

Internal Ex-Post Evaluation for Technical Assistance under Finance and Investment Account
conducted by Indonesia Office: March 2018

Country Name Republic of Indonesia	Project for Capacity Development of Jakarta Comprehensive Flood Management
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I. Project Outline

Background	<p>In JABODETABEK, the metropolitan area consisting of Jakarta and surrounding cities, frequency of flood disaster was increasing due to the delays of flood control measures based on the flood management master plan and unregulated development causing increase of run-off water. Big flood had occurred almost every five years in 1997, 2002, 2007 and 2013 paralyzing the metropolitan functions and creating massive confusion in the country. Under this circumstance, the JICA technical cooperation project “Institutional Revitalization Project for Flood Management in JABODETABEK” (2006-2010) was carried out, and the technical and organizational capacity of flood management agencies regarding non-structural measures was developed for better maintenance and operation of river facilities, and collection/analysis of flood control information. However, further improvements were needed for developing the specific run-off control measures in the river basin and for the capacity development on the coordination and role sharing between river management and basin management.</p>				
Objectives of the Project	<p>The project aimed at implementing the Comprehensive Flood Management (CFM) measures based on the Comprehensive Flood Management Plan (CFMP) by developing technical and organizational capacities related to policy planning and implementation mechanisms of implementing agencies in target areas, and thereby the CFM measures are implemented based on CFMP in Jakarta area.</p>				
	<ol style="list-style-type: none"> 1. Overall Goal: The Comprehensive Flood Management (CFM) measures are implemented in Jakarta based on the legalized Comprehensive Flood Management Plan (CFMP). 2. Project Purpose: CFM measures are implemented in the project area based on CFMP. 				
Activities of the Project	<ol style="list-style-type: none"> 1. Project site: Ciliwung River Basin 2. Main activities: (1) Clarification of roles of organization related to CFM, (2) Formulation of Comprehensive Flood Management Action Plan (CFMAP), (3) Establishment of practical monitoring mechanism of CFMP through pilot project and (4) Establishment of coordination and collaboration mechanism of all stakeholders (national and local governments, NGO and communities) 3. Inputs (to carry out above activities) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <u>Japanese Side</u> <ol style="list-style-type: none"> 1. Experts: 16 persons 2. Trainees received: 26 persons 3. Equipment: PCs for run-off analysis, printers Portable generators, and other office equipment 4. Operational Expenses </td> <td style="width: 50%; vertical-align: top;"> <u>Indonesian Side</u> <ol style="list-style-type: none"> 1. Staff allocated: 52 persons 2. Provision of Facilities and Equipment 3. Operating expenses </td> </tr> </table> 			<u>Japanese Side</u> <ol style="list-style-type: none"> 1. Experts: 16 persons 2. Trainees received: 26 persons 3. Equipment: PCs for run-off analysis, printers Portable generators, and other office equipment 4. Operational Expenses 	<u>Indonesian Side</u> <ol style="list-style-type: none"> 1. Staff allocated: 52 persons 2. Provision of Facilities and Equipment 3. Operating expenses
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Project Period	November 2010 – October 2013	Project Cost	(ex-ante) 340 million yen, (actual) 371 million yen		
Implementing Agency	<p>National level: Directorate General of Water Resources (DGWR), Directorate General of Spatial Planning (DGSP) and Directorate General of Human Settlements (DGHS) of the Ministry of Public Works and Housing (PUPR: <i>Kementerian Pekerjaan Umum dan Perumahan Rakyat</i>)</p> <p>Provincial level: Government of DKI Jakarta, Provincial Government of West Java (including Bogor Regency, Bogor City, Depok Regency and Depok City)</p>				
Cooperation Agency in Japan	<p>Ministry of Land, Infrastructure, Transport and Tourism, Yachiyo Engineering Co. Ltd.,</p>				

II. Result of the Evaluation

1 Relevance	<p><Consistency with the Development Policy of Indonesia at the Time of Ex-Ante Evaluation and Project Completion></p> <p>At the time of ex-ante evaluation, this project was highly relevant with development plans such as “National Medium-Term Development Plan (2010-2014)” which focused on the poverty alleviation for those disaster affected areas, mitigation of floods and development of basin with consideration of spatial planning, development of non-structural measures and capacity development of disaster management for both governmental staff and communities. This development plan was still effective as a key policy in the country’s flood management at the time of project completion.</p> <p><Consistency with the Development Needs of Indonesia at the Time of Ex-Ante Evaluation and Project Completion ></p> <p>This project has been consistent with Indonesian development needs of flood control management at the time of ex-ante evaluation as described in “Background” above. At the time of project completion, the need for effective flood control measures was strongly voiced by various decision-makers after the massive flood in Jakarta in January 2013 as well as the floods in 2002 and 2007.</p> <p><Consistency with Japan’s ODA Policy at the Time of Ex-Ante Evaluation></p> <p>The Country Assistance Program for the Republic of Indonesia as of November 2004 put one of its priorities on the assistance toward democratic and equitable social development. As for the assistance toward public services, it made practical reference to that Japan assists the measure to cope with natural disasters, such as flood management.</p> <p><Evaluation Result></p> <p>In light of the above, the relevance of the project is high.</p>
2 Effectiveness/Impact	<p><Status of Achievement for the Project Purpose at the time of Project Completion></p> <p>By the project completion, the Project Purpose, “CFM measures are implemented in the project area based on CFMP” was achieved.</p>

The CFMP was developed through project activities and approved by the related organizations on September 19, 2013 at the Joint Meeting of Joint Coordinating Committee (JCC) and the Comprehensive Flood Management Committee for Ciliwung River Basin (CFMC) (Indicator 1). Based on the CFMP, as runoff control measure, the rainwater storage and infiltration facility was installed in the area of BBWS Ciliwung-Cisadane Office during the implementation of project in 2013 and through the process of implementation the capacity development of relevant organization staffs was greatly enhanced from technical perspective under the guidance of Japanese experts. In order to mitigate the increase of runoff volume due to land use change, the land classification from flood control viewpoint was examined. In addition, the improvement of situ (pond) and storage-at-park were planned but not adopted and thus not implemented due to that that there was settlement development in the conservation area of river and Situ to classify the land area is not legally determined. (Indicator 2). The CFMC functioned as the decision-making body, and outcomes of what was discussed at the CFMC were reflected on the CFMP (Indicator 3). During the project duration, monitoring system was established, and it was agreed at the joint meeting of the JCC and the CFMC that both the CFMP and the function of the CFMC were to be included in the water resources management policy (POLA) and the water resources management plan (Rencana), which is a fundamental framework of water resources, including flood management for Ciliwung Cisadane River Basin Office (BBWSSC: *Balai Besar Wilayah Sungai Ciliwung Cisadane*). POLA and Rencana which are mandated at Government Regulation No 42 Year 2008 about Water Resources Management are to be reviewed in every five years according to legal requirement. The feedback of monitoring results to the CFMP was to be made in every five years (Indicator 4).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

POLA on which the content of the CFMP has been effectively reflected now serves as the guideline for the flood management implementation. After project completion, the function of the CFMC has been merged into that of TKPSDA, which is a Coordination Team on Water Resource Management, and regular meetings are organized by BBWSSC. As for monitoring, the hydrological data and operation quality for river infrastructure, reservoir dam, irrigation etc., are continuously monitored. And the monitoring results are used to analyze necessary activities regarding water resources including flood control management, which then be reflected on the content of Rencana.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

It is observed that the Overall Goal, “CFM measures have been implemented in Jakarta based on the legalized comprehensive flood management plan.” has been achieved. Eleven structural measures and eight non-structural measures have been implemented by BBWSSC, Depok Local Government, Bogor Local Government, and DKI Local Government in the project area since project completion. Examples of structural measures include the construction of dry dam at Ciliwung river and Cisukabirus river and infiltration facilities in Bogor Regency, and those of non-structural measures include the improvement of telemetry system in BBWSSC and a flood map with regular update function in DKI Jakarta, etc. (Indicator 1). The function of coordination mechanism, equivalent to the CFMC, has been established in the areas other than the project area, such as the TKPSDA Citarum for the TKPSDA1 Citarum river basin and the TKPSDA Cidanau-Ciujung-Cidurian for the TKPSDA3 Cidanau-Ciujung-Cidurian river basin (Indicator 2). Interviews with related organizations have revealed that the outcome of discussion at the TKPSDA has been reflected on POLA and Rencana (Indicator 3). It is observed that the CFM approach for urban flood management has been reflected in the form of POLA and Rencana (Indicator 4).

<Other Impacts at the time of Ex-post Evaluation>

Some land acquisition and resettlement issue occurred during construction of tunnel, shortcut, and river improvement. This is a common issue in DKI Jakarta, where many illegal squatters living near the river banks. Government of DKI Jakarta and PUPR has been negotiating the resettlement for the riverside communities to the multi-stories building since 2014. While some accept the offer, some simply reject due to long history with the land and existing livelihood-

<Evaluation Result>

In light of the above, the project achieved the Project Purpose at the time of project completion. The effect of the project has been continued after the project completion. Thus, the Overall Goal has been achieved. Therefore, the effectiveness/impact of the project is high.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) CFM measures are implemented <u>in the project area</u> based on CFMP.	Indicator 1: CFMP is approved by the related organizations.	Status of the Achievement : achieved (continued) (Project Completion) In the Joint meeting of the JCC and the CFMC on 19 September 2013, the acceleration of the CFM implementation in the Ciliwung River Basin was discussed and the CFMP was approved by all participants from organizations related to the CFM. (Ex-post Evaluation) After the project completion the CFMP has not been utilized as it is, however, the content of the CFMP is reflected on POLA, which is a fundamental framework regarding harmonization of management, development, and conservation of water resources, including flood management for BBWSSC. In POLA, the chapter 13 of the CFMP in which stipulates the urgency to determine role allocation, and coordination mechanism is mentioned. In Rencana, the chapter 3 of the CFMP in which stipulates the flood control measures in Ciliwung River is mentioned. The CFMP is used as a reference for BBWS in flood control management.

	<p>Indicator 2: 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 project area based on the CFMP</p>	<p>Status of the Achievement: Mostly achieved (continued) (Project Completion) As runoff control measure, the rainwater storage and infiltration facility was installed in the area of BBWS Ciliwung-Cisadane Office during the implementation of project in 2013. As for the improvement of situ (pond) and storage-at-park, they were planned but not adopted and thus not implemented due to that there was settlement development in the conservation area of river and Situ to classify the land area is not legally determined.</p> <table border="1" data-bbox="544 250 1533 452"> <thead> <tr> <th>Time period</th> <th colspan="2">November 2010 – October 2013</th> </tr> <tr> <th>Subject</th> <th>Number of structural measures</th> <th>Number of non-structural measures</th> </tr> </thead> <tbody> <tr> <td>Flood Control</td> <td>0</td> <td>0</td> </tr> <tr> <td>Runoff Control</td> <td>1</td> <td>0</td> </tr> <tr> <td>Land Use Regulation</td> <td>0</td> <td>0</td> </tr> <tr> <td>Disaster Mitigation</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <p>(Ex-post Evaluation)</p> <table border="1" data-bbox="544 510 1533 712"> <thead> <tr> <th>Time period</th> <th colspan="2">October 2013 – August 2017</th> </tr> <tr> <th>Subject</th> <th>Number of structural measures</th> <th>Number of non-structural measures</th> </tr> </thead> <tbody> <tr> <td>Flood Control</td> <td>6</td> <td>1</td> </tr> <tr> <td>Runoff Control</td> <td>2</td> <td>2</td> </tr> <tr> <td>Land Use Regulation</td> <td>0</td> <td>1</td> </tr> <tr> <td>Disaster Mitigation</td> <td>0</td> <td>1</td> </tr> </tbody> </table>	Time period	November 2010 – October 2013		Subject	Number of structural measures	Number of non-structural measures	Flood Control	0	0	Runoff Control	1	0	Land Use Regulation	0	0	Disaster Mitigation	0	0	Time period	October 2013 – August 2017		Subject	Number of structural measures	Number of non-structural measures	Flood Control	6	1	Runoff Control	2	2	Land Use Regulation	0	1	Disaster Mitigation	0	1
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	<p>Indicator 3: Outcomes from the CFMC in the project area are reflected to the CFMP.</p>	<p>Status of the Achievement: achieved (continued) (Project Completion) The opinions and propositions on flood control measures (dam construction) and runoff control measures raised at the CFMC meetings were feedback to the CFMP. (Ex-post Evaluation) The CFMC does not exist in the targeted area as it had been. But the coordination mechanism itself has been sustained in the different form which is through TKPSDA since project completion. And it is confirmed by the interviews with related organizations that the outcome of discussion at the TKPSDA has been reflected on POLA and Rencana. ※The content of the CFMP has been incorporated into POLA and Rencana since project completion as explained in Indicator 1.</p> <table border="1" data-bbox="544 1032 1533 1205"> <thead> <tr> <th>Subject</th> <th>Meeting Frequency</th> <th>Purpose</th> <th>Member organization</th> </tr> </thead> <tbody> <tr> <td>Flood Control</td> <td rowspan="2">Quarterly</td> <td>Discuss flood control program</td> <td>BBWSCC and Water Resources Agency</td> </tr> <tr> <td>Runoff Control, Land Use Regulation, Disaster Mitigation</td> <td>Coordination</td> <td>Members of TKPSDA</td> </tr> </tbody> </table>	Subject	Meeting Frequency	Purpose	Member organization	Flood Control	Quarterly	Discuss flood control program	BBWSCC and Water Resources Agency	Runoff Control, Land Use Regulation, Disaster Mitigation	Coordination	Members of TKPSDA																									
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	<p>Indicator 4: Monitoring results are reflected to the CFMP.</p>	<p>Status of the Achievement : achieved (continued) (Project Completion) It was agreed at the joint meeting of the JCC and the CFMC on Sept. 19, 2013, that the CFMP and the function of CFMAP are included in Rencana and POLA that are reviewed and revised in every 5 years according to the legal requirement. Under this procedure, the feedback of monitoring results to the CFMP was to be made in every five years. (Ex-post Evaluation) As for monitoring, the hydrological data of river area (ex. river discharge and rainfall) and operation quality for river infrastructure, reservoir dam, irrigation, raw water and beach are continuously monitored. And the monitoring results is used to analyze necessary activities regarding water resources including flood control management, reflecting the content of Rencana formally reviewed annually and POLA every five years.</p>																																				
<p>(Overall Goal) CFM measures are implemented in <u>Jakarta</u> based on the legalized CFMP.</p>	<p>Indicator 1: 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.)</p>	<p>(Ex-post Evaluation) : achieved Some structural and non-structural measures have been implemented based on POLA and Rencana, the equivalent framework for comprehensive flood management plan (CFMP). A number of measures implemented in Jakarta since project completion (2013) up to the time of ex-post evaluation (2017) are as follows.</p> <table border="1" data-bbox="544 1677 1533 1879"> <thead> <tr> <th>Time period</th> <th colspan="2">October 2013 – August 2017</th> </tr> <tr> <th>Subject</th> <th>Number of structural measures</th> <th>Number of non-structural measures</th> </tr> </thead> <tbody> <tr> <td>Flood Control</td> <td>6</td> <td>2</td> </tr> <tr> <td>Runoff Control</td> <td>4</td> <td>4</td> </tr> <tr> <td>Land Use Regulation</td> <td>0</td> <td>1</td> </tr> <tr> <td>Disaster Mitigation</td> <td>0</td> <td>1</td> </tr> </tbody> </table>	Time period	October 2013 – August 2017		Subject	Number of structural measures	Number of non-structural measures	Flood Control	6	2	Runoff Control	4	4	Land Use Regulation	0	1	Disaster Mitigation	0	1																		
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Indicator 2: Comprehensive Flood Management Committee (CFMC) are established in areas other than a project area.	(Ex-post Evaluation) : achieved		
	River Basin	Established committee name	Member organizations
	TKPSDA1 Citarum	TKPSDA Citarum	Bappeda (Regional Development Planning Agency), Provincial Agency of Water Resources, Agency of Spatial Planning, Agency of Public Works, representative of local community, NGO, and so on.
	TKPSDA3-Cidanau-Ciujung-Cidurian	TKPSDA Cidanau-Ciujung-Cidurian	Bappeda (Regional Development Planning Agency), Provincial Agency of Water Resources, Agency of Spatial Planning, Agency of Public Works, representative of local community, NGO, and so on.
Indicator 3: Outcomes of the discussion forums are reflected to the CFMP.	(Ex-post Evaluation) : achieved In the TKPSDA Citarum, flood control measures have been discussed. In the TKPSDA Cidanau-Ciujung-Cidurian, the run-off control, situ revitalization and dam construction have been discussed. Outcomes of these discussions were reflected to the POLA under the section of Flood Control Measures as the river improvement.		
Indicator 4: CFM approach for urban flood management is legalized.	(Ex-post Evaluation) : achieved CFM approach for urban flood management was not legalized as a form of the CFMP, but is in the form of POLA and Rencana which reflect the content of CFM approach. TKPSDA members are responsible to provide inputs in preparing and reviewing POLA and Rencana.		

Source : Project Completion Report and interviews with and response to the questionnaire by the implementing agency and related organizations.

3 Efficiency

While the project period was within the plan, the project cost slightly exceeded the plan (ratio against plan: 100%, 109%). Therefore, efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

Two policy documents, “National Medium-Term Development Plan (2015-2019)” and “Five Year’s Plan of the Ministry of Public Works (2015-2019)”, state the importance of flood management to achieve water security. Both documents constitute the basis for all ministries and government agencies (including Ministry of Public Works and Housing) in formulating their respective strategic plans.

<Institutional Aspect>

Some changes have been made to organizational structures since project completion with more focus on the function to manage water resources. As for the central level, in DGWR, the Dam Centre which in charge of dam construction was created in the similar level with Directorate of River and Coastal in 2015 and the DGSP has become the part of National Land Agency maintaining its original function. As for the provincial level, in DKI Jakarta, the Public Works Agency was split into Highways Agency and Water Management Agency in 2014. These changes are considered as appropriate in terms of being more specific for water resources management including flood control management. No significant changes have made to the city and regency levels. Interviews with those concerned of each organization have revealed that the numbers of organizations in each level are sufficient for current flood control management under the circumstances that staff recruitment for governmental offices has been suspended during 2015 to 2019. Those member organizations have already maximized their current staffs to implement the tasks. Furthermore, there is no need for staff increment since there is no urgency and priority to scale up the flood management task.

The coordination mechanisms which manage the urban flood control within related organizations have functioned well. In order to make a better coordination for water resources sector, the DKI Jakarta Government has redefined the water resources sector to include the flood control, water and wastewater while the environment sector to include the sanitation. The coordination mechanism has been sustained through the TKPSDA and regular meetings are organized by the BBWSCC. In terms of Ciliwung Cisadane river basin, there have been no significant changes to the role allocation of BBWSCC since project completion. For other TKPSDA other than Ciliwung Cisadane, two TKPSDAs were established, including TKPSDA Cidanau, Ciujung, and Cidurian and TKPSDA Citarum. This was to provide a better coordination among related stakeholders within a more limited river basin.

<Technical Aspect>

While some counterparts have moved to other divisions due to the promotion or rotation, many of counterparts have still been working and they can transfer their skills acquired to their colleagues or other staffs especially through the on-the-job training during the pilot project towards the regular activities. There are no refresher trainings, but Human Resources Development Agency of PUPR hold annual training about flood management, in the aspect of causes and action plan for flood control to approximately 30 staffs per year to maintain the staff’s skill level. Furthermore, according to the interview with representative from DGWR and BBWS Ciliwung Cisadane, legalized POLA and Rencana have served as the implementation guideline for those in charge to refresh their knowledge and skills.

<Financial Aspect>

According to the interview with organizations concerned, the central government level organizations can secure budget allocation consistently in both structural and non-structural measures. It was confirmed that there should be no change expected to the budget allocation in the future. The budget data of solely for comprehensive flood management for DGWR is shown below. The reasons for fluctuation are changes on yearly focus and priority program on water resources management. As for the DKI Jakarta, according to the representative of DKI Jakarta, it can secure budget allocation consistently in both structural and non-structural measures and there should be no major change expected to the budget allocation in the future.

Organization	Budget data for comprehensive flood management					
	Year	2013	2014	2015	2016	2017
DGWR	Amount in billion Rupiah	1,156	978	1,393	1,001	831
LG DKI Jakarta	Amount in billion Rupiah	NA	NA	NA	3,317	2,756

<Source> interviews with and response to the questionnaire from DGWR and Bappeda DKI Jakarta.

With respect to the financial aspect at the local level other than the DKI Jakarta, the budget data of CFM alone is hard to be collected as it is often mixed up with other function, such as maintenance cost of water resource facility, irrigation, dam and capacity building. As for the budget allocation of organizations of West Java, Bogor Regency, and Bogor City, it may be fluctuating due to yearly priority, so that budget can often cover the only limited area of flood control. (According to DGWR, the budget amount for flood management by each local government is secured, but the data itself was not available during this evaluation study.)

<Evaluation Result>

In light of the above, slight problems have been observed in terms of the financial aspects of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

5 Summary of the Evaluation

The project achieved the Project Purpose for implementing CFM measures in the project area based on the CFMP. The effect by the project has continued since the project completion. The Overall Goal has also been achieved since the CFM measures have been implemented in Jakarta based on the legalized form of currently effective comprehensive flood management policy and plan such as POLA and Rencana. As for sustainability, slight problem has been observed in terms of financial aspect due to uncertain budget especially in local government level. As for efficiency, the project cost slightly exceeded the plan. Considering all of the above points, this project is evaluated to be satisfactory.

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

It was identified by the study that budget allocation to the flood control management for West Java Province and its city and regency levels are fluctuating because their activities are not strongly considered in their priorities. In order to ensure their commitment to implement POLA and Rencana, the Central Government might encourage the Local Government through the provision of incentives system by increasing the Special Allocation Fund amount (*Dana Alokasi Khusus*) for Local Government which consistently implements Rencana. Hence, the Local Government can secure their funds for flood control management project, or execute more activities related to flood control management through the state budget.

Lessons Learned for JICA:

The project focused more on the “learning process” which was directly linked to the project purpose of “Capacity Development” rather than on the project outcome. The pilot project in Sugutamu sub basin had provided the good opportunity for the relevant organization staffs to experience all aspects of flood management under the guidance of Japanese experts. By this mean, they could acquire and enhance their technical skill. This approach has resulted in sustaining the effect of the project, especially in terms of technical sustainability. Aside from that, it also results on their contribution towards the achievement of project purpose and project output. The relevant staffs become more ready with necessary skills to manage the flood management activities during and after the project completed.



Additional gate at Manggarai Water Gate Point to increase the river flow capacity from 330 m³/ sec to 570 m³/s.



Diversion tunnel from Ciliwung to East Floodway to reduce flood peak discharge by diverting 60 m³/s.