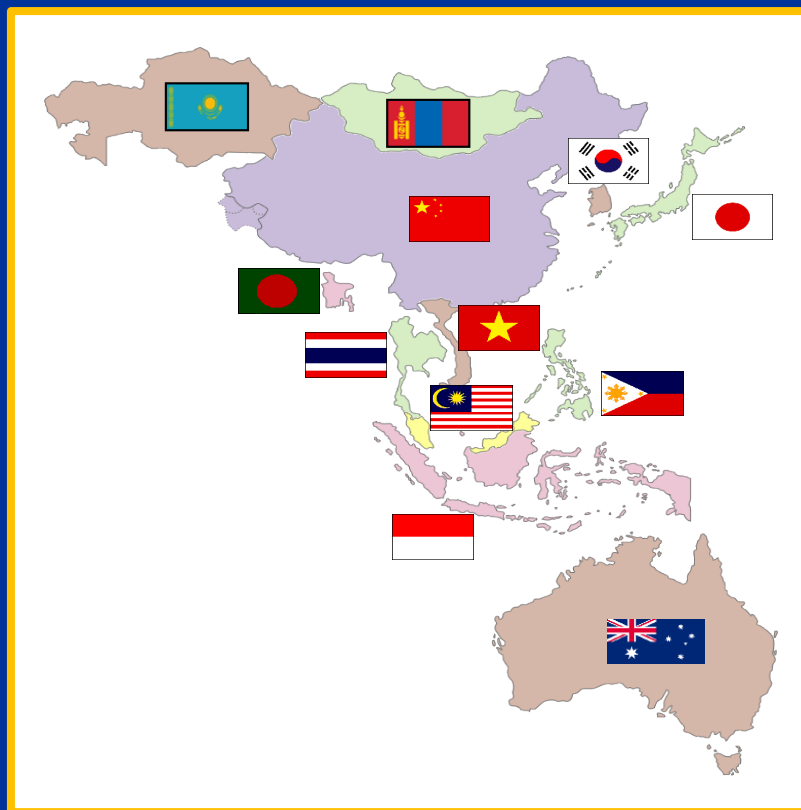


Overview and Progress of FNCA Activities in 2019

12 Member
Countries

Australia
Bangladesh
China
Indonesia
Japan
Kazakhstan



Korea
Malaysia
Mongolia
Philippines
Thailand
Viet Nam

42 RCA NRM
Virtual
Meeting

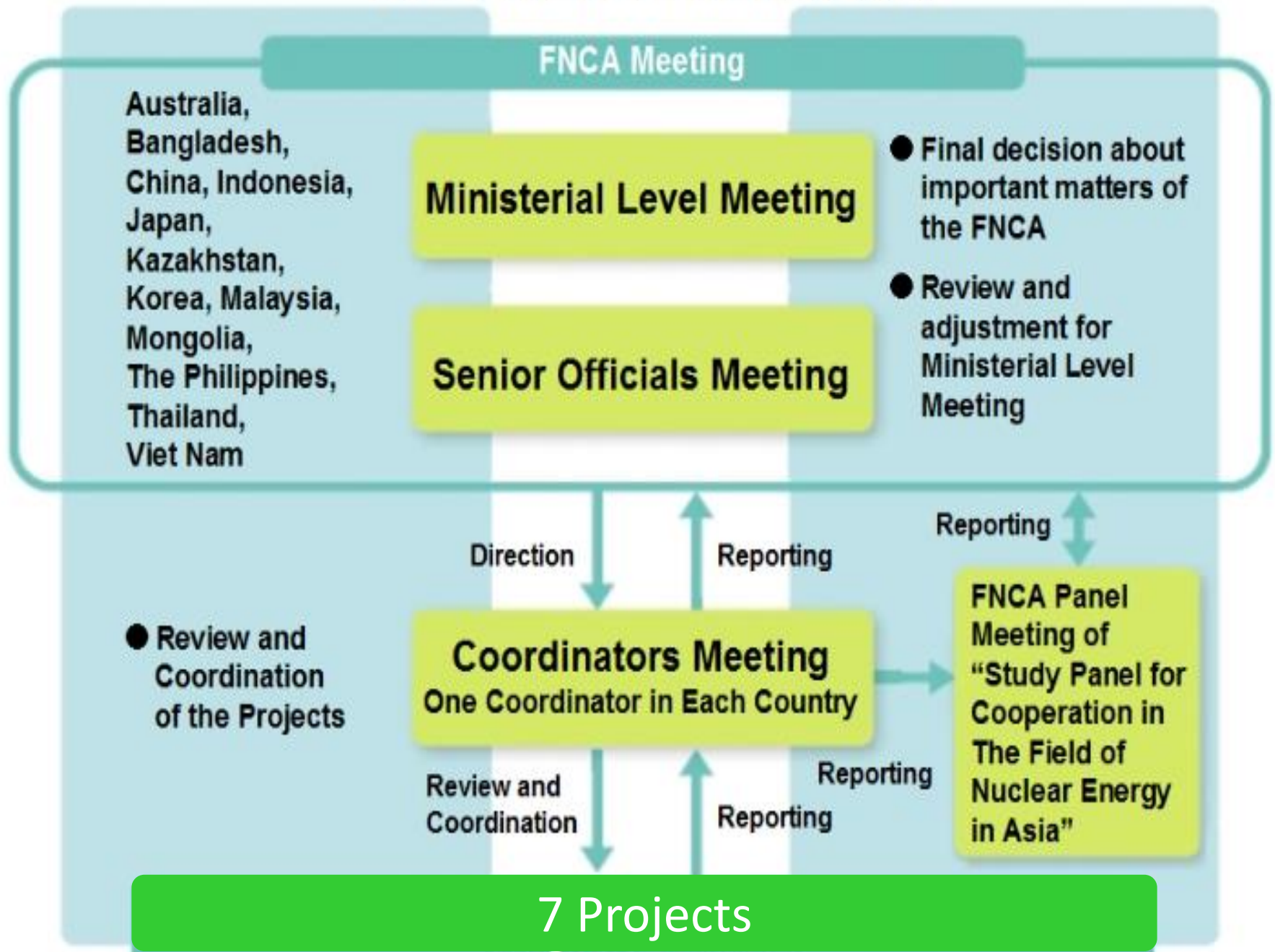
NAMBA Hideki
FNCA Advisor of Japan

April 23, 2020

About FNCA

- 1990 ICNCA (International Conference for Nuclear Cooperation in Asia) held by Atomic Energy Commission of Japan
 - Exchange of frank views by ministers in charge of development and utilization of nuclear energy on how to proceed with regional cooperation
 - Practical cooperation on specified subjects
- 2000 FNCA (Forum for Nuclear Cooperation in Asia)
 - Ministerial Level Meeting, Coordinator and Project Leader System
 - Four Fields:
 - (1) Radiation Utilization Development
(Industrial/Environmental Utilization and Healthcare Utilization)
 - (2) Research Reactor Utilization Development
 - (3) Nuclear Safety Strengthening
 - (4) Nuclear Infrastructure Strengthening

The FNCA Framework



20th FNCA Ministerial Level Meeting

[Major Agenda]

5 December 2019, Tokyo Japan

◆ Keynote speech

- “Future Dream: Quantum Scalpel ~Aim for healthy and long-living society with zero-cancer-death~” by Dr. Hirano Toshio, President of National Institute for Quantum and Radiological Science and Technology Japan (QST)
- “Nuclear Education and Human Resource Development” by Dr. Oka Yoshiaki, Chairman of Atomic Energy Commission, Japan

◆ Country Report

from all countries about the energy policy including nuclear energy and the research on the use of radiation

◆ Round table discussion

“Radiation Technology Utilization in Human Health and Medical Well-Being”



20th FNCA Ministerial Level Meeting

[Joint Communiqués]

5 December 2019, Tokyo Japan

- Recognizing the importance of cooperation with nuclear international organizations such as the IAEA and the OECD/NEA, and other relevant national organizations including NRC of the US,
- Appreciating the progress of the FNCA project activities in agriculture, industry, medicine and environment, and commending the winners of the 3rd FNCA Awards for their outstanding achievements,
- Appreciating the tireless efforts of Mr. Amano, the former Director General of IAEA, particularly his strong leadership in the peaceful and safe utilization of nuclear science and technology for the promotion of socio-economic well-being of the world, and extending condolences to his family, friends and colleagues

Related to the activities of IAEA and OECD/NEA in the Joint Communiqués of 20th MLM

[Decided to work toward]

6. Enhancement of public communication and public relations functions, and relationship with international institutions

Continue to promote public communication to raise an awareness of, and build public trust in, nuclear technology through the public relations functions of the FNCA such as its website and open lectures in the member countries, and make efforts to reinforce further the relationship with relevant international institutions, including the IAEA and the OECD/NEA.

FNCA on-going 7 Projects in 2019

- Radiation Utilization - Industrial & Environmental
 - (1) Mutation Breeding**
 - (2) Radiation Processing and Polymer Modification for Agricultural, Environmental and medical Applications**
 - (3) Research on Climate Change using Nuclear and Isotopic Techniques**
- Radiation Utilization - Healthcare
 - (4) Radiation Oncology**
- Research Reactor Utilization
 - (5) Research Reactor Utilization (RRU)**
 - Neutron Activation Analysis (NAA)**
- Nuclear Safety Strengthening
 - (6) Radiation Safety and Radioactive Waste Management**
- Nuclear Infrastructure Strengthening
 - (7) Nuclear Security and Safeguards**

Mutation Breeding

Mutation Breeding of Major Crops for Low Input Sustainable Agriculture under Climate Change (2018-2020)

Object of the Project

- ◆ To develop new varieties of Crops by mutation breeding using gamma rays and ion beams
- ✓ high yields with low Input (less fertilizer and chemicals)
- ✓ resistance to various environmental stress, e.g. diseases, insects, drought, flood, etc., under climate change



Vietnam awarded 2019
FNCA Excellent Research
Team of the year

Workshop in
Malaysia
3-6 September, 2019

Radiation Processing and Polymer Modification for Agricultural, Environmental and medical Applications

◆ Promotion of Versatile R&D and Technology Transfer through Information Exchange and Discussion with the Experts of Radiation Chemists and Radiation Microbiologists

- Degraded Chitosan for Animal Feeds
- Hydrogel for Medical Application
- PGP and SWA, Inclusive Process Development
- Synergistic Effect among PGP, SWA and BF
- Sterilization of BF Carrier using Radiation
- Mutation Breeding of BF Microbe using Radiation
- Environmental Remediation



Workshop in Indonesia
3-7 September, 2019

Kazakhstan awarded
2019 FNCA Best
Research Team of the
year

Research on Climate Change using Nuclear and Isotopic Techniques

Object of the Project

- ◆ To better understand the mechanisms and processes of past climate variability through nuclear and isotopic-based techniques and analysis with the goal of interpreting the drivers of the Earth's climate system.
- Climate Change Environmental Archives
- Carbon Storage (Sequestration) in coastal and terrestrial (forest) soils



Workshop in
Japan,
October 7-10,
2019

Radiation Oncology

Object of the Project

- ◆ To establish optimal treatment protocols of radiotherapy and chemotherapy for predominant cancers in Asia
- ◆ To improve the quality of radiotherapy in FNCA MCs
- ◆ To improve treatment outcomes for predominant cancers in Asia

Project Activities

- 1) International multi-center clinical studies
- 2) Physical QA/QC audit of radiotherapy
- 3) Workshop/Open Lecture/Technical Visit
- 4) Collaboration with IAEA/RCA

Workshop in China October 28-31, 2019



Research Reactor Utilization

Project Objectives

- Improve research reactor utilization in each FNCA member state
- The following topics will be discussed in three years

- a. Nuclear Activation Analysis (NAA)
- b. Isotope Production including new isotopes
- c. Neutron Scattering
- d. Nuclear Science
- e. Boron Neutron Capture Therapy, Neutron Radiography
- f. Material Research
- g. New Research Reactor
- h. Human Resource Development

Australia awarded 2019 FNCA
Excellent Research Team of the year

Workshop in Kazakhstan, September 10-12, 2019



Radiation Safety and Radioactive Wastes Management

Project Objectives

- ◆ To enhance Radiation Safety and Radioactive Wastes Management among participating FNCA countries through sharing information, knowledge and experience of existing technologies

Assist the member countries with safety improvement related to radiation safety and radioactive management of low-level radioactive waste repositories



Workshop in
Vietnam,
October 1-3,
2019

Nuclear Security and Safeguards

Project Objectives

- ◆ To share experience, knowledge and information on nuclear security and safeguards implementation including human resource development and R&D
- ◆ To exchange views on policy, strategy and frame work for nuclear security and safeguards

Project Activities

- To build an effective international mechanism for nuclear materials security in Asia
 - Nuclear forensics
 - cyber security
 - the security of radioactive sources
- To promote human resource development in nuclear security



Workshop in
Philippines
November 26-28,
2019

FNCA / RCA Present Cooperating Projects

	FNCA (Project Leader)	RCA (Project Coordinator)
Agriculture	Mutation Breeding (Dr. Yoshihiro Hase, Japan)	RAS5077 Promoting the Application of Mutation Techniques and Related Biotechnologies for the Development of Green Crop Varieties (Dr. Liu Luxiang, China) 2016-2019

	FNCA (Project Leader)	RCA (Project Coordinator)
Human Health	Radiation Oncology (Dr. Shingo Kato, Japan)	RAS6086 Strengthening Cancer Management Programmes in RCA States Parties through Collaboration with National and Regional Radiation Oncology Societies (Dr. Takashi Nakano, Japan), 2018-2021

for Future FNCA / RCA Cooperation Discussed in FNCA Project Workshops in 2019

	FNCA Project (Workshops)	Discussed Item
Agriculture	Mutation Breeding (September 3-6, 2019 in Malaysia)	The recent IAEA/RCA RAS5077 meeting on assessing nutrient use efficiency held in August 2019 in Beijing was reported.

	FNCA Project (Workshops)	Discussed Item
Human Health	Radiation Oncology (October 28-31, 2019 in China)	A collaboration with IAEA/RCA project on palliative radiotherapy was proposed by Japan.

	FNCA Project (Workshops)	Discussed Item
Food Provenance/ Security	Research on Climate Change using Nuclear and Isotopic Techniques (October 7-10, 2019 in Japan)	The possibility of a new FNCA Environmental Change / food provenance & security project was proposed, and suggested to cooperate with IAEA/RCA project.

Training Programs of MEXT

Outline

FNCA

Nuclear Researchers Training Program (NSRA)

1. FNCA Research Course

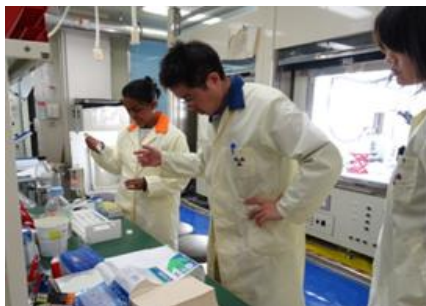
Performing research activities related to the FNCA project themes. (3-6months)

2. Individual Research Course

Matching the ANTEP (Asian Nuclear Training and Education Program) Needs from Asian Countries. (3-6months)

3. Basic and Fundamental Course

Giving various lectures on Nuclear Engineering/Nuclear Safety Engineering. (1-3months)



Instructors Training Program (JAEA)

1. Instructors Training Course(ITC)

Inviting the participants, who are expected to be instructors in their countries in the future. (6-8weeks)

2. Follow-up Training Course(FTC)

Japanese experts visit Asian countries and give an advice to local instructors who had participated in ITC. (1-2weeks)

3.Seminars on Nuclear Technologies

- (1)Nuclear Plant Safety
 - (2)Administration and Regulation
 - (3)Basic knowledge of Radiation
 - (4)Site Location of Nuclear Facility
- (1-4weeks)



Training Programs of MEXT

Number of Participants

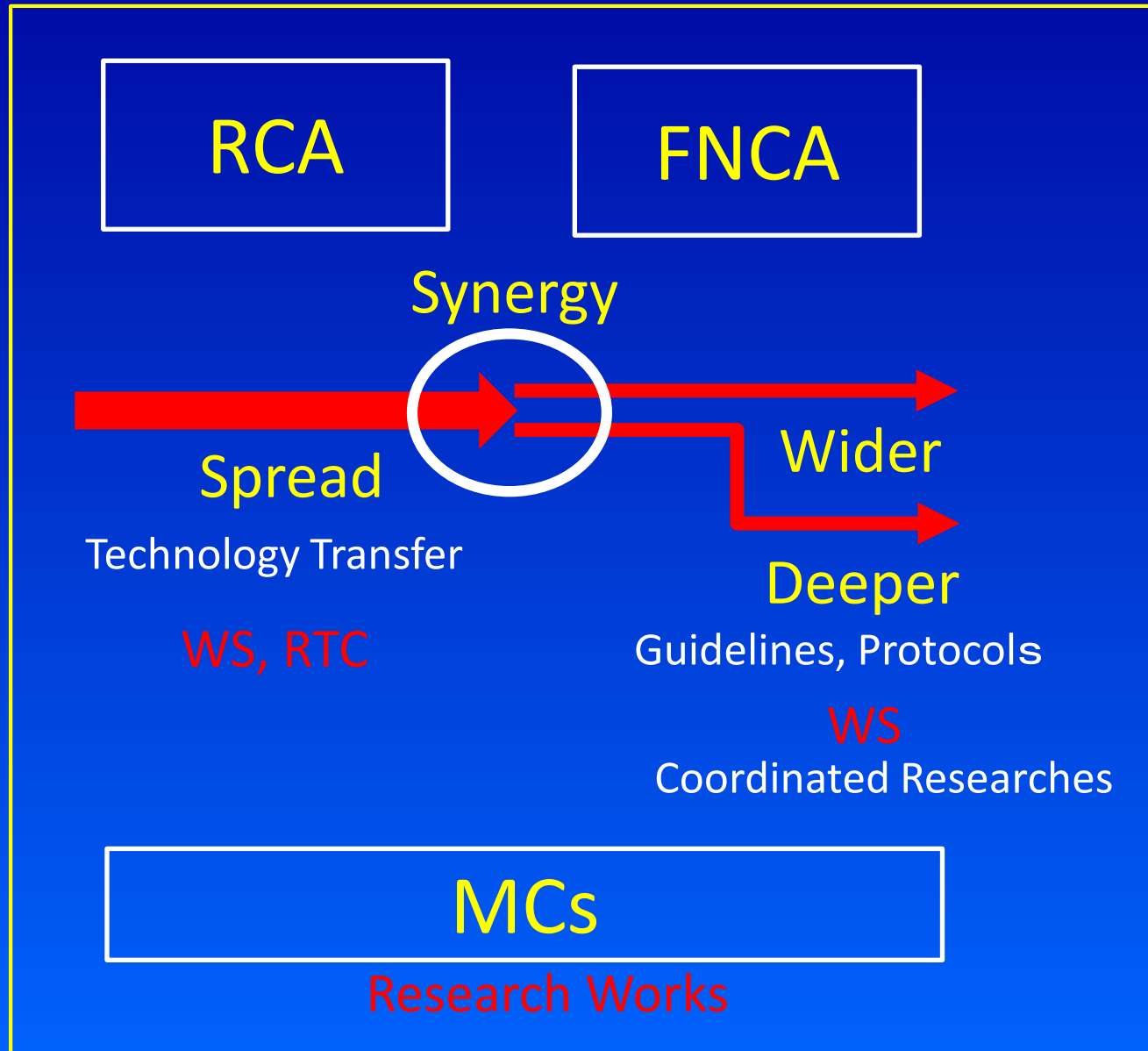
Nuclear Researchers Exchange Program

	JFY2017	JFY2018	JFY2019
Bangladesh	3	3	6
China	3	2	3
Indonesia	1	3	3
Kazakhstan	1	1	1
Malaysia	2	1	2
Mongolia	2	2	1
The Philippines	1	1	1
Sri Lanka	2	1	0
Thailand	2	3	3
Vietnam	3	3	2
Total	20	20	22

Instructors Training Program

	JFY2017	JFY2018	JFY2019
Bangladesh	9	11	10
China	0	0	0
Indonesia	7	6	8
Kazakhstan	5	4	8
Malaysia	12	13	11
Mongolia	9	9	7
The Philippines	7	4	4
Sri Lanka	4	4	4
Thailand	15	6	13
Vietnam	8	13	10
Turkey	4	9	8
Saudi Arabia	0	3	0
Total	80	82	84

Cooperation between RCA and FNCA projects



Purpose

Socioeconomic
Impacts

Benefit to MCs

Through
Nuclear
Technology

Thank you for your kind attention!

Please visit FNCA website!
(<https://www.fnca.mext.go.jp/>)

Namba Hideki
FNCA Advisor of Japan
QST Associate
namba.hideki@qst.go.jp

