

**添付資料 1-6**

**Minutes of Meeting (5th Steering Committee)**

**&**

**Discussion materials**

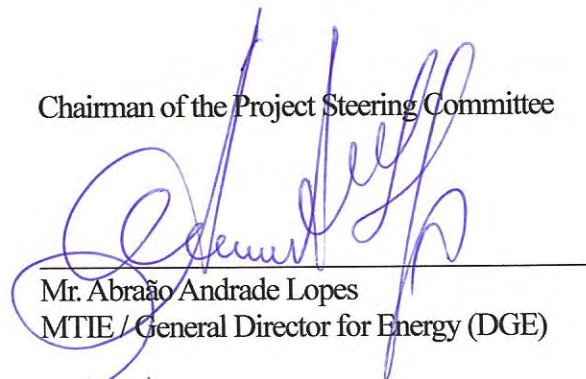


**MOM**  
**OF**  
**PROJECT STEERING COMMITTEE**  
**ON**  
**FEASIBILITY STUDY**  
**FOR**  
**WATER SUPPLY SYSTEM DEVELOPMENT PROJECT**

DATE: November 26<sup>th</sup>,  
PLACE: Praia, Cape Verde

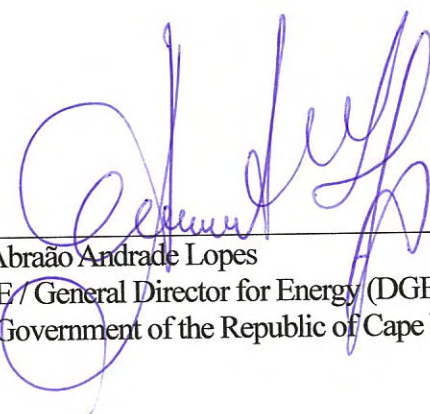
1. The Government of the Republic of Cape Verde (GoCV), in cooperation with the Government of Japan, intends to develop a structuring and strategic water sector project on the island of Santiago, aiming both at improving the water supply conditions, through the interconnection of water transmission and distribution networks, and at strengthening the production capacities;
2. Given the specific and strategic significance of the project, a diligent and efficient technical follow-up will be needed for the same;
3. In the scope of implementation of the above mentioned project, there will be a need to guarantee, to the GoCV, reliable technical counsel and assistance;
4. It is much advisable that the project be followed up and supported by all sectors and institutions which are, in one or other way, related to the water sector.
5. In this purpose, a Project Steering Committee has been officially established on 26<sup>th</sup> of January 2010 by the DISPATCH No. 007 / 2010 issued by MEGC (now MTIE).
6. The Project Steering Committee has met officially for the fifth time on the 23<sup>rd</sup> of November 2010, in the office of Cape Verde Investment Agency, Praia. The list of participants is given in ANNEX-2.
7. During the Project Steering Committee, the JICA study team made a presentation regarding the Draft Final Report of the study as referred in ANNEX-1.
8. The Project Steering Committee members hereby confirmed full understanding of the Draft Final Report with main points discussed as per hereto the Attachment of the Minutes of Meeting.

Chairman of the Project Steering Committee

  
Mr. Abraão Andrade Lopes  
MTIE / General Director for Energy (DGE)


MINUTES of MEETING  
on  
THE 5<sup>th</sup> STEERING COMMITTEE  
for  
THE PREPARATORY SURVEY  
on  
WATER SUPPLY SYSTEM DEVELOPMENT PROJECT  
in  
THE REPUBLIC OF CAPE VERDE

Praia, 26<sup>th</sup> November, 2010



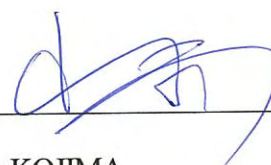
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Mr. Abraão Andrade Lopes  
MTIE / General Director for Energy (DGE)  
The Government of the Republic of Cape Verde



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Mr. Mitsutoshi SUZUKI  
Lead Consultant of the Survey Mission  
Japan International Cooperation Agency



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(as witness)  
Mr. Takeharu KOJIMA  
Global Environment Department  
Japan International Cooperation Agency

## Attachment

Japan International Cooperation Agency (hereinafter referred to as “JICA”) dispatched a mission (hereinafter referred to as “the JICA Mission”) to the Republic of Cape Verde. Since their arrival on November 18<sup>th</sup>, 2010, the JICA Mission and officials of Government of the Republic of Cape Verde (hereinafter referred to as “the GoCV”), Ministry of Tourism, Industry and Energy, (hereinafter referred to as “MTIE”) had detailed discussions on the Draft Final Report of the Preparatory Survey (hereinafter referred to as “the Survey”) for Water Supply System Development Project (hereinafter referred to as “the Project”).

The discussions of the 5<sup>th</sup> Steering Committee is described below. The JICA Study Team will proceed as planned up to December 2010, when the Survey comes to the end.

### 1. Conditions of the Survey in general

The JICA Mission stated that the results of discussions do not imply any decision or commitment by JICA for its prospective loan for the Project at this moment and the above results should be reported to the higher authority of JICA and the Government of Japan.

### 2. JICA Mission made a presentation regarding the Draft Final Report of the study using ANNEX-1 to all attendants listed in ANNEX-2.

### 3. After the presentation, all attendants made comment, discussion, and question as below:

#### a. Project Implementation Time Schedule

GoCV commented that the proposed time schedule should be shortened, because water supply issue was very serious, and the project was materialized and completed as soon as possible.

JICA explained that the proposed time schedule in the F/S Report was only indicative, and was developed in consideration of typical Japan’s ODA loan application.

JICA commented that JICA should further discuss the time schedule with MTIE.

#### b. RO permeated water quality specification

GoCV asked the permeated water quality specification.

JICA answered that 1<sup>st</sup> RO permeated was less than 0.9mg/l-Boron and 2<sup>nd</sup> RO permeated was less than 0.5mg/l-Boron, and the more detail specification was shown in Figure 4.1-5 and Figure 4.1-6 in the Draft Final Report.

#### c. Drinking Water Sales Plan

GoCV asked about 15% loss of production water and tariff in the Sales Plan.

JICA replied that 15% loss consisted of leakage and non-revenue water, and the value of 15% was discussed and mutually agreed in the 3<sup>rd</sup> Steering Committee on June 2010.

JICA also replied that the current water tariffs were referred as 5-10m<sup>3</sup>/month consumption basis.

#### d. Power Consumption of Desalination Facility

GoCV commented that the consumption of 4.7kWh/m<sup>3</sup> seemed to be high and should be further decreased.

JICA replied that this consumption was based on in-house performance data and 2 staged RO system.

JICA additionally replied that the consumption might be further decreased through the detail design and based on the allowable Boron content in the drinking water.

#### e. O&M Planning and ADA function

GoCV (ADA) commented that

- 1) In Praia only, ELECTRA is responsible for O&M of distribution network, and ADA is responsible for public taps,



- 2) In each municipality, SAAS is responsible for O&M of distribution network, public taps and house connections,
- 3) After the house connection is completed, the role of ADA in public taps may decrease,
- 4) Water production, transmission and distribution should be managed together.

f. STEP Loan

GoCV (MoF) commented that STEP Loan might result to the higher project cost.

JICA explained STEP as follows:

- 1) Cost of Japanese goods and services should be more than 30% of JICA loan portion in the STEP application,
- 2) Japanese goods and services in the desalination business field are globally competitive,
- 3) Interest rate of the STEP loan will be lower,
- 4) JICA conducts the detail design on grant basis,
- 5) Details of the above will be decided by Government of Japan.

g. Reservoir Location and Elevation

GoCV commented that JICA reservoirs should be located at the wherever possible high elevation for easy gravity flow to users.

JICA commented that the proposed locations were decided in consideration of gravity flow, technical and commercial aspects, and SAAS opinion who accompanied during the field survey.

h. Connection between JICA reservoir and user

GoCV commented about the demarcation of the connection between JICA reservoirs and users.

JICA replied that GoCV was responsible for the connection between JICA reservoirs and users.

4. Future Activities

JICA asked the followings to GoCV, and GoCV basically agreed;

- a. GoCV will make comments on the Draft Final Report by 10<sup>th</sup> December in English writing.
- b. According to the survey, GoCV will prepare to establish the appropriate O&M plan and organization.
- c. According to the survey, GoCV will prepare the appropriate financial management plan.
- d. GoCV will host the next (6<sup>th</sup>) Steering Committee next March or April.

GoCV commented that Task force team to conduct further considerations will be established, and officers of water related institutions will be assigned.

(End)

ANNEX-1: 5th Steering Committee Presentation

ANNEX-2: Attendants List of 5<sup>th</sup> Steering Committee

**5<sup>th</sup> Steering Committee  
on  
Water Supply System  
Development Project in Santiago, Cape Verde  
(JICA-II Project)**

**November 23, 2010 at Praia**



**Toyo Engineering Corporation  
UNICO International Corporation  
Ingérosec Corporation**

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**Contents**

- 1. Introduction**
- 2. Brief Review of Water Supply System**
- 3. CAPEX-OPEX Estimation**
- 4. Project Economics Study**
- 5. Operation and Maintenance**
- 6. Approach to Japan's ODA**
- 7. Conclusion**

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# 1-1 Implementation Schedule of JICA Study

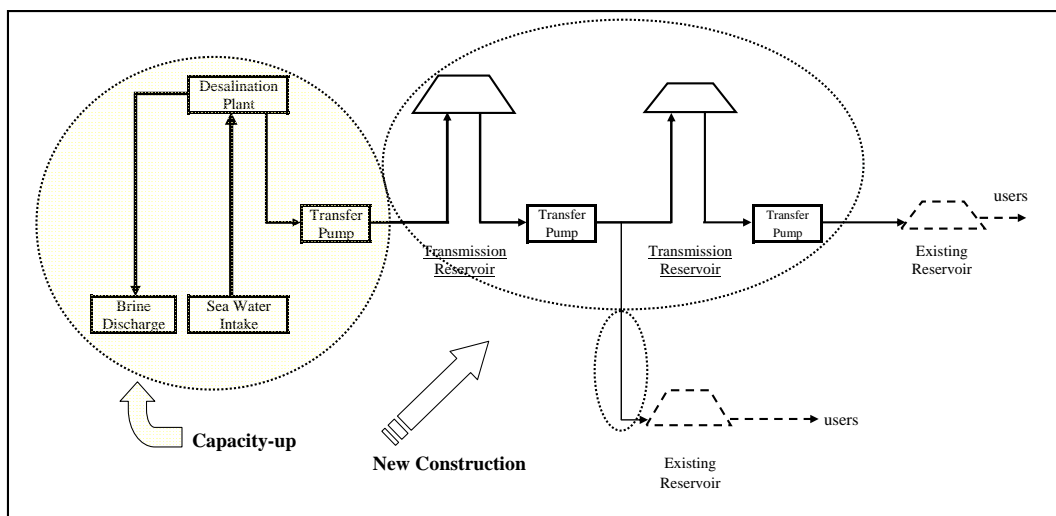
Year	2009			2010									2011					
	Phase 1			Phase 2														
Month	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Field Work	1st			2nd				3rd			4th			5th				
Submission of JICA Report	▲					▲				▲			▲		▲			
Steering Committee				1st				2nd	3rd		4th			5th				
Local Consultant	Socio Economica Analysis						water analysis			geological survey								
Phase 1	To analyze the project conditions																	
	To set the project scope, sites and components																	
Phase 2	To define Water Supply System as FS subject																	
	To conduct Conceptual Design with CAPEX/OPEX																	
	To conduct IEE																	
To develop Financing Plan and conduct Economical Analysis																		

**IC/R: Inception Report**  
**PR/R: Progress Report**  
**IT/R: Interim Report**  
**DF/R: Draft Final Report**  
**F/R: Final Report**



*We are here.*

# 1-2 Outline of F/S Project



**Water Supply Project**  
**F/S Project by JICA** | **others by GoCV**

**incl. Desalinations, Transmission Lines and Reservoirs**

**incl. Distribution and House-connection**



# 1-3 Each Report Topics

09/2009

**IC/R**

- KOM
- Methodology
- Approach
- Field Survey

03/2010

**PR/R**

- Horizon in 2020
- System Planning
- Socio Analysis
- donor projects
- 3 candidates

08/2010

**IT/R**

- Basic Planning
- GW Utilization
- Boron content
- Water Analysis
- Soil Investigation
- Technical Specification

11/2010

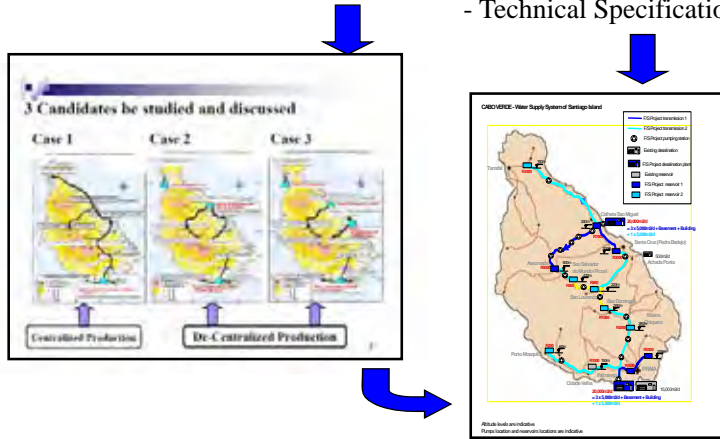
**DF/R**

- Cost Estimation
- Economics
- Funding
- O&M
- ODA loan

12/2010

**F/R**

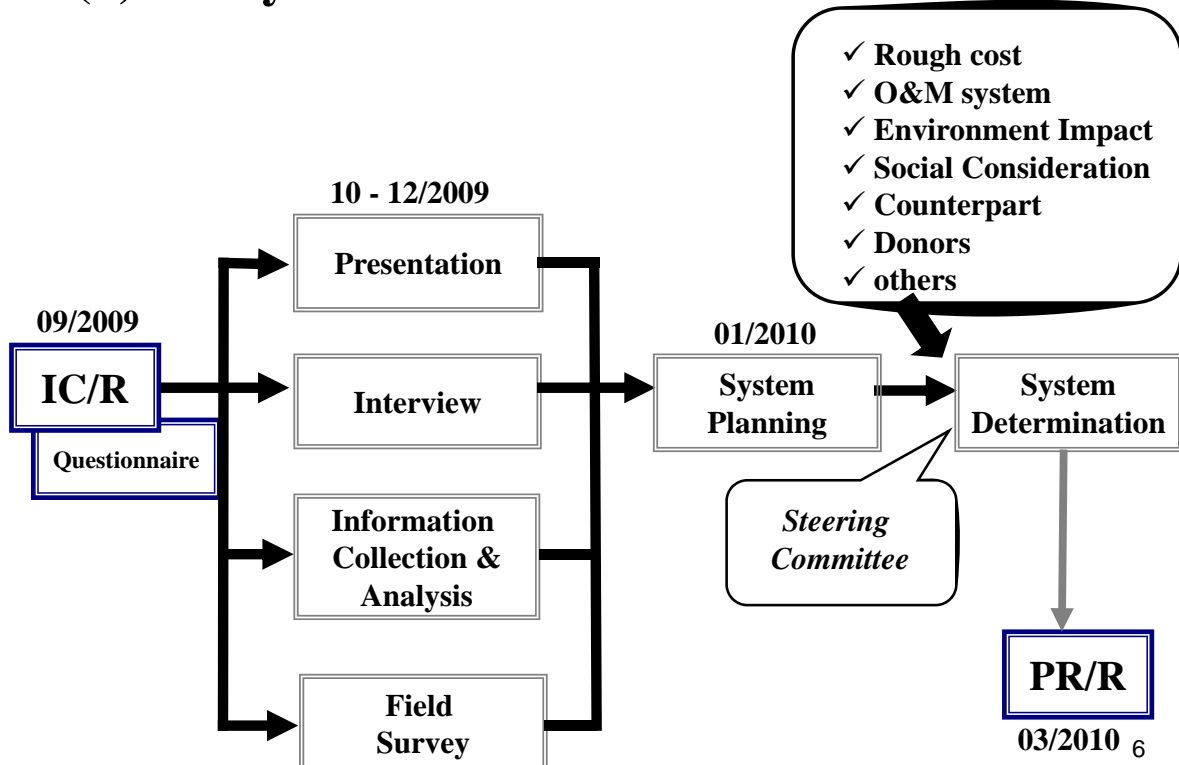
- *comments*
- *modification*
- *correction*
- *finalized*



5

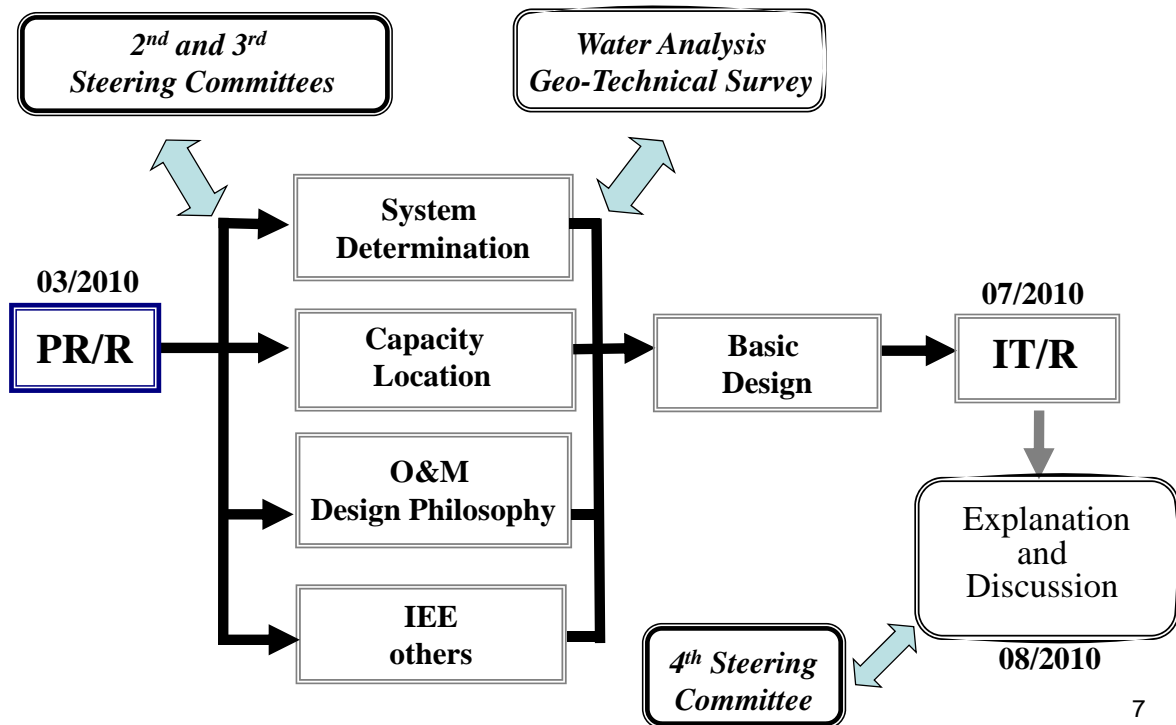
## 1-3 (1) Study Flow from IC/R to PR/R

01 - 02/2010



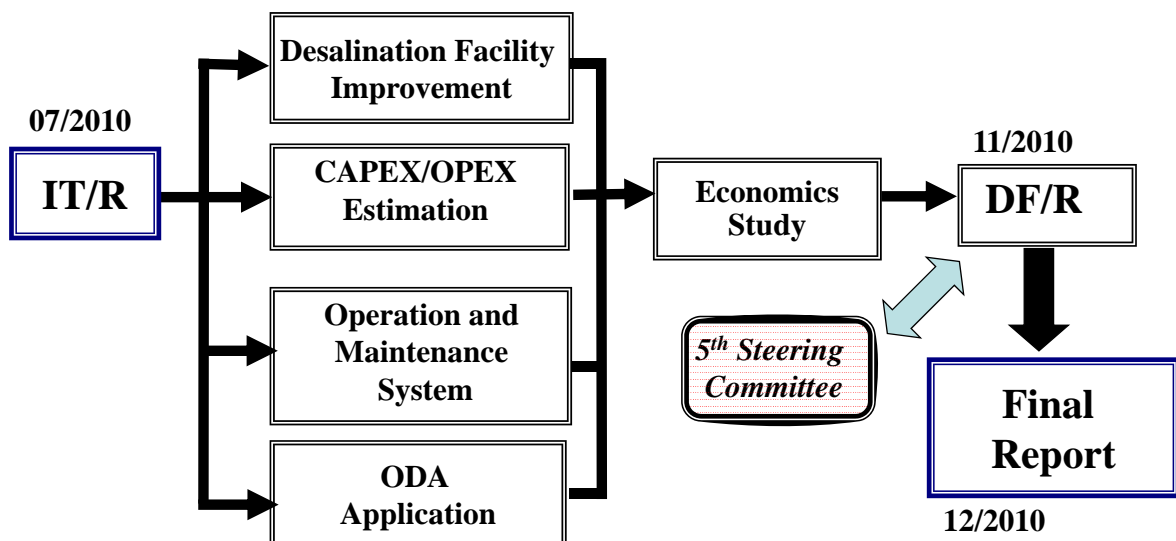
03/2010 6

### 1-3 (2) Study Flow from PR/R to IT/R



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### 1-3 (3) Study Flow from IR/R to DF/R



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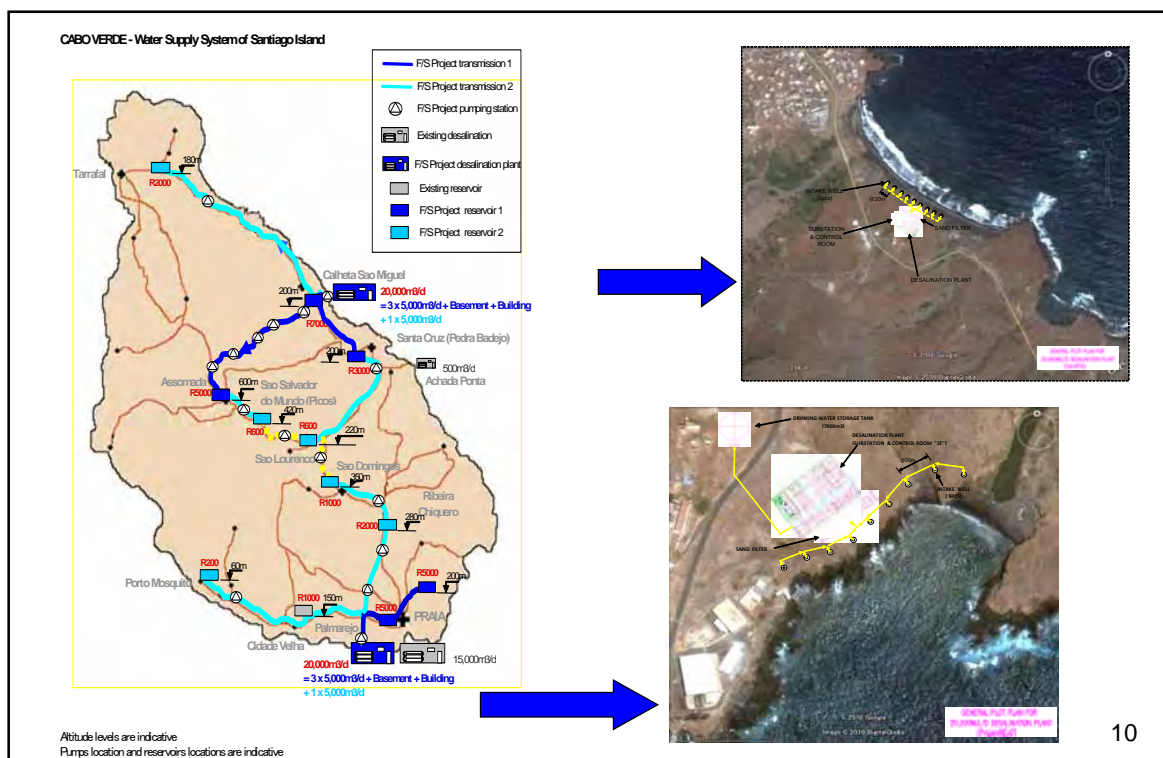
## 2.1 Capacity of Water Supply System

- Drinking water demand in 2020: 56,229m<sup>3</sup>/day (round 55,000m<sup>3</sup>/day)
- Existing Desalination Capacity in 2010: 5,000m<sup>3</sup>/day, in Praia
- Firmly Planned expansion plant: 5,000m<sup>3</sup>/day by Spain in Praia
- Firmly Planned plant: 5,000m<sup>3</sup>/day by WB in Praia
- Additional Capacity for whole demand: 40,000m<sup>3</sup>/day in island  
(= 55,000 - 5,000 x 3units)

➡ Additional water production capacity of JICA F/S Project, Desalination Capacity is set as 40,000m<sup>3</sup>/day.

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## 2-2 Sea Water Desalination Facility, *General Layout*



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## 2-3 Sea Water Desalination Facility, *improvement*

To improve the performance, Energy Recovery Device (ERD) was studied to utilize high pressure brine water from RO unit as below:

### Outline of Qualitative Comparison of Energy Recovery Device

Type	Turbine-based Centrifugal Energy Recovery Device		Isobaric Energy Recover Device	
	Turbo Charger	Pelton Turbine	PX (*1)	DWEER (*2)
Energy Recovery	50-65%	40-60%	Approx. 95%	Approx. 95%
Application	For smaller plant	For larger plant	Applicable to larger plant by multi-train	Applicable to larger plant
Experiences	Many	Many	Lately developed, increasing experiences	Lately developed, increasing experiences

(\*1) PX: Pressure Exchange

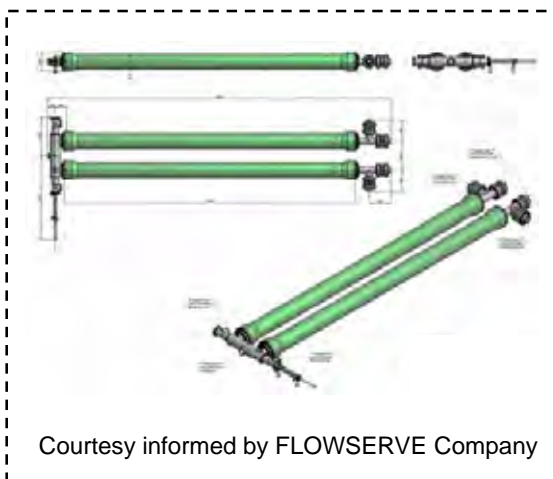
(\*2) DWEER: Dual Work Energy Exchanger

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DWEER ERD type was applied from technical and commercial views.

After DWEER ERD type application, Power Consumption of whole desalination plant was improved to be from **6.5 to 4.7kWh/m<sup>3</sup>** of desalinated water.

Preliminary drawing is shown as below for reference only.

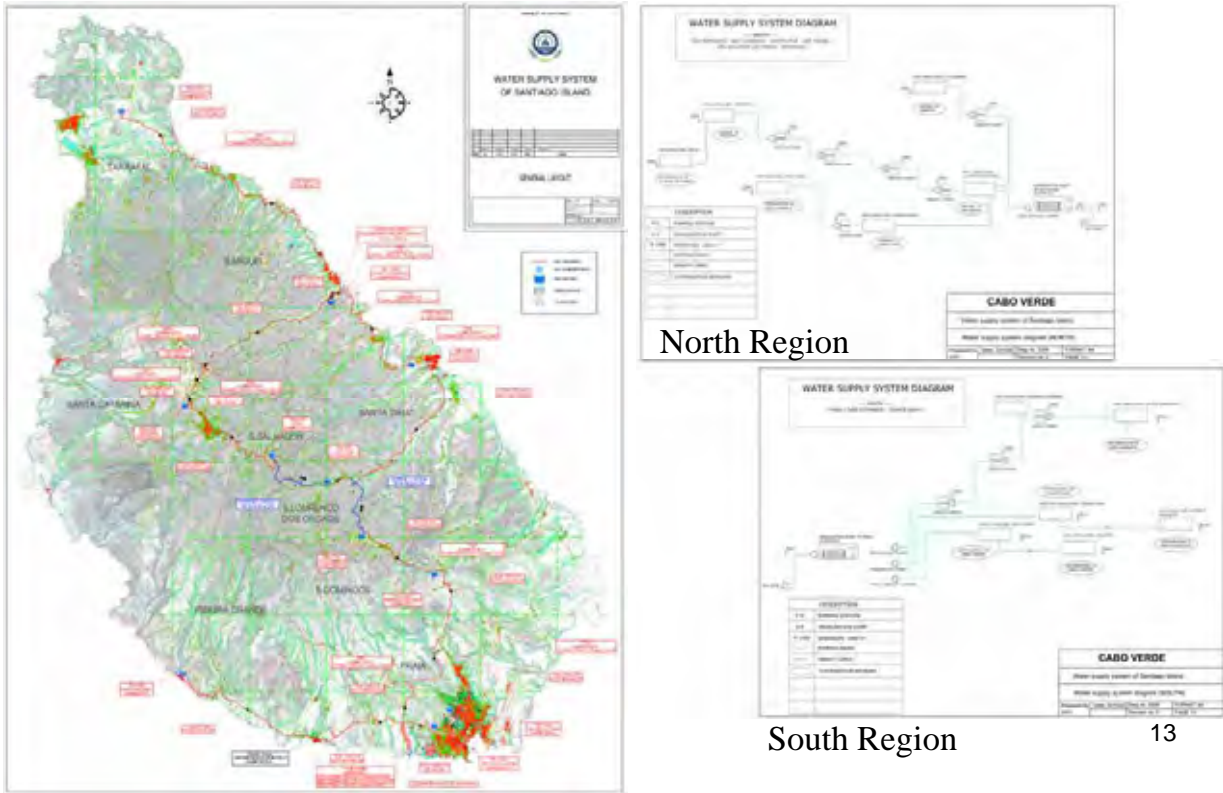


**Note: Current Operation in Palmarejo**

Capacity <i>m<sup>3</sup>/day</i>	ERD Type	Power <i>kW/m<sup>3</sup></i>
5,000	Centrifugal	4.27
1,200	Pressure Exchange	2.60

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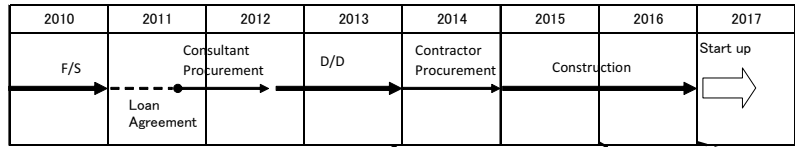
# 2-4 Water Transmission Facility, on Santiago island



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# 2-5 Implementation Planning

- No critical issue of the construction of the system is found.
- Due to the long transmission line construction, plural construction teams would be organized for the effective and reasonable planning.



DESCRIPTION	YEAR	2010 2011 2012 2013 2014 2015 2016 2017																																			
		Year 1												Year 2												Year 3											
		Calendar Mth	1	2	3	4	5	6	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	10	11
<b>GENERAL SCHEDULE</b>	Construction Team No.	Contractor Procurement												Construction																							
<b>North Area</b>																																					
N1 Desalination Facility Construction and Installation																																					
N2 Desalination Facility Installation	2 teams																																				
Water Transition Facility Construction	3 teams																																				
Commissioning																																					
<b>South Area</b>																																					
S1 Desalination Facility Construction and Installation																																					
S2 Desalination Facility Installation	1 team																																				
Water Transition Facility Construction	1 team																																				
Commissioning																																					

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## **3 CAPEX and OPEX Estimation *in-house basis***

### **3-1 (1) CAPEX Estimation of Sea Water Desalination Facility**

- 1) Itemized equipment: Short specification basis, except 1st Stage Booster Pump and Energy Recovery Device
- 2) Bulk material: Similar facility ratio basis with Flow Sheet and layout
- 3) Civil and erection: Local vendor hearing similar facility basis with equipment list, Flow Sheet and layout
- 4) Instrumentation: Similar facility ratio basis with I/O numbers
- 5) Electrical work: Similar facility ratio basis with single line diagram, motor list and layout

### **3-1 (2) CAPEX Estimation of Water Transmission Facility**

- 1) Pipe sections: Short specification basis of size, length and material
- 2) Pumping stations: Short specification basis of capacity and head
- 3) Reservoirs: Short specification basis of size and material

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## **3 CAPEX and OPEX Estimation *in-house basis***

### **3-2 OPEX Estimation of System**

OPEX was estimated based on the design and current commercial information.  
OPEX consists of Variable Cost and Fixed Cost.

Variable Cost includes

- Utility Cost (Electricity)
- Membrane replacement
- Cartridge filter replacement
- Chemical cost for Sodium hypochlorite, Hydrochloric acid, Sodium bisulphite, Caustic soda, Calcium chloride and Sodium carbonate

Fixed Cost includes

- Personnel Cost
- Maintenance Cost
- Sales Expense and General Affair Cost

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# 4 Project Economics Study

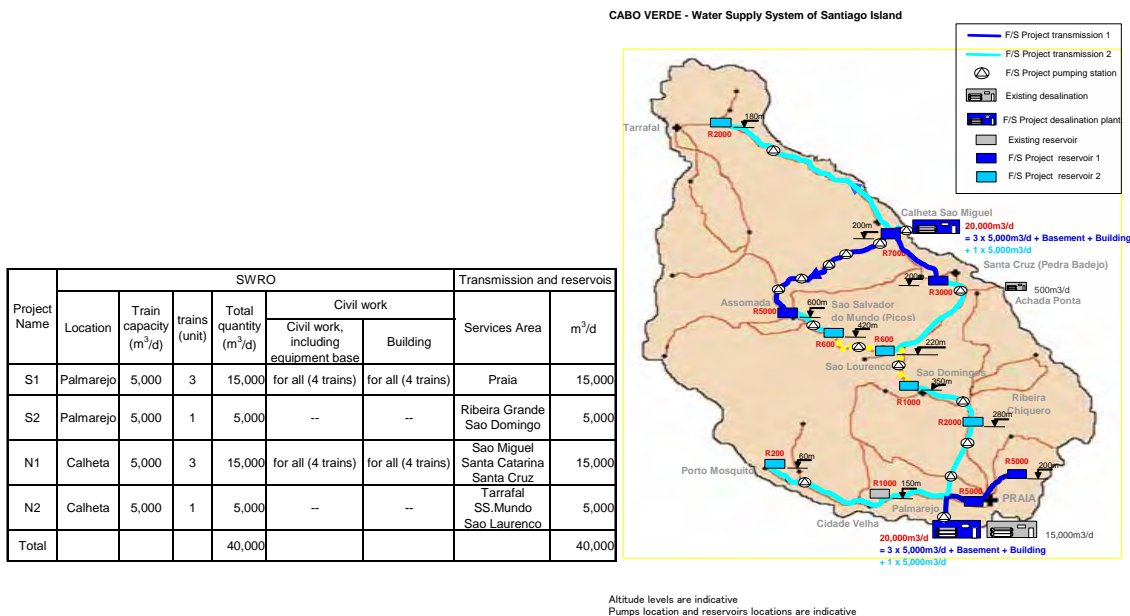
## (1) Presuppositions

- Case “S1”, “S2”, “N1” and “N2” are studied ... ref 4 (2)
- Production capacity, in “S1” case ... ref 4 (5)
  - Production: 15,000m<sup>3</sup>/d, with 365days/year operation
  - Sales : around 85% (13,500m<sup>3</sup>/d) of production
- Project period
  - Construction : 2 years for EPC, including trial run
  - Project life for Economics analysis : 20 years
- Financial condition
  - Loan: 85% of F/S cost, 25years Yen loan from Japanese Government with 7 years exemption, 1.4% p.a. interest, remained part paid by equity.
  - Investment 60% at 1<sup>st</sup> year, 40% at 2<sup>nd</sup> year
- Project cost: as per slide ... ref 4 (3) & (4)
- Tariff: 5.0USD/m<sup>3</sup> (395CVE/m<sup>3</sup>) in 2020, in base case ... ref 4 (5)
- Depreciation
  - Manner of depreciation : Straight-line method, with Zero salvage value
  - Service life : 20 years, for Economics study
- Unit cost for study
  - Electricity cost: 21CVE/kWh (= 0.265US\$/kWh), based on ELECTRA tariff
  - Labor cost: 10,000 US\$/person/year including overhead
  - Maintenance cost including membrane, chemical are considered accordingly

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# 4 Project Economics Study

## (2) Project Scope Case



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# 4 Project Economics Study

## (3) FS Project Cost

Project Name	Service area	Project cost				
		(E) PC, Desalination	(E) PC, Transmission & Reservoir	(E) PC, Total	Other Project cost (Land, EIA, Consultant, Contingency, Training on desalination technology, etc) 30 % of (E) PC total cost	F/S Project Cost
		(million \$)	(million \$)	(million \$)	(million \$)	(million \$)
S1	Praia	36.3	8.5	44.8	13.4	58.2
S2	Ribeira Grande Sao Domingos	5.5	10.6	16.1	4.8	20.9
S1+S2		41.8	19.1	60.9	18.2	79.1
N1	Sao Miguel Santa Catarina Santa Cruz	31.3	20.8	52.1	15.6	67.7
N2	Tarrafal SS Mundo Sao Laurenco	5.5	16.0	21.5	6.5	28.0
N1+N2		36.8	36.8	73.6	22.1	95.7
Total		78.6	55.9	134.5	40.3	174.8

note: "EPC" stands for "Engineering, Procurement, Construction"

Project cost is calculated by adding project implementation cost in future such as consultant fee, land acquisition fee, detail design fee etc. From in-house data, 30% of PC cost is added.

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# 4 Project Economics Study

## (4) Project Cost including GoCV cost

This cost is applied for CAPEX calculation

Project name		F/S Project =SWRO+Transmission+Other cost	by GoCV (Other than F/S project)				Total cost	Production capacity		
			SWRO (*note)	Transmission pipe (in the past)	Distribution pipe (in future)	Sub Total		F/S Project	by other fund (*note)	Total Production
			million \$	million \$	million \$	million \$		million \$	m <sup>3</sup> /d	m <sup>3</sup> /d
Name	Service Area									
by Others	Praia	-	23	5	-	28	28	-	15,000	15,000
S1	Praia	58	-	-	10	10	68	15,000	-	15,000
S2	Ribeira Grande Sao Domingo	21	-	-	4	4	25	5,000	-	5,000
N1	Sao Miguel Santa Catarina Santa Cruz	68	-	-	6	6	74	15,000	-	15,000
N2	Tarrafal SS.Mundo Sao Laurenco	28	-	-	3	3	31	5,000	-	5,000
F/S Project total		175	-	-	23	23	198	40,000	-	40,000
Total		175	23	5	23	51	226	40,000	15,000	55,000

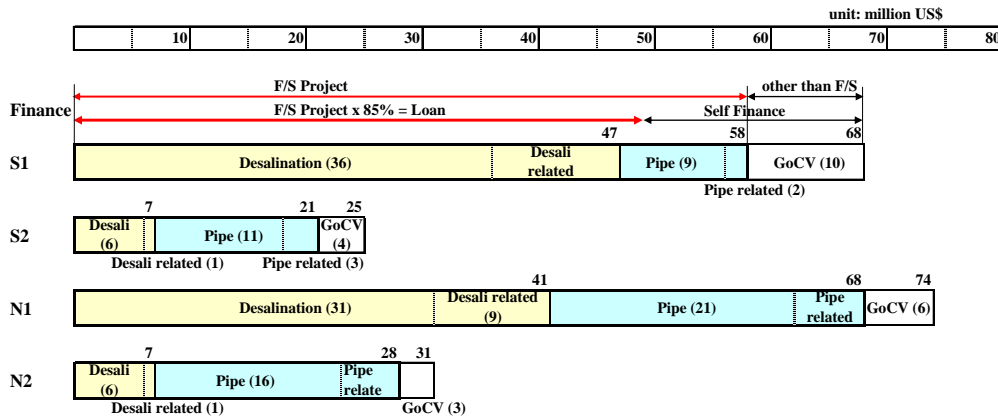
(\*note) The SWRO cost by others includes existing 5,000m<sup>3</sup>/d, and additional new 2 units of 5,000m<sup>3</sup>/d SWRO.  
Data base : Interview result from GoCV etc.

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# 4 Project Economics Study

## (4)' Project Cost distribution



Note:

Desali : Seawater desalination plant

Pipe : Transmission pipe and reservoir

Desali related : Cost for additional development for desalination plant such as Land, EIA, Consultant for D/D, Training etc.

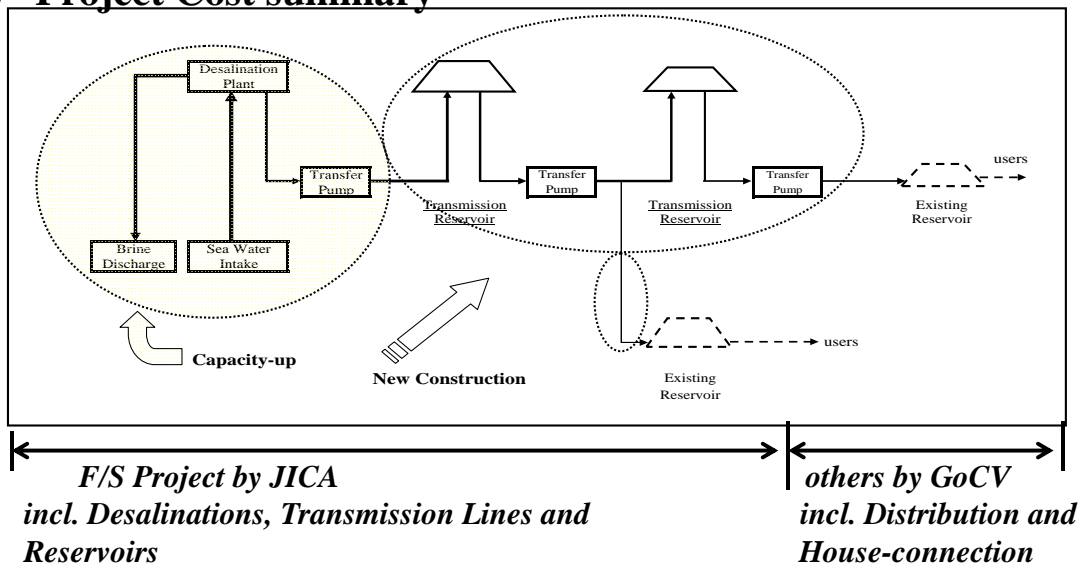
Pipe related : Cost for additional development for transmission pipe and reservoir such as Land, EIA, Consultant for D/D, Training, etc.

GoCV : Cost, prepared by Government of Cape Verde

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# 4 Project Economics Study

## (4)'' Project Cost summary



➔ **US\$ 175 Million (JICA) + 23 Million (GoCV) = 198 Million US\$**  
**CVE 13.8 Billion (JICA) + 1.8 Billion (GoCV) = 15.6 Billion CVE**  
 as of 79.1 CVE/US\$

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# 4 Project Economics Study

## (5) Current Sales Price (Tariff)

Area		South					North								Total	
Project name	S1	S2			South total	N1				N2				North total		
Municipality	Praia	Ribeira Grande	Sao Domingos	Average		Sao Miguel	Santa Catarina	Santa Cruz	Average	Tarrafal	SS do Mundo	Sao Lourenco	Average			
Tariff in 2008, consumption range of 6m3/month	CVE/m3	333	354	280	309	331	280	120	280	198	134	310	150	175	192	279
	US\$/m3	4.2	4.5	3.5	3.9	4.2	3.5	1.5	3.5	2.5	1.7	3.9	1.9	2.2	2.4	3.5
Sales quantity in 2020 (m3/d)	Normal	26,987	1,033	1,600		29,620	2,266	6,490	3,987		3,015	1,098	1,015		17,871	47,491
	Peak	237	10	10		257	10	49	20		20	0	0		99	356
	Total	27,224	1,043	1,610		29,877	2,276	6,539	4,007		3,035	1,098	1,015		17,970	47,847
	Round Figure	13,500	3,000			(30,000)	13,000				5,000				(18,000)	34,500
	by Others	13,500														

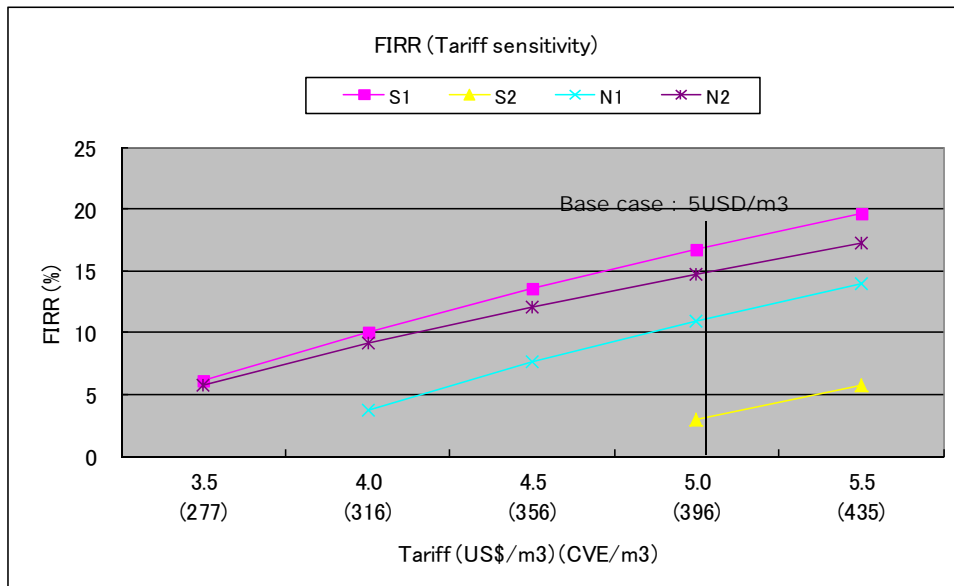
USD 1 = 79.1 CVE  
 Praia area 333 CVE/m3 = 4.2 USD/m3  
 Other Praia 207 CVE/m3 = 2.6 USD/m3

Data source: Electra for Praia, and SAAS for other municipality than Praia

Average tariff in other area than Praia is 207 CVE/m3. According to Social survey in 2009 by JICA study team, these area may accept tariff increase up to 200-350 CVE/m3 (= 1.7 times max). Therefore 1.4 times of average tariff of 279 CVE/m3 (= 3.5 US\$/m3) (= 5US\$/m) is set as base case in 2020.

# 4 Project Economics Study

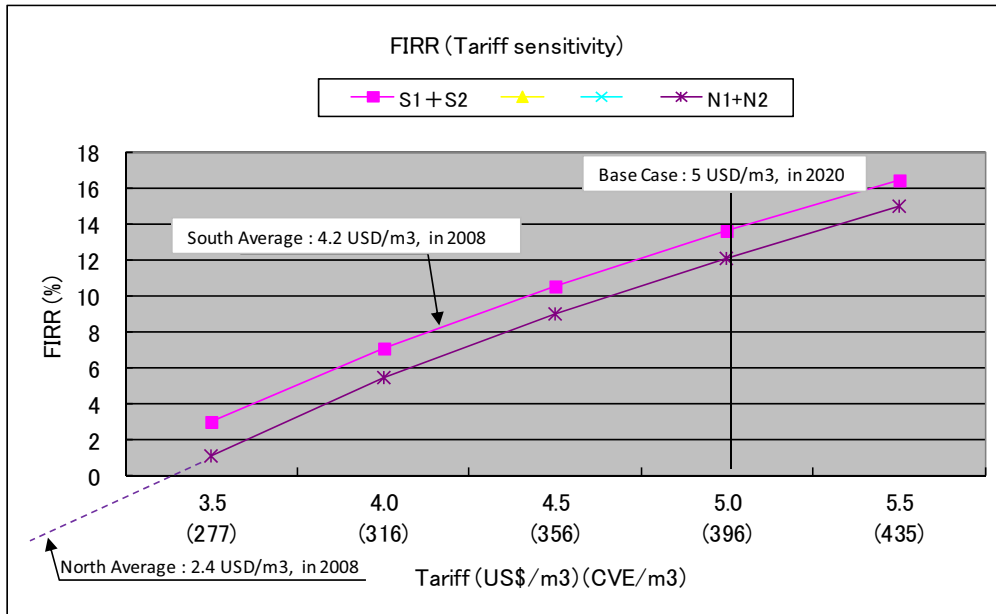
## (6) Calculation Result F-IRR



5 US\$/m3 is enough feasibility in all cases.

# 4 Project Economics Study

## (6) Calculation Result F-IRR -continued-



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# 4 Project Economics Study

## (7) Operation Cost

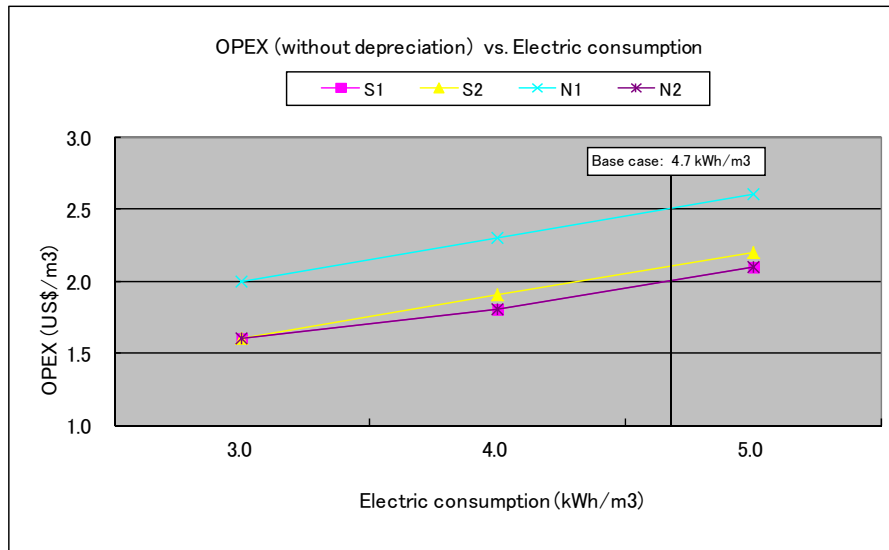
Project Name	Production capacity m3/day	Production						Sales, Admin	Total		Average Tariff, in 2008
		Electricity US\$/year	RO membrane US\$/year	Cartridge filter US\$/year	Chemical US\$/year	Manpower US\$/year	Maintenannce material etc US\$/year	Sales expense US\$/year	US\$/year	USD/m3	CVE/m3 (US\$/m3)
S1	15,000	9,400,000	320,000	60,000	150,000	260,000	400,000	500,000	11,090,000	2.0	333 (4.2)
S2	5,000	3,100,000	110,000	20,000	50,000	20,000	350,000	100,000	3,750,000	2.1	309 (3.9)
S1+S2	20,000	12,500,000	430,000	80,000	200,000	280,000	750,000	600,000	14,840,000	2.0	331 (4.2)
N1	15,000	11,500,000	320,000	60,000	150,000	280,000	800,000	470,000	13,580,000	2.5	198 (2.5)
N2	5,000	2,800,000	110,000	20,000	50,000	20,000	500,000	180,000	3,680,000	2.0	175 (2.2)
N1+N2	20,000	14,300,000	430,000	80,000	200,000	300,000	1,300,000	650,000	17,260,000	2.4	192 (2.4)
Total	40,000	26,800,000	860,000	160,000	400,000	580,000	2,050,000	1,250,000	32,100,000	2.2	279 (3.5)

Note : Other cost than above items, such as depreciation, interest, tax etc is not included.

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# 4 Project Economics Study

## (8) Operation Cost vs. Power Consumption



*Note: 1 kWh/m<sup>3</sup> consumption influences around 0.3US\$/m<sup>3</sup> production cost.*

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## 5. Operation and Maintenance Planning

There is no organization which comprehensively manages and supervises waterworks and O&M at whole island level.

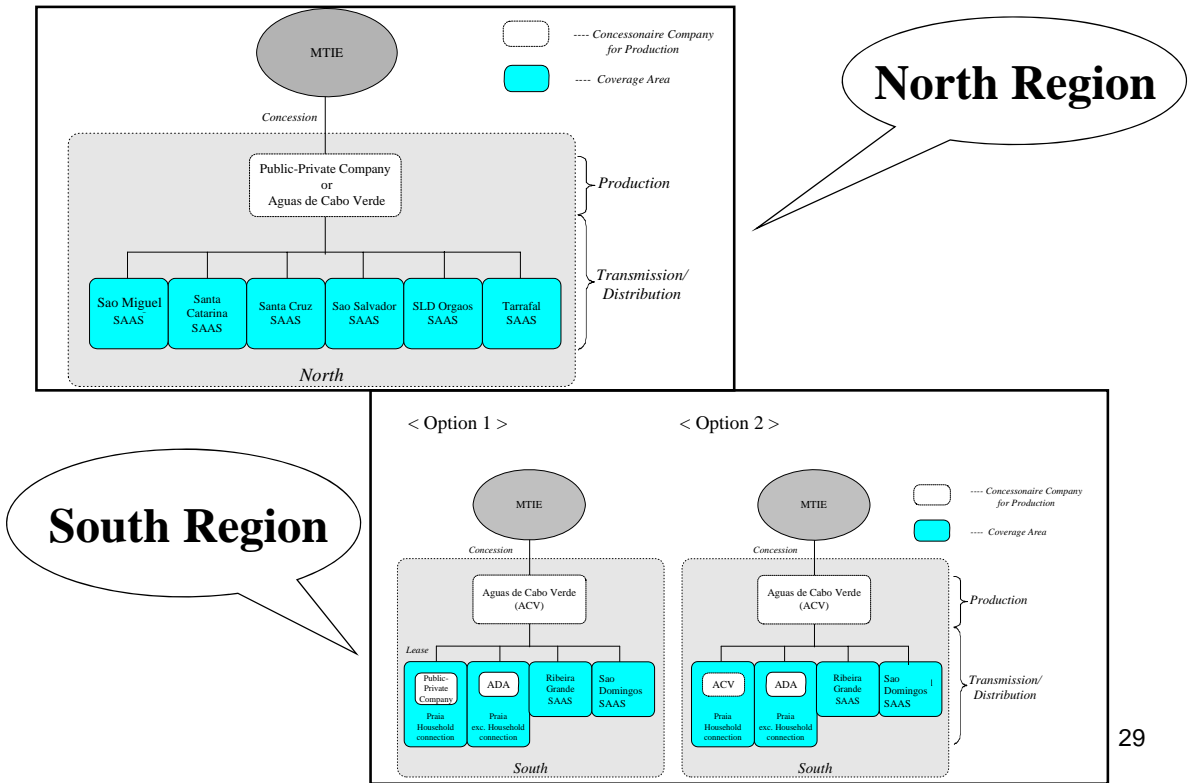
Considering the current waterworks situation and the project nature, the O&M systems in the transition period and in the future are recommended.

In the transition period, two water supply systems will be established in the south and the north in the island. The desalinated water produced by 2 desalination facilities in the southern and the northern regions will be transmitted and distributed to target municipalities.

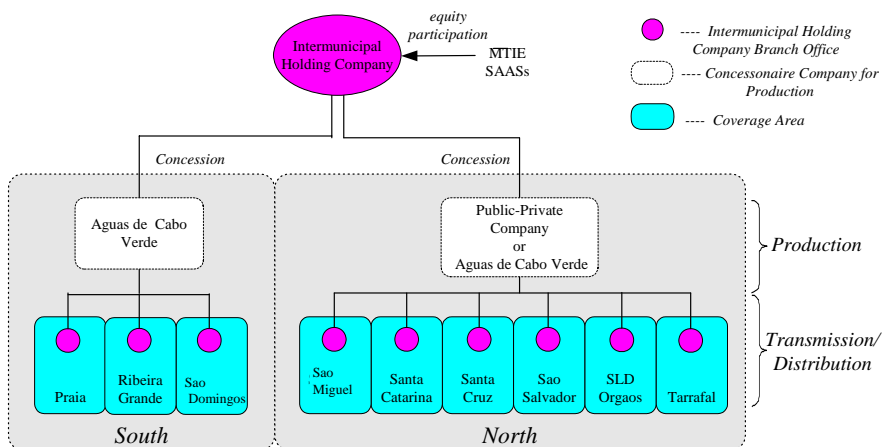
As a future scenario, establishing an inter-municipal public holding company will manage and supervise the water supply system comprehensively in southern and northern regions.

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# 5-1 O&M Planning in Transition Period



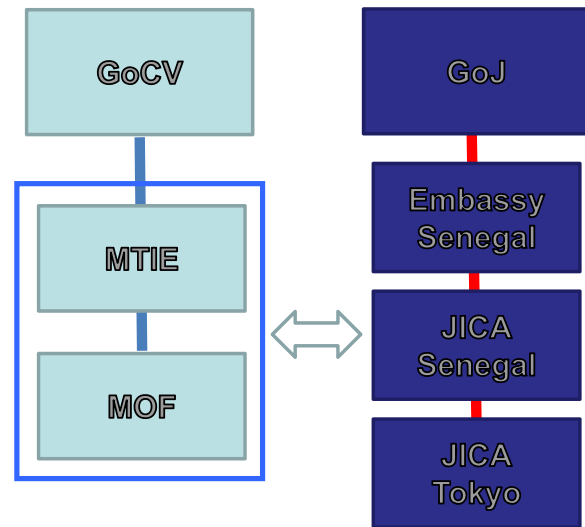
# 5-2 O&M Planning in Future



Region	Ownership/ Role	Production	Transmission	Distribution
North	Property ownership	Public-Private Company (SPC)	State	Municipality
	O&M	Public-Private Company (SPC)	Inter-municipal Public Holding Company	Inter-municipal Public Holding Company
South	Property ownership	Aguas de Cabo Verde	State	Municipality
	O&M	Aguas de Cabo Verde	Inter-municipal Public Holding Company	Inter-municipal Public Holding Company

## 6-1 Approach to Japan's ODA loan

- **Type of Applicable Loan:**
  - “the Project loan”
- **Terms and Conditions of Loans:**
  - Interest Rates and Repayment Periods to be determined by the Government of Japan (GoJ)
  - Special Terms for Economic Partnership (STEP) is very interesting loan with Japan-Tied condition



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## 6-2 Sequence of Procedures (1/2)

### (1) Project Identification by GoCV

The result of Survey consists of several potential elements of the project.

GoCV shall make an official decision for Project identification.

### (2) Request submission by GoCV

After the approval of the JICA feasibility study,

GoCV will issues the request for Japan's ODA loan to be submitted through the Japanese Embassy in Senegal to GoJ.

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## 6-2 Sequence of Procedures (2/2)

### (3) Appraisal Mission by JICA

**JICA's Appraisal Mission will be dispatched to Cape Verde.**



**After the Appraisal Mission, the GoJ will make decision and determination of loan amount and its terms of conditions.**



**After Prior Notification issued by the GoJ, Exchange of Notes and Loan Agreement will be concluded.**

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## 7. Conclusion

- (1) Horizon of Drinking Water Demand in 2020 is set, and F/S Project of 40,000m<sup>3</sup>/day Sea Water Desalination Facility and its Drinking Water Transmission Facility is planned.
- (2) Water Supply System Project is Technically, Environmentally and Financially feasible in Northern, Southern and entire island.
- (3) JICA recommends that the following way forward should be conducted by the Government of Cape Verde;
  - 1) to review (Draft) Final Report
  - 2) to discuss Financing and Funding in consideration of Japan's ODA
  - 3) to initiate Environmental Impact Assessment
  - 4) to discuss and select Project priority

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## 添付資料 2

### **List of Received Document**

**(Development, Institutions, Environment)**



LIST OF DOCUMENT: PART A, DOCUMENTS RELATED TO DEVELOPMENT PLAN

No.	TITLE OF DOCUMENT	TYPE		CONTENTS	
PHASE I	A1	Perfil de Pobreza em Cabo Verde (2001-2002, Instituto nacional de Estatistica/World Bank	<input type="checkbox"/> COPY <input checked="" type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Study report on Poverty Ratio Profile.
	A2	Condicoes de Vida dos Agregados familiares (2001-2002, Instituto nacional de Estatistica/World Bank	<input type="checkbox"/> COPY <input checked="" type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Socioeconomically study on the livelyfood of the families.
	A3	Caracteristicas Socio-Demograficas (2001-2002, Instituto nacional de Estatistica/World Bank	<input type="checkbox"/> COPY <input checked="" type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Socioeconomically study on the livelyfood of the families.
	A4	Rapport Final de l'Etude de faisabilite de l'Amelioration de l'Alimentation en Eau et de l'assainissement de la Commune de Santa Catarina (2009, Agence Francaise de Developpement:AFD)	<input type="checkbox"/> COPY <input checked="" type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	F/S on the water supply and swerage development project in the municipality of Santa Catarina/Assomada.
	A5	Plan de situation - Eau potable - Calheta	<input checked="" type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Location map of deep wells and reservoirs in the municipality of Sao Miguel
	A6	Memorandum do Atelier de Reflexao Sobre a Intermunicipalidade dos Servicos de Agua e Saneamento na Ilha de Santiago (September 2009, Agence Francaise de Developpement:AFD)	<input checked="" type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Minutes of Workshop among Municipalities' SAASs in the Santiago island.
	A7	Unidade de desalinizacao e Aducao de Agua (2009, Municipality of Sao Domingos)	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Project summary report on new desalination plant in the municipality of Sao Domingos financed by Lux-Development.
A8	Estatisticas E Projeccoes Do Turismo Em Cabo Verde	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Statistics about tourism until 2008	
A9	Plano Estrategico Para O Desenvolvimento Do Turismo Em Cabo Verde	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Development plan of tourism for 2010-2013	
A10	Estimativa orçamental	<input type="checkbox"/> COPY <input checked="" type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Unit prices relative to power related works	
A11	Lista de furos realizados no Municipio / Resarvatorios de stockagem de agua existentes no Municipio	<input type="checkbox"/> COPY <input checked="" type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	List of wells and reservoirs in the municipality of Picos (San Salvador de Mundo)	
A12	no title	<input type="checkbox"/> COPY <input checked="" type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	List of reservoirs in municipality of Pedro Badejo (Santa Cruz)	
A13	no title	<input type="checkbox"/> COPY <input checked="" type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	List of reservoirs in municipality of Tarrafal	

PHASE II	A14	Relacao Dos Reservatorios Para Agua Potavel Em Funcionamento	<input type="checkbox"/> COPY <input checked="" type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	List of reservoirs in Municipality of Sao Lourenco dos Orgaos
	A15	No title	<input type="checkbox"/> COPY <input checked="" type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Drawings of Sao Domingos existing water facilities
	A16	COMUNICAR	<input type="checkbox"/> COPY <input checked="" type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	News about Health Administration
	A17	No title	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Topographic maps of Santiago
	A18	No title	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Planimetric maps of Santiago
	A19	No title	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Geologic map of Santiago
	A20	The study for groundwater development for Santiago Island	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Study for groundwater development for Santiago Island
	A21	No title	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Distribution network of ELECTRA for S.Filipe, S.Vicente, Achadinha, Grande Tras, Lem Ferreira, Terra Branca, Bela Vista, Eugenio Li;a, Pensa;ento, Ribeirinha, Areia Branca, Lombo Veneno
	A22	Gabinete de Qualidade e Ambiente	<input type="checkbox"/> COPY <input checked="" type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Water quality at ELECTRA desalination plant of Palmarejo
	A23	Lista furos (INGRH)	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	List of wells in Santiago with results of water quality analysis
	A24	Onde Estamos?	<input type="checkbox"/> COPY <input checked="" type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Touristic facilities in Cape Verde
	A25	RELECAO de reservatorios publicos de abastecimento de agua potavel no concelho de sao miguel	<input type="checkbox"/> COPY <input checked="" type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	List of water related infrastructures of Sao Miguel
	A26	PAGIRH	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	National Action Plan for Integrated Water Resources Management: definition of water resources related policy in Cape Verde.

LIST OF DOCUMENT: PART B, DOCUMENTS RELATED TO INSTITUTIONS

No.	TITLE OF DOCUMENT	TYPE		CONTENTS	
PHASE I	B1	Relatorio de actividades e conta de 2008 (Camara Municipal do Tarrafal)	<input checked="" type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Annual report 2008 and tariff chart of the SAAS in the municipality of Tarrafal
	B2	Relatorio de Sintese das actividades Realizadas no de 2008 (Camara Municipal de Sao Lourenco dos Orgaos	<input checked="" type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Annual report 2008 of the SAAS in the municipality of Sao Lourenco dos Orgaos.
	B3	Relatorio de actividades Referente ao Ano de 2003, 2004, 2005, 2006, 2007, 2008 (Camara Municipal de Santa Cruz)	<input checked="" type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Annual report from 2003 to 2008 of the SAAS in the municipality of Santa Cruz
	B4	Decreto-Lei No.36/2008	<input checked="" type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Decree on concession, project, construction, financment, exploration, infrastructure and equipments of desalination plant of sea water in the municipalities in the Santiago island.
	B5	Decreto-Lei No.75/1999	<input checked="" type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Decree on legal licence for concession of utilization of natural resources.
	B6	Contrato general de Concessao de Transporte e Distribuicao de Energia Electrica e Agua e de Recolha e Tratamanto de Aguas Residuais para Reutilizasac	<input checked="" type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Concession contract between GoCV and ELECTRA on Electricity and Water Transmission and Distribution. General.
	B7	Decreto-Lei No.115/V/2007	<input checked="" type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Authorization by GoCV for water related laws.
PHASE II	B8	Relatorio Estatistico 2008	<input type="checkbox"/> COPY <input checked="" type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Statistics about Health sector in Cape Verde, of the Ministry of Health of Cape Verde
	B9	ELECTRA Annual Report	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Annual Report of the power and desalination water producer and distributor from 2005 to 2008
	B10	Boletim Oficial	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Base of concession and agreement for independant water producer between Cape Verde governement and LACHESI company (CAIS)
	B11	Instrucao 02/2008	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Notice on the modalities of Agua de Porto Novo, office of water management
	B12	Contrato especifico de Concessao de Transporte e Distribuicao de Energia Electrica e Agua e de Recolha e Tratamanto de Aguas Residuais para Reutilizasac	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Concession contract between GoCV and ELECTRA on Electricity and Water Transmission and Distribution. Specific.
	B13	Boletim Oficial	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Law establishing the INGRH organisation.
	B14	SAAS Santa Catarina - Relatorio 2009	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Annual Report 2009 and management documents about the Water Service of Santa Catarina

B15	SAAS Santa Cruz - Relatorio 2005-2009	<input type="checkbox"/> COPY <input checked="" type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Annual Reports 2005-2009 and managements documents about the Water Service of Santa Cruz
B16	SAAS San Miguel - Relatorio 2008	<input type="checkbox"/> COPY <input checked="" type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Annual Report 2008 of the Water Service of San Miguel
B17	Convention de Financement entre l'Union Européenne et Cap Vert	<input type="checkbox"/> COPY <input checked="" type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	European Union Financing Agreement for Cape Verde

LIST OF DOCUMENT: PART C, DOCUMENTS RELATED TO ENVIRONMENT

No.	TITLE OF DOCUMENT	TYPE		CONTENTS	
PHASE I	C1	Environmental Assessment of Energy, Water and Sanitation Project (1998, World Bank)	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	The main components of the project are rehabilitation and extension of water supply and sanitation systems in Praia and main urban centres (Assomada and Mindelo) plus institutional strengthening and support to SEMAP and INGRH.
	C2	Assessment of Environmental Impact of the Project “Santiago Integrated Energy Project” (2006, Direction General of Environment/AfDB)	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	The Project envisages the extension of the Palmarejo Thermal Power Plant, the construction of sub-stations, as well as of the transmission and distribution lines
	C3	Boa Vista Wind Farm Project (2008, EXECUTIVE SUMMARY)	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Boa Vista Vigia wind farm project which has an installed capacity of 4MW and is located on the northwestern tip of the island.
	C4	ESTUDO DE IMPACTE AMBIENTAL BARRAGEM DE POILÃO (2005, MINISTERIO DO AMBIENTE, AGRICULTURA E PESCAS)	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Environment assessment on the Poilao Dam construction project financed by china.
	C5	Decreto-Lei No.3/2007	<input checked="" type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Decree on expropriate, land acquisition.
PHASE II	C6	Boletim Oficial	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Environment laws of Cape Verde
	C7	Primeira Lista Vermelha de Cabo Verde	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	List of Endangered Species of Cape Verde
	C8	Lei n44/6/2004	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Law for coastal environment protection
	C9	Plano de Gestao - Parque Natural do Fogo	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Fogo Natural Park - Management Plan
	C10	Plano de Gestao - Parque Natural do Monte Gordo	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Monte Gordo Natural Park (San Nicolau) - Management Plan
	C11	Plano de Gestao - Parque Natural do Serra Malagueta	<input type="checkbox"/> COPY <input type="checkbox"/> RECEIVED	<input checked="" type="checkbox"/> DATA <input type="checkbox"/> PURCHASED	Serra Malagueta Natural Park (Santiago) - Management Plan





## 添付資料 3

### Questionnaire



## Additional Questionnaire for the JICA Survey on Water Supply System Development Project

### A. General Information about Water Sector

Questionnaire	Answer from MEGC on Nov. 03, 2009
<b>1. Organization for Water Sector</b>	
1-1; (To MEEC) Organization, role of each department and section, and No. of staff.	Refer to URL: <a href="http://www.governo.cv/">www.governo.cv/</a>
1-2; (To ELECTRA) Organization, role of each department and section, and No. of staff. No. of staff for Operation and Maintenance of water supply facilities.	To be provided.
1-3; (To SAAS) Organization, role of each department and section, and No. of staff. No. of staff for Operation and Maintenance of water supply facilities.	To be provided.
<b>2. Organizations for Japanese ODA Loan Project</b>	
2-1; Primary Organization, name and role for loan agreement Bank and other organization as borrower Government guarantee application	Typical will be extracted from the Existing JBIC Loan Agreement for a project.
2-2; Project organization of Cape Verde side for new water supply system	Not available for the moment, Steering Committee should discuss.
2-3; Construction organization of Cape Verde side for new water supply system	Not available for the moment, Steering Committee should discuss.
2-4; Operation and maintenance organization of Cape Verde side for new water supply system	Not available for the moment, Steering Committee should discuss.
2-5; Relending mechanism from the central government Entity which will bear the foreign exchange risk Entity which will propose the terms and conditions of relending	Not available for the moment, Steering Committee should discuss.

<b>3. Financial / Budgetary situation on Water Sector</b>	
<p>3-1;</p> <ul style="list-style-type: none"> <li>• Fiscal year start from the month of X and close Y?</li> <li>• Deadline of budget application from each ministry/ municipality according to the procedure of fiscal year?</li> <li>• Which ministry/agency is the responsible to approve the plan/program on water sector, especially the project financed by the international donors?</li> <li>• Which ministry/agency is the responsible to approve and allocate the annual budget to each ministry/ municipality?</li> <li>• Detailed procedure to apply the budget of new project from each executing agency such as CNAG, INGRH, ELECTRA, etc, to the Government?</li> </ul> <p>Financial situation of the Government, e.g. audit report, law of finance (version of fiscal year 2009 and latest 5 years), etc.</p>	<p>from January to December</p> <p>Description will be prepared</p>
<p>3-2;</p> <ul style="list-style-type: none"> <li>• Annual budget to relevant agencies concerned with water sector such as CNAG INGRH, ELECTRA, each municipality's SAAS, etc. including the construction cost, personnel cost, operation &amp; maintenance cost, etc.</li> </ul>	<p>MEGC will try to get</p> <p><b>Partly provided.</b></p>
<p>3-3;</p> <ul style="list-style-type: none"> <li>• Functions/roles on Project formulation and financial arrangement of those agencies concerned with water sector as below:</li> <li>- Ministry of Economy (MoE)</li> <li>- CNAG</li> <li>- INGRH</li> <li>- ELECTRA</li> <li>- ADA</li> <li>- SAAS</li> </ul>	<p>MEGC will try to get</p> <p><b>Already interviewed.</b></p>

<ul style="list-style-type: none"> <li>- MADRRM</li> <li>- INERF</li> <li>- ARE</li> </ul>	
<p>3-4; Information on budget/amount to on-going projects financed by international donors in water sector according to the latest law of finance approved by GoCV including the composition of budget such as budget financed by GoCV and by international donors.</p>	<p>Information from Ministry of Finance as of 17/09/2009 was disclosed as reference.</p>
<b>4. Financial / Budgetary situation of ELECTRA</b>	
<p>Information on financial situation and annual cash flow such as</p> <ul style="list-style-type: none"> <li>- Annual budget from GoCV to ELECTRA (at least latest 5 years)</li> <li>- Annual revenue from water fee, etc.</li> <li>- Annual expense to personnel cost, operation &amp; maintenance cost of water facilities, etc.</li> </ul>	<p>About 74 million EURO of 2015 for both water and power. Annual report of ELECTRA (latest 5 years) should be provided. <b>To be provided.</b></p>
<b>5. Information on On-going and Planned Water Supply Project in Santiago Island</b>	
<p>5-1; Projects financed by the GoCV</p>	<p>To be identified. <b>To be provided.</b></p>
<p>5-2; Projects financed by other donors</p>	<p>Detail description shall be required regarding project name, target areas, implementation schedule, project cost, budget from GoCV, budget from donors, etc. <b>To be interviewed.</b></p>
<p>5-3; Opportunity of Desalination projects other than Praia city</p>	<p>Yes. Desalination for Assomada from S. Cruz and S. Miguel Detail description shall be required regarding project name, target areas, implementation schedule, project cost, budget from GoCV, budget from donors, etc. Related report should be provided. <b>To be provided.</b></p>

5-4; If yes on 5-3, who are projects implementation organizations?	
<b>6. Water Tariff</b>	
6-1; (To ARE) Current water tariff tables of SAAS in Santiago island and ELECTRA, determined by ARE	MEGC will try to get <b>Received.</b>
6-2; (To ARE) Procedure and principle for setting water tariff Concerns or issues for resident's affordability to pay	MEGC will try to get <b>To be interviewed.</b>
6-3; Collection system of water tariff	MEGC will try to get <b>Received.</b>
6-4; Subsidy system on rural water supply	MEGC will try to get <b>To be interviewed.</b>
6-5; House / individual connection fee	MEGC will try to get <b>To be interviewed.</b>
6-6; Loss of water without water tariff collection	MEGC will try to get <b>To be interviewed.</b>
<b>7. Operation and Maintenance (O&amp;M) of Water Supply Facilities</b>	
7-1; (To ELECTRA, SAAS) Experienced major problems on O&M of water supply facilities	Lack of budget <b>Already interviewed.</b>
7-2; (To ELECTRA, SAAS) What do you think of the causes and necessary actions?	Plumber training is necessary. WB assistance to each SAAS is planned <b>Already interviewed.</b>
7-3; (To ELECTRA, SAAS) What kind of training is necessary for capacity development of your staff? Necessary training area and subject	Any training from Austria, France, WB, Germany <b>Already interviewed.</b>
7-4; (To INGRH) Current major problems on O&M of water supply facilities, operated by ELECTRA and SAAS	<b>Already interviewed.</b>

<p>7-5; (To INGRH)  What kind of technical supports INGRH provide to SAAS in the past?</p>	<p>To be interviewed.</p>
<p>7-6; (To INGRH)  What kind of training on O&amp;M of water supply facilities does INGRH conduct for SAAS staff?</p>	<p>To be interviewed.</p>
<p><b>8. Others</b></p>	
<p>According to JICA Preparatory Study on March 2009, a new PAGIRH mentioned about a necessity of new law/ institutional system on water sector. Please describe what kind of law/institutional system is developed?</p>	<p>Related documents should be provided.  Already interviewed.</p>

## B. Technical Information about Water Facilities

Questionnaire	Answer
<b>1. Water Quality</b>	
1-1; Regulations on water quality of drinking water	Draft on 2004 was received <b>Received.</b>
1-2; Specification of drinking water	WHO generally applied
<b>2. Procurement</b>	
2-1; Availability of facility construction materials including cement, sand, gravel, steel structure, pipe and fitting, cable, wire, pump, motor, instrument, drum, tank, RO module, etc.	Only gravel, rock and stone are available <b>To be provided.</b>
2-2; Availability of spare parts of facility	Not available
<b>3. Construction</b>	
3-1; Work Unit Price of - civil - construction - piping - welding - electrical cable - instrumentation - others	MEGC will try to get from Ministry of Infrastructure <b>To be provided.</b>



4. Existing Water Supply System	
4-1: Network System - Specification and actual performance - Operation and maintenance system - Experienced major troubles - Major corrective and preventive maintenance issues - Maps indicating location of existing main reservoirs and their capacity (except for Santa Cruz): Note: Information on Santa Cruz was already provided.	Limited information was prepared and submitted Partly provided (To see <b>E, F, G</b> ).
4-2 Raw Water source	
- Sea water intake point, where? - Ground water intake points, where?	5000m <sup>3</sup> /d SWRO in Praia: Direct intake from creek 1200m <sup>3</sup> /d SWRO in Praia: sea water pumped from well near creek 500m <sup>3</sup> /d SWRO in S. Cruz: blackish water pumped from well near sea Already interviewed.
4-3 Desalination Plant - Specification and actual performance - Operation and maintenance system - How Sea water resource imported? - How brine water discharge system? - Experienced major troubles? - Major corrective and preventive maintenance?	See each site visit memorandum To be provided.
4-4 Water specification Desalinated water? Sea water? Well water?	Refer to sub-Contact report from INGRH To be provided.

4-5 Soil or ground information  
Boring for N value, Ground water level, and Soil Composition and  
Soil corrosivity

MEGC try to get information on Praia desalination site  
**To be provided.**

### C. Socioeconomically Information

Questionnaire	Answer
<b>1. Water tariff system</b>	
1-1; Procedure of new tariff determination - Which agency is the responsible to determine the new price of water tariff and please describe detailed procedure?	Already interviewed.
<b>2. Water tariff collection</b>	
2-1; Which agency is the responsible to decide the utilization of the revenue from water tariff?	Already interviewed.
<b>3. Power Tariff and Consumption</b>	
3-1; Power supply system in Santiago Island - Existing and planned supply system - Composition and characteristics of power tariff - Power tariff table - cost for new connection from grid to industrial facility	<from ELECTRA> To be provided.

## D. Natural and Environmental Information

Questionnaire	Answer
<b>1. Environmental Assessment</b>	
<p>1-1; Necessary procedure of Environmental Impact Assessment (EIA) for water supply system project referring to the following points:</p> <ul style="list-style-type: none"> <li>• Who is responsible to conduct the EIA study?</li> <li>• Who is responsible to approve the EIA report?</li> </ul> <p>Time schedule of EIA</p>	<ul style="list-style-type: none"> <li>• MEGC is responsible to conduct EIA study,</li> <li>• EIA study is necessary for MEGC to approve and proceed the project,</li> <li>• DGE is responsible to approve EIA report in relation with MEGC, and</li> <li>• It takes 4 months to approve EIA report by GoCV.</li> </ul> <p>Consultant companies that will be able to conduct EIA study are available in Cape Verde</p> <p style="color: red;">Already Interviewed.</p>
<p>1-2; JICA will conduct Initial Environment Evaluation (IEE) level study for the project according to JBIC guideline and local relevant law in Cape Verde. Based on the above stage, how do you assess adequate study level as IEE? Note: JBIC guideline is separately attached for reference.</p>	<p>The procedure of EIA and necessary items to be studied is provided in <i>declare No.29/2006</i></p> <p style="color: red;">Already Interviewed.</p>
<b>2. Resettlement</b>	
<p>2-1; Necessary procedure of resettlement for the project referring to the following points:</p> <ul style="list-style-type: none"> <li>• Who is responsible to proceed resettlement?</li> <li>• Who is responsible to compensate the residents suffered from the project?</li> </ul> <p>How does the GoCV compensate the residents for their propertie?</p> <p>How does the GoCV compensate the residents for their income if the residents lose their income resources?</p>	<ul style="list-style-type: none"> <li>• MEGC is responsible to proceed Resettlement and Land Acquisition,</li> <li>• Project affected people and properties are identified by MEGC and compensated by Ministry of Finance</li> <li>• Related decree, <i>declare No.3/2007</i>, has been provided.</li> </ul> <p>MEGC proceeds</p> <p>MEGC compensates using MoF budget</p> <p style="color: red;">Already Interviewed.</p>

### 3. Land Acquisition

3-1; Necessary procedure of land acquisition for the project referring to the following points.

- Who is responsible to proceed land acquisition?
- Who is responsible to compensate the residents suffered from the project?
- How does the GoCV compensate the residents for their land?
- How does the GoCV estimate the land price?

See above

MEGC proceeds

MEGC compensates using MoF budget

Subject to negotiation

**Already Interviewed.**

## E. List of required documents

Following documents are required to implement the Study and please provide them to the Study Team at the first meeting of the Study.

Name of document	Objective of utilization
1. National Development Plan 2006-2011	Version 2004-2007 and 2008-2011 have been provided
2. Visao Nacional sobre a Agua, a Vida e o Ambiente No horizonte 2025	MEGC will check
3. Plano de Accao e Gestao Integrada dos Recursos Hidricos (PAGIRH)	MEGC will try to get <b>Received</b>
4. Strategie Developpement a L'Horizon 2015 & Plan D'Action 2005-2008	MEGC will try to get
5. National program to Fight Poverty 1996-2005	MEGC will try to get <b>Received</b>
6. Reports concerning about water resource and socioeconomically survey in basin of sao Miguel, Terrafal, Salto <b>Direccao General da Agricultura, Silvicultura e Pecuaria (DGASP) , 2006</b>	MEGC will try to get <b>Not Necessary</b>
7. Reports concerning about Water Sector Development 2011-2016 prepared by Lux-Development Agency	Required document has been identified. See No.3 of “ <b>Additional list of required documents</b> ” MEGC will try to get <b>Received</b>
8. Reports concerning about National Census (last version) <b>Instituto National de EstaEistica</b>	MEGC will try to get, 2020 forecast in particular <b>Received</b>
9. Reports concerning about Geological, Hydrographical and Meteorological (last 10 years) data of Santiago island <b>Instituto National de EstaEistica</b>	MEGC will try to get <b>Received</b>

<p>10. Documents, Low, Byelaw and declarations concerning about Environment Impact Assessment to proceed the project regarding water sector</p>	<p>Related decrees, <i>Decreto-Lei No.29/2006</i>, have been provided. If possible, digital formatted file, from MS-Word to PDF but any photocopy and scanning data, is also needed to be provided in order to translate directly from Portuguese to English on software for translation. <b>Received</b></p>
<p>11. Documents, Low, Byelaw and declarations concerning about Resettlement and Land Acquisition to proceed the public works</p>	<p>Related decrees, <i>Decreto-Lei No.3/2007</i>, have been provided. If possible, digital formatted file, from MS-Word to PDF but any photocopy and scanning data, is also needed to be provided in order to translate directly from Portuguese to English on software for translation. <b>Received</b></p>
<p>12. Documents concerning about Natural Park in Santiago island and Regulations applied to public works in Natural Park</p>	<p>MEGC will try to get Required document has been identified. See No.5 of “<b>Additional list of required documents</b>” <b>Received</b></p>
<p>13. Audit Reports (last 5 years) of ELECTRA and SAAS (Sao Miguel, Terrafal, Assomada, etc)</p>	<p>Certain municipalities has provided few part of latest 5 years. From No.6 to No.14 of “<b>Additional list of required documents</b>” have not been provided. Shibata received 3D CAD. <b>Partly received</b></p>

<p>14. Please provide with the following Law/By-law on Water Sector.</p> <ul style="list-style-type: none"> <li>- Decreto-Lei no 115/V/99, de 13 de Dezembro</li> <li>- Decreto-Lei no 75/99, de 13 de Dezembro</li> <li>- DecretoLei no 168/87 de 31 de Dezembro</li> </ul>	<p><i>Decreto-Lei no 115/V/99</i> and <i>Decreto-Lei no 75/99</i> have been provided.</p> <p><i>DecretoLei no 168/87</i> will be provided.</p> <p><b>Received</b></p> <p>If possible, digital formatted file, from MS-Word to PDF but any photocopy and scanning data, is also needed to be provided in order to translate directly from Portuguese to English on software for translation.</p> <p><b>Received</b></p>
<p>15. Governmental decree/ regulation/ guideline on setting water tariff</p>	<p>MEGC will try to check and get if available</p> <p><b>Interviewed</b></p>
<p>16. (To ELECTRA, SAAS) The latest Business Plan, Annual report</p>	<p>Certain municipalities has provided few part of latest 5 years.</p> <p>From No.6 to No.14 of “<b>Additional list of required documents</b>” have not been provided.</p> <p><b>To be provided</b></p>



## F. Additional list of required documents (Before 2<sup>nd</sup> Mission)

Following documents have not been provided or additionally identified through the 1<sup>st</sup> mission and please add them to the “**List of required documents**”.

Name of document	Version	To be provided from
1. National census data of population in each municipalities	2008 and latest 10 years	MEGC Instituto Nacional de Estat Eistica <b>Received.</b>
2. Reports concerning about water resource and socioeconomically survey in basin of Sao Miguel, Terrafal, Salto	2006	Direction General da Agricultura, Silvicultura e Pecuaria (DGASP) <b>Not Necessary.</b>
3. Reports concerning about Water Sector Development 2011-2016 prepared by Lux-Development Agency (Etude faisabilité économique pour production et amélioration en eau membre d’Associacion Santiago ???)		INGRH If possible, digital formatted file, from MS-Word to PDF but any photocopy and scanning data, is also needed to be provided in order to translate directly from Portuguese to English on software for translation. <b>Received.</b>
4. Reports concerning about Geological, Hydrographical and Meteorological data of Santiago island	Last 10 years	Instituto Nacional de Meteorologia de Geofisica <b>Received.</b>
5. Serra Malagueta protection management plan	Latest	Direction General of Environment If possible, digital formatted file, from MS-Word to PDF but any photocopy and scanning data, is also needed to be provided in order to translate directly from Portuguese to English on software for translation. <b>Received.</b>
6. Annual Reports of ELECTRA	2004, 2005, 2006, 2007, 2008	ELECTRA <b>Received.</b>

7. Annual Reports of the ADA in the municipality of Praia.	2004, 2005, 2006, 2007, 2008	Camara Municipal do Praia To be provided form Ms. Miliam.
8. Annual Reports of the SAAS in the municipality of Tarrafal.	2004, 2005, 2006, 2007	Camara Municipal do Tarrafal Received.
9. Annual Reports of the SAAS in the municipality of Sao Miguel. Staff information	2004, 2005, 2006, 2007, 2008	Camara Municipal do Sao Miguel To be provided form Ms. Miliam.
10. Annual Reports of the SAAS in the municipality of Sao Domingos.	2004, 2005, 2006, 2007, 2008	Camara Municipal do Sao Domingos Received.
11. Annual Reports of the SAAS in the municipality of Sao Lourenco dos Orgaos.	2004, 2005, 2006, 2007	Camara Municipal do Sao Lourenco dos Orgaos Received.
12. Annual Reports of the SAAS in the municipality of Ribeira Grande. Copy of Contract with INGRH	2004, 2005, 2006, 2007, 2008	Camara Municipal do Ribeira Grande de Santiago To be provided form Ms. Miliam.
13. Annual Reports of the SAAS in the municipality of Santa Catarina.	2004, 2005, 2006, 2007, 2008	Camara Municipal do Santa Catarina Received.
14. Annual Reports of the SAAS in the municipality of Sao Salvador do Mundo.	2004, 2005, 2006, 2007, 2008	Camara Municipal do Sao Salvador do Mundo Received.
15. Organization Chart of INGRH	Latest	INGRH Received.
16. Organization Chart of ELECTRA	Latest	ELECTRA Received.
17. Organization Chart of Ministry of Economy, Growth and Competitiveness (MEGC)	Latest	MEGC Received.

18. Organization Chart of Ministry of Environment, Agriculture, Rural Development and Maritime Resources (MADRRM),	Latest	MADRRM To be confirmed.
19. Decreto-Lei no 8/2004, de 23 de Fevereiro	2004 (final)	MEGC or INGRH If possible, digital formatted file, from MS-Word to PDF but any photocopy and scanning data, is also needed to be provided in order to translate directly from Portuguese to English on software for translation. →Received.
20. Despacho ARE no 01/07 de 13 de Janeiro	2007	ARE If possible, digital formatted file, from MS-Word to PDF but any photocopy and scanning data, is also needed to be provided in order to translate directly from Portuguese to English on software for translation. Received.

**Remarks:** If possible, digital formatted file, from MS-Word to PDF but any photocopy and scanning data, are also needed to be provided, because it is much more helpful to us to translate directly from Portuguese to English on software for translation.

**G. Additional list of required documents (During 2<sup>nd</sup> Mission)**

Name of document	Version	To be provided from
1. Activity (Annual) Report of ARE	2008 and latest 5 years	ARE To be provided form Ms. Miliam.
2. CAIS F/S Report, Technical Study Report		MEGC (Mr. Daniel) To be provided form Ms. Miliam.
3. Financial Statement/ Break down of O&M cost of ELECTRA		ELECTRA (Mr.Pina) To be provided form Ms. Miliam.
4. Localization map of reservoirs for Tarrafal		Austrian Cooperation -> Association of Municipalities? To be provided form Ms. Miliam.
5. Localization map of reservoirs		San Lorenzo To be provided form Ms. Miliam.
6. Reservoir list for potable water + localization map		SAAS San Miguel (to be sent to ONO's email address) To be provided form Ms. Miliam.
7. Reservoir list for potable water + localization map		San Salvador do Mundo (Director) To be provided form Ms. Miliam.
8. Reservoir list for potable water + localization map		Ribeira Grande To be provided form Ms. Miliam.