Directorate General of Water Resources, Ministry of Public Works Republic of Indonesia

THE PROJECT FOR CAPACITY DEVELOPMENT OF JAKARTA COMPREHENSIVE FLOOD MANAGEMENT IN INDONESIA

PROJECT COMPLETION REPORT

OCTOBER, 2013

JAPAN INTERNATIONAL COOPERATION AGENCY YACHIYO ENGINEERING CO., LTD.

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Exchange Rate applied in this Report As of September, 2013

USD 1.00 = IDR 10,929.766

USD 1.00 = JPY 98.04



Location Map of Project Area

The Project for Capacity Development of Jakarta Comprehensive Flood Management in Indonesia

Project Completion Report

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Abbreviation List

ALOS	Advanced land Observation Satellite 'Daichi'
BAPPEDA	Regional Development Planning Agency (<i>Badan Perencanaan Pembangunan Daerah</i>)
BAPPENAS	Ministry of National Development Planning/National Development Planning Agency (<i>Kementerian Perencanaan Pembangunan Nasional/Badan</i> <i>Perencanaan Pembangunan Nasional</i>)
BBWS	River Basin Management Main Office
CFMAP	Comprehensive Flood Management Action Plan
CFMC	Comprehensive Flood Management Committee for Ciliwung River Basin
CFMP	Comprehensive Flood Management Plan
C/P	Counterpart
DGHS	Director General of Human Settlements
DGSP	Director General of Spatial Planning
DGWR	Director General of Water Resources
DInSAR	Differential Interferometric SAR
DKI	Government of DKI Jakarta
EBC	East Banjir Canal
FTCP	Full Time Counterpart
GCM	Global Climate Model
GIS	Geographic Information System
GPS	Global Positioning System
IC/R	Inception Report
JCC	Joint Coordinating Committee
JICA	Japan International Cooperation Agency
M/M	Minutes of Meetings
M/P	Master Plan
OJT	On the Job Training
PDM	Project Design Matrix
PO	Plan of Operation
P/R	Progress Report
PU	Ministry of Public Works (Kementerian Pekerjaan Umum)
R/D	Record of Discussions
TKPSDA	Coordination Team on Water Resources Management (<i>Tim Koordinasi</i> Pengelolaan Sumber Daya Air)
TKPSDA WS	Coordination Team on Water Resources Management for Ciliwung-Cisadane
Ciliwung-Cisadane	River Basin
TKPSDA WS 6Ci	Coordination Team on Water Resources Management for 6 River Basins
WBC	West Banjir Canal
WG	Working Group
YEC	Yachiyo Engineering Co., Ltd.

CHAPTER 1 OUTLINE OF JCFM PROJECT

1.1 Background of JCFM Project

JABODETABEK in Indonesia is a metropolitan area with population of 24 million people; its GRDP accounts for 22 percent of the national GDP, and it is political and economic center. Ciliwung River Basin, which is the target river basin in the Project, is situated in the central part of Metropolitan Jakarta where metropolitan functions and large-scale commercial facilities are concentrated.

However, regarding the flood management, the frequency of the flood disaster has been currently increasing due to the delays of the construction of flood control facilities based on the flood management master plan (M/P) and unregulated development causing increase of run-off water. Recently, big flood had occurred almost once every 5 years in 1997, 2002, 2007 and 2013 paralyzing the metropolitan functions and creating massive confusion in the country.

Moreover, there are concerns that flood damage will be more serious in the future due to the intensification of localized heavy rain arising from climate change. And, extensive land subsidence has continued in JABODETABEK, making larger coastal area under high tide water level. Meanwhile, as can be seen in the discussion on the utilization of Situ (pond) as run-off control facility, interest in run-off control is growing in JABODETABEK.

Similar to the Comprehensive Flood Management adopted as the measure of urban river management in Japan, efforts to manage flood by integrating river and basin as one and promote on-stream and off-stream measures are required.

Specifically, through implementation of JICA technical cooperation project of the Institutional Revitalization Project for Flood Management in JABODETABEK (from 2006 to 2010), capacity development for flood management agencies regarding non-structural measures was carried out. The capacity development included maintenance and operation of river facilities, and collection/analysis of flood control information. However, the above cooperation project did not cover specific run-off control measures in the river basin, and the capacity development on the coordination and role sharing between river management and basin management. Therefore, as the coordination and role sharing is one of the key issues for the implementation of run-off control measures in JABODETABEK, the Project for Capacity Development of Jakarta Comprehensive Flood Management in Indonesia (hereinafter referred to as the "JCFM Project") has been implemented from November, 2010 to October, 2013.

1.2 Objective of JCFM Project

The JCFM Project aims to develop technical capability and capacity related to policy planning and implementation mechanisms, etc. regarding the Comprehensive Flood Management Plan (CFMP) of the implementing agencies in Indonesia through the project activities. All activities will be conducted in collaboration with the relevant organization counterparts (C/P), and technology transfer will be conducted to the following organizations through On-the-Job Training (OJT).

	Implementation Agency
National	 Directorate General of Water Resources, Ministry of Public Works Directorate General of Spatial Planning, Ministry of Public Works
	 Directorate General of Human Settlements, Ministry of Public Works
Province	DKI Jakarta Province
	West Java Province
District, City	Bogor Regency, Bogor City, Depok City

 Table 1.2-1
 Implementation Agencies for Technology Transfer

1.3 Implementation Structure of JCFM Project

The project implementing agency is the Directorate General of Water Resources (DGWR), the Ministry of Public Works; however, since this agency is in charge of flood countermeasures in rivers, the following relevant organizations are included in the project implementation: the Directorate General of Spatial Planning (DGSP), which is responsible for spatial planning and urban planning policy, the Directorate General of Human Settlements (DGHS), which is in charge of building policy, and the local governments responsible for implementing flood management and spatial policy in the urban areas, i.e. the Government of DKI Jakarta and the Provincial Government of West Java (Bogor Regency, Bogor City and Depok City).

To coordinate smoothly among the implementing agency and relevant organizations mentioned above, implementation structure was established. The structure includes the Project Director, Project Manager and Joint Coordinating Committee that are appointed and established in conventional way of technical cooperation projects. Accordingly, the Director General of Water Resources will be appointed to act as the Executing Agency for coordinating cross-ministerial/organizational issues arising from or in connection with the project. The Project Director will be the Director of River and Coast, DGWR, and the Project Manager will be the Head of River Basin Office of Ciliwung-Cisadane.

The implementation structure and role in the JCFM Project are shown in Figure 1.3-1 and Table 1.3-1 respectively.



Figure 1.3-1 Implementation Structure of JCFM Project

 Table 1.3-1
 Role of Implementation Structure

Structure	Role	Meeting Schedule
Joint Coordination Commtitee (JCC)	 Formulation of the project annual work plans based on the PO in the R/D framework Review of overall project progress and achievements Examination of and countermeasures for major issues arising in relation to the Project Modification of project activities as needed 	Once a year

Structure	Role	Meeting Schedule
Comprehensive Flood Management Committee	• Coordination among organizations related to comprehensive flood management in Ciliwung River Basin	Once a year
for Ciliwung River Basin (CFMC)	 Discussion on formulation of Comprehensive Flood Management Plan (CFMP) and Action Plan (CFMAP) 	
Working Group	 Implementation of technology transfer through working group meetings, workshop, site surveys and other activities regarding the formulation of CEMP/CEMAP 	$1^{st} - 2^{nd}$ Year: once a week or every 2 weeks 3^{rd} Year: as needed

(1) Joint Coordination Committee (JCC)

For the effective and efficient implementation of the JCFM Project, Joint Coordination Committee (JCC) was set up. The members of the JCC are shown in Table 1.3-2.

Role		Member
Chairman	Director General of Water Resources, M	linistry of Public Works
Indonesian Side	1) Project Director	7) Representative(s) of Government of West Java
Members	2) Project Manager	Province
	3) Representative(s) of DGWR, PU	8) Representative(s) of BAPPENAS
	4) Representative(s) of DGSP, PU	9) Representative(s) of City or Regency of the Project
	5) Representative(s) of DGHS, PU	Area (Bogor and Depok)
	6) Representative(s) of Government	10) Other Representative(s) of the Project related
	of DKI Jakarta	Agency
Japanese Side Members	1) Representative(s) of JICA Indonesia	Office
	2) Project Leader	
	3) Other JICA Experts	
	4) Member(s) of missions dispatched by	/ JICA
	5) Official(s) of the Embassy of Japan (observer)	
	6) Other officials of appointed by the Pr	oject Leader

Table 1.3-2	Member of JCC

(2) Comprehensive Flood Management Committee for Ciliwung River Basin (CFMC)

As one of the outputs of the JCFM Project, Comprehensive Flood Management Committee for Ciliwung River Basin was established for the coordination among organizations related to the CFM. The Stipulation for establishment and operation of the CFMC was formulated and approved in the 1st meeting of the CFMC held in November, 2011, and as a result, the CFMC was officially established. The structure and members of the CFMC are shown in Figure 1.3-2 and Table 1.3-3 respectively.



Figure 1.3-2 Structure of the CFMC

Role	Member	
Chairperson	Head of Regional Development Planning Agency, DKI Jakarta	
Vice Chairperson	Head of Public Works Agency, DKI Jakarta	
Secretariat	Head of Program and General Planning Division, BBWS Ciliwung-Cisadane, DGWR, PU	
Member	• Director of Water Resources and Irrigation, Ministry of National Development Planning/ National	
	Development Planning Agency (BAPPENAS)	
	Head of Spatial Planning Agency, DKI Jakarta	
	Head of Regional Development Planning Agency, West Java Province	
	Head of Water Resources Management Agency, West Java Province	
	• Head of Water Resources Utilization Office in Ciliwung-Cisadane River Basin, West Java Province	
	Regional Secretary, Bogor Regency	
	Head of Building and Settlement Agency, Bogor City	
	Head of Highways and Water Resources Agency, Depok City	
Honorary Member	Director General of Water Resources, Ministry of Public Works	
	• Director of River and Coast, DGWR, PU	
	Head of BBWS Ciliwung-Cisadane, DGWR, PU	
	Head of Sub-directorate of Region II, Directorate of River and Coast, DGWR, PU	
Resource Person	Head of Watershed Management Office, Ministry of Forestry	
	Head of Agriculture Agency, West Java Province	
	Head of Forestry Agency, West Java Province	
	Head of Regional Development Planning Agency, Bogor Regency	
	Head of Regional Development Planning Agency, Bogor City	
	Head of Regional Development Planning Agency, Depok City	
Working Unit	Working Unit on Comprehensive Flood Management Plan	
	Working Unit on Spatial Planning	
	Working Unit on RunOff Control	
	Working Unit on Coordination and Monitoring	

Table 1.3-3	Member of the CFMC

(3) Working Group (WG)

Based on the decision letter issued by the Director General of Water Resources, the Ministry of Public Works, full time counterparts (FTCP) have been assigned from C/P agencies for the technology transfer to the JCFM Project. The FTCP in each project year is listed in Table 1.3-4.

No	Central/Local	Organization / A gan av	N	umber of FTO	СР
INO.	Government	Organization/Agency	1 st Year	2 nd Year	3 rd Year
1.	Central	DGWR, PU	13	15	15
	Government	Directorate of Programs	1	1	1
		Directorate of River and Coast	6	5	6
		Directorate of Water Resources Management	2	3	2
		BBWS Ciliwung-Cisadane	4	6	6
		DGSP, PU	2	2	2
		DGHS, PU	3	3	3
	Sub-Total		18	20	20
2.	DKI Jakarta	Regional Development Planning Agency (BAPPEDA)		1	1
		Public Works Agency	3	3	3
		Spatial Planning Agency	1	1	1
3.	West Java Province	Water Resources Management Agency	1	1	1
		Housing and Settlement Agency	1	1	1
4.	Bogor Regency	Highways and Irrigation Agency	1	1	1
		Building and Settlement Agency	1	1	1
5.	Bogor City	Highways and Water Resources Agency	1	1	1
6.	Depok City	Regional Development Planning Agency (BAPPEDA)		1	1
		Highways and Water Resources Agency	1	1	1
		Building and Settlement Agency	1	1	1
7.	Development Coordin	nation Agency of JABODETABEKJUR	1	1	1
		Total	30	34	34

Table 1.3-4Number of FTCP in Each Project Year

In order to implement the technology transfer on the planning method and technical knowledge on the CFM smoothly, the FTCPs are divided into 4 WGs and the technology transfer programs were carried out for each WG. The agenda and subjects of technology transfer for each WG are summarized in Table 1.3-5.

Working Group (WG)	Agenda/Subject of Techncal Transfer
1) CFMP/CFMAP WG	collection of necessary data for CFMP
	 collaboration with JICA Expert Team for the preparation of the CFMP
	formulation of draft the CFMP
	· coordination among related organization regarding the preparation of
	the CFMAP
	 preparation of draft of the CFMAP
	 cooperation with for the examination of legalization of the CFMP
2) Spatial Planning WG	 collection of necessary data regarding spatial planning
	 wide-area land subsidence analysis
	 collaboration with JICA Expert Team on spatial planning
	 preparation of operational manual for runoff control facilities
	 cooperation for the examination of legalization of the CFMP
3) Runoff Control WG	• collection of necessary data regarding rainwater storage and infiltration
	facility planning
	 collaboration with JICA Expert Team for site permeability test
	 monitoring of runoff control effects
	 preparation of operational manual for runoff control facilities
	 cooperation for the examination of legalization of the CFMP
4) Coordination and Monitoring WG	• preparation of guidelines on establishment and operation of the CFMC
	 examination of method for organizing the CFMC
	 examination of monitoring mechanism
	 preparation of monitoring guideline for the CFM
	 cooperation for the examination of legalization of the CFMP

 Table 1.3-5
 Agenda and Subject of Technology Transfer in Working Group

(4) JCFM Project Team

As shown in Table 1.3-6, JCFM project team consisted of on Japanese long-term expert (chief advisor) and several short-term experts, and local staff including facilitators.

No.	Position	Name	Remarks
JICA E	xpert	-	-
1.	Chief Advisor	Takaya TANAKA	Until June, 2013
2.	Team Leader/Comprehensive Flood	Tamotsu SHINGU	Until March, 2013
	Management Plan		
3.	Team Leader/Comprehensive Flood	Masaharu MIZOGUCHI	From April, 2013
	Management Plan-1		
4.	Comprehensive Flood Management Plan-2	Taizo HASHIGUCHI	
5.	Comprehensive Flood Management Plan-3	Takashi ISHIZAKA	
6.	Assistant Comprehensive Flood	Takashi IZUMIYA	
	Management Plan-1		
7.	Assistant Comprehensive Flood	Shinji IWAI	
	Management Plan-2		
8.	Spatial Planning	Shigeo TAKASHIMA	Until June, 2011
		Toru TAKAHASHI	From July, 2011
9.	Storage/Infiltration Facility Plan	Hiroshi SHIMOOSAKO	
10.	Assistant Storage/Infiltration Facility Plan	Masaharu MIZOGUCHI	Until March, 2013
11.	Hydraulic/Climate Change	Tadafumi SATO	
12.	Runoff Analysis	Makoto YONEKURA	
13.	Land Subsidence Analysis	Nobuyuki IIJIMA	
14.	River Basin Management Organization	Naoki UEHATA	
15.	Coordinator/Assistant Comprehensive	Maiko TAKAHASHI	
	Flood Management Plan		
Local S	taff		
1.	Facilitator	Mr. Ir. Widagdo, Dipl. HE.	
		Mr. Sarwono Sukardi, Dipl. HE.	
2.	Secretary	Mrs. Novita Nababan, S. Pd.	Until March, 2012
		Ms. Dwi Ismar Pennie	Until March, 2012
		Ms. Ajeng Herdayani	From June, 2012
		Ms. Dinda Aulia Putri Nasution	September, 2012 – March, 2013
		Ms. Lulut Diani Swi W.	July – September, 2013
3.	Accountant	Ms. Lulu Annisa Septiawidi	
4.	GIS Engineer	Mr. Laode M. Syamsul Aditya	

Table 1.3-6	Structure	of JCFM	Project Team
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1.4 Development of PDM

The JCFM Project was operated based on the Project Design Matrix (PDM) in the minutes of meeting on 7 July, 2010.

However, as the establishment of the CFMC was agreed at the JCC meeting held in November, 2011, the "River Basin Forum (tentative)" was changed to "Comprehensive Flood Management Committee for Ciliwung River Basin (CFMC)", and this change was approved by the JCC meeting on June, 2012.

The original and revised PDMs are shown in Table 1.4-1 and Table 1.4-2 respectively.

T	Important Assumption		 Secure allocation of budget for implementing agency No drastic change of natural environment 	• Counterparts who trained in this project	are not transferred. • Secure allocation of budget for implementing agency		
······································	Means of Vertification	 Reports prepared by the implementing agency Notification of establishment of River Basin Forums Discussion records of the River Basin Forums Monitoring and feedback record Law and/or regulations to authorize CFM approach for urban flood management 	 Approved CFMP Reports prepared by implementing agency Discussion records of the River Basin Forums Monitoring and feedback record 	• Roles of organizations authorized (in written format)	 CFMP CFMAP for all related organizations for CFM Proposal and/or plan for legalization prepared by Indonesian Government 	 List of supervisory organization for CFMP (chair organization, participants, monitoring frequency, etc.) Record of monitoring activities Record of feedback 	 Authorized document for establishment of River Basin Forum in the project area Member list of River Basin Forum Record of discussion of River Basin Forum
	UDJECHVE VERHIADLE INDICATORS	 Structural measures (e.g. construction of flood storage facility) and non-structural measures (e.g. development control in the river basin) are implemented based on the legalized CFMP River Basin Forums are established in areas other than a project area. Outcomes of the discussion forums area reflected to the CFMP. CFM approach for urban flood management in legalized. 	 CFMP is approved by the related organizations. Structural measures (e.g. construction of flood storage facility) and non-structural measures (e.g. development control in the river basin) are implemented in the pilot area based on the CFMP. Outcomes from the river basin forum in the project area are reflected to the CFMP. Monitoring results are reflected to the CFMP. 	 Organizations related to CFM are identified. Roles of the organizations related to CFM are agreed. 	 CFMP is formulated. CFMAP for all related organizations for CFM are prepared. Legalization process for CFM approach for urban flood management has been started. 	 A supervisory organization for monitoring is established. Monitoring frequency and items are determined. Feedbacks from monitoring results are performed. Monitoring manuals are prepared. 	 "River Basin Forum" that is a discussion forum of river basin stakeholders for better coordination and understandings is established. Frequency and items to be discussed in the River Basin Forum are determined.
NT	Inarrance Summary	(Overall Goal) The comprehensive flood management (hereinafter referred to as "CFM") measures are implemented in Jakarta based on the legalized Comprehensive Flood Management Plan (hereinafter referred to as "CFMP").	(Project Purpose) CFM measures are implemented in the Project area based on CFMP.	(Outputs) 1. Respective roles of organizations related to CFM are clarified.	2. CFMP consisting of the Comprehensive Flood Management Action Plan (hereinafter referred to as "CFMAP") of all related organizations is formulated, and legalization process of the CFM approach for urban flood management has been started.	3. Mechanism for monitoring, evaluation and feedback for CFMP is established and monitoring activities are performed.	 Sustainable coordination and collaboration mechanism among river basin stakeholders (public, private and resident) is established.

(Activities)	Input)	(Pre-Conditions)
1-1: Identification of organizations related to CFM 3	apanese Side:	No major change in
1-2: Determination of role allocation of	Field of Dispatch Expert	policy in flood
organizations that identified 1-1	(1) Chief Advisor	management, and no
2-1: Conducting the studies related to implement	(2) Comprehensive Flood Management	major change in
CFM (runoff analysis, land subsidence	(3) Coordination Mechanism	implementing agency
investigation, and others)	(4) River Basin Management Planning	
2-2: Consideration and formulation of the CFMP	(5) Spatial Planning	
2-3: Preparation of the Action Plan for CFM	(6) Storage/Infiltration Facility Planning	
implementation (CFMAP)	(7) Runoff Analysis	
2-4: Necessary support on legalization of CFM	(8) Land Subsidence Analysis	
approach for urban flood management	Installation of storage facilities and implementation of measures for runoff control in pilot area	
3-1: Establishment of supervisory mechanism of	Overseas project support fund	
monitoring	Counterpart Training in Japan	
3-2: Establishment of feedback mechanism of	Land Subsidence Investigation	
monitoring results		
3-3: Installation of storage facilities and	ndonesian Side (PU, government of DKI Jakarta, provincial government of West Java)	
implementation of measures for runoff control	Placement of Counterpart Personnel	
in pilot area for demonstrating effects of	Provision of Office Space and Equipment	
measures	Allocation and release of fund for project operation	
3-4: Instruction of monitoring method through	Runoff investigation	
Activity 3-3		
4-1: Frameworking of stakeholders for CFM in the		
project area		
4-2: Preparation of an operational guideline for the		
discussion forum (River Basin Forum) in the		
project area		
4-3: Organizing the River Basin Forum in the		
project area		

		2 01 27 3 mmc, 2012)	
Narrative Summary	Objective Verifiable Indicators	Means of Verification	Important Assumption
(Overall Goal) The comprehensive flood management (hereinafter referred to as "CFM") measures are implemented in Jakarta based on the legalized Comprehensive Flood Management Plan (hereinafter referred to as "CFMP").	 Structural measures (e.g. construction of flood storage facility) and non-structural measures (e.g. development control in the river basin) are implemented based on the legalized CFMP Comprehensive Flood Management Committees (CFM) are established in areas other than a project area. Outcomes of the discussion forums area reflected to the CFMP. CFM approach for urban flood management in legalized. 	 Reports prepared by the implementing agency Notification of establishment of <u>CFMC</u> Discussion records of the <u>CFMC</u> Monitoring and feedback record Law and/or regulations to authorize CFM approach for urban flood management 	
(Project Purpose) CFM measures are implemented in the Project area based on CFMP.	 CFMP is approved by the related organizations. Structural measures (e.g. construction of flood storage facility) and non-structural measures (e.g. development control in the river basin) are implemented more than one (1) area in the pilot area based on the CFMP. Outcomes from the <u>CFMC</u> in the project area are reflected to the CFMP. Monitoring results are reflected to the CFMP. 	 Approved CFMP Reports prepared by implementing agency Discussion records of the CFMC Monitoring and feedback record 	Secure allocation of budget for implementing agency No drastic change of natural environment
 (Outputs) 1. Respective roles of organizations related to CFM are clarified. 2. CFMP consisting of the Comprehensive Flood Management Action Plan (hereinafter referred to as "CFMAP") of all related organizations is formulated, and legalization process of the CFM approach for urban flood management has been started. 	 Organizations related to CFM are identified. Roles of the organizations related to CFM are agreed by the CFMC. CFMP is formulated. CFMAP for all related organizations for CFM are prepared. Legalization process for CFM approach for urban flood management has been started. 	 Roles of organizations authorized (in written format) CFMP CFMAP for all related organizations for CFM Proposal and/or plan for legalization prepared by Indonesian Government 	Counterparts who trained in this project are not transferred. Secure allocation of budget for implementing agency
3. Mechanism for monitoring, evaluation and feedback for CFMP is established and monitoring activities are performed.	 A supervisory organization for monitoring is established. Monitoring frequency and items are determined. Feedbacks from monitoring results are performed. Monitoring manuals are prepared. 	 List of supervisory organization for CFMP (chair organization, participants, monitoring frequency, etc.) Record of monitoring activities 	
 Sustainable coordination and collaboration mechanism among river basin stakeholders (<u>national and local governments</u>) is established. 	 <u>CFMC</u> that is a discussion forum of river basin stakeholders for better coordination and understandings is established. Frequency and items to be discussed in the <u>CFMC</u> are determined. 	 Authorized document for establishment of the <u>CFMC</u> in the project area Member list of the <u>CFMC</u> Record of discussion of the <u>CFMC</u> 	

 Table 1.4-2
 Project Design Matrix (PDM: Version 2) (modified as of 29 June, 2012)

(Activities)	(Input)	(Pre-Conditions)
1-1: Identification of organizations related to CFM	Japanese Side:	No major change in
1-2: Determination of role allocation of	- Dispatch Expert	policy in flood
organizations that identified 1-1	(1) Chief Advisor/Comprehensive flood management/Coordination Mechanism	management, and no
2-1: Conducting the studies related to implement	(2) River Basin Management Planning	major change in
CFM (runoff analysis, land subsidence	(3) Spatial Planning	implementing agency
investigation, and others)	(4) Facility Planning (Storage/Infiltration Facility)	
2-2: Consideration and formulation of the CFMP	(5) <u>Hydrological Study/Land Subsidence Analysis</u>	
2-3: Preparation of the Action Plan for CFM	- Installation of pilot facilies (Storage and Infiltration facility)	
implementation (CFMAP)	- Overseas project support fund	
2-4: Necessary support on legalization of CFM	- Counterpart Training in Japan	
approach for urban flood management	- <u>Hydrological Study</u> , Land Subsidence Investigation	
3-1: Establishment of supervisory mechanism of		
monitoring	Indonesian Side (PU, DKI Jakarta, West Java)	
3-2: Establishment of feedback mechanism of	- Placement of Counterpart Personnel	
monitoring results	- Provision of Office Space and Equipment	
3-3: Installation of storage facilities and	 Allocation and release of fund for project operation 	
implementation of measures for runoff control		
in pilot area for demonstrating effects of		
measures		
3-4: Instruction of monitoring method through Activity 3-3		
4-1: Frameworking of stakeholders for CFM in the		
project area		
4-2: Preparation of an operational guideline for the		
discussion body (CFMC) in the project area		
4-3: Organizing the CFMC in the project area		

1.5 Schedule and Achievement of Activities

The JCFM Project activities are scheduled for three years, from November, 2010 to October, 2013. The field activities are composed of three phases: the first field activities are from November, 2010 to March, 2012; the second field activities are from May, 2012 to March, 2013; and the third field activities are from May, 2013 to October, 2013.

Table 1.5-1 shows the Plan of Operation (PO) of the JCFM Project and activity schedule and achievement in all field activities in line with PDM.

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2. Determination of Role Al	location of related	Plan		_		$\left \right $									-	-				-	-	-			_	1	_		_	_	4-		\square	_		
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8. CFMC	and operation	Actual																																		
Comprehensive Flood Management Committee	8-3: Support organizing	Plan																																		
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Table 1.5-1Plan of Operation (PO)

CHAPTER 2 ACHIEVEMENT IN JCFM PROJECT

2.1 Overall Goal, Project Puropse and Outputs

The overall goal, project purpose and outputs in JCFM project are as follows.

Overall Goal

The CFM measures are implemented in Jakarta based on the legalized CFMP.

Project Purpose

CFM measures are implemented in the Project area based on CFMP.

Outputs

- 1. Respective roles of organizations related to CFM are clarified.
- 2. CFMP consisting of the CFMAP of all related organizations is formulated, and legalization process of the CFM approach for urban flood management has been started.
- 3. Mechanism for monitoring, evaluation and feedback for CFMP is established and monitoring activities are performed.
- 4. Sustainable coordination and collaboration mechanism among river basin stakeholders (national and local governments) is established.

2.2 Achievements of the Overall Goal, Project Puropse and Outputs

The achievements of the overall goal, project purpose and outputs of the JCFM project (comparing with PDM version 2 shown in Table 1.4-2) are described in Table 2.2-1.

Table 2.2-1Project Indicators and Achievement

Narrative Summary	Objective Verifiable Indicators	Achievement
(Overall Goal)	• Structural measures (e.g. construction of	• In joint meeting of JCC and CFMC on 19 September, 2013, it was agreed that Rencana and
The comprehensive flood management	flood storage facility) and non-structural	future POLA for the Ciliwung River Basin will include the CFMP/CFMAP. In accordance with
(hereinafter referred to as "CFM") measures	measures (e.g. development control in	this agreement, the CFM measures based on the policy and strategy in the CFMP/CFMAP are
are implemented in Jakarta based on the	the river basin) are implemented based	expected to be implemented in coordination with related central and local government
legalized Comprehensive Flood Management	on the legalized CFMP	orgranizations in the basin.
Plan (hereinafter referred to as "CFMP").	● Comprehensive Flood Management	• Since it was agreed that Rencana and future POLA in the Ciliwung River Basin would include
	Committees (CFM) are established in	the policy and strategy of the CFMP/CFMAP in JCC and CFMC joint meeting as mentioned
	areas other than a project area.	above, the monitoring mechanism and operation of coordination body stipulated in the
		CFMP/CFMAP will be transferred to the TKPSDA WS Ciliwung-Cisadane.
		• As mentioned in the Minutes of Meeting of the above meeting, it was agreed that the policy and
		strategy of the CFM in the Ciliwung Kiver Basin would be disseminated to other river basins by the Ministry of Public Works.
	• Outcomes of the discussion forums area	• Since Rencana and future POLA will be reviewed and revised every 5 years according to existing
	reflected to the CFMP.	regulations, the discussion and monitoring results by the TKPSDA WS Ciliwung-Cisadane will
		be feedback to this review/revision works.
	• CFM approach for urban flood	• As mentioned above, it was agreed that CFMP/CFMAP would be included in POLA and Rencana
	management in legalized.	in the Ciliwung River Basin. Since POLA and Rencana are legally required to be prepared, the
		CFM approach is already legalized by the existing regulations.
(Overall Goal)	• CFMP is approved by the related	• In the joint meeting of JCC and CFMC on 19 September, 2013, the acceleration of the CFM
The comprehensive flood management	organizations.	implementation in the Ciliwuung River Basin was discussed and agreed by all participants from
(hereinafter referred to as "CFM") measures		organizations related to the CFM.
are implemented in Jakarta based on the	• Structural measures (e.g. construction of	• As of runoff control measure, the rainwater storage and infiltration facility was installed in the
legalized Comprehensive Flood Management	flood storage facility) and non-structural	area of BBWS Ciliwung-Cisadane office.
Plan (hereinafter referred to as "CFMP").	measures (e.g. development control in	• In order to mitigate the increase of runoff volume due to land use change, the land classification
	the river basin) are implemented more	from flood control viewpoint was examined. In addition to the comprehensive flood management
	than one (1) area in the pilot area based	in pilot sub-basin, the conservation area of Situ was also examined. However, it was identified
	on the CFMP.	that there was settlement development in the conservation area, and the boundary area of river
		and Situ to classify the land area is not legally determined.
	 Outcomes from the CFMC in the project 	• As shown in Table 6.2-1, the opinions on flood control measures (dam construction) and runoff
	area are reflected to the CFMP.	control measures in CFMC meetings are feedback to the CFMP.
	• Monitoring results are reflected to the	• In principle, the location for the installation of rainwater storage and infiltration facilities should
	CFMP.	be determined by permeability test. Thus, to confirm the permeability in Ciliwung River Basin,
		the permeability tests were carried out in the middle stream of Ciliwung River Basin. The result
		confirmed that most of the area were suitable for the installation of the facility, so that the
		applicability of rainwater storage and infiltration facility and effectiveness of target volume were
		clarified.

Narrative Summary	Objective Verifiable Indicators	Achievement
(Outputs) 1. Respective roles of organizations related to CFM are clarified.	 Organizations related to CFM are identified. Below of the organizations related to CFM are agreed by the CFMC. 	 The comprehensive flood management in the Ciliwung River Basin consists of structural measures (flood control and runoff control) and non-structural measures (land use regulation and disaster mitigation). In order to implement those measures, several central and local governments organizations engaged in flood control as well as spatial planning, regional development planning and so on are involved. For the CFM measures in the Ciliwung River Basin, the organizations related to the CFM were identified through the discussion and collaboration with the C/P in the JCFM Project. For the implementation of the CFM measures based on the CFMP, the role allocation of related organizations was prepared in the CFMAP was discussed and agreed for the acceleration of the implementation of the CFM measures.
 CFMP consisting of the Comprehensive Flood Management Action Plan (hereinafter referred to as "CFMAP") of all related organizations is formulated, and legalization process of the CFM approach for urban flood management has been started. 	 CFMP is formulated. CFMAP for all related organizations for CFM are prepared. Legalization process for CFM approach for urban flood management has been started. 	 Based on the policy and strategy of the CFM measures consisting of the flood control, runoff control, land use regulation and disaster mitigation, the CFMP was formulated including the policy, strategy, required measures and target volume for the mitigation of flood risks caused by the Ciliwung River, and the CFMAP was also prepared describing the role allocation for the implementation of the CFMP. It is legally required to establish the TKPSDA WS in each river basin. The TKPSDA WS is mandated to formulate the water resources management policy (POLA) and plan (Rencana) and nonnitor the progress. Since the minister regulation as the preparation guideline of POLA was issued in 2009, the JCFM Project approached to include the CFM concept into the minister regulation for the minister regulation of the Minister Regulation of Public Works No. 2/2013 included the flood control measures as well as runoff control measures and land use regulation for the mitigation of flood disaster risks. It was agreed that Rencana and future POLA in the Ciliwung River Basin would include the policy and strategy of the CFMAP in the joint JCC and CFMC meeting on 19 September, 2013.
3. Mechanism for monitoring, evaluation and feedback for CFMP is established and monitoring activities are performed.	 A supervisory organization for monitoring is established. Monitoring frequency and items are determined. Feedbacks from monitoring results are performed. Monitoring manuals are prepared. 	In the "Monitoring Guideline for Comprehensive Flood Management" prepared as a part of the CFMP, the monitoring items, frequency, responsible organizations, and feedback mechanism were described. In principle, the location for the installation of rainwater storage and infiltration facilities should be determined by permeability test. Thus, in order to confirm the permeability in the Ciliwung River Basin, the permeability tests were carried out in the middle stream of the Ciliwung River Basin. The result confirmed that most of the area was suitable for the installation of the facility, so that the applicability of rainwater storage and infiltration facility and effectiveness of target volume were clarified.

Achievement	• In the 2^{nd} JCC meeting held on 22 November, 2011, the CFMC was established as a discussion and coordination platform for the flood risk reduction. In the 1^{st} CFMC meeting following the	above JCC meeting, the supulation for the establishment and operation of the CFMC including the role, member, meeting schedule of the CFMC were approved.	• During the course of the JCFM Project, it was determined to divide the IKPSDA WS 6Ci according to the Presidential Regulation No. 12/2012, and the TKPSDA WS Ciliwung-Cisadane	was established in June, 2013. As mentioned above, TKPSDA WS is a coordination body for the water resources management including flood mitigation in the basin, and its establishment is	legally required. Thus, since the outputs of the JCFM Project are transferred to TKPSDA WS Ciliwung-Cisadane, it is ensured that the inter-organizational coordination and collaboration for	the implementation of the CFM will be conducted sustainably.
Objective Verifiable Indicators	• CFMC that is a discussion forum of river basin stakeholders for better coordination	• Frequency and items to be discussed in	the CFMC are determined.			
Narrative Summary	coordination and hanism among river	e (national and local ablished.				
	4. Sustainable (collaboration mec	basin stakenolders governments) is est				

CHAPTER 3 ACTIVITY AND TECHNOLOGY TRANSFER

3.1 Activities related to Output 1

3.1.1 Output and Activity

The activities related to Output 1 in PDM are as follows.

Output 1: Respective roles of organizations related to CFM are clarified.

Activities:

1-1: Identification of organizations related to CFM

1-2: Determination of role allocation of organizations that identified 1-1

3.1.2 Activity Result

(1) Identification of Organizations related to CFM

Ciliwung River is one of the major rivers in Indonesia running down through Jakarta Special Province (DKI Jakarta), with length and basin area of 145 km and 553 km² respectively. The current flow capacity from Manggarai Gate to the downstream up to West Banjir Canal of the Ciliwung River is approximately 500 m³/s. On the other hand, the flow capacity of approximately 23 km of the river section from Manggarai Gate to the upstream by Outer Ring Road is limited to $100 - 300 \text{ m}^3$ /s. The surround area in this section is recognized as flood prone area.

Moreover, with the rapid economic growth in Indonesia, the population is growing and urbanization area in the Ciliwung River Basin is expanding. The population of DKI Jakarta has approximately doubled in the last 40 years, from 1971 to 2010. In the Ciliwung River Basin, the urbanization area ratio rose approximately by 1.7 times from 27.6 % to 47.6 % in the past 30 years (from 1980's to 2008). According to the 2011 spatial plan, approximately 70 % of the basin will become urbanized by 2030. There is a concern that discharge volume to the Ciliwung River will increase due to decreasing of natural retarding function in the basin since rapid urbanization is expected.

In addition, land subsidence has been broadly advancing in the lower Ciliwung River Basin due to excess use and recharge decrease of groundwater in the upstream basin caused by settlement area development there.

Therefore, the flood disaster risks in the Ciliwung River Basin have been increasing due to the urbanization and land subsidence. In order to realize the flood mitigation effect urgently, it is necessary to implement the comprehensive flood management measures consisting of structural measures in the river course and the basin as well as non-structural measures. The structural measures are composed of flood control measures (such as river improvement, diversion channel, dam construction as main measures) and runoff control measures in the river basin (including the installation of rainwater storage and infiltration facility, conservation and rehabilitation of pond (Situ), and others). The non-structural measures consist of land use regulation for the preservation of retention and retarding functions and disaster mitigation measures such as preparation of flood hazard map, improvement of disaster information system and others.



Figure 3.1-1 Conceptual Figure of CFMP

The comprehensive flood management meausres consist of structural measures (flood control measures and runoff control measures) and non-structural measures (land use regulation and disaster mitigation measures), and those measures need to be implemented by central and local government agencies which are mandated for spatial planning, regional development planning and others. Therefore, the inter-organizational coordination will be required.

In order to implement and disseminate the CFM measures in the targeted river basin, the structural measures (flood control measures and runoff control measures) non-structural measures (land use regulation and disaster mitigation measures) are required to be conducted. For the implementation of those measures, many government agencies in central, provincial, regency and city levels have their own mandates on the flood management, spatial planning, regional development, and so on.

Based on examination of the tasks and functions of the above organizations and a series of discussions with related organizations and counterpart agencies, the roles of organizations related to the CFM are summarized in Table 3.1-1 (for details refer to Annex-4 of Technical Cooperation Report).

Measure		Related Organization	Role
Flood River Improvement		DGWR, PU	Policy, regulation, guidance and supervision
Control	(dredging,	BBWS Ciliwung-Cisadane, DGWR, PU	Planning, implementation, O&M (Ciliwung main
Measure	embankment,		river, WBC, main river/tributary outside of DKI
	widening)		JKT)
		Public Works Agency, DKI JKT	Planning, implementation, O&M (tributary in DKI
	Wata	DCWD DU	JK1) Delien nemletien enidence enderseemidien
	weir	DGWR, PU	Policy, regulation, guidance and supervision
		BBWS Ciliwung-Cisadane, DGWR, PU	Planning, implementation, O&M (Ciliwung main
			river, WBC, main river/tributary outside of DKI
			JKT)
	Gate	DGWR, PU	Policy, regulation, guidance and supervision
		BBWS Ciliwung-Cisadane, DGWR, PU	Planning, implementation, O&M (Ciliwung main
			river, WBC, main river/tributary outside of DKI
			JKT)
		Public Works Agency, DKI JKT	Planning, implementation, O&M (tributary in DKI
			JKT)
	Diversion Channel	DGWR, PU	Policy, regulation, guidance and supervision
		BBWS Ciliwung-Cisadane, DGWR, PU	Planning, implementation, O&M (Ciliwung main
			river, WBC, main river/tributary outside of DKI
			JKT)

Table 3.1-1Role of Organizations related to CFM

Measure		Related Organization	Role
Flood	Short Cut Channel	DGWR, PU	Policy, regulation, guidance and supervision
Control Measure		BBWS Ciliwung-Cisadane, DGWR, PU	Planning, implementation, O&M (Ciliwung main river, WBC, main river/tributary outside of DKI
			JKT)
	Dam	DGWR, PU	Policy, regulation, guidance and supervision
		BBWS Ciliwung-Cisadane, DGWR, PU	Planning, implementation, O&M (Ciliwung main
			river, WBC, main river/tributary outside of DKI
	Retarding/	_	
	Regulating Pond	-	-
Runoff	Inland Water	DGWR, PU	Policy, regulation, guidance and supervision
Control	Drainage (pump,	DGHS, PU	Policy, regulation, guidance and supervision
Measure	etc.)	BBWS Ciliwung-Cisadane, DGWR, PU	Planning, implementation, O&M in DKI JKT (based on MoU)
		Public Works Agency, DKI JKT	Planning, implementation, O&M in DKI JKT (based on MoU)
	Storage/Infiltration	DGWR, PU	Policy, regulation, guidance and supervision
	Facility	DGHS, PU	Policy, regulation, guidance and supervision
		BBWS Ciliwung-Cisadane, DGWR, PU	Planning, implementation, O&M
		Public Works Agency, DKI JKT	Planning, implementation, O&M
		Industry and Energy Agency, DKI JKT	Planning, implementation, O&M
		Agency, DKI JKT	Coordination, supervision
		Water Resources Management Agency, West Java Province	Planning, implementation, O&M
		Highways and Irrigation Agency, Bogor Regency	Planning, implementation, O&M
		Building and Settlement Agency, Bogor Regency	Dissemination
		Highways and Water Resources Agency, Bogor City	Planning, implementation, O&M
		Building and Settlement Agency, Bogor City	Dissemination
		Highways and Water Resources Agency, Depok City	Planning, implementation, O&M
		Building and Settlement Agency, Depok City	Dissemination
	Pond (Situ)	DGWR, PU	Policy, regulation, guidance and supervision
		BBWS Ciliwung-Cisadane, DGWR, PU	Planning, implementation, O&M (based on MoU)
		Public Works Agency, DKI JKT	Planning, implementation, O&M (based on MoU)
		Water Resources Management Agency, West Java Province	O&M (only small agricultural pond)
	Watershed Management	Forestry Agency, West Java Province	Policy, regulation, guidance
Land Use	Land Development	DGSP, PU	Policy, regulation, guidance, planning, supervision
Regulation	Control	Spatial Planning Agency, DKI JKT	Policy, regulation, guidance, planning, supervision
		Building Supervision and Controlling Agency, DKI JKT	Permission, supervision
		Housing and Settlement Agency, West Java Province	Policy, regulation, guidance, planning, supervision
		Building and Settlement Agency, Bogor Regency	Permission, supervision
		Building and Settlement Agency, Bogor City	Permission, supervision
		Building and Settlement Agency, Depok City	Permission, supervision
Disaster Mitigation	Rainfall/Water Level Observation	BBWS Ciliwung-Cisadane, DGWR, PU	Observation, record, report
Measure	Flood Forecasting &	DGWR, PU	Observation
	Warning	BBWS Ciliwung-Cisadane, DGWR, PU	Observation, report
	Flood Hazard Map	DGWR, PU	Preparation, dissemination

Measure	Related Organization	Role	
Coordination	Coordinating Ministry of Economic Affairs	Inter-organizational and inter-regional coordination on runoff control measures	
	BAPPENAS	Inter-organizational and inter-regional coordination on preparation of development plans	
	TKPSDA WS Ciliwung-Cisadane	Preparation of POLA and Rencana, report ot minister, monitoring and evaluation of activity implementation based on POLA and Rencana	
	DCA JABODETABEKJUR	Subsidy to local governments surrounding DKI JKT	

(2) Determination of Role Allocation of Organizations that identified 1-1

For the smooth implementation of the proposed comprehensive flood management measures including runoff control and land use regulation in the basin, it is necessary to implement the flood control activities by related organizations in coordination with other organizations based on the specific roles and responsibilities.

Thus, for the implementation of the comprehensive flood management measures targeting the completion by 2030, the role allocation of related organizations in the existing legal framework is summarized in Table 3.1-2. In addition, Figure 3.1-2 shows the relationship of organizations related to the implementation of comprehensive flood management measures.

	Table 3.1-2 Relate	d Organizations and Role A	llocation for Implementation of Comprehensive Flood Management Measure
	Organization	Measure	Role for Implementation of Comprehensive Flood Management
	Coordination Ministry of Economic Affairs	Coordination	• Inter-organizational and Inter-regional Coordination for the implementation of runoff control measures
	BAPPENAS	Coordination	• Inter-organizational and Inter-regional Coordination for the formulation of development plans
	Directorate General of Water Resources, Ministry of Public Works	Flood Control Measure, Runoff Control Measure, Disaster Mitigation Measure, Coordination/Monitoring	 Formulation and dissemination of policy, laws and technical standards regarding flood control measures, runoff control measures and disaster mitigation measures Coordination and monitoring on the projects implemented by BBWS Ciliwung-Cisadane
	TKPSDA WS Ciliwung-Cisadane	Flood Control Measure, Runoff Control Measure, Disaster Mitigation Measure, Coordination/Monitoring	• Formulation of POLA and Rencana, recommendation to Minister of Public Works, analysis and reporting of monitoring and evaluation results on implementation conditions of the above plans
Central Government	BBWS Ciliwung-Cisadane	Flood Control Measure, Runoff Control Measure, Disaster Mitigation Measure, Coordination/Monitoring	 <flood and="" banjir="" canal,="" ciliwung="" control="" dki="" east="" jakarta="" main="" measure:="" outside="" river,="" tributaries="" west=""></flood> Determination of river administration area Planning and implementation of river improvement Planning and implementation of river dredging Planning and implementation of river dredging Planning and implementation of of one redging Planning and implementation of of onstruction of Diawi dam (large dam) and gate dam Planning and implementation of of one redging Planning and implementation of diversion channel to East Banjir Canal Planning and implementation of improvement of Manggarai Gate and Karet Gate (proliferation of one additional gate) Construction and rehabilitation of pump station Construction and rehabilitation of pump station Runoff Control Measure> Planning, implementation and O&M of rainwater storage and infiltration facility Runoff Control Measure> Planning, implementation and O&M of rainwater storage and infiltration of small dams (Dam Parit) Construction and rehabilitation of planning and implementation of construction of small dams (Dam Parit) Construction and empowerment of flood evacuation system Set of flood hazard areas Dissemination and empowerment of flood evacuation system Coordination/Monitoring> Analysis and reporting of monitoring and evaluation results of POLA and Rencana as secretariat of TKPSDA WS Ciliwung-Cisadane
	Directorate General of Spatial Planning, Ministry of Public Works	Land Use Regulation	 Formulation and dissemination of policy, laws and technical standards regarding formulation of spatial planning

Role for Implementation of Comprehensive Flood Management	• Formulation and dissemination of policy, laws and technical standards regarding urban drainage and inland water drainage facility	 Coordination of project plans and implementation of subsidy in JABODETABEKJUR (including subsidy for installation of runoff control facility) 	 Coordination regarding formulation of regional development plans (long-term, mid-term and annual plans) Feedback of runoff control measures in regional development plans (formalization) Monitoring of flood control measures and runoff control measures conducted by related organizations Organizing the project evaluation reports formulated by related organizations Reporting monitoring results to TKPSDA WS Ciliwung-Cisadane 	 <flood control="" measure=""></flood> Flanning, implementation and O&M of tributary river improvement Planning and implementation of tributary river dredging O&M or river facility O&M or river facility O&M or river facility O&M of runoff control facility Planning, implementation and O&M of runoff control facility Planning, implementation and O&M of pond (<i>Situ</i>) Planning, implementation and O&M of pond (<i>Situ</i>) Set of flood hazard areas Dissemination and empowerment of flood evacuation system 	 Formulation of spatial plans Land use regulation through assessment and issuance of building permit (<i>IMB</i>) Coordination and monitoring for installation of infiltration well (<i>Sumur Research</i>) in public 	 Construction and through the Environmental Impact Assessment (AMDAL) process development land through the Environmental Impact Assessment (AMDAL) process Installation of infiltration well (Sumur Resapan) Monitoring of installation of infiltration well (Sumur Resapan) in private development land 	• Technical assistance for assessment of building permit (IMB)
Measure	Runoff Control Measure	Coordination	Coordination/Monitoring	Flood Control Measure, Runoff Control Measure, Disaster Mitigation Measure	Land Use Regulation	Runoff Control Measure Runoff Control Measure	Land Use Regulation
Organization	Directorate General of Human Settlements, Ministry of Public Works	Development Cooperation Agency of JABODETABEKJUR	Regional Development Planning Agency (BAPPEDA)	Public Works Agency	Spatial Planning Agency Regional Environmental	Management Agency Industry and Energy Agency	Building Supervision and Controlling Agency
Government 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			DKI Jakarta	·			

	Organization	Measure	Role for Implementation of Comprehensive Flood Management
	Regional Development Planning Agency (BAPPEDA)	Coordination/Monitoring	 Coordination regarding formulation of regional development plans (long-term, mid-term and annual plans) Feedback of runoff control measures in regional development plans (formalization) Monitoring of flood control measures and runoff control measures conducted by related organizations Organizations Reporting the project evaluation reports formulated by related organizations Reporting monitoring results to TKPSDA WS Ciliwung-Cisadane
West Java Province	Water Resources Management Agency	Runoff Control Measure, Disaster Mitigation Measure	 Runoff Control Measure> Planning, implementation and O&M of runoff control facility Planning, implementation and O&M of pond (<i>Situ</i>) Planning, implementation and O&M of pond (<i>Situ</i>) Set of flood hazard areas Best of flood hazard areas Dissemination and empowerment of flood evacuation system Planning and implementation for enhancement of flood fighting framework
	Housing and Settlement Agency	Land Use Regulation	 Formulation of spatial plans Assessment and issuance of building permit (<i>IMB</i>) Promotion of installation of rainwater storage and infiltration facility (by financial cooperation from DKI Jakarta)
	Forest Management Office in Citarum-Ciliwung River Basin	Runoff Control Measure	 Forest conservation for maintaining retention function Planning and dissemination of runoff control measures
Bogor	Regional Development Planning Agency (BAPPEDA)	Coordination/Monitoring	 Coordination regarding formulation of regional development plans (long-term, mid-term and annual plans) Feedback of runoff control measures in regional development plans (formalization) Monitoring of flood control measures and runoff control measures conducted by related organizations Organizations Reporting the project evaluation reports formulated by related organizations Reporting monitoring results to TKPSDA WS Ciliwung-Cisadane
Regency	Highways and Irrigation Agency	Runoff Control Measure, Disaster Mitigation Measure	 Runoff Control Measure> Planning, implementation and O&M of runoff control facility Planning, implementation and O&M of pond (<i>Situ</i>) Planning, implementation and O&M of pond (<i>Situ</i>) Set of flood hazard areas Set of flood hazard areas Dissemination and empowerment of flood evacuation system Planning and implementation for enhancement of flood fighting framework

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Role for Implementation of Comprehensive Flood Management	 Formulation of spatial plans Land use regulation through assessment and issuance of building permit (<i>IMB</i>) Promotion of installation of rainwater storage and infiltration facility (by financial cooperation from DKI Jakarta) 	• Coordination and monitoring for installation of infiltration well (<i>Sumur Resapan</i>) in public development land through the Environmental Impact Assessment (<i>AMDAL</i>) process	 Coordination regarding formulation of regional development plans (long-term, mid-term and annual plans) Feedback of runoff control measures in regional development plans (formalization) Monitoring of flood control measures and runoff control measures conducted by related organizations Organizations Organizing the project evaluation reports formulated by related organizations Reporting monitoring results to TKPSDA WS Ciliwung-Cisadane 	 <runoff control="" measure=""></runoff> Planning, implementation and O&M of runoff control facility Planning, implementation and O&M of pond (<i>Situ</i>) Planning implementation Measure> Set of flood hazard areas Dissemination and empowerment of flood evacuation system Planning and implementation for enhancement of flood fighting framework 	 Formulation of spatial plans Land use regulation through assessment and issuance of building permit (<i>IMB</i>) Promotion of installation of rainwater storage and infiltration facility (by financial cooperation from DKI Jakarta) 	• Coordination and monitoring for installation of infiltration well (<i>Sumur Resapan</i>) in public development land through the Environmental Impact Assessment (<i>AMDAL</i>) process
Measure	Land Use Regulation	Runoff Control Measure	Coordination/Monitoring	Runoff Control Measure, Disaster Mitigation Measure	Land Use Regulation	Runoff Control Measure
Organization	Organization Building and Settlement Agency Regional Environmental Management Agency Regional Development Planning Agency (BAPPEDA)		Regional Development Planning Agency (BAPPEDA)	Highways and Water Resources Agency	Building and Settlement Agency	Regional Environmental Management Agency
	Bogor Regency			Bogor City		
Role for Implementation of Comprehensive Flood Management	 Coordination regarding formulation of regional development plans (long-term, mid-term and annual plans) Feedback of runoff control measures in regional development plans (formalization) Monitoring of flood control measures and runoff control measures conducted by related organizations Organizations Reporting the project evaluation reports formulated by related organizations Reporting monitoring results to TKPSDA WS Ciliwung-Cisadane 	 <runoff control="" measure=""></runoff> Planning, implementation and O&M of runoff control facility Planning, implementation and O&M of pond (<i>Situ</i>) Planning, implementation and O&M of pond (<i>Situ</i>) Set of flood hazard areas Set of flood hazard areas Dissemination and empowerment of flood evacuation system Planning and implementation for enhancement of flood fighting framework Formulation of spatial plans Land use regulation through assessment and issuance of building permit (<i>IMB</i>) Promotion of installation of rainwater storage and infiltration facility (by financial cooperation from DKI Jakarta) 	• Coordination and monitoring for installation of infiltration well (<i>Sumur Resapan</i>) in public development land through the Environmental Impact Assessment (<i>AMDAL</i>) process			
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Measure	Coordination/Monitoring	Runoff Control Measure, Disaster Mitigation Measure Land Use Regulation	Runoff Control Measure			
Organization	Regional Development Planning Agency (BAPPEDA)	Highways and Water Resources Agency Building and Settlement Agency	Regional Environmental Management Agency			
		Depok City				

Monitoring	Ministry of Affairs NAS	r & Coast		A WS Cisadane							Development Cooperation	Agency for	JABODETA BEKJUR)			304 113 0
Coordination/	Coordinating Economic BAPPE	Dir. of Rive		TKPSD Ciliwung-(BAPPEDA				BAPPEDA		BAPPEDA		BAPPEDA	M tuomoro
Land Use Control				Secretariat		Renortina	Monitoring/Evaluation	Spatial Planning Agency	nical Guidance for Market Control	Relevant Agencies •Building Supervision & Control Agency •Others			Reporting Reporting Monitoring/Evaluation Reporting Building and Settlement Monitoring Agency Evaluation	Renortine	MonitoringEvaluation Reporting Building and Settlement Monitoring Agency Evaluation	Danomino	Monitoring/Evaluation Reporting Building and Settlement Monitoring Agency Evaluation	
Disaster Mitigation Measures		ast	fanagement	•	DG of Spatial Planning		\	off Control	Tech	Cooperation for Run-off Control	Municipality Administration		rrigation Agency		er Resources Agency		er Resources Agency	
Run-off Control Measure		Dir. of River & Co	Dir. of Water Resources M	BBWS CilCis	DG of Human Settlements		Public Works Agency	Cooperation for Run- Relevant Agencies	Regional Environmental	Management Agency •Industry & Energy Agency •Others			Highways and I		Highways and Wat		Highways and Wat	
Flood Control Measure			DG of Water Resources															
		Central	Government					1	IAU	Jakarta			Bogor Regency		Bogor City		Depok City	i

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3.2 Activities related to Output 2

3.2.1 Output and Activity

The activities related to Output 2 in PDM are as follows.

Output 2: CFMP consisting of the CFMAP of all related organizations is formulated, and legalization process of the CFM approach for urban flood management has been started.

Activity:

- 2-1: Conducting the studies related to implement CFM (runoff analysis, land subsidence investigation, and others)
- 2-2: Consideration and formulation of the CFMP
- 2-3: Preparation of the Action Plan for CFM implementation (CFMAP)
- 2-4: Necessary support on legalization of CFM approach for urban flood management

3.2.2 Activity Result

(1) Conducting the Studies related to Implement CFM

1) Hydraulic and Hydrological Analysis and Runoff Analysis

In order to set the design peak discharge at Manggarai Gate as a basis for planning of structural measures, the following analyses were carried out (details are referred to Annex-1 of Technical Cooperation Report).

- Hydraulic and Hydrological Analysis
 - The probable rainfall obtained from rainfall observation stations was calculated, and the average probable rainfall in the basin was estimated at Manggarai, Depok and Katulampa points.
 - Based on the rainfall data causing the past floods, the rainfall duration was set for 48 hours and design rainfall curve was set. Moreover, the current flow capacities of Ciliwung River and West Banjir Canal were calculated by non-uniform flow analysis, and it was confirmed that the flow capacity of the river section from Manggarai Gate to Outer Ring Road is not sufficient.
- Examination of Flood Discharge in Each Return Period
 - By Distributed Runoff Analysis Model, the flood discharge was calculated in each return period in each case of current land use (2008) and future land use (2030). Due to the land use change from 2008 to 2030, it was estimated that the flood peak discharge in 50 years return period at Manggara Gate point would increase from 480 m³/s to 720 m³/s.
- Runoff Analysis
 - By conducting the runoff analysis, the expansion of flood area due to land use change was recognized.
- Examination of Design Peak Discharge
 - The design peak discharge at Manggarai Gate point was set as 720 m³/s with design scale of 1/50 flood and target year of 2030.



Figure 3.2-1 Projection of Land Use Change in River Basin



Figure 3.2-2 Relation between Land Use Change and Flood Peak Discharge

2) Land Subsidence Analysis

In order to identify the land subsidence area and its chronological change in DKI Jakarta, the land subsidence analysis was conducted.

In the first year, the JCFM Project carried out DInSAR analysis in order to grasp the range and tendency of land subsidence in the Jakarta area based on satellite images obtained by ALOS (DAICHI). Besides, the result was corrected based on the result of ground survey consisting of leveling survey and GPS survey.

In the second year, the planned DInSAR analysis could not be implemented because of the termination of ALOS (DAICHI) operation. Therefore, the JCFM Project carried out the ground survey (leveling

survey and GPS survey) using the survey course network which was set up in the first year in order to grasp the tendency of land subsidence.

In the third year, the ground survey started in second year continued, land subsidence conditions were recognized. Besides, in order to increase the accuracy of the GPS survey, the survey period was for 24 hours.

The results of the land subsidence analysis are summarized as follows (for details refer to Annex-5 of Technical Cooperation Report).

- ➤ The land subsidence has been expanding to the whole area. However, the degree of land subsidence depends on the locations.
- The land subsidence area has been expanding especially to the southern and western area in DKI Jakarta.



Figure 3.2-3 Overlapping Results of Satellite Analysis and Ground Survey

(2) Consideration and Formulation of the CFMP

The CFMP was formulated in consideration of the existing flood control plans, current activities for installation of rainwater infiltration facilities, and present spatial plans. The contents of the CFMP are summarized as follows (for details refer to "Comprehensive Flood Management Plan" of Technical Cooperation Report).

1) Target of Structural Measures

As of 2030, unregulated peak discharge of 720 m³/s with 50-year return period at Manggarai Gate shall be reduced to 500 m³/s or less than that.



Figure 3.2-4 Target of Structural Measures

500 m³/s of the peak discharge will be released to the sea safely after the completion of planned river improvement. Also, 60 m³/s of the peak discharge will be drained to East Banjir Canal through the planned diversion tunnel. Therefore, remaining peak discharge 160 m³/s (= 220 - 60) needs to be controlled in the upstream river course and the basin.

2) Flood Control Measures in the Basin

Besides the river improvement, gate installation and diversion tunnel construction which have already been planned, the JCFM Project proposed the construction of 2 dry dams around Ciawi area from a viewpoint of project cost and flood control effect.

Further geotechnical investigation and permeability test shall be conducted for the realization of dam construction. However, it is expected that the dam construction will contribute to the flood control effect with approximately 100 m^3 /s at Manggarai Gate point.

Flood Control Facility	Conditions				
River Improvement	Section between Manggarai Water Gate and Outer Ring Road (Length: 23.8 km, Capacity: 500 m ³ /s)				
Gate Installation1 gate on Manggarai Water Gate, 1 gate on Karet Water Gate					
Diversion Tunnel From the Ciliwung River to East Banjir Canal (Capacity: 60 m ³ /s)					
Dams (Dry Dam)1 dam on the Ciliwung River at Ciawi (H= 40 m)1 dam on the Cisukabirus River (H= 30 m)(Total Flood Control Effect at Manggarai Gate: Approx.100 m³/s)					
Ciawi Dar	Cisukabirus Dam				

Table 3.2-1Overview of Flood Control Measures

3) Runoff Control Measures in the Basin

All feasible runoff control measures need to be actively implemented in the Ciliwung River Basin based on "zero delta Q" policy.

Main measures for runoff control are installation of facilities which can store and/or infiltrate rainwater or surface flow, and revitalization or improvement of the existing Situ. In the CFMP, only runoff control effect by the facilities which have infiltration function, namely Rainwater Storage and Infiltration Facilities (RSIF) is assessed, because small-scale storage facilities are filled up and lose the function before it stores peak discharge at the time of a large scale rainfall.

The JCFM Project calculated target of the RSIF installation in the Ciliwung River Basin at local government level. If the target is achieved, approximately 70 m^3/s of flood control effect is expected at Manggarai Gate point.

Item		Central Jakarta	East Jakarta	South Jakarta	Depok City	Bogor Regency	Bogor City	Total in the Basin
Target	Public Sector	41,890	35,530	88,560	18,310	13,970	5,140	203,400
Volume (m ³)	Private Sector	0	59,500	49,400	501,000	1,754,000	310,700	2,674,600
	Total	41,890	95,030	137,960	519,310	1,767,970	315,840	2,878,000

 Table 3.2-2
 Target of RSIF Installation in the Ciliwung River Basin

4) Effect of Structural Measures

As of 2030, unregulated design peak discharge Q_{50} = 720 m³/s at Manggarai water Gate can be reduced to 500 m³/s or less than that by the above-mentioned structural measures. The measures also can reduce water level at the upstream river section from Manggarai Water Gate about 1.1 m, and mitigate serious flood damage around the Ciliwung River.



Figure 3.2-5 Proposed Design Flood after CFMP Completion



Figure 3.2-6 Effect of CFMP Implementation (W= 1/50)

5) Land Use Regulation based on Spatial Plans

In the CFMP, the structural measures are planned in consideration of the increase of flood peak discharge due to the urbanization until 2030. However, if the urbanization ratio in 2030 exceeds the projected ratio in the spatial plan, additional measures will be required to secure 1/50 of the flood safety level. Thus, in order to avoid this condition, the JCFM Project pointed out the necessity of land use regulation in the basin from the following viewpoints:

- Prevention of unregulated development of urban area and settlement area
- Achievement of targeted open green space areas
- Preservation of border areas of river and pond (*Situ*) and other protected areas

Existing regulations on spatial planning are consistent with the regulations for the preservation of the related protected areas and border areas of river and pond (Situ). In addition, those regulations stipulate the necessity to secure a certain area of open green spaces and other non-utilized areas. Therefore, it is recognized that the regional spatial plans prepared by the local governments based on those regulations have important role in the runoff control as well.

However, in order to conduct the smooth land use control based on the spatial plans, it is necessary to formulate the guidelines and regulations to realize the strict legal implementation.

6) Disaster Mitigation Measures

For the preparation to the inundation caused by rainfall exceeding the capacity of existing flood control facilities and probable rainfall, it is necessary to take measures to mitigate the flood damages, including the dissemination of disaster information and implementation of proper evacuation.

In JCFM Project, the impacts of climate change on the flood safety level after the completion of CFM measures were assessed. Based on the several scenarios of climate changes set in the 4th Assessment Report of IPCC, the runoff analysis in Jakarta area was conducted. As a result, in Scenario A1F1 with

the largest impact of climate change (Value on Fossil Energy Resources in Growth-oriented Society Scenario), it is estimated that the flood safety level at Manggarai Gate point will reduce from 50 years design scale used for the CFMP to 25 years design scale. Considering the above, it is necessary to implement the flood damage mitigation measures even after the completion of the structural measures in CFMP.

(3) Preparation of the Action Plan for CFM Implementation (CFMAP)

The Comprehensive Flood Management Action Plan (CFMAP) was formulated to minimize the damage around the Ciliwung River from the design flood with 50-year return period within the target year of 2030 (the following 20 years).

For the smooth implementation of the proposed comprehensive flood management measures including runoff control and land use regulation in the basin, it is necessary to implement the flood control activities by related organizations in coordination among those organizations based on the clear role allocation. Thus, through the counterpart meetings and workshop, the role allocation among related organizations was clarified. For the implementation of the runoff control and land use regulation in the basin, it was pointed out that the legal framework for the implementation of those measures shall be formulated. Therefore, the target volume in 2030 was set for the runoff control and land use regulation, but the required legal framework for the implementation was proposed.

(4) Necessary Support on Legalization of CFM Approach for Urban Flood Management

When the local governments (province, regency and city governments) formulate the mid-term regional development plans and spatial plans, they will refer to the water resources management policy (POLA) and plan (Rencana) and formulate those plans in consistent with POLA and Rencana. Therefore, in order to reflect the policy and strategy of the CFMP into regional development plans and spatial plans, it is necessary to include the CFM concept in POLA and Rencana as a first step.

The JCC and CFMC agreed to include the CFMP/CFMAP into Rencana and future POLA in their joint meeting held on 19 September, 2013. Therefore, it is expected to formulate the POLA and Rencana as agreed and to reflect the CFM into regional development plans and spatial plans in the near future.

3.3 Activities related to Output 3

3.3.1 Output and Activity

The activities related to Output 3 in PDM are as follows.

Output 3: Mechanism for monitoring, evaluation and feedback for CFMP is established and monitoring activities are performed.

Activity:

- 3-1: Establishment of supervisory mechanism of monitoring
- 3-2: Establishment of feedback mechanism of monitoring results
- 3-3: Installation of storage facilities and implementation of measures for runoff control in pilot area for demonstrating effects of measures
- 3-4: Instruction of monitoring method through Activity 3-3

3.3.2 Activity Result

(1) Establishment of Supervisory Mechanism of Monitoring

In the "Monitoring Guideline for Comprehensive Flood Management" prepared as a part of the CFMP, the monitoring items, frequency, responsible organizations and feedback mechanism of monitoring results were determined. In accordance with the establishment of the TKPSDA WS Ciliwung-Cisadane, the monitoring activities on the progress of the CFM measures can be conducted by the existing coordination body through the coordination and collaboration among related organizations.

Organizations and role allocation for the monitoring are summarized below.



Figure 3.3-1 Proposed Monitoring Mechanism in TKPSDA WS Ciliwung-Cisadane

<Implementation Agency>

• The central and local government agencies which implement the flood control measures, runoff control measures, land use regulation and disaster mitigation measures will plan and conduct the projects of each measure based on the CFMP/CFMAP.

<Supporting Agency>

• Supporting agencies will provide technical supports to the above implementation agencies for the smooth and effective implementation of each measure.

<Monitoring Agency>

• Monitoring agencies will monitor and evaluate the progress and achievement of project of each measure conducted by the implementing agency, and report the monitoring and evaluation results to the secretariat of TKPSDA WS Ciliwung-Cisadane.

<TKPSDA WS Ciliwung-Cisadane>

- BBWS Ciliwung-Cisadane, as secretariat of the TKPSDA WS Ciliwung-Cisadane, will receive the monitoring and evaluation results from monitoring agencies, and analyze those results in the unit of river basin.
- BBWS Ciliwung-Cisadane will report the monitoring and evaluation results in the assembly meeting of TKPSDA WS Ciliwung-Cisadane.
- Commission for Water-related Disaster Control
- Commission for Water-related Disaster Control will assist the analysis of monitoring and evaluation results by the secretariat of the TKPSDA WS Ciliwung-Cisadane.

(2) Establishment of Feedback Mechanism of Monitoring Results

1) Feedback of Permeability Test Results to the CFMP

For the installation of infiltration facilities as runoff control measures, the permeability at installation location shall be confirmed. Thus, in order to confirm the applicability of rainwater storage and infiltration facility in Ciliwung River Basin, the permeability test at middle and upstream of the basin was carried out. The result confirmed that most of the basin areas are suitable for the installation of rainwater storage and infiltration facilities; so the runoff control measures can be implemented and target volume will be practiced.



Figure 3.3-2 Results of Permeability Test in Ciliwung River Basin

2) Review of CFMP/CFMAP

After the CFMP/CFMAP is included in POLA and Rencana in Ciliwung River Basin, TKPSDA WS Ciliwung-Cisadane will play a role for monitoring and evaluation of the progress of the CFM measures. Based on the monitoring results, the policy and strategy of CFMP/CFMAP included in POLA and Rencana will be reviewed and revised every 5 years as legally required.

In the joint meeting of JCC and CFMC on 19 September, 2013, it was agreed that Rencana and future POLA will include the CFMP/CFMAP, so that the feedback mechanism of monitoring results to CFMP will be implemented.

(3) Installation of Storage Facilities and Implementation of Measures for Runoff Control in Pilot Area for Demonstrating Effects of Measures

1) Rainwater Storage and Infiltration Facility for Demonstrating Effects

In JCFM Project, rainwater storage and infiltration facility (RSIF) was installed for demonstrating effects in the area of BBWS Ciliwung-Cisadane office by using the recycled plastic materials (for details refer to Annex-3 of Technical Cooperation Report). Besides, the sign board was set to explain

the function of RSIF in the underground.

Specification of the RSIF

- Location : Ciliwung-Cisadane River Basin Management Main Office
- Catchment Area
- Water Storage
 - Dimension $(L \times W \times H) = 9.0 \text{m} \times 9.0 \text{m} \times 1.33 \text{m}$
 - Storage Capacity $: 102.8 \text{ m}^3$
 - Material : Plastic Material "Crosswave"

: 0.5 ha

- Void Ratio : more than 90 %
- Load Capacity : 25 t
- Runoff Control Effect : Peak runoff with 2-year return period can be reduced by half. Infiltration : 7.3 m³/h (based on the result of infiltration test 1.2×10^{-3} cm/s)
- Infiltration per Unit Area : 1.46 mm/h



(Construction Situation)



(Ground Situation after the Completion)

Figure 3.3-3 Rainwater Storage and Infiltration Facility for Demonstrating Effects

Comprehensive Flood Management in Pilot Sub-Basin 2)

For the pilot project of comprehensive flood management in sub-basin considering the runoff control measures with target volume and Situ in CFMP, the comprehensive flood management plan in pilot sub-basin was examined in the Sugutam sub-basin of Ciliwung River Basin. The conditions and results of the examination are summarized as follows (for details refer to Annex-3 of Technical Cooperation Report).

- **Basic Condition in Sub-Basin**
 - Target Pilot Sub-Basin : Sugutamu Sub-Basin
 - Basin Area $: A=13.23 \text{ km}^2$
 - Situ in Pilot Sub-Basin : Situ Cilodong at middle-stream and Situ Sidomukti at downstream
 - Inflow from other Basin : there is the channel flowing into Situ Cilodong from Situ Cikaret
 - Feature of Pilot Sub-Basin : extending from north to south, and relatively high gradient with average river slope of 1/200. Residential buildings are intensively located along the river in urban area, resulting in the narrow river course.
- Condition on Design Discharge Calculation
 - Design Scale : 10-year return period
 - Runoff Calculation Method : Rational Formula
 - Rainfall Intensity : rainfall intensity formula at Damaga Bogor observation point near the pilot sub-basin
 - Runoff Coefficient : average runoff coefficient in the pilot sub-basin considering the land use condition
 - Inflow from other Pilot Sub-Basin: the outflow volume from Situ Cilodong to other basin is

small, so that the flood discharge from Situ Cilodong is considered to inflow to Sugutamu basin. The outflow to the other basin is not included.

- Outline of Case Study Results
 - Since the current river course does not have sufficient flow capacity against the design scale of flood, significant river improvement is required in all the river section.
 - In case of the above river improvement, since there will be no overflow but flow to the downstream, it is recognized that the inflow volume to Situ Sidomukti will increase, and the flood flow will overflow the dike of Situ causing the dike break. Originally, Situ is established for the water use, so that the scale of *Situ* is not consistent with the river basin area. As measures against overflow, it is necessary to determine the necessary measures including a) removal of *Situ*, b) reconstruction of *Situ* as a dam, c) construction of bypass channel, and d) no river improvement at upstream of *Situ*.
 - Through the installation of rainwater storage and infiltration facilities with targeted volume shown in CFMP in Sugutamu basin, the flood control effect against 10 years design flood at confluence to Ciliwung River is expected to be 7.4 m^3/s (equivalent to 5.3 % of design peak discharge).

In accordance with the results of case study, the following concerns are identified for the comprehensive flood management in pilot sub-basin.

- Determination of River Administration Area
 - In the case study, several cases where private developer and/or others change the river course without approval were identified. This can be avoided if the river administration area is designated. Therefore, in order to avoid these practices, it is recommended to set and regulate the river administration area urgently.
- Consideration for Improvement of Situ and River at Upstream of *Situ*
 - It is identified that the inflow volume to *Situ* will increase and flood flow will overflow the dike of *Situ* because the flood flow will not inundate but flow to the downstream due to the river improvement (Situ Sidomukti). Moreover, there is other case that all flow volume from *Situ* flow to the other basin through the irrigation channel with small flow capacity, resulting in the overflow of irrigation channel during the flood (Situ Cilodong). Based on those facts, the plans for the *Situ* improvement and the river (connecting those *Situ*) improvement shall carefully take into account of their impacts.



Figure 3.3-4 River Section of Sugutamu Sub-Basin

(4) Instruction of Monitoring Method through Activity 3-3

1) Rainwater Storage and Infiltration Facility for Demonstrating Effects

In order to conduct the technology transfer to the C/P on the runoff control effects and O&M method of RSIF, the monitoring and maintenance manual of the installed facility was prepared, and the O&M and monitoring methods were transferred to the C/P with the said manual. The monitoring items were rainfall volume and water leve at inflow, outflow and storage space at 10 minutes interval. Based on those collected data, the inflow and outflow volumes and stored volume were estimated.

The monitoring was conducted by the counterpart of BBWS Ciliwung-Cisadane. As a result, it was identified that a part of peak discharge was cut, but the permeability reduced to 2.0 x 10^{-4} cm/s approximately 6 months after the construction (for details refer to Annex-3 of Technical Cooperation Report).

2) **Comprehensive Flood Management in Pilot Sub-Basin**

Through the formulation of comprehensive flood management plan in pilot sub-basin, the technology transfer was carried out regarding the treatment of Situ in planning and the concerns on the river planning for securing the safety of Situ.

3) **Other Activity**

Based on the above examination, Technical Cooperation Reports of "Monitoring Guideline for Comprehensive Flood Management" and "Measure and Operation Manual for Runoff Control Facility" were prepared.

3.4 Activities related to Output 4

3.4.1 **Output and Activity**

The activities related to Output 4 in PDM are as follows.

Output 4: Sustainable coordination and collaboration mechanism among river basin stakeholders (national and local governments) is established.

Activity:

4-1: Frameworking of stakeholders for CFM in the project area

4-2: Preparation of an operational guideline for the discussion body (CFMC) in the project area

4-3: Organizing the CFMC in the project area

3.4.2 **Activity Result**

(1) Frameworking of Stakeholders for CFM in the Project Area

1) Laws and Regulations related to Coordination Institution

Based on Law No. 7/2004 on Water Resources, several regulations such as Government Regulation, Presidential Regulation and Minister Regulation have been issued in Indonesia. The regulations deal with the establishment of water resources council and coordination team of water resources and river basin management (TKPSDA WS) as coordination institutions for the water resources management. The law and regulations are shown in Table 3.4-1.

Table 3.4-	1 Related Legislatives on Coordination Institution
Legislative	Purpose
/2004	Management and Conservation of Water Resources

Legislative	Fuipose
Law No. 7/2004	Management and Conservation of Water Resources
Government Regulation No. 42/2008	Water Resources Management
Presidential Regulation No. 12/2008	Establishment of National/Provincial/Regency/City Water Resources Council
Minister of Public Works Regulation	Guideline on Establishment of National/Provincial/Regency/City Water Resources
No. 4/PRT/M/2008	Council and TKPSDA WS

In accordance with the above regulations, the National Water Resources Council was established in May, 2010. Moreover, in DKI Jakarta province and West Java province, the targeted river basin of the JCFM Project, the Provincial Water Resources Councils were set up in October, 2010 and August, 2010 respectively for the discussion and coordination on the water resources management and flood management among the related organizations. Furthermore, in the Solo river basin and Brantas river basin, TKPSDA WS were formulated in February 2009 in accordance with Minister of Public Works Regulations. In the 6 river basins in Jakarta metropolitan area, based on the Minister of Public Works Regulation No. 594/KPTS/M/2010 on Establishment of Coordination Team of Water Resources and River Basin Management in Cidanau-Ciujung-Cidurian-Cisadane-Ciliwung-Citarum River Basins, TKPSDA WS 6Ci was established. However, after the establishment of TKPSDA WS 6Ci, it was divided and TKPSDA WS for Ciliwung-Cisadane river basin was formulated (TKPSDA WS Ciliwung-Cisadane).

2) Government Regulation No. 42/2008 on Water Resources Management

The Government Regulation No. 42/2008 is a legal basis for the water resources management based on the Law No. 7/2004. In Chapter 2 of the Regulation, inter-provincial river basin and water resources management is stipulated as follows.

- Formulation of Water Resources Management Policy (POLA) (Article 14-23)
 - > POLA is a fundamental framework regarding the harmonization of management, development and conservation of water resources including surface water and groundwater
 - Objectives, management framework, current river conditions and management strategy of water resources shall be included.
 - POLA shall be discussed and formulated by the TKPSDA WS and approved by the Minister of Public Works.
 - > POLA is a 20-year plan and shall be reviewed every 5 years.
- Formulation of Water Resources Management Plan (Rencana) (Article 35-39)
 - > Rencana shall be prepared as a detail plan based on POLA.
 - Rencana shall be discussed and formulated by the TKPSDA WS and approved by the Minister of Public Works.
 - Rencana is a 20-year plan and shall be reviewed every 5 years by public consultations.
- Formulation of Water Resources Management Program (Article 40-41)
 - Within 5 years after the formulation of Rencana, Program shall be formulated by the related implementation agencies based on the results of feasibility study.
 - Program is a 5-year plan.
 - Formulation of Water Resources Management Action Plan (Article 40-41)
 - > Action Plan shall be formulated by the related implementation agencies for the implementation of the Program.
 - Action Plan shall be a detail plan including development and O&M of water resources infrastructure.
 - Action Plan is a 1-year plan.

3) Minister of Public Works Regulation No. 4/PRT/M/2008 on Guideline for Establishment of Water Resources Council

Minister of Public Works Regulation No. 4/PRT/M/2008 on the Guideline for Establishment of Water Resources Council in the Level of Province, Regency/City and River Basin is a guideline for the establishment of water resources council in the provincial, regency and city levels and the TKPSDA WS in accordance with the Law No. 7/2004. The relations between the Council and the TKPSDA WS are described in Figure 3.4-1.



Figure 3.4-1 Relation of Water Resources Council and TKPSDA WS

TKPSDA WS in Solo river basin, Brantas river basin, 6 river basins and Ciliwung-Cisadane in Jakarta metropolitan area were established as TKPSDA in inter-provincial river basin. As a coordination institution, TKPSDA WS has the following functions.

- To achieve the inter-regional, inter-sectoral and inter-stakeholder cooperation for the implementation of integrated water resources management
- To coordinate the inter-regional, inter-sectoral and inter-stakeholder interests and concerns for the water resources management
- To monitor and evaluate the implementation of water resources management

For the operation of the TKPSDA WS, the head of Provincial Regional Development Planning Agency and the head of Provincial Public Works Agency will be appointed as chairman and vice chairman respectively. Moreover, as sub-organization of the TKPSDA WS, the commissions will be established. All the members are required to belong to one commission; however, one member organization can belong to only one commission. The members of the TKPSDA WS shall consist of equal number of governmental and non-governmental organizations. The selection criteria of membership are shown below.

- Government Member:
 - Representative of central, provincial, regency and city governments from the technical organization for water resources
 - Maximum 5 representative organizations shall be selected from the provincial government organizations for water resources management, and maximum of 5 officials will be nominated from one organization.
 - In case of the absence of provincial water resources council, the representative shall be selected from the water resources committee.
 - In case of the absence of water resources committee, the representative shall be selected from the organization for regional development, water resources management, agriculture, environment and/or forestry.
 - ➤ The member of regency and city governments shall be determined by the secretariat of the TKPSDA WS by considering the member of provincial water resources council.
- Non-Government Member:
 - > The non-government members shall be selected from the following organizations:
 - Traditional community organization
 - Agricultural water user organization
 - Water supply organization
 - Industrial water user organization

- Fishery organization
- Water resources conservation organization
- Hydro-power organization
- Transportation organization
- Tourism and lecture organization
- Mining organization
- Water-related disaster management organization
- > The selection procedures shall be fair and transparent.

4) TKPSDA WS 6Ci

Regarding the six (6) river basins in JABODETABEK area, TKPSDA WS 6Ci was set up based on the Minister of Public Works Regulation No. 594/KPTS/M/2010 on Establishment of Coordination Team of Water Resources and River Basin Management in Cidanau-Ciujung-Cidurian-Cisadane-Ciliwung-Citarum River Basins dated 16 February 2010 for the coordination among the organizations related to river basin management in the basins. The members of the TKPSDA WS 6Ci are shown in Table 3.4-2.

	Member	No. of Member
Central	- BBWS Ciujung-Cidanau-Cidurian	1
Government	- BBWS Ciliwung-Cisadane	1
	- BBWS Citarum	1
Provincial	- DKI JKT: BAPPEDA, Public Works Agency, Maritime and Agriculture Agency,	5
Government	 West Java: BAPPEDA, Water Resources Management Agency, Water Resources Utilization Office in Ciliwung-Cisadane River Basin, Environmental Management 	7
	Agency, Agriculture Agency, Forestry Agency, Jasa Tirta II (state-owned company)	
	- Banten	5
Regency	- Bogor: Regional Secretary	1
Government	- Lebak, Tangerang, Serang, Pandeglang, Bandung, West Bandung, Indramayu, Subang, Purwakarta, Bekasi, Cianjur	12
City Government	- North/South/Central/East/West Jakarta: Secretary	5
	- Bogor: Human Settlement and Spatial Planning Agency	1
	- Depok: Highway and Water Resources Agency	1
	- Cilegon, Serang, Bekasi, Tangerang, South Tangerang, Bandung, Cimahi	7
Non-Government		49
	Total	96

Table 3.4-2Membership of TKPSDA WS 6Ci

The Minister Regulation stipulates the followings.

- TKPSDA WS 6Ci is established under the responsibility and authority of the Minister
- The chairman and vice chairman shall be rotated annually among the following members:

year	Chairman	Vice Chairman
1 st year	Head of BAPPEDA DKI JKT	Head of Public Works Agency DKI JKT
2 nd year	Head of BAPPEDA West Java Province	Head of Water Resources Management Agency West Java province
3 rd year	Head of BAPPEDA Banten Province	Head of Water Resources and Settlement Agency, Banten Province

• The main secretariat is BBWS Ciliwung-Cisadane, and the supporting secretariats are BBWS Ciujung-Cidanau-Cidurian and BBWS Citarum.

- The main objectives of the TKPSDA WS 6Ci are as follows.
 - To discuss on the formulation and implementation of water resources management plan and project in 6 river basins
 - To discuss on the water allocation in 6 river basins
 - > To discuss on the integrated management mechanism of hydrological data in 6 river basins
 - > To utilize the existing resources (human, finance, institution) in 6 river basins
 - > To recommend to the Minister on the water resources management in 6 river basins



The structure of TKPSDA WS 6Ci was determined including the commissions as shown in Figure 3.4-2 below.

Figure 3.4-2 Structure of TKPSDA WS 6Ci

5) Examination for Establishment of Comprehensive Flood Management Committee for Ciliwung River Basin

TKPSDA WS 6Ci set up the Secretariat and held the first meeting in September 2011. In the meeting, the members agreed to establish the above commissions and those Commissions would start to conduct any activities in their own field.

On the other hand, the following issues were identified on the operation of TKPSDA WS 6Ci by the discussions among the related organizations and working group meetings in the Project.

- According to the Minister of Public Works Regulation No. 594/KPTS/M/2010, each member shall participate in one commission, but it can belong to only one commission. Thus, organizations such as spatial planning and water resources management organizations which are related to all the commissions cannot participate in the discussion of other commission.
- TKPSDA WS 6Ci deals with 6 river basins. However, since the commission is composed based on the water related sector (water resources conservation, water resources utilization and water-related disaster control), it is difficult to discuss and coordinate the issues based on the river basin.
- The secretariat of TKPSDA WS 6Ci does not have any structure for the technical aspects.
- The water resources management policy (POLA) was formulated. However, the water resources management plan (Rencana), program, and action plan have not been prepared. Moreover, since POLA is a policy for the water resources management, the coordination in the program and project levels has not been achieved.

TKPSDA WS 6Ci covers 6 river basins mainly because of the specialty for DKI Jakarta regarding the water transmission among the basins. However, even though flood management measures are required based on the unit of the basin, the structure of TKPSDA WS 6Ci is not suitable to formulate the flood management plan in the river basin and to implement the inter-organizational coordination. Therefore, by establishing the Comprehensive Flood Management Committee for Ciliwung River Basin (CFMC) in JCFM Project, it can be expected to provide the opportunity to discuss on the CFM measures among the related organizations, to clarify the role allocation among the organizations for the implementation of CMF measures by approving and authorizing the CFMP and CFMAP in the CFMC, and to promote

the coordination of runoff control measures consistent with spatial plan. Furthermore, the experiences and know-how on the planning and coordination conducted by the CFMC might be shared with the TKPSDA WS Ciliwung-Cisadane. The main functions and structure of the CFMC are shown below.

- Coordination of relevant agencies for accelerating flood management measures in the Ciliwung river and for integrating basin management measures including zoning rules, land use regulations, land development regulations, run-off control, and other necessary measures in the Ciliwung river basin,
- Formulation, authorization and review of the CFMP/CFMAP and determination of the role allocation of each relevant institution for implementation of the CFMP/CFMAP,
- Discussion on the formulation and enforcement of legal basis for the implementation of the CFMP/CFMAP,
- Discussion and Establishment of monitoring and feedback mechanisms in the implementation of the CFMP/CFMAP, and,
- Discussion for evaluation, implementation and realization of the CFMP/CFMAP.



Figure 3.4-3 Strucutre of CFMC

- Chairman: head of regional development planning agency (BAPPEDA), DKI Jakarta
- Executive Chairman: head of public works agency, DKI Jakarta
- Secretariat: head of BBWS Ciliwung-Cisadane
- Member: central and local government agencies related to flood control in the Ciliwung River Basin which are designated as member of the TKPSDA WS 6Ci
- Working Unit: counterpart agencies of the JCFM Project

6) Establishment of TKPSDA WS Ciliwung-Cisadane

In accordance with the issuance of Presidential Regulation No. 12/2012, the TKPSDA WS 6Ci was divided into three (3) TKPSDAs. After that, in accordance with the issuance of Minister of Public Works Regulation No. 242/KPTS/M/2013 on Establishment of Coordination Team of Water Resources and River Basin Management in Ciliwung-Cisadane River Basin, TKPSDA WS Ciliwung-Cisadane was established in June, 2013. The members and tentative structure of TKPSDA WS Ciliwung-Cisadane are as follows.

	Member	No. of Member
Central	- BBWS Ciliwung-Cisadane	1
Government		
Provincial	- DKI JKT: BAPPEDA, Public Works Agency, Maritime and Agriculture Agency,	5
Government	Environmental Management Agency, Spatial Planning Agency	
	- West Java: BAPPEDA, Water Resources Management Agency, Forestry Agency, Jasa Tirta II (state-owned company)	4
	- Banten	2

 Table 3.4-3
 Member of TKPSDA WS Ciliwung-Cisadane





Figure 3.4-4 Structure of TKPSDA WS Ciliwung-Cisadane (Draft)

The internal regulation on the operation and meeting procedures has been drafted by the secretariat of the TKPSDA WS Ciliwung-Cisadane. The main subjects of this internal regulation are mentioned as follows:

Chapter 1: General Provisions (Article 1)

- Chapter 2: Commission of TKPSDA WS Ciliwung-Cisadane (Article 2 to 3)
 - All members of TKPSDA WS Ciliwung-Cisadane shall belong to any commission excluding chairperson and vice chairperson of the TKPSDA WS Ciliwung-Cisadane.
 - TKPSDA WS Ciliwung-Cisadane consists of 58 members and the following commissions are established.
 - Commission for Water Resources Conservation
 - Commission for Water Resources Utilization
 - Commission for Water-related Disaster Control
 - Commission for Community Empowerment
 - Commission for Water-related Disaster Control has the following tasks.
 - To coordinate with POLA and Rencana of Ciliwung-Cisadane river basin and to provide recommendation for the mitigation of flood disaster through the formulation of comprehensive flood control plan
 - To finalize the recommendation report by the commission based on the acceptance of assembly meeting of the TKPSDA WS Ciliwung-Cisadane
 - To promote the flood control measures with community participation
 - To accelerate the implementation of flood control measures by utilizing the water

- resources information system
- Chapter 3: Meeting Schedule (Article 4 to 7)
- Meeting shall be held at least four (4) times a year.
- Based on necessity, resource person can be invited.
- The chairperson of the TKPSDA WS Ciliwung-Cisadane is rotated by Head of BAPPEDA in DKI Jakarta, West Java and Banten provinces annually.
- The vice chairperson of the TKPSDA WS Ciliwung-Cisadane is rotated by Head of Public Works Agency of DKI Jakarta, Head of Water Resources Management Agency of West Java province and Head of Water Resources and Settlement Agency of Banten province annually.
- The meeting materials shall be prepared by the secretariat of the TKPSDA WS Ciliwung-Cisadane.
- Chapter 4: Type of Meeting (Article 8 to 13)
 - The following types of meeting can be held.
 - Assembly meeting
 - Ad hoc meeting
 - Leader meeting
 - Commission leader meeting
 - Joint commission meeting
 - Working committee meeting
 - Others
- Chapter 5: Meeting Procedure (Article 14 to 17)
 - In case of the absence of member, the representative can be appointed with power of attorney.
 - In case of the absence of chairperson, vice chairperson will be representative of chairperson.
 - The secretariat shall assist the chairperson for the smooth process of the meeting.
- Chapter 6: Discussion Procedure (Article 18 to 26)
 - After introducing the name and affiliate institution, the participant is allowed to share his/her opinion.
 - If the chairperson judges the inappropriateness of the participants' remarks, he/she can terminate it and request to leave the meeting.
- Chapter 7: Meeting Records (Article 27 to 30)
 - In the assembly meeting and ad hoc meeting, the secretariat is required to prepare the minutes of meeting and it shall be signed by chairperson or head of secretariat.
- The minutes of meeting shall be distributed to all the members.
- Chapter 8: Invitation of Resource Person (Article 31 to 32)
 - Resource person can participate in the meeting with the invitation from the chairperson, but does not have voting right.
 - Observer can participate in the meeting without the invitation, but does not have voting right.
- Chapter 9: Consensus Building (Article 33 to 43)
 - The decision making shall be based on the consensus among the members in principle.
 - In case consensus cannot be achieved, the decision will be made by voting.
- Chapter 10: Final Provision (Article 44)

In Joint Coordination Committee (JCC) and CFMC meeting held on 19 September, 2013, the CFMP/CFMAP was approved by the members of JCC and CFMC, and it was agreed that the Rencana and future POLA of water resources management for Ciliwung-Cisadane will include the CFMP/CFMAP. Since the CFMP/CFMAP is utilized for the TKPSDA WS Ciliwung-Cisadane which is legally established, it is ensured that the inter-organizational and inter-regional coordination and collaboration for the implementation of the CFM measuers will be sustainably carried out.

(2) Preparation of Operational Guideline for Discussion Body (CFMC) in Project Area

The stipulation for the establishment of CFMC was formulated and approved by the first JCC meeting held in November 2011.

In consistent with the Minister Regulation No. 594/KPTS/M/2010, the stipulation was prepared through the discussion with implementation agencies and secretariat of the TKPSDA WS 6Ci. The stipulation is attached in the CFMP.

(3) Organizing the CFMC in Project Area

The records of the CFMC meeting are shown in Table 3.4-4.

No.	Schedule	Agenda
1.	22 November, 2011	• Discussion and approval of stipulation for establishment of CFMC
		• Outline of the CFM measures
2.	18 March, 2012	• Explanation on CFM measures
		 Alternatives of structural measures for flood control
3.	19 September, 2013	• Explanation of the CFMP/CFMAP
	(joint meeting with JCC)	• Discussion for sustainable implementation of CFM measures in Ciliwung
		River Basin

Table 3.4-4Schedule and Agenda of CFMC Meeting

For the 3 CFMC meetings shown in Table 3.4-4, the following approaches were taken to lead the active discussion among the participants within the limited time.

- Approach for Organizing the CFMC Meeting
 - The meeting agenda and important subjects were explained to the key persons before the meeting is held, depending on the agenda of the meeting. By doing so, the discussion among the participants became active.
 - In principle, the invitation letter for the CFMC meeting might be issued by the chairman. However, since the members consist of central and local government agencies and various organizations not only for flood control but also runoff control, land use regulation and others participated, the Director General of Water Resources as Executing Agency of JCFM Project issued the invitation letter to lead the participation from those organizations.
- Approach for Operating the CFMC Meeting
 - At the beginning of the meeting, the key persons explained the importance and effectiveness of the CFM measures. Moreover, the representatives of the local governments explained the current activities and issues on the implementation of CFM approaches. Through those explanations, the participants would easily understand the key subjects of the meeting and express their opinions.
 - The explanation from JCFM Project team was minimized, and the time for discussion among the participants was secured as much as possible.
 - In order to lead the opinions from the participants, ex-officers of the Directorate General of Water Resources played a role as facilitator of JCFM Project.
 - FTCP also joined in the meeting as working unit members for the technology transfer.

3.5 Evaluation of Technology Transfer

3.5.1 Basic Policy for Technology Transfer

In accordance with the PDM and project implementation policies, the following activities were conducted for the technology transfer to the FTCP.

• Technology Transfer by Working Group Meeting: FTCP divided to 4 working groups (CFMP, spatial planning, runoff control, and coordination and monitoring), and technical skills and

knowledge on preparation of the CFMP/CFMAP were transferred (see Figure 3.5-1). In addition, the site surveys on runoff control measures, Situ conditions, and construction of pilot project (rainwater storage and infiltration facility) were carried out. Through those site surveys, the knowledge learned through the WG meeting was confimed at site, and FTCP was enabled to identify the issues and concerns for the implementation of the runoff control measures.

- Technology Transfer by Workshop: through the preparation and explanation in the workshop, FTCP would learn about the CFM measures (see in Table 3.5-4).
- Technology Transfer by Counterpart Training in Japan: through the counterpart training in Japan, the participants learned the policy, legal framework and projects of CFM measures in Japan. In addition, 2 types of trainings were conducted: counterpart training for FTCP and that for associate executives (see in 3.5.4).

3.5.2 Working Group Meeting Record

The technology transfer activities were conducted in 4 working groups as follows:

- 1^{st} Year:
 - Technology transfer activities were carried out to each WG.
 - Those meetings aimed to confirm and share the current issues in Ciliwung River Basin in each WG and to obtain the basic knowledge on the related technology. Moreover, for the preparation of the CFMP/CFMAP, the basic existing data were collected and analyzed.
- 1^{st} Year to 2^{nd} Year:
 - Working group meeting was held jointly with other working groups.
 - By sharing the issues and activities in the multi-sector in joint WG meeting, FTCP enabled to understand the necessity of the CFM measures in coordination with other organizations. Moreover, through the site surveying and monitoring activities during the construction of pilot project (rainwater storage and infiltration facility), the efficiency of the facility was recognized.
- 3^{rd} Year:
 - Working group meeting was held jointly with all working groups to discuss on the CFMP/CFMAP.
 - Among all WG, the CFMP/CFMAP including the measures for flood control, runoff control, land use regulation and disaster mitigation was formulated. Moreover, the guidelines and manuals related to the CFM were prepared.



Figure 3.5-1 Policy of Technology Transfer by Working Group Meeting

The composition of working group in 3^{rd} year is shown in Table 3.5-1.

Table 3.5-1	Composition	of Working	Group	(3rd	Year)
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WG	FTCP
CFMP WG	• Dwi Indriastuti (Staff, Dir. of River and Coast, DGWR, PU)
	• Dina Noviadriana (Section Head, BBWS Ciliwung-Cisadane, DGWR, PU)
	• Faris Setiawan (Staff, BBWS Ciliwung-Cisadane, DGWR, PU)
	• Ferdinanto (Staff, BBWS Ciliwung-Cisadane, DGWR, PU)
	• Geri Ramdhani (Staff, BBWS Ciliwung-Cisadane, DGWR, PU)
	• Pungky Yuliansyah (Staff, BBWS Ciliwung-Cisadane, DGWR, PU)
	• Sarah Dewi Yani (Staff, Water Resources Maintenance Divison, DPU, DKI JKT)
	• Vega Fitria Mutiara Sari (Staff, Water Resources Management Division, DPU, DKI JKT)
	• Sumaji (Setion Head, Technical Engineering Division, Water Resources Management Agency, West
	Java Province)
	• Agus Rejeki Nusantara Nainggolan (Section Head, Management & Development Division, Highway
	and Irrigation Agency, Bogor Regency)
	• Bahtiar Ardiansyah (Staff, Water Resources Division, Highways and Water Resources Agency, Depok
	City)
Spatial Planning WG	• Alrikagusti Wardi Putri (Staff, Dir. of Urban Planning & Development, DGSP, PU)
	• Pilas Agita (Staff, Dir. of Urban Planning & Development, DGSP, PU)
	• Dewi Andriana (Section Head, Dir. of Building & Neighborhood Development, DGHS, PU)
	• Siti Harfiah (Staff, Water and Green Management Planning Division, Spatial Planning Agency, DKI
	• Tautan Gurnasa (Staff, Housing and Settlement Agency, West Java Province)
D 000 1000	• Ariet Panju (Staff, Measurement and Survey Divison, Building and Settlement Agency, Depok City)
Runoff Control WG	• Kalmah (Section Head, Dir. of Programs, DGWR, PU)
	• Hendra Utama (Staff, Dir. of River and Coast, DGWR, PU)
	• Nila Alietia Fadly (Staff, Dir. of River and Coast, DGWR, PU)
	• Nova Veronica (Staff, Dir. of River and Coast, DGWR, PU)
	• Juniferanne Brahmana (Safft, Dir. of BPSDA, DGWR, PU)
	• Pandu Yuri Pratama (Satti, Dir. of BPSDA, DGWR, PU)
	• Dina Noviadriana (Section Head., BBWS Cliwung-Cisadane, DGWR, PU)
	• Pilas Agita (Staff, Dir. of Urban Planning & Development, DGSP, PU)
	• Hotman Frian Pandiangan (Staff, Dir. of Urban Planning & Developmen, DGHS, PU)
	• Imas Budiasin (Staff, Water Resources Management Division, DPU, DKI JKI)
	• Atis fardiana (Head of Building Management Division, Building and Settlement Agency, Bogor
	Kegency)

Coordination and	• Fahmi Zamroni (Staff, Dir. of River and Coast, DGWR, PU)
Monitoring WG	• Inneke Dwiwahyuni (Staff, Dir. of River and Coast, DGWR, PU)
_	• Nila Aliefia Fadly (Staff, Dir. of River and Coast, DGWR, PU)
	• M. Rian Wahyu Kesumo (Staff, BBWS Ciliwung-Cisadane, DGWR, PU)
	• Reza Riska Pratama (Assistant, Dir. of Human Settlement Sanitation, DGHS, PU)
	• Listiani, Msi (Head of Sub-division Settlement, Facility & Infrastructure, DCA JABODETABEKJUR)
	• Feirully Irzal (Staff, Infrastructure and Environment Planning Division, BAPPEDA, DKI JKT)
	• Vega Fitria Mutiara Sari (Staff, Water Resources Management Division, DPU, DKI JKT)
	• Sumaji (Setion Head, Technical Engineering Division, Water Resources Management Agency, West
	Java Province)
	• Andi Siswandi (Section Head,, Water Resources Division, Highways and Water Resources Agency,
	Bogor City)
	• Aas Kasmanah (Staff, Physical and Infrastructure Planning Division, BAPPEDA, City Depok)

PU: Ministry of Public Works, DGWR: Directorate General of Water Resources, DGSP: Directorate General of Spatial Planning, DGHS: Directorate General of Human Settlements, BPSDA: Directorate of Water Resources Management, DPU: Public Works Agency

The number and records of working group meetings from 1st to 3rd year are shown in Table 3.5-2 and Table 3.5-3 respectively.

The working group meetings were held individually in the 1^{st} year, jointly with other groups in the 2^{nd} year, and for the whole groups in the 3^{rd} year.

Table 3.5-2 Number of Time of Working Group Meeting	Table 3.5-2	Number of Time of Working Group Meeting
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WG	1 st Year	2 nd Year	3 rd Year	Total
CFMP WG	19	11		35
Spatial Planning WG	18	10	5	33
Runoff Control WG	17	11	5	33
Coordination and Monitoring WG	17	10		32
Total	71	42	5	133

No.	Schedule	Activity
1 st Year		
1.	13 January, 2011	Spatial Planning WG Meeting
2.	22 February, 2011	CFMP WG Meeting
3.	22 February, 2011	Coordination & Monitoring WG Meeting
4.	26 May, 2011	CFMP WG Meeting
5.	30 May, 2011	Spatial Planning WG Meeting
6.	31 May, 2011	Runoff Control WG Meeting
7.	1 June, 2011	CFMP WG Meeting
8.	6 June, 2011	Runoff Control WG Meeting
9.	7 June, 2011	Spatial Planning WG Meeting
10.	8 June, 2011	CFMP WG Meeting
11.	10 June, 2011	Coordination & Monitoring WG Meeting
12.	14 June, 2011	Spatial Planning WG Meeting
13.	15 June, 2011	CFMP WG Meeting
14.	16 June, 2011	Runoff Control WG Meeting
15.	17 June, 2011	Coordination & Monitoring WG Meeting
16.	20 June, 2011	Spatial Planning WG Meeting
17.	22 June, 2011	CFMP WG Meeting
18.	23 June, 2011	Runoff Control WG Meeting
19.	24 June, 2011	Coordination & Monitoring WG Meeting
20.	2 August, 2011	CFMP/Runoff Control WG Meeting
21.	4 August, 2011	Coordination & Monitoring/Spatial Planning WG Meeting
22.	16 August, 2011	CFMP/Runoff Control WG Meeting
23.	18 August, 2011	Coordination & Monitoring/Spatial Planning WG Meeting
24.	14 September, 2011	CFMP/Runoff Control WG Meeting
25.	15 September, 2011	Coordination & Monitoring/Spatial Planning WG Meeting
26.	27 September, 2011	CFMP/Runoff Control WG Meeting
27.	29 September, 2011	Coordination & Monitoring/Spatial Planning WG Meeting

No.	Schedule	Activity
28.	11 October, 2011	Coordination & Monitoring/CFMP WG Meeting
29.	14 October, 2011	Spatial Planning/Runoff Control WG Meeting
30.	17 October, 2011	Coordination & Monitoring/CFMP WG Meeting
31.	21 October, 2011	Spatial Planning/Runoff Control WG Meeting
32.	27 October, 2011	Coordination & Monitoring/CFMP WG Meeting
33.	28 October, 2011	Spatial Planning/Runoff Control WG Meeting
34.	3 November, 2011	Coordination & Monitoring/CFMP WG Meeting
35.	4 November, 2011	Spatial Planning/Runoff Control WG Meeting
36.	10 November, 2011	CFMP WG Meeting
37.	11 November, 2011	Spatial Planning/Runoff Control WG Meeting
38.	17 November, 2011	CFMP WG Meeting
39.	18 November, 2011	Spatial Planning/Runoff Control WG Meeting
40.	26 Januarny, 2012	Counterpart Meeting
41.	2 February, 2012	CFMP/Runoff Control WG Meeting
42.	7 February, 2012	Coordination & Monitoring/Spatial Planning WG Meeting
43.	14 February, 2012	CFMP/Runoff Control WG Meeting
44.	21 February, 2012	Coordination & Monitoring/Spatial Planning WG Meeting
2 nd Year		
1.	21 June, 2012	Counterpart Meeting
2.	5 July, 2012	Coordination & Monitoring/Spatial Planning WG Meeting
3.	6 July, 2012	CFMP/Runoff Control WG Meeting
4.	17 July, 2012	Site Survey Training (Situ)
5.	17 September, 2012	CFMP/Coordination & Monitoring WG Meeting
6.	18 September, 2012	Spatial Planning/Runoff Control WG Meeting
7.	3 October, 2012	CFMP/Coordination & Monitoring WG Meeting
8.	4 October, 2012	Spatial Planning/Runoff Control WG Meeting
9.	10 October, 2012	CFMP/Coordination & Monitoring WG Meeting
10.	11 October, 2012	Spatial Planning/Runoff Control WG Meeting
11.	19 October, 2012	Counterpart Meeting (Joint WG Meeting)
12.	25 October, 2012	Counterpart Meeting (Joint WG Meeting)
13.	7 November, 2012	Site Survey Pilot Project (Infiltration Facility) at BBWS Ciliwung-Cisadane
14.	29 January, 2013	Counterpart Meeting (Joint WG Meeting)
15.	7 February, 2013	Site Survey
3rd Year		
1.	21 May, 2013	Counterpart Meeting (Joint WG Meeting)
2.	12 June, 2013	Counterpart Meeting (Joint WG Meeting)
3.	2 July, 2013	Counterpart Meeting (Joint WG Meeting)
4.	25 July, 2013	Counterpart Meeting (Joint WG Meeting)
5.	22 August, 2013	Core-Working Team Meeting

3.5.3 Record of Workshop

A series of workshops were held in the project period in order to transfer the technology to the C/P. The principles of the workshops were as follows.

- The workshops were held in line with the schedule of activities in JCFM Project, and the FTCP announced the outputs.
- Technology was transferred to the other C/P through technical presentations and discussions.
- Materials to be announced in workshops were compiled into pamphlets and distributed to the C/P.

The records of the workshop are summarized in Table 3.5-4.

Schedule/Location	Objective	Output
14 December, 2010 (jointly with JCC) Location: Jakarta	 Explanation on JCFM Project Discussion on coordination for flood control measures in DKI Jakarta Information sharing with other projects conducted by other donors 	 Information sharing and consensus on coordination for further project activities with other projects Confirmation of target and role among related projects for flood control

Table 3.5-4Record of Workshop

Schedule/Location	Objective	Output
4 July, 2011 Location: Jakarta	 Confirmation of understandings of FTCP on JCFM Project activities Information sharing and exchanging opinions with organizations related to JCFM Project 	 Confirmation of technology transfer conditions among C/P Confirmation of further activities in JCFM Project
31 October - 1 November, 2012 Location: Bogor	 Site survey report on rainwater storage and infiltration facility Explanation on progress of working group activities by FTCP 	• Acceleration of understandings on the CFM
3 - 4 September, 2013 Location: Bogor	 Recognition of the necessity of inter-orgnizational and inter-regional coordination for implementation of CFM in Ciliwung River Basin Discussion on role allocation for implementation of CFMP 	• Role allocation matrix (draft)

3.5.4 Record of Counterpart Training in Japan

Two types of training were conducted by the JCFM Project:

- Counterpart Training for FTCP (once a year, 3 times in total)
- Counterpart Training for Associate Executives (once a year, 3 times in total)

Since most of the FTCP are officers with limited experiences, the programs were formulated to provide opportunity to learn abou the policy and legal framework as well as project experiences of the CFM in Japan, leading to the understandings of basic knowledge in the CFM. Thus, the program for the FTCP mainly consisted of site visits and lectures.

On the other hand, training for the associate executives was mainly conducted through the exchange of opinions with Japanese government officers on the policy and institutional arrangement for the CFM in Japan. Moreover, they visited the project sites with advanced runoff control technology including underground retarding pond and dry dam. Through those programs, they are expected to accelerate the implementation of the CFM in Indonesia.

(1) Counterpart Training in Japan (1st Year)

1) Training for FTCP

Schedule			15 October – 1 November, 2011			
Location			Tokyo, Osaka			
Participant						
No.	Name		Position/Organization	Position/Organization		
1.	Mr. Suma	aji	Head of Survey Section, Water Resources Management Age	Head of Survey Section, Water Resources Management Agency, West Java Province		
2.	Ms. Dina	Noviadı	riana Chief of Water Resources Conservation Project, BBWS Cil	Chief of Water Resources Conservation Project, BBWS Ciliwung-Cisadane, DGWR, PU		
3.	Ms. Pilas	Agita	Technical Staff, Directorate of Spatial Planning Region II, I	Technical Staff, Directorate of Spatial Planning Region II, DGSP, PU		
4.	Ms. Nova	a Veronic	ca Technical Staff, Directorate of River and Coast, DGWR, PU	J		
5.	Mr. Atis '	Tardiana	Chief of Area Development, Building and Settlement Agen	cy, Bogor Regency		
6.	Ms. Kaln	na	Head of Section, Directorate of Planning and Programming	Head of Section, Directorate of Planning and Programming, DGWR, PU		
Detail	Schedule					
I	Date	Day	Place/Subject	Organization in Charge		
201	1/10/15	Sat	Leaving Indonesia			
201	1/10/16	Sun	Arriving Japan			
201	1/10/17	/10/17 Mon	JICA Tokyo International Center / Orientation	TIC		
201	1/10/17		YEC / Briefing	YEC		
201	1/10/10	-	YEC / Lecture about CFM	VEG		
201	1/10/18	Tue	Myosyoji Regulating Pond	YEC		
			Kanda River Underground Reservoir			
201	1/10/19	Wed	Meguro River	Tokyo Metropolitan Gov.		
201	1 /1 0 /0 0		Tsurumi Miultipurpose Retarding Basin	Keihin River Office, MLIT		
201	1/10/20	Thu	Kawawa Retarding Basin	Kanagawa Prefecture Gov.		
				Arakawa-Jyouryu River		
201	1/10/21	Fri	Arakawa 1st Reservoir	Office, MLIT		
			Koshigaya Lake Town	Urban Renaissance Agency		
201	1/10/22	Sat	Holiday			
201	1/10/23	Sun	Move (from Tokyo to Osaka)			
201	1/10/24	Mon	Neyagawa River/ Hanazono Miultipurpose Detention Pond,	Osalva Profestura		
201	1/10/24	MOI	Mitsushima Detention Pond, South Underground River	Osaka Plelectule		
201	1/10/25	T	Daito Storage Facility between buildings	Urban Renaissance Agency		
201	1/10/23	Tue	Reservoir Ara Pond			
201	1/10/06	337 1	Move (from Osaka to Tokyo)			
201	1/10/26	wea	Summary of Site Visit	TIC		
201	1 /1 0 /07		YEC/ Planning of Storage and Infiltration Facilities	YEC/ARSIT		
201	1/10/27	Thu	Site Inspection of Storage Facility using Recent Technology	Sekisui Chemical Co.Ltd		
			YEC/ Workshop: Application of CFM to Indonesia	YEC		
201	1/10/28	Fri				
201	1/10/29	Sat	Holiday / Making Report			
201	1/10/30	Sun	Holiday / Making Report			
201	1/10/31	Mon	Report to JICA/ Appraisal Meeting	TIC		
201	1/11/1	Tue	Leaving Japan / Arriving Indonesia			

Schedule			18 - 2	25 February, 2012			
Location			Tokyo	o, Kanagawa			
Partic	ipant						
No.		Name		Position/Organization			
1.	Ir. Imam	Santoso	Head	of BBWS Ciliwung-Cisadane, DGWR, PU			
2.	Dr. Ir. Su	purapto	Head	Head of Subdit of Technical Planning, Directorate of River and Coast, DGWR, PU			
3.	Ir. Yudi P	ratondo	Head	of Subdit of Region II, Directorate of River and Coas	t, DGWR, PU		
Detail	Schedule						
I	Date	Day		Place/Subject	Organization in Charge		
201	2/2/18	Sat		Leaving Indonesia			
201	2/2/19	Sun	Arriving Japan				
201	2/2/20	м	JICA Tokyo Inte	ernational Center / Orientation	TIC		
201	2/2/20	Mon	YEC / Briefing		YEC		
			Kawawa Retard	ing Basin	Kanagawa Prefecture Gov.		
201	2/2/21	Tue	Tsurumi Miultip Office, MILT	burpose Retarding Basin, Meeting with Keihin River	Keihin River Office, MLIT		
201	2012/2/22 NV 1	Koshigaya Lake	Town	Urban Renaissance Agency			
201		weu	Kanda River Un	derground Reservoir	Tokyo Metropolitan Gov.		
201				Thu	Meeting with A	rakawa downstream River Office, MLIT	Arakawa-Karyu River Office. MLIT
2012/2/23		Inu	Ara river/Sumid river, lowland ri	a river (improvement and management of urban ver)	Tokyo Metropolitan Gov.		
201	2/2/24	Dui:	Courtesy call for	r MILT			
2012/2/24		ГП	Report to JICA/	Appraisal Meeting			
201	2/2/25	Set		Leaving Japan / Arriving Indonesia			
2012/2/25		Sat					

2) Training for Associate Executive

(2) Counterpart Training in Japan (2nd Year)

1) Training for Associate Executive

Sched	lule			1 – 8 September, 2012		
Locat	ion			Tokyo, Kanagawa		
Participant						
No.		Na	me	Position/Organization		
1.	Dr. Pu	rba Roł	pert	Assistant Deputy Minister for Water Resources Infrast	ructure, Deputy Minister for	
	Manga	apul Sia	nipar	Infrastructure and Region Development, Coordinating Ministry for Economic Affairs		
2.	Mr. Ag	gung Dj	juhartono	Head of subdir. of Region III, Directorate of River and Coast, DGWR, PU		
	Wiros	useno				
3.	Ms. Sa	arwo Ha	andayani	Head of Regional Development Planning Agency (BAPPEI	DA), DKI Jakarta	
4.	Mr. Er	y Basw	oro	Head of Public Works Agency, DKI Jakarta		
5.	Mr.Nu	ırsyam l	Daoed	Head of City Infrastructure and Environment Division, Re	gional Development Planning	
				Agency (BAPPEDA), DKI Jakarta		
6.	Mr. Fa	ıkrurraz	i	Head of Water Resources Management Division, Public Wo	orks Agency, DKI Jakarta	
Detail	Schedu	ıle				
Da	Date Day			Place/Subject	Organization in Charge	
2012	2/9/1	Sat		Leaving Indonesia		
2012	2/9/2	Sun		Arriving Japan		
201			Briefing/ Ori	entation	TIC	
2012	2/9/3	Mon	Global 4 Dim	ensions Water Cycle Management System	RFC	
2012	2/9/4	Tue	Tokyo Water of Kandagaw	Related Infrastructure/ Edogawabashi Diversion Channel a	Tokyo Metropolitan Gov.	
			Sumida river	super levee/ Integrated Watergate management Center	Tokyo Metropolitan Gov.	
2017	2/0/5	Wed	Ariake Water	Reclamation Center	Tokyo Metropolitan Gov.	
2012/9/3		weu	Tokyo Metro	politan Government Landfill Site	Tokyo Metropolitan Gov.	
			Mini Seminar	r about Sewage	MILT	
2012	2/9/6	Thu	Courtesy call	to MILT	MILT	
			Courtesy call	to Tokyo Metropolitan Government	Tokyo Metropolitan Gov.	
2012	2/9/7	Fri	Report to JIC	A/ Appraisal Meeting		
2012	2/9/8	Sat		Leaving Japan / Arriving Indonesia		

2)	Training for FTCP					
Schedule				22 February – 8 March, 2013		
Location				Tokyo, Osaka, Fukuoka		
Particit	Participant					
No.	Name			Position/Organization		
1.	Mr.	Ferdinanto	Pasaribu	Staff of BBWS Ciliwung-Cisadane DGWR PU		
2.	Mr.	Pandu Yuri	i Pratama	Staff of Directorate of Water Resources Management, DGWR, PU		
3.	Mr.	Hotman Fr	ian	Staff of Directorate of Human Settlement Sanitation, DGH	IS PU	
	Panc	liangan		······································		
4.	Ms.	Listiani Da	ana	Head of Sub-division of Settlement, Facility	and Infrastructure, DCA	
	Soed	lharna		JABODERABEKJUR		
5.	Mr. /	Andi Siswa	andi	Section Head of Water Resources Region II, Highway	and Water Resources Agency,	
				Bogor City		
6.	Ms.	Dwi Indria	astuti	Staff of Directorate of River and Coastal, DGWR, PU		
7.	Ms.	Siti Harfia	h Kartika	Staff of Spatial Planning Agency, DKI Jakarta		
	Sari					
Detail S	Sche	dule				
Date	e	Day		Place/Subject	Organization in Charge	
2013/2	2/20	Wed		Leaving Indonesia		
2013/2	2/21	Thu		Arriving Japan		
2013/2	122	Eri	Briefing		TIC	
2013/2	2013/2/22 Fri Program Or		Program Or	ientation and Lecture about CFM	YEC	
2013/2	2/23	Sat	Holiday			
2013/2	2/24	Sun		Move (from Tokyo to Osaka)		
			Neyagawa l	River/ North Underground River,		
2013/2	/25	Mon	1. Hanazon	o Multi-Purpose Flood Control Basin, Matsubara-Minami	Osaka Prefecture	
2013/2	V25 WIOII	Basin		obulu Protocturo		
			2. South Un	derground River		
2013/2	/26	Tue	Reservoir A	Ira Pond	YEC	
2012/2	107	*** 1	Y amato rive	er super levee		
2013/2	/27	Wed		Move (from Osaka to Fukuoka)		
2013/2	/28	Thu	Hii river CF	M by partnership with citizen	Kyushu Univ.	
			I a starma sha		Fukuoka Univ.	
2013/3	3/1	Fri	Lecture abo	in Deinfell Storage and Lefiltertien Devility	Kyushu Univ.	
2012/2	2/2	Sat	Kyushu Un	News (from Enhance to Tolyma)		
2013/3	5/2 3/3	Sup	Holiday	Move (IIOIII Fukuoka to Tokyo)		
2013/3	5/5	Sull	Site Visit of	f Storage Facility using Pecent Technology	Sakisui Chamical Co. I td	
2013/3	3/4	Mon	Myosyoji P	agulating Dond	VEC	
			Metropolita	n Area Outer Underground Discharge Channel	Edogawa River Office	
2013/3	3/5	Tue	Furukawa F	Pagulating Reservoir	Tokyo Metropolitan Goy	
			Tsurumi Mi	ultinurnose Retarding Basin		
2013/3	/3/6	Wed	Nissaen Sta	dium (Underground Retarding Rasin)	Keihin River Office, MLIT	
2013/.		wed	Torivomogo	utum (Underground Retarding Basin)	Vokohama City	
			Planning of	Storage and Infiltration Facilities		
2013/3	3/7	Thu	Meeting wi	Surage and minuation Facilities	MIT	
2013/3	3/8	Fri	Report to II	CA/Appraisal Meeting		
2013/3	3/9	Sat	Report to JI	Leaving Japan / Arriving Indonesia		
- 201J/.	511	Sat		Leaving Japan / Annying muunesia		

Training for FTCP

(3) Counterpart Training in Japan (3rd Year)

1) Training for Associate Executive

Schedule			12 – 18 May, 2013		
Location				Tokyo, Shimane	
Participant					
No.	Name		ne	Position/Organization	
1.	Ir. Ima	m Santo	so	Head of BBWS Ciliwung-Cisadane, DGWR, PU	
2.	Mr. Mochammad Majid		ad Majid	Head of Subdit of Region II, Directorate of River and Coast, DGWR, PU	
3.	Mr. Ba	Mr. Bastari		Head of Implementation Division, BBWS Ciliwung-Cisadane, DGWR, PU	
4.	Mr. Ap	Mr. Apriady Mangiwa		Head of Water Resources Section, Coordinating Ministry of	f Economic Affairs
Detail	Schedu	le			
D	ate	Day		Place/Subject	Organization in Charge
2013/	5/12	Sat		Leaving Indonesia	
2013/	5/13	Sun	Arriving Japan		
			Move (from Tokyo to Shimane)		
2013/	5/14	Mon	Masuda-gawa Dam (Dry Dam)		Maduda-gawa Dam Office
				Move (from Shimane to Tokyo)	
2013/5/15		Tue	Disaster Management System in Arakawa		Arakawa-Karyu River Office, MLIT
			Technology	of Dry Dam	Japan Dam Engineering Center
2013/5/16		Wed	Arakawa 1st Reservoir		Arakawa-Jyouryu River Office, MLIT
			Underground retarding basin		Zenfuku-ji intake facility
2013/	5/17	Thu	Jacking Met	hod in Japan	Japan Microtunnelling Association
			Jacking Met	hod for Sewerage System	MLIT
2013/	5/18	Fri	Courtesy cal	l to MLIT	MLIT
			Report to JI	CA	JICA
2013/	5/19	Sat		Leaving Japan / Arriving Indonesia	

2) Training for FTCP

Schedule		17 September – 3 October, 2013
Location		Tokyo, Kanagawa
Participant		
No.	Name	Position/Organization
1.	Mr. Hendra Utama, ST	Technical Staff, Subdit of Technical Planning, Directorate of River and Coast, DGWR,
		PU
2.	Mr. Bayu Aditya Canserio,	Technical Staff, Subdit of Conservation and Sediment Control, Directorate of River and
	ST	Coast, DGWR, PU
3.	Mr. Pungky Yuliansyah	Technical Staff, BBWS Ciliwung-Cisadane, DGWR, PU
	Yunarno, ST	
4.	Ms. Imas Budiasih, ST	Staff, Water Resources Management and Planning Section, Public Works Agency, DKI
		Jakarta
5.	Mr. Arief Panuju, ST	Section Head, Spatial Planning Division, Building and Settlement Agency, Depok City

Detail Schedu	ıle		
Date	Day	Place/Subject	Organization in Charge
2013/9/16	Mon	Leaving Indonesia	
2013/9/17	Tue	Arriving Japan	
2013/9/18	2013/9/18 Wed Briefing		
		Program Orientation	YEC
		Lecture about CFM	
2013/9/19	Thu	Underground retarding basin	Zenfuku-ji intake facility
		CFM facility of Myushoji river	3 rd site office
2013/9/20	013/9/20 Fri Tsurumi Multi-purpose retarding basin		
		Nissan Studium, sport center, etc.	Keihin River Office, MLIT
		Kirigaoka flood control reservoir	
2013/9/21	Sat	Holiday	
2013/9/22	Sun	Holiday	
2013/9/23	Mon	Move (from Tokyo to Osaka)	
2013/9/24	Tue	Flood control effect and O&M of facility for Neyagawa CFM projects	- Osaka prefecture
		Matsubara-Minami basin, Hanazono multi-puropose flood control	government
		reservoir, south underground river	government
2013/9/25	Wed	Yamato river super levee	Yamato river office
		Reservor Ara pond, retarding pond in Jizoin river, Koenji high school	Nara prefecture government
		ground, Iwai river dam	I tara prefectare government
2013/9/26	Thu	Move (from Osaka to Fukuoka)	
2013/9/27	Fri	Hii river CFM by community participation	Kyushu University
		Rainfall storage and infiltration facility in Kyushu university	Kyushu University
		Move (from Fukuoka to Tokyo)	
2013/9/28	Sat	Holiday	
2013/9/29	Sun	Holiday	
2013/9/30	Mon	Planning of rainwater storage and infiltration facility	ARSIT
		Application of CFM to Ciliwung River	YEC
2013/10/1	Tue	Site visit of storage and infiltration facility using advanced technology	Sekisui Chemical Co., Ltd.
		O&M of infrastructure	MLIT
2013/10/2	Wed	Report preparation	
		Report of JICA	JICA
2013/10/3	Thu	Leaving Japan / Arriving Indonesia	

3.5.5 Result of Technology Transfer

The JCFM Project divided all FTCPs into 4 WGs: 1) CFMP WG, 2) Spatial planning WG, 3) Runoff Control WG, and 4) Coordination and Monitoring WG. The WG meetings were conducted for the technology transfer based on the policies shown in Figure 3.5-1. In addition to a series of WG meetings, workshops, counterpart trainings and pilot project were carried out and through those activites, the opportunities for technology transfer were provided to the FTCP. The results of the technology transfer are summarized as follows.

(1) CFMP WG

Item	Description	
Main Subject of Technology	1. Identification and sharing the issues on flood control in Ciliwung River Basin	
Transfer	2. Knowledge and skill on analysis (flood analysis, rainfall analysis, runoff analysis,	
	land subsidence analysis, etc.)	
	3. Methodology for examination and preparation of CFMP/CFMAP	
	4. Understanding on CFM measures	
Target	• Learning of the process for preparation of CFMP/CFMAP	
	• Understandings on issues, method and concerns for the preparation of CFMP/CFMAP	
Result	1. Identification and sharing the issues on flood control in Ciliwung River Basin	
	Current flood issues and measures were identified including the outline of Ciliwung River Basin, river system, existing river facilities, and inundation records/damages.	
	2. Knowledge and skill on analysis	
	Required data for analysis including rainfall data, discharge data were collected. Moreover, necessary hydrological analysis skills, such as hydrological and hydraulic analysis, flood analysis, rainfall analysis, runoff analysis, land subsidence analysis, and so on, were learned.	
	3. Methodology for examination and preparation of CFMP/CFMAP (jointly conducted with other WGs)	
	FTCP understood the planning process and methodology of the CFMP through the lectures and sit surveys. In addition, they understood the coordination, monitoring and role allocation among the organizations related to the runoff control measures (including target volume in public and private) and land use regulation.	
	4. Understanding of CFM measures (jointly conducted with other WGs)	
	Through the workshop and training in Japan, the understandings of FTCP on the implementation, necessity and concerns of CFM measures (flood control, runoff control, land use regulation, and disaster mitigation) were accelerated. Moreover, for the planning of the rainwater storage and infiltration facilities, FTCP understood the examination process for the installation of the facilities, including the installation location, scale, monitoring method and so on.	

(2) Spatial Planning WG

Item	Description	
Main Subject of Technology Transfer	 Necessity and issues on land use regulation for CFM Examination for smooth implementation of land use control Methodology for examination and preparation of CFMP/CFMAP Understanding on CFM measures 	
Target	 Understandings of the necessity land use regulation and application of spatial plans for CFM Understandings on issues, method and concerns for the preparation of CFMP/CFMAP 	
Result	 Necessity and issues on land use regulation for CFM Through the survey and examination of the current land use in the basin, FTCP understood the necessity of countermeasures against the increasing runoff volume due to urbanization and flood risks. 	
	2. Examination for smooth implementation of land use control FTCP promoted their understandings on the legal framework of regional development planning, spatial planning, zoning regulation and land use control, and examined the necessary activities for the smooth implementation of the land use regulation. In addition, from the aspects of flood control, the land classification was examined.	
	 Methodology for examination and preparation of CFMP/CFMAP (jointly conducted with other WGs) FTCP understood the planning process and methodology of the CFMP through the lectures and sit surveys. In addition, they understood the coordination, monitoring and role allocation among the organizations related to the runoff control measures (including target volume in public and private) and land use regulation. 	

4.	Understanding of CFM measures (jointly conducted with other WGs)
	Through the workshop and training in Japan, the understandings of FTCP on the implementation, necessity and concerns of CFM measures (flood control, runoff
	control, land use regulation, and disaster mitigation) were accelerated. Moreover, for
	the planning of the rainwater storage and infiltration facilities, FTCP understood the
	examination process for the installation of the facilities, including the installation
	location, scale, monitoring method and so on.

(3) Runoff Control WG

Item	Description
Main Subject of Technology	1. Current activities and issues on runoff control for CFM
Transier	2. Knowledge and skill on analysis (nood analysis, failing analysis, funon analysis, land subsidence analysis etc.)
	3 Methodology for examination and preparation of CEMP/CEMAP
	4. Understanding on CFM measures
Target	• Understandings of the analysis method for planning and implementation of runoff
C .	control measures
	• Understandings on issues, method and concerns for the preparation of CFMP/CFMAP
Result	1. Current activities and issues on runoff control for CFM
	FTCP surveyed the current activities for installation of infiltration well and ponds in DKI Jakarta, and learned about the type and effect of rainwater storage and infiltration facilities. Moreover, through the discussion on the legal system regarding zero delta Q policy and regulation in DKI Jakarta, FTCP identified the necessity and issues on the operation of legal mechanism on runoff control.
	2. Knowledge and skill on analysis (jointly conducted with CFMP WG)
	Required data for analysis including rainfall data, discharge data were collected. Moreover, necessary hydrological analysis skills, such as hydrological and hydraulic analysis, flood analysis, rainfall analysis, runoff analysis, land subsidence analysis, and so on, were learned.
	3. Methodology for examination and preparation of CFMP/CFMAP (jointly conducted with other WGs)
	FTCP understood the planning process and methodology of the CFMP through the lectures and sit surveys. In addition, they understood the coordination, monitoring and role allocation among the organizations related to the runoff control measures (including target volume in public and private) and land use regulation.
	4. Understanding of CFM measures (jointly conducted with other WGs)
	Through the workshop and training in Japan, the understandings of FTCP on the implementation, necessity and concerns of CFM measures (flood control, runoff control, land use regulation, and disaster mitigation) were accelerated. Moreover, for the planning of the rainwater storage and infiltration facilities, FTCP understood the examination process for the installation of the facilities, including the installation location, scale, monitoring method and so on.

(4) Coordination and Monitoring WG

Item	Description
Main Subject of Technology	1. Identification of organizations related to CFM and role allocation of those
Transfer	organizations
	2. Legal system and implementation mechanism of CFMP/CFMAP
	3. Methodology for examination and preparation of CFMP/CFMAP
	4. Understanding on CFM measures
Target	• Understandings on inter-organizational coordination and monitoring mechanism for
	the planning and implementation of CFM measurs
	• Understandings on issues, method and concerns for the preparation of
	CFMP/CFMAP
Result	1. Identification of organizations related to CFM and role allocation of those
	organizations
	FTCP identified the organizations in central and local governments related to the
	CFM in Ciliwung River Basin.
2.	Legal system and implementation mechanism of CFMP/CFMAP FTCP examined the existing legal framework on monitoring system, and examined the applicable monitoring mechanism for the CFMP/CFMAP.
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3.	Methodology for examination and preparation of CFMP/CFMAP (jointly conducted with other WGs)
	FTCP understood the planning process and methodology of the CFMP through the lectures and sit surveys. In addition, they understood the coordination, monitoring and role allocation among the organizations related to the runoff control measures (including target volume in public and private) and land use regulation.
4.	Understanding of CFM measures (jointly conducted with other WGs)
	Through the workshop and training in Japan, the understandings of FTCP on the implementation, necessity and concerns of CFM measures (flood control, runoff control, land use regulation, and disaster mitigation) were accelerated. Moreover, for the planning of the rainwater storage and infiltration facilities, FTCP understood the examination process for the installation of the facilities, including the installation location, scale, monitoring method and so on.

(5) Summary of Technology Transfer

The CFM measures consisting of flood control, runoff control, land use regulation and disaster mitigation need to be implemented through the coordination among related organizations in central and local governments. Thus, the activities for the technology transfer to FTCP were conducted in consideration of the identification of inter-sectoral issues and acceleration of understandings on current activities and issues in other organizations and sectors.

- FTCP was divided into 4 WGs, and technology transfer was carried out individually at the early stage of the JCFM Project.
- By holding the joint WG meetings, the understandings on inter-organizational and inter-sectoral issues were enhanced.
- Experiences in Japan were introduced to FTCP, so that the FTCP gets concrete image of the CFM measures.
- Through the weekly meeting, communication opportunities between Japanese experts and the FTCP as well as among the FTCP were provided. With this frequent communication, especially, among FTCP, they could establish the human network with other organizations, which is one of the key elements for the future implementation of the CFM.
- To accelerate the discussion among the FTCP, ex-officers of the Directorate General of Water Resources participated in the JCFM Project as facilitator.
- Through the workshop, counterpart training in Japan and site survey on pilot project, the FTCP obtained the opportunities to understand the actual implementation of the CFM measures at site.

Through the project activities, FTCP achieved clear understandings on the technical knowledge of the CFM, and conducted the preparation works of the CFMP/CFMA in coordination with the related central and local government organizations. By promoting the understandings on the CFM for FTCP, it is expected that the implementation of the CFM measures in the Ciliwung River Basin will be accelerated.

CHAPTER 4DEVICE AND LESSONS LEARNED THROUGH
PROJECT IMPLEMENTATION AND
RECOMMENDATION FOR FLOOD DISASTER
MANAGEMENT

4.1 Lessons Learned through Project Implementation

4.1.1 Collaboration with Ex-Officers of Directorate General of Water Resources, Ministry of Public Works

For the smooth communication among Japanese experts, counterpart organizations and counterpart personnel as well as for the inter-organizational coordination, the ex-officers (director and sub-director) of Directorate General of Water Resources participated in the project management as facilitators. The facilitators contributed to the effective technology transfer and played key roles for the discussion and agreement on the CFMP with the related organizations. Especially, in the project which involves various central and local government organizations, the facilitators are effective.

The advantages on utilization of facilitator are summarized as follows.

- a) Sufficient Knowledge on Administrative and Legal Framework For the sharing of current issues on current flood control and the discussion on the implementation strategy of the CFM, the knowledge of the facilitators on administrative and legal framework on water resources management was quite helpful.
- b) Human Network
 By utilizing the human network possessed by the facilitator to communicate with the decision makers smoothly, the discussion and agreement on the CFMP could be smoothly implemented.
- c) Follow Up after Completion of the JCFM Project Those facilitators are willing to disseminate the CFM measures to the key organizations. This activity will greatly contribute to the sustainable implementation of the CFM in Ciliwung River Basin.

During the course of the JCFM Project, the following concerns were considered to collaborate with facilitators.

- To hire the ex-officials who used to be high level officials in the implementation agency of JCFM Project
- To consider the establishment and sustainment of good relationship with facilitator, and to allocate the roles for the optimization of their capability and human network
- In order to encourage them, a) to enable them understand the objectives, purposes and necessity of the CFM measures properly, and b) to recognize them as key persons in Indonesian side and to share the roles in the project

4.1.2 Technology Transfer to C/P by Establishing Working Groups

In order to transfer the knowledge and skills on the CFM efficiently, the counterpart personnels from the various central and local government organizations were divided into 4 working groups depending on their specialities: CFMP, spatial planning, runoff control, and coordination and monitoring WGs. In the first year of JCFM Project, the technology transfer was conducted to share the current issues on flood control and to learn the basic technical skills and knowledge on the CFM in each working group individually. In the second year, the joint working group meetins were held to increase the understandings on the necessity of inter-sectoral and inter-organizational coordination. In the third year, overall working group meetings were joinly held to formulate the CFMP/CFMAP.

This strategy of technology transfer in JCFM Project can be effective since the fields of technology

transfer are broad sectors, and the required works in the project change from learning the knowledge to planning.

4.1.3 Continuous Activation of C/P for Sustainable Implementation

In order to continue the activities for the implementation of the CFMP/CFMAP, it was proposed to activate the core team of the counterparts for the inter-organizational coordination after the completion of JCFM Project, and it was agreed in the joint meeting of JCC and CFMC on 19 September, 2013.

4.1.4 Examination of Flood Control Measures after Flood in January 2013

On 16 January, 2013 during the second year of JCFM Project, the water level in Ciliwung River rose due to the continuous rainfall and caused the flood disaster in the surrounding areas of Ciliwung River in DKI Jakarta and Depok City. Moreover, on 17 January, 2013, the dike break of West Banjir Canal induced the flood flow into the lowland area of DKI Jakarta. In accordance with this flood disaster, the policies of flood control in Ciliwung River were modified as follows.

- a) To examine the diversion tunnel construction to divert approximately 60 m3/s of flood peak discharge from Ciliwung River to East Banjir Canal
- b) To examine the flood control dam construction at the upstream of Ciliwung River

Due to the flood occurrence in January, 2013 and policy change for flood control, the following works were conducted by JCFM Project:

- (1) To review the damage conditions of January 2013 flood
- (2) To consider the flood control effect by diversion tunnel into the CFMP
- (3) To examine the required process for the dam construction for the examination of location, type, scale, flood control effect of dam, and to feedback those results into the CFMP

As a result of examination (3) above, it was identified that the data of geological conditions and permeability at potential dam sites were not sufficiently available. For the acceleration of the flood control measures by Indonesian government, the items and process of required surveys were explained to Directorate General of Water Resources, BBWS Ciliwung-Cisadane and large dam committee.

4.2 Recommendation for Future Flood Disaster Management by Indonesian Government

4.2.1 Dissemination of Comprehensive Flood Management Measures to Other River Basins

Due to the rapid economic growth, the urbanization has been advancing not only in Ciliwung River Basin but also in other river basins. Thus, the dissemination of the CFM policy and strategy formulated in the JCFM Project to those river basins is expected.

4.2.2 Accumulation of Basic Data for Flood Control

(1) Enhancement of Observation System on Rainfall, Water Level and Flow Velocity

The data on rainfall, water level and velocity are necessary for the review and projection of flood disaster and the formulation of flood control plan.

The rainfall data are provided by BMKG but the data sharing with other organizations is not smoothly conducted. Moreover, the establishment of rainfall observation station is under progress. Considering the large area of national land and a number of active volcanoes, the intensive setup of rainfall observation stations and stable data collection are inevitable, and it can be considered to utilize the

meteorological observation system with meteorological radar.

In addition, for the acceleration of the flood control planning in large river basin, it is expected to establish the water level and velocity observation system in sub-basins.

(2) Regular Implementation of River Cross Section Survey

The dredging works have been carried out to improve the flow capacity of West Banjir Canal after February 2007 flood. However, through the review of the January 2013 flood in the JCFM Project, it was identified that the riverbed might rise due to the sedimentation and garbage deposits at Manggarai Gate section. In order to recognize the river flow capacity and river facility functions and to utilize that information to the planning, the regular river cross section survey is recommended in urban river, river running through the urban area, and river with large riverbed fluctuation.

4.2.3 Development of Legal Framework for Implementation of Runoff Control Measure

In order to realize the strict legal operation for the runoff control and land use regulation, the following actions shall be taken immediately.

- Detailed spatial plans
- Determination of administration area of river and pond (*Situ*)
- Operation procedures for the reference to detailed spatial plans and the confirmation of installation of rainwater storage and infiltration facility in the process of building permits
- Regardign the securing and preservation of open green space and various protection areas, penatly agaist the illegal building owner to encourage the removal of existing buildings, and local regulations and guidelines clearly stipulating the compensation for the building with building permit
- Provision of subsidy and construction equipment/materials to accelerate the installation of rainwater storage and infiltration facility in the existing settlement area and new development area, and local regulations and guidelines clearly stipulating the incentive for the above, such as tax incentive and others
- Local regulations and guidelines clearly stipulating the penatly in case of the destruction or backfill of constructed rainwater storage and infiltration facility as well as land use change of those facility areas
- Legislatives stipulating the administration authority, secured function, operation and maintenance, penatly agaist the shape distortion without approval of the irrigation channel which loses its original function and is currently used as drainage channel due to the rapid urbanization

CHAPTER 5 INPUT BY JAPANESE AND INDONESIAN SIDES

5.1 Input from Japanese Side

5.1.1 Composition of Japanese Expert

Japanese experts in the JCFM Project Team consisted of 1 long-term expert (chief advisor) and 15 short-term experts as shown in Table 5.1-1.

Category	Position	Name	Input (MM)	Main Task				
Long-term Expert	Chief Advisor	Takaya TANAKA	-	Identification of related organizations and determination of role allocation, advice for preparation of the CFMP/CFMAP, establishment of monitoring mechanism, and guidance on establishment of CFMC				
	Team Leader/ Comprehensive Flood Management Plan	Tamotsu SHINGU	14.83	To manage whole project activities including project management, preparation of CFMP/CFMAP, rainwater storage and infiltration facility, coordination and				
	Comprehensive Flood Management Plan-1	Masaharu MIZOGUCHI	4.83	and so on				
	Comprehensive Flood Management Plan-2	Taizo HASHIGUCHI	1.00	To review flood control plans, to examine the optimal alternatives for flood control, and to prepare draft CFMP/CFMAP				
	Comprehensive Flood Management Plan-3	Takashi ISHIZAKA	0.50	To examine dam construction as one of flood control measures in CFMP, and to provide technical advice for dam planning at upper Ciliwung area to the Indonesian government				
	Assistant Comprehensive Flood Management Plan-1	Takashi IZUMIYA	1.30	To assist "Comprehensive Flood Management Plan-2" to examine CFMAP				
	Assistant Comprehensive Flood Management Plan-2	Shinji IWAI	0.50	To assist "Comprehensive Flood Management Plan-3" to provide technical advice for dam planning at upper Ciliwung area by Indonesian government				
	Spatial Planning	Shigeo TAKASHIMA	3.00	To provide technical guidance and advice to C/P on spatialplanning and land use regulations from CFM viewpoints and to prepare "Measure and operation				
Short-term		TAKAHASHI	7.07	Manual for Runoff Control Facility"				
Expert	Storage/Infiltration Facility Plan	Hiroshi SHIMOOSAKO	8.16	To provide technical instruction and advice to C/P on installation of rainwater storage and infiltration facility as demonstration effect, and to prepare "Measure and operation Manual for Runoff Control Facility"				
	Hydraulic/Climate Change	Tadafumi SATO	8.07	To provide technical instruction and advice to C/P on hydraulic analysis for examination and preparation of CFMP/CFMAP				
	Runoff Analysis	Makoto YONEKURA	11.43	To provide technical guidance and advice to C/P on runoff analysis for examination and preparation of CFMP/CFMAP				
	Land Subsidence Analysis	Nobuyuki IIJIMA	3.20	To provide technical guidance and advice to C/P on land subsidence analysis for examination and preparation of CFMP/CFMAP				
	River Basin Management Organization	Naoki UEHATA	8.27	To provide technical guidance and advice to C/P on establishment of CFMC as coordination and discussion platform and monitoring mechanism, and to prepare "stipulation for establishment and operation of CFMC"				
	Coordinator/Assistant Comprehensive Flood	Maiko TAKAHASHI	2.00	To assist "Team Leader/ Comprehensive Flood Management Plan" to implement the coordination				
	Management Plan			among related organizations				
	Assistant Storage/ Infiltration Facility Plan	Masaharu MIZOGUCHI	3.00	To provide technical guidance and advice to C/P on examination of runoff control effect by pond (<i>Situ</i>)				

 Table 5.1-1
 Composition and Task of Japanese Expert

5.1.2 Actual Assignment of Short-Term Experts

The actual assignment of short-term experts during the JCFM Project was totally 77.76 M/M consisting of 33.46 M/M in the 1^{st} year, 26.80 M/M in the 2^{nd} year, and 17.50 M/M in the 3^{rd} year. The planned and actual assignments of the short-term experts are shown in Table 5.1-2.

1 1 1	N	Plan/			CX 201	0				1	st Year		F 3/	2011						_					2nd	nd Year							3rd Year		_	1st Year (M/M)		ar 2nd Yea		3rd Y	3rd Year (M/M)		al MD				
Position	Name	Actual	10	11 1	FY 2010	0	2	3 4	1 4	5 6	7	8	FY 9	10	11	12	1	2	3	4	5	6	7	8	FY 9	Y 2012 10	11	12	2 1	2	3	4	5	6	FY 2	8	9 1	10	11 Indo	onesia	Japan I	ndonesia	Japan J	Indonesia	Japan	Indonesia	Japan
Team Leader/	Tamotsu	Plan			35		26	\square		45		30			60			60			75		Ħ			10	60			54										8.53		6.30		0.00		14.83	
Management Plan	SHINGU	Actual		22	34		29	26		60	14	25		60			12	48	8 3			10 2	20	21	2	26	96		30	52]								8.53		6.30		0.00		14.83	
Team Leader/	Masahani	Plan													Π					Π								Т				1	75			45				0.00		0.00		4.00		4.00	
Comprehensive Flood Management Plan-1	MIZOGUCHI	Actual															T															2	93		21	52	1			0.00		0.00		4.83		4.83	
Comprehensive Flood	Teizo	Plan																														1	30							0.00		0.00		1.00		1.00	
Management Plan-2	HASHIGUCHI	Actual															T			T			Π									2	30							0.00		0.00		1.00		1.00	
Comprehensive Flood	Takashi	Plan													Π		П	\square		Π													15							0.00		0.00		0.50		0.50	\square
Management Plan-3	ISHIZAKA	Actual										\top			Π		Т	Π		T				Π	Τ				Π			Π	15							0.00		0.00		0.50		0.50	Π
Assistant Comprehensive	Takashi	Plan																															24							0.00		0.00		0.80		0.80	
Flood Management Plan-1	IZUMIYA	Actual																														2	24 5 19		15 7 21					0.00		0.00		1.30		1.30	
Assistant Comprehensive	Shinji IWAI	Plan																															15							0.00		0.00		0.50		0.50	
Flood Management Plan-2		Actual			45				45																								15							0.00		0.00		0.50		0.50	
	Shigeo	Plan			45					45																														3.00		0.00		0.00		3.00	
Spatial Planning		Actual		7		20			8		21				54		\square				\downarrow		30				45			30			45			34				3.00		0.00		0.00		3.00	
t in Indo	Toru TAKAHASHI	Plan													54		╨	\downarrow			++		30	+	\downarrow		45	+			30		45			26				1.80		3.50		2.70		8.00	\square
signmen		Actual												3	45	5					+	10	9			2	60	15		11 60	12	2	60	3		19 13 45				1.80		3.50		2.37		7.67	
Storage/Infiltration Facility Plan	Hiroshi SHIMOOSAKO	Plan											\square	28				++		+	++	+	+	+			73	++		47			58		25	-	14			1.50		4.00		3.50		9.00	\vdash
		Actual		40		45				30	+			3 30	42			++		+	++		30	+	5	30	1	16		1	1	9 2)	16 15	8	1 1	6 29			0.93		4.00		3.23		8.16	\square
Hydraulic/Climate Change	Tadafumi SATO	Plan		34		47				30				56									30											15		30				5.23		2.00		1.50		8.73	
		Actual		22	25	17 45	4		9	7		12		3	42	7		42				10	9	60		4	45	+						17 30	1	21	19			5.57		1.00		1.50		8.07	⊢
Runoff Analysis	Makoto YONEKURA	Plan				41				45				60				32		+	+			52	15		68	+				+	\square	30						5.70		3.50		2.00		11.20	-
		Actual		30		24	5	21		23	6			3		1	1	6 1	6		+		17	7	5 19	19 27		3	+					14	13					5.93		4.50		1.00		11.43	-
Land Subsidence Analysis	Nobuyuki IIJIMA	Pian	_	20		+				31				+		+	+				+	+	╉	-	Ŧ.	4	45	╈	+	+			++							1.70		1.50		0.00		3.20	╟─
		Plan	++-	1	20 30	+	30		+	15 14 30				+	60		+	++		+	╈		30		2	20	3	╈	+	30		+	15			- 1:	5			5.00		2.00		1.00		8.00	-
River Basin Management Organization	Naoki UEHATA	Actual	+		27		40		+	30				53		\square	╉	+		+	╈		30		3	30	+	╈		-		╈	┢	╟	14	24				5.00		2.00		1.00		8.27	╟─
Coordinator/Assistant		Plan	+	13	8	8		19	+	8	7		5	27	6		+			+	╈	10	9 30		5	4		╈	+			+	╈		19	1 11 3	4 21			1.00		1.00		0.00		2.00	
Comprehensive Flood Management Plan	Maiko TAKAHASHI	Actual		22 30	21					30			+		+		+	+		+	+		30		+	+	+	+				+	+							1.00		1.00		0.00		2.00	┢
		Plan		22	21					8	7						Ħ					2	25	24	+		+			90			+							0.00		3.00		0.00		3.00	\vdash
Assistant Storage/ Infiltration Facility Plan	Masaharu MIZOGUCHI	Actual															+						+			51			90											0.00		3.00		0.00		3.00	
																									24	26		15 8			/								Plan 3	3.46		26.80		17.50		77.76	
Team Leader/		Plan													Π			Π			Π	³	Π																	5.40	0.03	20.00	0.10	17.50	0.00	11.10	0.13
Comprehensive Flood Management Plan	Tamotsu SHINGU	Actual	++-														+					3 []			+		+														0.03	-/	0.10	-/	0.00		0.13
Team Leader/		Plan													\square		+			\square	+	з П										3								\parallel	0.03		0.10		0.30		0.43
Comprehensive Flood Management Plan-1	Masaharu MIZOGUCHI	Actual															+					а 3 П	+			\pm				+		3					3			+	0.03	+	0.10	-+	0.30		0.43
nt in Jap		Plan	++	\square		$\left \right $		$\left \right $				+		+	+		+	+		+	+		+	+	+	+	+		+	+			11						\square	\square	0.00	+	0.00	+	0.55		0.55
Land Subsidence Analysis	****	Actual	++	\square								+	\square	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	11			+			H	\vdash	0.00	+	0.00	+	0.55		0.55
<		Plan	++	$\left \right $		$\left + \right $	$\left \right $				+	+	\square	+	+	+	+	++	+	+	+	+	+	+	2	25	+	+	+	+	+	+	10			+	$\left \right $	\square	H/	+	0.00	+	0.83	+	0.50		1.33
Counterpart Training in Japan	****	Actual	++	$\left \right $			\vdash	$\left \right $			+	+	\square	+	+		+	+		+	+	+	+	+	2	25	+	+	+	+	+	+	10	\parallel		+		\square	++/-	+	0.00	+	0.83	+	0.50		1.33
	1																																						Plan		0.06		1.03		1.35		2.44
																																						А	ctual		0.06		1.03		1.35		2.44

 Table 5.1-2
 Planned and Actual Assignment of Short-Term Expert

<Legend> : Assignment in Indonesia (Plan) : Assignment in Indonesia (Actual) : Assignment in Japan : Assignment by own cost

5.1.3 Sub-Contracting Work

The sub-contracting works in Indonesia and Japan are summarized in Table 5.1-3 and Table 5.1-4 respectively.

Item	Description	Amount (Rp.)		
1 st Year				
 Land Subsidence Analysis 	BM Leveling (length: 130 km), GPS Statistic Survey (28 points)	274,021,000		
• River Survey	BM Leveling (length: 23.1 km), River Cross Section Survey (120 sections)	161,480,000		
2 nd Year				
• Land Subsidence Analysis	BM Leveling (length: 210 km), GPS Statistic Survey (28 points)	441,298,000		
 Construction of Rainwater Storrage and Infiltration Facility 	1 location	653,180,000		
• Surveys	Sounding survey, route survey, leveling survey and geotechnical investigation for examination of Situ improvement	104,880,000		
3 rd Year				
• Land Subsidence Analysis	BM Leveling (length: 210 km), GPS Statistic Survey (28 points)	1 270 020 000		
• River Survey	BM Leveling (length: 22.4 km), River Cross Section Survey (113 sections)	1,279,920,000		

Table 5.1-4Sub-Contracing Work in Japan

Item	Amount (JPY)				
1 st Year					
Land Subsidence Analysis	satellite data analysis	2,400,000			

5.1.4 Provision of Equipment

The following sets of equipment were procured and handed over to the counterpart at the completion of the JCFM Project.

Equipment	Specification							
PC (CAD, GIS use)	Windows 7 or XP Professional, MS-Office Professional, other necessary software, etc.)	2						
Printer	Color Laser Printer (A3 size)	1						
Copy Machine	Black and White	1						
CAD Software	AutoCAD 2010	1						

Table 5.1-5List of Equipment



AutoCAD 2010

5.1.5 Expenses for Project Implementation

The expenses for the project implementation from 1^{st} to 3^{rd} year are summarized in Table 5.1-6.

				(Unit: Japanese Yen)
T.	1 st Year	2 nd Year	3 rd Year	T (1
Item	(actual expense)	(actual expense)	(contract amount)	Total
1) Direct Cost in Field	12,021,517	7,470,630	7,648,542	27,140,689
Staff Salary	4,579,196	3,312,354	3,440,151	11,331,701
Equipment Maintenance	0	208,218	0	208,218
Consumables	1,789,369	726,753	767,816	3,283,938
Documentation	6,531	590,940	693,097	1,290,568
Transportation & Communication	3,246,421	2,632,365	2,747,478	8,626,264
Sub-Contracting Work in Japan	2,400,000	0	0	2,400,000
2) Report Production	378,000	150,000	883,000	1,411,000
3) Sub-Contracting Work in Indonesia	4,019,000	4,884,000	12,784,000	21,687,000
4) Counterpart Training in Japan	1,770,000	480,000	455,000	2,705,000
Total	18,188,517	12,984,630	21,770,542	52,943,689

Table 5.1-6Expense for Project Implementation (Japanese Side)

5.2 Input from Indonesian Side

5.2.1 Placement of Counterpart Personnel

The following counterparts were assigned for the JCFM Project.

- Coordinator: 24 personnels (Director General and Director levels)
- Part Time Counterpart: 18 personnels (Sub-director level)
- Full Time Counterpart: 34 personnels (working officer level)

Due to the transfer, domestic/abroad education and new participation, the number of the FTCP changed annually. The part time counterpart and FTCP during the project period are summarized in Table 5.2-1 and Table 5.2-2 respectively.

No.	Position/Institution	Role
1.	Head of Subdit. Region II, Dir. of River and Coast, DGWR, PU	Coordinator of Counterpart
2.	Head of Subdir. of Region II, Dir. of River and Coast, DGWR, PU	Secretary of Counterpart
3.	Head of Subdir. of Technical Planning Dir. of River and Coast, DGWR, PU	Support for Flood Control Planning Activity
4.	Head of Subdir. of Hydrology and Water Quality, Dir. of Water Resources Management, DGWR, PU	Support for Hydrology Acitivity
5.	Head of Subdir. of City Management, Dir. of Urban Area, DGSP, PU	Support for Spatial Planning Activity
6.	Head of Subdir. of Institutional Arrangement and Management, Dir. of Buidling and Environmental Management, DGHS, PU	Support for Environment Drainage and Building Codes Activity
7.	Head of Implementation Division, BBWS Ciliwung-Cisadane, DGWR, PU	Support for Implementation of Flood Control Program Activity
8.	Head of Subdir. of Planning of River Area, Dir. of Water Resources Management, DGWR, PU	Support for Flood Control Planning Activity
9.	Head of Programming Division, BBWS Ciliwung-Cisadane, DGWR, PU	Support for Flood Control Planning Activity
10.	Head of Water Resources Management Division, Public Works Agency, DKI Jakarta	Support for Flood Control Planning Activity

Table 5.2-1Placement of Part Time Counterpart

No.	Position/Institution	Role						
11.	Head of Engineering Division, Water Resources Management Agency,	Support for Hydrology Acitivity						
	West Java Province							
12.	Head of Regional Spatial Planning Division, Settlement and Housing	Support for Spatial Planning						
	Agency, West Java Province	Activity						
13.	Head of Section for Planning of Transportation, Water System and Green	Support for Spatial Planning						
	Layout, City Infrastructure Planning Division, Spatial Planning Agency,	Activity						
	DKI Jakarta							
14.	Head of Water Resources Division, Highway and Water Resources Agency,	Support for Environment Drainage						
	Bogor City	and Building Codes Activity						
15.	Head of Section Region II, Subdir. of Drainage, Dir. of Sanitation	Support for Environment Drainage						
	Development, DGHS, PU	and Building Codes Activity						
16.	Head of Section for Planning of Water Resources Maintenance, Division of	Support for Environment Drainage						
	Water Resources Maintenance, Public Works Agency, DKI Jakarta	and Building Codes Activity						
17.	Head of Management and Maintenance Division, Highway and Irrigation	Support for Implementation of						
	Agency, Bogor Regency	Flood Control Program Activity						
18.	Head of Section, Water Resources Division, Highway and Water Resources	Support for Implementation of						
	Agency, Depok City	Flood Control Program Activity						

No.	Name	Poisition/Insitution	Remarks
1 st Ye	ar		
1.	Kalmah	Section Head, Dir. of Programs, DGWR, PU	
2.	Dony Hermawan	Staff, Dir. of River and Coast, DGWR, PU	
3.	Dwi Indriastuti	Staff, Dir. of River and Coast, DGWR, PU	
4.	Hendra Ramdhani	Staff, Dir. of River and Coast, DGWR, PU	
5.	Nila Aliefia Fadly	Staff, Dir. of River and Coast, DGWR, PU	
6.	Nova Veronica	Staff, Dir. of River and Coast, DGWR, PU	
7.	Sevi Inasih	Staff, Dir. of River and Coast, DGWR, PU	
8.	Hanif Wasistono Adi	Satff, Dir. of BPSDA, DGWR, PU	Until Aug., 2011
			(study in university)
9.	Sumarno	Staff, Dir. of BPSDA, DGWR, PU	Until Jun., 2011
			(move to Yogyakarta)
10.	Dina Noviadriana	Staff, BBWS Ciliwung-Cisadane, DGWR, PU	
11.	Ferdinanto	Staff, BBWS Ciliwung-Cisadane, DGWR, PU	
12.	Lina Fitriani	Section Head, BBWS Ciliwung-Cisadane, DGWR, PU	Until Aug., 2011
			(study in Japan)
13.	M. Rian Wahyu Kesumo	Staff, BBWS Ciliwung-Cisadane, DGWR, PU	
14.	Andri Hari Rochayanto	Staff, Dir. of Urban Planning and Development, DGSP, PU	
15.	Pilas Agita	Staff, Dir. of Urban Planning and Development, DGSP, PU	
16.	Dewi Andriana	Section Head, Dir. of Building and Neighborhood Development,	
		DGHS, PU	
17.	Dodi Krispratmadi	Staff, Dir. of PPLP, DGHS, PU	
18.	Reza Riska Pratama	Assistant, Dir. of Human Settlement Sanitation, DGHS, PU	
19.	Listiani, Msi	Head of Sub-division Settlement, Facility and Infrastructure, DCA	
		JABODETABEKJUR	
20.	Imas Budiasih	Staff, Water Resources Management Division, DPU, DKI JKT	
21.	Sarah Dewi Yani	Staff, Water Resources Maintenance Divison, DPU, DKI JKT	
22.	Vega Fitria Mutiara Sari	Staff Water Resources Management Division, DPU, DKI Jakarta	
23.	Akstiaji Wibowo Astoto	Section Head, Water and Green Management Planning Division,	
		Spatial Planning Agency, DKI JKT	1

 Table 5.2-2
 Placement of Full Time Counterpart

No.	Name	Poisition/Insitution	Remarks
24.	Sumaji	Setion Head, Technical Engineering Division, Water Resources	
		Management Agency, West Java Province	
25.	Taufan Gurnasa	Staff, Housing and Settlement Agency, West Java Province	
26.	Agus Rejeki Nusantara	Section Head, Management and Development Division, Highway	Until Nov., 2010
	Nainggolan	and Irrigation Agency, Bogor Regency	(promotion)
27.	Atis Tardiana	Head of Building Management Division, Building and Settlement	
		Agency, Bogor Regency	
28.	Andi Siswandi	Section Head, Water Resources Division, Highways and Water	
		Resources Agency, Bogor City	
29.	Bahtiar Ardiansyah	Staff, Water Resources Division, Highways and Water Resources	
		Agency, Depok City	
30.	Djatmiko Rahardjo	Section Head, Spatial Planning Division, Building and Settlement	
		Agency, Depok City	
2^{nd} Ye	ear		
1.	Kalmah	Section Head, Dir. of Programs, DGWR, PU	
2.	Hendra Ramdhani	Staff, Dir. of River and Coast, DGWR, PU	Until Oct., 2011
			(study in Japan)
3.	Dony Hermawan	Staff, Dir. of River and Coast, DGWR, PU	Until Oct., 2011
			(study in university)
4.	Dwi Indriastuti	Staff, Dir. of River and Coast, DGWR, PU	
5.	Nila Aliefia Fadly	Staff, Dir. of River and Coast, DGWR, PU	
6.	Nova Veronica	Staff, Dir. of River and Coast, DGWR, PU	
7.	Sevi Inasih	Staff, Dir. of River and Coast, DGWR, PU	Until Oct., 2011
	- 10 - D - 1		(study in university)
8.	Juniferanne Brahmana	Satti, Dir. of BPSDA, DGWR, PU	
9.	Pandu Yuri Pratama	Satti, Dir. of BPSDA, DGWR, PU	
10.	Dina Noviadriana	Staff, BBWS Ciliwung-Cisadane, DGWR, PU	
11.	Geri Ramdhani	Staff, BBWS Ciliwung-Cisadane, DGWR, PU	
12.	Faris Setiawan	Staff, BBWS Ciliwung-Cisadane, DGWR, PU	
13.	Ferdinanto	Staff, BBWS Ciliwung-Cisadane, DGWR, PU	
14.	M. Rian Wahyu Kesumo	Staff, BBWS Ciliwung-Cisadane, DGWR, PU	
15.	Pungky Yuliansyah	Staff, BBWS Ciliwung-Cisadane, DGWR, PU	
16.	Alrikagusti Wardi Putri	Staff, Dir. of Urban Planning and Development, DGSP, PU	
17.	Pilas Agita	Staff, Dir. of Urban Planning and Development, DGSP, PU	
18.	Dewi Andriana	Section Head, Dir. of Building and Neighborhood Development,	
10	Hatman Erian	DUHS, PU	
19.	Pandiangan	Stan, JH. of Building and Neighborhood Development, DGHS, PU	
20	Para Diska Pratama	Assistant Dir of Human Sattlement Sanitation DGHS DU	
20.	Listiani Mei	Head of Sub-division Settlement Eacility and Infractructure DCA	
21.	Lisuani, 19151	IABODETABEKIUR	
22	Feirully Irzal	Staff Infrastructure and Environment Planning Division	
	- chung neur	BAPPEDA, DKI JKT	
23.	Imas Budiasih	Staff, Water Resources Management Division, DPU, DKI IKT	
24	Sarah Dewi Yani	Staff, Water Resources Maintenance Divison, DPU, DKI IKT	
25.	Vega Fitria Mutiara Sari	Staff, Water Resources Management Division, DPU, DKI JKT	
26.	Siti Harfiah	Staff, Water and Green Management Planning Division Spatial	
		Planning Agency, DKI JKT	

No.	Name	Poisition/Insitution	Remarks
27.	Sumaji	Setion Head, Technical Engineering Division, Water Resources	
		Management Agency, West Java Province	
28.	Taufan Gurnasa	Staff, Housing and Settlement Agency, West Java Province	
29.	Agus Rejeki Nusantara	Section Head, Management and Development Division, Highway	
	Nainggolan	and Irrigation Agency, Bogor Regency	
30.	Atis Tardiana	Head of Building Management Division, Building and Settlement	
		Agency, Bogor Regency	
31.	Andi Siswandi	Section Head, Water Resources Division, Highways and Water	
		Resources Agency, Bogor City	
32.	Aas Kasmanah	Staff, Physical and Infrastructure Planning Division, BAPPEDA,	
		Depok City	
33.	Bahtiar Ardiansyah	Staff, Water Resources Division, Highways and Water Resources	
		Agency, Depok City	
34.	Arief Panju	Staff, Measurement and Survey Divison, Building and Settlement	
		Agency, Depok City	
3 rd Ye	ar		1
1.	Kalmah	Section Head, Dir. of Programs, DGWR, PU	
2.	Dwi Indriastuti	Staff, Dir. of River and Coast, DGWR, PU	Until Mar., 2013
			(study in university)
3.	Fahmi Zamroni	Staff, Dir. of River and Coast, DGWR, PU	Until Mar., 2013
			(study in university)
4.	Hendra Utama	Staff, Dir. of River and Coast, DGWR, PU	
5.	Inneke Dwiwahyuni	Staff, Dir. of River and Coast, DGWR, PU	
6.	Nila Aliefia Fadly	Staff, Dir. of River and Coast, DGWR, PU	
7.	Nova Veronica	Staff, Dir. of River and Coast, DGWR, PU	
8.	Juniferanne Brahmana	Satff, Dir. of BPSDA, DGWR, PU	
9.	Pandu Yuri Pratama	Satff, Dir. of BPSDA, DGWR, PU	
10.	Dina Noviadriana	Section Head,, BBWS Ciliwung-Cisadane, DGWR, PU	
11.	Faris Setiawan	Staff, BBWS Ciliwung-Cisadane, DGWR, PU	
12.	Ferdinanto	Staff, BBWS Ciliwung-Cisadane, DGWR, PU	Until Mar., 2013
13	Gari Damdhani	Staff BBWS Ciliurung Cicadana DGWP DU	Until Eab 2013
15.		Stan, DD wS Chiwung-Cisadane, DO wK, 10	(study in university)
14	M Rian Wahyu Kesumo	Staff BRWS Ciliwung Cisadana DGWR PU	(study in university)
15	Pungky Yuliansyah	Staff, BBWS Ciliwung-Cisadane, DGWR, PU	
16	Alrikagusti Wardi Putri	Staff, Dir of Urban Planning and Development DGSP PU	Until Apr 2013
10.	minkugusti wurdi i uti	Starr, Di. of Orban Franking and Development, DODI, FO	(move to Palembang)
17	Pilas Agita	Staff Dir of Urban Planning and Development DGSP PU	Until Aug 2013
17.	i nuo i ignu	Starr, Di. of Orban Franking and Development, DOST, FO	(stuidy in Netherland)
18	Dewi Andriana	Section Head Dir of Building and Neighborhood Development	(study in redictional)
10.	Down / Indinana	DGHS, PU	
19.	Hotman Frian	Staff, Dir. of Urban Planning and Developmen, DGHS, PU	Until Jun., 2013
	Pandiangan		(move to Surabaya)
20.	Reza Riska Pratama	Assistant, Dir. of Human Settlement Sanitation, DGHS, PU	
21.	Listiani, Msi	Head of Sub-division Settlement, Facility and Infrastructure, DCA	
		JABODETABEKJUR	
22.	Feirully Irzal	Staff, Infrastructure and Environment Planning Division,	
		BAPPEDA, DKI JKT	
23.	Imas Budiasih	Staff, Water Resources Management Division, DPU, DKI JKT	

No.	Name	Poisition/Insitution	Remarks
24.	Sarah Dewi Yani	Staff, Water Resources Maintenance Divison, DPU, DKI JKT	
25.	Vega Fitria Mutiara Sari	Staff, Water Resources Management Division, DPU, DKI JKT	
26.	Siti Harfiah	Staff, Water and Green Management Planning Division, Spatial	
		Planning Agency, DKI JKI	
27.	Sumaji	Setion Head, Technical Engineering Division, Water Resources	
		Management Agency, West Java Province	
28.	Taufan Gurnasa	Staff, Housing and Settlement Agency, West Java Province	
29.	Agus Rejeki Nusantara	Section Head, Management & Development Division, Highway	
	Nainggolan	and Irrigation Agency, Bogor Regency	
30.	Atis Tardiana	Head of Building Management Division, Building and Settlement	
		Agency, Bogor Regency	
31.	Andi Siswandi	Section Head, Water Resources Division, Highways and Water	
		Resources Agency, Bogor City	
32.	Aas Kasmanah	Staff, Physical and Infrastructure Planning Division, BAPPEDA,	
		Depok City	
33.	Bahtiar Ardiansyah	Staff, Water Resources Division, Highways and Water Resources	
		Agency, Depok City	
34.	Arief Panju	Staff, Measurement and Survey Divison, Building and Settlement	
		Agency, Depok City	

5.2.2 Expense for Project Implementation

The expenses for project implementation from Indonesian side are summarized in Table 5.2-3.

Table 5.2-3	Expense for Project	t Implementation	(Indonesian Side)
	Expense for i rojec	· implementation	(maonesian siae)

Item	FY2011 (actual)	FY2012 (actual)	FY2013 (budget)	Total
Honor-related Activities	77,828,500	99,250,000	107,250,000	284,328,500
Non Operating Items Expenditures	1,952,500	32,631,000	36,295,000	70,878,500
Professional Services Expenditures	8,677,500	12,900,000	16,400,000	37,977,500
Official Trip Expenditures	31,850,000	15,955,000	15,080,000	62,885,000
Material Expenditures	0	0	24,975,000	24,975,000
Total	120,308,500	160,736,000	200,000,000	481,044,500

CHAPTER 6 Meeting Record for JCC and CFMC

6.1 Meeting Record for Joint Coordination Committee (JCC)

The meeting records of the JCC are summarized in Table 6.1-1.

Fable 6.1-1	Meeting Record of JCC
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No.	Schedule	Agenda
1.	4 December, 2010	• Explanation on inception report
		• Explanation of activity plan in 1 st year
2.	22 November, 2011	• Explanation of progress report (1 st year)
		• Explanation of activity progress in 1 st year
		 Discussion on establishment of the CFMC
3.	29 June, 2012	• Report on mid-term review results
		• Explanation on activity plan in 2 nd year
4.	21 June, 2013	• Report on terminal evaluation results
		• Explanation on activity plan in 3 rd year
5.	19 September, 2013	• Explanation on the CFMP/CFMAP
	(joint meeting with CFMC)	• Discussion for sustainable implementation of the CFM measures

6.2 Meeting Record for Comprehensive Flood Management Commttee for Ciliwung River Basin (CFMC)

The meeting records of the CFMC are summarized in Table 6.2-1.

No.	Schedule	Agenda
1.	22 November, 2011	• Discussion and approval of stipulation for establishment of the CFMC
		• Explanation on the CFM measures
2.	18 March, 2012	• Explanation and discussion on the CFM measures in Ciliwung River Basin
		 Alternatives of structural measures for flood control
3.	19 September, 2013	• Explanation on the CFMP/CFMAP
	(joint meeting with JCC)	• Discussion for sustainable implementation of the CFM

Table 6.2-1Meeting Record of CFMC

CHAPTER 7 LIST OF PREPARED REPORT

7.1 List of Prepared Report in JCFM Project

Reports prepared by the JCFM Project are listed in Table 7.1-1.

epared Report

Year	Report	Language	Set
1 st Year	Inception Report	English	1 set
		Japanese	1 set
	Work Plan (1 st Phase)	English	1 set
		Japanese	1 set
	Progress Report (1 st Phase)	English	23 sets
		Japanese	3 sets
		CD-ROM	1 set
	Annual Report (1 st Phase)	English	23 sets
		Japanese	3 sets
		CD-ROM	2 sets
2 nd Year	Work Plan (2 nd Phase)	English	1 set
		Japanese	1 set
	Progress Report (2 nd Phase)	English	23 sets
		Japanese	3 sets
		CD-ROM	1 set
	Annual Report (2 nd Phase)	English	23 sets
		Japanese	3 sets
ard		CD-ROM	2 sets
3 rd Year	Work Plan (3 rd Phase)	English	1 set
		Japanese	1 set
	Project Completion Report	English	23 sets
		Japanese	3 sets
		CD-ROM	3 sets
	Technical Cooperation Report		
	1) Comprehensive Flood Management Plan (including Monitoring	English	23 sets
	Guideline for Comprehensive Flood Management, and Stipulation for		
	Establishment and Operation of Comprehensive Flood Management		
	Committee for Ciliwung River Basin)	Enalish	22
	2) Measure and Operation Manual for Run-off Control Facility	English	25 sets

Attachment

Minutes of the Final JCC & CFMC Meeting



Jakarta, 19th September, 2013

DR. Ir. Mohamad Hasan, Dipl. HE Director General of Water Resources Ministry of Public Works Indonesia

Dr. Hitoshi BABA Senior Advisor Japan International Cooperation Agency

Ir. Pitoyo Subandrio, Dipl. HE Director of River and Coast Directorate General of Water Resources Ministry of Public Works Indonesia

Mr. Masaharu MIZOGUCHI Team Leader of Japanese Expert Team JCFM Project

At the final stage of the Project for Capacity Development of Jakarta Comprehensive Flood Management in Indonesia (hereinafter referred to as the "Project"), Joint Coordination Committee (hereinafter referred to as the "JCC") and Comprehensive Flood Management Committee for Ciliwung River Basin (hereinafter referred to as the "CFMC") for the Project was jointly held on 19th September, 2013.

The meeting was chaired by Ir. Pitoyo Subandrio, Dipl. HE, Director of River and Coast, Directorate General of Water Resources, Ministry of Public Works. The participants of the meeting are listed on the Attachment-1.

After the opening remarks by Ir. Pitoyo Subandrio, Dipl. HE, the explanation of current issues and activities related to the flood management, runoff control and land use control were presented by Ir. Imam Santoso, M.Sc., head of BBWS Ciliwung-Cisadane as Project Manager of the Project and Mr. Feirully Irzal, B. Eng, MBA, representative of Regional Development Planning Agency (BAPPEDA) of Jakarta Special Province (DKI Jakarta), while Mr. Masaharu MIZOGUCHI, Team Leader of the Project, explained the activities and achievement of the Project, especially the Comprehensive Flood Management Plan (CFMP) and Action Plan (CFMAP).

The discussion and exchanged view have been carried out to formulate the sustainable implementation of the CFMP/CFMAP. JCC and CFMC confirmed the contents of the CFMP/CFMAP and agreed to the following subjects.

- (1) It is important to implement the comprehensive flood management measures to mitigate the flood damages in Ciliwung river basin with the strategy of flood control as well as runoff control, land use regulation and disaster risk reduction as described in the CFMP/CFMAP.
- (2) The implementation of the comprehensive flood management measures will give the contribution to 1) the mitigation of flood damages along Ciliwung river, 2) the mitigation of inundation caused by the drainage problem, and 3) the conservation of water resources and groundwater recharge.
- (3) Considering the effectiveness and efficiency of the CFM, the CFMP/CFMAP gives the effective inputs for the flood management in Ciliwung River Basin. Therefore, it was agreed that Rencana and future POLA of water resources management for Ciliwung-Cisadane will include the CFMP/CFMAP to enhance the effectiveness for the mitigation of flood damage in Ciliwung river basin.
- (4) Directorate General of Water Resources, Ministry of Public Works will take into account to disseminate the policy and strategy of the comprehensive flood management in Ciliwung river basin for the other river basins.
- (5) In order to keep the sustainability of the implementation of the CFMP/CFMAP after the project termination, the Project Team strongly recommended that the project counterparts can be continuously activated as a core team in the coordination among the institutions concerned.

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PEKERJAAN UMUM DIREKTORAT JENDERAL SUMBER DAYA AIR KEMENTERIAN

Jl. Pattimura 20/7 Kebayoran Baru, Jakarta Selatan 12110 Telp. 7396616, Fax. 7208285

DAFTAR HADIR

Hari/ Tanggal Waktu Tempat Acara

: 08:00 ~ selesai : Atanaya II , Hotel Atlet Century Park

: Kamis, 19 September 2013

: Final Meeting for Comprehensive Flood Management Committee for Ciliwung River Basin (CFMC) and Joint Coordination Committee (JCC)

No.	Nama	Instansi	Telepon/Email	Tanda Tangan
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PEKERJAAN UMUM AIR DIREKTORAT JENDERAL SUMBER DAYA KEMENTERIAN

Jl. Pattimura 20/7 Kebayoran Baru, Jakarta Selatan 12110 Telp. 7396616, Fax. 7208285

DAFTAR HADIR

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: Kamis, 19 September 2013

- : 08:00 ~ selesai
- : Atanaya II, Hotel Atlet Century Park
- : Final Meeting for Comprehensive Flood Management Committee for Ciliwung River Basin (CFMC) and Joint Coordination Committee (JCC)

Tanda Tangan	A.V.	marka -		Aller -		Ama	N.M.	- Aller	÷	An an
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