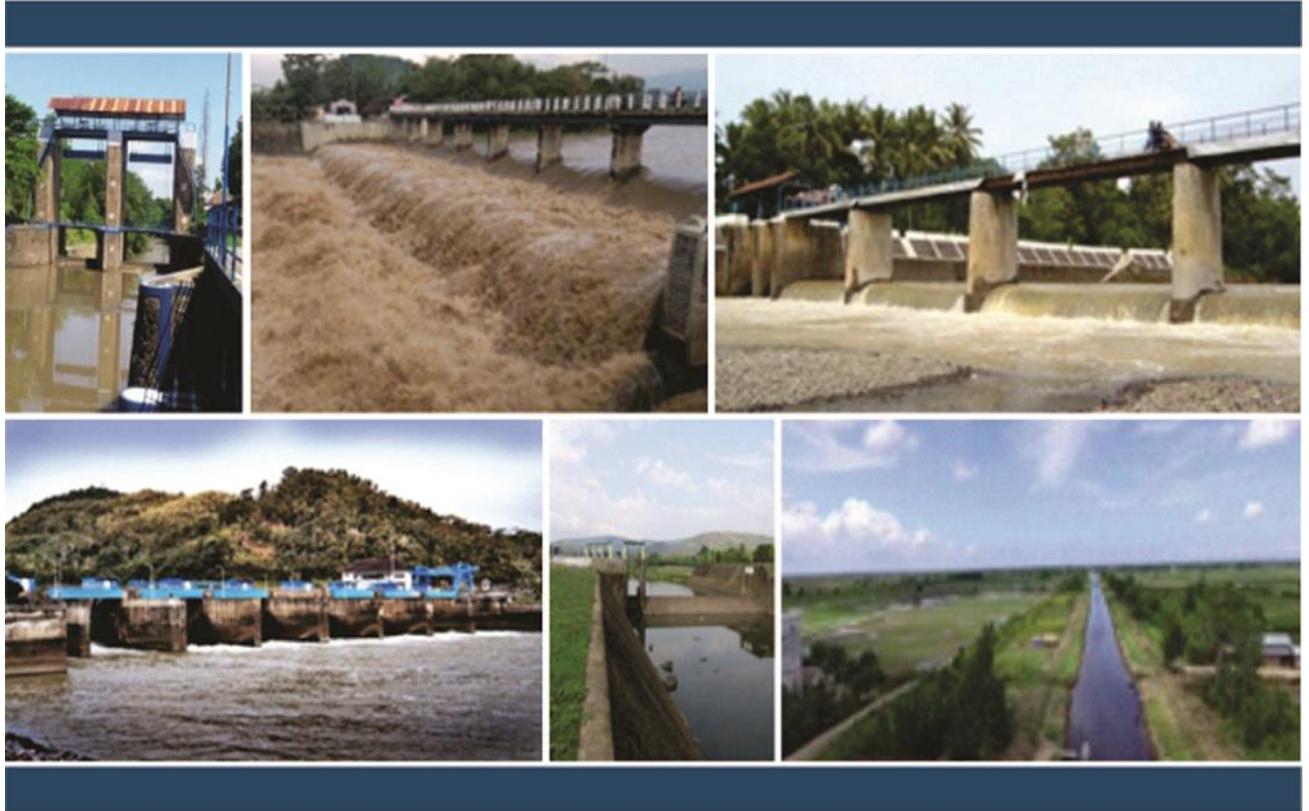


SIMURP

**Strategic Irrigation Modernization and Urgent
Rehabilitation Project**

IBRD Loan 8027-ID



**ENVIRONMENTAL and SOCIAL MANAGEMENT
PLAN (ESMP)**

March 2018

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Chapter 1. Introduction

1.1 Project Description

The Strategic Irrigation Modernization and Urgent Rehabilitation Program (SIMURP) responds to the needs as formulated in the Government's Mid-Term Development Plan (RPJM 2015-2019) using the five-pillar framework to promote rehabilitation and preparation of modernization of existing national irrigated systems, referred to as 'irrigation revitalization'. The proposed project will focus on enabling some 110,000 hectares of national irrigation systems to be rehabilitated and to more or lesser extent to be modernized through a revitalization program, while the Jatiluhur system (224,000 hectares) will be the object of strategic modernization (component B). The rehabilitation and modernization activities relate to enhanced service delivery and deals with system assessments, management information and decision support systems, institutional strengthening, human resources development and studies and designs for rehabilitation and modernization of irrigation, drainage and flood management infrastructure. All these activities will follow the established principles and practices of participatory irrigation management (PPSIP). The proposed SIMURP program consists of 3 components that are aligned to the five pillars of modernization.

The project is designed around the five pillars that define the concept of irrigation modernization in Indonesia. These are intended to support the Government's efforts to address the infrastructure, institutions, information and technical issues required to enhance irrigation efficiency through a coherent participatory approach. The five pillars include elements of the ABCDE+F approach advocated in the WBG Irrigation Modernization Paper. These are aimed at improving an existing irrigation system to better meet participatory irrigation management services, to be more efficient, effective and sustainable management. These pillars include: (i) Improving Water Security and Availability; (ii) Rehabilitation and Upgrading of Infrastructure; (iii) Improvement of Management Systems; (iv) Strengthening of Institutions; and, (v) Strengthening of Human Resources.

1.2 Objective of the ESMP

This ESMP document has been prepared as part of World Bank requirement to support the nationally regulated environmental and social management plan (SPPL). The ESMP will guide the implementation of activities that are to manage and monitor environmental and social impacts of the SIMURP. This document is aligned with the project's Environmental and Social Management Framework (ESMF) document.

1.3 Project Location and Activity

SIMURP sub-projects that covered in this ESMP are located in five locations as mentioned in the table below.

Table 1. Name and Location of Sub-Projects

No	Name of Irrigation Scheme	B/BWS	Regency	Province	Total area
1	Kedung Putri	Serayu Opak	Purworejo	Central Java	4.341
2	Talang	Brantas	Jember	East Java	8.844
3	Pamukkulu	Pompengan Jeneberang	Takalar	South Sulawesi	4.133
4	Jurang Batu	Nusa Tenggara I	Lombok Tengah	NTB	3.467
5	Jatiluhur	Citarum	Subang,	West Java	183.229

1.3.1 DI Kedung Putri

Kedung Putri Irrigation Scheme is located in Purworejo Regency, Central Java Province, under B/BWS Serayu Opak. Kedung Putri Irrigation scheme has 57,980 meters of primary canal, 51,521 meters of secondary canal, 6,987 m³/s water debit, and 4,500.1 Ha total service area. The first-year activity for this irrigation scheme will be demolishing the concrete structure; sediment removal; rehabilitation of drainage; and installment of the irrigation gate.

During the sediment removal, it is expected to generate an issue with the local community that lives by the irrigation canal. The sediment removal quantity is small and the dredging materials are silted material from existing canals which the local community uses for embankment material. The potential issues are dust, odor, noise, and disrupted road access. Therefore, it is proposed to conduct socialization to the community and conduct mitigation activities to reduce these potential negative impacts. The location of Kedung Putri Irrigation Scheme passes urban areas. Therefore, the social issues that might arise are reactions to odor from the dredging material, safety of the community, temporary disrupted access, all resulting in potential community complaints. To anticipate this, socialization and information disclosure regarding the project should be shared before the construction begins. The specific conditions of the location of Irrigation Scheme are shown in **Figure 1** and **Figure 2**.



Figure 1. Picture of DI Kedung Putri Site

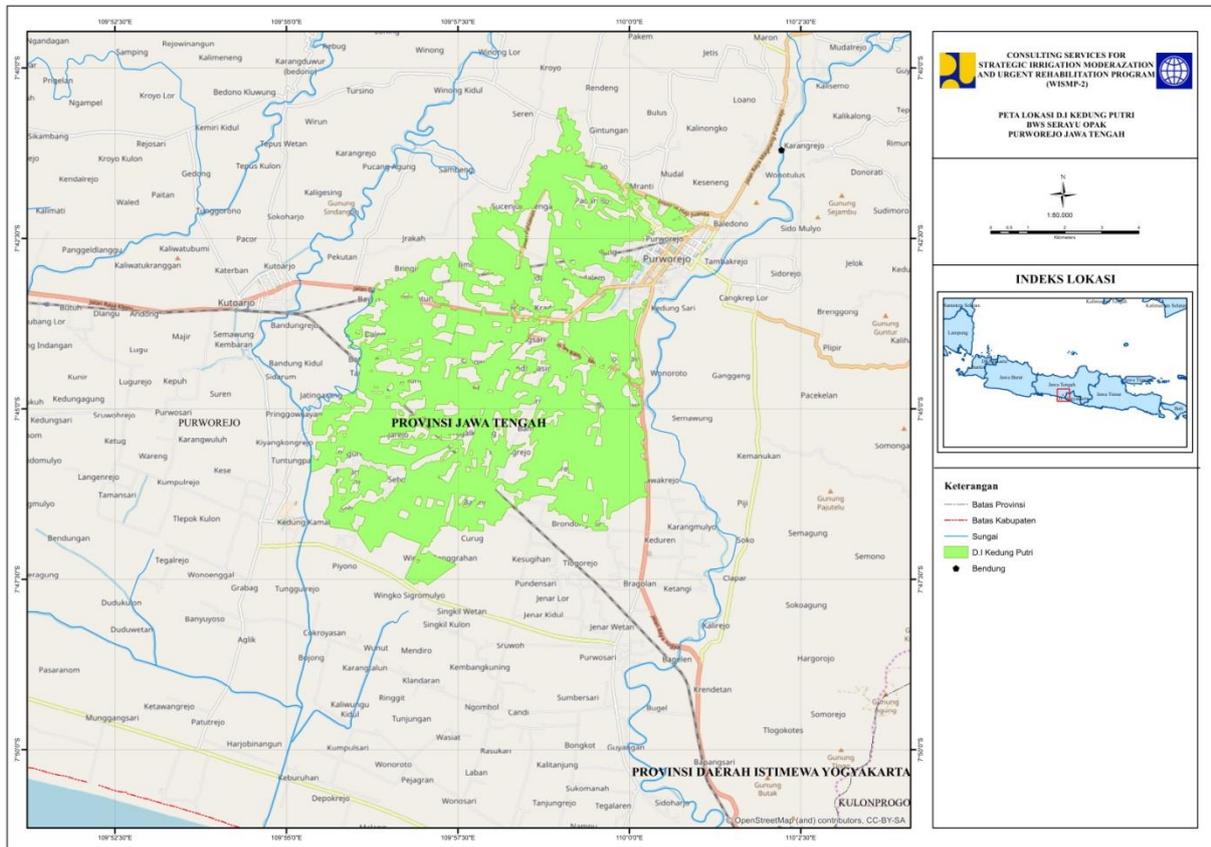


Figure 2. Map of DI Kedung Putri

1.3.2 DI Talang

Talang Irrigation Scheme is located in Jember Regency, East Java Province, under B/BWS Brantas. Talang Irrigation scheme has 9,523 m of primary canal, 66,803 m of secondary canal, 7,423 m³/s water debit, and 4,366 Ha total service area. The first-year activities for this irrigation scheme will be: demolishing the concrete structure; sediment removal; rehabilitation of drainage; and installment of the irrigation gate.

To reduce the potential negative impacts of the construction activities, to the subproject will conduct socialization with the community prior to begin the activities, as the construction will potentially generate noise and dust from the mobilization of material and equipment. Although there are no potential significant social issues at the site, the construction activity will potentially still create a negative impact on parts of the community. The social issues that might arise are: reactions to odor from the dredged material, safety risks to the community, and temporary disrupted access. These may all result in community complaints if mitigation measures were not properly implemented. The sediment removal quantity is small and the dredging material are silted material from existing canals is used by the community as embankment material. To anticipate any issues, socialization and information disclosure regarding the project shall be shared before the construction begins. The specific conditions of the location of Irrigation Scheme are shown in **Figure 3** and **Figure 4**.



Figure 3. Picture of DI Talang Site

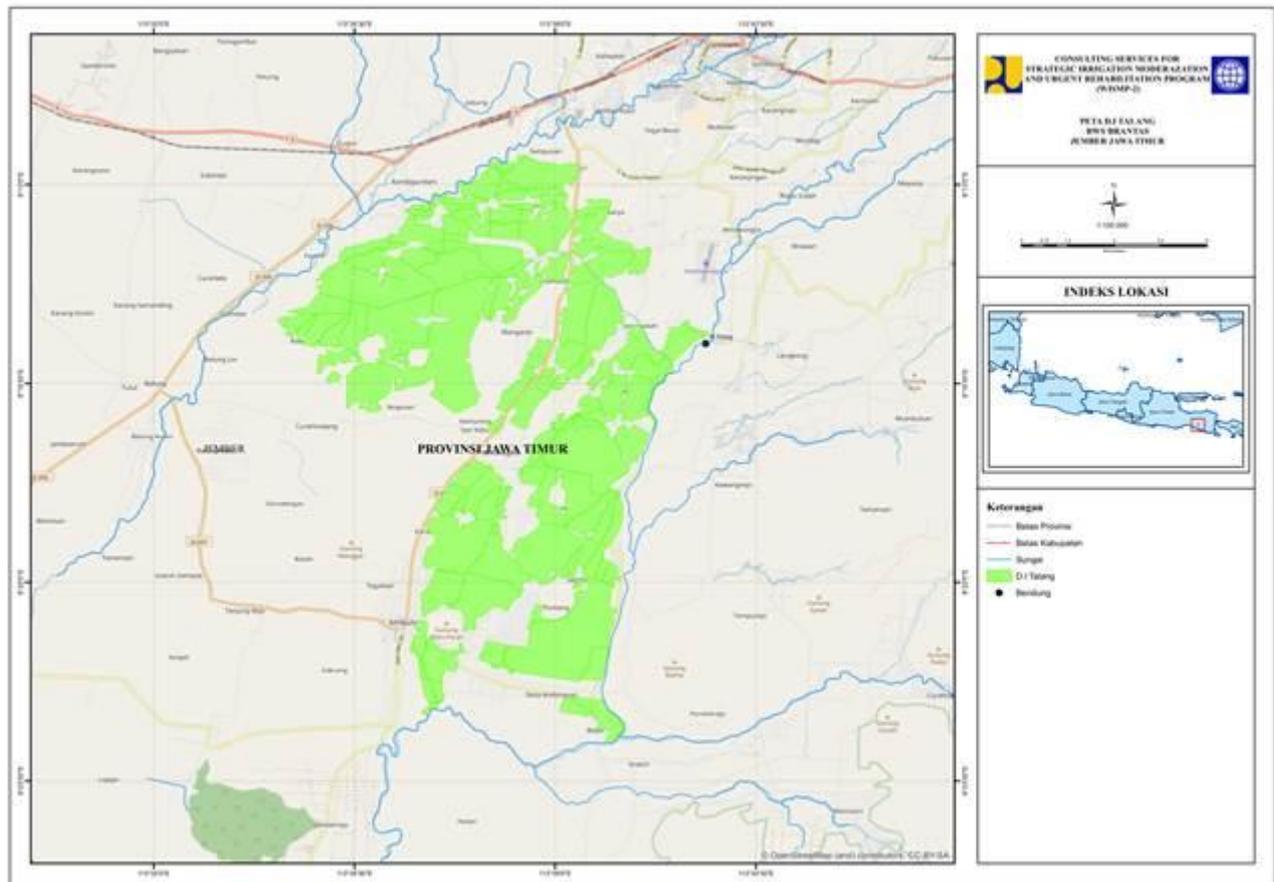


Figure 4. Map of DI Talang

1.3.3 DI Pamukkulu

Pamukkulu Irrigation Scheme, which is under B/BWS Pompegan Jeneberang, is located at Takalar Regency, South Sulawesi Province. . Pamukkulu Irrigation scheme has 57,980 m of primary canal, 55,590 m of secondary canal, 7,650 m³/s water debit, and 4,500,1 Ha total service area.

The activities to be conducted during the 1st year of SIMURP are demolishing concrete structure, sediment removal, rehabilitation of drainage, installment of the irrigation gate and aqueduct installment. There are areas in the irrigation scheme with steep slopes. In this location, some construction engineering design will be required to protect community houses. The irrigation canal is also used for animal (cattle and livestock) bathing. Therefore during the design an alternative sites for animal activities need to be considered.

The construction of an aqueduct is required in Pamukkulu Irrigation Scheme to connect the PB.19 canal to Jenemarung canal. This will require additional land, approximately 1,500 m². The initial survey has identified that the land belonged to 2 land owners and initial consultation with them was held during the DED survey. The land owners have no objection to sell the land for the project as it is not productive land and is not cultivated for earning income. Furthermore, they will get benefit from the facilities. Negotiation will be conducted directly with the land owners before the construction work starts. No LARAP is prepared as the process will be on a voluntary basis. A simple plan of land acquisition will be prepared and submitted to the Bank prior to the execution, to ensure that the process is acceptable. The implementation process will be documented, including the consultation and negotiation process, to be submitted to NPMU/NPIU and the World Bank. The specific conditions of the irrigation scheme is shown in **Figure 5** and **Figure 6**.



Figure 5. Picture of DI Pamukkulu Site

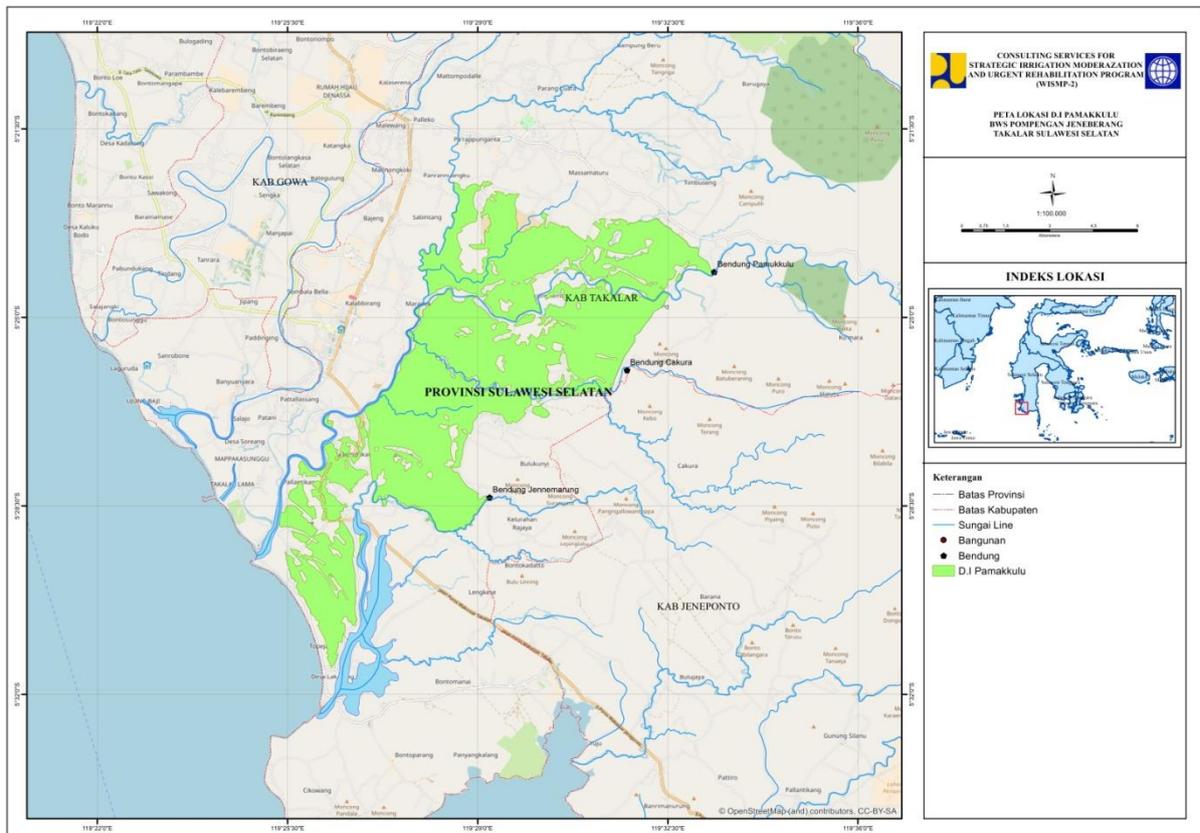


Figure 6. Map of DI Pamukkulu

1.3.4 DI Jurang Batu

Jurang Batu Irrigation Scheme is located in Central Lombok Regency, West Nusa Tenggara Province, under B/BWS Nusa Tenggara I. Jurang Batu Irrigation scheme has 33,690 m of primary canal, 19,429 m of secondary canal, 5,708 m³/s water debit, and 3,357 Ha total service area. The first-year activities for this irrigation scheme will be: demolishing the concrete structure; sediment removal; rehabilitation of drainage; and installment of the irrigation gate.

To reduce the potential negative impacts of the construction activities, to the subproject will conduct socialization with the community, particularly as the construction will generate noise and dust from the mobilization of material and equipment. Jurang Batu Irrigation Scheme has reservoirs (*embung*) that are made for irrigation purpose and are used by the community for domestic water supply purposes and for aquaculture (fish cages). Therefore, the community requests that the water in the reservoir shall not reduce. If the water is to be used for irrigation, it will reduce the volume of the water available in the reservoir. The communities are worried that this will reduce their fishery productivity. The SIMURP activities will potentially increase public concern on the water quantity issue, therefore intensive socialization is required at this site to get a better understanding of the community needs and to determine which approaches are needed in the design planning, based on these communities inputs. The mitigation activity is to develop an understanding and proceed with activities that have benefit for both parties. The specific conditions of the location of Irrigation Scheme are shown in **Figure 7** and **Figure 8**.



Figure 7. Picture of DI Jurang Batu Site

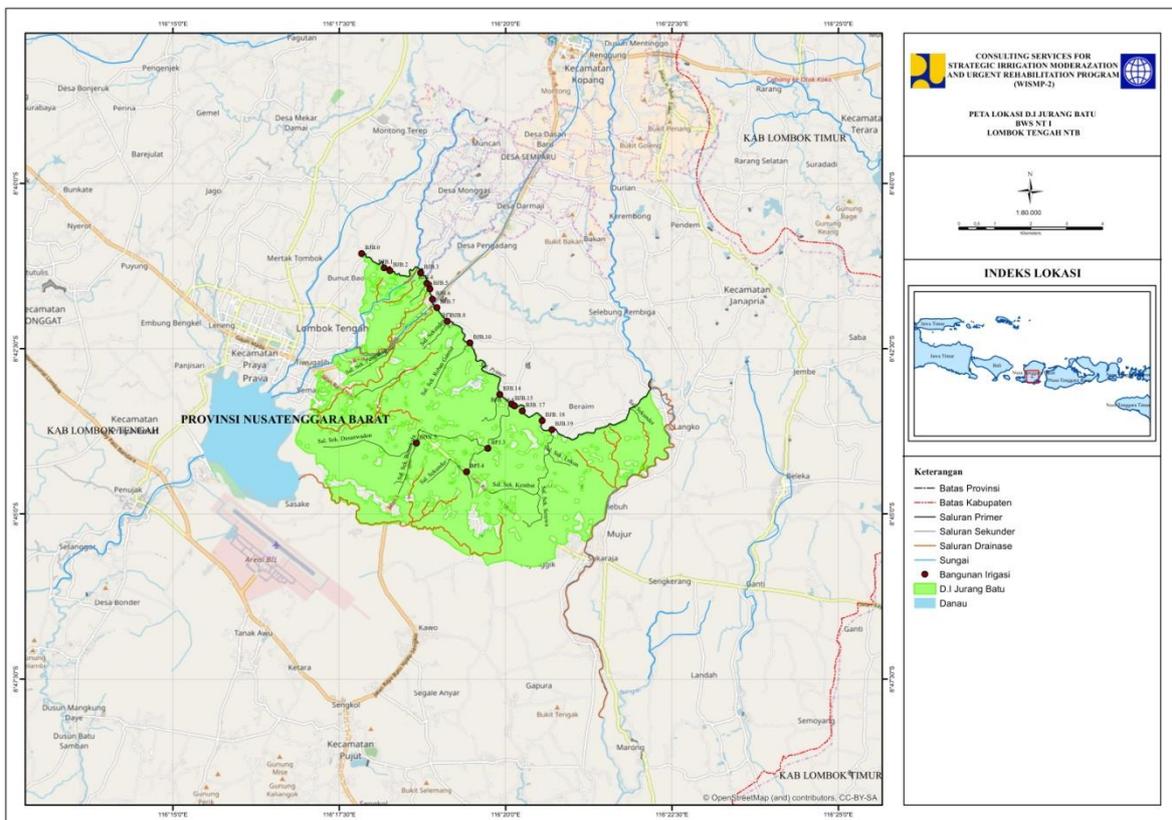


Figure 8. Map of DI Jurang Batu

1.3.5 DI Jatiluhur

Jatiluhur Irrigation Scheme is under Component B. Jatiluhur irrigation scheme is located at Subang, West Java Province, under B/BWS Citarum. SIMURP will conduct pilot projects in 2 sub-irrigation schemes: Macan Sub-irrigation Scheme in Binong Section; and Pamanukan Sub-irrigation Scheme in the Patrol Section of Jatiluhur. Initial screening assessment for the Jatiluhur Irrigation Scheme has been done with the complete screening to be done upon the finalization of Detail Engineering Design (DED). The assessment of impacts was based on the information quantifying the extent of works. The construction activities that will be conducted for the first year are: lining, dredging, and rehabilitation on the irrigation canal. Based on the design, there is no requirement to acquire land. Potential social impacts still might arise from the sub-project implementation. Therefore, socialization is needed to anticipate reactions, while specific measures will be taken to reduce the potential negative impacts. The specific conditions of the location of Jatiluhur Irrigation Scheme are shown in **Figure 9** and **Figure 10**.



Figure 9. Picture of DI Jatiluhur Site

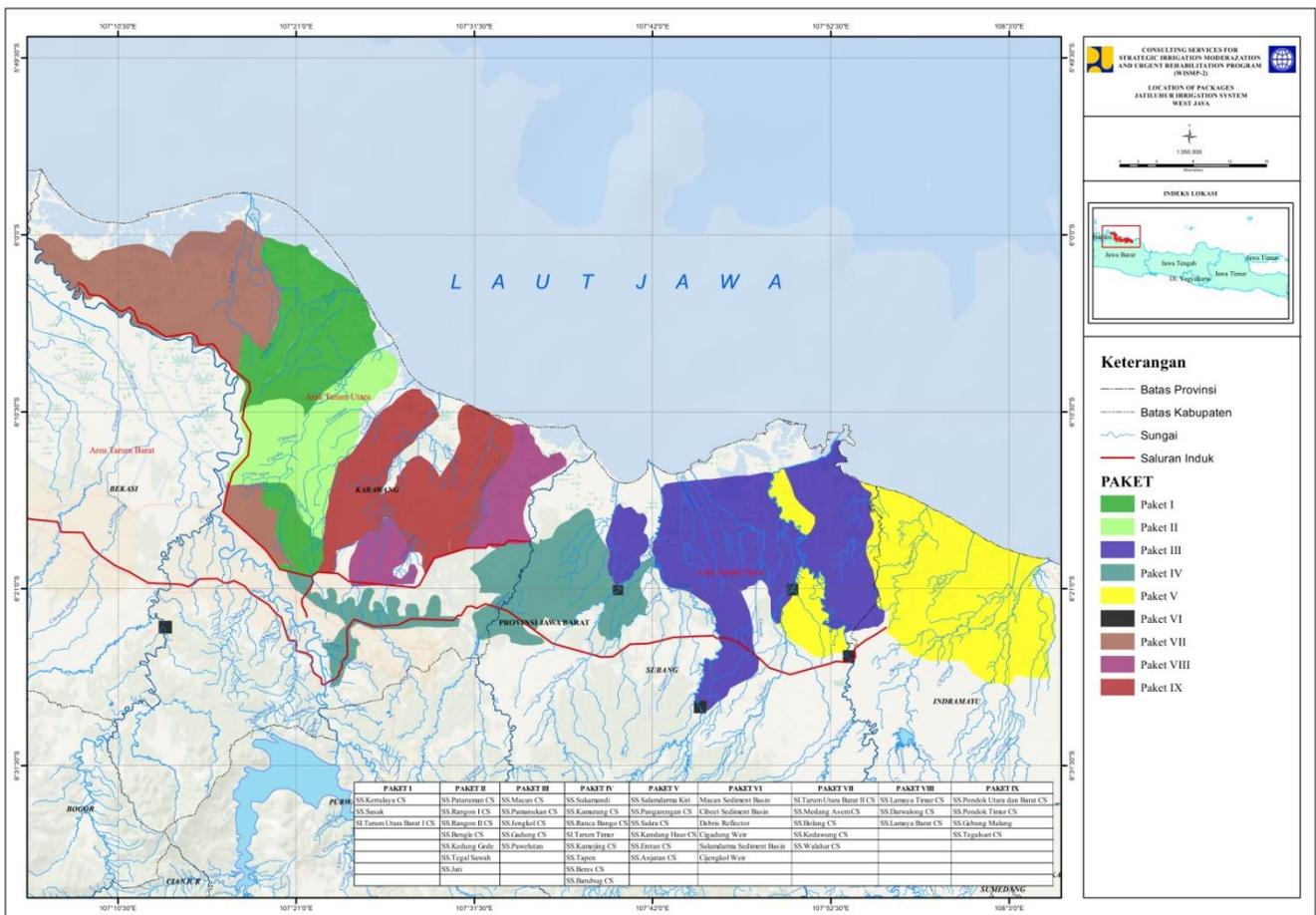


Figure 10. Map of DI Jatiluhur

There are some potential environmental and social risks and impacts resulting from the Project's activities as summarized in the **Table 2** below.

Table 2. Environmental and Social Risk Assessment Result for 1st Year

Subproject	Aspect	Environmental and Social Issues	Level of Impact
DI Kedung Putri			
Mobilization of equipment, materials and labor	Transportation	Air pollution – Dust impact on human respiratory systems from material loss during transportation	Moderate risk
		Noise pollution – impacts from vehicle movements	Moderate risk
		Traffic impact – temporary traffic disruption	Moderate risk
	Mobilization of labor	Social jealousy between the workers and other local member of communities	Low risk
Demolition of the concrete structure	Demolition work	Air pollution – Dust impact on human respiratory systems from material loss during demolition	Low risk
		Noise pollution – impacts from demolition	Low risk
		Water pollution – potential additional sediment load within water system from demolition	Low risk
	Placement of debris	No additional impacts	Low risk
Sediment removal/dredging	Dredging activity	Noise pollution – from the dredging activity and transport dredging material	Moderate risk
		Odor pollution – from the dredging material	Moderate risk
		Air pollution – from the dredging activity and transport dredging material	Moderate risk
		Water pollution – from dredging activity	Low risk
Rehabilitation of drainage	Civil work	Air pollution – dust impact on human respiratory system from the civil work activity	Low risk
Installment of the irrigation gate	Civil work	Water pollution – impacts from residual construction material run-off	Low risk
DI Talang			
Mobilization of equipment, materials and labor	Transportation	Air pollution – Dust impact on human respiratory systems from material loss during transportation	Low risk
		Noise pollution – impacts from vehicle movements	Low risk
		Traffic impact – temporary traffic disruption	Low risk
	Mobilization of labor	Social jealousy between the workers and other local member of communities	Low risk
Demolition of the concrete structure	Demolition work	Air pollution – Dust impact on human respiratory systems from material loss during demolition	Low risk
		Noise pollution – impacts from demolition	Low risk
		Water pollution – potential additional sediment load within water system from demolition	Low risk
	Placement of debris	No additional impacts	Low risk
Sediment removal/dredging	Dredging activity	Noise pollution – from the dredging activity and transport dredging material	Low risk

Subproject	Aspect	Environmental and Social Issues	Level of Impact
		Odor pollution – from the dredging material	Low risk
		Air pollution – from the dredging activity and transport dredging material	Low risk
Sediment removal/dredging	Dredging activity	Water pollution – from dredging activity	Low risk
Rehabilitation of drainage	Civil work	Air pollution – dust impact on human respiratory system from the civil work activity	Low risk
Installment of the irrigation gate	Civil work	Water pollution – impacts from residual construction material run-off	Low risk
DI Pamukkulu			
Land acquisition	Land	Public concern – unclear information to the community	Low risk
		Social jealousy – between the PAPs and non PAPs for the land acquisition	Low risk
		Tough negotiation on the land price	Low risk
Mobilization of equipment, materials and labor	Transportation	Air pollution – Dust impact on human respiratory systems from material loss during transportation	Low risk
		Noise pollution – impacts from vehicle movements	Low risk
		Traffic impact – temporary traffic disruption	Low risk
	Mobilization of labor	Social jealousy between the workers and other local member of communities	Low risk
Demolition of the concrete structure	Demolition work	Air pollution – Dust impact on human respiratory systems from material loss during demolition	Low risk
		Noise pollution – impacts from demolition	Low risk
		Water pollution – potential additional sediment load within water system from demolition	Low risk
	Placement of debris	No additional impacts	Low risk
Sediment removal/dredging	Dredging activity	Noise pollution – from the dredging activity and transport dredging material	Low risk
		Odor pollution – from the dredging material	Low risk
		Air pollution – from the dredging activity and transport dredging material	Low risk
		Water pollution – from dredging activity	Low risk
Rehabilitation of drainage	Civil work	Air pollution – dust impact on human respiratory system from the civil work activity	Low risk
Installment of the irrigation gate	Civil work	Water pollution – impacts from residual construction material run-off	Low risk
Construction of aqueduct	Civil work	Noise pollution – impact from the heavy equipment	Low risk
		Air pollution – dust impact on human respiratory system from civil work activity	Low risk
		Water pollution – impacts from residual construction material run-off	Low risk
DI Jurang Batu			
Design preparation	Data collection	Public concern – unclear information in community	Moderate risk
Mobilization of equipment, materials and labor	Transportation	Air pollution – Dust impact on human respiratory systems from material loss during	Low risk

Subproject	Aspect	Environmental and Social Issues	Level of Impact
		transportation	
		Noise pollution – impacts from vehicle	Low risk
Mobilization of equipment, materials and labor	Transportation	movements	
		Traffic impact – temporary traffic disruption	Low risk
	Mobilization of labor	Social jealousy between the workers and other local member of communities	Low risk
Demolition of the concrete structure	Demolition work	Air pollution – Dust impact on human respiratory systems from material loss during demolition	Low risk
Demolition of the concrete structure	Demolition work	Noise pollution – impacts from demolition	Low risk
		Water pollution – potential additional sediment load within water system from demolition	Low risk
	Placement of debris	No additional impacts	Low risk
Sediment removal/dredging	Dredging activity	Noise pollution – from the dredging activity and transport dredging material	Low risk
		Odor pollution – from the dredging material	Low risk
		Air pollution – from the dredging activity and transport dredging material	Low risk
		Water pollution – from dredging activity	Low risk
Rehabilitation of drainage	Civil work	Air pollution – dust impact on human respiratory system from the civil work activity	Low risk
Installment of the irrigation gate	Civil work	Water pollution – impacts from residual construction material run-off	Low risk
DI Jatiluhur (SS Pamanukan & SS Macan)			
Mobilization of equipment, materials and labor	Transportation	Air pollution – Dust impact on human respiratory systems from material loss during transportation	Moderate risk
		Noise pollution – impacts from vehicle movements	Moderate risk
		Traffic impact – temporary traffic disruption	Moderate risk
	Mobilization of labor	Social jealousy between the workers and other local member of communities	Low risk
Demolition of the concrete structure	Demolition work	Air pollution – Dust impact on human respiratory systems from material loss during demolition	Low risk
		Noise pollution – impacts from demolition	Low risk
		Water pollution – potential additional sediment load within water system from demolition	Low risk
	Placement of debris	No additional impacts	Low risk
Sediment removal/dredging	Dredging activity	Noise pollution – from the dredging activity and transport dredging material	Moderate risk
		Odor pollution – from the dredging material	Moderate risk
		Air pollution – from the dredging activity and transport dredging material	Moderate risk
		Water pollution – from dredging activity	Low risk
Rehabilitation of drainage	Civil work	Air pollution – dust impact on human respiratory system from the civil work activity	Low risk
Installment of the irrigation	Civil work	Water pollution – impacts from residual	Low risk

Subproject	Aspect	Environmental and Social Issues	Level of Impact
gate		construction material run-off	

The screening process for the 1st year subprojects' implementation indicated that the safeguards documents to be prepared are SPPLs under the GOI requirements, which are then to be strengthened into this ESMP to meet the requirements of the World Bank's Operational Policies.

1.4 Public Consultation

A summary of the comments and responses during the public consultation is presented in this section. Public consultations with various stakeholders were conducted in five locations of the SIMURP irrigation areas. Presentation of the ESMF draft and discussions with stakeholders were conducted using the national language, Bahasa Indonesia.

1.4.1 DI Kedung Putri

A. Summary of Public Consultation

Date	:	02 November 2017
Time	:	08.30 – Done
Location	:	Hotel Sanjaya Inn, Purworejo
Participants	:	Government: 61, NGO: 42, others: 26
Summary	:	<ul style="list-style-type: none"> • In accordance with Ministry of Environment regulations, all activities must have environmental documents / environmental permits, based on the type of work and volume. • Access in the village is important. The field survey will be carried out for the construction of inspection road first. It's too early to decide when. • All relevant institutions need to participate in supporting all irrigation activities, not just prokasih (Government clean river program). • Planning should invite community participation according to World Bank standards. • Tertiary channels need to be normalized and will be accommodated. For the culvert and drainage must be done field search first.

B. Minutes of Meeting

Issues/Comment	Response
<p>Environmental Law says, "all activities must have documents, based on the type of work and volume ". Suggestion:</p> <ol style="list-style-type: none"> 1. Make sure the volume of activities is known so the documents are in order. Purworejo has no EIA election commission yet. 2. Ensure that budgets are available, districts do not want to be burdened with the requirement of EIA as their environmental document. The understanding about these documents is still 	<ol style="list-style-type: none"> 1. SIMURP will wait for the information from the Design Team regarding the type and volume of work that will be done. 2. The type of environment document is not EIA. Documents may not be an EIA document. We are still waiting for the final team reports to find out the type of document required. Project Financing: The project will be fully responsible for the cost and the preparation of environmental documents. 3. Socialization and coordination will not stop here, but

Issues/Comment	Response
<p>minimal, related to the cost of EIA that is not budgeted.</p> <p>3. Improvement and coordination with related UPT-UPT is needed.</p>	<p>will continue in the future.</p>
<p>1. There is a garbage pile next to the district attorney's office.</p> <p>2. Need coordinate with related parties for continuation of design.</p>	<p>We will follow up and will conduct a survey to the location.</p>
<p>1. Has the team reviewed all the locations yet? Especially the buildings on the irrigation embankment/ Inspection road.</p> <p>2. Inspection Road of irrigation is used by the community for roads. Please include the cost to construct in the budget because it is an access for the village which is important.</p> <p>3. Is the budget amount according to the proposal or it has been determined?</p>	<p>1. Upstream to downstream investigation has been done. At the time of coordinating PSTEKL / PAI with individual meetings with farmer group.</p> <p>2. In the near future will be discussed together with the planning system. Problem in Baledono: There is no inspection road. We will used persuasive approach related to the construction.</p> <p>3. The road inspection cost will be included to the budget. But a field investigation will be done first. It's too early to decide.</p>
<p>1. Inspection road has special specifications such as: land ownership, tonnage not to damage the construction of irrigation. Tonnage needs to be considered and remain limited. Maximum limit is not allowed through the building.</p> <p>2. All related institutions participate in supporting irrigation channel activities, not just "prokasih" (clean program).</p> <p>3. Access road inspection requires O & M.</p> <p>4. What type of employee is required in O & M?</p> <p>5. The operation of the tools to modernize the gate, number of worker are reduced due to the modernization process. It is necessary to train the operators.</p> <p>6. That are many inputs to do maintainance and preparedness with the organization in WUA, WUAF, UPT, because it is a waste if maintenance is not done properly.</p>	<p>1. Road inspection at the embankment. The use of the inspection road should apply for permission to Balai to know the inspection road standard.</p> <p>2. Strengthening of irrigation institutions (KT, WUA) Garbage filters in each village boundaries. The person responsible is the villagers.</p> <p>3. Modernization of building and gate gear is safe and can be used by operators.</p> <p>4. Technical removal of sedimentation.</p> <p>5. The channel related works needs will be assisted by the Balai.</p>
<p>Distribution of water is an issue. For example, need to involve the community in water distribution planning.</p>	<p>World Bank standards require that processes be participatory.</p>
<p>1. Water distribution at Condosari & Candingasinan gate, small water discharge (Kesambliplenden Channel)</p> <p>2. Small culverts.</p>	<p>Field investigation should be prioritized in relation to the problem (For culverts and drainage)</p>
<p>1. SIMURP team must do a direct investigation to the field accompanied by farmers.</p> <p>2. The tertiary channels are lost because the community does widening.</p> <p>3. Culverts of the Dutch relics, where the water channels from Kauman enter the culvert ,were not accommodated, passing through two villages. These are covered with garbage so there are overflows everywhere.</p>	<p>Teams need to know the missing tertiary channels. The team will investigate the field.</p>

1.4.2 DI Talang

A. Summary of Public Consultation

Date	: 09 November 2017
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Time	:	09.00 – Finished
Location	:	Gedung PU Bina Marga District Jember
Participants	:	Government: 20, NGO: 35, etc: 6
Summary	:	<ul style="list-style-type: none"> • There is an agreement between the community and the government for irrigation land use, if the government (irrigation) is going to use the land, the community is ready to leave that irrigation area. • This improvement of irrigation is a major country program, what the government wants is for us not to need to import food. • Agricultural office suggests that at the time of implementation the project teams need to consider the planting season calendar. • There is a need for water management and we are hoping the caretaker (<i>Juru Kunci</i>) will inform the community and to be willing to distribute water for the areas that have not received water.

B. Minutes of Meeting

Issues/Comment	Response
<ol style="list-style-type: none"> 1. The problem of sipai (irrigation asset management information system), to be ascertained in accordance with the planting season schedule so as not to harm the farmers. 2. And regarding the sediments in reservoir, we get a lot of inputs from farmers about irrigation channels in our area and channel conditions for tertiary and quarterly levels. 	<ol style="list-style-type: none"> 1. The gate master will surely ask for a schedule or confirmation of the water distribution, and also coordinate when doing the watering. 2. For the sediment problem, the longer the rice field area will be high due to the sediment rate. It should be noted that the conditions of water distribution cannot be streamed together and the planting season has not been issued officially.
<p>The problem with “olak” building (when flooding not reducing the existing water pressure) the fact is this building is leaking. Immediate evaluation is needed because the water pressure during the flood is very high.</p>	<ol style="list-style-type: none"> 1. This irrigation improvement is a major program of our country, which the government expects us to no longer depend on food from imported. The key is in the shoulders of all the farmers. 2. The problems of the irrigation channels are the many environmental changes that occur. Since 10 years ago it is difficult to predict when the rainy season, due to changes in the existing environment or uncertain. 3. Even BMKG is difficult to predict climate and weather, so with this irrigation channel during the dry or rain for irrigation areas are well managed. 4. Not just the rice fields that are handled with the hydraulic system, but the plantation too. 5. Our challenge is very big because the rainfall is very heavy. And the existing planting requirements can be adjusted. 6. There is no point having land but no water, do not let drought during the rainy season even drought during the dry season. 7. We also hope that the farmers can convey the difficulties that exist in the field, so that their thoughts influence us. 8. We need to look at the academic review of Mr. Cahyo, in relation to the schedule it is now November, the schedule of the scheme cannot be agreed now because of the difficulty of predictions. 9. To meet the needs of water by draining from wells. 10. Based on the assessment of ministries, availability is much lower than the need, especially from communities

Issues/Comment	Response
	<p>that manage water supply by pump, optimizing shallow wells in their respective areas.</p> <ol style="list-style-type: none"> 11. Where the climate is uncertain it is challenging, judging from the relatively narrow history of gutters construction, the area we can gutter is not more than 10%, which is very grateful if it can be 3 times planting. The benchmark is 2 years 5 times planting. Where once was not the type of rice to be planted but the plantations, such as tobacco plants, whose intensity was not repaired had experienced good production / good planting \pm 3 times planting. 12. Guttering is one example of areas that have good irrigation. In Law 11 of 2011 on agriculture, for whatever reason, technical irrigation should not transfer functions. 13. Between the infrastructure that has been built, you need to be re-measurement from the weir to the last tapping building. 14. Focus or activity boundaries from upto downstream but also between there are water sources or irrigation networks, i.e. can not stand alone. 15. Borders for line-setting need joint measurement from village observers and consultants or related parties. The most important thing is community empowerment so it should not be only a formality.
<ol style="list-style-type: none"> 1. We support SIMURP's activities on food security, which in fact we are one of the village that was left behind for its tertiary irrigation channel infrastructure. 2. There are tertiary channels that break down and all transport is diverted to the south. And we request that WUAF channel be created. 	<p>I will ask the consultant for advice, about the same planting schedule, and the compensation for DI streaming.</p>
<p>In every development there will be a negative impact. There will be efforts to minimize the impact. One of the impacts is the lack of water in the field/land. In addition, we expect compensation because many plants die from drought during project implementation.</p>	<p>Usually maximal made schedule 10 days, with 5-day water distribution and 5 days water stop. We would still coordinate and strive for excellence and to be very careful in the preparation of the drying schedule.</p> <p>Please note that there should be no casualties due to this drying. There will be a settlement for this matter with the agreement of the various parties involved. Any losses that arise must be calculated properly through deliberation and there will be compensation.</p>
<p>There are many important components of water management. We expect staff to be appointed based on consensus, and that there will be compensation.</p>	<ol style="list-style-type: none"> 1. I request you to coordinate with related parties 2. Socialize the order in the construction of weir in Ambulu region. 3. We have been doing inventory activities but only 3 locations, in Ambulu Cangkring, Mandigo, and Patukebo. 4. We do not handle all tertiary channels maybe only about 20%. 5. We have asked the observer for selection of sites and we also consider road access.

1.4.3 DI Pamukkulu

A. Summary of Public Consultation

Date	:	07 November 2017
Time	:	09.00 -- Finished
Location	:	Hotel Grand Kalampa Takalar
Participants	:	Government: 23, NGO: 32, etc : 3
Summary	:	<ul style="list-style-type: none"> • Recommendation from Environmental institution is attained before the project implemented; any document that related with environmental permit needs to be completed first, by involving related institution. • The community request to dredge on the Pamukkulu weirs because there is too much sediments and the weir cannot contain the water. • Representatives from WUA requested the management irrigation channel be managed by WUA. • 10 farming communities manage ± 136 Ha rainfed rice fields and there is no irrigation yet, so they demanded immediately the realization of irrigation for their area.

B. Minutes of Meeting

Issues/Comment	Response
<p>Dredging is required on Pamukkulu weir due to many sediments. In the upper part of Pamukkulu weir to make a storage on an area of ± 5 Ha, which is now has turned into a corn field.</p> <p>The tertiary channel in Lantang Village (10 WUA): on average tertiary channels have no buildings and existing buildings are reviewed.</p> <p>Drainage (<i>saluran gendong</i>) at BP 4, could be fix because many buildings that already almost collapsed.</p> <p>Quarter channels, once in the rice fields were included but no longer as they are covered by the community.</p>	<p>The drainage channel will be designed in DI Pamukkulu</p> <p>Weirs and dams have different functions, weirs function to raise the water level and dam functions are to save water (reservoir) that will be managed to be utilized by the community either for irrigation, raw water, etc.</p>
<p>Regarding the missing channel (tertiary and quarter), please inform the location because now it has become rice field. As the management will be delegated to WUA, egarding the funding of the project, please be clear so that funds for WUA can be immediately followed up and submitted to WUAF and WUA for its management.</p>	<p>In order for village officials and WUA to assist if there is a consultant active in the field and giving advice.</p> <p>Farmer Group in cooperation with WUA, Kelompok Tani located in DI Pamukkulu will be proposed to WUA.</p>
<p>FGF supervises 10 farmer group and manages ± 136 Ha of rainfed rice field where there is no irrigation. Can farmer groups act as WUA? Or whether farmer group and WUA cooperate on tertiary channels.</p> <p>In planning there are tertiary channels in Pabundukan and there are 7 tertiary plots, in order to be realized.</p> <p>Pabundukan is an area affected by floods, each year about 70% of the area is flooded. Often harvest failures. In 1 year, 1-time harvest. Since the area is low, it is probably a swamp area, it may be made of drainage, so water can be discharged into the river.</p> <p>Input for the Environment management plan is to increase production, farmers in Pabundugan use the way by drilling water, perhaps including occasionally checks in order not to damage the environment. Our water condition is not normal.</p>	<p>Pamukkulu weir only raise the water level so it can be streamed into the channel.</p> <p>A Dam will be built about 7 km above Pamukkulu Dam, which serves to store water, then water will be removed from the dam according to the needs of existing fields under it [not by SIMURP].</p> <p>The team will investigate the field situation and will inform related institutions.</p>
<p>The primary and secondary channels are managed by the government. The tertiary channels are managed in collaboration with the community. Based on the experience, the tertiary plan does not fit with the primary and secondary plan.</p> <p>Institutions of WUA / WUAF and FGF are responsible for taking care of farmer groups. How about technical coaching WUA?</p> <p>Assets of WUA residents need to be considered.</p>	<p>The team has already traced the damages. Channels are viewed from upstream to downstream, for areas that have not reached the channel there will be a designed advance channel .</p>
<p>Need for clear regulation, what buildings can be built on the</p>	<p>If the proposed widening of farm roads and</p>

Issues/Comment	Response
<p>network? There are many large trees in the channel border, technically potentially damaging irrigation buildings in the field. Many communities fished and gardened in river borders, fulfill their water needs by breaking into channels. WUA to provide input, especially for plots that are higher than tertiary plots. In order to conduct a re-survey of tertiary plots, either it really be applied to technical irrigation. Gate damage and the slightest piercings/damage need to be reported.</p>	<p>improvement of channel function is approved then supporting documents need to be compiled. The management of weir and main system (primary and secondary) is the authority of the government and tertiary networks will be managed by farmers.</p>
<p>One of the many causes of piercing/damage in buildings and channels is the lack of institutions such as WUA. Our hope is that such institutions will increase.</p>	<p>There are institutional improvements planned as part of SIMURP activities.</p>

1.4.4 DI Jurang Batu

A. Summary of Public Consultation

Date	: 09 November 2017
Time	: 09.00 – Finished
Location	: Hotel Dmax, Lombok
Participants	: Government: 29, NGO: 14, etc: 12
Summary	: <ul style="list-style-type: none"> • DED phase and hydraulic calculations to be done immediately. Sedimentation problems can be beneficial to the society in some cases. • Regarding the proposed drainage sediment, the repair of gates, the creation of support channels, all will be accommodated and the planning depends on the Indonesian government, in this case the World Bank in cooperation with the Director General of SDA are the ones that receives proposals and submits them to the relevant parties. • Sedimentation materials are already in use for plant nurseries.

B. Minutes of Meeting

Issues/Comment	Response
<p>Sediment can be used for resale to the community We expect the consultant to detect whether the channel discharge is in accordance with the plan or not. For information, the intersection of weirs here does not operate well during the rainy season.</p>	<p>DED for Jurang Batu including the measurement of Long Cross channel situation has not been done. A situation map Irrigation area itself using Lidar system will be done soon, and we will do hydraulic calculations.</p>
<p>Sedimentation is actually very useful for the community. We hope to get data or something to strengthen the ownership of land assets, so that the land purchased by BBWS for irrigation can be used in accordance with its function.</p>	<p>Specific impacts of sedimentation are positive. There are some stakes missing and the data also disappear, but for the status of land ownership will be followed up.</p>
<p>To anticipate the problem of excavation in the reservoir, maybe carry out the modernization of its tributaries at the same time. This is because the riverbed troughs in some places are low and can be used as a dumping place. For example, the Pejanggik reservoir on the left and right side of the trough is low, resulting in erosion</p>	<p>This very useful input from Mr. Sukaman will be accommodated. In April 2018, the volume of RAB and the new contract documents will be ready, but we wdo not know when the implementation will be exactly because it is still in the preparation stage.</p>

Issues/Comment	Response
<p>and causing sediment in the small reservoirs. There are unfinished rock excavations in BJB 0, BJB 3, BJB 10, and the last BJB. The channel near to the road must be made as the drain carrying channel because the remnants of the road repairs directly into the river is causing sedimentation to harden and will be difficult to dig. The channel curve (R) needs to be investigated because of the whirlpool. When did the project preparation finish?</p>	
<p>We hope the gate and drainage at Jurang Jale reservoir will be repaired. If it is not possible to use a large pump for drainage then use a drill machine to make a hole. We are still thinking of a sedimentation disposal site for our area.</p>	<p>The consultant will examine how the sedimentation dumps are being handled.</p>
<p>Reservoir Grantung gate has been damaged, so farmers who need water feel the difficulty because the gate of the damaged weir and sedimentation is quite high. Since 2015 we have been expecting repair of a safety bridge near the entrance gate. We are ready to accommodate the sedimentation.</p>	<p>Related to the gates of damaged reservoirs, we as consultants will examine why the doors are damaged, either because of their construction or other factors.</p>
<p>Reservoir Surabaya condition cannot accommodate the water so that people and livestock are affected.</p>	<p>DI Surabaya is not included in the SIMURP program.</p>
<p>No attention has been given to Dusun Tegal Sari Reservoir. The level of soil from that reservoir has reach the road. We hope there will be a survey and it will be fixed.</p>	<p>Our team will conduct a survey.</p>
<p>Every time there is a high weir construction of water level of 5-8 m, there are no gates that are really good, some can be opened. Input for consultants not to make gates above 5 m using standard, must analyze the thickness of the plate, height, slope, all must be taken into account. As a technique of irrigation, the occurrence of sedimentation is due to R (slope) is not appropriate.</p>	<p>Suggestion accepted.</p>
<p>Does this job cover the upstream of Jurang Sate? Is it possible to include some areas outside DI Jurang Batu into this project?</p>	<p>Proposed activities and planning are all dependent of the government of Indonesia, in this case World Bank in cooperation with the Directorate General of SDA. So later we will get all the proposed activities from the people associated with the agency.</p>
<p>Reservoir Pejanggik has broken its gate and caused high sediment. Therefore, please repair the drainage gate and sediment dredging.</p>	<p>Our team will conduct a survey to this location.</p>
<p>Road farming of Pejanggik Village: To open a new Road around Irrigation Channel along 1 Km, the land was acquired in 1995 as a farm road Please build 5 km of irrigation (Tertiary) canal.</p>	<p>We will forward the request.</p>
<p>Sedimentation material has been utilized as food that plants need (good for breeding). In the southern part of Lombok, the land is cracked so it cannot be constructed.</p>	<p>Suggestion accepted.</p>

1.4.5 DI Jatiluhur

A. Summary of Public Consultation

Date	:	31 October 2017
Time	:	09.00 – Finish
Location	:	Hotel Lotus, Subang
Participants	:	Government: 36, NGO : 31, etc: 14
Summary	:	<ul style="list-style-type: none"> • BBWS cooperates with 6 ministries, the Balai has done the maintenance but the work itself was not delegated to the Balai, and the formation of the water traffic is very long process. • SS Macan & Pamanukan are priorities for main canal and capacity increase. • This program is to improve the previous program so it is more focused on the drainage. • There should be awareness from the community not to dispose of garbage in the river, and there will be a periodic river maintenance that requires coordination of many parties. • Waste bank activities should be coordinated with BAPPEDA and activities on the river banks are not allowed. • Local government and community are ready to support Balai to make this program a success.

B. Minutes of Meeting

Issues/Comment	Response
What if the function of the Citarum River flow is intended for the community, not only a farmer? For example, as a water traffic mode.	We will accept the suggestions. The Citarum river is the dirtiest river and will be very difficult if only BBWS handles it. We will cooperate with the relevant ministries for this matter
At the end of Cirata, there is an area of 40 hectares flooded. Can BBWS conduct water channel survey?	One of the solution is to improve drainage first. This program will focus on improving drainage.
During the rain season, the rice field at Karang Anyar is a place for water gathering, but during the dry season there is no water in the land and gardens with an area of approximately 250 hectares. What's the solution?	The primary channel will be repaired and increased the capacity. We will prioritize Macan & Pamanukan, the other four sub-districts will follow after it.
Can the sub-district help to restore the irrigation embankment?	First, the drainage will be repaired. East Tarum's issues are water capacity, the issues in East Tarum's are far from the waste and illegal housing.
What kind of work will be carried out?	The work carried out is the modernization of irrigation and recapitulation of existing infrastructure.
Which Pamanukan Channel?	At the end of Bugis and Bugis Primary channel
How to handle the trash in the channel and in the gate?	There should be awareness of the community not to dispose of garbage in the river and we will be conduct the river maintenance periodically. Such implementation requires the coordination of many parties. Garbage filtering will be conducted in upstream of East Tarum.
What should be built? Dredging at Cigadung river (Binong), dredging at Ciragem river (Patrol), and culvert construction (BLG II)? Can it be included?	We will follow up on the Dredging at Cigadung river (Binong), dredging at Ciragem river (Patrol), and culvert construction (BLG II)? Everything will be built at the time of calm water.
Can a waste bank be built on the banks of the river so that no one will dispose a garbage to the channel?	Actually, activity on the banks of the river is not permitted. May have to be socialized by Bappeda because the activities of waste banks are handled by them.
The river is threatened by the illegal buildings. What action can be hastened?	Continuous maintenance of the river and multiply the socialization of the river embankment functions
For the next step, is there any clarity regarding the demolition of the building because the PJTII has issued a letter but there is a mosque built above the channel. There is a dike in Ciasem that eroded. When	The work starts from 2018 to 5 years ahead, we will completed 175,000 Ha of Eastern and Northern Tarum. In 2018 we will conduct Socialization in SS Pamanukan and SS Ciasem in 2018 and in 2020 there will be a

<p>it will be implemented and secondary channels have narrowed. What's the solution?</p>	<p>construction. For the eroded Ciasem, we will do the checking to be followed up. For the first year's secondary channel issues are the 40,000 ha of drainage works that will definitely be handled.</p>
<p>Regulation is required. Please inform people through Warning (sign) boards so the community are aware of the land status, what is irrigation land or not.</p>	<p>We still using the old DAS (Daerah Aliran Sungai) regulation, and for warning sign boards in Citarum for example, are t only placed in the areas of residential and where there are activities. Later this will be checked and placed only priorities location.</p>
<p>At the time of doing the work, will it disturb the farmers in SS Macan?</p>	<p>We will conduct socialization and coordination. We will try our best so that farmers will not be disturbed. Either the water debit is reduced or otherwise, depending on its implementation at the time.</p>

Chapter 2. Environmental and Social Mitigation Plan

2.1 DI Kedung Putri

Environmental and Social Aspect Impacted	Mitigation Action	Cost	Responsible parties	Start	End
Air quality	<ul style="list-style-type: none"> (a) During interior demolition use debris-chutes above the first floor. (b) Keep demolition debris in controlled area and spray with water mist to reduce debris and dust. (c) Suppress dust during pneumatic drilling/wall destruction by ongoing water spraying and/or installing dust screen enclosures at site. (d) Keep surrounding environment (sidewalks, roads) free of debris to minimize dust. (e) There will be no open burning of construction / waste material at the site. (f) There will be no excessive idling of construction vehicles at sites. 	Minor, included in construction cost	Contractor ; BBWS Serayu Opak	In the beginning of the construction	After returning the condition to the existing condition
Noise	<ul style="list-style-type: none"> (a) Construction noise will be limited to restricted times agreed to in the permit. (b) During operations the engine covers of generators, air compressors and other powered mechanical equipment should be closed, and equipment placed as far away from residential areas as possible. 	Minor, included in construction cost	Contractor ; BBWS Serayu Opak	In the beginning of the construction	After returning the condition to the existing condition
Water quality	The site will establish appropriate erosion and sediment control measures such as e.g. hay bales and / or silt fences to prevent sediment from moving off site and causing excessive turbidity in nearby streams and rivers.	Minor, included in construction cost	Contractor ; BBWS Serayu Opak	In the beginning of the construction	After returning the condition to the existing condition
Waste management	<ul style="list-style-type: none"> (a) To be removed by license contract to places specially allocated for landfills, approved by local authorities (b) Waste collection and disposal pathways and sites will be identified for all major waste types expected from demolition and construction activities. 	Minor, included in construction cost	Contractor ; BBWS Serayu Opak	In the beginning of the construction	After returning the condition to the existing condition

Environmental and Social Aspect Impacted	Mitigation Action	Cost	Responsible parties	Start	End
	(c) Mineral construction and demolition waste will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting and stored in appropriate containers. (d) Construction waste will be collected and disposed properly by licensed collectors. (e) The records of waste disposal will be maintained as proof for proper management as designed. (f) Whenever feasible the contractor will reuse and recycle appropriate and viable materials (except asbestos).				
Toxic /hazardous management	(a) Temporarily storage on site of all hazardous or toxic substances will be in safe containers labeled with details of composition, properties and handling information. (b) The containers of hazardous substances should be placed in a leak-proof container to prevent spillage and leaching. (c) The waste is transported by specially licensed carriers and disposed in a licensed facility. (d) Paints with toxic ingredients or solvents or lead-based paints will not be used.	Minor, included in construction cost	Contractor ; BBWS Serayu Opak	In the beginning of the construction	After returning the condition to the existing condition
Direct or indirect hazards to public traffic and pedestrians	In compliance with national regulations the contractor will insure that the construction site is properly secured and construction related traffic regulated. This includes but is not limited to: <ul style="list-style-type: none"> ▪ Signposting, warning signs, barriers and traffic diversions: site will be clearly visible and the public warned of all potential hazards. ▪ Traffic management system and staff training, especially for site access and near-site heavy traffic. Provision of safe passages and crossings for pedestrians where construction traffic interferes. ▪ Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement. ▪ Active traffic management by trained and visible staff at the site, if required for safe and convenient passage for the 	Minor, included in construction cost	Contractor ; BBWS Serayu Opak	In the beginning of the construction	After returning the condition to the existing condition

Environmental and Social Aspect Impacted	Mitigation Action	Cost	Responsible parties	Start	End
	<p>public.</p> <ul style="list-style-type: none"> ▪ Ensuring safe and continuous access to office facilities, shops and residences during renovation activities, if the buildings stay open for the public. 				
Community perception	<ul style="list-style-type: none"> (a) Prioritize the community around the site for construction labor. (b) Approach the community around the location related to the required specifications and labor requirements. (c) Coordinate with local government or community groups related to the needs for labor. (d) Provide the opportunities for the surrounding community to conduct business in the location of activities (e) Provide a minimum wage equal to the applicable minimum wage. (f) Provide manpower with personal protective equipment on direct construction work. 	Minor, included in construction cost	Contractor ; BBWS Serayu Opak	In the beginning of the construction	After returning the condition to the existing condition

2.2 DI Talang

Environmental and Social Aspect Impacted	Mitigation Action	Cost	Responsible parties	Start	End
Air quality	<ul style="list-style-type: none"> (a) During interior demolition use debris-chutes above the first floor. (b) Keep demolition debris in controlled area and spray with water mist to reduce debris dust. (c) Suppress dust during pneumatic drilling/wall destruction by ongoing water spraying and/or installing dust screen enclosures at site. (d) Keep surrounding environment (sidewalks, roads) free of debris to minimize dust. (e) There will be no open burning of construction / waste material at the site. (f) There will be no excessive idling of construction vehicles at sites. 	Minor, included in construction cost	Contractor ; BBWS Brantas	In the beginning of the construction	After returning the condition to the existing condition
Noise	<ul style="list-style-type: none"> (a) Construction noise will be limited to restricted times agreed to in the permit. 	Minor, included in construction	Contractor ;	In the beginning of the	After returning the condition to the

Environmental and Social Aspect Impacted	Mitigation Action	Cost	Responsible parties	Start	End
	(b) During operations the engine covers of generators, air compressors and other powered mechanical equipment should be closed, and equipment placed as far away from residential areas as possible.	cost	BBWS Brantas	construction	existing condition
Water quality	The site will establish appropriate erosion and sediment control measures such as e.g. hay bales and / or silt fences to prevent sediment from moving off site and causing excessive turbidity in nearby streams and rivers.	Minor, included in construction cost	Contractor ; BBWS Brantas	In the beginning of the construction	After returning the condition to the existing condition
Waste management	(a) To be removed by license contract to places specially allocated for landfills, approved by local authorities. (b) Waste collection and disposal pathways and sites will be identified for all major waste types expected from demolition and construction activities. (c) Mineral construction and demolition wastes will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting and stored in appropriate containers. (d) Construction waste will be collected and disposed properly by licensed collectors. (e) The records of waste disposal will be maintained as proof for proper management as designed. (f) Whenever feasible the contractor will reuse and recycle appropriate and viable materials (except asbestos).	Minor, included in construction cost	Contractor ; BBWS Brantas	In the beginning of the construction	After returning the condition to the existing condition
Toxic /hazardous management	(a) Temporary storage on site of all hazardous or toxic substances will be in safe containers labeled with details of composition, properties and handling information. (b) The containers of hazardous substances should be placed in a leak-proof container to prevent spillage and leaching. (c) The wastes are transported by specially licensed carriers and disposed in a licensed facility. (d) Paints with toxic ingredients or solvents or lead-based paints will not be used.	Minor, included in construction cost	Contractor ; BBWS Brantas	In the beginning of the construction	After returning the condition to the existing condition
Direct or indirect hazards to public traffic and pedestrians	In compliance with national regulations the contractor will insure that the construction site is properly secured and construction related traffic regulated. This includes but is not limited to	Minor, included in construction cost	Contractor ; BBWS Brantas	In the beginning of the construction	After returning the condition to the existing condition

Environmental and Social Aspect Impacted	Mitigation Action	Cost	Responsible parties	Start	End
	<ul style="list-style-type: none"> ▪ Signposting, warning signs, barriers and traffic diversions: site will be clearly visible and the public warned of all potential hazards ▪ Traffic management system and staff training, especially for site access and near-site heavy traffic. Provision of safe passages and crossings for pedestrians where construction traffic interferes. ▪ Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement ▪ Active traffic management by trained and visible staff at the site, if required for safe and convenient passage for the public. ▪ Ensuring safe and continuous access to office facilities, shops and residences during renovation activities, if the buildings stay open for the public. 				
Community perception	<ul style="list-style-type: none"> (a) Prioritize the community around the site for construction labor. (b) Approach the community around the location related to the required specifications and labor requirements. (c) Coordinate with local government or community groups related to the needs for labor. (d) Provide the opportunities for the surrounding community to conduct business at the location of activities. (e) Provide a minimum wage equal to the applicable minimum wage. (f) Provide workers with personal protective equipment on direct construction work. 	Minor, included in construction cost	Contractor ; BBWS Brantas	In the beginning of the construction	After returning the condition to the existing condition

2.3 DI Pamukkulu

Environmental and Social Aspect Impacted	Mitigation Action	Cost	Responsible parties	Start	End

Environmental and Social Aspect Impacted	Mitigation Action	Cost	Responsible parties	Start	End
Air quality	<ul style="list-style-type: none"> (a) During interior demolition use debris-chutes above the first floor (b) Keep demolition debris in controlled area and spray with water mist to reduce debris dust (c) Suppress dust during pneumatic drilling/wall destruction by ongoing water spraying and/or installing dust screen enclosures at site (d) Keep surrounding environment (sidewalks, roads) free of debris to minimize dust (e) There will be no open burning of construction / waste material at the site (f) There will be no excessive idling of construction vehicles at sites 	Minor, included in construction cost	Contractor ; BBWS Pompengan Jeneberang	In the beginning of the construction	After returning the condition to the existing condition
Noise	<ul style="list-style-type: none"> (a) Construction noise will be limited to restricted times agreed to in the permit (b) During operations the engine covers of generators, air compressors and other powered mechanical equipment should be closed, and equipment placed as far away from residential areas as possible 	Minor, included in construction cost	Contractor ; BBWS Pompengan Jeneberang	In the beginning of the construction	After returning the condition to the existing condition
Water quality	The site will establish appropriate erosion and sediment control measures such as e.g. hay bales and / or silt fences to prevent sediment from moving off site and causing excessive turbidity in nearby streams and rivers.	Minor, included in construction cost	Contractor ; BBWS Pompengan Jeneberang	In the beginning of the construction	After returning the condition to the existing condition
Waste management	<ul style="list-style-type: none"> (a) To be removed by license contract to places specially allocated for landfills, approved by local authorities (b) Waste collection and disposal pathways and sites will be identified for all major waste types expected from demolition and construction activities. (c) Mineral construction and demolition wastes will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting and stored in appropriate containers. (d) Construction waste will be collected and disposed properly by licensed collectors. 	Minor, included in construction cost	Contractor ; BBWS Pompengan Jeneberang	In the beginning of the construction	After returning the condition to the existing condition

Environmental and Social Aspect Impacted	Mitigation Action	Cost	Responsible parties	Start	End
	(e) The records of waste disposal will be maintained as proof for proper management as designed. (f) Whenever feasible the contractor will reuse and recycle appropriate and viable materials (except asbestos).				
Toxic /hazardous management	(a) Temporarily storage on site of all hazardous or toxic substances will be in safe containers labeled with details of composition, properties and handling information (b) The containers of hazardous substances should be placed in a leak-proof container to prevent spillage and leaching. (c) The wastes are transported by specially licensed carriers and disposed in a licensed facility. (d) Paints with toxic ingredients or solvents or lead-based paints will not be used.	Minor, included in construction cost	Contractor ; BBWS Pompengan Jeneberang	In the beginning of the construction	After returning the condition to the existing condition
Direct or indirect hazards to public traffic and pedestrians	In compliance with national regulations the contractor will insure that the construction site is properly secured and construction related traffic regulated. This includes but is not limited to: <ul style="list-style-type: none"> ▪ Signposting, warning signs, barriers and traffic diversions: site will be clearly visible and the public warned of all potential hazards. ▪ Traffic management system and staff training, especially for site access and near-site heavy traffic. Provision of safe passages and crossings for pedestrians where construction traffic interferes ▪ Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement . ▪ Active traffic management by trained and visible staff at the site, if required for safe and convenient passage for the public ▪ Ensuring safe and continuous access to office facilities, shops and residences during renovation activities, if the buildings stay open for the public. 	Minor, included in construction cost	Contractor ; BBWS Pompengan Jeneberang	In the beginning of the construction	After returning the condition to the existing condition
Community perception	(a) Prioritize the community around the site for construction	Minor, included in	Contractor ;	In the beginning	After returning

Environmental and Social Aspect Impacted	Mitigation Action	Cost	Responsible parties	Start	End
	<p>labor.</p> <p>(b) Approach the community around the location related to the required specifications and labor requirements.</p> <p>(c) Coordinate with local government or community groups related to labor force.</p> <p>(d) Provide the opportunities for the surrounding community to conduct business at the location of activities</p> <p>(e) Provide a minimum wage equal to the applicable minimum wage.</p> <p>(f) Provide workers with personal protective equipment on direct construction work.</p>	construction cost	BBWS Pompengan Jeneberang	of the construction	the condition to the existing condition
Land acquisition activity	<p>(a) Socialization/consultation with the people in the subproject area regarding the project design, impacts and benefits;</p> <p>(b) Prioritize willing buyer-willing seller negotiations for land purchase;</p> <p>(c) Further consultation with land owners regarding the project and how the land is to be affected;</p> <p>(d) Negotiation with land owners on the land price and agreed on payment process including timing for payment;</p> <p>(e) Provide replacement value for land price that land owners will be able to obtain land in other locations with similar condition</p> <p>(f) Grievance Redress Mechanism (GRM) is established to allow affected people to share their concerns and complaints regarding the land acquisition process.</p> <p>(g) Document the whole process, including consultation and negotiation process</p>	Major. Fund for land acquisition will be provided by the DOIR, DGWR, PUPR	Contractor ; BBWS Pompengan Jeneberang	Before the construction	After returning the condition to the existing condition

2.4 DI Jurang Batu

Environmental and Social Aspect Impacted	Mitigation Action	Cost	Responsible parties	Start	End
Air quality	(a) During interior demolition use debris-chutes above the	Minor, included	Contractor ;	In the beginning	After returning the

	<p>first floor.</p> <p>(b) Keep demolition debris in controlled area and spray with water mist to reduce debris and dust.</p> <p>(c) Suppress dust during pneumatic drilling/wall destruction by ongoing water spraying and/or installing dust screen enclosures at site.</p> <p>(d) Keep surrounding environment (sidewalks, roads) free of debris to minimize dust.</p> <p>(e) There will be no open burning of construction / waste material at the site.</p> <p>(f) There will be no excessive idling of construction vehicles at sites.</p>	in construction cost	BBWS Nusa Tenggara I	of the construction	condition to the existing condition
Noise	<p>(a) Construction noise will be limited to restricted times agreed to in the permit.</p> <p>(b) During operations the engine covers of generators, air compressors and other powered mechanical equipment should be closed, and equipment placed as far away from residential areas as possible.</p>	Minor, included in construction cost	Contractor ; BBWS Nusa Tenggara I	In the beginning of the construction	After returning the condition to the existing condition
Water quality	The site will establish appropriate erosion and sediment control measures such as e.g. hay bales and / or silt fences to prevent sediment from moving off site and causing excessive turbidity in nearby streams and rivers.	Minor, included in construction cost	Contractor ; BBWS Nusa Tenggara I	In the beginning of the construction	After returning the condition to the existing condition
Waste management	<p>(a) To be removed by license contract to places specially allocated for landfills, approved by local authorities.</p> <p>(b) Waste collection and disposal pathways and sites will be identified for all major waste types expected from demolition and construction activities.</p> <p>(c) Mineral construction and demolition wastes will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting and stored in appropriate containers.</p> <p>(d) Construction waste will be collected and disposed properly by licensed collectors.</p> <p>(e) The records of waste disposal will be maintained as proof for proper management as designed.</p> <p>(f) Whenever feasible the contractor will reuse and recycle appropriate and viable materials (except asbestos).</p>	Minor, included in construction cost	Contractor ; BBWS Nusa Tenggara I	In the beginning of the construction	After returning the condition to the existing condition
Toxic /hazardous	(a) Temporarily storage on site of all hazardous or toxic	Minor, included	Contractor ;	In the beginning	After returning the

management	<p>substances will be in safe containers labeled with details of composition, properties and handling information</p> <p>(b) The containers of hazardous substances should be placed in a leak-proof container to prevent spillage and leaching.</p> <p>(c) The wastes are transported by specially licensed carriers and disposed in a licensed facility.</p> <p>(d) Paints with toxic ingredients or solvents or lead-based paints will not be used.</p>	in construction cost	BBWS Nusa Tenggara I	of the construction	condition to the existing condition
Direct or indirect hazards to public traffic and pedestrians	<p>In compliance with national regulations the contractor will insure that the construction site is properly secured and construction related traffic regulated. This includes but is not limited to:</p> <ul style="list-style-type: none"> ▪ Signposting, warning signs, barriers and traffic diversions: site will be clearly visible and the public warned of all potential hazards ▪ Traffic management system and staff training, especially for site access and near-site heavy traffic. Provision of safe passages and crossings for pedestrians where construction traffic interferes. ▪ Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement ▪ Active traffic management by trained and visible staff at the site, if required for safe and convenient passage for the public. ▪ Ensuring safe and continuous access to office facilities, shops and residences during renovation activities, if the buildings stay open for the public. 	Minor, included in construction cost	Contractor ; BBWS Nusa Tenggara I	In the beginning of the construction	After returning the condition to the existing condition
Community perception	<p>(a) Prioritize the community around the site for construction labor.</p> <p>(b) Approach the community around the location related to the required specifications and labor requirements</p> <p>(c) Coordinate with local government or community groups related to labor force</p> <p>(d) Provide the opportunities for the surrounding community to conduct business at the location of activities</p> <p>(e) Provide a minimum wage equal to the applicable minimum wage.</p> <p>(f) Provide workers with personal protective equipment on</p>	Minor, included in construction cost	Contractor ; BBWS Nusa Tenggara I	In the beginning of the construction	After returning the condition to the existing condition

	direct construction work				
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2.5 DI Jatiluhur

Environmental and Social Aspect Impacted	Mitigation Action	Cost	Responsible parties	Start	End
Air quality	<ul style="list-style-type: none"> (a) During interior demolition use debris-chutes above the first floor. (b) Keep demolition debris in controlled area and spray with water mist to reduce debris and dust. (c) Suppress dust during pneumatic drilling/wall destruction by ongoing water spraying and/or installing dust screen enclosures at site. (d) Keep surrounding environment (sidewalks, roads) free of debris to minimize dust. (e) There will be no open burning of construction / waste material at the site. (f) There will be no excessive idling of construction vehicles at sites. 	Minor, included in construction cost	Contractor ; BBWS Nusa Tenggara I	In the beginning of the construction	After returning the condition to the existing condition
Noise	<ul style="list-style-type: none"> (a) Construction noise will be limited to restricted times agreed to in the permit. (b) During operations the engine covers of generators, air compressors and other powered mechanical equipment should be closed, and equipment placed as far away from residential areas as possible. 	Minor, included in construction cost	Contractor ; BBWS Citarum	In the beginning of the construction	After returning the condition to the existing condition
Water quality	The site will establish appropriate erosion and sediment control measures such as e.g. hay bales and / or silt fences to prevent sediment from moving off site and causing excessive turbidity in nearby streams and rivers.	Minor, included in construction cost	Contractor ; BBWS Citarum	In the beginning of the construction	After returning the condition to the existing condition
Waste management	<ul style="list-style-type: none"> (a) To be removed by license contract to places specially allocated for landfills, approved by local authorities. (b) Waste collection and disposal pathways and sites will be identified for all major waste types expected from demolition and construction activities. (c) Mineral construction and demolition wastes will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting and stored in 	Minor, included in construction cost	Contractor ; BBWS Citarum	In the beginning of the construction	After returning the condition to the existing condition

Environmental and Social Aspect Impacted	Mitigation Action	Cost	Responsible parties	Start	End
	<p>appropriate containers.</p> <p>(d) Construction waste will be collected and disposed properly by licensed collectors.</p> <p>(e) The records of waste disposal will be maintained as proof for proper management as designed.</p> <p>(f) Whenever feasible the contractor will reuse and recycle appropriate and viable materials (except asbestos).</p>				
Toxic /hazardous management	<p>(a) Temporarily storage on site of all hazardous or toxic substances will be in safe containers labeled with details of composition, properties and handling information.</p> <p>(b) The containers of hazardous substances should be placed in a leak-proof container to prevent spillage and leaching.</p> <p>(c) The wastes are transported by specially licensed carriers and disposed in a licensed facility.</p> <p>(d) Paints with toxic ingredients or solvents or lead-based paints will not be used.</p>	Minor, included in construction cost	Contractor ; BBWS Citarum	In the beginning of the construction	After returning the condition to the existing condition
Direct or indirect hazards to public traffic and pedestrians	<p>In compliance with national regulations, the contractor will insure that the construction site is properly secured and construction related traffic regulated. This includes but is not limited to:</p> <ul style="list-style-type: none"> ▪ Signposting, warning signs, barriers and traffic diversions: site will be clearly visible and the public warned of all potential hazards. ▪ Traffic management system and staff training, especially for site access and near-site heavy traffic. Provision of safe passages and crossings for pedestrians where construction traffic interferes. ▪ Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement. ▪ Active traffic management by trained and visible staff at the site, if required for safe and convenient passage for the public. ▪ Ensuring safe and continuous access to office facilities, shops and residences during renovation activities, if the buildings stay open for the public. 	Minor, included in construction cost	Contractor ; BBWS Citarum	In the beginning of the construction	After returning the condition to the existing condition

Environmental and Social Aspect Impacted	Mitigation Action	Cost	Responsible parties	Start	End
Community perception	<ul style="list-style-type: none"> (a) Prioritize the community around the site for construction labor. (b) Approach the community around the location related to the required specifications and labor requirements. (c) Coordinate with local government or community groups related to the labor force. (d) Provide the opportunities for the surrounding community to conduct business as much as the location of activities. (e) Provide a minimum wage equal to the applicable minimum wage. (f) Provide with personal protective equipment on direct construction work. 	Minor, included in construction cost	Contractor ; BBWS Citarum	In the beginning of the construction	After returning the condition to the existing condition

Chapter 3. Environmental and Social Monitoring Plan

For the above mentioned potential impacts and mitigation measures, a monitoring plan has been prepared. This monitoring plan shall ensure that the construction and operation of the project is in conformance with Government of Indonesia laws and regulation and other relevant norms and standards. The costs for monitoring of the implementation of the mitigation measures to prevent and reduce the potential environmental impacts of SIMURP activities is included in the supervision consultant costs. Monitoring activities are detailed in the matrices below.

3.1 DI Kedung Putri

MONITORING PLAN							
Phase	What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency / or continuous?)	Why (Is the parameter being monitored?)	Cost (if not included in project budget)	Who (Is responsible for monitoring?)
During preparation activity	Negative perceptions that appear in the community around the site that shows in complaints log	Villages passed by SIMURP activities	Direct observation of water users or farmers and reviewing public complaints that generate from SIMURP activities. The results of observations and complaints are made in the tabulation to compare with the previous month	Every month	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
During implementation activity	Negative perceptions that appear in the community around the site that shows in complaints log	Villages passed by SIMURP activities	Direct observation of water users or farmers and reviewing public complaints that generate from SIMURP activities. The results of observations and complaints are made in the tabulation to compare with the previous month	Every month	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	SOx, NOx, CO, Pb, and Dust	Location of Commercial, rice field, and residential	24-hour ambient air sampling using "air sampler impinger" and analyzed in laboratories. Laboratory results are compared with quality standards.	Every 6 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	Noise Level	Commercial, rice field, and residential	Direct measurement with Sound Level Meter. The measurement results are compared with the quality standard.	Every 6 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	BOD, DO, COD, TSS, and TDS	Construction Activity Location	Water sample taken and analyzed in laboratory. The results of the analysis in comparison with the standard quality	Every 6 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	Occurrence of traffic constraints (access) caused by SIMURP activities	The route of mobilization equipment & around SIMURP activities	monitore the community comlaints regarding the disturbance of access	Every month	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	Sanitation condition around base camp and activity location	SIMURP Construction & Activity Site	Direct observation of sanitary conditions and calculation of waste disposal volume from TPS	Every month	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
During operational activity	Complaints by water users and farmers about water distribution	Each P3A Group	Direct observation of water users or farmers and reviewing public complaints that generate from SIMURP activities. The results of observations and complaints are made in the tabulation to compare with the previous month	Every 3 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	Water quantity	Irrigation channel DI Kedung Putri	Calculating water discharge and comparing it with previous data	Every 6 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)

3.2 DI Talang

MONITORING PLAN							
Phase	What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency / or continuous?)	Why (Is the parameter being monitored?)	Cost (if not included in project budget)	Who (Is responsible for monitoring?)
During preparation activity	Negative perceptions that appear in the community around the site that shows in complaints log	Villages passed by SIMURP activities	Direct observation of water users or farmers and reviewing public complaints that generate from SIMURP activities. The results of observations and complaints are made in the tabulation to compare with the previous month	Every month	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
During implementation activity	Negative perceptions that appear in the community around the site that shows in complaints log	Villages passed by SIMURP activities	Direct observation of water users or farmers and reviewing public complaints that generate from SIMURP activities. The results of observations and complaints are made in the tabulation to compare with the previous month	Every month	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	SOx, NOx, CO, Pb, and Dust	Location of Commercial, rice field, and residential	24-hour ambient air sampling using "air sampler impinger" and analyzed in laboratories. Laboratory results are compared with quality standards.	Every 6 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	Noise Level	Commercial, rice field, and residential	Direct measurement with Sound Level Meter. The measurement results are compared with the quality standard.	Every 6 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	BOD, DO, COD, TSS, and TDS	Construction Activity Location	Water sample taken and analyzed in laboratory. The results of the analysis in comparison with the standard quality	Every 6 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	Occurrence of traffic constraints (access) caused by SIMURP activities	The route of mobilization equipment & around SIMURP activities	monitor the community complaints regarding the disturbance of access	Every month	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	Sanitation condition around base camp and activity location	SIMURP Construction & Activity Site	Direct observation of sanitary conditions and calculation of waste disposal volume from TPS	Every month	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
During operational activity	Complaints of water users and farmers towards water distribution	Each P3A Group	Direct observation of water users or farmers and reviewing public complaints that generate from SIMURP activities. The results of observations and complaints are made in the tabulation to compare with the previous month	Every 3 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	Water quantity	Irrigation channel DI Talang	Calculating water discharge and comparing it with previous data	Every 6 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)

3.3 DI Pamukkulu

MONITORING PLAN							
Phase	What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency / or continuous?)	Why (Is the parameter being monitored?)	Cost (if not included in project budget)	Who (Is responsible for monitoring?)
During preparation activity	Negative perceptions that appear in the community around the site that shows in complaints log	Villages passed by SIMURP activities	Direct observation of water users or farmers and reviewing public complaints that generate from SIMURP activities. The results of observations and complaints are made in the tabulation to compare with the previous month	Every month	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
During implementation activity	Negative perceptions that appear in the community around the site that shows in complaints log	Villages passed by SIMURP activities	Direct observation of water users or farmers and reviewing public complaints that generate from SIMURP activities. The results of observations and complaints are made in the tabulation to compare with the previous month	Every month	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	Public Concern that appear in the community (Ms. Hasna Dg Cini and Ms. Nurhayati Dg Nginga) due to land acquisition process that shows in complaints	Ms. Hasna Dg Cini and Ms. Nurhayati Dg Nginga	Direct observation of Ms. Hasna Dg Cini and Ms. Nurhayati Dg Nginga and reviewing public complaints that generate from SIMURP activities.	During the process of Land Acquisition	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	SOx, NOx, CO, Pb, and Dust	Location of Commercial, rice field, and residential	24-hour ambient air sampling using "air sampler impinger" and analyzed in laboratories. Laboratory results are compared with quality standards.	Every 6 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	Noise Level	Commercial, rice field, and residential	Direct measurement with Sound Level Meter. The measurement results are compared with the quality standard.	Every 6 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	BOD, DO, COD, TSS, and TDS	Construction Activity Location	Water sample taken and analyzed in laboratory. The results of the analysis in comparison with the standard quality	Every 6 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	Occurrence of traffic constraints (access) caused by SIMURP activities	The route of mobilization equipment & around SIMURP activities	monitor the community complaints regarding the disturbance of access	Every month	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	Sanitation conditions around base camp and activity location	SIMURP Construction & Activity Site	Direct observation of sanitary conditions and calculation of waste disposal volume from TPS	Every month	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
During operational activity	Complaints of water users and farmers towards water distribution	Each P3A Group	Direct observation of water users or farmers and reviewing public complaints that generate from SIMURP activities. The results of observations and complaints are made in the tabulation to compare with the previous month	Every 3 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)

	Water quantity	Irrigation channel DI Pamukkulu	Calculating water discharge and comparing it with previous data	Every 6 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
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3.4 DI Jurang Batu

MONITORING PLAN							
Phase	What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency / or continuous?)	Why (Is the parameter being monitored?)	Cost (if not included in project budget)	Who (Is responsible for monitoring?)
During preparation activity	Negative perceptions that appear in the community around the site that shows in complaints log	Villages passed by SIMURP activities	Direct observation of water users or farmers and reviewing public complaints that generate from SIMURP activities. The results of observations and complaints are made in the tabulation to compare with the previous month	Every month	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
During implementation activity	Negative perceptions that appear in the community around the site that shows in complaints log	Villages passed by SIMURP activities	Direct observation of water users or farmers and reviewing public complaints that generate from SIMURP activities. The results of observations and complaints are made in the tabulation to compare with the previous month	Every month	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	SOx, NOx, CO, Pb, and Dust	Location of Commercial, rice field, and residential	24-hour ambient air sampling using "air sampler impinger" and analyzed in laboratories. Laboratory results are compared with quality standards.	Every 6 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	Noise Level	Commercial, rice field, and residential	Direct measurement with Sound Level Meter. The measurement results are compared with the quality standard.	Every 6 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	BOD, DO, COD, TSS, and TDS	Construction Activity Location	Water sample taken and analyzed in laboratory. The results of the analysis in comparison with the standard quality	Every 6 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	Occurrence of traffic constraints (access) caused by SIMURP activities	The route of mobilization equipment & around SIMURP activities	monitor the community complaints regarding the disturbance of access	Every month	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	Sanitation conditions around base camp and activity location	SIMURP Construction & Activity Site	Direct observation of sanitary conditions and calculation of waste disposal volume from TPS	Every month	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
During operational activity	Complaints of water users and farmers towards water distribution	Each P3A Group	Direct observation of water users or farmers and reviewing public complaints that generate from SIMURP activities. The results of observations and complaints are made in the tabulation to compare with the previous month	Every 3 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	Water quantity	Irrigation channel DI Jurang Batu	Calculating water discharge and comparing it with previous data	Every 6 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)

3.5 DI Jatiluhur

MONITORING PLAN							
Phase	What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency / or continuous?)	Why (Is the parameter being monitored?)	Cost (if not included in project budget)	Who (Is responsible for monitoring?)
During preparation activity	Negative perceptions that appear in the community around the site that shows in complaints log	Villages passed by SIMURP activities	Direct observation of water users or farmers and reviewing public complaints that generate from SIMURP activities. The results of observations and complaints are made in the tabulation to compare with the previous month	Every month	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
During implementation activity	Negative perceptions that appear in the community around the site that shows in complaints log	Villages passed by SIMURP activities	Direct observation of water users or farmers and reviewing public complaints that generate from SIMURP activities. The results of observations and complaints are made in the tabulation to compare with the previous month	Every month	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	SOx, NOx, CO, Pb, and Dust	Location of Commercial, rice field, and residential	24-hour ambient air sampling using "air sampler impinger" and analyzed in laboratories. Laboratory results are compared with quality standards.	Every 6 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	Noise Level	Commercial, rice field, and residential	Direct measurement with Sound Level Meter. The measurement results are compared with the quality standard.	Every 6 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	BOD, DO, COD, TSS, and TDS	Construction Activity Location	Water sample taken and analyzed in laboratory. The results of the analysis in comparison with the standard quality	Every 6 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	Occurrence of traffic constraints (access) caused by SIMURP activities	The route of mobilization equipment & around SIMURP activities	monitor the community complaints regarding the disturbance of access	Every month	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	Sanitation condition around base camp and activity location	SIMURP Construction & Activity Site	Direct observation of sanitary conditions and calculation of waste disposal volume from TPS	Every month	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
During operational activity	Complaints of water users and farmers towards water distribution	Each P3A Group	Direct observation of water users or farmers and reviewing public complaints that generate from SIMURP activities. The results of observations and complaints are made in the tabulation to compare with the previous month	Every 3 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)
	Water quantity	Irrigation channel DI Jatiluhur (SS Macan and SS Pamanukan)	Calculating water discharge and comparing it with previous data	Every 6 months	To find out if the mitigation action can minimize the impact	Include in project budget	Directorate of Water Resource Management (BPSDA)

Chapter 4. Institutional Arrangements, and Responsible Parties

To ensure that works associated with the project are undertaken in a manner that minimizes potential impacts it is necessary to have resources dedicated to managing the environmental and social issues. Approvals associated with all stages of preparation and works will be undertaken by B/BWS in coordination with National Project Implementation Unit of MPWH.

Table 3. Roles and Responsibilities

Activity / Task	Implementing Agency	Monitoring Agency
1. Screening Impact of Rehabilitation/Remedial Works and/or Sedimentation Management Works	B/BWS	Directorate ILL (MPWH)
2. Safeguard Document Preparation (UKL-UPL, SPPL, LARAP, and IPP as appropriate)		
a. Prepare Administration	B/BWS	Directorate ILL (MPWH)
b. Compose document	B/BWS	Directorate ILL (MPWH)
c. Approval Process	DLH in each irrigation scheme respected regency WBOJ (for LARAP and IPP)	Directorate ILL (MPWH)
3. Project Implementation and Monitoring		
a. Project Implementation		
- Urgent Rehabilitation Irrigation	B/BWS/ PW Agency (Regency)	Directorate ILL (MPWH)
- Irrigation Modernization	B/BWS	Directorate ILL (MPWH)
- Report	B/BWS in coordination with related institutions	Directorate ILL (MPWH) DLH WBOJ
b. Environmental and Social Management Implementation		

Activity / Task	Implementing Agency	Monitoring Agency
- Urgent Rehabilitation Irrigation	B/BWS	Directorate ILL (MPWH)
- Irrigation Modernization	B/BWS	Directorate ILL (MPWH)
- Report	B/BWS Coordination with related institution with the Management	Directorate ILL (MPWH) DLH WBOJ
c. Environmental and Social Monitoring Implementation		
- Urgent Rehabilitation Irrigation	BPSDA	Directorate ILL (MPWH)
- Irrigation Modernization	BPSDA	Directorate ILL (MPWH)
- Report	BPSDA	Directorate ILL (MPWH) DLH WBOJ

Box – 1

Summary of SIMURP Environmental and Social Management Division of Responsibilities

Overall Environmental Objective of the Project:

- Project will be implemented in accordance with the Environmental and Social Management Framework (ESMF) and Loan Agreements

Directorate Irrigation & Low Land, DGWR, MPWH:

- Prepare the guidance and supervise the project's environmental and social aspects.
- Ensure close coordination with *District/Kota/Provincial/Central* governments and the World Bank, and other national and local government agencies.

National Project Implementation Unit Consultants (*serves under the Directorate ILL, DGWR*):

- Assist in establishing and ensuring compliance with the ESMF requirements, particularly during Irrigation scheme planning, design and assessment.
- Ensure close coordination with NPIUs including annual consultation and coordination workshops; needed training support and information dissemination.
- Provide needed environmental guidance and field support during the irrigation scheme implementation.
- Support NPIU to record and to monitor complaints (implement the GRM).

B/BWS:

- Lead role for Detail Engineering Design and Construction supervision at the provincial level.
- Lead role for the preparation of the environmental permit and safeguard Instrument.
- Lead role for implementation of the GRM.
- Serve as the official point of project coordination and communication with the respective and other government institutions.

Design and Supervision Consultants (DSCs; *under B/BWS*)

Lead role during irrigation scheme design reviews, monitoring and reporting on implementation in coordination with the provincial/*District/kota* and National Project Management Unit Consultants. Support transport and other funding requirements of NPIU irrigation Scheme monitoring visits and local consultation meetings.

DLH (Environmental Agency; *serves under local government at the provincial and/or District/kota level*)

Monitor the implementation of Environmental and Social Management and Monitoring Plan through periodical Environmental Management and Monitoring Implementation Report.