

[ 資 料 ]

資料 1 : 調査団員・氏名



## 資料1 調査団員・氏名

### (1) 第1次現地調査

総括	吉見 昌宏	JICA 社会基盤・平和構築部 技術審議役
計画管理	矢追 秀樹	JICA 社会基盤・平和構築部 運輸交通・情報通信グループ 第二チーム 特別嘱託
業務主任/事業全体計画	小川 賢	一般財団法人日本造船技術センター
副業務主任/運営維持管理計画	友井 武人	一般財団法人日本造船技術センター
浚渫計画	小舟 浩治	ペン株式会社
船体設計	染矢 隆一	一般財団法人日本造船技術センター
造船計画/調達・積算	山田 通政	一般財団法人日本造船技術センター
通訳	山川 清利	株式会社フランシール

### (2) 第2次現地調査

総括	佐藤 渉	JICA 社会基盤・平和構築部 運輸交通・情報通信グループ 第二チーム 課長補佐
計画管理	矢追 秀樹	JICA 社会基盤・平和構築部 運輸交通・情報通信グループ 第二チーム 特別嘱託
業務主任/事業全体計画	小川 賢	一般財団法人日本造船技術センター
副業務主任/運営維持管理計画	友井 武人	一般財団法人日本造船技術センター
浚渫計画	小舟 浩治	ペン株式会社
船体設計	染矢 隆一	一般財団法人日本造船技術センター
造船計画/調達・積算	山田 通政	一般財団法人日本造船技術センター

### (3) 準備調査報告書(案)説明調査

総括	西宮 宜昭	JICA 社会基盤・平和構築部 運輸交通・情報通信グループ 第二チーム 専任参事
業務主任/事業全体計画	小川 賢	一般財団法人日本造船技術センター
副業務主任/運営維持管理計画	友井 武人	一般財団法人日本造船技術センター



## 資料 2 : 調査行程



## 資料 2 調査行程

### (1) 第1次現地調査

	月日(曜)	総括	計画管理	業務主任	副業務主任	浚渫計画	船体設計	調達・積算
	2016年8月	吉見昌宏	矢追秀樹	小川 賢	友井武人	小舟浩治	染矢隆一	山田通政
	28日	日	現地着 12:40		現地着 12:40			
1	29日	月	Same as consultant	Ar ASU 12:40	JICA パラグアイ事務所訪問、打合せ ANNP 本部事務所訪問、討議			
2	30日	火	ANNP ビジエタ港湾施設視察、討議。常石造船パラグアイ視察					
3	31日	水	外務省にて同省・環境局・ANNP 他との合同会議 ANNP 航行水路部打合せ					
4	9月 1日	木	ANNP 航行水路部打合せ 大蔵省訪問・面談・質疑					
5	2日	金	JICA パラグアイ事務所、M/D 署名式、日本大使館訪問 (JICA 及び小川)、ANNP 航行水路部打合せ (他)					
6	3日	土	現地発 13:20	資料整理、団内会議				
7	4日	日	資料整理、団内会議					
8	5日	月	パラグアイ船主協会 ANNP 航行水路部打合せ					
9	6日	火	パラグアイ気象庁 TERPORT 社港湾施設視察					
10	7日	水	ラ・バルカ造船所視察 ANNP ビジエタ事務所、浚渫船等乗船視察					
11	8日	木	シグニチャー社 (民間浚渫会社) 視察 MOPC 訪問、面談・討議					
12	9日	金	税関訪問・面談・質疑 ANNP 航行水路部打合せ、ワークショップ見学					
13	10日	土	資料整理、団内会議					
14	11日	日	資料整理 ダイハツ・ブラジル駐在員打合せ					
15	12日	月	アグアペ造船所視察 ANNP 航行水路部打合せ					
16	13日	火	産業貿易省訪問・面談・質疑 チャコ造船所視察 農牧省訪問 ANNP 航行水路部打合せ ANNP 本部で MOTD 署名					
17	14日	水	JICA パラグアイ事務所訪問・調査内容報告・質疑 現地発 13:30					

(2) 第2次現地調査

	月日(曜)	総括	計画管理	業務主任	副業務主任	浚渫計画	船体設計	調達・積算
	2016年11月	佐藤 渉	矢追秀樹	小川 賢	友井武人	小舟浩治	染矢隆一	山田通政
	27日	日	現地着 10:35	現地着 12:40				
1	28日	月	JICA パラグアイ事務所訪問・打合せ、在パラグアイ日本大使館訪問・打合せ ANNP 本部事務所訪問・討議					
2	29日	火	大蔵省海外協力担当部署訪問・協議、ANNP 航行水路部打合せ					
3	30日	水	MOPC 商業海事局訪問・協議、ANNP 航行水路部打合せ					
4	12月 1日	木	常石造船パラグアイ(ATP)訪問・工場視察、ANNP 航行水路部打合せ					
5	2日	金	大蔵省税金担当部署訪問・協議、M/D 署名式、JICA パラグアイ事務所打合せ					
6	3日	土	現地発 13:20	資料整理	河川航路調査(アスンシオン⇄アパ川合流点)開始			
7	4日	日		資料整理	河川航路調査(アスンシオン⇄アパ川合流点)			
8	5日	月		ANNP,MOPC	河川航路調査(アスンシオン⇄アパ川合流点)			
9	6日	火		ANNP 財務	河川航路調査(アスンシオン⇄アパ川合流点)			
10	7日	水		ANNP	河川航路調査(アスンシオン⇄アパ川合流点)			
11	8日	木		ANNP	河川航路調査(アスンシオン⇄アパ川合流点)			
12	9日	金		ANNP	河川航路調査(アスンシオン⇄アパ川合流点)			
13	10日	土		資料整理	河川航路調査(アスンシオン⇄アパ川合流点)			
14	11日	日		資料整理	河川航路調査(アスンシオン⇄アパ川合流点)			
15	12日	月	河川航路調査(北部)終了、ANNP 本部財務部					
16	13日	火	ANNP 航行水路部打合せ、ラ・バルカ造船所、船価見積・資機材物価調査					
17	14日	水	船主協会、T&C 浚渫現場視察、河川航路調査(アスンシオン⇄ピラール)開始					
18	15日	木		パラグアイ造船工業会、 ANNP 航行水路部打合せ	河川航路調査(アスンシオン⇄ピラール)			
19	16日	金		アグアベ造船所・船価見積依頼	河川航路調査(アスンシオン⇄ピラール)			
20	17日	土		河川(南部)	資料整理	河川航路調査(アスンシオン⇄ピラール)		
21	18日	日		河川(南部)	資料整理	河川航路調査(アスンシオン⇄ピラール)		
22	19日	月	河川航路調査(南部)終了、ANNP 本部幹部面談・船価見積協議					
23	20日	火	ANNP 航行水路部打合せ、モーターボート建造 Cabel 社視察					
24	21日	水	ANNP 航行水路部打合せ					
25	22日	木	JICA パラグアイ事務所報告、NK パラグアイ支部訪問ヒヤリング、 ANNP 航行水路部打合せ、ダイハツディーゼル南米駐在面談					
26	23日	金	ANNP 本部で MOTD 署名 現地発 13:30					



## (3) 準備調査報告書（案）説明調査

	月日（曜）		総括	業務主任	副業務主任
	2017年5月		西宮宜昭	小川 賢	友井武人
	7日	日		現地着 12:40	
1	8日	月		JICA パラグアイ事務所訪問・打合せ、ANNP 本部で MOPC・外務省交えて報告書（案）説明・討議	
2	9日	火	現地着 12:40	ANNP 航行水路部で技術協議及び事業効果算定基準打合せ	
3	10日	水	大蔵省免税局訪問・現地建造時の VAT 免税手続き方法を協議、ANNP 航行水路部で浚渫作業手順確認やスパッド・アンカーなどの検分		
4	11日	木	ANNP 本部で MOPC や外務省交えて協議後 M/D 署名、その後同じ建物にある税関を訪問し実務者と関税免税手続きについて協議、午後 ANNP 航行水路部で打合せ		
5	12日	金	JICA パラグアイ事務所訪問・報告、午後現地日本大使館訪問・報告		
6	13日	土	現地発 17:30	現地発 17:30	



### 資料3：関係者（面会者）リスト



### 資料 3 関係者（面会者）リスト

(1) 第1次現地調査（2016年8月29日～9月14日）

氏名	役職名	備考
1. Administracion Nacional de Navegacion y Puertos (ANNP) 国営航行港湾公社		
Héctor Alfredo Duarte Chávez	Presidente 総裁	
Julio Taboada	Director de ANNP Representante del Ministerio de Hacienda (MH) ANNP 理事（大蔵省から出向）	
Antonio Quiñonez	Director de ANNP - Representante de la Armada Paraguaya ANNP 理事（「パ」国船主業界代表）	
Jose Maciel	Gerente de Navegacion e Hidrovia 航行水路部長	カウンターパート
Gustavo Florentin	Administrador Puerto Villeta ビジエタ港所長	
Bienvenido Cuellar	Jefe Departamento de Senalización 航路標識課長	
Victos Plaz Suarez	Jefe Departamento de Nagegación y Talleres 航路および維持修理課長	
Luis Maria Jara	Jefe Departamento de Estudios Hidropograicos 水理地形図課長	
2. Ministerio de Obras Publicas y Comunicaciones (MOPC) 公共事業・通信省		
Ronald Olson Zayas Romero	Director General de Marina Mercante 商船部長	
Jose Luis Avila	Coordinador de Hidrovia 航路調整官	
3. Ministerio de Relaciones Exteriores (MRE) 外務省		
Blas Felip	Director Cuenca del Plata y Navegacion Fluvial ラプラタ水系水運部長	
Aníbal A. N. Zarza Domínguez	Jefe- Dirección de Cuenca del Plata y Navegación Fluvial ラプラタ水系水運部チーフ	
Sofia Lafuente	Direccion de Cuenca del Plata y Navegación Fluvial ラプラタ水系水運部	
Jose Garcia	Direccion de Cuenca del Plata y Navegación Fluvial ラプラタ水系水運部	
Francisco Javier Oxilia Vera	Direccion de Cuenca del Plata y Navegación Fluvial ラプラタ水系水運部	
Carlos Vidal Pintos	Jefe Cooperación Bilateral 二国間協力チーフ	

Hugo Chaparro                      Direccion de Cooperación Internacional  
国際協力局

Dieder Olmedo                      Director General de Comercio Exterior  
外国貿易局長

4. Ministerio de Hacienda    Subsecretaria de Estado de Tributacion    大蔵省

Abg. Liz del Padre                      Directora, Dirección de Planificación y Técnica                      税務計画と技術  
Maciel,                      Tributaria    税務技術企画部長                      術

Abg. Luis Martínez,                      Jefe de Departamento, Departamento de Elaboración e  
Interpretación de Normas Tributarias.  
税務規則解釈開発部主任

Abg. Fabio Andrés López                      Dictaminante, Departamento de Elaboración e  
Ortiz                      Interpretación de Normas Tributarias.  
税務規則解釈開発部認定官

5. Secretaria del Ambiente    環境庁

Edelira Duarte                      Directora    部長

6. Representante Permanente de Paraguay ante la OMM

Presidente de la AR-III de la OMM    気象庁

Lic. Julián Báez Benítez                      Director    部長

7. Centro de Armadores Fluviales y Marítimos    船主協会

Lic. Juan Carlos Muñoz Menna                      Presidente    総裁

Valte(R) Manuel Royg Benítez                      Asesor Técnico    技術アドバイザー

8. Aduana    税関

Ramón Gómez, Abg.                      Director Relaciones International    国際関係部長

Oscar Sandoual                      DPTO Mercosur/ UE    メルコスール部

Cristian Parcyes                      Jefe Normas y Procedimientos  
手続基準担当チーフ

Jose Torres                      Tecnico Normas y Procedimientos    手続基準担当

Omar Troche                      Departamento de Vistoria    検査部

9. Ministerio de Agricultura y Ganaderia    農牧省

Ing. Agr. Santiago                      Director General    Dirección General de Planificación

Bertoni 企画総局長

10. Terminales Portuarias S. A (TERPORT) TERPORT 港湾会社

Ricardo D. dos Santos Director 所長

11. 常石造船

小葉竹泰則 常石造船株式会社 取締役副社長

12. Astillero Tsuneishi Paraguay S.A. 常石パラグアイ造船所及び関連会社

高原 仁 代表取締役社長

蔵本 明 取締役 設計・調達

飯塚 正明 取締役 営業・財務・管理

寺尾 隆文 取締役 工場長

Satoshi Sugano Presidente GL SOUTH AMERICA S.A

13. Astillero La Barca del Pescador ラ・バルカ造船所

Gerardo Ceratti 工場長 (アルゼンチン人)

Rodrigo Soto 技師

14. Astillero Aguapé アグアペ造船所

Aureliano Gonzalez Presidente 社長

Saldivar

Ing. Mauricio Gonzalez Director Owner の息子 電気技師

Arce

Ing. Gustavo Ruir Diaz Gerente de Producción 製造部長

Arsenio Villa Iba Asistente de Gerencia 部長代理

Ing. Guillermo Garcia HSE Manager

Hülkamp 安全衛生担当課長

15. Astillero Chaco Paraguayo S.A. チャコ造船所

Eladio Núñez Alvarez Gerente General ゼネラルマネージャー

Lic. Vieter Manue Gerente Comercial

Sanabia Fleeha 営業部長

Luis Alberto Jacquet Director

Diarte 役員

16. Signature S.R.L. 現地土木浚渫会社  
 Paul Hellmers Director  
 Lic. Enrique Amarilla Gerente Administrativo

17. 在パラグアイ日本大使館  
 上田 善久 日本国特命全権大使  
 肥田 剛 経済・経済協力班

18. JICA パラグアイ事務所  
 吉田 英之 所長  
 伊藤 圭介 次長  
 井川 晴彦 事業班長  
 ミリアン 現地スタッフ

19. その他  
 豊歳 直之 パラグアイ国特命全権大使 パラグアイ共和国大使館  
 (東京都千代田区一番町)  
 大隈 広視 ダイハツディーゼル南米代表事  
 務所 (DDSA) 社長

(2) 第2次現地調査 (2016年11月28日～12月23日)

氏名 (敬称略)	役職名	備考
1. Administracion Nacional de Navegacion y Puertos (ANNP)	国営航行港湾公社	
Antonio Quiñonez	Director de ANNP - Representante de la Armada Paraguaya 理事 (パラグアイ船隊代表)	
Regilio Negri	Derector de ANNP – Miembro del Directorio por el Centro de Armadores Fluviales y Marítimos (CAFyM) 理事 (パラグアイ船主協会理事兼務)	
Carlos Humberto Fariña Cabrera	Gerente de Navegacion e Hidrovia	カウンターパ



	航行水路部長	ート
Carlos Alberto Irala Fernández	Gerente de Administración 管理部長	
Bienvenido Cuellar	Jefe Departamento de Senalización 航路標識課・課長	
Victor Plaz Suarez	Jefe Departamento de Nagegación y Talleres 航路・維持修理課・課長	
Luis Maria Jara Vargas	Jefe Departamento de Estudios Hidropograficos 水理地形図課・課長	
Juan Carlos Zunini Casamayouret	Jefe de Departamento 課長	
2. Ministerio de Obras Publicas y Comunicaciones (MOPC) 公共事業・通信省		
Ronald Olson Zayas Romero	Director General de Marina Mercante 商船局長	
Jose Luis Avila	Coordinador de Hidrovia 航行水路コーディネーター	
3. Ministerio de Hacienda (MH) 大蔵省		
Luis Roberto Martínez	Jefe Departamento de Elaboración e Interpretación de Normas Tributarias DPTT-SET 税務規則推敲解釈課・課長	無償資金協力 に係る税務計画
Fabio Andrés López Ortiz	Dictaminante, Departamento de Elaboración e Interpretación de Normas Tributarias. 税務規則推敲解釈課・専門員	同上
Antulio Bohbout	Coordinador, Juridice DPTT-SET 法務コーディネーター	同上
Maria Victoria Alarcon Comas	Jefa del Departamento de Cooperación no reembolsable del Ministerio de Hacienda 無償資金協力課・課長	無償資金協力 担当
Fernando Santander	Miembro de la Dirección de Política de Endeudamiento 債務政策局・メンバー	同上
Mario Armoa	Miembro de la Dirección de Política de Endeudamiento 債務政策局・メンバー	同上
4. Representante Permanente de Paraguay ante la OMM		
	Presidente de la AR-III de la OMM 気象庁	

Julián Báez Benítez Director 局長

5. Centro de Armadores Fluviales y Marítimos 船主協会  
Valte(R) Manuel Royg Benítez Asesor Técnico 技術顧問

6. Terminales Portuarias S. A (TERPORT) TERPORT 港湾会社  
Ricardo D. dos Santos Director 所長

7. Astillero Tsuneishi Paraguay S.A. 常石パラグアイ造船所及び関連会社  
高原 仁 代表取締役社長  
蔵本 明 取締役 設計・調達  
飯塚 正明 取締役 営業・財務・管理  
寺尾 隆文 取締役 工場長  
Yoshizaki Noriyuki 営業部長

8. Astillero La Barca del Pescador ラ・バルカ造船所  
Gerardo Ceratti 工場長 (アルゼンチン人)  
Rodrigo Soto 技師

9. Astillero Aguapé アグアペ造船所  
Ing. Guillermo Garcia Hülskamp HSE Manager  
労働安全衛生環境担当マネージャー

10. Naviera Yeruti S.A. ナビエラ・イェルティ河川輸送会社  
Guillermo Ehreke 社長、パラグライ造  
ラ・バルカ造船所社外取締役、船工業会の元  
元 CAFyM 総裁 締め

11. Class NK Asuncion Office 日本海事協会アスンシオン事務所  
Cristian D. Morales R. Exclusive Surveyor 専任検査官  
Derlys R. González O. Exclusive Surveyor 専任検査官

12. 在パラグアイ日本大使館  
上田 善久 日本国特命全権大使

肥田 剛 書記官 経済・経済協力班

### 13. JICA パラグアイ事務所

吉田 英之 所長  
合澤 栄美 次長  
井川 晴彦 事業班長  
ミリアン 現地スタッフ

### 14. その他

大隈 広視 ダイハツディーゼル南米代表事務所  
(DDSA) 社長

### (3) 準備調査報告書（案）説明調査（2017年5月8日～12日）

<u>氏名</u> （敬称略）	<u>役職名</u>	<u>備考</u>
1. Administracion Nacional de Navegacion y Puertos (ANNP)	国营航行港湾公社	
Antonio Quiñonez	Director de ANNP - Representante de la Armada Paraguaya 理事（パラグアイ船隊代表）	ANNP 本部
Regilio Negri	Derector de ANNP – Miembro del Directorio por el Centro de Armadores Fluviales y Marítimos (CAFyM) 理事（パラグアイ船主協会理事兼務）	ANNP 本部
Carlos Humberto Fariña Cabrera	Gerente de Navegacion e Hidrovia 航行水路部長	カウンターパート
Bienvenido Cuellar	Jefe Departamento de Senalización 航路標識課・課長	
Victor Plaz Suarez	Jefe Departamento de Nagegación y Talleres 航路・維持修理課・課長	
Luis Maria Jara Vargas	Jefe Departamento de Estudios Hidropograficos 水理地形図課・課長	
2. Ministerio de Obras Publicas y Comunicaciones (MOPC)	公共事業・通信省	
Ronald Olson Zayas Romero	Director General de Marina Mercante 商船局長	

3. Ministerio de Relaciones Exteriores (MRE) 外務省  
 Blas Alfredo Felip, Director de Dirección de Cuenca del Plata y  
 Himmelreich, Navegacion Fluvial ラプラタ水系水運部長
4. Ministerio de Hacienda (MH) 大蔵省  
 Luis Roberto Martínez Jefe de Departamento de Elaboración e Interpretación de Normas Tributarias DPTT-SET 税務規則推敲解釈課・課長 無償資金協力に係る税務計画
5. Aduana 税関  
 Americo Pereira Director de Procedimientos Aduaneros 税関手続部長 ANNP 本部の隣の事務所に在籍
6. 在パラグアイ日本大使館  
 中谷 好江 臨時代理大使  
 岡本 真実 書記官
7. JICA パラグアイ事務所  
 吉田 英之 所長  
 近藤 信孝 次長  
 井川 晴彦 事業班長  
 ミリアン 現地スタッフ

## 資料4 討議議事録 (M/D)

第1次現地調査時の討議議事録

第1次現地調査時のコンサルタントの技術討議議事録

第2次現地調査時の討議議事録

第2次現地調査時のコンサルタントの技術討議議事録

説明調査時の討議議事録



**Minutes of Discussions**  
**on the Preparatory Survey for the Project for Procurement of Dredging Equipment for**  
**Paraguay River in the Republic of Paraguay**

In response to a request from the Government of Republic of Paraguay (hereinafter referred to as “Paraguay”), the Government of Japan decided to conduct a Preparatory Survey for “the Project for Procurement of Dredging Equipment for Paraguay River” (hereinafter referred to as “the Project”). In accordance with this decision, Japan International Cooperation Agency (hereinafter referred to as “JICA”) decided to commence the survey.

JICA sent the Preparatory Survey Team for the Field Survey (hereinafter referred to as “the Team”), which is headed by Mr. Masahiro YOSHIMI, Executive Technical Advisor of the Director General, Infrastructure and Peacebuilding Department, JICA, and is scheduled to stay in the country from 28<sup>th</sup> August to 14<sup>th</sup> September, 2016.

The Team held discussions with the officials concerned of the Paraguayan side, and conducted a field survey at the Project site.

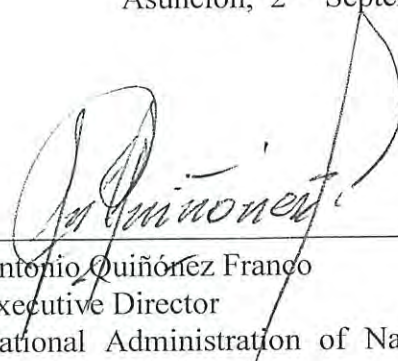
In the course of discussions and field survey, both sides confirmed the main items described on the attached sheets. The Team will proceed to further works and prepare a Draft Report of the Preparatory Survey.

Asuncion, 2<sup>nd</sup> September, 2016

吉見昌宏

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Mr. Masahiro YOSHIMI  
Leader  
Preparatory Survey Team  
Japan International Cooperation Agency



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Antonio Quiñónez Franco  
Executive Director  
National Administration of Navigation and  
Ports  
The Republic of Paraguay

## ATTACHMENT

### 1. Objective of the Project

The objective of the Project is to enlarge dredging capability of National Administration of Navigation and Ports by procuring dredging equipment including a dredger, thereby contributing to conduct maintenance dredging at Paraguay River.

### 2. Title of the Preparatory Survey

Both sides confirmed the title of the Preparatory Survey as “the Preparatory Survey for the Project for Procurement of Dredging Equipment for Paraguay River.”

### 3. Project Site

Both sides confirmed that site of the Project is in Paraguay River which is shown in Annex-1.

### 4. Line agency and Executing Agency

Both sides confirmed the line ministry and executing agency as follows:

- 4-1. The line agency is Ministry of Public Works and Communications (MOPC), which would be the agency to supervise the executing agency.
- 4-2. The executing agency is National Administration of Navigation and Ports (ANNP). The executing agency shall coordinate with all the relevant agencies to ensure smooth implementation of the Project and shall ensure that the undertakings are taken by relevant agencies properly and on time. The organization chart is shown in Annex-2.

### 5. Item requested by the Government of Paraguay

5-1. As a result of discussions, both sides confirmed that the items requested by the Government of Paraguay are: a dredger, a tugboat, a support vessel, two pontoons, two motorboats and other surveying instrument.

5-2. JICA will assess the appropriateness of the above requested items through the survey and will report findings to the Government of Japan. The final components of the Project would be decided by the Government of Japan.

### 6. Dredging operation

6-1. The Paraguayan side explained that requested items will be operated by ANNP for dredging the area of Paraguay River from a confluence with Apa River to a confluence with Parana river.

6-2. The Paraguayan side explained allocation of responsibilities about dredging of the





Paraguay-Argentine border area of Paraguay River between the governments according to their agreement in 1969 as follows:

- Argentine (Direccion Nacional Vias Navegables, Subsecretaria de Puertos y Vias Navegables of Ministeria de Transporte) shall bear the responsibility for dredging the downstream from Formosa;
- Both Paraguay and Argentine shall bear the responsibility for dredging area between Asuncion and Formosa, and the cost is shared equally; and
- Paraguay shall bear the responsibility for dredging the upstream from Asuncion as the area is located in Paraguay, but not Paraguay-Argentine border.

6-3. The Team explained their concerns if procurement of new dredger in the Project would harm private dredging sectors' business. The Paraguayan side explained that the private sectors will not be harmed since dredging work for maintaining the river traffic was ordered to the private sectors only in 2015 and 2016 to respond the urgent needs, and their main usage of dredgers is for obtaining soils for construction works such as reclaiming and protection of the river side land.

## 7. Japanese Grant Aid Scheme

7-1. The Paraguayan side understood the Japanese Grant Aid Scheme and its procedures as described in Annex-3, Annex-4 and Annex-5, and necessary measures to be taken by the Government of Paraguay.

7-2. The Paraguayan side agreed to take the necessary measures, as described in Annex-6, for smooth implementation of the Project, as a condition for the Japanese Grant Aid to be implemented. The detailed contents of the Annex-6 will be worked out during the survey and shall be agreed no later than by the time of explanation of the Draft Preparatory Survey Report.

The contents of Annex-6 will be used to determine the following:

- (1) The scope of the Project
- (2) The timing of the Project implementation
- (3) Timing and possibility of budget allocation

Contents of Annex-6 will be updated as the Preparatory Survey progresses, and will finally be the Attachment to the Grant Agreement.

## 8. Schedule of the Study

8-1. The Team will conduct the first field survey in Paraguay until 14<sup>th</sup> September, 2016, and the second field survey in around November, 2016.

8-2. JICA will prepare the draft Preparatory Survey Report and dispatch a mission to Paraguay in order to explain its contents in around April, 2017.

8-3. If the contents of the draft Preparatory Survey Report are accepted in principle and the



undertakings are fully agreed by the Paraguayan side, JICA will complete the final report and send it to Paraguay in around June, 2017.

8-4. The above schedule is tentative and subject to change.

9. Monitoring during the implementation

The Project will be monitored three (3) times (once before commencement of construction, once during construction and at the time of completion of construction) during the project period by the executing agency by using the Project Monitoring Report (PMR) described in Annex-7.

10. Ex-Post Evaluation

JICA will conduct ex-post evaluation three (3) years after the project completion with respect to five evaluation criteria (relevance, effectiveness, efficiency, impact and sustainability) of the Project. Result of the evaluation will be publicized. The Paraguayan side is required to provide necessary support for them.

11. Disclosure of Information

Both sides confirmed that the study results excluding the Project cost will be disclosed to the public after the completion of the Survey. All the study results including the Project cost will be disclosed to the public after all the verification of contracts for the Project are concluded by JICA.

12. Other Relevant Issues

12-1. The Team explained the importance of operation and maintenance of the vessels and equipment procured in the Project considering that proper asset management impacts greatly on life-span of them and their maintenance cost. The Paraguayan side assured that they will secure the necessary budget and personnel for operation and maintenance of the vessels and equipment.

12-2. The Paraguayan side assured that the vessels and equipment procured in the Project would never be transferred to a third party without prior consultation with the Japanese side.

12-3. The Paraguayan side agreed that customs duties, internal taxes and other fiscal levies which may be imposed in Paraguay are exempted under mutual agreement in the Exchange of Note (E/N). If any temporary expenses by consultant(s) and/or contractor(s) stated before are caused by some reasons such as the delay of execution of tax exemption, the Paraguayan side shall bear the cost.

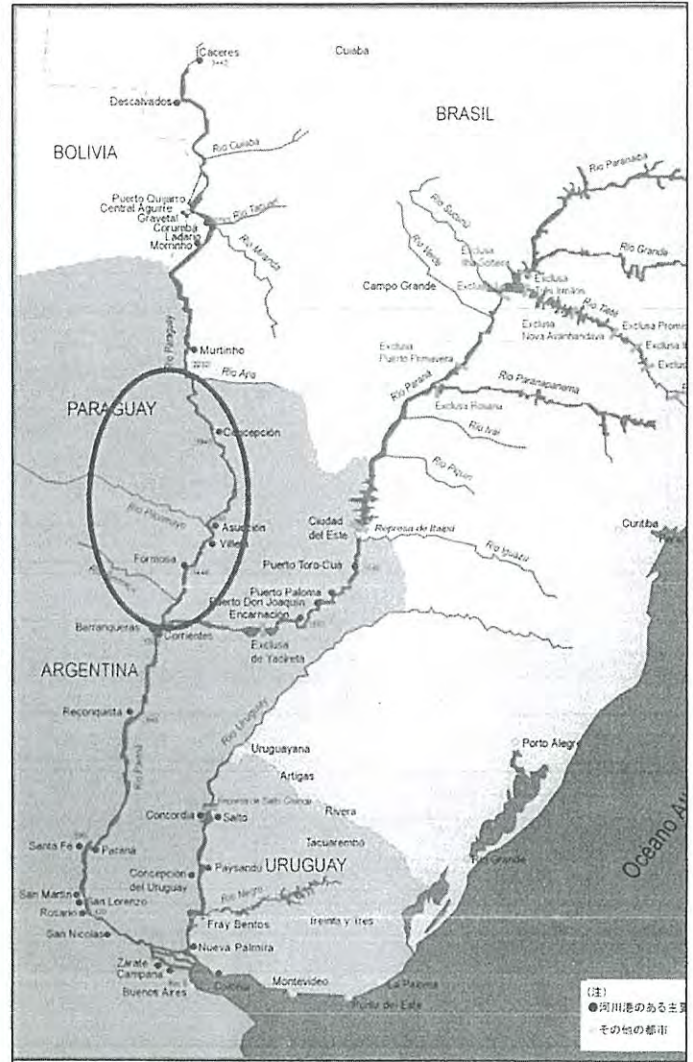
12-4. The Minutes of Discussions are made in duplicate in the languages of Spanish and English. Both equally authentic. In case of divergence of interpretation, English text

shall prevail.

- Annex-1 Project Site
- Annex-2 Organization Chart
- Annex-3 Japan's Grant Aid
- Annex-4 Flow Chart of Japan's Grant Aid
- Annex-5 Financial Flow of Japan's Grant Aid
- Annex-6 Major Undertakings to be taken by Each Government
- Annex-7 Project Monitoring Report



Project Site



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## Ministries in Paraguay

Ministry of Internal Affairs (MI)

Ministry of Foreign Affairs (MRE)

Ministry of Finance (MH)

Ministry of Education & Culture (MEC)

Ministry of Agriculture & Livestock (MAG)

Ministry of Public Works & Communications (MOPC)

Ministry of National Defence (MDN)

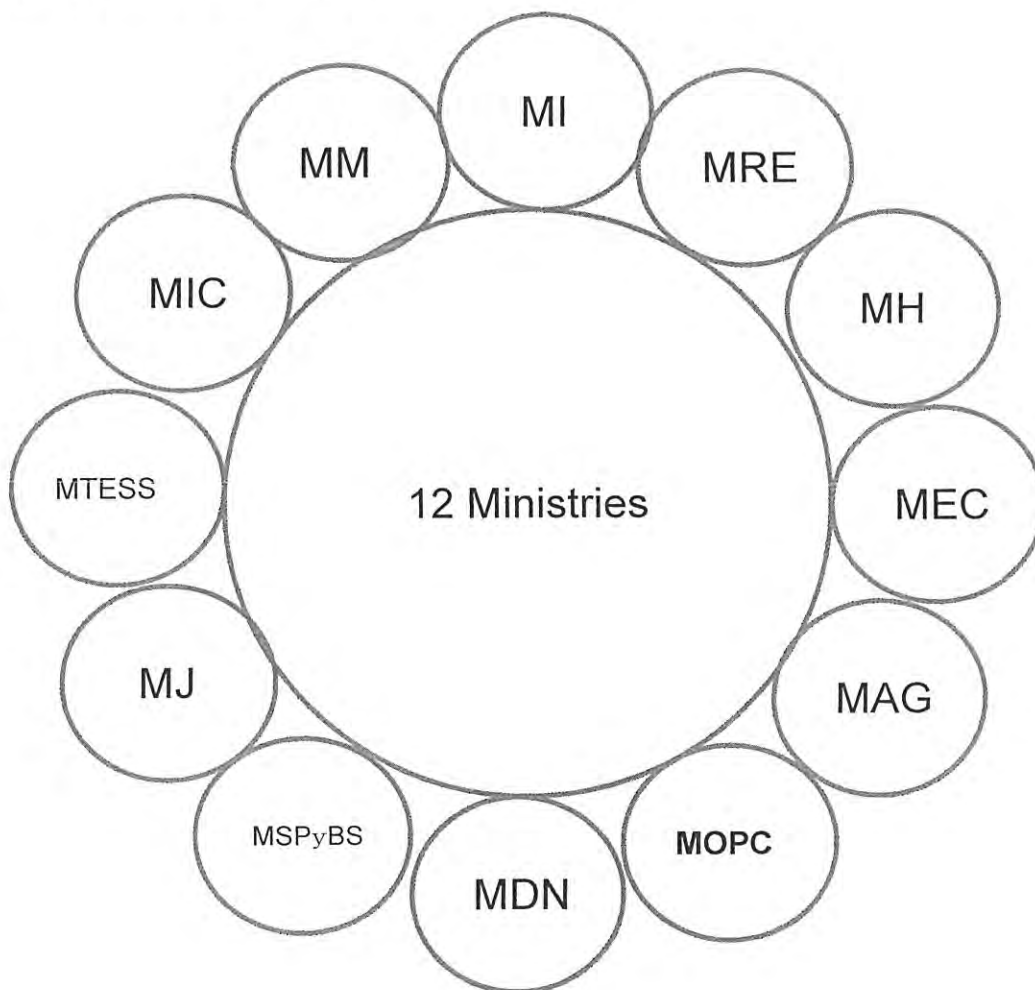
Ministry of Public Health & Social Welfare (MSPyBS)

Ministry of Justice (MJ)

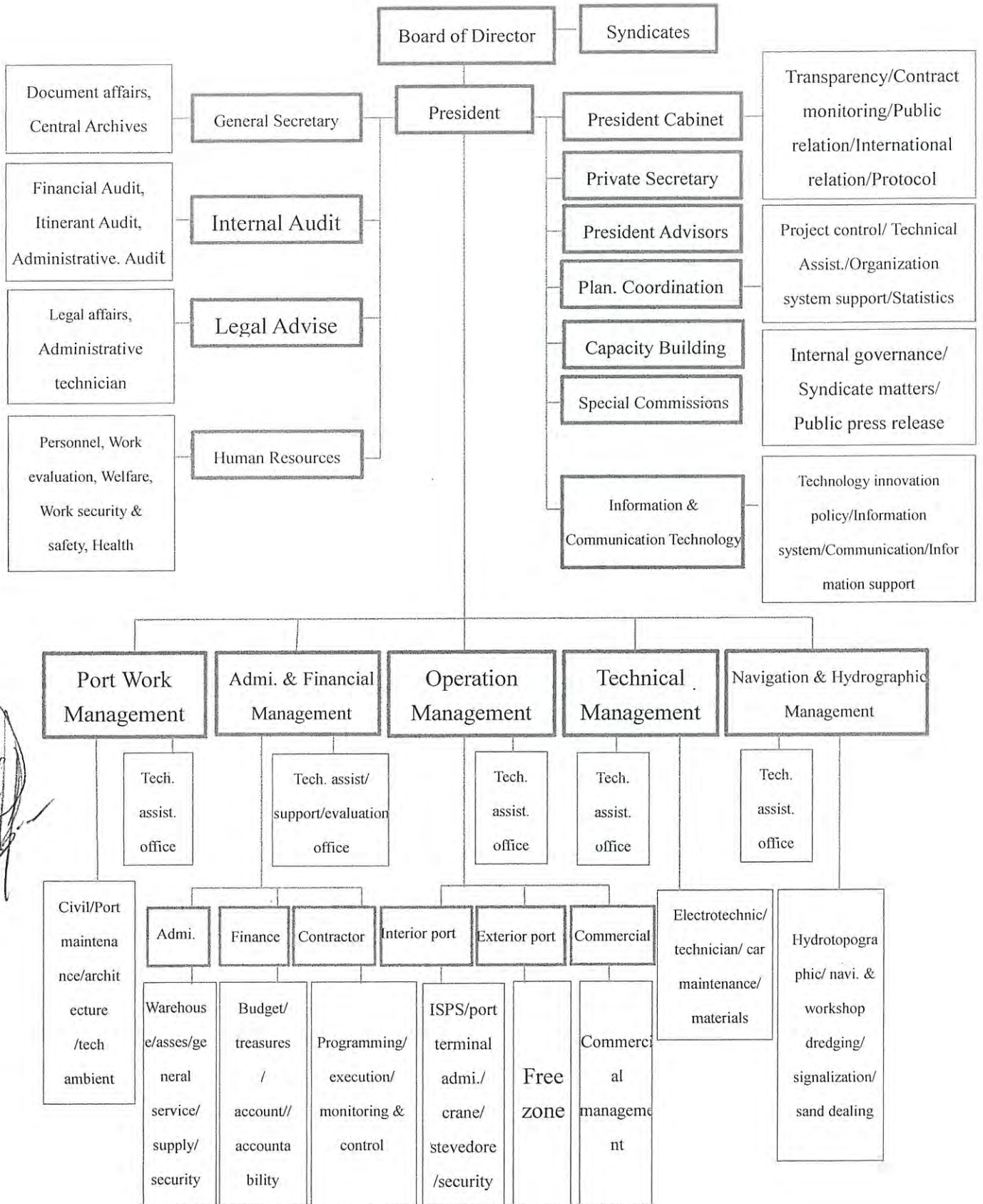
Ministry of Labour, Employment and Social Security (MTESS)

Ministry of Industry and Commerce (MIC)

Ministry of Women's Affairs (MM)



# Organization Chart



## JAPAN'S GRANT AID

The Government of Japan (hereinafter referred to as "the GOJ") is implementing the organizational reforms to improve the quality of ODA operations, and as a part of this realignment, a new JICA law was entered into effect on October 1, 2008. Based on this law and the decision of the GOJ, JICA has become the executing agency of the Grant Aid for General Projects, for Fisheries and for Cultural Cooperation, etc.

The Grant Aid is non-reimbursable fund provided to a recipient country to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for its economic and social development in accordance with the relevant laws and regulations of Japan. The Grant Aid is not supplied through the donation of materials as such.

### 1. Grant Aid Procedures

The Japanese Grant Aid is supplied through following procedures :

- Preparatory Survey
  - The Survey conducted by JICA
- Appraisal & Approval
  - Appraisal by the GOJ and JICA, and Approval by the Japanese Cabinet
- Authority for Determining Implementation
  - The Notes exchanged between the GOJ and a recipient country
- Grant Agreement (hereinafter referred to as "the G/A")
  - Agreement concluded between JICA and a recipient country
- Implementation
  - Implementation of the Project on the basis of the G/A

### 2. Preparatory Survey

#### (1) Contents of the Survey

The aim of the preparatory Survey is to provide a basic document necessary for the appraisal of the Project made by the GOJ and JICA. The contents of the Survey are as follows:

- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of relevant agencies of the recipient country necessary for the implementation of the Project.
- Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, financial, social and economic point of view.
- Confirmation of items agreed between both parties concerning the basic concept of the Project.
- Preparation of an outline design of the Project.
- Estimation of costs of the Project.

The contents of the original request by the recipient country are not necessarily approved in their initial form as the contents of the Grant Aid project. The Outline Design of the Project is confirmed based on the guidelines of the Japan's Grant Aid scheme.

JICA requests the Government of the recipient country to take whatever measures necessary to achieve its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization of the

recipient country which actually implements the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country based on the Minutes of Discussions.

(2) Selection of Consultants

For smooth implementation of the Survey, JICA employs (a) registered consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms.

(3) Result of the Survey

JICA reviews the Report on the results of the Survey and recommends the GOJ to appraise the implementation of the Project after confirming the appropriateness of the Project.

### 3. Japan's Grant Aid Scheme

(1) The E/N and the G/A

After the Project is approved by the Cabinet of Japan, the Exchange of Notes(hereinafter referred to as "the E/N") will be signed between the GOJ and the Government of the recipient country to make a pledge for assistance, which is followed by the conclusion of the G/A between JICA and the Government of the recipient country to define the necessary articles to implement the Project, such as payment conditions, responsibilities of the Government of the recipient country, and procurement conditions.

(2) Selection of Consultants

In order to maintain technical consistency, the consulting firm(s) which conducted the Survey will be recommended by JICA to the recipient country to continue to work on the Project's implementation after the E/N and G/A.

(3) Eligible source country

Under the Japanese Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased. When JICA and the Government of the recipient country or its designated authority deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country. However, the prime contractors, namely, constructing and procurement firms, and the prime consulting firm are limited to "Japanese nationals".

(4) Necessity of "Verification"

The Government of the recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by JICA. This "Verification" is deemed necessary to fulfill accountability to Japanese taxpayers.

(5) Major undertakings to be taken by the Government of the Recipient Country

In the implementation of the Grant Aid Project, the recipient country is required to undertake such necessary measures as Annex.

(6) "Proper Use"

The Government of the recipient country is required to maintain and use properly and effectively the facilities constructed and the equipment purchased under the Grant Aid, to assign staff necessary for this operation and maintenance and to bear all the expenses other than those covered by the Grant Aid.



(7) "Export and Re-export"

The products purchased under the Grant Aid should not be exported or re-exported from the recipient country.

(8) Banking Arrangements (B/A)

a) The Government of the recipient country or its designated authority should open an account under the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"). JICA will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.

b) The payments will be made when payment requests are presented by the Bank to JICA under an Authorization to Pay (A/P) issued by the Government of the recipient country or its designated authority.

(9) Authorization to Pay (A/P)

The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commissions paid to the Bank.

(10) Social and Environmental Considerations

A recipient country must carefully consider social and environmental impacts by the Project and must comply with the environmental regulations of the recipient country and JICA socio-environmental guidelines.

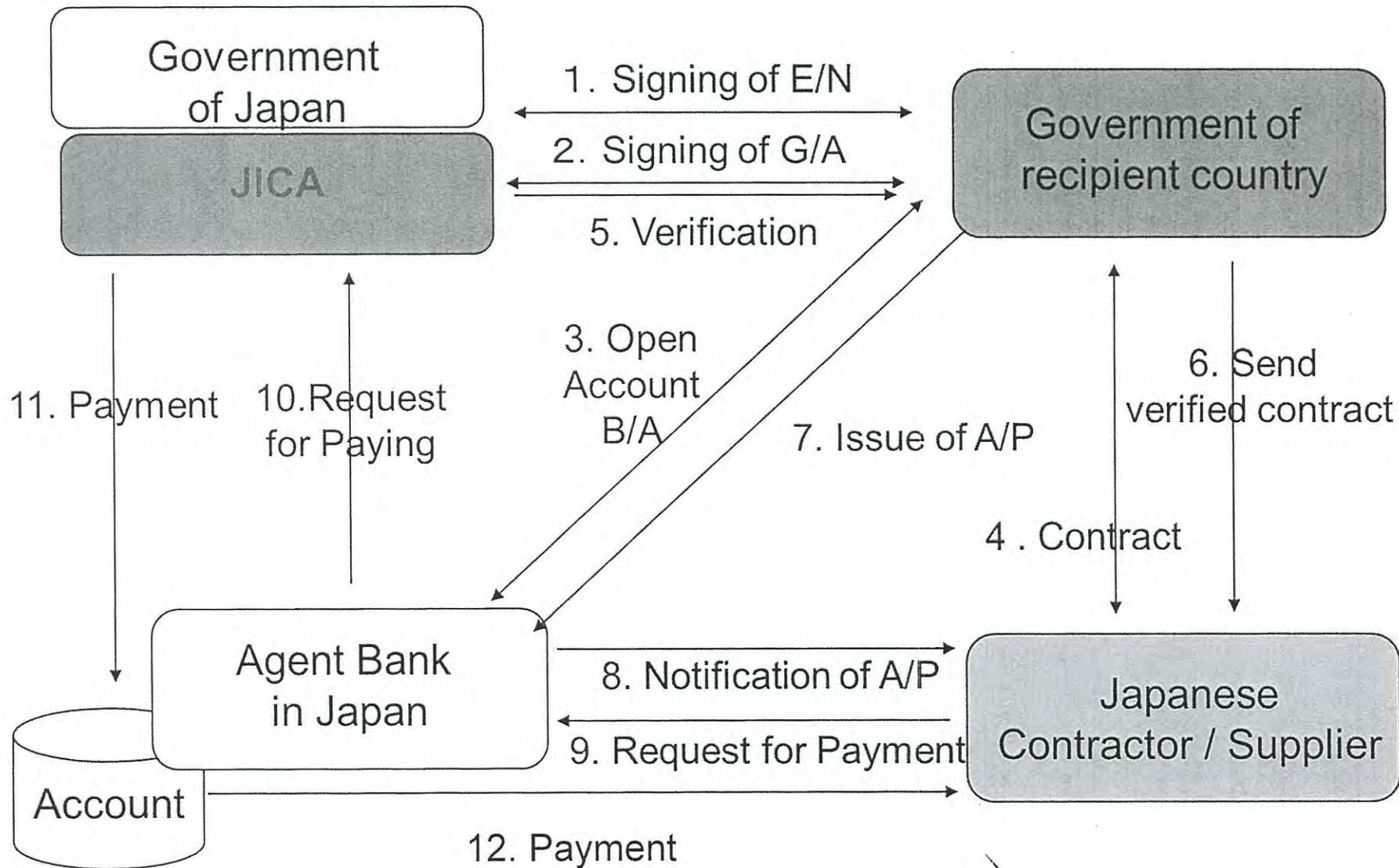
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FLOW CHART OF JAPAN'S GRANT AID PROCEDURES

Stage	Flow & Works	Recipient Government	Japanese Government	JICA	Consultant	Contractor	Others
Application	Request (T/R : Terms of Reference)	✓					
	Screening of Project → Evaluation of T/R → Project Identification Survey*		✓	✓			
Project Formulation & Preparation Preparatory Survey	Preliminary Survey* → Field Survey Home Office Work Reporting *if necessary	✓	✓	✓			
	Outline Design Study → Selection & Contracting of Consultant by Proposal → Field Survey Home Office Work Reporting	✓	✓	✓	✓		
	Explanation of Draft Final Report → Final Report Final Report	✓	✓	✓	✓		
Appraisal & Approval	Appraisal of Project		✓	✓			
	Inter Ministerial Consultation		✓				
	Presentation of Draft Notes	✓	✓				
	Approval by the Cabinet		✓				
Implementation	E/N and G/A (E/N: Exchange of Notes, G/A: Grant Agreement)	✓	✓	✓			
	Banking Arrangement (A/P: Authorization to Pay)	✓					✓
	Consultant Contract → Verification → Issuance of A/P	✓		✓	✓		
	Detailed Design & Tender Documents → Approval by Recipient Government → Preparation for Tendering	✓		✓	✓		
	Tendering & Evaluation	✓		✓	✓	✓	
	Procurement /Construction Contract → Verification → A/P	✓		✓	✓	✓	
	Construction → Completion Certificate Recipient Government → A/P	✓		✓	✓	✓	
	Operation → Post Evaluation Study	✓		✓			
	Ex-post Evaluation → Follow up	✓	✓	✓			

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# Financial Flow of Grant Aid



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**Major Undertakings to be taken by Each Government****Major Undertakings to be taken by Recipient Government**

## 1. Before the Tender

NO	Items	Deadline	In charge	Cost (PYG)	Ref.
1	To open Bank Account (Banking Arrangement (B/A))	within 1 month after G/A	MOPC		
2	To secure appropriate berthing / mooring space for the new patrol vessels	before notice of the tender document	ANNP		

## 2. During the Project Implementation

NO	Items	Deadline	In charge	Cost (PYG)	Ref.
1	To bear the following commissions to a bank of Japan for the banking services based upon the B/A				
	1) Advising commission of A/P	within 1 month after the signing of the contract	MOPC		
	2) Payment commission for A/P	every payment	MOPC		
2	To ensure and perform prompt tax and port charge exemption and customs clearance of the new vessels and other equipment	during the Project	ANNP		
3	To carry out the domestic transportation of the new vessels and other equipment from the delivery place(s) and/or port(s)	during the Project	ANNP		
3	To accord Japanese nationals and/or physical persons of third countries whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work	during the Project	ANNP		
4	To bear the cost which is equivalent to the customs duties, internal taxes and other fiscal levies which may be imposed in the country of the Recipient with respect to the purchase of the Products and/or the Services, instead of tax exemption system. Such customs duties, internal taxes and other fiscal levies mentioned above include VAT, commercial tax, income tax and corporate tax of Japanese nationals, resident tax, fuel tax, but not limited, which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract.	during the Project	MOPC		
5	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for the Project implementation	during the Project	ANNP		
6	To submit the monitoring result to JICA by using the monitoring form as a part of Project Monitoring Report	during the Project	ANNP		

## 3. After the Project

NO	Items	Deadline	In charge	Cost (PYG)	Ref.
1	To maintain and use properly and effectively equipment procured under the Grant Aid	After completion of the delivery	ANNP		
	1) Allocation of maintenance cost				
	2) Operation and maintenance equipment				
	3) Routine/Periodic inspection				
2	To take required measures for the Project in accordance with Exchange of Notes (E/N) and Grant Agreement (G/A), and other related agreements.	After completion of the delivery	ANNP		

(B/A: Banking Arrangement, A/P: Authorization to pay, N/A: Not Applicable)

**Major Undertakings to be covered by the Japanese Grant Aid**

No	Items	Deadline	Cost (Million Japanese Yen)	Ref.
1	To procure necessary vessels and equipment	before end of the contract	XXXX	
2	To transport vessels and equipment to delivery point(s) and/or port(s) to the Recipient country	before end of the contract	XXXX	
3	To implement detailed design, tender support and construction supervision (Consultant)	before end of the contract	XXXX	
	Total		XXXX	

Note:

-The cost estimates are provisional. This is subject to the approval of the Government of Japan



**(Sample)**

**Project Monitoring Report**

**on**

**Project Name**

Grant Agreement No. XXXXXXXX

**Organization Information**

<b>Authority (Signer of the G/A)</b>	_____ Person in Charge _____ (Division) _____ Contacts      Address: _____ Phone/FAX: _____ Email: _____
<b>Executing Agency</b>	_____ Person in Charge _____ (Division) _____ Contacts      Address: _____ Phone/FAX: _____ Email: _____
<b>Line Ministry</b>	_____ Person in Charge _____ (Division) _____ Contacts      Address: _____ Phone/FAX: _____ Email: _____

**Outline of Grant Agreement:**

<b>Source of Finance</b>	Government of Japan: Not exceeding JPY _____ mil. Government of (_____): _____
<b>Project Title</b>	
<b>E/N</b>	Signed date: Duration:
<b>G/A</b>	Signed date: Duration:



## 1: Project Description

### 1-1 Project Objective

### 1-2 Necessity and Priority of the Project

- Consistency with development policy, sector plan, national/regional development plans and demand of target group and the recipient country.

### 1-3 Effectiveness and the indicators

- Effectiveness by the project

## 2: Project Implementation

### 2-1 Project Scope

Table 2-1-1a: Comparison of Original and Actual Location

<b>Location</b>	<b>Original: (M/D)</b>	<b>Actual: (P/R and PCR)</b>
	<b>Attachment(s):Map</b>	<b>Attachment(s):Map</b>

Table 2-1-1b: Comparison of Original and Actual Scope

Items	Original	Actual
(M/D)	(M/D)	(P/R and PCR)

### 2-1-2 Reason(s) for the modification if there have been any.

(P/R and PCR)

**2-2 Implementation Schedule**

**2-2-1 Implementation Schedule**

Table 2-2-1: Comparison of Original and Actual Schedule

Items	Original		Actual
	DOD	G/A	
[M/D]	(M/D)		(P/R, PCR) As of (Date of Revision)
Project Completion Date*			Please state not only the most updated schedule but also other past revisions chronologically.

\*Project Completion was defined as \_\_\_\_\_ at the time of G/A.

**2-2-2 Reasons for any changes of the schedule, and their effects on the project.**

(P/R and PCR)

**2-3 Undertakings by each Government**

**2-3-1 Major Undertakings**

See Attachment 2.

**2-3-2 Activities**

See Attachment 3.

**2-4 Project Cost**

**2-4-1 Project Cost**

Table 2-3-1 Comparison of Original and Actual Cost by the Government of Japan  
 (Confidential until the Tender)

Items	Original		Actual	Cost (Million Yen)	
				Original	Actual
Construction Facilities (or Equipment)					
Consulting Services	- Detailed design				
	- Procurement Management				



	-Construction Supervision			
Total				

Note: 1) Date of estimation:  
 2) Exchange rate: 1 US Dollar = Yen

Table 2-3-2 Comparison of Original and Actual Cost by the Government of XX

Items			Cost (Million USD)	
	Original	Actual	Original	Actual
Total				

Note: 1) Date of estimation:  
 2) Exchange rate: 1 US Dollar = (local currency)

2-4-2 Reason(s) for the wide gap between the original and actual, if there have been any, the remedies you have taken, and their results.

(P/R, PCR)

2-5 Organizations for Implementation

2-5-1 Executing Agency:

- Organization's role, financial position, capacity, cost recovery etc,
- Organization Chart including the unit in charge of the implementation and number of employees.

Original: (M/D)

Actual, if changed: (P/R and PCR)

2-6 Environmental and Social Impacts

Report based on the agreed environmental checklist and monitoring form (See Attachment 4)

**3: Operation and Maintenance (O&M)**

**3-1 O&M and Management**

- Organization chart of O&M
- Operational and maintenance system (structure and the number ,qualification and skill of staff or other conditions necessary to maintain the outputs and benefits of the project soundly, such as manuals, facilities and equipment for maintenance, and spare part stocks etc)

Original: (M/D)

Actual: (PCR)

**3-2 O&M Cost and Budget**

- The actual annual O&M cost for the duration of the project up to today, as well as the annual O&M budget.

Original: (M/D)

**4: Precautions (Risk Management)**

- Risks and issues, if any, which may affect the project implementation, outcome, sustainability and planned countermeasures to be adapted are below.

**Original Issues and Countermeasure(s): (M/D)**

Potential Project Risks	Assessment
1.	Probability: H/M/L
(Description of Risk)	Impact: H/M/L
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action during the Implementation:

	Contingency Plan (if applicable):
2.	Probability: H/M/L
(Description of Risk)	Impact: H/M/L
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action during the Implementation:
	Contingency Plan (if applicable):
3.	Probability: H/M/L
(Description of Risk)	Impact: H/M/L
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action during the Implementation:
	Contingency Plan (if applicable):
<b>Actual issues and Countermeasure(s)</b>	
(P/R and PCR)	

**5: Evaluation**

**5-1 Overall evaluation**

Please describe your evaluation on the overall outcome of the project.

(PCR)

**5-2 Lessons Learnt and Recommendations**

Please raise any lessons learned from the project experience, which might be valuable for the future assistance or similar type of projects, as well as any recommendations, which might be beneficial for better realization of the project effect, impact and assurance of sustainability.

(PCR)

Attachment

1. Project Location Map
2. Undertakings to be taken by each Government
3. Monthly Report
4. Monitoring report on environmental and social considerations

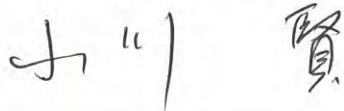


**MEMORANDUM OF TECHNICAL DISCUSSIONS  
ON PREPARATORY SURVEY  
FOR THE PROJECT FOR PROCUREMENT OF DREDGING EQUIPMENT  
FOR PARAGUAY RIVER  
IN THE REPUBLIC OF PARAGUAY**

From August 29th to September 13rd, 2016, the Preparatory Survey Team for the Field Survey (hereinafter referred to as “the Team”) held a series of technical discussion with the officials of National Administration of Navigation and Ports (hereinafter referred to as “ANNP”) in Paraguay and had field surveys in Asuncion.

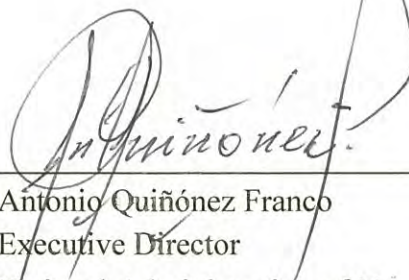
As a result of the discussions and the field survey, the both sides confirmed the items described in the attached sheets and annexes.

Asuncion, September 13rd, 2016



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Masaru Ogawa  
Chief of the Consultant  
Shipbuilding Research Centre of Japan



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Antonio Quiñónez Franco  
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The Republic of Paraguay

1. ANNP's Requirement for the new Dredging Equipment

(1) Referring to the Application Form for Grant Aid titled "Project for Dredging Equipment Provision for Paraguay River, 2015" and the answer to "the Questionnaire for the Preparatory Survey for the Project for Procurement of Dredging Equipment for Paraguay River, August, 2016", the Team discussed with ANNP and confirmed the ANNP's requirement for the new Dredging Equipment as show on the column (B) in Annex-1.

(2) In accordance with the information and the various data obtained in the course of discussions with ANNP, the field survey and the requirement mentioned above (B), the Team will make evaluation and analysis in Japan on the Project to conduct the outline design of the new Dredging Equipment, which will be indicated in the 2<sup>nd</sup> field survey conducted around December, 2016.

2. The basic design condition for the new Dredging Equipment

(1) Required dredging quantity: 1,500,000 m<sup>3</sup>/year (Refer to Annex-2)

(2) Operation hour

1) Operation months : 5 months/year

2) Operation days : 25 days/month (Emergency case: 30 days/month)

3) Operation hour : 12 hours/day (Emergency case: 24 hours/day)

(3) Type of the new Dredger: Cutter Suction Dredger

3. Operation and Maintenance of the new Dredging Equipment (Refer to Annex-3)

(1) The Team confirmed that ANNP will take necessary measures to maintain the new Dredging Equipment in good conditions.

(2) ANNP explained that the new Dredging Equipment will be inspected and maintained periodically at least once a year at the maintenance facilities in such private ship-repair yards as in Asuncion.

(3) The Team confirmed that ANNP will secure enough budget necessary for the proper operation and maintenance.

4. Familiarization training to the new Dredging Equipment

- (1) ANNP requested the training of operation and maintenance for the new Dredging Equipment to the operator(s)/mechanic(s), the Team explained that the familiarization training will be held before completion of the new Dredging Equipment in the shipyard.
- (2) ANNP requested the Team to accept each one (1) captain, dredging operator, mechanic and electrician for the dredger and one (1) bathymetric expert, total five (5) persons for the familiarization training.
- (3) The Team will investigate the numbers of persons and the period of training etc., in the course of the Preparatory Survey.

5. Mooring site of the new Dredging Equipment

- (1) The Team confirmed that ANNP will provide the existing mooring facilities for the new Dredging Equipment in Asuncion Port and no further rehabilitation work will be required for those facilities there.

6. Expected work schedule (for reference only)

	2016	2017.	2018	2019
Preparatory Survey	▬			
Detailed design		▬		
Construction of Dredging Equipment			▬	
Delivery of Dredging Equipment				▨

7. Others

- (1) Two (2) years standard spare parts recommended by manufacturers are to be supplied by the shipbuilder except those of dredge pump and cutter head, which will be investigated in the course of the Preparatory Survey.
- (2) The Team explained that the new Dredging Equipment will be principally constructed in Japan, and transported to Paraguay by the cargo ship, but subject to the shipbuilder's final decision.

Annex-1 ANNP's Requirements for the new Dredging Equipment

Annex-2 Annual Dredging Quantity

Annex-3 Annual Amount for Operation and Maintenance

Annex-1 ANNP's Requirement for Dredging Equipment

	(A) ANNP's Requirement (2015 )			(B) ANNP's Requirement (September,2016)		
	No.	Used for	Specifications	No.	Used for	Specifications
1. Dredger	1	River Dredging	<b>Type</b> : Cutter Suction Dredger <b>Dredging Capacity:</b> 1,500m <sup>3</sup> /h <b>Dredging Depth</b> : 10m and more <b>Draft</b> : 7 feet and less <b>Complement</b> : 25 persons <b>Pump Power</b> : for discharge pipe 500m and more (without assistance) <b>Navigation</b> : Self propelled <b>Pipe Material</b> : Steel or Plastic <b>Discharge Pipe</b> : 700m with floater	1	River Dredging	<b>Type</b> : Cutter Suction Dredger <b>Dredging Capacity</b> : 1,500m <sup>3</sup> /h <b>Dredging Depth</b> : 10m <b>Draft</b> : 2.1 m and less <b>Complement</b> : 13 persons <b>Accommodation</b> : no accommodation facilities <b>Pump Power</b> :for discharge pipe 1,000m(minimum) (without assistance) <b>Navigation</b> : 1,000 Horse Power (speed : about 10km/h) <b>Arm Crane</b> : 5 tons <b>Anchor</b> : 8 sets (Danforth Type) <b>Pipe Material</b> : Steel and GRP Pipes with floater - each 50% of steel and GRP Land pipes -GRP <b>Discharge Pipe</b> : 700m with floater 300m for land use <b>Fuel Tank</b> : Double hull
2.Tug Boat	1	Shifting Dredger/ Floating Pipes/	<b>Draft</b> :1.5m <b>Complement</b> : 2 persons	1.	Shifting / Floating Pipes/	<b>Draft</b> : 1.5m <b>Complement</b> : 6 persons

AP-4-2-4



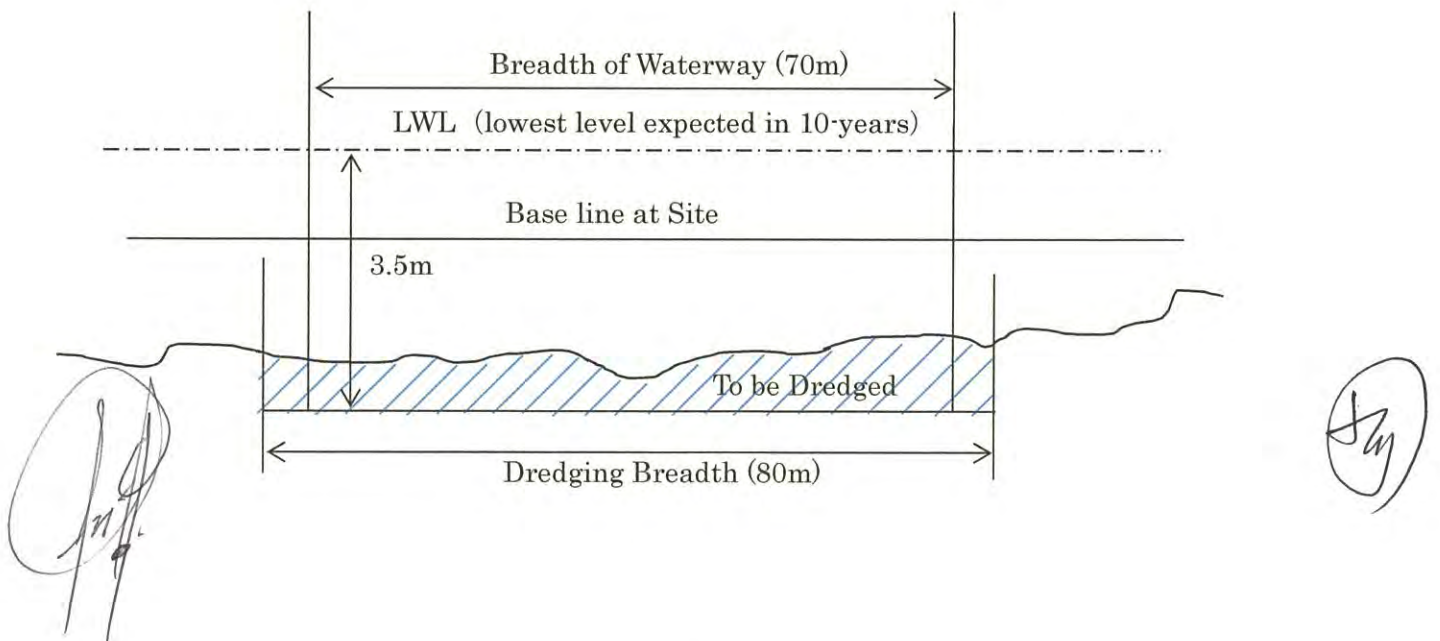
			Pontoons	<b>Main Engine</b> : 500 Horse Power		Pontoons	<b>Main Engine</b> : 1,000 Horse Power (500 HP x 2) <b>Accommodation</b> : Lavatory ,6 sofa-beds and small kitchen <b>Fuel Tank</b> : Double hull
3. Work Boat or Support	Work Boat	1	Shifting Discharge pipe		—	N/A	N/A
	Support Vessel	N/A	N/A	N/A	1	Shifting anchors for floating pipes and swing wires	<b>Draft</b> : 1.5m <b>Complement</b> : 2 persons <b>Main Engine</b> : 500 Horse Power <b>Cooling system</b> : Air cooling <b>Fuel Tank</b> : Double hull
4. Motor Boat		1	Transporting workers		1	Transporting workers	<b>Material</b> : Aluminum alloy
		1	Measuring		1	Measuring	
5. Pontoon		1	Maintenance Repairing		1	Transportation of land discharge pipes and maintenance works	<b>Size</b> : for pipes of 8 m x 650mm to 700mm dia. x about 40 pieces Work shop to be on board <b>Pontoon shape</b> : Good for navigation
		1	Accommodation for workers/crew		1	Accommodation for workers/crew	<b>Size</b> : for 31 persons
6. Measuring Equipment		1	Dredging Measuring works	D-GPS System	1	Dredging Measuring works	<b>Software and Equipment</b> : HYPACK HYSWEEP or equivalent
7. Training		Training for operation and maintenance of the Dredging Equipment			Familiarization training for dredger and machinery		

Annex-2

Annual Dredging Quantity (Average quantity for recent 15 years)(m3)

Northern Part of Asuncion						Southern Part of Asuncion		
km	Place	Quantity	km	Place	Quantity	km	Place	Quantity
	ANNP Port	80,000	645	Pedernal	40,000		ANNP Port	60,000
383	Paso Zanja Jhu	60,000	692	Riacho Negro Salida	30,000	368	Paso Medin	37,700
425	Paso Tres Bocas	70,000	710	Riacho Negro Entrada	15,000	344	Vuelta ItaPiru	29,900
432	Paso Arecutacua	50,000	713	Ita Curubi	65,000	342	Guyrati Superior	46,200
495	Villa Rey	50,000	727	Romero Cue	31,600	340	Guyrati	31,500
523	Oculto Inferior	30,000	756	Alegre	35,000	295	Lobato	55,000
529	Oculto Superior	55,500	818	Guardia Cue	20,000	218	Monte Alto	80,000
563	Almiron	25,000	828	Stanley	82,900	119	Cancha Larga	75,800
566	Barranquerita	15,000	836	Pinasco	30,000	89	Pilar	62,500
612	Curuzu Juanita	25,000	858	Palacio Cue	128,450			
623	Montelindo	35,000	920	Casilda	29,000			
642	Pedernal Medio	30,000	925	San Lazaro	9,100			
<b>1,041,550</b>						<b>478,600</b>		
<b>1,520,150</b>								

Depth and Breadth of Waterway



Anexo-3. Costo de operación y mantenimiento de todas embarcaciones para trabajos de dragado

1.Monto anual para operación y mantenimiento(ANNP)

Item	Año	Registro de los últimos 5 años (Millión de Gs.)				Presupuesto planeado para el futuro (Million de Gs)	
		2012	2013	2014	2015	2016	2017
Monto anual para operación (Costo de combustible y personal)		5,665	6,094	4,960	4,002	4,002	4,002
Monto anual para mantenimiento		-	-	-	3,772	3,772	3,772
Mont Total de Operación y Mantenimiento		-	-	-	7,774	7,774	7,774
Presupuesto Total del ANNP		119,932	120,220	149,033	121,406	121,406	-




**Minutes of Discussions  
on the Preparatory Survey for the Project for  
Procurement of Dredging Equipment for Paraguay River in the Republic of Paraguay**

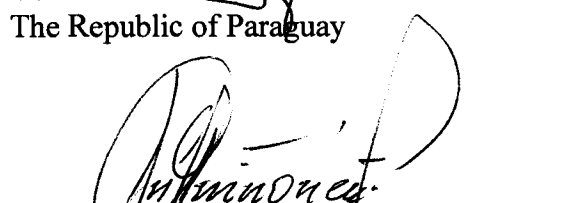
In response to a request from the Government of the Republic of Paraguay (hereinafter referred to as “Paraguay”), Japan International Cooperation Agency (hereinafter referred to as “JICA”) dispatched the Preparatory Survey Team for the Outline Design (hereinafter referred to as “the Team”) of “the Project for Procurement of Dredging Equipment for Paraguay River” (hereinafter referred to as “the Project”) to Paraguay, headed by Mr. Wataru SATO, Deputy Director of Team 2, Transportation and ICT Group, Infrastructure and Peacebuilding Department, JICA, from 27<sup>th</sup> November to 23<sup>rd</sup> December, 2016. The Team held a series of discussions with the officials of the Government of Paraguay and conducted a field survey. In the course of discussions, both sides have confirmed the main items described in the attached sheets.

Asuncion, 2<sup>nd</sup> December, 2016

*Emi Aizawa*

Ms. Emi AIZAWA  
Senior Representative  
Japan International Cooperation Agency  
Paraguay Office

  
Ministry of Public Works and  
Communications  
The Republic of Paraguay

  
Mr. Antonio Quiñónez Franco  
Director Titular  
National Administration of Navigation and  
Ports  
The Republic of Paraguay

## ATTACHMENT

### 1. Reconfirmation of the Minutes of Discussions of the First Field Survey

Both sides reconfirmed the contents of the Minutes of Discussions of the First Field Survey dated 2<sup>nd</sup> September, 2016 as Annex-1. A correction was made at item 6-3 on the Minutes of Discussions as below (item 4-2).

### 2. Draft design

The Team explained draft designs of new vessels and equipment to be installed in the Project, and the Paraguayan side confirmed that all items of their request are fulfilled.

### 3. Operation and Maintenance cost

3-1. The Team explained importance of appropriate operation and maintenance considering that proper asset management impacts greatly on life-span of the vessels and equipment to be installed in the Project and their maintenance cost.

3-2. The Paraguayan side assured that they would secure the necessary budget and personnel for operation and maintenance of the vessels and equipment as stated in Annex-2.

3-3. The Team expressed its intention to assess probability of National Administration of Navigation and Ports' (ANNP) securing operation and maintenance cost of the new vessels and equipment to be procured under the Project by analyzing ANNP's financial statements and the past records related to its budget allocation of necessary operation and maintenance cost of the existing assets. The Paraguayan side agreed to provide financial information, including cash flow statements, profit and loss statement, balance sheet, by 5<sup>th</sup> December, 2016.

3-4. Both side agreed to request MOPC to allocate the operation and maintenance cost, in case it is considered to be necessary in the Team's view after such an assessment.

### 4. Dredging operation

4-1. The Paraguayan party explained the bilateral mechanism for the execution of dredging and navigability maintenance works on the Paraguay River in the section shared between the Republic of Paraguay and the Argentine Republic. Once the Project for the Acquisition of Dredging Equipment between the Republic of Paraguay and Japan is completed, the execution of eventual works on the aforementioned shared section shall be coordinated within the framework of the Technical Executive Joint Commission for Regularization, Channeling, Dredging, Beaconing and Maintenance of the Paraguay River, created by the Agreement signed between Paraguay and Argentine in 1969.

4-2. The Team explained their concerns if procurement of new dredgers in the Project would harm private dredging sectors' business. The Paraguayan side explained that the private sectors will not be harmed since dredging work for maintaining the river traffic was ordered to the private sectors only in 2013, 2015 and 2016<sup>(\*)</sup> due to the urgent needs and the lack of capacity of ANNP.

(\*) the period was corrected from the Minutes of Discussions dated 2<sup>nd</sup> September, 2016 that shows only in 2015 and 2016

4-3. The Paraguayan side confirmed that considering the strategic importance of the Paraguay River for national economy and security, the Paraguayan government does not have intention to contract out the dredging work of the river to the private sectors after the Project. ANNP shall conduct dredging work for maintaining the river traffic exclusively unless any emergency happens.

5. Major undertakings to be taken by each government

The Paraguayan side agreed to take the necessary measures, as described in Annex-2, for smooth implementation of the Project. The contents of the Annex-2 will be elaborated and refined during the Preparatory Survey and be agreed in the mission dispatched for explanation of the Draft Preparatory Survey Report.

The contents of Annex-2 will be updated as the Preparatory Survey progresses, and eventually, will be used as an attachment to the Grant Agreement.

6. Schedule of the Survey

6-1. The Team will proceed with further survey in Paraguay until 23<sup>rd</sup> December, 2016.

6-2. JICA will prepare a draft Preparatory Survey Report in Spanish and dispatch a mission to Paraguay in order to explain its contents in around April, 2017.

6-3. If the contents of the draft Preparatory Survey Report are accepted and the undertakings for the Project are fully agreed by the Paraguayan side, JICA will finalize the Preparatory Survey Report and send it to Paraguay in around June, 2017.

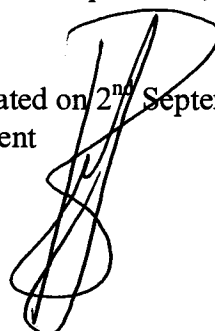
6-4. The above schedule is tentative and subject to change.

7. Language of the Minutes of Discussions

The Minutes of Discussions are made in duplicate in the languages of Spanish and English. Both are equally authentic. In case of divergence of interpretation, English text shall prevail.

Annex-1 Minutes of Discussions of the First Field Survey dated on 2<sup>nd</sup> September, 2016

Annex-2 Major Undertakings to be taken by Each Government



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## Major Undertakings to be taken by Each Government

### Major Undertakings to be taken by Recipient Government

#### 1. Before the Tender

NO	Items	Deadline	In charge	Cost (PYG)	Ref.
1	To open Bank Account (Banking Arrangement (B/A))	within 1 month after G/A	ANNP (to be confirmed)		
2	To secure appropriate berthing / mooring space for the new vessels	before notice of the tender document	ANNP		

#### 2. During the Project Implementation

NO	Items	Deadline	In charge	Cost (PYG)	Ref.
1	To bear the following commissions to a bank of Japan for the banking services based upon the B/A				
	1) Advising commission of A/P	within 1 month after the signing of the contract	ANNP (to be confirmed)		
	2) Payment commission for A/P	every payment	ANNP (to be confirmed)		
2	To ensure and perform prompt tax and port charge exemption and customs clearance of the new vessels and other equipment	during the Project	ANNP		
3	To carry out the domestic transportation of the new vessels and other equipment from the delivery place(s) and/or port(s)	during the Project	ANNP		
4	To accord Japanese nationals and/or physical persons of third countries whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work	during the Project	ANNP		
5	To bear the cost which is equivalent to the customs duties, internal taxes and other fiscal levies which may be imposed in the country of the Recipient with respect to the purchase of the Products and/or the Services, instead of tax exemption system. Such customs duties, internal taxes and other fiscal levies mentioned above include VAT, commercial tax, income tax and corporate tax of Japanese nationals, resident tax, fuel tax, but not limited, which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract.	during the Project	ANNP		
6	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for the Project implementation	during the Project	ANNP		
7	To submit the monitoring result to JICA by using the monitoring form as a part of Project Monitoring Report	during the Project	ANNP		

#### 3. After the Project

NO	Items	Deadline	In charge	Cost (PYG)	Ref.
1	To maintain and use properly and effectively equipment procured under the Grant Aid	After completion of the delivery	MOPC ANNP		
	1) Allocation of maintenance cost				
	2) Operation and maintenance equipment				
	3) Routine/Periodic inspection				
2	To take required measures for the Project in accordance with Exchange of Notes (E/N) and Grant Agreement (G/A), and other related agreements.	After completion of the delivery	ANNP		

(B/A: Banking Arrangement, A/P: Authorization to pay, N/A: Not Applicable)

**Major Undertakings to be covered by the Japanese Grant Aid**

No	Items	Deadline	Cost (Million Japanese Yen)	Ref.
1	To procure necessary vessels and equipment	before end of the contract	XXXX	
2	To transport vessels and equipment to delivery point(s) and/or port(s) to the Recipient country	before end of the contract	XXXX	
3	To implement detailed design, tender support and construction supervision (Consultant)	before end of the contract	<del>XXXX</del>	
	Total		XXXX	

Note:

-The cost estimates are provisional. This is subject to the approval of the Government of Japan

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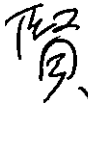



**MEMORANDUM OF TECHNICAL DISCUSSIONS  
ON PREPARATORY SURVEY  
FOR THE PROJECT FOR PROCUREMENT OF DREDGING EQUIPMENT  
FOR PARAGUAY RIVER  
IN THE REPUBLIC OF PARAGUAY**

From November 28th to December 23rd, 2016, the Preparatory Survey Team for the Field Survey (hereinafter referred to as “the Team”) held a series of technical discussion with the officials of National Administration of Navigation and Ports (hereinafter referred to as “ANNP”) in Paraguay and had field surveys in Asuncion and on the Paraguay River from Pilar to confluence point of Apa River.

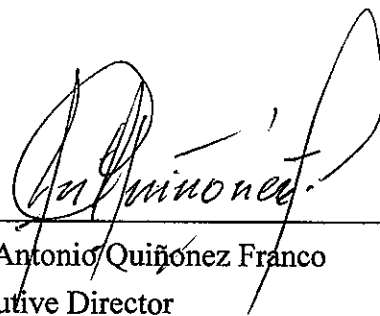
As a result of the discussions and the field survey, the both sides confirmed the items described in the attached sheets and annexes.

Asuncion, December 23rd, 2016



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Masaru Ogawa  
Chief of the Consultant  
Shipbuilding Research Centre of Japan



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Don Antonio Quiñonez Franco  
Executive Director  
National Administration of Navigation and  
Ports  
The Republic of Paraguay

1. Dredging Capacity of the new Dredger

- (1) The Team confirmed that the dredging works for required dredging quantity of 1,500,000 m<sup>3</sup>/annum would be done with the new Dredging Equipment and the existing dredging D-4 convoy by ANNP.
- (2) The Team explained the design basis of the dredging capacity of the new Dredger with Annex-1 and ANNP accepted the explanation.

2. Principal Particulars and General Arrangement (Preliminary) of the new Dredging Equipment

(1) Referring to the Principal Particulars of the new Dredging Equipment and the General Arrangement (Preliminary), December, 2016, ( Annex-2 and Annex-3) which was made by the Consultant on the basis of the (B) ANNP’s Requirement ( September, 2016) in Annex-1 ANNP’s Requirement for Dredging Equipment in ” MEMORANDUM OF TECHNICAL DISCUSSIONS ON PREPARATORY SURVEY FOR THE PROJECT FOR PROCUREMENT DREDGING EQUIPMENT FOR PARAGUAY RIVER IN THE REPUBLIC OF PARAGUAY”, signed between Executive Director of ANNP and Chief of the Consultant on September 13rd, 2016, the Team discussed with ANNP and ANNP informed the Team of their propositions and the following modifications shall be made.

**(1-1) Self-Propelled Cutter Suction Dredger**

- 1) The two (2) motor boats to be carried on board and new Item “1.16 Motor boat” to be added. The specifications are as follows.

Type x Quantity	Flat bottom x 1 for Bathymetric use
	V- shape bottom x 1 for Transportation
Material	Aluminum alloy
Length x Breadth x Depth	approx. (6 m x 2 m x 1m)
Capacity	6 persons
Engine	60 PS (Outboard engine)

- 2) Item 2-1 General

The discharging length to be 800 m instead of 1,000 m.

- 3) Item 2.4 Discharging pipe

Item	Original		Modification	
Floating pipe	Steel 800mm dia. x 12,7 mm x 8m	Each	Steel 800mm dia. x 12.7 mm x 10 m	70
	GRP 800mm dia. x 8m	44	Floater to be of cut up type	
Land pipe	Steel 800mm dia. x 8m	38	GRP 800mm dia. x 10 m	10
Joint	Rubber joint or Ball joint	125	Ball joint	80

- 4) Item 2.10 Portable water depth sounding  
ANNP required that these system shall be installed rather on board the Dredger, and will be compatible to the bathymetry equipment which ANNP is using. The Team will investigate the appropriate system in Japan.
- 5) Item 4. Electric Part  
The voltage of 230 V to be read as 220 V.
- 6) Item 4.1 Supply System  
The shore connection of AC 380V 50 Hz 3 phase to be added.

**(1-2) Tug Boat**

- 1) Item 1,15 Mooring fitting  
One (1) towing hook of quick release type to be provided
- 2) Item 3 Electric Part  
The voltage of 230 V to be read as 220 V.
- 3) Item 3.1 Supply System  
The shore connection of AC 380V 50 Hz 3 phase to be added.
- 4) Item 4.5 Navigation equipment  
One (1) echo sounder to be provided.

**(1-3) Work Pontoon**

- 1) Item 1.3 to 1.16  
Since the Work Pontoon will transport ten (10) 10 m long pipes on board instead of thirty (30) 10m long, the Team will make proper design accordingly.
- 2) Item 3 Electric Part  
The voltage of 230 V to be read as 220 V.
- 3) Item 3.1 Supply System  
The shore connection of AC 380V 50 Hz 3 phase to be added.

**(1-4) Accommodation Barge**

- 1) Item 3 Electric Part  
The voltage of 230 V to be read as 220 V.
- 2) Item 3.1 Supply System  
The shore connection of AC 380V 50 Hz 3 phase to be added.

\* The General Arrangement ( Preliminary) to be changed in accordance with the modifications of each Equipment mentioned above.



- (2) On the basis of the Principal Particulars and the General Arrangement (Preliminary) with the modifications mentioned above, the Team will further proceed the Preparatory Survey of the new Dredging Equipment through the analysis to be made in Japan, and outline design will be finalized with due consideration of the objectives and necessity of the Project within the frame work of the Japan's ODA with discussion between higher authorities of the Government of Japan.
- (3) Should the modification of outline design be necessary, the order of the priority among the major items of the outline design would be confirmed as follows;
- 1) Provision of the dredger, tug boat and work support vessel
  - 2) Provision of discharge pipes
  - 3) Provision of accommodation barge
  - 4) Provision of work pontoon
  - 5) Modifications on the specifications of each equipment

### 3 Operation and Maintenance

- (1) The Team confirmed for both D-3 and D-4 dredging convoy to be well maintained and to be ready for the dredging works currently.
- (2) ANNP explained for the daily inspection and minor maintenance works to be done by the complements and workers of the dredger ( Mechanic-2, Electrician-1 Worker-4 or 6) and the tug boat ( Captain-1 Mechanic-1, Electrician-1, Worker-3) and for the periodical inspection and the major maintenance works to be conducted at the dry-docking facilities in Asuncion, which the Team visited and confirmed the capability for those works, and for the same system to be taken to the new Dredging Equipment.
- (3) ANNP indicated the record of the operation and maintenance cost for dredging and the total budget of ANNP (Annex-4) and explained for the necessary amount for the operation and maintenance to have been obtained so far for the flexibility caused by rather small amount against the big total budget, and ANNP will secure enough budget necessary for the proper operation and maintenance of the new Dredging Equipment.
- (4) The Team confirmed ANNP's plan on the complement and workers for the new Dredging Equipment as follows;
- 1) The complement and workers for the existing dredger D-3 (10 P ) to be shifted for the operation of the new Dredger (15 P).
  - 2) Two (2) captains are newly necessary for the new Dredger and will be hired from private companies or skilled workers of ANNP will be trained to obtain the license.
  - 3) Three (3) dredging workers are newly necessary and mainly the workers of Port Work Division of ANNP will be made as dredging workers on the job training.



#### 4. Mooring site of the new Dredging Equipment

The Team confirmed that ANNP would provide the exiting mooring facilities for the new Dredging Equipment in Asuncion Port of ANNP, and no further construction work will be required for the facilities.

#### 5. Field survey along the Paraguay Rive

The Team made a field survey along the Paraguay River between Pilar and Apa River with Chief of Hydrotopographic Study Department and Chief of the Navigation and Dredging.

During the survey the following items were verified: the location of critical points for the navigation, factors making the points critical, deposit zones of the dredged materials. At 31 critical points, the measurement of water temperature, current speed and water depth was made and bed materials were sampled.

On the basis of the results of the field survey, it was proved that those design conditions preliminary assumed by the Team proved to be appropriate. It was found that most of the placing zones are not on land but either sand bars, shoals near river banks and outside of navigation channel. Therefore, it was the Team's observation that the 300-meter-long length sediment discharging pipe to be set on land can be shortened. The Team also confirmed with ANNP officials that the rocks existing at the four critical points, i.e., Remanso Castillo, Arrecife, Pedernal and Palacio Cue, should be excluded from the objects of Remanso Castillo, Arrecife for dredging.

The itinerary of the field survey is shown in Annex 5

- Annex-1 Necessary Dredging Capacity of the new Dredger
- Annex-2 Principal Particulars of the new Dredging Equipment
- Annex-3 General Arrangement of the new Dredging Equipment (Preliminary)
- Annex-4 Operation and Maintenance Cost for Dredging (ANNP)
- Annex-5 The Itinerary of Field Survey along Paraguay River



Annex-1 Necessary Dredging Capacity of the New Dredger

(1) Annual Working Hours

- 1) Annual Working Month : 5 months ( August to December)
- 2) Monthly Working Days : 25 days
- 3) Daily Working Hour : 12 hours

$$12 \text{ h/ day} \times 25 \text{ h/ month} \times 5 \text{ month./annum} = \mathbf{1,500 \text{ h/annum}}$$

(2) Necessary Dredging Capacity of New Dredger ( Typical case)

Dredger	A Dredging Sites (model case)	B Distance between Sites ( km)	C Transport hours (B÷10km/h) (h)	D Preparation and Finishing ((12 + 6) x A) (h)	E Dredging Hour (1,500—C—D) (h)	F Working Hour of Dredge Pump (E x 0.8) (h)
D-4	9	692—344=348	35	162	1303	1,042
New Dredger	24	925— 89=826	83	432	985	788

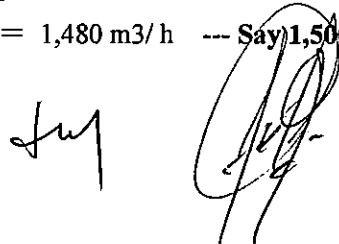
Necessary Dredging Capacity of new dredger

Annual Necessary Dredging Amount = **1,500,000 m3**

Annual Dredging Amount by D-4 = 400 m3/ h x 0.8 x 1042h =333,440 m3

Necessary Dredging Capacity of New Dredger =

$(1,500,000\text{m}^3 - 333,440 \text{ m}^3) \div 788 \text{ h} = 1,480 \text{ m}^3/ \text{h} \text{ --- Say } \mathbf{1,500 \text{ m}^3/\text{h}}$



**Annex- 2**

**Principal Particulars of the new Dredging Equipment  
(PRELIMINARY)**

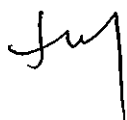
**1. Self-Propelled Cutter Suction Dredger**

**2. Tug Boat**

**3. Work Support Vessel**

**4. Work Pontoon**

**5. Accommodation Barge**



# 1. SELF-PROPELLED CUTTER SUCTION DREDGER

	Item		Specifications	Remarks
1	<b>General and Hull Part</b>			
1.1	Navigation Area And Designing Condition	Navigation Area	Paraguay River	
		Design Condition	Outside Temp : 35 °C Humidity : 95 % Water Temp : 32°C Wind : 15m/sec Flow : 2 knots (Dredging)	
1.2	Rules and Standard	Rule	Nippon Kaiji Kyokai (Appraisal) Paraguay River Rule	
		Standard	Japanese Industrial Standard (JIS) Japanese Shipbuilding Quality Standard(JSQS)	
1.3	Principal Dimensions	Length(oa)	Approx. 60 m	
		Length	46.8 m	
		Breadth	12.0 m	
		Depth	3,0 m	
		Draft	Less than 2,1 m	
1.4	Vessel Speed	Without towing	Approx. 5 knots (in still water)	
		With 350m pipes	4 knots (in still water)	
1.5	Dead weight		Approx. 200 tons	
1.6	Tank	Fuel Oil	Approx. 120 m3	
		Lub. Oil	Approx.1 m3	
		Fresh Water	Approx.10 m3	
1.7	Complement		13 persons (Chief— 1 Worker—12)	
1.8	Facilities	Dredge Control Room	Dredge control, Navigation	
		Meeting Room (common use Mess room)	Sofa-bed(6), Table (1), Chair, Refrigerator, Electronic range, Air conditioner	
		Toilet	Western style, Shower	
1.9	Crane	Type	Electric	1
		Capacity	6.5 t	
1.10	Propulsion unit	Type	Steerable, Diesel driven	2
		Capacity	500 PS	
1.11	Air conditioning	Type	Package type	each 1
		Conditioning room	Dredge control room, Meeting room	
1.12	Mooring equipment	Anchor	3.0 t (common use for swing)	2
		Mooring rope	Wire (common use for swing)	2
1.13	Mooring		Bollard, Cross bit	1 set
1.14	Life saving equipment		Life jacket (13) Life	1 set

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			buoy(4)etc.		
1.15	Fire fighting equipment	Hydrant	Accommodation, Upper deck, Machinery room	each 1	
		Portable fire extinguisher	As per rule	1 set	
<b>2. Dredging Part</b>					
2.1	General	Dredging capacity	1,500 m <sup>3</sup> / h (depend on dredged material)		
		Max dredging depth	10 m		
		Max. dredging breadth	80 m		
		Discharging length	1,000 m		
2.2	Dredge pump	Type	Single casing, Single stage centrifugal pump	1	
		Capacity	8,800 m <sup>3</sup> / h x 50 m TH		
		Suction/ Discharge pipe	Suction 900 mm dia. Discharge 800 mm dia.		
2.3	Cutter	Type	5-Blade	1	
		Driver	Hydraulic motor (250PS x4)		
2.4	Discharging pipes	Floating pipe	Steel 800mm dia. x12.7mm x 7m GRP 800mm dia. x 7m	Each 44	
		Land pipes	Steel 800mm dia. x 12.7mmx7m	38	
		Joint	Flexible joint or Ball joint	125	
		Anchor	Danforth type	8	
2.5	Ladder winch	Type	Hydraulic driven	1	
		Capacity	18 t x 20m/min		
2.6	Swing winch	Type	Hydraulic driven	1	
		Capacity	25 t x 15m/min		
2.7	Spud system	Type	Hydraulic cylinder	2	
		Spud	800mm dia. x 16m		
		Cylinder	10 t x 2.5m		
2.8	Hydraulic pump unit	Type	Variable flow type	1	
		Capacity	3,350L/min x 210kg/cm <sup>2</sup>		
		Driver	1,900 PS Diesel engine		
2.9	Auxiliary	Type	Variable flow type	1	
		Capacity	500L/min x 210kg/cm <sup>2</sup>		
		Driver	270 PS Diesel engine( common use for Generator)		
2.10	Portable water depth sounding	Type	Single beam type	1	
		Equipment	Echo sounder, GPS, Personal computer, soft		

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	equipment		wear		
<b>3.</b>	<b>Machinery Part</b>				
3.1	Dredge pump engine	Type	4- cycle marine diesel engine	1	
		Capacity	3,750 PS x 400rpm		
3.2	Hydraulic pump unit engine	Type	4- cycle marine diesel engine	1	
		Capacity	1,900 PS x 1,000rpm		
3.3	Generator engine	Type	4- cycle marine diesel engine	2	
		Capacity	380 PS x 1,000rpm		
3.4	Propulsion engine	Type	4- cycle marine diesel engine	2	
		Capacity	500 PS x 1,000rpm		
3.5	Auxiliary	Cooling water pump		2	
		Bilge/ Ballast pump		1	
		Fire and general service pump		1	
		Fresh water pump		2	
		Sanitary water pump		1	
		F.O. transfer pump		1	
		L.O. transfer pump		1	
		Bilge pump		1	
		Sludge pump		1	
		Main air compressor	30m3/hr (F.A.) x 25kg/cm2	2	
		Main air reservoir	1,000 L x 25kg/cm2	2	
		Oily water separator		1	
		Machinery room vent. fan	500m3/ min x 20mm Aq	2	
		Dredge pump room vent. fan	500m3/ min x 20mm Aq	1	
3.6	Automation and Remote control	Dredge pump engine	Start/ normal stop : Machine side Speed control : Remote control from Dredge control room		
		Cutter motor, Winches, Spud system	Start/ Stop and Speed control : Remote control from Dredge control room		
		F.O. transfer pump Main air compressor, Fresh water pump, Sanitary pump	Automatic Start/ Stop		
<b>4.</b>	<b>Electric Part</b>				
4.1	Supply System	Power	AC 380V 50Hz 3 phase		
		Lighting	AC 230V 50Hz Single phase		
		Onboard	AC 230V 50Hz Single phase/		

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		Communication	DC24V	
		Nav./ Commun.	AC 230V 50Hz Single phase/ DC24V	
		Indicator	AC 230V 50Hz single phase/ DC24V	
4.2	Electric source	Generator	AC250kW (312.5kVA)	2
		Main switchboard	Dead front type	1
		Transformer	3 phase 380/230V	1
		Battery	24 V	1 set
4.3	Lighting	Accommodation	LED light	1set
		Machinery room	LED light	1 set
		Upper deck	Mercury flood light 400W	1 set
		Search light	Incandescent light 500W	1 set
4.4	Onboard communication	Public addressor	30 W	1 set
		Fire/ general alarm system		1 set
4.5	Navigation Equipment	Steering control		1 set
		Echo sounder		1 set
		DGPS		1 set
4.6	Radio Equipment	SSB(MF/HF)		1 set

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## 2. TUG BOAT

	Item	Specifications		Remarks	
1	<b>General and Hull Part</b>				
1.1	Navigation Area And Designing Condition	Navigation Area	Paraguay River		
		Design Condition	Outside Temp : 35 °C Humidity : 95 % Water Temp : 32°C Wind : 15m/sec Flow : 2 knots (Dredging)		
1.2		Rules and Standard	Rule	Nippon Kaiji Kyokai (Appraisal) Paraguay River Rule	
			Standard	Japanese Industrial Standard (JIS) Japanese Shipbuilding Quality Standard(JSQS)	
1.3		Principal Dimensions	Length(oa)	Approx. 17 m	
	Length		Approx. 16.0 m		
	Breadth		7.00 m		
	Depth		2,50 m		
	Draft		Less than 1,50 m		
1.4	Vessel Speed	Without towing	Approx. 5 knots (in still water)		
		With 350m pipes and barge	4 knots (in still water)		
1.5	Dead weight		Approx. 40 tons		
1.6	Tank	Fuel Oil	Approx. 15 m3		
		Fresh Water	Approx.10 m3		
		Gray Water	Approx.10 m3		
		Sewage	Approx. 3 m3		
1.7	Complement		8 persons (Crew—6 Other—2)		
1.8	Facilities	No.1 Wheelhouse	Steering console, Main engine control, chart desk, Chair, Book case, Sink, Wiper (4)		
		No.2 Wheelhouse	Steering equipment, main engine revolution control, Wiper (4)		
		No.1 Cabin	2-tier bed, Locker (2) Desk, Chair		
		No.2 Cabin	Sofa bed (2), Locker (4), Table, Cooking board, Cooking range, Microwave range,		
		Toilet	Western style, Shower, Wash basin		
		Fore Store	Wooden shelf		
1.9	Propulsion unit	Type	Fixed pitch propeller with nozzle	2	
1.10		Steering Gear	Type	Electro hydraulic	1
	Capacity		For advance 1,000kgf-m For astern 500kg-m		
1.11	Air conditioning Equipment	Type	Package type ( air cooling)	each	
		Conditioning room	No.1 / No.2 wheelhouse, No.1 / No.2 cabin	1	

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1.12	Windlass	Type	Electric driven	2	
		Capacity	1.0 t x 12m/min		
1.13	Capstan	Type	Electric	1	
		Capacity	0.8 t x 12m/min		
1.14	Anchor and Mooring Rope	Anchor	Danforth type 40 kg	2	
		Mooring Rope	Synthetic rope 20mm dia.x 110m	4	
1.15	Mooring Fitting	Bollard		4	
		Cross Bitt		4	
		Towing Bitt		1	
1.16	Life saving Equipment		Life jacket (8) Life buoy(4)etc.	1 set	
1.17	Fire fighting Equipment	Portable fire Extinguisher		4	
		Gasoline Pump	60PS for	1	
1.18	Hot water Maker		Solar Type 200L	1	
<b>2. Machinery Part</b>					
2.1	Propulsion engine	Type	4- cycle marine diesel engine	2	
		Capacity	470 PS x 1,800rpm		
2.2	Harvor generator engine	Type	4- cycle marine diesel engine	1	
		Capacity	Refer to Electric Part		
2.3	Auxiliary equipment	Fresh water pump	Home use type 1.98 m3/h x 12m	1	
		Sanitary water pump	Home use type 1.98 m3/h x12m	1	
		Gray water pump	10m3/h x12m	1	
		Sewage pump	3m3/h x 12m	1	
		Machinery room vent. fan	150m3/ min x 20mm Aq	2	
2.4	Automation and Remote control	Propulsion engine Harbor generator engine	Start/ normal stop : Machine side Speed control : Remote control from N0.1/ No.2 wheelhouse		
		Frash water pump, Sanitary pump	Automatic Start/ Stop		
<b>3. Electric Part</b>					
3.1	Supply System	Power	AC 380V 50Hz 3 phase		
		Lighting	AC 230V 50Hz Single phase		
		Onboard communication	AC 230V 50Hz Single phase/ DC24V		
		Nav./ Commun.	AC 230V 50Hz Single phase/ DC24V		

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		Indicator	AC 230V 50Hz single phase/ DC24V	
3.2	Electric source	Main generator	Driven by Propulsion engine DC24 V	1
		Harbor generator	Diesel driven 20kVA	1
		Main switchboard	Dead front type	1
		Transformer	3 phase 380/230V	1
		Battery	24 V	1
		Inverter		
3.3	Lighting	Accommodation	LED light	1 set
		Machinery room	LED light	1 set
		Fore store	LED light	1 set
		Steering room	LED light	1 set
		Upper deck	Mercury flood light	1 set
		Search light	Incandescent light 500W	1 set
3.4	Onboard communication	Public addressor	30 W	1 set
		Fire/ general alarm system		1 set
3.5	Navigation Equipment	Steering console		1 set
		Radar		1 set
		Wind speed/ direction indicator		1 set
		DGPS		1 set
		Doppler log		1 set
3.6	Radio Equipment			1 set

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### 3 WORK SUPPORT VESSEL

		Item	Specifications	Remarks
<b>1</b>	<b>General and Hull Part</b>			
1.1	Navigation Area And Designing Condition	Navigation Area	Paraguay River	
		Design Condition	Outside Temp : 35 °C Humidity : 95 % Water Temp : 32°C Wind : 15m/sec Flow : 2 knots (Dredging)	
1.2	Rules and Standard	Rule	Nippon Kaiji Kyokai (Appraisal) Paraguay River Rule	
		Standard	Japanese Industrial Standard (JIS) Japanese Shipbuilding Quality Standard(JSQS)	
1.3	Principal Dimensions	Length(oa)	Approx. 11 m	
		Length	Approx.9.8 m	
		Breadth	5.00 m	
		Depth	2,50 m	
		Draft	Less than 1,50 m	
1.4	Vessel Speed	Without towing	Approx. 5 knots (in still water)	
		With 350m pipes and barge	4 knots (in still water)	
1.5	Dead weight		Approx. 4 tons	
1.6	Tank	Fuel Oil	Approx. 3.4 m3 (Double hull)	
1.7	Complement		2 persons	
1.8	Facilities	Wheelhouse	Steering console, Main engine control, Wiper (1)	
1.9	Steering gear	Type	Electro hydraulic	
		Capacity	500 kgf- m	
1.10	Propulsion unit	Type	Nozzle propeller	1
1.11	Air conditioning Equipment	Type	Package type ( air cooling)	1
		Conditioning room	Wheelhouse,	
1.12	Mooring Rope		Synthetic rope 15mm dia.x 30m	4
1.13	Mooring Fitting	Cross Bitt		4
		Towing Bitt		1
1.14	Life saving Equipment		Life jacket (2) Life buoy(1)etc.	1 set
1.15	Fire fighting Equipment	Portable fire Extinguisher	As per rule	
<b>2.</b>	<b>Machinery Part</b>			
2.1	Propulsion engine	Type	4- cycle marine diesel engine	1
		Capacity	470 PS x 1,800rpm	
2.2	Generator engine	Type	Driven by main engine	1
		Capacity	Generator DC 24V	

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2.3	Auxiliary machinery	Bilge pump		1	
		Machinery room vent. fan	150m3/ min x 20mm Aq	1	
2.4	Automation and Remote control	Propulsion engine	Start/ normal stop : Remotely from wheelhouse and machine side		
<b>3. Electric Part</b>					
3.1	Supply System	Power	DC 24V		
		Lighting	DC 24V		
		Onboard communication	DC24V		
		Nav./ Commun.	DC24V		
		Indicator	DC24V		
3.2	Electric source	Generator	Driven by Propulsion engine DC24 V	1	
		Main switchboard	Dead front type	1	
		Battery	24 V	1	
3.3	Lighting	Wheelhouse	LED light	1 set	
		Machinery room	LED light	1 set	
		Exposed deck	LED light	1 set	
		Search light	Incandescent light 500W	1 set	
3.4	Onboard communication	Fire/ general alarm system		1 set	
3.5	Navigation Equipment	Steering console		1 set	
		Radar		1 set	
		GPS		1 set	

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#### 4 WORK PONTOON

	Item		Specifications	Remarks
1	<b>General and Hull Part</b>			
1.1	Navigation Area And Designing Condition	Navigation Area	Paraguay River	
		Design Condition	Outside Temp : 35 °C Hmidity : 95 % Water Temp : 32°C Wind : 15m/sec Flow : 2 knots (Dredging)	
1.2	Rules and Standard	Rule	Nippon Kaiji Kyokai (Appraisal) Paraguayi River Rule	
		Standard	Japanese Industrial Standard (JIS) Japanese Shipbuilding Quality Standard(JSQS)	
1.3	Principal Dimensions	Length(oa)	Approx. 25 m	
		Length	Approx. 22.0 m	
		Breadth	12.00 m	
		Depth	2,50 m	
		Draft	Less than 1,50 m	
1.4	Dead weight		Approx. 100 tons	
1.5	Tank (Independent tank)	Fuel Oil	Approx. 2 m3 (for crane) Approx. 1 m3(for generator)	
		Fresh water	Approx. 3 m3	
		Gray water	Approx. 3 m3	
		Sewage	Approx. 3 m3	
1.6	Persons onboard		Max.12 persons ( usually 6 )	
1.7	Onboard Facilities	Waiting room	Table, Desk, Chair (3), Wash basin	1
		Toilet	Western style, Wash basin	1
1.8	Capstan	Type	Electric	2
		Capacity	2.3 t x 12m/min	
1.9	Air conditioning Equipment	Type	Package type ( air cooled)	1
		Conditioning room	Waiting room	
1.10	Mooring Rope		Synthetic rope 30mm dia.x 110m	4
1.11	Mooring Fitting	Bollard		4
		Towing bitt		2
1.12	Life saving Equipment		Life jacket (12) Life buoy(2)	1 set
1.13	Fire fighting Equipment	Portable fire Extinguisher	As per rule	1 set
1,14	Pipe handling crane	Type	Hydraulic driven	1
		Capacity	2 t	
1.15	Mobil crane	Type	Shovel car type	1
1.16	Workshop machine	Welder		1

2. Machinery Part					
2.1	Generator engine	Type	4- cycle marine diesel engine Package type	2	
		Capacity	Refer to Electric Part		
2.2	Auxiliary machinery	Fresh water pump	3.84 m3/h x 12m Aq	1	
		Sewage pump	3m3/h x 12m Aq	1	
		Gray water pump	3m3/h x 12m Aq	1	
		Bilge pump	Portable	1	
2.3	Automation and Remote control	Fresh water, Sanitary pump	Automatically Start/ Stop		
3. Electric Part					
3.1	Supply System	Power	AC 230V 50Hz Single phase		
3.2	Electric source	Generator	AC 230V 50Hz 13.5 kVA	1 set	
		Battery	24 V	1 set	
3.3	Lighting	Waiting room	LED light	1 set	
		Exposed deck	Mercury light 400W	1 set	
3.4	Onboard communication	Public addressor system	30W	1 set	

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## 5. ACCOMMODATION BARGE

	Item		Specifications	Remarks
<b>1</b>	<b>General and Hull Part</b>			
1.1	Navigation Area And Designing Condition	Navigation Area	Paraguay River	
		Design Condition	Outside Temp : 35 °C Humidity : 95 % Water Temp : 32°C Wind : 15m/sec Flow : 2 knots (Dredging)	
1.2	Rules and Standard	Rule	Nippon Kaiji Kyokai (Appraisal) Paraguay River Rule	
		Standard	Japanese Industrial Standard (JIS) Japanese Shipbuilding Quality Standard(JSQS)	
1.3	Principal Dimensions	Length(oa)	Approx. 29 m	
		Length	Approx. 29.0 m	
		Breadth	12.00 m	
		Depth	2,50 m	
		Draft	Less than 1,50 m	
1.4	Dead weight		Approx. 150 tons	
1.5	Tank	Fuel Oil	Approx. 18 m3 (Double hull)	
		Fresh water	Approx. 120 m3	
		Gray water tan	Approx. 110m3	
1.6	Persons onboard		Max.33 persons ( usually31 )	
1.7	Onboard Facilities	Single room	Bed, Desk, Chair, Locker,	3
		2-bed room	2-tier bed, desk, Chair, Locker(2)	1
		4-bed room	2-tier bed, desk, Chair, Locker(4)	3
		8-bed room	2-tier bed, desk, Chair, Locker(8)	2
		Mess room	Table(4), Chair (24)	1
		Dish washing space	Sink, Cupboard, Microwave range	1
		Galley	Sink, Cooking table, Gas range, Refrigerator (2),	1
		Toilet/ shower	Clothes box, shower(4), urinal (3) Wash basin (3)	1
		Laundry	Washing machine (4) Wash basin	1
		Generator room	Generator (2), main switch board	1
		Gas bottle soring	Propane gas bottle, Gas detector	1
		Store	Refrigerator (6)	1
	Provision store	Wooden shelves	1	

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		Sewage treatment space	Sewage treatment unit	1	
1.8	Capstan	Type	Electric	1	
		Capacity	2.3 t x 12m/min		
1.9	Air conditioning Equipment	Type	Package type ( air cooled)	each 1	
		Conditioning room	Cabin,Mess room, Galley		
1.10	Mooring Rope		Synthetic rope 30mm dia.x 110m	4	
1.11	Mooring Fitting	Bollard		4	
		Closed chock		8	
		Towing Bitt		2	
1.12	Life saving Equipment		Life jacket (31) Life buoy(2)	1 set	
1.13	Fire fighting Equipment	Portable fire Extinguisher	As per rule	1 set	
1.14	Hot water maker		Solar type (430 L)	2 set	
<b>2.</b>	<b>Machinery Part</b>				
2.1	Generator engine	Type	4- cycle marine diesel engine Package type	2	
		Capacity	Refer to Electric Part		
2.2	Auxiliary machinery	Fresh water pump	3.84 m3/h x 12m Aq	2	
		Sanitary pump	1,98 m3/h x 12m Aq	2	
		Sewage pump	3m3/h x 12m Aq	1	
		Gray water pump	3m3/h x 12m Aq (transfer) 10m3/h x 12mAq.( for land)	each 1	
		Bilge pump	Portable	1	
		Vent. fan	For generator room 20m3/min x 25mm Aq.	2	
2.3	Automation and Remote control	Generator	Start/ normal stop : Remotely from wheelhouse and machine side		
		Fresh water, Sanitary water pump	Automatically Start/ Stop		
<b>3.</b>	<b>Electric Part</b>				
3.1	Supply System	Power	AC 230V 50Hz Single phase		
		Onboard communication	AC 230V 50Hz Single phase/ DC 24V		
3.2	Electric source	Generator	AC 230V 50Hz 50 kVA	1 set	
		Main switch board	Dead front type	1 set	
		Battery	24 V	1 set	
3.3	Lighting	Accommodation	LED light	1 set	
		Generator room	LED light	1 set	
		Exposed deck	Mercury light 400W	1 set	

3.4	Onboard communication	Public addressor system	30W	1 set	
		Fire/ general alarm system		1 set	

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**Annex-3 General Arrangement of the new Dredging Equipment  
( Preliminary)**

**1. Self-Propelled Cutter Suction Dredger**

**2. Tug Boat**

**3. Work Support Vessel**

**4. Work Pontoon**

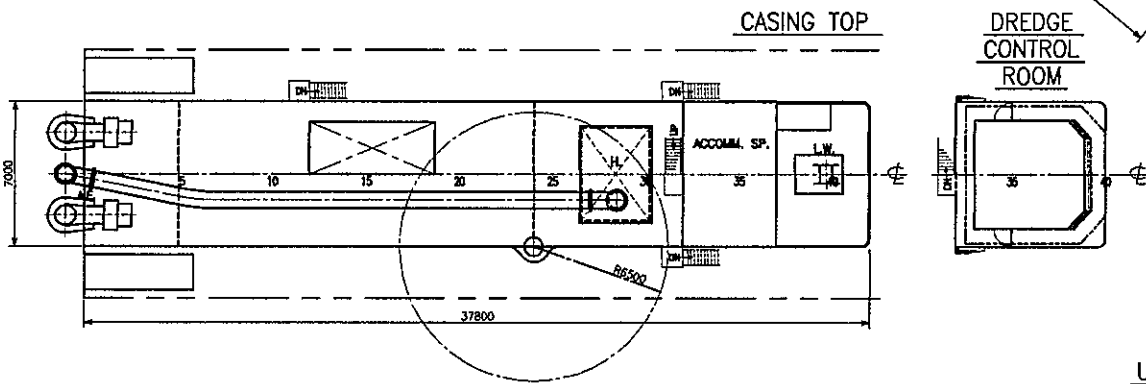
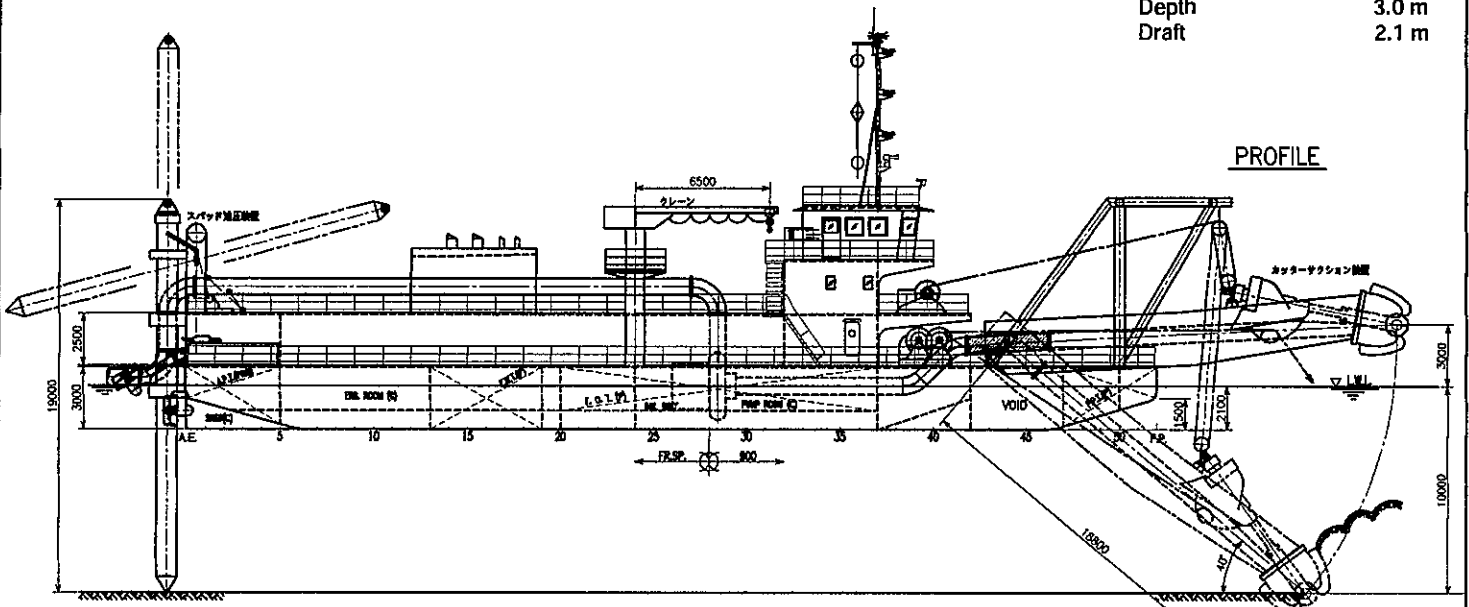
**5. Accommodation Barge**



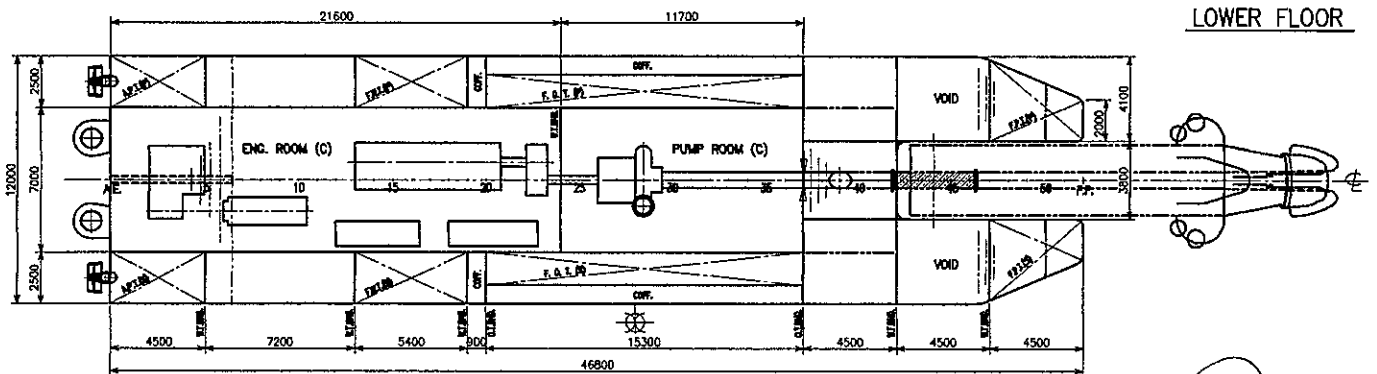
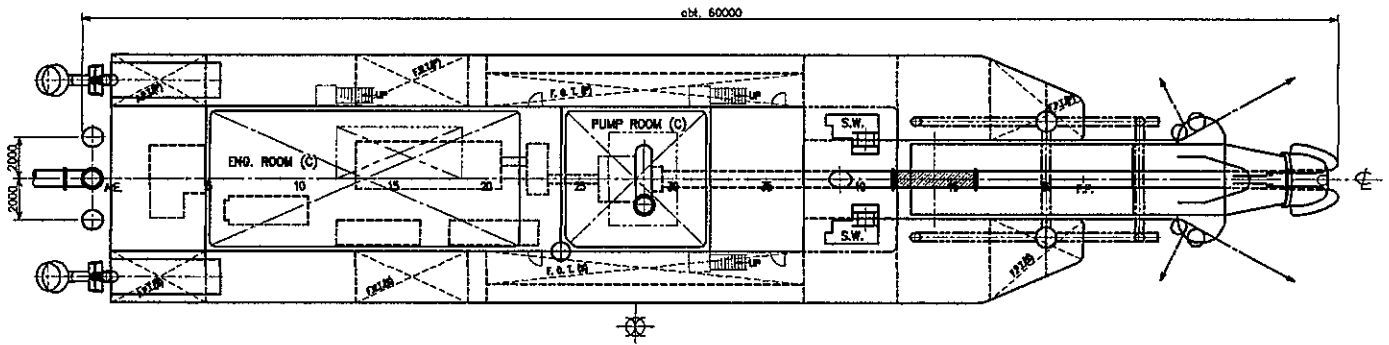
# SELF-PROPELLED CUTTER SUCTION DREDGER GENERAL ARRANGEMENT PLAN

S=1/250

Principal Particular	
Length over all	abt. 60,0 m
Length	46.8 m
Bredth	12.0 m
Depth	3.0 m
Draft	2.1 m



UPP. DK. PLAN



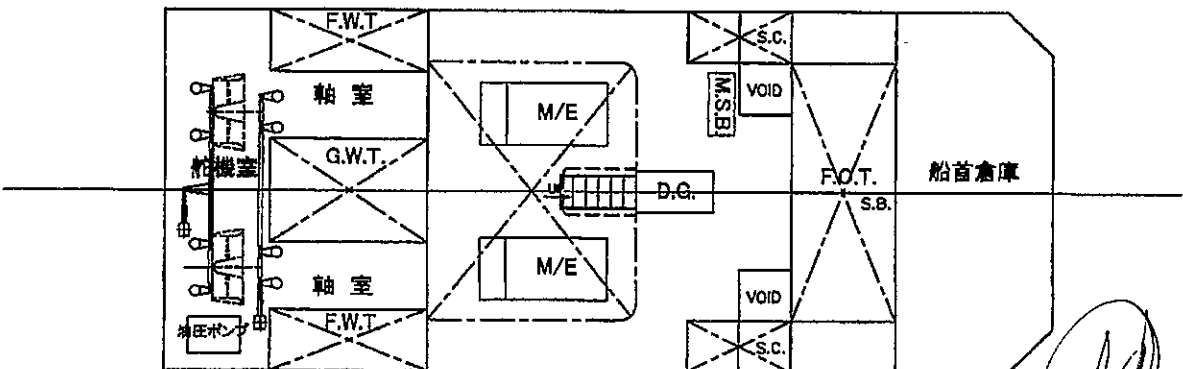
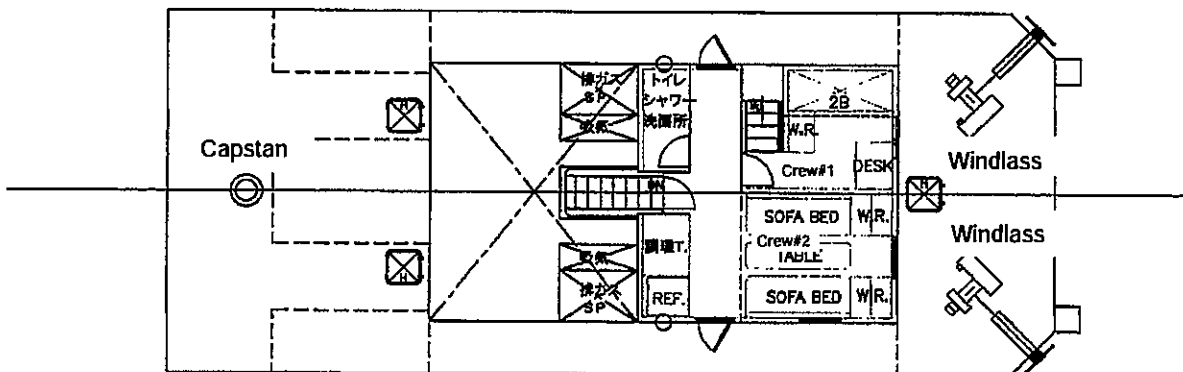
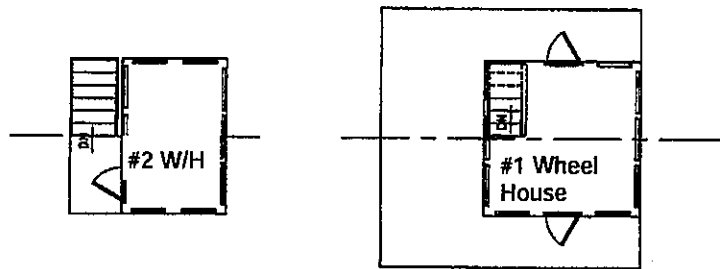
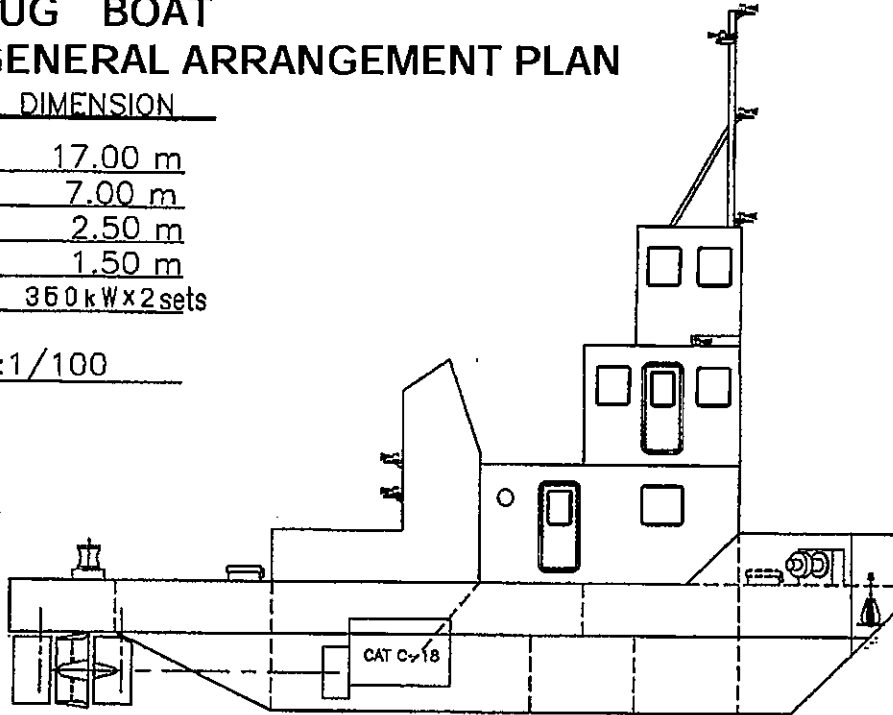
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# TUG BOAT GENERAL ARRANGEMENT PLAN

## PRINCIPAL DIMENSION

Loa	17.00 m
B	7.00 m
D	2.50 m
d	1.50 m
M/E	360kWx2sets

SCALE:1/100





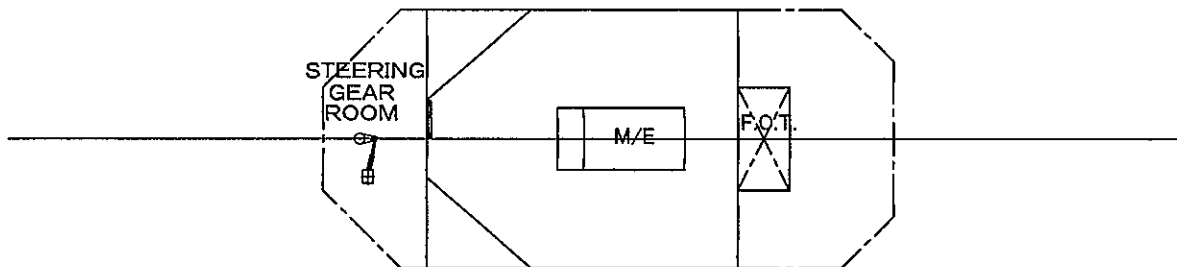
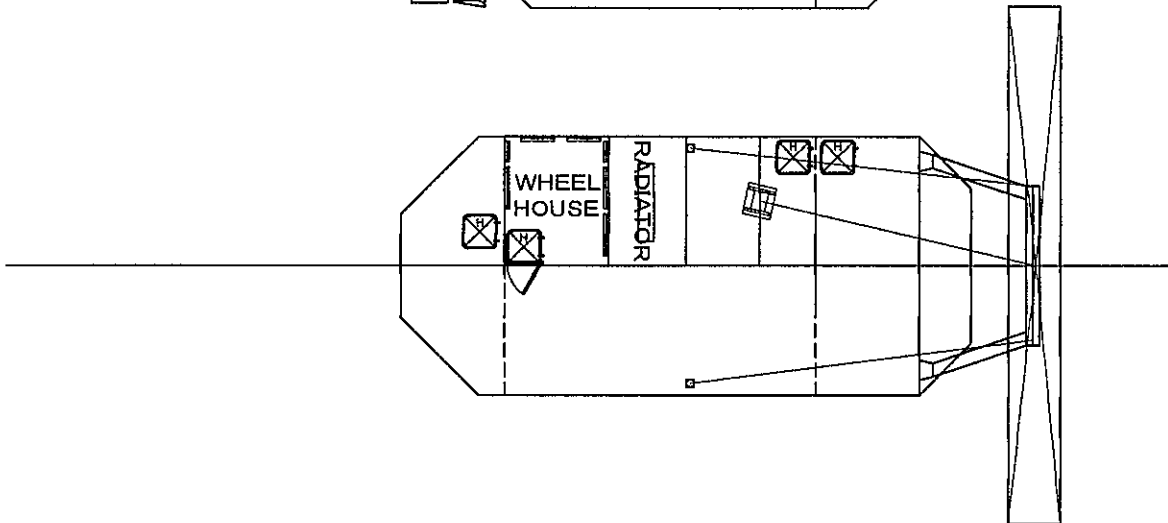
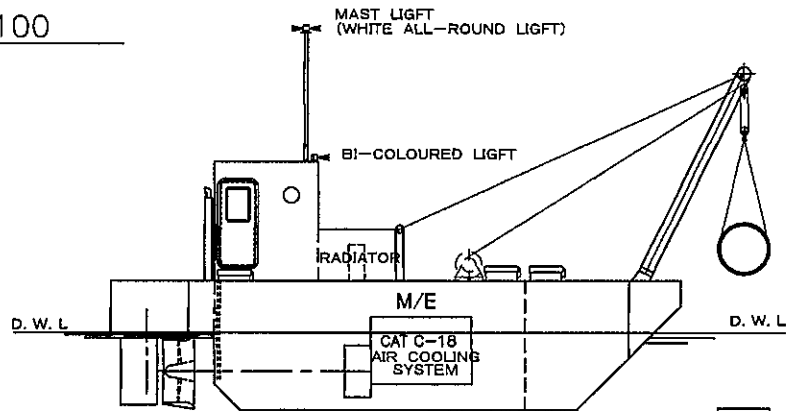
# WORK SUPPORT VESSEL

## GENERAL ARRANGEMENT PLAN

### PRINCIPAL DIMENSION

Loa	11.00 m
B	5.00 m
D	2.50 m
d	1.50 m
M/E	350 kW x 1 set

SCALE: 1/100

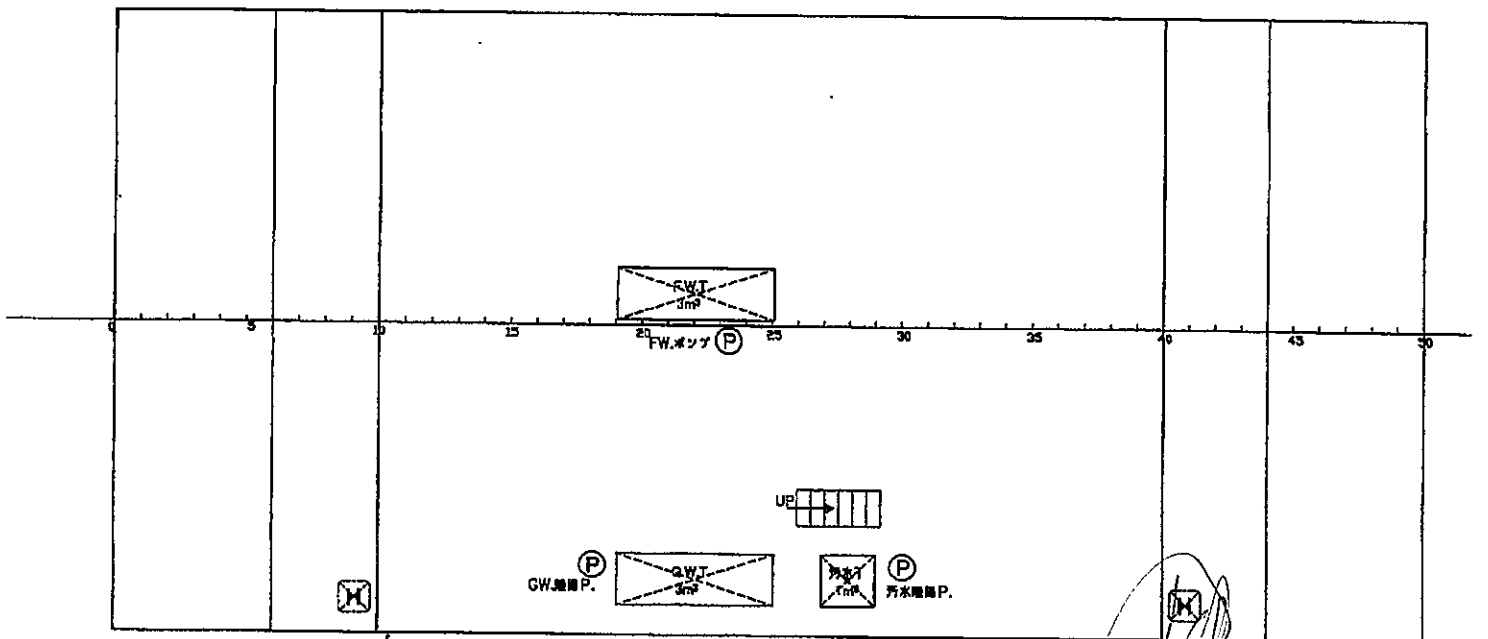
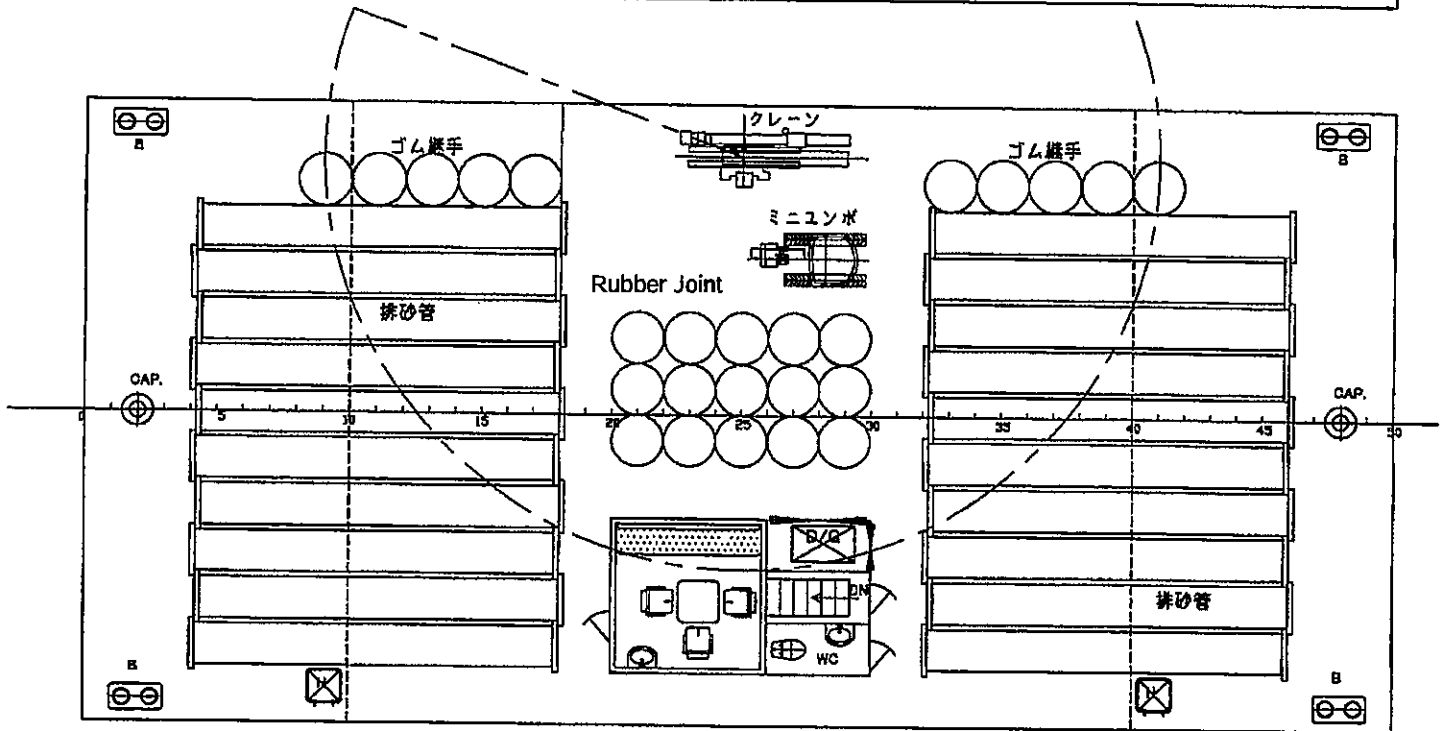
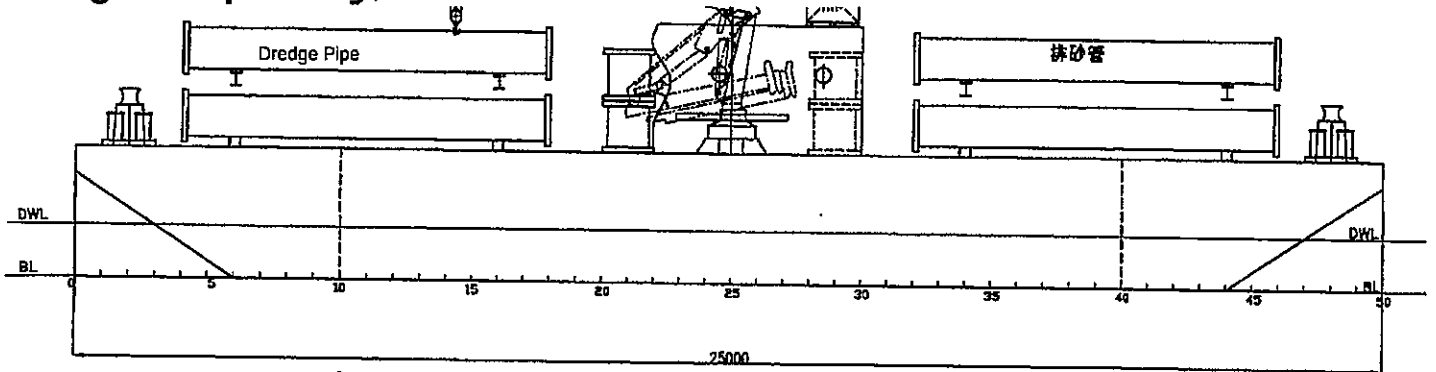


*skj*

# WORK PONTOON GENERAL ARRANGEMENT PLAN

(Note: This drawing shall be modified in  
according to change of dredge pipe  
length & quantity)

PRINCIPAL PARTICULARS	
LENGTH O.A.	25.00m
BEAM M.I.D.	12.00m
DEPTH M.I.D.	2.50m
DRAFT DESIGNED	1.00m
COMPLEMENTS	
SCALE: 1/100	



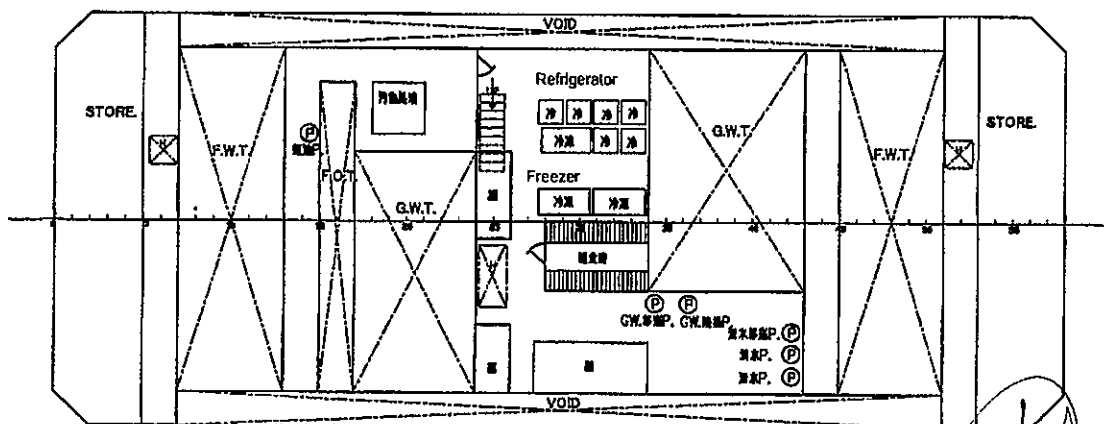
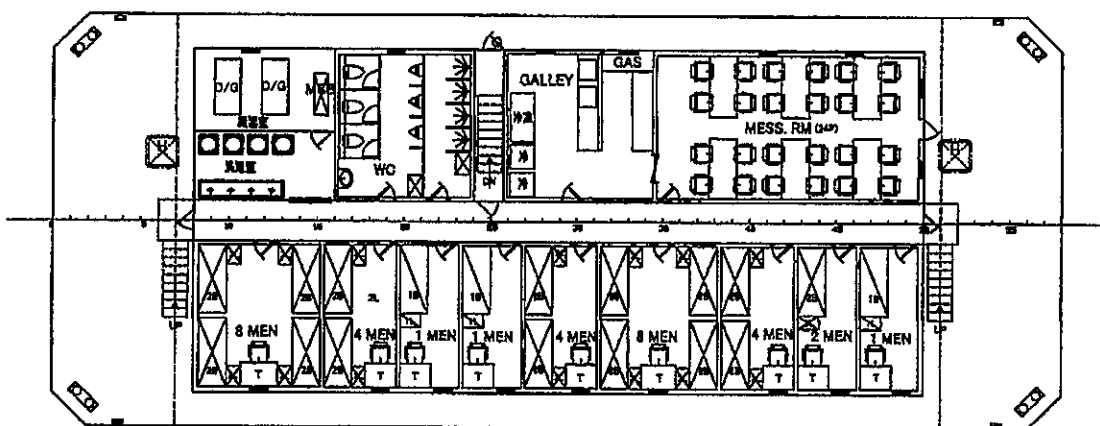
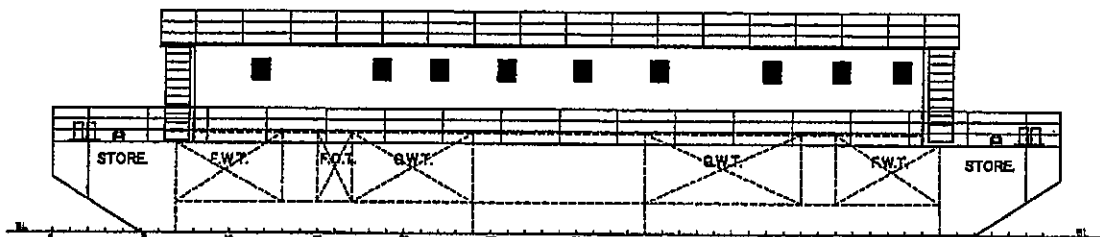
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# ACCOMMODATION BARGE GENERAL ARRANGEMENT PLAN

PRINCIPAL PARTICULARS

LENGTH O.A.	29.00m
BEAM M.L.D.	12.00m
DEPTH M.L.D.	2.50m
DRAFT DESIGNED	
COMPLEMENTS	33 P
SCALE: 1/150	



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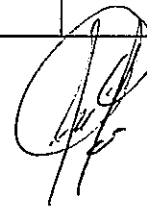
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Annex-4

Operation and Maintenance Cost for Dredging

(million Gs)

Year	2012	2013	2014	2015	2016
Annual Amount for fuel	1,485	2,010	1,018	1,018	1,018
Annual amount for maintenance	,1,172	1,265	1,345	1,345	1,674
( Total)	2,657	3,275	2,363	2,363	2,692
Total Budget of ANNP	123,720	134,273	134,223	101,510	



**Annex-5 Itinerary of Field Survey along Paraguay River**

**Asuncion – Apa River**

Month	Day	Depart	Time	Arrive	Time	Survey locations( figures denote the distance from the confluencce with Parana River)				
December	3	Asuncion	8:55	About Km 454	19:30	425 Paso Tres Bocas				
	4	About km 454	6:00	Anteguera	20:40	495 Villa Rey				
	5	Anteguera	5:30	Concepcion	19:00	642 Pedernal Medio,	645 Pedernal			
	6	Concepcion	5:30	About km 812	18:30	713 Ita Curubi,	756 Alegre,	806 Areecife		
	7	About 812Km	6:10	Vellami	20:20	818 Paso Gurdia Cue,	830 Itapucu Mi,	858 Palacio Cue		
	8	Vellami	6:00	About km 800	16:00	925 San Lazaro	Visit ANNP Dredger D3			
	9	About km 800	7:00	Concepcion	14:10	ASTILLERO DESVARS S.R.L,	No survey was made due to heavy rain			
	10	Concepcion	5:55	Anteguera	16:30	700 Guggari,	702 Mercecea,	692 Riacho Negro Salida	623 Montelindo	
	11	Anteguera	8:10	About km 430	15:00	566 Barranquerita,	563 Almiron,	523 Oculuto Superior		
	12	About km 430	5:51	Asuncion	10:00	440 Areputa Que,	405 Remanso Castillo			

**Asuncion – Parana River**

Month	Day	Depart	Time	Arrive	Time	Survey locations( figures denote the distance from the confluencce with Parana River)				
December	14	Asuncion	####	Asuncion	13:30	Visit working site of the dredger of T&C (369 Paso Medin)				
	15	Asuncion	5:56	Near Formosa km 210	18:40	386 Ita Pyta Punta	383 Paso Zanja Jhu	349 Paso Buey Muetro	344 Vuelta Ita Piru	
	16	km 210	6:10	Pilar	14:10	119 Cancha Larga	089 Paso Pilar			
	17	Pilar	5:10	About km 220	18:30	Monte Agudo				
	18	About km 220	5:05	About km 340	17:30	293 Vuelta Lobato	295 Lobato			
	19	About km 340	5:20	Asuncion	9:30	367 Paso Medin				

**Minutes of Discussions**  
**on the Preparatory Survey for the Project for**  
**the Procurement of Dredging Equipment for Paraguay River**  
**in the Republic of Paraguay**  
**(Explanation on Draft Preparatory Survey Report)**

With reference to the minutes of discussions signed among Ministry of Public Works and Communications, National Administration of Navigation and Ports, and the Japan International Cooperation Agency (hereinafter referred to as "JICA") on 2<sup>nd</sup> December, 2016 and in response to the request from the Government of the Republic of Paraguay (hereinafter referred to as "Paraguay") dated 9<sup>th</sup> July, 2015, JICA dispatched the Preparatory Survey Team (hereinafter referred to as "the Team") for the explanation of Draft Preparatory Survey Report (hereinafter referred to as "the Draft Report") for the Project for the Project for Procurement of Dredging Equipment for Paraguay River (hereinafter referred to as "the Project"), headed by Mr. Noriaki Nishimiya, Team 2, Transportation and ICT Group, Infrastructure and Peacebuilding Department, JICA from 8<sup>th</sup> to 12<sup>th</sup> May, 2017.

As a result of the discussions, both sides agreed on the main items described in the attachment.

Asuncion, 11th May, 2017



Mr. Noriaki NISHIMIYA

Leader

Preparatory Survey Team

Japan International Cooperation Agency

Japan

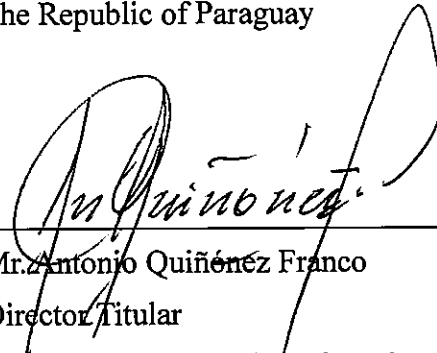


Mr. Ronald Olson Zayas Romero

Director

Ministry of Public Works and Communications

The Republic of Paraguay



Mr. Antonio Quiñónez Franco

Director Titular

National Administration of Navigation and Ports

The Republic of Paraguay

## ATTACHEMENT

### 1. Objective of the Project

The objective of the Project is to enlarge dredging capability of National Administration of Navigation and Ports by procuring dredging equipment including a dredger, thereby contributing to conduct maintenance dredging at Paraguay River and enhance regional infrastructure development in South America.

### 2. Title of the Preparatory Survey

Both sides confirmed the title of the Preparatory Survey as "the Preparatory Survey for the Project for Procurement of Dredging Equipment for Paraguay River".

### 3. Project site

Both sides confirmed that the site of the Project is in Paraguay River, which is shown in Annex 1.

### 4. Responsible authority for the Project

Both sides confirmed the authorities responsible for the Project are as follows:

4-1. National Administration of Navigation and Ports (ANNP) will be the executing agency for the Project (hereinafter referred to as "the Executing Agency"). The Executing Agency shall coordinate with all the relevant authorities to ensure smooth implementation of the Project and ensure that the undertakings for the Project shall be taken care by relevant authorities properly and on time. The organization charts are shown in Annex 2.

4-2. The line ministry of the Executing Agency is the Ministry of Public Works and Communications (MOPC). The MOPC shall be responsible for supervising the Executing Agency on behalf of the Government of Paraguay.

### 5. Contents of the Draft Report

After the explanation of the contents of the Draft Report by the Team, the Paraguayan side agreed to its contents.

### 6. Cost estimate

Both sides confirmed that the cost estimate described in Annex 5 and the Draft Report is provisional and will be examined further by the Government of Japan for its approval.

### 7. Confidentiality of the cost estimate and technical specifications

Both sides confirmed that the cost estimate and technical specifications in the Draft

Report should never be duplicated or disclosed to any third parties until all the contracts under the Project are concluded.

8. Procedures and Basic Principles of Japanese Grant

The Paraguayan side agreed that the procedures and basic principles of Japanese Grant as described in Annex 3 shall be applied to the Project. In addition, the Paraguayan side agreed to take necessary measures according to the procedures.

9. Timeline for the project implementation

The Team explained to the Paraguayan side that the expected timeline for the project implementation is as attached in Annex 4.

10. Expected outcomes and indicators

Both sides agreed that key indicators for expected outcomes are as follows. The Paraguayan side will be responsible for the achievement of agreed key indicators targeted in year 2023 and shall monitor the progress based on those indicators.

[Quantitative indicators]

- Annual dredging quantity: approximately 1,500,000m<sup>3</sup>(\*)

(\*) The quantity is estimated according to the past dredging plans. The required dredging quantity would be changed depending on actual sediment level.

[Qualitative indicators]

- To contribute on vessels' smooth sailing between the confluence of Paraguay River and Parana River, and the confluence of Paraguay River and Apa River throughout the year
- To reduce the transportation cost by smoothing the river transportation

11. Undertakings of the Project

Both sides confirmed the undertakings of the Project as described in Annex 5. With regard to exemption of customs duties, internal taxes and other fiscal levies as stipulated in 1.(2)5 of Annex 5, both sides confirmed that such customs duties, internal taxes and other fiscal levies include VAT, commercial tax, income tax and corporate tax, which shall be clarified in the bid documents by ANNP during the implementation stage of the Project.

The Paraguayan side assured to take the necessary measures and coordination including allocation of the necessary budget which are preconditions of implementation of the Project. It is further agreed that the costs are indicative, i.e. at Outline Design level. More accurate costs will be calculated at the Detailed Design stage.

Both sides also confirmed that the Annex 5 will be used as an attachment of G/A.



12. Monitoring during the implementation

The Project will be monitored by the Executing Agency and reported to JICA by using the form of Project Monitoring Report (PMR) attached as Annex 6. The timing of submission of the PMR is stipulated in Annex 5.

13. Project completion

Both sides confirmed that the project completes when all the equipment procured by the grant are in operation. The completion of the Project will be reported to JICA promptly, but in any event not later than six months after completion of the Project.

14. Ex-Post Evaluation

JICA will conduct ex-post evaluation after three (3) years from the project completion, in principle, with respect to five evaluation criteria (Relevance, Effectiveness, Efficiency, Impact, Sustainability). The result of the evaluation will be publicized. The Paraguayan side is required to provide necessary support for the data collection.

15. Items and measures to be considered for the smooth implementation of the Project

Both sides confirmed the items and measures to be considered for the smooth implementation of the Project as follows

15-1. Tax exemption

The Paraguayan side agreed that ANNP will bear the cost which is equivalent to the customs duties, internal taxes and other fiscal levies which may be imposed in the country of the Recipient with respect to the purchase of the Products and/or the Services, instead of tax exemption system. Such customs duties, internal taxes and other fiscal levies mentioned above include VAT, commercial tax, income tax and corporate tax of Japanese nationals, resident tax, fuel tax, but not limited, which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract between ANNP and the contractor.

The Japanese side explained that approximately PYG 253 million of VAT would occur if tax is not exempted according to tax exemption agreement on E/N and G/A.

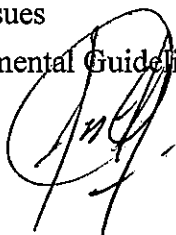
16. Schedule of the Study

JICA will finalize the Preparatory Survey Report based on the confirmed items. The report will be sent to the Paraguayan side around July 2017.

17. Environmental and Social Considerations

17-1 General Issues

17-1-1 Environmental Guidelines and Environmental Category



The Team explained that 'JICA Guidelines for Environmental and Social Considerations (April 2010)' (hereinafter referred to as "the Guidelines") is applicable for the Project. The Project is categorized as C because the Project is likely to have minimal adverse impact on the environment under the Guidelines.

## 18. Other Relevant Issues

### 18-1. Disclosure of Information

Both sides confirmed that the Preparatory Survey Report from which project cost is excluded will be disclosed to the public after completion of the Preparatory Survey. The comprehensive report including the project cost will be disclosed to the public after all the contracts under the Project are concluded.

Annex 1 Project Site

Annex 2 Organization Chart

Annex 3 Japanese Grant

Annex 4 Project Implementation Schedule

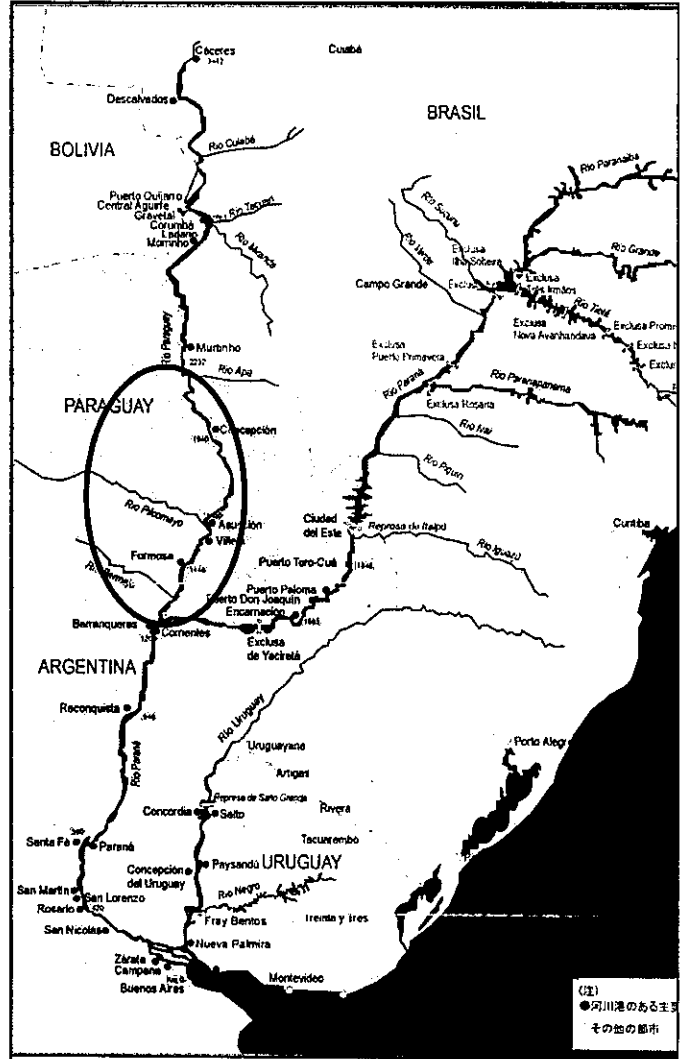
Annex 5 Major Undertakings to be taken by the Government of Paraguay

Annex 6 Project Monitoring Report (template)

Project Site



(Source: Google Maps)



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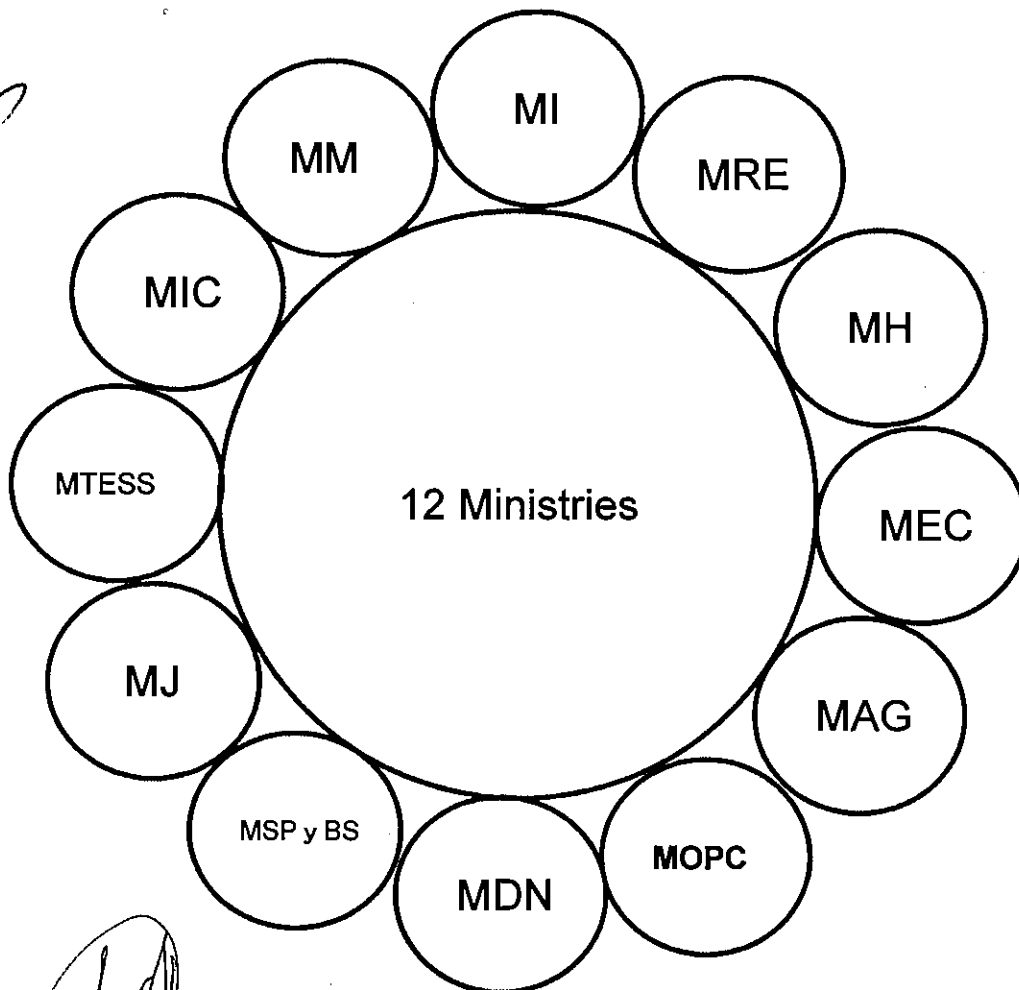
(注)  
●河川港のある主要  
その他の都市

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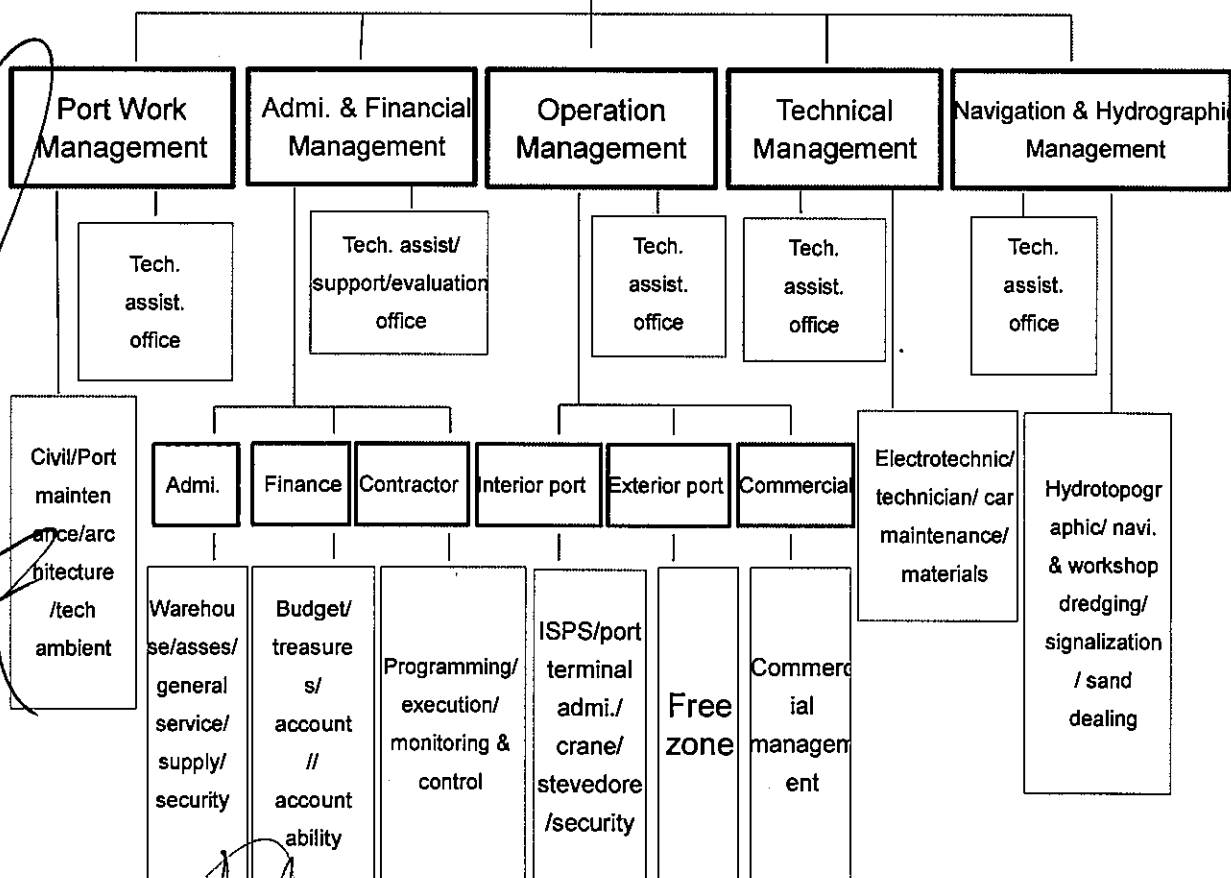
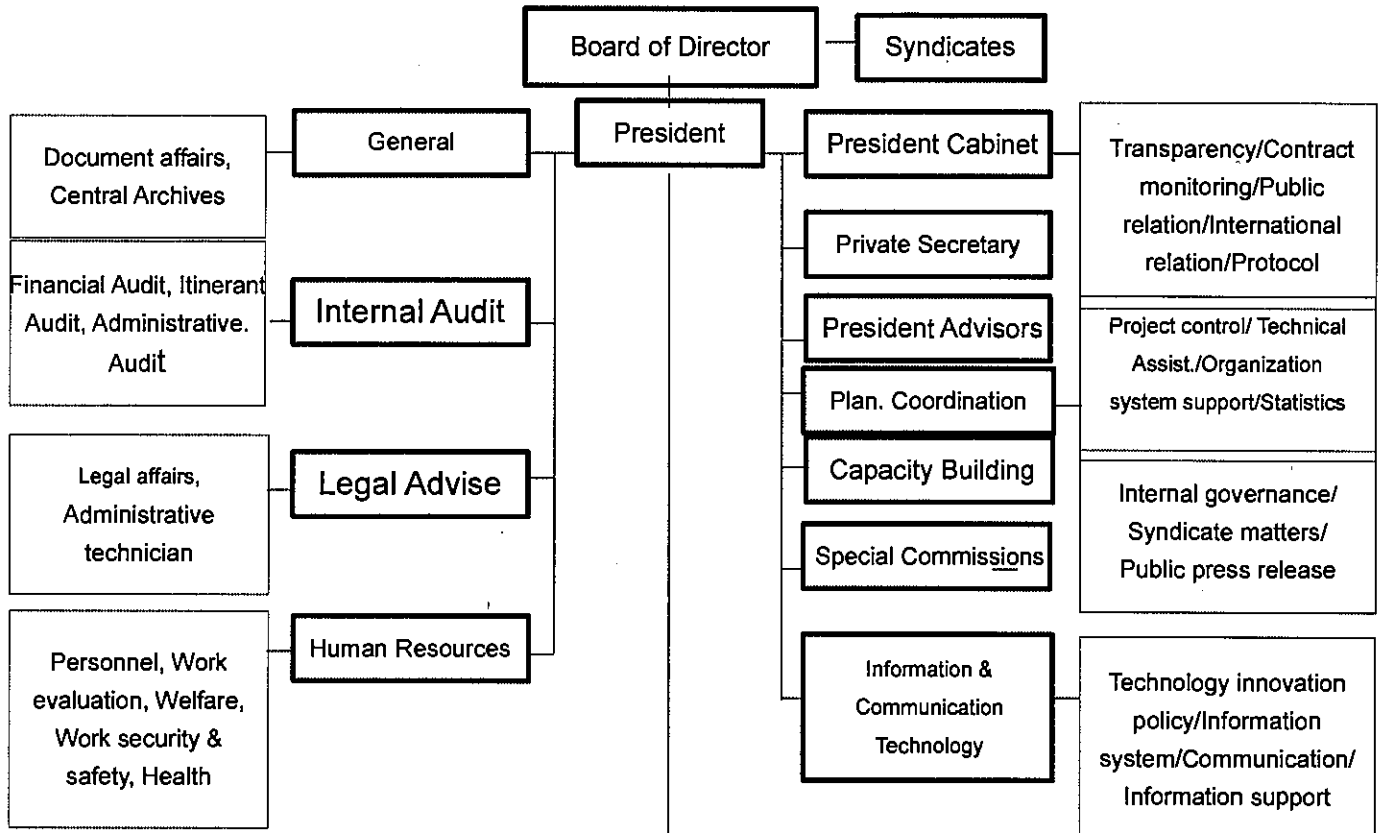
### Organization Chart

#### Ministries in Paraguay

- Ministry of Internal Affairs (MI)
- Ministry of Foreign Affairs (MRE)
- Ministry of Finance (MH)
- Ministry of Education & Culture (MEC)
- Ministry of Agriculture & Livestock (MAG)
- Ministry of Public Works & Communications (MOPC)
- Ministry of National Defence (MDN)
- Ministry of Public Health & Social Welfare (MSPyBS)
- Ministry of Justice (MJ)
- Ministry of Labour, Employment and Social Security (MTESS)
- Ministry of Industry and Commerce (MIC)
- Ministry of Women's Affairs (MM)



## Organization Chart of ANNP



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## JAPANESE GRANT

The Japanese Grant is non-reimbursable fund provided to a recipient country (hereinafter referred to as “the Recipient”) to purchase the products and/or services (engineering services and transportation of the products, etc.) for its economic and social development in accordance with the relevant laws and regulations of Japan. Followings are the basic features of the project grants operated by JICA (hereinafter referred to as “Project Grants”).

### 1. Procedures of Project Grants

Project Grants are conducted through following procedures (See “PROCEDURES OF JAPANESE GRANT” for details):

#### (1) Preparation

- The Preparatory Survey (hereinafter referred to as “the Survey”) conducted by JICA

#### (2) Appraisal

- Appraisal by the government of Japan (hereinafter referred to as “GOJ”) and JICA, and Approval by the Japanese Cabinet

#### (3) Implementation

##### Exchange of Notes

- The Notes exchanged between the GOJ and the government of the Recipient Grant Agreement (hereinafter referred to as “the G/A”)

- Agreement concluded between JICA and the Recipient

##### Banking Arrangement (hereinafter referred to as “the B/A”)

- Opening of bank account by the Recipient in a bank in Japan (hereinafter referred to as “the Bank”) to receive the grant

##### Construction works/procurement

- Implementation of the project (hereinafter referred to as “the Project”) on the basis of the G/A

#### (4) Ex-post Monitoring and Evaluation

- Monitoring and evaluation at post-implementation stage

### 2. Preparatory Survey

#### (1) Contents of the Survey

The aim of the Survey is to provide basic documents necessary for the appraisal of the the Project made by the GOJ and JICA. The contents of the Survey are as follows:

- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of relevant agencies of the Recipient necessary for the implementation of the Project.
- Evaluation of the feasibility of the Project to be implemented under the Japanese Grant from a technical, financial, social and economic point of view.
- Confirmation of items agreed between both parties concerning the basic concept of the Project.
- Preparation of an outline design of the Project.
- Estimation of costs of the Project.
- Confirmation of Environmental and Social Considerations

The contents of the original request by the Recipient are not necessarily approved in their initial form. The Outline Design of the Project is confirmed based on the guidelines of the Japanese Grant.

JICA requests the Recipient to take measures necessary to achieve its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the executing agency of the Project. Therefore, the contents of the Project are confirmed by all relevant organizations of the Recipient based on the Minutes of Discussions.

(2) Selection of Consultants

For smooth implementation of the Survey, JICA contracts with (a) consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms.

(3) Result of the Survey

JICA reviews the report on the results of the Survey and recommends the GOJ to appraise the implementation of the Project after confirming the feasibility of the Project.

### 3. Basic Principles of Project Grants

(1) Implementation Stage

1) The E/N and the G/A

After the Project is approved by the Cabinet of Japan, the Exchange of Notes (hereinafter referred to as "the E/N") will be signed between the GOJ and the Government of the Recipient to make a pledge for assistance, which is followed by the conclusion of the G/A between JICA and the Recipient to define the necessary articles, in accordance with the E/N, to implement the Project, such as conditions of disbursement, responsibilities of the Recipient, and procurement conditions. The terms and conditions generally applicable to the Japanese Grant are stipulated in the "General Terms and Conditions for Japanese Grant (January 2016)."

2) Banking Arrangements (B/A) (See "Financial Flow of Japanese Grant (A/P Type)" for details)

- a) The Recipient shall open an account or shall cause its designated authority to open an account under the name of the Recipient in the Bank, in principle. JICA will disburse the Japanese Grant in Japanese yen for the Recipient to cover the obligations incurred by the Recipient under the verified contracts.
- b) The Japanese Grant will be disbursed when payment requests are submitted by the Bank to JICA under an Authorization to Pay (A/P) issued by the Recipient.

3) Procurement Procedure

The products and/or services necessary for the implementation of the Project shall be procured in accordance with JICA's procurement guidelines as stipulated in the G/A.

4) Selection of Consultants

In order to maintain technical consistency, the consulting firm(s) which conducted the Survey will be recommended by JICA to the Recipient to continue to work on the Project's implementation after the E/N and G/A.

5) Eligible source country



In using the Japanese Grant disbursed by JICA for the purchase of products and/or services, the eligible source countries of such products and/or services shall be Japan and/or the Recipient. The Japanese Grant may be used for the purchase of the products and/or services of a third country as eligible, if necessary, taking into account the quality, competitiveness and economic rationality of products and/or services necessary for achieving the objective of the Project. However, the prime contractors, namely, constructing and procurement firms, and the prime consulting firm, which enter into contracts with the Recipient, are limited to "Japanese nationals", in principle.

6) Contracts and Concurrence by JICA

The Recipient will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be concurred by JICA in order to be verified as eligible for using the Japanese Grant.

7) Monitoring

The Recipient is required to take their initiative to carefully monitor the progress of the Project in order to ensure its smooth implementation as part of their responsibility in the G/A, and to regularly report to JICA about its status by using the Project Monitoring Report (PMR).

8) Safety Measures

The Recipient must ensure that the safety is highly observed during the implementation of the Project.

9) Construction Quality Control Meeting

Construction Quality Control Meeting (hereinafter referred to as the "Meeting") will be held for quality assurance and smooth implementation of the Works at each stage of the Works. The member of the Meeting will be composed by the Recipient (or executing agency), the Consultant, the Contractor and JICA. The functions of the Meeting are as followings:

- a) Sharing information on the objective, concept and conditions of design from the Contractor, before start of construction.
- b) Discussing the issues affecting the Works such as modification of the design, test, inspection, safety control and the Client's obligation, during of construction.

(2) Ex-post Monitoring and Evaluation Stage

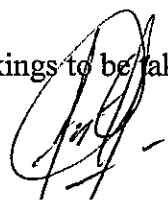
- 1) After the project completion, JICA will continue to keep in close contact with the Recipient in order to monitor that the outputs of the Project is used and maintained properly to attain its expected outcomes.
- 2) In principle, JICA will conduct ex-post evaluation of the Project after three years from the completion. It is required for the Recipient to furnish any necessary information as JICA may reasonably request.

(3) Others

1) Environmental and Social Considerations

The Recipient shall carefully consider environmental and social impacts by the Project and must comply with the environmental regulations of the Recipient and JICA Guidelines for Environmental and Social Considerations (April, 2010).

2) Major undertakings to be taken by the Government of the Recipient





For the smooth and proper implementation of the Project, the Recipient is required to undertake necessary measures including land acquisition, and bear an advising commission of the A/P and payment commissions paid to the Bank as agreed with the GOJ and/or JICA. The Government of the Recipient shall ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the Recipient with respect to the purchase of the Products and/or the Services be exempted or be borne by its designated authority without using the Grant and its accrued interest, since the grant fund comes from the Japanese taxpayers.

3) Proper Use

The Recipient is required to maintain and use properly and effectively the products and/or services under the Project (including the facilities constructed and the equipment purchased), to assign staff necessary for this operation and maintenance and to bear all the expenses other than those covered by the Japanese Grant.

4) Export and Re-export

The products purchased under the Japanese Grant should not be exported or re-exported from the Recipient.

## Procedures of Japanese Grant

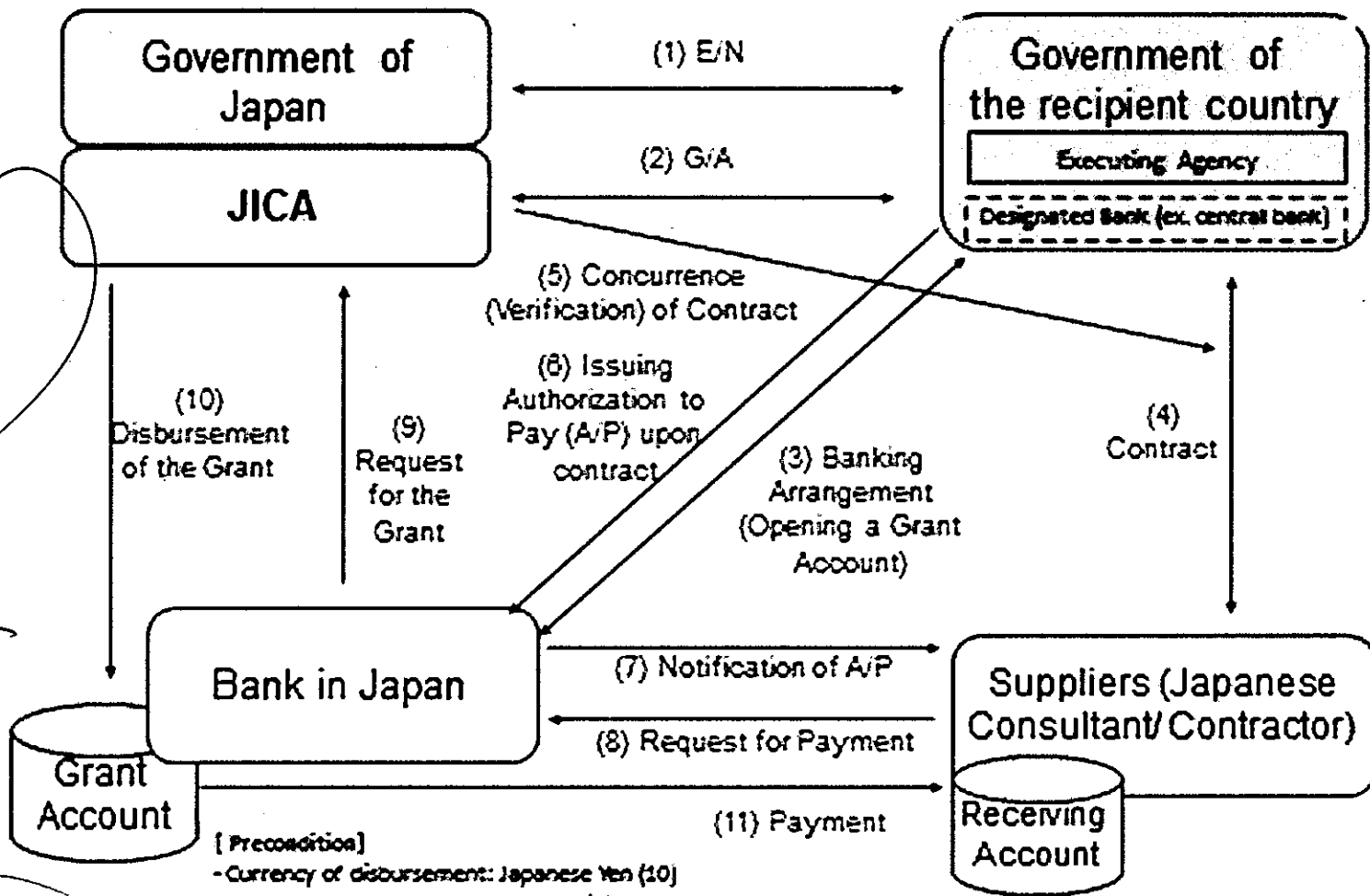
Stage	Procedures	Remarks	Recipient Government	Japanese Government	JICA	Consultants	Contractors	Agent Bank
Official Request	Request for grants through diplomatic channel	Request shall be submitted before appraisal stage.	x	x				
1. Preparation	(1) Preparatory Survey Preparation of outline design and cost estimate	—	x		x	x		
2. Appraisal	(2) Preparatory Survey Explanation of draft outline design, including cost estimate, undertakings, etc.		x		x	x		
	(3) Agreement on conditions for implementation	Conditions will be explained with the draft notes (E/N) and Grant Agreement (G/A) which will be signed before approval by Japanese government.	x	x (E/N)	x (G/A)			
	(4) Approval by the Japanese cabinet	—		x				
3. Implementation	(5) Exchange of Notes (E/N)		x	x				
	(6) Signing of Grant Agreement (G/A)		x		x			
	(7) Banking Arrangement (B/A)	Need to be informed to JICA	x					x
	(8) Contracting with consultant and issuance of Authorization to Pay (A/P)	Concurrence by JICA is required	x			x		x
	(9) Detail design (D/D)	—	x			x		
	(10) Preparation of bidding documents	Concurrence by JICA is required	x			x		
	(11) Bidding	Concurrence by JICA is required	x		—	x	x	
	(12) Contracting with contractor/supplier and issuance of A/P	Concurrence by JICA is required	x				x	x
4. Ex-post monitoring & evaluation	(13) Construction works/procurement	Concurrence by JICA is required for major modification of design and amendment of contracts.	x			x	x	
	(14) Completion certificate	—	x			x	x	
	(15) Ex-post monitoring	To be implemented generally after 1, 3, 10 years of completion, subject to change	x		x			
	(16) Ex-post evaluation	To be implemented basically after 3 years of completion	x		x			

notes:

1. Project Monitoring Report and Report for the Project Completion shall be submitted to JICA as agreed in the G/A.
2. Concurrence by JICA is required for allocation of grant for remaining amount and/or contingencies as agreed in the G/A.

# Financial Flow of Japanese Grant (A/P Type)

WJEC/04/01/02



- [ Precondition ]
- Currency of disbursement: Japanese Yen (10)
  - Currency of contract: Japanese Yen (4)
  - Currency of payment: Japanese Yen (11)

AP-4-5-14

*[Handwritten signatures and marks]*

**Project Implementation Schedule**

AP-4-5-15

Calender Year		2017					2018					2019					2020					2021																										
Calender Month		7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	7	8																		
Accumulative number of month		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31								
Contract	Cabinet approval	▲																																														
	Signing of Exchange of Note (E/N)		▲																																													
Bidding stage	Consultant contract								▲																																							
	Spec plan final check at site									■																																						
	Reviewing of specification																																															
	Preparing/approval of bid documents																																															
	Bid announcement																																															
	Delivery of bid documents																																															
	Biddings																																															
	Evaluation and negotiation																																															
	Building contract																																															
	Building stage	1 Design and drawing																																														
2 Ordering machinery and equipment																																																
3 Ordering steel materials																																																
4 NC nesting																																																
5 NC cutting																																																
6 Block assembly (Dredger)																																																
7 Building on slipway (Dredger)																																																
8 Machinery outfitting (Dredger)																																																
9 Launching (Dredger)																																																
10 Outfitting at the pier (Dredger)																																																
11 Building of other vessels																																																
12 Factory completion and trial operation																																																
13 Delivery at site																																																
14 Defect inspection																																																

**Major Undertakings to be taken by the Government of Paraguay**

**1. Specific obligations of the Government of Paraguay which will not be funded with the Grant**

(1) Before the Tender

NO	Items	Deadline	In charge	Estimated Cost (Million PYG)	Ref.
1	To open Bank Account (Banking Arrangement (B/A))	within 1 month after G/A	ANNP		
2	To secure appropriate berthing and mooring space for the new vessels	before notice of the tender document	ANNP		

(2) During the Project Implementation

NO	Items	Deadline	In charge	Estimated Cost (Million PYG)	Ref.
1	To bear the following commissions to bank of Japan for the banking services based upon the B/A				
	1) Advising commission of A/P	within 1 month after the signing of the contract	ANNP		
	2) Payment commission for A/P	everypayment	ANNP	139	
2	To ensure and perform prompt tax and port charge exemption and customs clearance of the vessels and other equipment	during the Project	ANNP		
3	To carry out the domestic transportation of the new vessels and other equipment from the delivery place(s) and/or port(s)	during the Project	ANNP		
4	To accord Japanese nationals and/or physical persons of third countries whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work	during the Project	ANNP		
5	To bear the cost which is equivalent to the customs duties, internal taxes and other fiscal levies which may be imposed in the country of the Recipient with respect to the purchase of the Products and/or the Services, instead of tax exemption system. Such customs duties, internal taxes and other fiscal levies mentioned above include VAT, commercial tax, income tax and corporate tax of Japanese nationals, resident tax, fuel tax, but not limited, which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract.	during the Project	ANNP	253	
6	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for the Project implementation	during the Project	ANNP		
7	To submit the monitoring result to JICA by using the monitoring from as a part of Project Monitoring Report	during and Project	ANNP		

(3) After the Project

NO	Items	Deadline	In charge	Estimated Cost (Million PYG)	Ref.
1	To maintain and use properly and effectively equipment procured under the Grant Aid 1) Allocation of maintenance cost 2) Operation and maintenance equipment 3) Routine/Periodic inspection	after completion of the delivery	MOPC ANNP		
2	To take required measures for the Project in accordance with Exchange of Notes (E/N) and Grant Agreement (G/A), and other related agreements	after completion of the delivery	ANNP		

2. Other obligations of the Government of Paraguay funded with the Grant

NO	Items	Deadline	Amount (Million Japanese Yen)*
1	To procure necessary vessels and equipment	before end of the contract	2,486
2	To transport vessels and equipment to delivery point(s) and/or port(s) to the Recipient country	before end of the contract	0
3	To implement detailed design, tender support and construction supervision (Consultant)	before end of the contract	116
	Total		2,602

\* The Amount is provisional. This is subject to the approval of the Government of Japan

<p><b><u>(Sample)</u></b></p> <p><b><u>Project Monitoring Report</u></b></p> <p><b>on</b></p> <p><b><u>Project Name</u></b></p> <p><b>Grant Agreement No. <u>XXXXXXXX</u></b></p>
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### Organization Information

<b>Authority (Signer of the G/A)</b>	Person in Charge _____ _____ (Division) _____ Contacts Address: _____ Phone/FAX: _____ Email: _____
<b>Executing Agency</b>	Person in Charge _____ _____ (Division) _____ Contacts Address: _____ Phone/FAX: _____ Email: _____
<b>Line Ministry</b>	Person in Charge _____ _____ (Division) _____ Contacts Address: _____ Phone/FAX: _____ Email: _____

### Outline of Grant Agreement:

<b>Source of Finance</b>	Government of Japan: Not exceeding JPY _____ mil. Government of (_____): _____
<b>Project Title</b>	
<b>E/N</b>	Signed date: Duration:
<b>G/A</b>	Signed date: Duration:



**1: Project Description**

**1-1 Project Objective**

**1-2 Necessity and Priority of the Project**

- Consistency with development policy, sector plan, national/regional development plans and demand of target group and the recipient country.

**1-3 Effectiveness and the indicators**

- Effectiveness by the project

**2: Project Implementation**

**2-1 Project Scope**

Table 2-1-1a: Comparison of Original and Actual Location

<b>Location</b>	<b>Original: (M/D)</b> <b>Attachment(s):Map</b>	<b>Actual: (P/Rand PCR)</b> <b>Attachment(s):Map</b>
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Table 2-1-1b: Comparison of Original and Actual Scope

<b>Items</b>	<b>Original</b>	<b>Actual</b>
(M/D)	(M/D)	(P/R and PCR)

**2-1-2 Reason(s) for the modification if there have been any.**



(P/R and PCR)

**2-2 Implementation Schedule**

**2-2-1 Implementation Schedule**

Table 2-2-1: Comparison of Original and Actual Schedule

Items	Original		Actual
	DOD	G/A	
<i>[M/D]</i>	<i>(M/D)</i>		<i>(P/R, PCR)</i> As of (Date of Revision)  Please state not only the most updated schedule but also other past revisions chronologically.
Project Completion Date*			

\*Project Completion was defined as \_\_\_\_\_ at the time of G/A.

**2-2-2 Reasons for any changes of the schedule, and their effects on the project.**

(P/R and PCR)

**2-3 Undertakings by each Government**

**2-3-1 Major Undertakings**

See Attachment 2.

**2-3-2 Activities**

See Attachment 3.

**2-4 Project Cost**

**2-4-1 Project Cost**

Table 2-3-1 Comparison of Original and Actual Cost by the Government of Japan

(Confidential until the Tender)



Items			Cost (Million Yen)	
	Original	Actual	Original	Actual
Construction Facilities (or Equipment)				
Consulting Services	- Detailed design - Procurement Management - Construction Supervision			
Total				

Note: 1) Date of estimation:  
2) Exchange rate: 1 US Dollar = Yen

Table 2-3-2 Comparison of Original and Actual Cost by the Government of XX

Items			Cost (Million USD)	
	Original	Actual	Original	Actual
Total				

Note: 1) Date of estimation:  
2) Exchange rate: 1 US Dollar = (local currency)

**2-4-2** Reason(s) for the wide gap between the original and actual, if there have been any, the remedies you have taken, and their results.

(P/R, PCR)

**2-5 Organizations for Implementation**

**2-5-1 Executing Agency:**

- Organization's role, financial position, capacity, cost recovery etc,
- Organization Chart including the unit in charge of the implementation and number of employees.

Original: (M/D)

**Actual, if changed:** (P/R and PCR)

**2-6 Environmental and Social Impacts**

Report based on the agreed environmental checklist and monitoring form (See Attachment 4)

**3: Operation and Maintenance (O&M)**

**3-1 O&M and Management**

- Organization chart of O&M
- Operational and maintenance system (structure and the number, qualification and skill of staff or other conditions necessary to maintain the outputs and benefits of the project soundly, such as manuals, facilities and equipment for maintenance, and spare part stocks etc)

**Original:** (M/D)

**Actual:** (PCR)

**3-2 O&M Cost and Budget**

- The actual annual O&M cost for the duration of the project up to today, as well as the annual O&M budget.

**Original:** (M/D)

**4: Precautions (Risk Management)**

- Risks and issues, if any, which may affect the project implementation, outcome, sustainability and planned countermeasures to be adapted are below.



<b>Original Issues and Countermeasure(s): (M/D)</b>	
Potential Project Risks	Assessment
1.	Probability: H/M/L
(Description of Risk)	Impact: H/M/L
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action during the Implementation:
	Contingency Plan (if applicable):
2.	Probability: H/M/L
(Description of Risk)	Impact: H/M/L
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action during the Implementation:
	Contingency Plan (if applicable):
3.	Probability: H/M/L
(Description of Risk)	Impact: H/M/L
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action during the Implementation:
	Contingency Plan (if applicable):
<b>Actual issues and Countermeasure(s)</b>	
(P/R and PCR)	

**5: Evaluation**

**5-1 Overall evaluation**

Please describe your evaluation on the overall outcome of the project.

*(PCR)*

**5-2 Lessons Learnt and Recommendations**

Please raise any lessons learned from the project experience, which might be valuable for the future assistance or similar type of projects, as well as any recommendations, which might be beneficial for better realization of the project effect, impact and assurance of sustainability.

*(PCR)*

**Attachment**

1. Project Location Map
2. Undertakings to be taken by each Government
3. Monthly Report
4. Monitoring report on environmental and social considerations



## 資料5：モニタリングフォーム案





**Project Monitoring Report**  
**on**  
**The Project for the Procurement of Dredging Equipment for**  
**Paraguay River**  
Grant Agreement No. XXXXXXX  
20XX, Month

**Organization Information**

<b>Authority (Signer of the G/A)</b>	_____ Person in Charge _____ (Division) _____ Contacts Address: _____ Phone/FAX: _____ Email: _____
<b>Executing Agency</b>	<u>Administración Nacional de Navegación y Puertos (ANNP)</u> Person in Charge _____ (Division) _____ Contacts Address: _____ Phone/FAX: _____ Email: _____
<b>Line Agency</b>	<u>Ministerio de Obras Públicas y Comunicaciones (MOPC)</u> Person in Charge _____ (Division) _____ Contacts Address: _____ Phone/FAX: _____ Email: _____

**Outline of Grant Agreement:**

<b>Source of Finance</b>	Government of Japan: Not exceeding JPY _____ mil. Government of (_____): _____
<b>Project Title</b>	
<b>E/N</b>	Signed date: Duration:
<b>G/A</b>	Signed date: Duration:

## 1: Project Description

### 1-1 Project Objective

The objective of the Project is to enlarge dredging capability of National Administration of Navigation and Ports by procuring dredging equipment including a dredger.

### 1-2 Necessity and Priority of the Project

- Consistency with development policy, sector plan, national/regional development plans and demand of target group and the recipient country.

The project objective accords to the Paraguay government's policy to contribute to conduct maintenance dredging at Paraguay River and enhance regional infrastructure development in South America

### 1-3 Effectiveness and the indicators

- Effectiveness by the project

Quantitative Effect (Operation and Effect indicators)		
Indicators	Original (Yr 2016) (Actual value <sup>9</sup> )	Target (Yr 2020) (3 years after project completion)
Annual dredging quantity by the executing agency	400,000 m <sup>3</sup>	1,500,000 m <sup>3</sup> (*)
(*) The quantity is estimated according to the past dredging plans. The required dredging quantity would be changed depending on actual sediment level.		
Qualitative Effect		
1) To contribute on vessels' smooth sailing between the confluence of Paraguay River and Parana River, and the confluence of Paraguay River and Apa River throughout the year.		
2) To reduce the transportation cost by smoothing the river transportation.		
3) To respond to the increase in the amount of river transport cargo expected in the future by smoothing the river transportation.		

## 2: Project Implementation

### 2-1 Project Scope

Table 2-1-1a: Comparison of Original and Actual Location

<b>Location</b>	<b>Original:</b> (M/D) <b>Attachment(s):</b> Map	<b>Actual:</b> (PMR) <b>Attachment(s):</b> Map
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Table 2-1-1b: Comparison of Original and Actual Scope

Items	Original	Actual
(M/D)  'Soft component' shall be included in 'Items'.	(M/D)	(PMR)  Please state not only the most updated schedule but also other past revisions chronologically.  All change of design shall be recorded regardless of its degree.

#### 2-1-2 Reason(s) for the modification if there have been any.

(PMR)
-------

### 2-2 Implementation Schedule

#### 2-2-1 Implementation Schedule

Table 2-2-1: Comparison of Original and Actual Schedule

Items	Original		Actual
	DOD	G/A	
(M/D)  'Soft component' shall be stated in the column of 'Items'.  Project Completion Date*	(M/D)		(PMR) As of (Date of Revision)  Please state not only the most updated schedule but also other past revisions chronologically.

\*Project Completion was defined as \_\_\_\_\_ at the time of G/A.

**2-2-2** Reasons for any changes of the schedule, and their effects on the project.

--

**2-3 Undertakings by each Government**

**2-3-1 Major Undertakings**

See Attachment 2.

**2-3-2 Activities**

See Attachment 3.

**2-3-3 Report on RD**

See Attachment 4.

**2-4 Project Cost**

**2-4-1 Project Cost**

Table 2-4-1a Comparison of Original and Actual Cost by the Government of Japan  
(Confidential until the Tender)

Items			Cost (Million Yen)	
	Original	Actual	Original	Actual
Construction Vessels (including transportation)	<ul style="list-style-type: none"> <li>- One self-propelled cutter suction dredger</li> <li>- One tug boat</li> <li>- One work support vessel</li> <li>- One work pontoon</li> <li>- One accommodation barge</li> <li>- Two motor boats</li> <li>- Discharging pipes (70 for floating pipes, 10 for land pipes)</li> </ul>		2,519	Please state not only the most updated schedule but also other past revisions chronologically.
Consulting Services	<ul style="list-style-type: none"> <li>- Detailed design</li> <li>- Procurement management</li> <li>- Construction Supervision</li> </ul>		130	
<b>Total</b>			<b>2,649</b>	

Note: 1) Date of estimation: June 30<sup>th</sup>, 2017

2) Exchange rate: 1 US Dollar = 105.63 Yen

Table 2-4-1b Comparison of Original and Actual Cost  
by the Government of Sri Lanka

Items		Cost (Million Guaranies)		
	Original	Actual	Original	Actual
	Commissions to the Japanese bank for banking services based upon the Banking Arrangement (B/A) - Advising commission of Authorization to Pay (A/P) - Payment commission		142	Please state not only the most updated schedule but also other past revisions chronologically.
	In the case of local construction, the value-added tax for local procurement that may be subject to locally procured items and subcontracted contracts		4,615	
Total			4,757	

Note: 1) Date of estimation: June 30<sup>th</sup>, 2017  
2) Exchange rate: 1 Guarani = 0.0187 Yen

**2-4-2** Reason(s) for the wide gap between the original and actual, if there have been any, the remedies you have taken, and their results.

(PMR)

## 2-5 Organizations for Implementation

### 2-5-1 Executing Agency:

- Organization's role, financial position, capacity, cost recovery etc,
- Organization Chart including the unit in charge of the implementation and number of employees.

**Original:** (M/D)

**Actual, if changed:** (PMR)

## 2-6 Environmental and Social Impacts

- The results of environmental monitoring as attached in Attachment 5 in accordance with Schedule 4 of the Grant Agreement.
  - The results of social monitoring as attached in Attachment 5 in accordance with Schedule 4 of the Grant Agreement.
  - Information on the disclosed results of environmental and social monitoring to local stakeholders, whenever applicable.

## 3: Operation and Maintenance (O&M)

### 3-1 O&M and Management

- Organization chart of O&M
- Operational and maintenance system (structure and the number ,qualification and skill of staff or other conditions necessary to maintain the outputs and benefits of the project soundly, such as manuals, facilities and equipment for maintenance, and spare part stocks etc)

<b>Original:</b> (M/D)
<b>Actual:</b> (PMR)

**3-2 O&M Cost and Budget**

- The actual annual O&M cost for the duration of the project up to today, as well as the annual O&M budget.

<b>Original:</b> (M/D)
------------------------

**4: Precautions (Risk Management)**

- Risks and issues, if any, which may affect the project implementation, outcome, sustainability and planned countermeasures to be adapted are below.

<b>Original Issues and Countermeasure(s):</b> (M/D)	
Potential Project Risks	Assessment
1.	Probability: H/M/L
(Description of Risk)	Impact: H/M/L
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action during the Implementation:
	Contingency Plan (if applicable):

2.	Probability: H/M/L
(Description of Risk)	Impact: H/M/L
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action during the Implementation:
	Contingency Plan (if applicable):
3.	Probability: H/M/L
(Description of Risk)	Impact: H/M/L
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action during the Implementation:
	Contingency Plan (if applicable):
<b>Actual issues and Countermeasure(s)</b>	
(PMR)	

## 5: Evaluation at Project Completion and Monitoring Plan

### 5-1 Overall evaluation

Please describe your overall evaluation on the project.



**5-2 Lessons Learnt and Recommendations**

Please raise any lessons learned from the project experience, which might be valuable for the future assistance or similar type of projects, as well as any recommendations, which might be beneficial for better realization of the project effect, impact and assurance of sustainability.

**5-3 Monitoring Plan for the Indicators for Post-Evaluation**

Please describe monitoring methods, section(s)/department(s) in charge of monitoring, frequency, the term to monitor the indicators stipulated in 1-3.

**Attachment**

1. Project Location Map
2. Undertakings to be taken by each Government
3. Monthly Report
4. Report on RD
5. Environmental Monitoring Form / Social Monitoring Form
6. Monitoring sheet on price of specified materials
7. Report on Proportion of Procurement (Recipient Country, Japan and Third Countries)  
(Final Report Only)



## 資料 6 : 収集資料



## 資料6 収集資料

番号	名称	発行元	形状
1	CORTE DE CONVOY EN PASO RÍO BERMEJO (ベルメホ川における船団の切り離し)	ラプラタ流域 輸送委員会	電子
2	LA VIA NAVEGABLE DE HOY (現在の航行可能な水路)	同上	電子
3	PODER LEGISLATIVO LEY NO. 5211 DE CALIDAD DEL AIRE (立法権第 5211 号 排ガス規制)	SEAM (環境省)	電子
4	Archivos Altura Rio Paraguay (Datos Altura: Asuncion, Bahia Negra, Concepcion, Pilar, Villeta)1980- 16.09.16 (パラグアイ川歴年水位データ：1980年~2016年9月16日)	ANNP	電子
5	Volumenes Anuales de Dragado 1999-2013 (年間浚渫量データ：1999年~2013年)	ANNP	電子
6	Planilla de Volumenes (2012-2016) (パラグアイ川難所(南北両区間)浚渫計画：2012年~2016年)	ANNP	電子
7	Croquis de Pasos Dragados Anos 2015-2016 (Rio Paraguay – Tramo Norte) (パラグアイ川北部域の浚渫難所位置図及び浚渫量：2015~2016年)	ANNP	電子
8	Niveres P Dinac 6-09-2016 (パラグアイ川港湾年間月別水位：2008年~2016年)	ANNP	電子
9	Datos Technos Paso Itacurubi 2016 final (イタクルビ浚渫サイトデータ(位置、サイズ、浚渫土等)：2016)	ANNP	電子
10	Paso Itacurubi PSD (イタクルビ水路断面図)	ANNP	電子
11	Plan Maestro de Infraestructura y Servicios de Transporte del Paraguay 2011- 2031 MOPC (パラグアイにおける輸送サービス及設備のマスタープラン：2011年~2031年 MOPC)	MOPC	電子
12	Plan de Inversion vial 2014- 2023 by MOPC (MOPC 投資計画：2014年~2023年)	MOPC	電子
13	Estadística interesante (河川輸送用船舶数統計 国別・船種別)	MOPC	電子
14	Hidrovia- Paraguay (1) (パラグアイの河川輸送、陸上との比較等)	MOPC	電子
15	Resumen de Normativas Referidas a las Responsabilidades y Competencias de Direccion Generl de Marina Mercante (商船局長所掌の河川輸送に関する規則概要)	MOPC	電子
16	TRABAJOS DE DRAGADO REALISADO AL NORTE DE ASUNCION 2016 (アスンシオン以北の難所の浚渫作業 2016年)	ANNP	電子
17	PROYECTO DE DRAGADO AL SUR DE ASUNCION 2016	ANNP	電子

	(アスンシオン以南の難所の浚渫計画 2016 年)		
1 8	Cost Logistico Paraguay 2013 (パラグアイの輸送コストについての調査 2013 年)	MlyC MOPC	電子
1 9	Exportaciones (Brasil) via fluvial- Maritimo (2011-2015) (ブラジルの河川輸送輸出：2011 年～2015 年)	MlyC	電子
2 0	Exportaciones (Bolivia) via fluvial 2014 (ボリビアの河川輸送輸出：2014 年)	MlyC	電子
2 1	Exportaciones Paraguay Globales 2008 – 2015 (パラグアイの輸出：2008 年～2015 年)	MlyC	電子
2 2	Importaciones –Exportaciones Paraguay 2015 (パラグアイの輸出入：2015 年)	MlyC	電子
2 3	Inportaciones Paraguay Globales 2009 – 2015 (パラグアイの輸入：2009 年～2015 年)	MlyC	電子
2 4	Informe Encuesta Nacional de Logistica 2013-2014 (パラグアイ輸送国家調査：2013 年～2014 年)	MlyC MOPC	電子
2 5	Plan Nacional de logistica (パラグアイ輸送国家計画)	MlyC MOPC	電子
2 6	Pro-foruma Tarifa de Impotacion de Mercaderias Contenerizadas Puerto Villeta (ビジェタ港コンテナ荷役タリフ)	ANNP	電子
2 7	AGRICULTURA EN EL PARAGUAY- Presentacion ROMA (パラグアイの農業)	農業牧畜省	コピー
2 8	INFORMATIVO DEL COMPLEJO DE NAVIGACION E HIDROGRAFIA –ANNP (ANNP の保有設備・機材の紹介)	ANNP	パンフレット
2 9	Astillero Chaco Paraguay S.A. (チャコ 造船所紹介)	チャコ 造船所	パンフレット
3 0	ERF-650 EMPUJADOR/REMOLCADOR DE PUERTO (チャコ造船所建造 ERF-650 型港湾用プッシャータグボート)	チャコ 造船所	パンフレット
3 1	TSUNEISHI ( ASTILLERO TSUNEISHI PARAGUAY S.A.) (常石パラグアイ造船所紹介)	常石パラグ アイ造船所	パンフレット
3 2	Tsuneishi for South America (常石造船所の南米関連会社)	常石パラグ アイ造船所	パンフレット
3 3	QUE CREA LA A.N.N.P. COMO ENTE AUTARQUICO Y SU CARTA ORGANIA (LEY No. 1066) (ANNP 設立法 No 1066)	ANNP	電子
3 4	CONVENIO ESPECIFICO DE COOPERACION INTERINSTITUCIONAL ENTRE EL MOPC Y ANNP	ANNP MOPC	電子

	(MOPC と ANNP との間の省庁間特別協力協定書)		
3 5	ESTADO DE RESULTADOS (2012-2016) (ANNP の財務諸表 : 2012~2016 年)	ANNP	電子
3 6	COMBUSTIBLES Y LUBRICANTES , MANTENIMIENTO Y REPARACIONES MENORES (Draga-3 Draga-4) (浚渫船 D-3/ D-4 の燃料費、潤滑油費及び維持修理費)	ANNP	コピー
3 7	DRAGADO RIO PARAGUAY -TRAMO SUR Y NORTE DE ASUNCION (Draga-3 Draga-4) (2013) (パラグアイ川南北区 Draga-3 Draga-4 による浚渫量 : 2013 年)	ANNP	電子
3 8	CROQUIS DE BALIZAMIENTO RIO PARAGUAY ( 0km-390km) (パラグアイ川標識概略図 (0km~390km))	ANNP	コピー
3 9	CROQUIS DE BALIZAMIENTO RIO PARAGUAY ( 390km-932km) (パラグアイ川標識概略図 (390km~932km))	ANNP	コピー
4 0	MAPA DE PARAGUAY (1/2,000,000) (パラグアイ国地図 (2 百万分の 1))	軍事地理局	オリジナル
4 1	RUTAS DEL PARAGUAY (パラグアイ道路地図)	現地出版社	オリジナル
4 2	Estudio para el mejoramiento y mantenimiento de la navegabilidad del Rio Paraguay y gestion institucional Tramo Rio Apa- Confluencia (アパ川との合流点の制度管理とパラグアイ川の航行性向上と維持のための調査研究)	CAFyM (船主協会)	コピー
4 3	8 ejes de Integracion de la Infraestructura de America del Sur (南米のインフラ整備 8 つの軸)	UNASUR BRASIL	コピー
4 4	Orientaciones para conformar y fortalece los Consejos de Aguas en Paraguay (パラグアイにおける水系協議会の形成及び強化のためのガイドライン)	SEAM (環境省)	コピー
4 5	Vivir en armonia con la naturaleza es nuestro compromise (自然と調和して生きることが我々の約束)	SEAM (環境省)	コピー
4 6	Decreto Reglamentario No.453/2013 de la Ley No. 394/1993 "de Evaluacion de Impacto Ambiental" (「環境影響評価」法令 394/1993 の規制令 No.453/2013)	SEAM (環境省)	コピー

