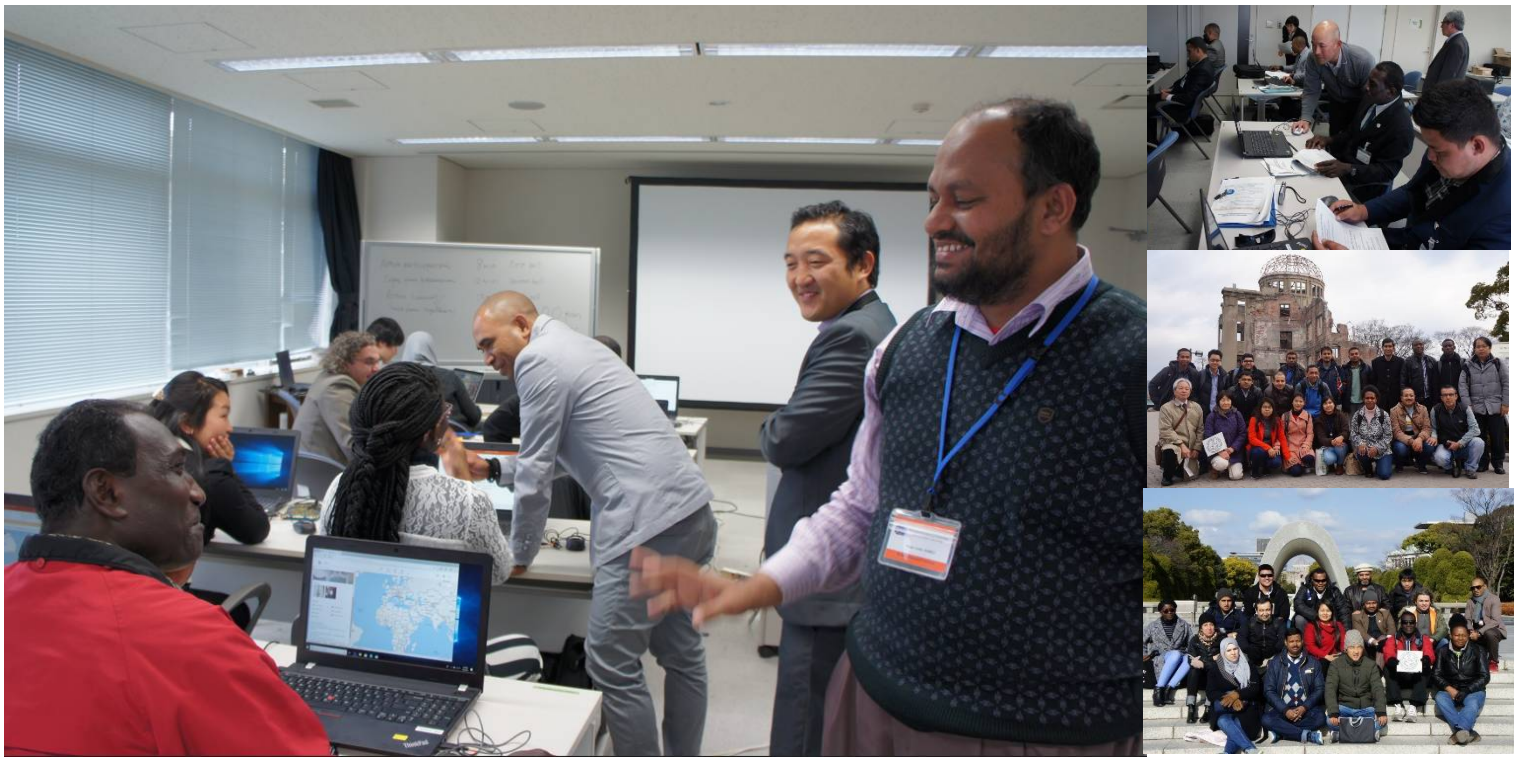
Face-to-Face (in Japan)

Knowledge Co-Creation Program (Group and Region Focus)

Global Seismological Observation

課題別研修「グローバル地震観測」



Course Number: 202107993J001

Course Period: January 5- March 4, 2023

"In the context of the COVID-19 pandemic, please note that there is still a possibility the course period might be slightly changed."

NOTE: Depending on the circumstances, some or all of the program periods may be changed or cancelled after the application has been accepted.

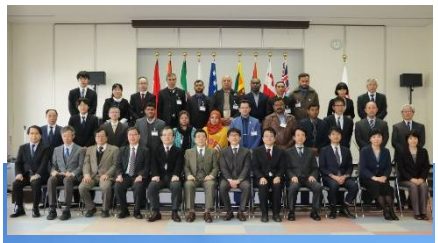
How do we learn global seismological observation?

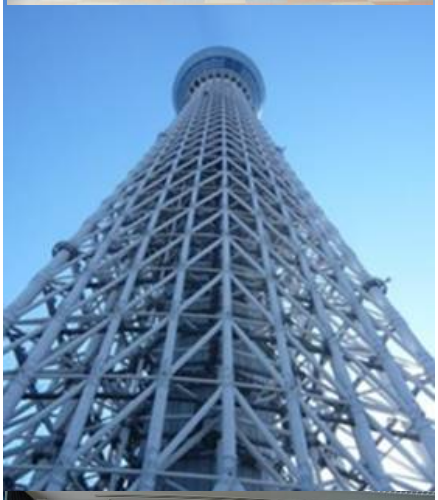
Gain up-to-date technologies and knowledge in the field of global seismological observation through lectures, discussions, practices & site visits.

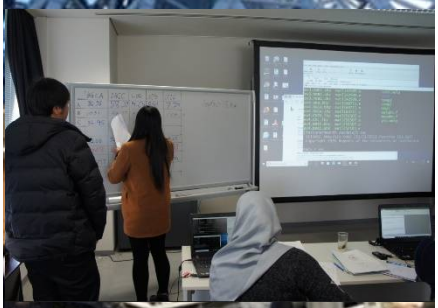
Participants are expected to play an important role in the global monitoring network for nuclear tests.

The acquired technology is also expected to be utilized in the natural earthquakes analysis and contribute to earthquake disaster prevention.

Outline







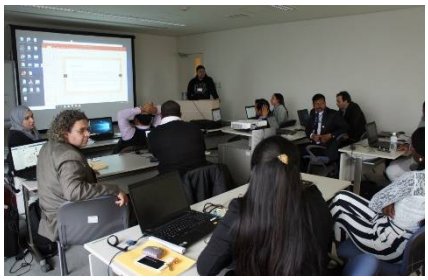
This program is designed for government officers and technical experts who are expected to play an important role in the monitoring system for nuclear tests.

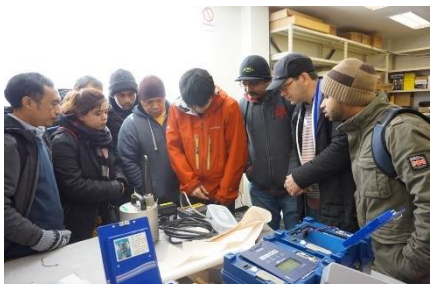
Participants will have opportunities to acquire knowledge and advanced techniques of global seismological observation. Participants will also make an Action Plan on future activities at their institution in their home countries putting the knowledge and ideas acquired and discussed throughout the course.

All sessions are carried out in English.

The period of the program is from January 5 to March 4, 2023.

Course Capacity: 10 participants





JICA Knowledge Co-Creation Program (KCCP)

The Japanese Cabinet released the Development Cooperation Charter in February 2015, stated that “In its development cooperation, Japan has maintained the spirit of jointly creating things that suit partner countries while respecting ownership, intentions and intrinsic characteristics of the country concerned based on a field-oriented approach through dialogue and collaboration. It has also maintained the approach of building reciprocal relationships with developing countries in which both sides learn from each other and grow and develop together.” We believe that this ‘Knowledge Co-Creation Program’ will serve as a foundation of mutual learning process.

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For What?

Background

In September 1996, after difficult and exhaustive discussions/negotiations over a period of two and a half years, the Comprehensive Nuclear-Test-Ban Treaty (CTBT) was adopted with the support of an overwhelming majority of the international community.
CTBT stipulates that International Monitoring System (IMS) which includes seismological monitoring is to be established in order to verify the compliance of the Treaty for monitoring nuclear tests. The data obtained at more than 300 stations under the IMS all over the world are sent to the International Data Center in Vienna to be processed.
Towards an entry into force of the treaty, the Government of Japan decided to initiate an international cooperation in 2004 with the group training course called "Global Seismological Observation."

Objective

The program objective is to acquire knowledge and advanced techniques of global seismological observation for playing an important role in the monitoring system of nuclear tests under the CTBT.

Overall Goal

The overall goal is to understand global seismological observation technologies for monitoring nuclear tests and earthquakes, and to strengthen the capacities of National Data Center (NDC) in the field of seismology and/or International Monitoring System (IMS) for contributing to the promotion for taking effect of Comprehensive Nuclear Test Ban Treaty (CTBT) in each country.

Outputs

Participants are expected to achieve the following outputs;

(1) To acquire knowledge of the CTBT regime and the role of seismology in the International Monitoring System (IMS).
(2) To understand global seismological observation technologies for monitoring nuclear tests and earthquakes.
(3) To acquire data analytical techniques to discriminate nuclear tests from natural earthquakes.
(4) To make an Action Plan that they will implement in their countries.

To Whom?

Job Areas and Organizations

This program is designed for the administrative officers who are expected to play an important role in the monitoring system for nuclear tests.

The applying organization with the best intention to utilize the opportunity of this program will be highly valued in the selection.

<Target Organization>

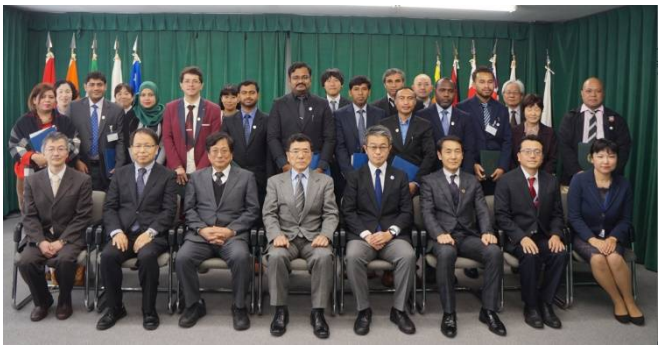
This program is designed for governmental organizations that are expected to play an important role in the global monitoring network on nuclear tests.

*Please refer to the ANNEX- III, "Relevant organization list in the field of CTBT"

Targeted Countries

Algeria, Namibia, Nepal, Peru, Philippines, Samoa, Vanuatu

Participants who have successfully completed the program will be awarded a certificate by JICA.



When?

Program Period

Preparatory Program: from the middle of November to early January

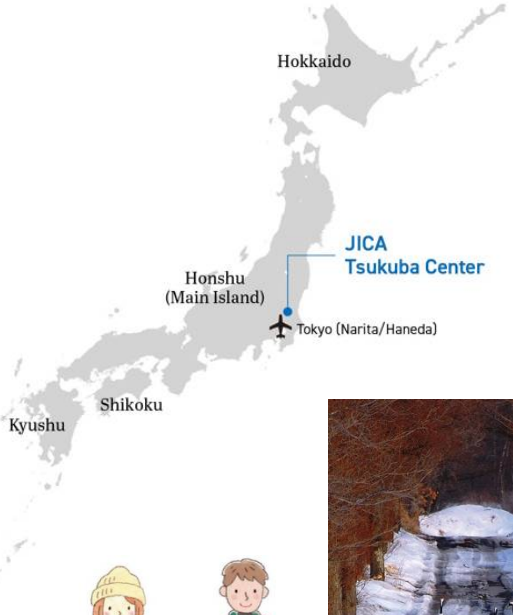
Program in Japan: January 5th to March 4th, 2023

"In the context of the COVID-19 pandemic, please note that there is a possibility the course period & contents might be slightly changed."

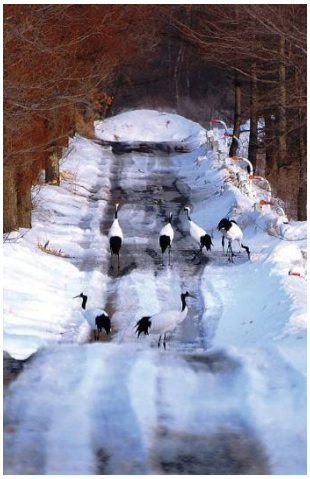
Where?

This course is carried out in winter in Japan, organized by JICA Tsukuba Center.

The program may be partially conducted online, depending on the situation.



Winter in Japan
December, January, February
Max Temp: 19.6°C | Min Temp: -2.8°C



How?

How to Learn

- Self-Study
- Lectures
- Interactive Q&A Session
- Field Visits
- Workshops
- Discussions
- Presentations

Language

English

Commitment to the SDGs

Program Structure

This course consists of the following components.

Details on each component are shown below.

(1) Preliminary Phase in a participant's home country; *(November 2022 to early January 2023)* *Participants & Participating organizations make required preparation for the Program in the respective country.*	
Activities	
	Formulation and submission of an Inception Report.
	Preparation for some lectures, including computer settings, etc.

(2) Core Phase (in Japan); *(January 5 to March 4, 2023)* *Participants dispatched by organizations attend the Program implemented in Japan.*				
Expected Output	Subjects	Lecture/ Exercise	Contents	Methodology
To acquire knowledge of the CTBT regime and the role of seismology in the International Monitoring System (IMS)	CTBT & IMS	Introduction of CTBT Regime concerning seismology	Review of verification of nuclear tests and seismology. Explanation of present status and future plan of CTBT concerning seismology. Japan's Perspective on Nuclear Disarmament and Non-Proliferation and its political initiative towards early entry into force of the CTBT.	Lecture
		Overview of CTBT and International Monitoring System (IMS)	Overview of the CTBT and four different technologies form the basis used by the IMS to verify compliance with the CTBT.	Lecture
		Overview of International Data Center (IDC)	Collection of data, analytical methods, output flow, roles of National Data Center (NDC) and coordination with NDC.	

To understand global seismological observation technologies for monitoring nuclear tests and earthquakes	Seismological Observation	Seismometer	Basic theory of electro-magnetic seismometer and specific explanation for some broad band seismographs.	Lecture and Practice
		Seismic Network	Data acquisition and telemetry systems.	Lecture
		Design of Seismic Network I & II	General guidelines for designing seismic network (on the first day). Making a plan to upgrade the seismic network of their countries during the training course to make a presentation (on the last day).	Lecture and Presentation
		Noise survey and site selection I & II	Practice in measurement of ground tremor with short-period sensors and a broadband sensor.	Lecture and Practice
	National Data Center	National Data Center (NDC)	System and operation in National Data Center (NDC).	Lecture
To acquire data analytical techniques to discriminate nuclear tests from natural earthquakes	Data Processing	Retrieval of Digital Seismic Data and Disposal of Format	Practice of data retrieval and plotting seismograms. Basic theory and practice of data processing frequently used in the field of global seismology. Practice using broad and short-period seismograms of nuclear explosions and earthquakes.	Lecture and Practice
		Spectral Analysis		
		Digital Filter		
		Introduction to UNIX	The essentials and basic commands of UNIX.	Lecture and Practice
		Hypocenter Location	A method for determining a hypocenter of a teleseismic event as well as that of a local one. Practice of the hypocenter determination using PC.	Lecture and Practice
		Source	Basic knowledge for	Lecture

		Mechanism	determination of focal mechanism by seismic wave analysis. A manual P-wave first motion method and moment tensor inversion.	and Practice
		Analysis of Teleseismic waves	Explanation of principles underlying the interpretation of seismograms reading practice.	Lecture and Practice
		Seismic Array Data Analysis	Objectives and history of seismic arrays, signal and noise in space and time, arrival time analysis, beamforming in time domain, frequency-wavenumber power spectrum, spatial sampling, and design of an array station.	Lecture
To acquire data analytical techniques to discriminate nuclear tests from natural earthquakes	The nuclear test identifying method	FDSN Web Service	International Federation of Digital Seismograph Networks (FDSN) web service for the exchange of seismological data, such as waveform data, and event parameters.	Lecture and Practice
		Seismicity and Tectonics	The characteristics and tectonic background of the seismicity in the world are introduced and practice on analyzing seismicity is given by using personal computer.	Lecture and Practice
		Discrimination by mb-Ms	General introduction on magnitudes, practice of determination of mb and Ms, and discrimination by mb-Ms.	Lecture and Practice
		Discrimination by short-period seismograms	Explanation of short period discriminants, practice of discrimination by short period discriminants.	Lecture and Practice
		General	Practice of the screening	Practice

		discrimination technique	procedure along the streamline by using all knowledge in this lecture course.	
To Make an Action Plan which they should implement in their countries after returning home	Action Plan	Making Action Plan	Making Action Plan.	Practice
		Presentation	Making the Presentation of the Action Plan.	Presentation

(3) <u>Monitoring Phase after the training program</u>; *(March to April, 2023)* *Participants will voluntarily report their progress about their Action Plan to JICA after the completion of the training program.*	
Activities	
	* Participants will share the acquired knowledge and techniques, and the Action Plan prepared in this course with their organizations and/or countries. * Participants will elaborate/revise the Action Plan for solving the problem in their countries, based on the comments and suggestions from their organizations and/or countries.

【Structure of the Program】

Overall Goal: The overall goal is to understand global seismological observation technologies for monitoring nuclear tests and earthquakes, and to strengthen the capacities of National Data Center (NDC) in the field of seismology and/or International Monitoring System (IMS) for contributing to the promotion for taking effect of Comprehensive Nuclear Test Ban Treaty (CTBT) in each country.

3. Monitoring Phase after returning home country

To share the Action Plan prepared during the course with your organization and/or country.
⇒To elaborate/revise the Action Plan for solving the problems in your country.

Program Objective:
The program objective is to acquire knowledge and advanced techniques of global seismological observation for playing an important role in the monitoring system of nuclear tests under the CTBT

2. Core Phase (Program Online)

Output 4: To make an Action Plan which they should implement in their countries after returning home
<Subject of Training> Making Action Plan & Presentation

Output 2:
To understand global seismological observation technologies for monitoring nuclear tests and earthquakes.
<Subject of Training>
Seismological Observation
-Seismometer
-Seismic Network
-Design of Seismic Network
-Noise survey and site selection
-National Data Center

Output 3:
To acquire data analytical techniques to discriminate nuclear tests from natural earthquakes
<Subject of Training>
Data processing
-Retrieval of Digital Seismic Data and Disposal of Format
-Spectral Analysis, -Digital Filter, -Introduction to UNIX Data Analysis
-Hypocenter Location, Analysis of Teleseismic waves
-Source Mechanism, -Seismic Array Data Analysis
The nuclear test identifying method
-FDSN Web Service, -Seismicity and Tectonics
-Discrimination by mb-Ms
-Discrimination by short-period seismograms
-General discrimination technique

Output 1:
To acquire knowledge of the CTBT regime and the role of seismology in the International Monitoring System (IMS).
<Subject of Training> Outline of CTBT & IMS
-Introduction of CTBT Regime concerning seismology
-Overview on CTBT and IMS
-Overview on International Data Center (IDC)

1. Preliminary Phase

Formulation and submission of Inception Report.
Preparation for the lectures, including computer settings, etc.

Eligibility and Procedures

1. Expectations to the Applying Organizations

(1) This program is designed primarily for organizations that intend to address specific issues or problems identified in their operations. Applying organizations are expected to use the Program for those specific purposes.
(2) In this connection, applying organizations are expected to nominate the most qualified candidates to address the said issues or problems, carefully referring to the qualifications described in section Ⅲ-2 below.
(3) Applying organizations are also expected to be prepared to make use of knowledge acquired by the nominees for the said purpose.

2. Nominee Qualifications

Applying organizations are expected to select nominees who meet the following qualifications.

(1) Essential Qualifications

1) Current Duties: administrative officers and technical experts, who are expected to play an important role in the international nuclear test monitoring network.
2) Experience in the Relevant Field: have more than 3 years' experience in the field of seismology.
3) Educational Background: be a graduate of university or equivalent
4) Age: be under forty-five (45) years
5) Language Proficiency: have a competent command of spoken and written English proficiency equivalent to TOEFL iBT 61 or above. This program includes active participation in discussions, which requires high competence in English. (An official certificate is not necessary to attach. Instead, English ability of applicants will be examined through interviews at JICA office in each country.)
6) Health: must be in good health to participate in the program in Japan. To reduce the risk of worsening symptoms associated with respiratory tract infection, please be honest to declare in the Medical History (QUESTIONNAIRE ON MEDICAL STATUS RESTRICTION of the application form) if you have been a

patient of following illnesses; Hypertension / Diabetes / Cardiovascular illness / Heart failure / Chronic respiratory illness.

(2) Recommended Qualifications

Gender Equality and Women's Empowerment: Women are encouraged to apply for the program. JICA makes a commitment to promote gender equality and women's empowerment, providing equal opportunity for all applicants regardless of sexual orientation and gender identity.

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3. Required Documents for Application

(1) **Application Form:** The Application Form is available at the JICA overseas office (or the Embassy of Japan)

* If you have any difficulties/disabilities which require assistance, please specify necessary assistances in the QUESTIONNAIRE ON MEDICAL STATUS RESTRICTION (1-(c)) of the application form. Information will be reviewed and used for reasonable accommodation.

(2) **Photocopy of Passport:** You should submit it with the application form if you possess your passport which you will carry when entering Japan for this program. If not, you are requested to submit its photocopy as soon as you obtain it.

*The following information should be included in the photocopy:

Name, Date of Birth, Nationality, Sex, Passport Number and Expiry Date

(3) **English Score Sheet:** to be submitted with the application form, if the nominees have any official English examination scores. (e.g., TOEFL, TOEIC, IELTS)

(4) **Inception Report:**

Each applicant should prepare a report on the present situation of the following subject in his/her own country in accordance with ANNEX I. This Inception Report should be typewritten and submitted to JICA Office (or the Embassy of Japan) together with the application form.

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4. Procedures for Application and Selection

(1) Submission of the Application Documents

Closing date for applications: **Please confirm the local deadline with the JICA overseas office (or the Embassy of Japan).**

All required materials must arrive at JICA Center in Japan not later than October 14th, 2022.

(2) Selection

Primary screening is conducted at the JICA overseas office (or the embassy of Japan) after receiving official documents from your government. JICA Center will consult with concerned organizations in Japan in the process of final selection. Applying organizations with the best intentions to utilize the opportunity will be highly valued.

The Government of Japan will examine applicants who belong to the military or other military-related organizations and/or who are enlisted in the military, taking into consideration of their duties, positions in the organization and other relevant information in a comprehensive manner to be consistent with the Development Cooperation Charter of Japan.

(3) Notice of Acceptance

The JICA overseas office (or the Embassy of Japan) will notify the results **not later than November 15th, 2022.**

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5. Additional Document(s) to Be Submitted by Accepted Candidates

Accepted Participants are required to make a presentation of Inception Report (about 15 minutes) and discuss on the contents at the beginning of the program.

The Inception Report Presentation data should be sent by January 11th, 2023 to:

1. IISEE Secretary, Building Research Institute, by email to st-iisee@kenken.go.jp
2. Sachiyo Akiyama, Program Officer, JICA Tsukuba, by e-mail to tbicttp@jica.go.jp

6. Conditions for Participation

The participants of KCCP are required

(1) to strictly observe the course schedule,
(2) not to change the air ticket (and flight class and flight schedule arranged by JICA) and lodging by the participants themselves,
(3) to understand that leaving Japan during the course period (to return to home country, etc.) is not allowed (except for programs longer than one year),
(4) not to bring or invite any family members (except for programs longer than one year),
(5) to carry out such instructions and abide by such conditions as may be stipulated by both the nominating Government and the Japanese Government in respect of the course,
(6) to observe the rules and regulations of the program implementing partners to provide the program or establishments,
(7) not to engage in political activities, or any form of employment for profit,
(8) to discontinue the program, should the participants violate the Japanese laws or JICA's regulations, or the participants commit illegal or immoral conduct, or get critical illness or serious injury and be considered unable to continue the course. The participants shall be responsible for paying any cost for treatment of the said health conditions except for the medical care stipulated in (3) of "3. Expenses", "Administrative Arrangements",
(9) to return the total amount or a part of the expenditure for the KCCP depending on the severity of such violation, should the participants violate the laws and ordinances,
(10) not to drive a car or motorbike, regardless of an international driving license possessed,
(11) to observe the rules and regulations at the place of the participants' accommodation, and
(12) to refund allowances or other benefits paid by JICA in the case of a change in schedule.

Administrative Arrangements

1. Organizer (JICA Center in Japan)

(1) **Center**: JICA Tsukuba Center (JICA TSUKUBA)
(2) **Program Officer**: Ms. AKIYAMA Sachiyo (tbicttp@jica.go.jp)

2. Implementing Partner

(1) **Name**:
International Institute of Seismology and Earthquake Engineering (IISEE) at Building Research Institute (BRI)
(1) URL: http://www.kenken.go.jp/english/index.html
(2) E-mail: iisee@kenken.go.jp
(3) Remark:
IISEE is an organization that trains participants from earthquake-prone developing countries on seismology, earthquake engineering and tsunami disaster mitigation.
The Global Seismological Observation Training Course is conducted in cooperation with the Ministry of Foreign Affairs of Japan (MOFA), JICA, Japan Meteorological Agency (JMA) and IISEE. The lecturers are from the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), JMA, Japan Weather Association (JWA), and other institutions/universities.

3. Expenses

The following expenses in Japan will be provided by JICA
(1) Allowances for meals, living expenses, outfits, and shipping and stopover.
(2) Expenses for study tours (basically in the form of train tickets).
(3) Medical care for participants who become ill after arriving in Japan (the costs related to pre-existing illness, pregnancy, or dental treatment are not included).
(4) Expenses for program implementation, including materials.
(5) For more details, please see "III. ALLOWANCES" of the brochure for participants titled "KENSHU-IN GUIDE BOOK," which will be given before departure for Japan.

4. Travel to Japan:

(1) **Air Ticket**: The cost of a round-trip ticket between an international airport designated by JICA and Japan will be borne by JICA.

(2) **Travel Insurance**: Coverage is from time of arrival up to departure in Japan. Thus, traveling time outside Japan will not be covered.

5. Accommodation in Japan:

JICA will arrange the following accommodations for the participants in Japan:

JICA Tsukuba Center (JICA TSUKUBA)
Address: 3-6 Koyadai, Tsukuba, Ibaraki 305-0074, Japan
TEL: +81-29-838-1111
FAX: +81-29-838-1119
(where "81" is the country code for Japan, and "29" is the local area code)

If there is no vacancy at JICA TSUKUBA, JICA will arrange alternative accommodations for the participants.

Lobby

Accommodation Bldg.

Lecture Room

PC Room

Restaurant

Gymnasium

6. Pre-departure Orientation

A pre-departure orientation will be held at respective country's JICA office (or the Japanese Embassy), to provide Participants with details on travel to Japan, conditions of the course, and other matters.

Part I: Knowledge Co-Creation Program and Life in Japan	
English ver.	https://www.youtube.com/watch?v=SLurfKugrEw
French ver.	https://www.youtube.com/watch?v=v2yU9lSYcTY
Spanish ver.	https://www.youtube.com/watch?v=m7l-WlQSDjI
Arabic ver.	https://www.youtube.com/watch?v=1iBQqdpXQb4
Part II: Introduction of JICA Center in Japan	
JICA Tsukuba	https://www.jica.go.jp/tsukuba/english/office/index.html

If the link of these URLs has expired, please access the URL below and search the necessary information from the keyword.
https://www.youtube.com/user/JICAChannel02

7. Reference

You can check our information on:

- JICA Tsukuba website
  〔https://www.jica.go.jp/tsukuba/english/office/index.html〕
- JICA Tsukuba Facebook〔https://www.facebook.com/jicatsukuba〕
- BRI-IISEE website〔https://iisee.kenken.go.jp/〕
- BRI-IISEE Facebook〔https://www.facebook.com/IISEE.Japan/〕

You can find posts about ongoing KCCPs and stories of ex-participants on our Facebook page.

Other information

1. **Computer:**

The participants are recommended to bring their own laptop/notebook computers and a conversion adapter to prepare the Action Plan, presentation slides and to communicate by e-mail. The electrical current in Japan is 100 volts, 50 cycles, and the plug shape is A type.

For the training program, we will prepare a computer for each participant, which has specific software installed.

2. **Data for global seismological observation in your country:**

The participants are recommended to prepare the relevant data concerning global seismological observation of their countries in laptop/notebook computers.

END

ANNEX-I: Instruction for the Preparation of Inception Report

ANNEX-II: Tentative Schedule of the program in Japan (JFY2022)

ANNEX-III: Relevant organization list in the field of CTBT

Annex I: Inception Report

Instructions for the Preparation on Inception Report

Knowledge Co-Creation Program on Global Seismological Observation

The Inception Report should be type-written including items listed below.

(1) Name of Applicant

(2) Name of Organization to which Applicant belongs
(*(1)-(2) are to be written on cover sheet as following sample shows.)

(3) Title and **Author's Name**

(4) Summary

The summary should be informative and include the principal findings and conclusions. References to formulas or figures are not necessary. It should not consist of more than 200 words.

(5) Affiliation of the Author

Affiliation should appear as a footnote on the first page as following sample shows.

(6) Topic

Sections to be included;
(1) Introduction
(2) Seismicity
(3) Organization
(4) Observational Network and Instruments
(5) Data analyses performed in your Organization
(6) Relation between your country/your organization and CTBT/IMS
(7) Current problems relevant to CTBT, IMS, and NDC that your Organization is facing with, and Future Plans corresponding to them.
* You might add **Acknowledgements** and **Appendix** after the topic if necessary.

(7) References

References should have numbers in brackets in the order of their citation.

(8) Attached Document

Applicants are requested to submit attached documents including 3 items,

- Information about the structure of Organization, for example, Organization Chart,
- Research activity of Organization related to Seismology, Earthquake Engineering, or Seismic Hazard/Risk Analysis, and a list of governmental or private organizations

related to Seismology or Earthquake Engineering in the country of Applicant.

- Program for CTBT (Comprehensive Nuclear-Test-Ban Treaty) in your country

(9) Download

The template file that may make your editing task easier from, see “Sample file of Country Report (MS Word file) Country Report”
https://iisee.kenken.go.jp/?p=public

* The participants will be requested to make action plans in which they describe how they utilize their achievements (e.g., knowledge, techniques, etc.) that they have obtained in the training course after returning to their countries. In order to make good action plans through the training course, each applicant should describe current problems relevant to CTBT, IMS, and NDC that their organizations are facing with in their inception reports.

Notes;

1. The manuscript must be carefully prepared and should be submitted with the application form. The total pages of the Inception Report should not exceed 15 pages including tables and figures.
2. **Page format:** Use A4 white paper sheets (21 cm x 29.7 cm). Leave 2.5 cm margins at the top, right and left sides of the text and 3.5 cm margin at the bottom. Special attention has to be paid in preparing papers using US letter-size paper. It should be appropriately arranged so that it conforms to the above requirements in appearance, namely the manuscript should occupy 16 cm x 23.7 cm in each page. All main text should be single spaced, Times New-Roman types. Use 18pt in capital letters and boldface for **TITLE**, 12pt for authors, and 11pt for the rest, including affiliations, abstract, main text, headings, sub-headings, sub-subheadings, acknowledgements, appendix, references, and captions for figures, photos and tables.
3. **Organization of the papers:** Write the **TITLE** of your paper, centered and in 18pt capital letters and boldface types at the top of the first page. After two more line spaces, write your names in 12pt. Surnames should be in capital. Affiliations should be cited by superscripts. Leave two lines, and then write abstract in 11pt. "**ABSTRACT**" should be in capital letters and boldface and be followed by the text of Abstract. After three lines, start main body of your paper in 11pt. The ordinary pages, starting from the second page, contain the main text from the top line. Avoid footnotes and remarks. Explain in the main text, or in Appendices, if necessary. Affiliation itself should be put at the bottom of the first page, cities, countries and e-mail addresses of all authors, as indicated above.
4. **Headings:** Use at most three levels of headings, i.e., headings, subheadings and sub-subheadings. Headings shall be written in capital letters, boldface types, and centered of your text. Leave two lines space before headings and one after them. Do not indent the first line after headings, subheadings and sub-subheadings. First lines of the other text paragraphs should be indented as indicated here. Do not leave blank lines between paragraphs. **Subheadings:** Subheadings shall be written in lower-case letters and boldface types, right against the left side of your text, as indicated here. Leave one line space before and after subheadings. Use the above mentioned rules for indentation. ***Sub-subheadings:*** The only difference with respect to subheadings is that sub-subheadings shall be in Italic and no lines space shall be left after sub-subheadings. Don't put numbering to heading of any level.
5. **Equations and symbols:** Use high quality fonts for both mathematical equations and symbols. Papers with hand-written mathematical equations and symbols are not accepted. Equations should be centered and numbered. Leave one line above and below equations. The equation number, enclosed in parentheses, is placed flush right. Equations should be cited in the text as Eq. (1).

6. **Figures, tables and photos:** Figures and tables shall be legible and well reproducible, and photos shall be clear. Colored figures, tables and photo will be printed in Black and White. Captions shall be written directly beneath figures and photos and above tables, and shall be numbered and cited as Figure 1, Table 1 or Photo 1. They should be written in 11pt, and centered. Long captions shall be indented. Do not use capital letter or boldface types for captions. Figures, tables and photos shall be set possibly close to the

positions where they are cited. Do not place figures, tables and photos altogether at the end of manuscripts. Figures, tables and photos should occupy the whole width of a page, and do not place any text besides figures, tables and photos. Leave one line spacing above and bottom of figures, tables and photos. Do not use small characters in figures and tables. Their typing size should be at least 9pt or larger.

7. **Unit:** Use SI unit in the entire text, figures, and tables. If other units are used, provide it in parentheses after the SI unit as 2MPa (19.6 kg/cm^2).
8. **CONCLUSIONS:** Write a **CONCLUSIONS** section at the end of your paper, followed by ACKNOWLEDGEMENTS, APPENDICES and REFERENCES.
9. **ACKNOWLEDGMENTS:** Acknowledgments should follow CONCLUSIONS.
10. **APPENDIX:** Appendixes should be placed between Acknowledgments and References, if any.
11. **REFERENCE:** All references should be listed in alphabetical order of the first author's family name. They are referred in the main text like (Gibson 1995a). Write the reference list as;

    Gutenberg, B., and Richter, C. F., 1954, Seismicity of the Earth and Associated Phenomena, 2nd ed. Princeton Univ. Press, Princeton, NJ.

    Richter, C. F., 1935, an instrument earthquake magnitude scale, *Bull.Seis. Soc.Am.*25, 1-32.
12. **Date of acceptance:** This will be assigned after accepted for publication and added to the end of manuscript by Editorial Board. They should be written in parentheses in 9pt in boldface types.

<Sample for Inception Report>

【Sample for the cover sheet】

Knowledge Co-Creation Program on
Global Seismological Observation

2018
(COURSE ID: J18-04441)

INCEPTION REPORT
ON

1. Name of Participant
2. Name of Organization

【Sample for the first page】

TITLE OF THE INCEPTION REPORT
by
AUTHOR*

ABSTRACT

_____
_____

INTRODUCTION

_____
_____

* The Author's organization and occupation are to be written here.

Annex II: Tentative Schedule

Tentative Schedule of the program (JFY2022)

Please note that this is a tentative schedule and it may be subject to change.

FY2022 Global Seismological Observation Course Schedule
Jan. 6th – Mar. 3rd 2023

As of July26, 2022

Mon.	Tue.	Wed.	Thu.	Fri.	Sat.	Sun.
1/2	1/3	1/4	1/5	1/6	1/7	1/8
			Arrival in Japan	Online + In-person ・JICA Briefing, Orientation ・Opening Ceremony ・IISEE Orientation ・Overview of the Curriculum ・Interview		
1/9	1/10	1/11	1/12	1/13	1/14	1/15
National Holiday (Coming of Age Day)	Online + In-person Introduction to Unix (Y. Fujii)	Online + In-person Instrumentation and Observation (1/8) (Seismometer) (T. Yokoi)	Online + In-person Data Processing (1/3) (Retrieval of Digital Seismic Data and Disposal of Format) (T. Hara)	AM Preparation for Presentation of Inception Report Online + In-person PM Special Lecture		
1/16	1/17	1/18	1/19	1/20	1/21	1/22
Data Processing (2/3) (Spectral Analysis) (B. Shibazaki)	Data Processing (3/3) (Digital Filter) (B. Shibazaki)	Hypocenter Location (1/3) (S. Kita)	Hypocenter Location (2/3) (S. Kita)	Presentation of Inception Report		
1/23	1/24	1/25	1/26	1/27	1/28	1/29
Hypocenter Location (3/3) (S. Kita)	Source Mechanism (1/3) (T. Hara)	Source Mechanism (2/3) (T. Hara, Y. Yagi)	Source Mechanism (3/3) (Y. Yagi)	10:00-11:00 Earthquake Monitoring and Tsunami Warning Services in JMA 11:15-11:45 Tour of operational center for the monitoring of earthquakes and volcanos (Y. Yokoyama) 14:00-16:00 Lecture at Ministry for Foreign Affairs (MOFA)		
1/30	1/31	2/1	2/2	2/3	2/4	2/5
Analysis of Teleseismic Waves 15:40-16:10 Briefing Session on Field Trip (JICA)	Instrumentation and Observation (2/8) (Seismic Network) (H. Inoue)	Discrimination by mb-Ms (K. Tamaribuchi)	Instrumentation and Observation (3/8) (Introduction of CTBT Regime Concerning Seismology in Japan and NDC) (T. Sakamoto) Field Trip to Hiroshima Move to Hiroshima (Stay in Hiroshima)	09:00-13:00 Miyajima Island 13:00-14:00 Lecture by A-Bomb Survivor 14:00-15:30 Hiroshima Peace Memorial Museum 15:30-16:30 A-Bomb Dome (Stay in Hiroshima)	Move to Kobe -Nojima Fault -Disaster Reduction and Human Renovation Institution (Stay in Kyoto)	Kyoto
			Study Trip to Kansai Region (Feb.2 ~ 5)			

FY2022 Global Seismological Observation Course Schedule
Jan. 6th – Mar. 3rd 2023

As of July26, 2022

Mon.	Tue.	Wed.	Thu.	Fri.	Sat.	Sun.
2/6	2/7	2/8	2/9	2/10	2/11	2/12
Seismic Array Data Analysis (M. Ogiso)	Instrumentation and Observation (4/8) (Design of Seismic Network I) (H. Inoue)	Instrumentation and Observation (5/8) (Noise Survey I) (T. Hayashida)	Instrumentation and Observation (6/8) (Noise Survey II) (T. Hayashida) 10:00-15:00 Practice at Mt. Tsukuba	Seismicity and Tectonics (Y. Ishikawa)	National Holiday (National Foundation Day)	
2/13	2/14	2/15	2/16	2/17	2/18	2/19
Instrumentation and Observation (7/8) (Design of Seismic Network II) (H. Inoue)	Instrumentation and Observation (8/8) (FDSN Web Service) (S. Tsuboi)	Discrimination by Short-Period Seismograms (Y. Yoshida, T. Otsu)	Introduction of IDC I Overview of the IDC, IDC: Collection of Data, Analytical Methods and Output Flow (CTBTO Lecturer)	Introduction of IDC II Roles of NDC and Coordination with NDC Q&A, Discussion (CTBTO Lecturer)		Move to Nagano
2/20	2/21	2/22	2/23	2/24	2/25	2/26
Observation of Matsushiro Seismological Observatory (JMA Lecturer)	Geotool (1/2) (T. Fujii, M. Motohashi)	Geotool (2/2) (T. Fujii, M. Motohashi)	National Holiday (Emperor's Birthday)	Self-study (Preparation for Presentation of Action Plan)		
2/27	2/28	3/1	3/2	3/3	3/4	3/5
General Discrimination Technique (1/3) (Y. Yoshida, T. Otsu, Y. Fujii)	General Discrimination Technique (2/3) (Y. Yoshida, T Otsu, T. Hayashida)	General Discrimination Technique (3/3) (Y. Yoshida, T. Otsu, B. Shibazaki)	Presentation of Action Plan (MOFA, JICA, B. Shibazaki)	10:00-11:30 General Meeting 11:30-12:00 Closing Ceremony (JICA)	Leave Japan	

<Lecture hours>
09:30-12:00, 13:00-15:30 exclusive of the lectures:
"Analysis of Teleseismic Waves" starting from 10:20 and finishing at 15:50
"General Discrimination Technique" and "Geotool" starting from 09:30 and finishing at 16:00

JICA: Japan International Cooperation Agency
BRI: Building Research Institute / IISEE: International Institute of Seismology and Earthquake Engineering
JMA: Japan Meteorological Agency
MOFA: Ministry of Foreign Affairs

Annex III: Relevant organizations

Relevant organization list

The list below shows relevant organizations, which have experience to send their members to this training program. It is not compulsory to select applicants only from these organizations. Each country can consider and decide which organizations are relevant and appropriate to this program.

Argeria	・ National Center for Applied Research in Earthquake Engineering (C.G.S) ・ Centre National de Recherche Appliquée en Génie Parasismique
Namibia	・ Geological Survey of Namibia
Nepal	・ National Seismological Center, Department of Mines and Geology
Peru	・ Geophysical Institute of Peru
Philippines	・ Manila Observatory ・ Philippine Institute of Volcanology and Seismology
Samoa	・ Samoa Meteorology Division, Ministry of Natural Researches , Environment and Meteorology
Vanuatu	・ Department of Geology, Mines and Water Resources

For Your Reference

JICA and Capacity Development

Technical cooperation is people-to-people cooperation that supports partner countries in enhancing their comprehensive capacities to address development challenges by their own efforts. Instead of applying Japanese technology per se to partner countries, JICA's technical cooperation provides solutions that best fit their needs by working with people living there. In the process, consideration is given to factors such as their regional characteristics, historical background, and languages. JICA does not limit its technical cooperation to human resources development; it offers multi-tiered assistance that also involves organizational strengthening, policy formulation, and institution building.

Implementation methods of JICA's technical cooperation can be divided into two approaches. One is overseas cooperation by dispatching experts and volunteers in various development sectors to partner countries; the other is domestic cooperation by inviting participants from developing countries to Japan. The latter method is the Knowledge Co-Creation Program, formerly called Training Program, and it is one of the core programs carried out in Japan. By inviting officials from partner countries and with cooperation from domestic partners, the Knowledge Co-Creation Program provides technical knowledge and practical solutions for development issues in participating countries.

The Knowledge Co-Creation Program (Group & Region Focus) has long occupied an important place in JICA operations. About 400 pre-organized course cover a wide range of professional fields, ranging from education, health, infrastructure, energy, trade and finance, to agriculture, rural development, gender mainstreaming, and environmental protection. A variety of programs is being customized by the different target organizations to address the specific needs, such as policy-making organizations, service provision organizations, as well as research and academic institutions. Some programs are organized to target a certain group of countries with similar developmental challenges.

Japanese Development Experience

Japan, as the first non-Western nation to become a developed country, built itself into a country that is free, peaceful, prosperous and democratic while preserving its tradition. Japan will serve as one of the best examples for our partner countries to follow in their own development.

From engineering technology to production management methods, most of the know-how that has enabled Japan to become what it is today has emanated from a process of adoption and adaptation, of course, has been accompanied by countless failures and errors behind the success stories.

Through Japan's progressive adaptation and application of systems, methods and technologies from the West in a way that is suited to its own circumstances, Japan has developed a storehouse of knowledge not found elsewhere from unique systems of organization, administration and personnel management to such social systems as the livelihood improvement approach and governmental organization. It is not easy to apply such experiences to other countries where the circumstances differ, but the experiences can provide ideas and clues useful when devising measures to solve problems.

JICA, therefore, would like to invite as many leaders of partner countries as possible to come and visit us, to mingle with the Japanese people, and witness the advantages as well as the disadvantages of Japanese systems, so that integration of their findings might help them reach their developmental objectives.

This information pertains to one of the JICA Knowledge Co-Creation Programs (Group & Region Focus) of the Japan International Cooperation Agency (JICA) implemented as part of the Official Development Assistance of the Government of Japan based on bilateral agreement between both Governments.

CORRESPONDENCE

For enquiries and further information, please contact the JICA office or the Embassy of Japan. Further, address correspondence to:

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