

INFORMATION ON GROUP TRAINING COURSE FOR
*INTEGRATED BASIN MANAGEMENT FOR
LAKE ENVIRONMENT*

JFY 2007

集団：湖沼環境保全のための統合的流域管理

COURSE NO.: J07-00940

PROJECT NO.: 0780988

January 3, 2008 ~ March 15, 2008



THE GOVERNMENT OF JAPAN
JAPAN INTERNATIONAL COOPERATION AGENCY

Preface

The Japanese Government extends official development assistance (ODA) to developing countries to support self-help efforts that will lead to economic progress and a better life for the citizens of those countries.

Since its foundation in 1974, the Japan International Cooperation Agency (JICA) has implemented Japan's technical cooperation under the ODA programme.

As of October 2003, JICA has transformed itself into an "Independent Administrative Institution", a new form of governmental agency. Important changes include closer attention paid to grass-roots level cooperation, peace-building, cost performance, faster decision-making, and accountability. JICA continues to be an official agency responsible for implementing ODA programs, in particular technical cooperation, on behalf of the Government of Japan.

JICA's programs include Technical Cooperation Projects, Dispatch of Technical Cooperation Experts, Technical Training of Overseas Participants, Development Studies, Dispatch of Japanese Volunteers, Disaster Relief and Grant Aid, etc.

Technical Training of Overseas Participants applies to key administrators, technicians and researchers in developing countries and areas. It includes the transfer of knowledge and technology necessary for the development of those countries and areas through the training conducted by JICA both at home and abroad. This is one of the most fundamental "human resource development" programs implemented by JICA.

Those who have received such technical training are now contributing in many ways to the development of their home countries and areas. Many have gone on to become national leaders, top-ranking administrators and, researchers while others are now imparting their acquired skills nationwide.

Course Background

This course is intended principally for mid-career government officials and senior researchers who are responsible for the management of lakes (natural and artificial) and their basins in developing countries for sustainable use of resources. The prospective participants should preferably be familiar with technical and administrative challenges in the development and implementation of policies and programs for lake and reservoir management.

The course will review biophysical characteristics of and experiences in the management of lakes and reservoirs and their basins, examine issues pertaining to governance challenges faced in lake basin management including institutions, national and local policies, stakeholder participation, technological possibilities and limitations, the role of science, and sustainable finance, while exploring alternative approaches for planning over time. The course also introduces thematic subjects in water quality management of lakes and reservoirs including methods of monitoring, assessment, control and abatement of pollution in the form of class-room lectures, field visits and some laboratory experiments. As part of the course requirements, the participants will be guided to integrate the knowledge and insights gained through the course to help improve and develop basin management plans for lakes in their respective countries.

I. ESSENTIAL FACTS

COURSE TITLE	Integrated Basin Management for Lake Environment
DURATION	January 3, 2008~ March 15, 2008
DEADLINE FOR APPLICATION	November 9, 2007 * for acceptance at <u>JICA Osaka Centre</u>
NUMBER OF PARTICIPANTS	10
REQUIRED DOCUMENTS FOR APPLICATION	Applicants are requested to submit the following documents for application 1. Nomination form (A2A3 form) 2. Questionnaire for application
REQUIRED REPORTS AND QUESTIONNAIRE FOR PARTICIPATION	<u>Accepted</u> applicants are requested to prepare the following report and questionnaire, and submit it on their arrival in Japan. 1. Preliminary Lake Basin Report (Please refer Section V and Annex II) 2. Lake Basin Questionnaire (ditto)
TARGET GROUP	Mid-career government officials and senior researchers who are responsible for the management of lakes (natural and artificial) and their basins for sustainable use of resources. * The organization names of past participants are shown in Annex IV for reference.
COURSE OBJECT	Through the training course, participants are expected to: 1. study local, regional, national and international programs for integrated basin management for lake and reservoir environments with particular reference to development and implementation of legal, administrative and institutional policy tools, 2. gain experience in field study, monitoring and techniques for analyzing and assessing lake and reservoir environment management, and 3. acquire skills for developing sound programs of lake and reservoir management by properly integrating the components of the governance framework involving institutions, policies, stakeholder participation, technological investments, information, financing and other considerations.
TRAINING INSTITUTION	International Lake Environment Committee Foundation (ILEC) Address: 1091 Oroshimo-cho, Kusatsu-shi, Shiga 525-0001, Japan Tel: 81(*)-77 (**) -568-4573 Fax: 81(*)-77(**)-568-4568 E-mail: info@ilec.or.jp URL: http://www.ilec.or.jp/
ACCOMMODATIONS	JICA Osaka Address: 25-1 Nishi-Toyokawa-cho, Ibaraki-shi, Osaka 567-0058, Japan Tel: 81(*)-72(**)-641-6900 Fax: 81(*)-72(**)-641-6910 http://www.jica.go.jp/english/contact/pdf/what's_osic.pdf http://www.jica.go.jp/english/contact/pdf/life_in_osic.pdf *If no room is available at JICA Osaka, JICA will arrange accommodations for participants at other appropriate places.
ALLOWANCES & EXPENSES	The Government of Japan provides the following allowances and covers the following expenses through JICA in accordance with relevant laws and regulations. <u>Details</u> Round-trip air ticket between an international airport designated by JICA and Japan, accommodation allowance, living allowance, outfit allowance, shipping allowance, expenses for JICA study tours, free medical care for participants who

	become ill after arrival in Japan (costs related to preexisting illness, pregnancy and dental treatment are not included), etc.
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(*) country code of Japan (**) area code

(NOTE)

The International Lake Environment Committee Foundation (ILEC) has been working on the establishment of lake water quality control management measures based on science and technology. Its activities include establishment of general rules as well as countermeasures for individual problems.

II. CURRICULUM

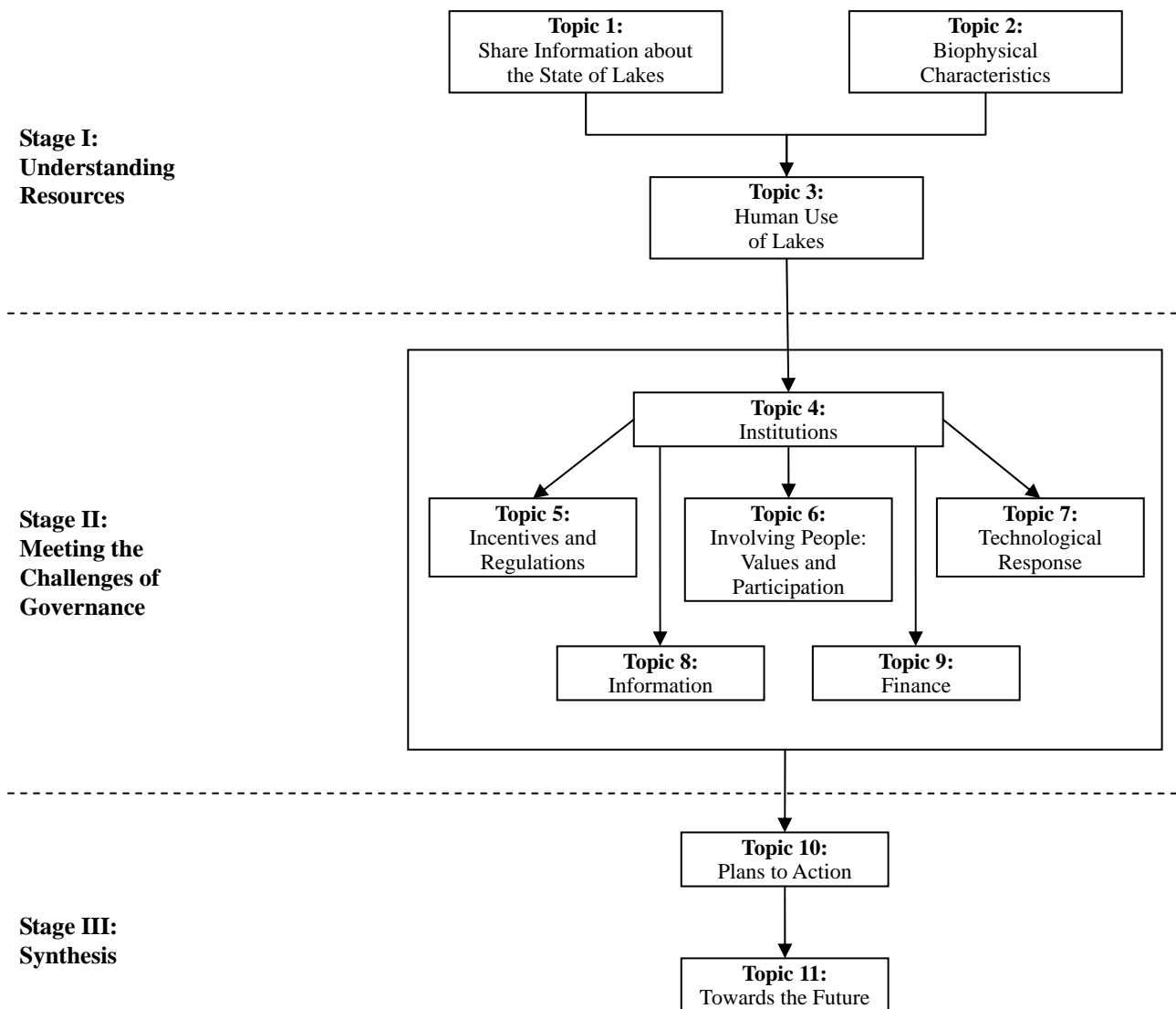
Structure of JICA Integrated Lake Basin Management Course

The course is comprised of eleven topics presented in three stages.

Stage I includes three topics that provide the background for understanding the challenges faced regarding lakes, and their potential values and uses as key resources for sustainable livelihoods and development around the world, as well as for maintaining important life-supporting ecosystems.

Stage II includes six topics. It presents the key lessons learned on the main themes of lake management: institutions, incentives and regulations, involving people, technology, information, and financing.

Stage III includes the final two topics. The topic of planning brings all the themes in Stage II together and discusses how lake basin management is carried out in practice. The final topic presents guidelines for taking action to improve the conditions of lakes as well as the people and natural environment which are both dependent on them.



The following major subjects will be covered in the course

(There may be minor changes in several subjects.)

- (1) Orientation Lecture and Practice (45 hrs.)
Opening Lecture, Preliminary Lake Basin Report Presentation, Evaluation Meeting, Final Report (Action Plan) Presentation, and so on.
- (2) Stage 1. Understanding the Resource
Topic 1. Share Information about the State of Lakes (24 hrs.)
Topic 2. Biophysical Characteristics (35 hrs.)
Topic 3. Human Use of Lakes (12 hrs.)
- (3) Stage 2. Meeting the Governance Challenge
Topic 4. Institution (30 hrs.)
Topic 5. Incentives and Regulations (6 hrs.)
Topic 6. Involving People (35 hrs.)
Topic 7. Technological Response (24 hrs.)
Topic 8. Information (33 hrs.)
Topic 9. Finance (12 hrs.)
- (4) Stage 3. Synthesis (TBD)
Topic 10. Plan to Action
Topic 11. Towards the Future
- (5) Other (45 hrs.)

III. TRAINING SCHEDULE OF FY2006

* The following schedule is 2006 version, schedule will be changed in 2007.

Date	Type	Subject	Lecturer's Organization	Place to Visit
WED		Arrival in Japan		
THU		Briefing		JICA Osaka
FRI	L	General Orientation: Japanese People and Society, Characteristics of the Japanese Language, Japanese History		"
SAT	N			"
SUN	N			"
MON	N	National Holiday (Coming-of-Age Day)		"
TUE				
~	L	Intensive Japanese Language Class	JICE	"
FRI				
SAT	N			
SUN	N			
MON		Orientation	Graduate School of Kyoto Univ.	ILEC
		Opening Ceremony		Center for Sustainability and Environment, Shiga Univ.
	L	Lake Biwa, Introduction	Graduate School of Kyoto Univ.	
TUE	L	Curriculum Orientation, Explanation on Contents Development	Center for Sustainability and Environment, Shiga Univ.	Shiga University Satellite Office (Otsu City)
	L	Lake Management Experience ; Lake Biwa Example Management of Lake Biwa and Yodo River (Political Collaboration)	"	"
WED	O	Visit to Nango Weir	Biwa Lake Construction Work Office	Nango Weir(Otsu City)
	O	Visit to Kitayamada Purification Plant	Kitayamada Purification Plant	Kitayamada Purification Plant (Kusatsu City)
THU	L	Fisheries and Countermeasures against Foreign Fish	ILEC	JICA Osaka
	L	Lake Biwa Comprehensive Development Plan and Present Policies	"	"
FRI	L	Waste Water Treatment System in Japan	ILEC	Shiga University Satellite Office (Otsu City)
	L	Lakes and Basin (Asia as Examples)	The Univ. of Shiga Prefecture	
SAT	N			
SUN	N			
MON		Preparation for Country Report Presentation		Shiga University Satellite Office (Otsu City)
	D	Country Report Presentation-1	Graduate School of Kyoto Univ., Center for Sustainability and Environment, Shiga Univ.	"
TUE	D	Country Report Presentation-2	Graduate School of Kyoto Univ., Center for Sustainability and Environment, Shiga Univ.	Shiga University Satellite Office (Otsu City)
	D	Country Report Presentation-3		
WED	L/O	Visit to Lake Biwa Museum	Research Scientist, Lake Biwa Museum of Shiga Prefectural Government	Lake Biwa Museum
THU	L	Environment Conservation and Citizen Participation	The Univ. of Shiga Prefecture	The University of Shiga Prefecture
FRI	L	Case-Study of Lake Bhopal	Shiga University Lecturer, Ritsumeikan Univ.	Shiga University Satellite Office (Otsu City)
SAT	N			
SUN	N			
MON	L	Eco-sanitation	Graduate School of Kyoto Univ.	ILEC
	O	Night Soil Treatment Plant (Konan Regional Environmental Sanitation Center)	"	Konan Regional Environmental Sanitation Center (Kusatsu City)
TUE	L	Lake Basin Management	Kyoto Univ.	Shiga Univ. Satellite Office
	O	Visit to Lake Biwa Water Channel	"	Lake Biwa Water Chennel (Kyoto City)
WED	L	Eutrophication Problem	Shiga University	Shiga University
	L	Eutrophication Problem and EE		
THU	L	Economic Valuation of Lake Resources 1	Faculty of Economics, Shiga Univ.	Shiga University Satellite Office (Otsu City)
FRI	L	Accommodating for Stakeholder Interests and Restoration of Resource Values	Dept. of Env. Science, The Univ. of Shiga Pref.	Shiga University Satellite Office (Otsu City)
	D	Discussion for contents development	Center for Sustainability and Environment, Shiga Univ.	Shiga University Satellite Office (Otsu City)
SAT	N			
SUN	N			
MON	O/D	Env. NGO's Activities	Akanoi-Biwako Environmental Citizen's Initiative	Akanoi-Biwako Environmental Citizen's Initiative
TUE	O	Agricultural Activities and Irrigation	Agricultural Technology Promotion Center	Agricultural Experimental Station
	O	Activities of Higashi-Ohmi Basin Committee	Higashi-Ohmi Environment Self-Governance Association	Nagamachi Public Center (Azuchi Town)
WED	L	Lake Basin Management Policies and Institutions	Nagoya Sangyo University	
	L	Policy Options in Lake Environment Management: Revis of Project	"	
THU	L	Biophysical Characteristics of World's Lake Basin	ILEC	
	L	Toxic Substances Management in Lakes & Reservoirs	Graduate School of Kyoto Univ.	
FRI	L	Upper Watershed Degradation and Restoration	Shiga Univ.	Shiga University Satellite Office (Otsu City)
	D	Interim Progress Evaluation		Shiga University Satellite Office (Otsu City)

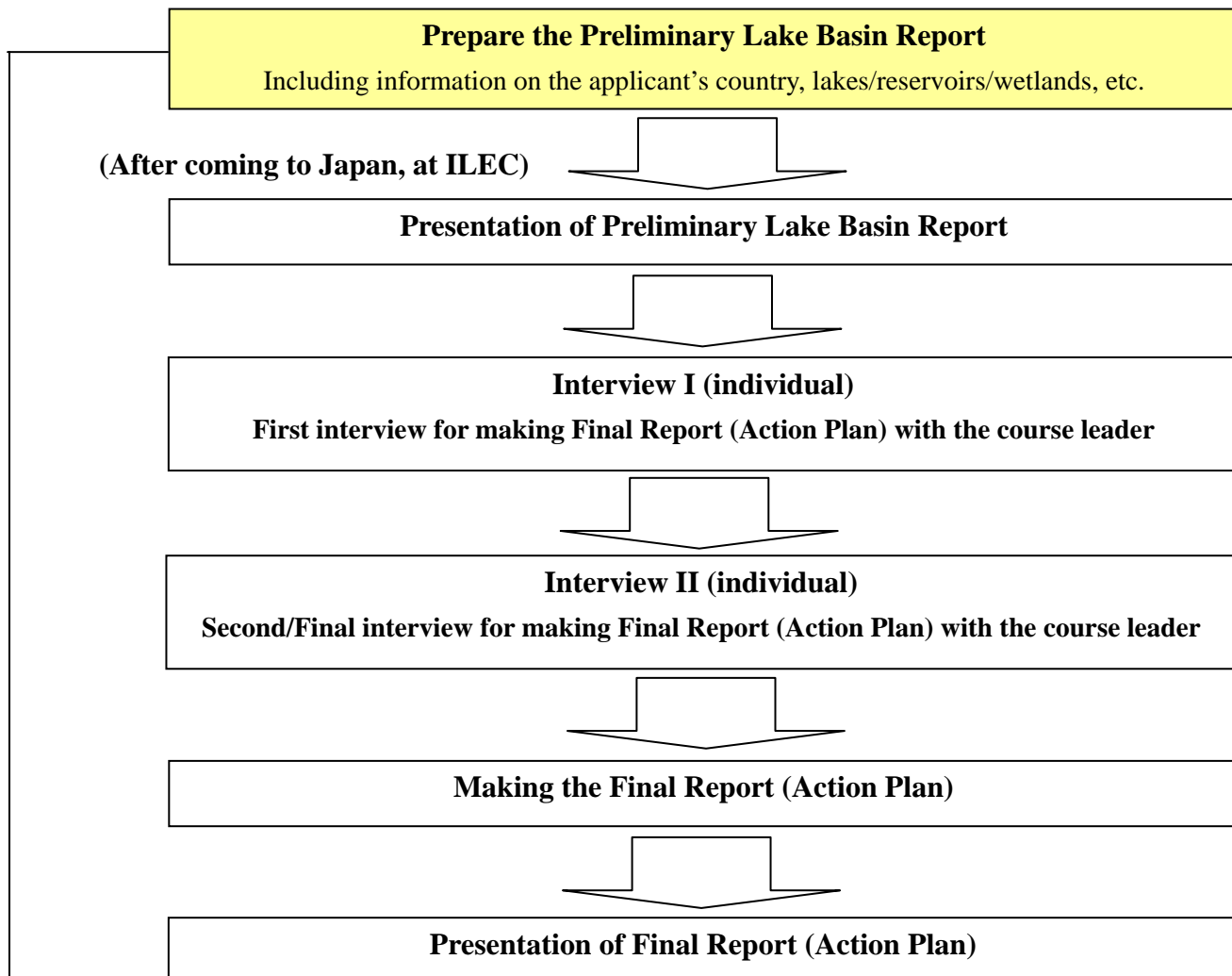
Date	Type	Subject	Lecturer's Organization	Place to Visit
SAT	N			
SUN	N			
MON	N	Holiday (National Day of Japan)		
TUE	T	Move to Tokyo		Osaka-Tokyo
		Ministry of Environment	Water Environmental Management Div., Water Environment Dept., Ministry of the Environment	Ministry of the Environment
		Move to Kasumigaura		Tokyo - Tsuchiura
WED	T	Lake Kasumigaura Management Experience	Lake Kasumigaura Construction Work Office	Kasumigaura Citizen's Association
	T	Kasumigaura Citizen's Association		
THU	T	National Institute for Environmental Studies	General Affairs Division, NIES Lake Environment Research Section, NIES	Tokyo-Tsukuba NIES, Tsukuba Science City
FRI	T	Ramsar Activities in Japan	Tokyo Harbor Wild Fowl Park	Tokyo-Hamamatsucho-Ryutsu Center
SAT	T	Move back to OSIC		Tokyo-OSIC
SUN	N			
MON	L	Water Quality Management Monitoring	Kyoto Univ.	Shiga University Satellite Office (Otsu City)
	L/P	Water Quality Management Monitoring	Institute of Comprehensive Global Environ.	
TUE	L	Water Sampling		Shiga University
	L/D	Water Sampling / Discussion		
WED	L/P	Lake Modeling	The Univ. of Shiga Prefecture	
THU	L/P	Lake Modeling	The Univ. of Shiga Prefecture	
FRI	D	Individual Course Planning Session	Center for Sustainability and Environment, Shiga Univ.	Shiga Univ. Satellite Office (Otsu City)
SAT	N			
SUN	N			
MON	L	GIS Research	Kyoto University	
TUE	L/P	GIS Application in Lake Basin Management	Kyoto University	
WED	L	International Fundiig and Technical Collaboration, ODA	Ritsumeikan Univ.	ILEC
	O	Visit to Konan-Chubu Sewage Treatment Plant	Konan-Chubu Water Reclamation Plant, Shiga Pref. Sewage Management Public Corporation	Konan Chubu Water Reclamation Plant (Kusatsu City)
THU	T	Move to Himeji Visit to Ibo River Water Purification Center, Hyogo-Nishi Sludge Center	Ibo River Administration Office, Hyogo Prefectural Sewerage Public Corporation	Osaka-Himeji Ibo River Administration Office Hyogo Prefectural Sewerage Public Corporation
	T	Visit to Tanning Industry Plant and Waste Water Treatment Facility Move back to Osaka		
FRI	T	Local CBO Activities in Hiroshima	Hiroshima City	Hiroshima Municipal Office
	T	Move back to OSIC		Hiroshima-Osaka
SAT	N			
SUN	N			
MON	L	Sustainable Financing in Lake Basin Management	Center for Sustainability and Environment, Shiga Univ.	Shiga University Satellite Office (Otsu City)
TUE	L	National and Local financing in Lake Basin Management	Center for Sustainability and Environment, Shiga Univ.	Shiga University Satellite Office (Otsu City)
	L	International Financing in Lake Basin Management	JBIC(Japan Bank of International Cooperation)	
WED	P	Practice	Kyoto University/ Shiga University/ Akanoi-Biwako Environmental Citizens' Initiative/ Ryukoku University	Kyoto Univ./ Shiga Univ./ Akanoi-Biwako Environmental Citizens' Initiative/ Ryukoku Univ.
THU	P	"	"	"
FRI	P	"	"	"
SAT	N			
SUN	N			
MON		Final Report Preparation		JICA Osaka
TUE	P	Final Report Presentation 1		Shiga University Satellite Office (Otsu City)
	D	Synthes Discussion 1		
WED	P	Final Report Presentation 2		Shiga University Satellite Office (Otsu City)
	D	Synthes Discussion 2		
THU	P	Final Report Presentation 3		Shiga University Satellite Office (Otsu City)
	D	Synthes Discussion 3 / Evaluation		
FRI		Completion of Final Report		JICA Osaka
		Evaluation Meeting, Closing Ceremony, Farewell Party		JICA Osaka
SAT		Departure from Japan		

L: Lecture, P: Practice, O: Observation, D: Discussion, T: Trip, N: No schedule

IV. REQUIRED REPORTS TO MAKE BEFORE AND DURING THE COURSE

Report Flowchart

(Before coming to Japan)



NOTE: Details concerning Interviews I and II and the Final Report will be provided to participants after their arrival in Japan.

Preliminary Lake Basin Report (For detail, please refer Annex II)

Before coming to Japan, applicants should prepare a Preliminary Lake Basin report on the present situation of their own field of study and interest in their own country in accordance with the contents of the Annex II. This Preliminary Lake Basin Report should be

- typewritten single-spaced in English (about 20 pages, A-4 size).
- submitted to JICA as an original hard copy and as a copy saved on CD-ROM or USB memory stick etc by the time of arrival in Osaka

The Preliminary Lake Basin Report is used as training material. Each participant is expected to make a presentation on this report at the beginning of the training course (20 minutes for presentation and 10 minutes for discussion; PowerPoint projector is available).

V. REQUIREMENT FOR APPLICATION

Applicants should:

- (1) be nominated by their government in accordance with the procedures mentioned in VI. below,
- (2) be university graduates or the equivalent,
- (3) be either technical officers in charge of lake/wetland water management (including management of rivers flowing into such water bodies) who are expected to assume executive administrative posts in that field, or researchers in water quality and ecosystem management who are expected to take leading roles in guiding the lake/wetland management programmes in their country,
- (4) have more than five (5) years' occupational experience in the field,
- (5) be between twenty-five (25) and forty (40) years of age,
- (6) have a sufficient command of spoken and written English,
- (7) be in good health, both physically and mentally, to undergo the training, and
- (8) not be serving in the military.

ATTENTION

Participants are required:

- (1) not to change course subjects or extend the course period,
- (2) not to bring any members of their family,
- (3) to return to their home country at the end of their course according to the international travel schedule designated by JICA,
- (4) to refrain from engaging in political activities or any form of employment for profit or gain, and
- (5) to observe the rules and regulations of their place of accommodation and not to change accommodations designated by JICA.

VI. PROCEDURE FOR APPLICATION

1. A government desiring to nominate applicants for the course should fill in and forward one (1) original and three (3) copies of the Nomination Form (Form A2A3) for each applicant to the JICA office (or the Embassy of Japan), **for the acceptance at the JICA Osaka Centre by November 9, 2007.**
2. The JICA office (or the Embassy of Japan) will inform the applying government whether or not the nominee's application has been accepted **no later than December 7, 2007.**

VII. OTHER MATTERS

1. Pre-departure orientation is held at the JICA office (or the Embassy of Japan) to provide the selected candidates with details on travel to Japan, conditions of training, and other matters. Participants will see a video, “TRAINING IN JAPAN”, and will receive a textbook and cassette tape, “SIMPLE CONVERSATION IN JAPANESE”. A brochure, “GUIDE TO TRAINING IN JAPAN” will be handed to each selected candidate before (or in the time of) the orientation.
2. Allowances, such as for accommodation, living, outfits, books and shipping, will be paid on the second day of the designated course schedule, which is January 4, 2008. Those participants who will arrive in Japan before that day are kindly advised to bring the necessary funds to cover expenses as JICA only provides accommodation facilities.
3. Participants are strictly advised to visit the JICA Counter upon arrival at Kansai International Airport, the designated airport of arrival in Japan. The JICA Counter is located at the south-end corner of the arrival hall on the 1st floor. A JICA-designated Travel Agent will provide participants with instructions and tickets to get to their designated accommodations. Please refer to the last page of this brochure to inquire about further details.
4. Participants who have successfully completed the course will be awarded a certificate by JICA.
5. Particularly for the facilitation of final report preparation is it preferable for participants to be familiar with the use of computers and their software (e.g. Microsoft Word, PowerPoint, Excel, etc.)

Annex I Questionnaire for Application

This questionnaire is requested to be sent with nomination form for selection of participants

1. Name and Country

2. Title and Organization

3. Please describe in detail your duties/responsibilities on the job.

4. What difficulties or challenges (administrative issues and technical issues) in the field of basin management for lake environment are you currently facing on your duties?

5. Subjects of special personal interest in this training course, and/or what do you expect from this training course?

6. Please describe correlation charts of organizations which involved in basin management for lake environment, and indicate which is your organization.

7. Comments, if any.

Annex II Preliminary Lake Basin Report and Lake Basin Questionnaire

Please refer to Annex III and complete the report and questionnaire according to the instructions below. These should be submitted on the arrival in Japan. Also it is recommended to bring the photos and maps which show the lake environment in the participants' countries.

Preliminary Lake Basin Report

(For Introductory Presentation during the Training Course)

The participants will be requested to make a short presentation on their Lake Basin Reports (LBRs), using PowerPoint slides. An LBR can be described by the following general outline:

1. Introduction
2. The Lake
3. Management of the Lake and Its Basin
4. Key Challenges
5. References

1. Introduction. (based in part on Lake Basin Questionnaire items, 10 and 11, 14 and 15)

This section should describe the socio-economic context (people, livelihood, economy, institutions, political structure, etc.) of the region, country, or the basin in which the lake is located. It should summarize the overall importance of the lake and its drainage basin, from the perspective of its significance as a natural habitat and its social, economic, political, cultural and recreational importance to the human population in the region, and for globally-important lakes of the world.

2. The Lake (based in part on Lake Basin Questionnaire items, 1 through 9)

2.1 Overview

This section should provide information on the biophysical feature of the lake and its drainage basin. It should also present basic physical characteristics including the water surface and drainage areas, depth and volume of the lake, etc. The landscape of the drainage basin as well as the past and current land use patterns should also be mentioned. It should also summarize the environmental state of the lake in relation to its drainage basin.

List the human and environmental benefits derived from the lake/reservoir and its drainage area.

2.2 State of the Lake

To be included here is the past and present states of the lake's water environment, including water quantity and quality, and aquatic biota (flora and fauna). Any regionally or globally important aspects of the lake's environment should be identified.

3. Management of the Lake and Its Basin

(based in part on Lake Basin Questionnaire items, 10 through 14)

3.1 Overview of Management Needs

- What is the importance of the lake/reservoir to the population of its drainage basin? What are the major socio-economic-political characteristics of the lake/reservoir and its drainage basin?
- What is the importance of the lake/reservoir for the economy of the region? Describe a brief history of the resource degradation and environmental problems that the lake and its drainage basin have experienced over past decades (e.g., the impacts of industrial, urban, and

agricultural development).

- Provide an overview of resource development, use and conservation conflicts within the lake and its drainage basin resulting in significant environmental threats to the sustainable use of the lake resources (resource exploitation, watershed degradation, declining fishery, biodiversity losses, etc).

3.2 Management Programs and Processes

- To what extent have land-based and water-based activities occurring in and around the lake and within its drainage basin been reduced (by, for example, control of domestic, industrial and other pollution loads, control of urban and agricultural run-offs, including that resulting from watershed degradation, excessive flow control and water withdrawal, over-fishing, loss of wetlands and riparian zones)?
- Are there any formal plans or policies for management of the lake and its drainage basin or, in the absence of formal plans and policies, the existing legal and policy basis for lake management? Describe the major water pollution control programs, management of water abstraction from the lake and its inflowing rivers, legal framework for the prevention of lake water and lake environment quality degradation, including land-use control, environmental and ecosystem management and restoration, as well as specific instruments for financing lake management including user fees, taxes, fish levies, zoning charges, tradable permit systems, etc.). This section also should identify important gaps, issues and challenges.

4. Key Challenges (based largely on your insights and impressions)

This section should identify key challenges with regard to such issues as policy development, institutional and management frameworks, capacity building efforts, financing mechanisms, stakeholder involvement, scientific research and community-based knowledge-base development, sharing, transfer and dissemination of information, etc., as well as the corresponding investment approach, considerations and priorities. The questions to ask may include;

- (a) Has there been an emergence of political interest and commitment to managing and using the lake and its resources in a more sustainable manner, and the reasons for this emergency?
- (b) Have there been attempts to establish sustainable institutions that can adequately address multi-national, multi-sectoral issues and multi-stakeholder interests involved in managing the lake for sustainable use;
- (c) Will there be efforts to develop a financing subsidizing mechanisms for management activities focusing on sustainable lake use?
- (d) Will there be attempts to establish a new legislative framework and policies for lake management?
- (e) Will there be efforts to enhance the extent of stakeholder participation in the design and implementation of the lake management program?
- (f) Will there be a plan or plans to strengthen the linkages between the lake management program and the broader national and regional water resources management efforts?
- (g) Will there be efforts to better incorporate scientific information and research in the lake management program?

5 References

List useful supplementary reading materials on the lake, the lake basin, and the region including your country, that complement this Report.

Lake Basin Questionnaire

Note: Please provide as much information as possible. Information relating to items displayed in boxes below may be omitted from the questionnaire if not readily available. It may, however, be found later in the scientific literature or in the global database, or even during the course of training course. Identify as many reference materials on the subjects as possible and be prepared to have ready access to them if and when needed for improving the Preliminary Lake Basin Report as a Final Report.

1. Basic Information

1.1 Name(s)

1.1.1 In English (All official names, if called in more than one way.)

1.1.2 In local language(s)

1.2 Location

1.2.1 Latitude (range from West to East)

1.2.2 Longitude (range from South to North)

1.2.3 Elevation at water surface from sea level

1.2.4 Riparian countries and sub-national (state, province, etc.) jurisdictions

1.2.5 Non-riparian basin (upstream) countries and sub-national jurisdictions

1.3 Origin

1.3.1 In the case of natural lakes

- Origin of the lake (e.g., glacial, tectonic, volcanic, etc.)
- Estimate of the age of the lake

1.3.2 In case of artificial lakes (reservoirs)

- Describe the physical features
- Years of construction in phases

1.4 Basin and/or Watershed, Map(s)

1.4.1 Major inflowing and out-flowing rivers

1.4.2 Main cities and other points of interest

1.4.3 National/sub-national jurisdictional boundaries

1.4.4 Etc.

1.5 Basin Demography, Map(s)

1.5.1 Population and density distribution

1.5.2 Etc.

(The trainees are requested to bring along maps and other resource materials containing geographical, demographical, land-use, geo-hydrological information for the lake and its basin and/or watershed.)

1.6 Landscape and waterscape

1.6.1 Visual features of the lake and its basin

(The trainees are requested to bring along photos of various kind including landscape, physical facilities, water quality problems, land and water uses in the riparian as well as upstream regions, biological and ecosystem conditions including unique fauna and flora, etc., for possible use in the final report.)

2. Morphology

2.1 Bathymetric map, if available

2.2 Volume (in km³)

2.3 Surface Area (in km²)

2.4 Length and width (in km)

- 2.5 Length of shoreline (in km)
- 2.6 Maximum depth (in m)
- 2.7 Mean depth (in m)
- 2.8 Note on intra- and inter-annual changes in water level and volume, if information is available (provide a note on water level changes due to flow regulations)

3. Water Balance

- 3.1 Inflow (Annual average in m³ per year)
 - 3.1.1 Precipitation
 - 3.1.2 Rivers (Note if they are controlled.)
 - 3.1.3 Groundwater
 - 3.1.4 Diversions
- 3.2 Outflow (Annual average in m³ per year, if information is available.)
 - 3.2.1 Evaporation
 - 3.2.2 Rivers (Controlled?)
 - 3.2.3 Groundwater
 - 3.2.4 Diversions
- 3.3 Retention time (In years, if information is available.)
 - 3.3.1 Theoretical filling time (Lake volume/annual inflow)
 - 3.3.2 Theoretical flushing time (Lake volume/annual outflow)
- 3.4 Notes on any long-term changes

4. Climate

- 4.1 Average T, min monthly T, max monthly T (in centigrade)
- 4.2 Average Precipitation, min monthly precipitation, max monthly precipitation (in mm)
- 4.3 Prevailing wind directions by season, strength
- 4.4 Seasonal and inter-annual variability (Describe.)

5. State of Ecosystem

- 5.1 Description on the state of ecological health including conservation of fauna and flora
- 5.2 Description on the state of biodiversity conservation

6. Physical Data

- 6.1 Temperature of water
 - 6.1.1 Versus time
 - 6.1.2 Versus depth
- 6.2 Freezing period and extent of freezing
- 6.3 Mixing
 - 6.3.1 Vertical
 - 6.3.2 Horizontal (Note main bays, sub-basins of lake.)
- 6.4 Stratification
 - 6.4.1 Period and extent of stratification

7. Chemical Data

- 7.1 Concentrations: The state of chemical water quality in general including the states of eutrophication, i.e., oxygen demand, N and P concentration values (organic, inorganic, particulate, total, if available), salinity, organic and inorganic chemical pollution.
- 7.2 Loadings (tons/yr.) of inputs from rivers, groundwater, and the atmosphere

8. Biotic Data (Main species, exotics, productivity change through time)

- 8.1 The overall state of the lake ecosystem including its biodiversity
- 8.2 Phytoplankton, Zooplankton, Fish

8.3 Benthos, Avifauna

8.4 Linkages (e.g., Describe briefly the ecosystem/biodiversity issues in general with regard to littoral wetlands, rivers, air (birds, etc.).

9. State of the Basin

9.1 Description of the catchment area including its size (in km²), general geography of the region in relation to the lake and other neighboring water bodies (other lakes connected in chain, for example), catchment (draining-in) system, catchment area of the out-flowing river (draining-out) system

9.2 Basin hydrology (Briefly describe basin hydrology, including active as well as non-active parts.)

9.3 Soil types (refer to a soil map, if available)

9.4 Land cover with changes through time (Briefly describe seasonal land-use changes, by referring to a land-use map.)

9.5 Notes on sub-surface drainage (Briefly describe underground water flows, referring to hydrographical and hydrological maps, if available.)

10. Uses of the Lake and Its Resource Development Facilities

10.1 Water

10.1.1 Flood/drought control facilities

10.1.2 Drinking water withdrawal and facilities

10.1.3 Agricultural water withdrawal and facilities

10.1.4 Industrial water withdrawal and facilities

10.2 Fisheries and their facilities

10.3 Tourism facilities

10.4 Others

11. Impairments to Uses

11.1 Increased algal growth

11.2 Increased salinity

11.3 Destruction of wetlands

11.4 Declining fish stocks

11.5 Other

12. Causes of Impairments

12.1 Upper-watershed degradation including erosion and siltation

12.2 Point and non-point source runoff from urban areas

12.3 Shoreline degradation and alterations

12.4 Other

13. Structural Management Response

13.1 Sewerage system

13.2 Industrial wastewater treatment system

13.3 Solid and hazardous waste management system

13.4 Other

14. Non-structural Management Response

14.1 Rules

14.1.1. Informal (informal community rules and voluntary restrictions)

14.1.2. Formal (industrial effluent regulations, protected areas (land use restrictions, ecological reserves), etc.)

14.2 Economic Incentives (subsidies, taxes, etc.)

14.3 Awareness Raising (public awareness-raising including environmental education, environmental campaigns, activities of environmental NGOs and CBOs, etc.)

15. Socioeconomic Information (partial duplication of 1.5)

15.1 Population dynamics (numbers, distribution, main cities, percent urban/rural, etc.)

15.2 Education (extent and types of education, literacy rates, etc.)

15.3 Culture (languages, ethnicity, including indigenous peoples, religion, legends/beliefs about the lake)

15.4 Economic sectors (major industries and their production statistics, regional economic development issues including energy, transportation, commerce sectors, livelihood issues in different parts of the lake basin, i.e., coastal regions, upland regions, upper-watershed regions, Gross National Income per capita within the basin (noting how it might differ from the national average(s)))
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16. Political Situation (partial duplication of 1.2)

16.1 Nations within basin

16.2 Sub-national boundaries

16.3 Describe briefly the political history of the region

16.4 Describe briefly the governance challenges for the people to have;

16.4.1. Access to information

16.4.2. Rights to participation

16.4.3. Access to justice

Annex III Course Background and Lake Basin Governance Challenges

Course Background

This course is intended principally for mid-career government officials and senior researchers who are responsible for the management of lakes (natural and artificial) and their basins in developing countries for sustainable use of resources. The prospective participants should preferably be familiar with technical and administrative challenges in the development and implementation of policies and programs for lake and reservoir management.

The course will review biophysical characteristics of and experiences in the management of lakes and reservoirs and their basins, examine issues pertaining to governance challenges faced in lake basin management including institutions, national and local policies, stakeholder involvement, technological possibilities and limitations, role of science, and sustainable finance, while exploring alternative approaches for planning over time. The course also introduces thematic subjects in water quality management of lakes and reservoirs including methods of monitoring, assessment, control and abatement of pollution in the form of class-room lectures, field visits and some laboratory experiments. As part of the course requirements, the participants will be guided to integrate the knowledge and insights gained through the course to help improve and develop basin management plans for lakes in their respective countries.

Lake Basin Governance Challenges

<Note> The following preview gives a general description of what the Training Course aims to address during its course, with regard to some of the important challenges that you have listed under 4. Key Challenges in the Lake Basin Report to be presented at the outset of the training course.

Institution

- Is there a good institutional mechanism to ensure vertical (transboundary, regional, national and local) linkages among government agencies in lake basin management?
- Is there a good institutional mechanism to ensure horizontal linkages between government agencies, industries, scientific institutions and citizen groups, etc., in dealing with lake resource development and conservation? In particular, is there good institutional collaboration to deal with water pollution and other natural resource degradation activities such as land degradation and over-fishing?

Policy

- Is there a national policy for lake basin management? What, if any, are the major national/regional development plans related to the lake basin? What, if any, are the major national/regional conservation plans related to the lake basin?
- What sort of policy reforms have taken place, or are being considered, to overcome the constraints to achieving environmentally-sound management and use of the resources of the lake and its drainage basin, particularly with respect to development of sound policy, strengthening of institutional capacity, promotion of environmental investments, and development of human resources?

Legislation

- What are the major legislative provisions (laws, regulations, ordinances) pertaining to development and conservation measures for lake basin management? Does your lake have lake-specific legislation (lake laws and ordinances)?
- What are the major regulatory measures introduced for lake basin management, e.g., effluent standards, ambient standards such as nutrient and chemical concentrations, source-water

protection classification?

- What is the state of command-and-control measures? Have industries been well regulated?
- What is the state of voluntary compliance regarding industrial pollution? Have they been able to regulate themselves in preventing lake water pollution?

Stakeholder and community/citizen participation

- What are the major stakeholder groups in the management of your lake (e.g., government sectors, institutions, organizations, interest groups, private sectors, etc.)?
- How well have stakeholders been involved in the design and implementation of the lake management program(s) (e.g., identification of relevant stakeholders living on the lake shore, as well as those living upstream and downstream of the lake, the existing mode, if any, of stakeholder involvement, the relationship between the government and various non-governmental stakeholders)?
- How has involvement of voluntary associations, village organizations, CBOs, NGOs, etc. been promoted/assured?
- How has involvement of women as well as disadvantaged and affected members of community been promoted/assured?
- How has involvement of international/external NGOs been? What have been the benefits and disbenefits of their involvement?

Role of Science

- What is the state of lake water quality monitoring?
- How well have monitoring results been reflected in lake basin management?
- How well has scientific information been reflected in management plans for your lake/reservoir and its basin?
- List the names of major scientific institutions working on your lake including universities, governmental/non-governmental research institutes, private sector laboratories, etc. This has no value unless each institution's role is critiqued.
- What has been the extent of information dissemination and sharing, and the degree of transparency and access to data and information on the lake?

Technology

- List some of the major technological interventions for lake resources development, e.g., water resource development (sewerage comes here too I think), agriculture/irrigation, fisheries/navigation, tourism, etc.
- List some of the major technological interventions for lake resources conservation, e.g., sewerage, industrial pollution control, solid waste management, wetland conservation, etc.

Finance

- Describe briefly the taxation system of your country? How much tax money is retained for local use, such as for management of your lake basin?
- If you know, what is the general distribution of major sources of funds, for lake environment management, such as construction and operation/maintenance of sewerage, and/or other sanitation systems? For example, what portion of construction costs is being borne by the national budget, state budget, local budget, and external financial assistance? Who pays the operations and maintenance costs?
- What are some of the means for raising local funds, taxes, charges, fees, etc., used for conservation projects?
- Do you know of any innovated financial mechanisms used in your region for pollution control, such as pollution charges, tradable permits, etc.?

Annex IV Reference Information - Past participants -

The following are past participants in this course. This information is provided to show what kinds of people have participated in this course in the last 2 years.

Countris	Positions and Organizations
Benin	Inland Fisheries of Oueme Plateau Department, Regional Center for Agricultural Promotion of Oueme Plateau Department
Benin	Fishing, Regional Center for Agricultural Promotion of Mono-Couffo
Brazil	Governmental Agency for Environmental Control and Water Administration
Burundi	Ministry of Land Planning, Tourism, and Environment, Forestry Department, Section of Inventory and Statistics
China	Mountain-River-Lake Development Office of Jiangxi Province
Colombia	Plan and Ordering of the River basin of the Garagoa River, Boyacá National University of Colombia - Institute of Environmental Studies
Ghana	Landscape, Volta River Authority
Ghana	Senior Aquatic Biologist, Volta River Authority
Guatemala	Hydrobiological Resources Unit, National Council of Protected Areas
India	Hyderabad Urban Development Authority
Kenya	Surface Water, Water Resources Management Authority
Kyrgyzstan	Laboratory, Institute of Water Problems and Hydropower, NASKR
Macedonia	Scientific Collaborator, Hydrobiological Institute
Paraguay	Technician Assesor, House of Representatives Parliament
Philippines	Chemist, Laguna Lake Development Authority
Syria	Planning, General Organization of the Euphrates Dam
Vietnam	Water Resources and Environment Planning and Management, The Center for Water Development and Environment, Vietnam Institute for Water Resources Research, Ministry of Agriculture and Rural Development



Welcome to JICA Osaka

Osaka International Centre of Japan International Cooperation Agency (JICA Osaka) extends a hearty welcome to all JICA participants.

1. Location of the centre in the Kansai region

JICA Osaka is located in Ibaraki City, Osaka prefecture, in the heart of the Kansai region. Ibaraki lies close to the ancient cultural centers of Kyoto and Nara, and to the commercial, industrial and economic center of Osaka, and the city of Kobe.

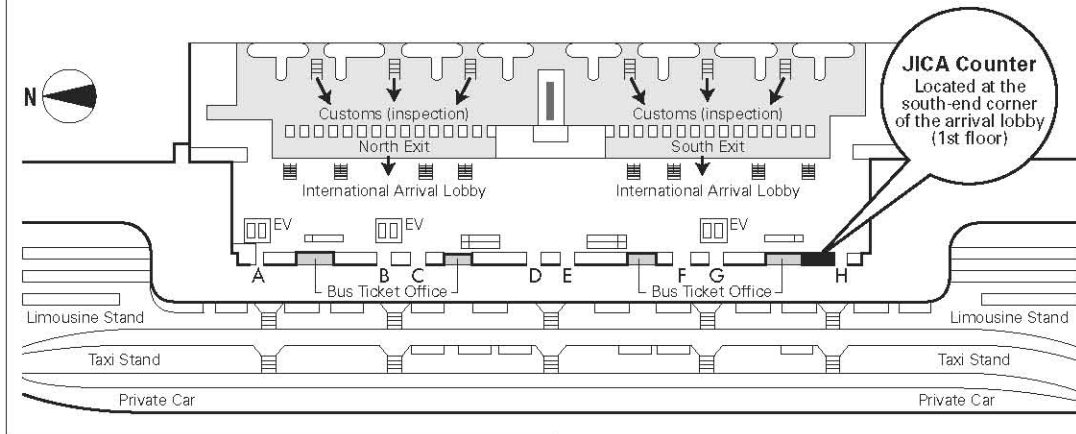
2. Orientation Programme & Japanese Language Course

- (1) The four days after arrival at JICA Osaka are dedicated to an orientation programme, during which participants are introduced to JICA Osaka and its facilities, attend lectures on Japan's economy, society and culture, and participate in an international exchange programme with local communities.
- (2) It is desirable that participants acquire basic Japanese daily conversation for use in communication with training institution personnel and in other situations outside the scope of their technical training. JICA Osaka therefore offers:
 - ① an intensive Japanese language course as an integral part of the training programme in designated courses
 - ② an optional Japanese language course held in the evenings

3. Weekend Recreational Programme

Occasionally, at the weekends, JICA Osaka, in concert with community groups, organizes a programme of recreational activities and exchange events, including introductions to flower arrangement, tea ceremony, kimono wearing, handicrafts, and folk dancing, and visits to Japanese homes.

Map of JICA Counter in Kansai International Airport (KIX)



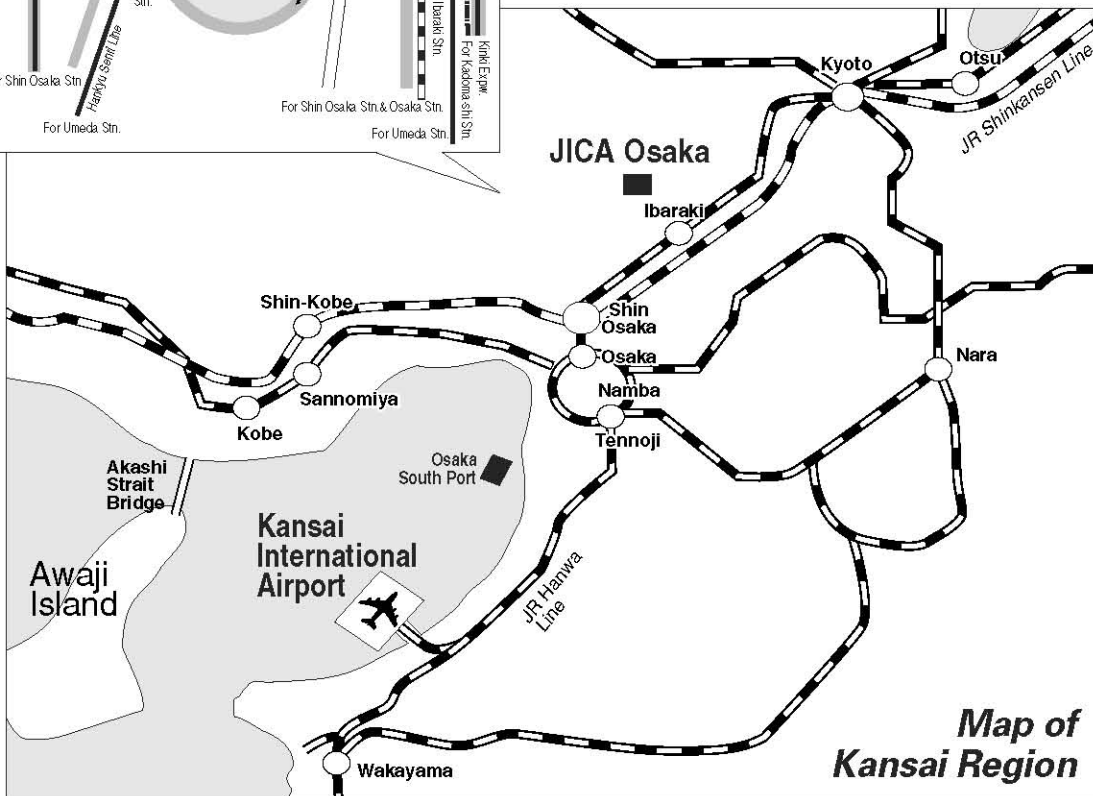
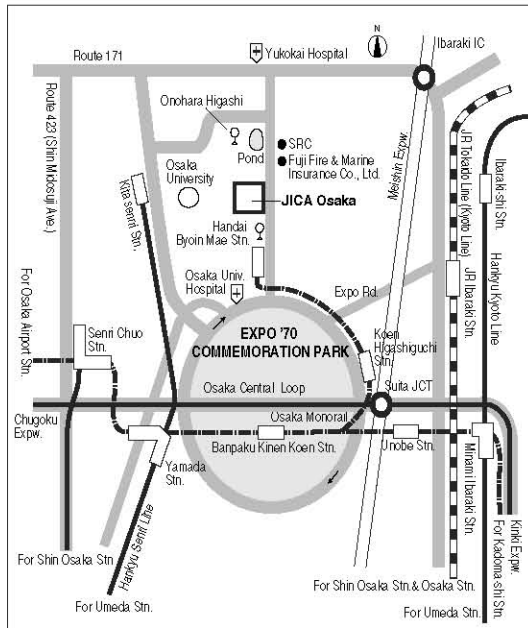
Upon arrival, participants should follow the procedure below:

1. Ride on Wing Shuttle (red elevated tram).
2. Pass through Immigration.
3. Collect baggage and pass through Customs Inspection.
4. Go to the JICA Counter located at the south-end corner of the arrival lobby (1st floor).

The staff at the JICA Counter will provide participants with a limousine bus ticket to Osaka Station (alight at Hotel New Hankyu).

At Osaka Station, a representative of the travel agency designated by JICA will meet the participant. The participant will be taken to JICA Osaka by taxi (with a taxi ticket), which takes approximately 30 minutes.

Map of the JICA Osaka Vicinity



Map of Kansai Region



CORRESPONDENCE

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

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(*): country code for Japan (**) : area code for Ibaraki