実施協議調査報告書

1　調査の概要

2009 年 1 月から 2 月に実施した詳細計画策定調査、及びその後の国内での検討を経て協力内容を取りまとめた後、クロアチア側と再度協議をおこない合意形成を図るため、2009 年 3 月に実施協議調査団を派遣した。調査団の構成及び日程の概要は以下のとおりである。

（1）実施協議調査団　団員構成

	氏名	担当分野	現職	調査期間
1	大竹　祐二	団長／総括	国際協力機構 地球環境部 次長 （計画・調整担当）	3 月 24 日～3 月 29 日
2	七海　明子	制度管理	国際協力機構 総務部 法務課 調査役	3 月 23 日～3 月 29 日
3	佐藤　一朗	協力企画	国際協力機構 地球環境部 水資源･防災グループ 防災第二課 調査役	3 月 24 日～3 月 29 日

（2）実施協議調査　日程

	日付	行　程	
		大竹、佐藤	七海
1	3/23(月)		移動（成田→ウィーン→ベオグラード）
2	3/24(火)	移動（成田→ウィーン→ベオグラード）	JICA バルカン事務所打合せ
3	3/25(水)	JICA バルカン事務所打合せ 移動（ベオグラード→ウィーン→ザグレブ）	
4	3/26(木)	科学教育スポーツ省との協議 日本大使館表敬	
5	3/27(金)	陸路移動（ザグレブ→スプリット） 討議議事録（R/D）署名式 陸路移動（スプリット→ザグレブ）	
6	3/28(土)	移動（ザグレブ→ウィーン→	
7	3/29(日)	→成田）	

2　調査の目的

実施協議調査は、以下の目的で実施された。

（1）詳細計画策定調査と帰国後の国内関係者との協議、及び JICA 内の事前評価・案件承認プロセスを経て作成した協力内容と、これを記載した討議議事録（R/D）案を基に、科学・教育・スポーツ省と協議を行い、合意形成を経て R/D の署名を行う。

（2）専門家の特権免除確保、供与機材の関税等免除措置などの懸案事項について科学・教育・スポーツ省と協議を行い、協議内容をミニッツに取りまとめ、署名を行う。

3　調査・協議結果概要

（1）R/D の署名

調査団は、3 月 26 日に科学・教育・スポーツ省と R/D 案の内容について協議を行い、合意形成を行った。細かな表記の修正はなされたものの、調査団から提示した R/D 案がほぼそのまま先方に受入れられるかたちとなり、第 3 章に記載した協力の基本計画と実施体制にもほとんど変更は加えられなかった（合同調整委員会の日本側メンバーについて、当初「調査団員」としていた箇所を、クロアチア側の要請でより限定し「調査団長」に変更した点のみ修正された）。R/D の署名は、3 月 27 日に科学・教育・スポーツ大臣をはじめとする要人の立会いの下、スプリット市での署名式にて行った（附属資料５参照）。同署名式では、科学技術協力機構（JST）が科学・教育・スポーツ省との間で交わした戦略的国際科学技術協力推進事業に係る覚書（MOU）も併せて署名された。

（2）懸案事項に関する協議とミニッツ署名

調査団は 3 月 26 日の科学・教育・スポーツ省との協議において、上記に述べた R/D の内容に関する協議に加え、懸案事項について協議を行い協議結果を附属資料６のとおりミニッツに取りまとめて署名した。ミニッツで確認したポイントは以下のとおりである。

ア. R/D の AnnexIV に記載の特権免除をクロアチア政府が JICA 専門家に付与するためには、両国政府間で国際約束を締結する必要があることを確認した。従って、調査団と科学・教育・スポーツ省は、それぞれ在クロアチア日本大使館とクロアチア外務省に対して、かかる国際約束の締結方法について検討・協議を依頼することについて合意した。

イ. 科学・教育・スポーツ省が、最初に派遣される JICA 専門家の正式要請書（A1 フォームを含む）を、5 月末を目処にクロアチア外務省を通じて在クロアチア日本大使館に提出することを確認した。

ウ. 調査団から外国籍の JICA 専門家を派遣する可能性があることを科学・教育・スポーツ省に伝え、科学・教育・スポーツ省は外国籍専門家の派遣自体に反対する意向は無いものの、当該専門家に対して日本国籍の JICA 専門家に付与するものと同等の特権免除を付与することができるかどうか、検討することで合意した。

エ. 調査団は、プロジェクトが 2009 年 12 月までに開始できない場合は、中止する可能性があることを科学・教育・スポーツ省に伝え、同省の理解を得た。

附属資料 1

MINUTES OF MEETING BETWEEN JAPANESE
DETAILED PLANNING SURVEY TEAM AND
THE CROATIAN MINISTRY OF SCIENCE, EDUCATION AND SPORTS
ON JAPANESE TECHNICAL COOPERATION
FOR
PROJECT ON RISK IDENTIFICATION AND LAND-USE PLANNING FOR DISASTER
MITIGATION OF LANDSLIDES AND FLOODS IN CROATIA

The Japanese Detailed Planning Survey Team (hereinafter referred to as "the Team") organized by Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Shinichi MASUDA, visited Croatia from January 25, 2009 to February 6, 2009, for the purpose of working out the details of the technical cooperation program concerning the Project on risk identification and land-use planning for disaster mitigation of landslide and floods in Croatia (hereinafter referred to as "the Project").

During its stay in Croatia, the Team exchanged views and had a series of discussions with the Croatian authorities concerned. As a result, the Team and the Croatian authorities concerned agreed on the matters referred to in the document attached hereto.

Zagreb , February 5, 2009

Mr. Shinichi MASUDA
Leader,
Japanese Detailed Planning Survey Team,
Japan International Cooperation Agency,
Japan

Radovan FUCHS, Ph.D.
State Secretary
Ministry of Science, Education and Sports
Croatia

ATTACHED DOCUMENT

I. TITLE OF THE PROJECT

Both sides acknowledged that the title of the Project will be "the Project on risk identification and land-use planning for disaster mitigation of landslide and floods in Croatia".

II. RATIONALE OF THE PROJECT

Both sides agreed that, although the purpose of the Project is to develop integrated landslide/flood hazard mapping technology as well as the methodology of formulating land-use guidelines for mitigation of landslide/flood disasters, it is envisaged that such technology and methodology are disseminated and applied nation-wide in Croatia, and also in other countries in the region with similar natural conditions.

III. RECORD OF DISCUSSIONS

The draft Record of Discussions (herein after referred to as "R/D"), which stipulates the framework of the Project, will be finalized and signed by the representatives of the Government of Croatia and the Project Implementation Study Team dispatched by JICA before the commencement of the Project. Both sides agreed on the Draft R/D shown as ATTACHMENT I.

IV. TENTATIVE PLAN OF OPERATION

The Tentative Plan of Operation for the whole period of the Project is shown as ATTACHMENT II. The activities of the Project are subject to modifications within the scope of the R/D with mutual consultation when necessity arises in the course of implementation of the Project.

V. PROJECT IMPLEMENTATION ARRANGEMENT

1. Responsible Authority

Ministry of Science, Education and Sports, Government of Croatia

2. Project Implementing Institutions

Croatian side

University of Split

University of Zagreb

University of Rijeka

Croatian Waters

Croatian Geological Survey

Japanese side

Niigata University

International Consortium on Landslides (ICL)

Disaster Prevention Research Institute (DPRI), Kyoto University

Japan International Cooperation Agency (JICA)

3. Working Groups

The following three Working Groups will be established for effective implementation of the project activities.

(1) Landslide Working Group

(2) Flash-flood and Debris Flow Working Group

(3) Hazard Mapping and Land-use Guidelines Working Group

4. Cooperating Authorities (to be consolidated in the course of the project implementation)

Ministry of Regional Development and Water Management

National Protection and Rescue Directorate

City of Zagreb

City of Rijeka and Istria County

VI. COOPERATION PERIOD OF THE PROJECT

The cooperation period of the Project will be five (5) years from the date when the first JICA expert arrives in Croatia.

VII. OTHERS

1. Privileges and immunities for the JICA experts and custom clearance for equipment

It is necessary for the Croatian side to send the application forms (A1 Form for JICA experts, A4 Form for equipment, and Application Form for the JICA Training and Dialogue Program) through the diplomatic channel to the Government of Japan so that JICA may dispatch an expert, supply equipment, or accept trainees for the Project.

Before the commencement of the Project, the Ministry of Science, Education and Sports shall take necessary arrangements with the concerned ministries to clear the legal issues, which the requirements

stipulated in A1 Form and A4 Form might be subject to the approval of the Croatian Government for the privileges and immunities for the JICA experts and for the custom clearance for the equipment, respectively.

2. Estimate of project costs

Both sides agreed that Japanese and Croatian sides should estimate the project costs to be covered by their own side, and share the information with each other by the end of February, 2009.

In order to proceed the Project, an overall budget for the Project outlining the financial obligations of both parties will be prepared.

3. Science and Technology Research Partnership for Sustainable Development

Both sides confirmed that the Project is implemented under the'Science and Technology Research Partnership for Sustainable Development*' promoted by JICA and Japan Science and Technology Agency (JST) in collaboration.

JICA will take necessary measures for the technical cooperation such as dispatch of Japanese experts, provision of equipment and training of personnel, and other supports related to the Project in Croatia. JST will support the Japanese research institute/researchers for the project activities in Japan.

*'Science and Technology Research Partnership for Sustainable Development' aims to develop new technology and its applications for tackling global issues, and also aims at capacity development of researchers and research institutes in both countries.

4. Memorandum of Understanding between Japanese and Croatian Project Implementing Institutions

Both sides agreed that the Project Implementing Institutions in Japan and Croatia should reach an agreement to execute the collaborative research in accordance with the Master Plan of the Project. The agreed document (e.g. Collaborative Research Agreement) should contain the following items;

a. Objective and Plan
b. Implementation
c. Confidentiality and Intellectual Property Rights
d. Access to Genetic Resources
e. Publication
f. Dispute Resolution
g. Duration of the Agreement

h. Compliance with Laws and Regulations

** The items described on the document are subject to change according to the contents of the research.

5. Selection of study areas

Both sides agreed that the study areas of the Project, where broad-range assessment of disaster risks will be implemented, will be the following.

a. Mt. Medvednica Area in Zagreb

b. Rijeka region and Istria Peninsula

c. Split region

Within each study area, a few model sites (specific small watersheds or slopes), where detailed survey will be implemented, will be selected after the initiation of the Project

ATTACHMENT I Draft Record of Discussions

ATTACHMENT II Tentative Plan of Operation

ATTACHMENT III List of JICA Experts

ATTACHMENT IV List of Participating Croatian Researchers

ATTACHMENT I

DRAFT RECORD OF DISCUSSIONS BETWEEN JAPANESE
IMPLEMENTATION STUDY TEAM AND
AUTHORITIES CONCERNED OF THE GOVERNMENT OF CROATIA
ON JAPANESE TECHNICAL COOPERATION
FOR
PROJECT ON RISK IDENTIFICATION AND LAND-USE PLANNING FOR DISASTER MITIGATION OF LANDSLIDES AND FLOODS IN CROATIA

The Japanese Implementation Study Team (hereinafter referred to as "the Team") organized by Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by (name of JICA mission leader), visited Croatia from date of arrival to date of departure for the purpose of working out the details of the technical cooperation program concerning the Project on risk identification and land-use planning for disaster mitigation of landslide and floods in Croatia.

During its stay in Croatia, the Team exchanged views and had a series of discussions with the Croatian authorities concerned with respect to desirable measures to be taken by JICA and Croatian Government for the successful implementation of the above-mentioned Project.

As a result of the discussions, the Team and the Croatian authorities concerned agreed to recommend to their respective Governments the matters referred to in the document attached hereto.

Zagreb , , 2009

Name	Name
Leader,	Position
Implementation Study Team,	Organization
Japan International Cooperation	Croatia
Agency, Japan	

THE ATTACHED DOCUMENT

I. COOPERATION BETWEEN JICA AND CROATIAN

1. The Government of Croatia will implement the Project on risk identification and land-use planning for disaster mitigation of landslide and floods in Croatia (hereinafter referred to as "the Project") in cooperation with JICA.

2. The Project will be implemented in accordance with the Master Plan which is given in Annex I.

II. MEASURES TO BE TAKEN BY JICA

In accordance with the laws and regulations in force in Japan, JICA will take, at its own expense, the following measures according to the normal procedures under the Technical Cooperation Scheme of Japan.

1. DISPATCH OF JICA EXPERTS
   JICA will provide the services of the JICA experts as listed in Annex II.

2. PROVISION OF MACHINERY AND EQUIPMENT
   JICA will provide such machinery, equipment and other materials (hereinafter referred to as "the Equipment") necessary for the implementation of the Project as listed in Annex III. The Equipment will become the property of the Government of Croatia upon being delivered C.I.F. (cost, insurance and freight) to the Croatian authorities concerned at the ports and/or airports of disembarkation.

3. TRAINING OF CROATIAN PERSONNEL IN JAPAN
   JICA will receive the Croatian personnel connected with the Project for technical training in Japan.

III. MEASURES TO BE TAKEN BY THE GOVERNMENT OF CROATIA

1. The Government of Croatia will take necessary measures to ensure that the self-reliant operation of the Project will be sustained during and after the period of Japanese technical cooperation, through full and active involvement in the Project by all related authorities, beneficiary groups and institutions.

2. The Government of Croatia will ensure that the technologies and knowledge acquired by the Croatian nationals as a result of Japanese technical cooperation will contribute to the economic and social development of Croatia.

3. The Government of Croatia will grant in Croatia privileges, exemptions and benefits as listed in Annex IV and will grant privileges, exemptions and benefits no less favorable than those granted to experts of third countries or international organizations performing similar missions to the JICA experts referred to in II-1 above and their families.

4. The Government of Croatia will ensure that the Equipment referred to in II-2 above will be utilized effectively for the implementation of the Project in consultation with the JICA experts referred to in Annex II.

5. The Government of Croatia will take necessary measures to ensure that the knowledge and experience acquired by the Croatian personnel from technical training in Japan will be utilized effectively in the implementation of the Project.

6. In accordance with the laws and regulations in force in Croatia, the Government of Croatia will take necessary measures to provide at its own expense:

   (1) Services of the Croatian counterpart personnel and administrative personnel as listed in Annex V;

   (2) Land, buildings and facilities as listed in Annex VI;

   (3) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the

Equipment provided by JICA under II-2 above;

7. In accordance with the laws and regulations in force in Croatia, the Government of Croatia will take necessary measures to meet:

   (1) Expenses necessary for transportation within Croatia of the Equipment referred to in II-2 above as well as for the installation, operation and maintenance thereof;

   (2) Customs duties, internal taxes and any other charges, imposed in Croatia on the Equipment referred to in II-2 above ; and

   (3) Running expenses necessary for the implementation of the Project.

IV. ADMINISTRATION OF THE PROJECT

1. Head of the Department for Multilateral Cooperation, Directorate for International Cooperation and European Integration, Ministry of Science, Education and Sports, as the Project Director, will bear overall responsibility for the administration and implementation of the Project.

2. Prof. Ognjen BONACCI of University of Split, as the Project Manager, will be responsible for the managerial and technical matters of the Project.

3. Dean of the Faculty of Civil Engineering, University of Rijeka, as the Deputy Project Manager, will assist the Project Manager in fulfilling his/her responsibilities.

4. The Japanese Chief Advisor will provide necessary recommendations and advice to the Project Director and the Project Manager on any matters pertaining to the implementation of the Project.

5. The JICA experts will give necessary technical guidance and advice to the Croatian counterpart personnel on technical matters pertaining to the implementation of the Project.

6. For the effective and successful implementation of technical cooperation for the Project, a Joint Coordinating Committee will be established whose functions and composition are described in Annex VII.

V. JOINT EVALUATION

Evaluation of the Project will be conducted jointly by JICA and the Croatian authorities concerned, at the middle and during the last six months of the cooperation term in order to examine the level of achievement.

VI. CLAIMS AGAINST JICA EXPERTS

The Government of Croatia undertakes to bear claims, if any arises, against the JICA experts engaged in technical cooperation for the Project resulting from, occurring in the course of, or otherwise connected with the discharge of their official functions in Croatia except for those arising from the willful misconduct or gross negligence of the JICA experts.

VII. MUTUAL CONSULTATION

There will be mutual consultation between JICA and Croatian Government on any major issues arising from, or in connection with this Attached Document.

VIII. MESURES TO PROMOTE UNDERSTANDING OF AND SUPPORT FOR THE PROJECT

For the purpose of promoting support for the Project among the people of Croatia, the Government of Croatia will take appropriate measures to make the Project widely known to the people of Croatia.

IX. TERM OF COOPERATION

The duration of the technical cooperation for the Project under this Attached Document will be

five years from the date when the first Japanese expert arrives in Croatia.

ANNEX I	MASTER PLAN
ANNEX II	LIST OF JICA EXPERTS
ANNEX III	LIST OF MACHINERY AND EQUIPMENT
ANNEX IV	PRIVILEGES, EXEMPTIONS AND BENEFITS FOR JICA EXPERTS
ANNEX V	LIST OF CROATIAN COUNTERPART AND ADMINISTRATIVE PERSONNEL
ANNEX VI	LIST OF LAND, BUILDINGS AND FACILITIES
ANNEX VII	JOINT COORDINATING COMMITTEE

MASTER PLAN

1. Project Purpose

Integrated landslide/flood hazard mapping technology and land-use guidelines formulation methodology are developed for nation-wide application in Croatia.

2. Outputs

(1) Methodologies for landslide risk assessment, prediction of affecting areas, and early warning systems are developed adapting to hydrological and geological conditions in Croatia.

(2) Flash-flood/debris-flow simulation models and early warning systems are developed adapting to hydrological and geological conditions in Croatia.

(3) Integrated landslide/flood hazard maps and land-use guidelines for landslide/flood risk mitigation are developed for study areas

3. Activities

(1)-1. Development of a low-cost undrained shear test apparatus

(1)-2. Soil tests using the shear test apparatus

(1)-3. Field survey and monitoring at landslide risk sites in model sites

(1)-4. Development of wide-area landslide risk assessment methods using the Analytical Hierarchy Process (AHP) method, and their application to the study areas

(1)-5. Development of landslide risk assessment methods based on landslide dynamics, and their application to the model sites

(1)-6. Development of methods for the prediction of landslide affecting areas, and their application to the model sites

(1)-7. Development of land slide early warning systems, and their application to the model sites

(2)-1. Collection of existing hydro-meteorological data and analysis of rainfall-discharge characteristics in model sites

(2)-2. Installation of rainfall measurement equipment, and collection of rainfall data

(2)-3. Development of flashflood and debris flow simulation models in model sites

(2)-4. Development of flashflood and debris flow early warning systems, and their application to the model sites

(3)-1. Preparation of digital topography maps of the study areas and the model sites based on the photo interpretation

(3)-2. Development of integrated landslide/flood hazard mapping technology, and formulation of integrated hazard maps for the study areas and model sites

(3)-3. Development of land-use guidelines formulation methodology, and formulation of land-use guidelines for disaster mitigation in study areas

ANNEX II

LIST OF JICA EXPERTS

Fields of expertise to be covered by the JICA experts are as follows:

1. Chief Advisor
2. Landslide Analysis
3. Soil Testing
4. Flood Modeling
5. Flood and Sediment Discharge Analysis
6. Land-use Planning
7. Groundwater Analysis
8. Landslide Monitoring

ANNEX III

LIST OF MACHINERY AND EQUIPMENT

1. Equipment for hazard mapping
2. Equipment for landslide analysis and monitoring
3. Equipment for hydro-meteorological observation
4. Equipment for flood analysis
5. Office equipment
6. Other equipment mutually agreed upon as necessary for the implementation of the Project

ANNEX IV

PRIVILEGES, EXEMPTIONS AND BENEFITS FOR JICA EXPERTS

In case JICA dispatches experts, the Government of Croatia shall:

(1)(a) exempt the experts from taxes including income tax, and fiscal charges imposed on or in connection with salaries and any allowances remitted to them from abroad;

(b) exempt the experts and their families from consular fees, taxes including customs duties and fiscal charges as well as from the requirements of obtaining import license and certificate of foreign exchange coverage, in respect of the importation of:

(i) luggage;

(ii) personal effects, household effects and consumer goods; and

(iii) one motor vehicle per expert, and per family of the expert assigned to stay in Croatia;

(c) exempt the experts and their families who do not import any motor vehicle into Croatia from taxes including value added tax and fiscal charges in respect of the local purchase of one motor vehicle per expert, and per family of the expert; and

(d) exempt the experts and their families from the registration fee of the motor vehicles mentioned in (b) (iii) and (c).

(2)(a) provide at its own expense suitable office and other facilities including telephone and facsimile services necessary for the performance of the duties of the experts as well as to bear the expenses for their operation and maintenance;

(b) bear expenses of the experts for:

(i) daily transportation to and from their place of work; and

(ii) their official correspondence; and

(c) provide the convenience for receiving medical care and facilities for the experts and their families.

(3)(a) permit the experts and their families to enter, leave and sojourn in Croatia for the duration of their assignment therein, offer them the convenience for procedures of alien registration requirements, and exempt them from consular fees;

(b) issue identification cards to the experts to secure the cooperation of all governmental organizations necessary for the performance of their duties;

(c) offer the experts and their families the convenience for acquisition of car driving license; and

(d) carry out other measures necessary for the performance of the duties of the experts.

ANNEX V

LIST OF CROATIAN COUNTERPART AND ADMINISTRATIVE PERSONNEL

1. Administrative personnel

(1) Project Director

Mr. Vinko Purgar, Head of the Department for Multilateral Cooperation, Directorate for International Cooperation and European Integration, Ministry of Science, Education and Sports

(2) Project Manager

Dr.sc. Ognjen BONACCI, Faculty of Civil Engineering, University of Split

(3) Deputy Project Manager

Dr.sc. Nevenka Ožanić, Dean of the Faculty of Civil Engineering, University of Rijeka

(4) Project Coordinator

Dr.sc. Ivica Kisić, Faculty of Agriculture, University of Zagreb

2. Counterpart personnel

Representative of Faculty of Civil Engineering, University of Split

Representative of Faculty of Civil Engineering, University of Rijeka

Representative of Faculty of Mining, Geology and Petroleum Engineering, University of Zagreb

Representative of Faculty of Agriculture, University of Zagreb

Representative of Croatian Geological Survey

Representative of Croatian Waters

ANNEX VI

LIST OF LAND, BUILDINGS AND FACILITIES

1. Office space, furniture, facilities of communication and public utilities, and meeting rooms necessary for JICA experts to undertake project activities
2. Land or space for the installation of equipment
3. Other facilities mutually agreed upon as necessary for the implementation of the Project

ANNEX VII

JOINT COORDINATING COMMITTEE

The Joint Coordinating Committee (hereinafter referred to as "JCC") will be organized and meet at least once a year and whenever necessity arises, in order to fulfill the following functions;

(1) To formulate the annual work plan of the Project

(2) To review the progress of the annual work plan

(3) To review and exchange opinions on major issues that may arise during the implementation of the Project

(4) To discuss any other issue(s) pertinent to the smooth implementation of the Project

The JCC members will be the following

Croatian side:

- Project Director (Chairperson of the JCC)
- Project Manager
- Deputy Project Manager
- Representative of Faculty of Civil Engineering, University of Split
- Representative of Faculty of Civil Engineering, University of Rijeka
- Representative of Faculty of Mining, Geology and Petroleum Engineering, University of Zagreb
- Representative of Faculty of Agriculture, University of Zagreb
- Representative of Croatian Geological Survey
- Representative of Croatian Waters
- Project Coordinator

Japanese side:

- JICA Experts
- JICA study team members

Note: Representative(s) of the Embassy of Japan, Japan Science and Technology Agency (JST), and Croatian cooperating authorities may participate in the JCC as observer(s)

Tentative Plan of Operation

	Outputs and Activities	1st Year 2009/2010	2nd Year 2010/2011	3rd Year 2011/2012	4th Year 2012/2013	5th Year 2013/2014
Output 1: Methodologies for landslide risk assessment, prediction of affecting areas, and early warning systems are developed adapting to hydrological and geological conditions in Croatia.						
1-1	Development of a low-cost undrained shear test apparatus	←	—	→		
1-2	Soil tests using the shear test apparatus	←	—	→		
1-3	Field survey and monitoring at landslide risk sites in model sitess	←	—	—	→	
1-4	Development of wide-area landslide risk assessment methods using the Analytical Hierarchy Process (AHP) method, and their application to the study areas	←	—	→		
1-5	Development of landslide risk assessment methods based on landslide dynamics, and their application to the model sitess	←	—	—	—	→
1-6	Development of methods for the prediction of landslide affecting areas, and their application to the model sitess		←	—	—	→
1-7	Development of land slide early warning systems, and their application to the model sitess	←	—	—	—	→
Output 2: Flash-flood/debris-flow simulation models and early warning systems are developed adapting to hydrological and geological conditions in Croatia.						
2-1	Collection of existing hydro-meteorological data and analysis of rainfall-discharge characteristics in model sitess	←	—	→		
2-2	Installation of rainfall measurement equipment, and collection of rainfall data		←	—	→	
2-3	Development of flashflood and debris flow simulation models in model sitess		←	—	→	
2-4	Development of flashflood and debris flow early warning systems, and their application to the model sitess			←	—	→
Output 3: Integrated landslide/flood hazard maps and land-use guidelines for landslide/flood risk mitigation are developed for study areas						
3-1	Preparation of digital topography maps of the study areas and the model sitess based on the photo interpretation	←	—	→		
3-2	Development of integrated landslide/flood hazard mapping technology, and formulation of integrated hazard maps for the study areas and model sitess	←	—	—	—	→
3-3	Development of land-use guidelines formulation methodology, and formulation of land-use guidelines for disaster mitigation in study areas			←	—	→

List of JICA Experts

Chief Advisor: Prof. Hideaki MARUI, Niigata University

(1) Landslide Working Group
Prof. Kyoji SASSA, ICL (Leader)
Prof. Satoshi TSUCHIYA, ICL
Dr. Hiroshi FUKUOKA, DPRI, Kyoto University

(2) Flash-flood and Debris Flow Working Group
Dr. Yousuke YAMASHIKI, DPRI, Kyoto University (Leader)
Dr. Takahiro SAYAMA, DPRI, Kyoto University

(3) Hazard Mapping and Land-use Guidelines Working Group
Prof. Hideaki MARUI, Niigata University (Leader)
Dr. Naoki WATANABE, Niigata University
Dr. Srikantha HERATH, ICL

Note: The list is subject to change during the implementation of the Project

List of Participating Croatian Researchers

Landslide Working Group Leader: Dr.sc. Ortolan/Dr.sc. Arbanas			
	Institution	Name	Position
1.	UNI Rijeka	Dr.sc. Željko Arbanas	Researcher
2.	UNI Rijeka	Dr.sc. Čedomir Benac	Researcher
3.	UNI Rijeka	Dr.sc. Ivan Vrkljan	Researcher
4.	UNI Rijeka	Dr.sc. Leo Matešić	Researcher
5.	UNI Rijeka	Sanja Dugonjić	Assist. researcher
6.	UNI Rijeka	Vedran Jagodnik	Assist. researcher
7.	CGS	Željko Miklin	Researcher
8.	CGS	Dr. Ivan Hećimović	Researcher
9.	CGS	Ladislav Podolszki	Assist. researcher
10.	CGS	Vlatko Gulam	Assist. researcher
11.	CGS	Dr. Davor Pollak	Researcher
12.	CGS	Dr. Renato Buljan	Researcher
13.	CGS	Dr. Željka Brkić	Researcher
14.	CGS	Dr. Ozren Larva	Researcher
15.	CGS	Dr. Želimir Ortolan	Researcher
16.	UNI ZG AGR	Dr.sc. Ivica Kisić	Researcher
17.	UNI ZG AGR	Krunoslav Sajko	Assist. researcher
18.	UNI ZG AGR	Darija Čapka	Assist. researcher
19.	UNI ZG RGN	Martin Krkač	Assist. researcher
20.	UNI ZG RGN	Dr.sc. Snježana Mihalić	Researcher
21.	UNI ZG RGN	Dr.sc. Predrag Kvasnička	Researcher
22.	UNI ZG RGN	Dr.sc. Želimir Vejnović	Researcher
23.	UNI ZG RGN	Dr.sc. Biljana Kovačević-Zelić	Researcher
24.	UNI ZG RGN	Dubravko Domitrović	Assist. researcher
25.	UNI ZG RGN	Helena Strgar	Assist. researcher
26.	C. WATERS	Maja Oštrić	Assist. researcher
27.	UNI ST	Dr.sc. Tanja Roje Bonacci	Researcher
28.	UNI ST	Dr.sc. Predrag Miščević	Researcher
29.		Dr.sc. Marijan Herak	Researcher
30.	UNI ZG RGN	Dr.sc. Bruno Tomljenović	Researcher
31.		Dr.sc. Tomislav Ivšić	Researcher
32.	UNI ZG RGN	Dr.sc. Vladimir Jurak	Researcher

Flash Flood and Debris Flow Working Group **Leader: Dr.sc. Nevenka Ožanić**			
	Institution	Name	Position
1.	UNI Rijeka	Dr.sc. Nevenka Ožanić	Researcher
2.	UNI Rijeka	Dr.sc. Barbara Karleuša	Researcher
3.	UNI Rijeka	Mr.sc. Josip Rubinić	Researcher
4.	UNI Rijeka	Dr.sc. Željko Arbanas	Researcher
5.	UNI Rijeka	Dr.sc. Čedomir Benac	Researcher
6.	UNI Rijeka	Dr.sc. Ivan Vrkljan	Researcher
7.	UNI Rijeka	Igor Ružić	Assist. researcher
8.	UNI Rijeka	Elvis Žic	Assist. researcher
9.	UNI Rijeka	Nevena Dragičević	Assist. researcher
10.	UNI Rijeka	Goran Volf	Assist. researcher
11.	CGS	Vlatko Gulam	Assist. Researcher
12.	UNI ZG AGR	Dr.sc. Milan Mesić	Researcher
13.	UNI ZG AGR	Mr.sc. Željka Zgorelec	Assist. Researcher
14.	UNI ZG AGR	Aleksandra Jurišić	Assist. Researcher
15.	UNI ST	Dr.sc. Ognjen Bonacci	Researcher
16.	UNI ST	Ivo Andrić	Assist. Researcher
17.	C. WATERS	Mr.sc. Bojana Horvat	Researcher
18.	C. WATERS	Dr.sc. Danko Biondić	Researcher

Hazard Mapping and Land-use Guidelines Working Group Leader: Dr.sc. Snježana Mihalić			
	Institution	Name	Position
1.	UNI Rijeka	Dr.sc. Željko Arbanas	Researcher
2.	UNI Rijeka	Dr.sc. Čedomir Benac	Researcher
3.	UNI Rijeka	Dr.sc. Ivan Vrkljan	Researcher
4.	UNI Rijeka	Dr.sc. Leo Matešić	Researcher
5.	UNI Rijeka	Dr.sc. Nevenka Ožanić	Researcher
6.	UNI Rijeka	Dr.sc. Barbara Karleuša	Researcher
7.	UNI Rijeka	Mr.sc. Josip Rubinić	Researcher
8.	UNI Rijeka	Sanja Dugonjić	Assist. Researcher
9.	UNI Rijeka	Vedran Jagodnik	Assist. Researcher
10.	UNI Rijeka	Igor Ružić	Assist. Researcher
11.	UNI Rijeka	Elvis Žic	Assist. Researcher
12.	UNI Rijeka	Nevena Dragičević	Assist. Researcher
13.	UNI Rijeka	Goran Volf	Assist. Researcher
14.	CGS	Vlatko Gulam	Assist. researcher
15.	CGS	Željko Miklin	Researcher
16.	CGS	Dr. Ivan Hećimović	Researcher
17.	CGS	Ladislav Podolszki	Assist. researcher
18.	CGS	Dr. Davor Pollak	Researcher
19.	CGS	Dr. Renato Buljan	Researcher
20.	CGS	Dr. Željka Brkić	Researcher
21.	CGS	Dr. Ozren Larva	Researcher
22.	CGS	Dr. Želimir Ortolan	Researcher
23.	UNI ZG AGR	Dr.sc. Stjepan Husnjak	Researcher
24.	UNI ZG AGR	Ivana Vuković	Assist. researcher
25.	UNI ZG AGR	Darija Čapka	Assist. researcher
26.	UNI ZG RGN	Martin Krkač	Assist. researcher
27.	UNI ZG RGN	Dr.sc. Snježana Mihalić	Researcher
28.	UNI ST	Dr.sc. Tanja Roje Bonacci	Researcher
29.	UNI ST	Dr.sc. Predrag Miščević	Researcher
30.	UNI ST	Aleksandar Toševski	Assist. researcher
31.	C. WATERS	Mr.sc. Bojana Horvat	Researcher

附属資料２

詳細計画策定調査の概要

１．詳細計画策定調査団　団員構成

	氏名	担当分野	現職	調査期間
1	益田　信一	団長／総括	国際協力機構 地球環境部 水資源･防災グループ防災第二課 課長	1 月 25 日～2 月 7 日
2	丸井　英明	研究統括	新潟大学　災害復興科学センター 教授	1 月 25 日～2 月 7 日
3	佐々　恭二	土砂災害研究	特定非営利活動法人 アイシーエル （ICL）事務局長	1 月 29 日～2 月 7 日
4	神田　美紀	計画管理	国際協力機構 地球環境部 計画・ 調整課　調査役	1 月 25 日～2 月 7 日
5	佐藤　一朗	協力企画	国際協力機構 地球環境部 水資源･防災グループ 防災第二課 調査役	1 月 25 日～2 月 7 日
6	山﨑　吉高	洪水・土砂災害対策／評価分析	OYO インターナショナル株式会社 技術部　課長	1 月 25 日～3 月 1 日

上記団員に加え、独立行政法人科学技術振興機構（JST）から下記 2 名が調査に同行した。

	氏名	現職	調査期間
1	荒川　敦史	科学技術振興機構パリ事務所　所長	1 月 25 日～1 月 28 日
2	月岡　康一	科学技術振興機構 地球規模課題国際協力室　主任調査員	1 月 25 日～2 月 7 日

２．詳細計画策定調査日程

	日付	行　程		
		佐々団員	山﨑団員	その他の団員
1	1/25 （日）		移動（成田→ウィーン→ザグレブ）	
2	1/26 （月）		地域開発・森林・水管理省、クロアチア水公社との会議 外務省との会議 日本大使館表敬	
3	1/27 （火）		ザグレブ現場踏査 ザグレブ大学理学部との会議	
4	1/28 （水）		移動（ザグレブ→スプリット）	
5	1/29 （木）	移動（大阪→パリ→ ザグレブ）	スプリット大学との会議 移動（スプリット→ザグレブ）	
6	1/30 （金）	クロアチア地質調査所との会議 科学・教育・スポーツ省との会議 移動（ザグレブ→リエカ）		
7	1/31 （土）	リエカ大学との会議 リエカ現地調査		
8	2/1 （日）	移動（リエカ→ザグレブ）		
9	2/2 （月）	国家保安・救援局との会議 ザグレブ市都市計画局との会議 ザグレブ大学鉱業・地質・石油工学部との会議		
10	2/3 （火）	ミニッツ協議 ザグレブ大学学長表敬		
11	2/4 （水）	世界銀行クロアチア事務所との会議 ミニッツ協議		
12	2/5 （木）	ミニッツ署名 日本大使館報告		
13	2/6 （金）	移動（ザグレブ→パリ →	追加調査	移動（ザグレブ→ウィーン→
14	2/7 （土）	→大阪）	追加調査	→成田）
15 ～ 34	2/8～ 2/27		追加調査	
35	2/28 （土）		移動（ザグレブ→ ウィーン→	
36	3/1 （日）		→成田）	

詳細計画策定調査及び実施協議調査における主要面談者

所属	職位	氏名
Ministry of Science, Education and Sports	Minister	Prof. Dragan Primorac
	State Secretary for Higher Education and International Cooperation	Dr. Radovan Fuchs
	State Secretary for Science	Prof. Drazen Vikic-Topic
	Director of International Cooperation and European Integration	Ms. Ivana Puljiz
	Head of Department for Multilateral Cooperation	Mr. Vinko Purgar
	Head of Department for Bilateral Cooperation	Ms. Silvana Siebert
	Desk-Officer for Japan	Ms. Ivana Greenspan
Ministry of Regional Development, Forestry and Water Management	Director	Ms. Ruzica Drmic
	Head of Water Policy Sector	Mr. Sasa Dvic
	Croatian Waters	Mr. Danko Biomic
	Croatian Waters	Ms. Bojana Horvat
Ministry of Foreign Affairs And European Integration	Director	Ms. Andrea Javor
	Head of Department for Asia and Oceania	Mr. Zoran Vodopija
	Head of Department for Non-European Bilateral Economic Cooperation	Mr. Stjepan Glas
	Department for Eurasia Minister Counselor	Mr. Marijan Oresnik
National Protection and Rescue Directorate	Director	Mr. Natasa Briski
	Deputy Civil Protection Commander	Mr. Damir Cemerin
	Assistant Director	Mr. Stjepan Huzjak
City of Zagreb City Bureau for Physical Planning	Director	Mr. Ivica Fanjek
University of Zagreb	Rector	Dr. Aleska Bjelis
University of Zagreb Faculty of Mining, Geology and Petroleum Engineering	Dean	Dr. Goran Durn
	Vice-Dean	Dr. Bilijana Kovacevic Zelic
	Assistant Professor	Dr. Snjezana Mihalic
	Assistant	Mr. Martin Krkac

University of Zagreb Faculty of Science	Professor	Dr. Marijan Herak
University of Zagreb Faculty of Agriculture	Vice-Dean	Dr. Milan Mesic
	Professor	Dr. Ivica Kisic
University of Rijeka Faculty of Civil Engineering	Dean	Dr. Nevenka Ozanic
	Head of Geotechnical Department	Dr. Cedomir Benac
	Professor	Dr. Ivan Vrkljan
	Assistant Professor	Dr. Zeljko Arbanas
University of Split	Rector	Prof. Ivan Pavic
	Vice-Rector	Dr. Roko Andricevic
	Professor	Prof. Ognjen Bonacci
University of Osijek Faculty of Civil Engineering	Assistant Professor	Dr. Zelimir Ortlan
Croatian Geological Survey	Director	Dr. Josip Halamic
	Department of hydrogeology and engineering geology	Mr. Zeljko Miklin
The World Bank Croatia Country Office	Senior Operations Officer	Mr. Stjepan Gabric
	Operations Analyst	Ms. Hana Huzjak
在クロアチア日本大使館	特命全権大使	白川　哲久
	二等書記官	岡村　勝文
独立行政法人科学技術振興機構	審議役	高橋　文明
	パリ事務所長	荒川　敦史
新潟大学	学長	下條　文武
	理事・副学長	仙石　正和
	副学長	永山　庸男
JICA バルカン事務所	所長	鹿野　正雄
	所員	高橋　洋平